Automated Metering Infrastructure (AMI) Project Phase I

WaterSMART: Water and Energy Efficiency Grants for Fiscal Year 2022 R22AS00023 Funding Group II

Prepared For:
Bureau of Reclamation
Financial Assistance Operations
Attn: NOFO Team
eweakland@usbr.gov
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Submitted By:
Santa Clarita Valley Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
Matthew Stone, General Manager
mstone@scvwa.org
661-297-1600

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SECTION 1: TECHNICAL PROPOSAL

A. Executive Summary

Date: November 3, 2021	**Applicant Name**: Santa Clarita Valley Water Agency
City: Santa Clarita	**Project Length of Time:** 36 months
County: Los Angeles and Ventura Counties	**Estimated Completion Date:** July 2025
State: California	**Located on a Federal Facility:** No

Santa Clarita Valley Water Agency is a Category A applicant.

Project Summary

To further increase Santa Clarita Valley Water Agency's (SCV Water) water supply reliability and support water conservation and management efforts, SCV Water has embarked on replacing its existing water service meters with Advanced Metering Infrastructure (AMI) and launching a Customer Engagement Portal (CEP) which will provide SCV Water customers with daily water use information. These components will increase water conservation through accurate and real-time meter readings, detection of leaks in the system and immediate corrective responses, facilitation of the billing process, reduction in the amount of manual labor to read water meters and customer education on water use. This phase will replace 21,163 meters with AMI capable meters. In addition, this phase of the Project proposes to upgrade 11,000 existing meters with leak detection capabilities and to connect these meters to the customer portal. These two components are expected to upgrade 44% of the meters in the service area that will conserve an estimated **2,946 acre-feet per year (AFY)** in water savings and **2,522,333 kilowatt-hours (kWh) per year** in energy savings. SCV Water is directly managing and implementing the AMI Project. These upgrades will improve SCV Water's overall management of the system and enhance customer service.

This request for funding is for **$2,000,000** and will augment SCV Water's existing funding of $7,361,443 (78.6% match). SCV Water is ready to proceed with the Project upon grant approval, to receive the required equipment and start the installation of the water meters and customer engagement portal.

B. Project Location

The AMI Project, located in Los Angeles County in the state of California, will replace existing water meters in three service areas within SCV Water's boundaries as shown in **Figure 1**. Since there are many locations where meters will be installed, the latitude and longitude for the SCV Water headquarters is 34° 26' 7.2492'' N and 118° 31' 15.6432'' W, respectively.

Several standalone water agencies were consolidated in 2018 to form SCV Water. The previous agencies are:

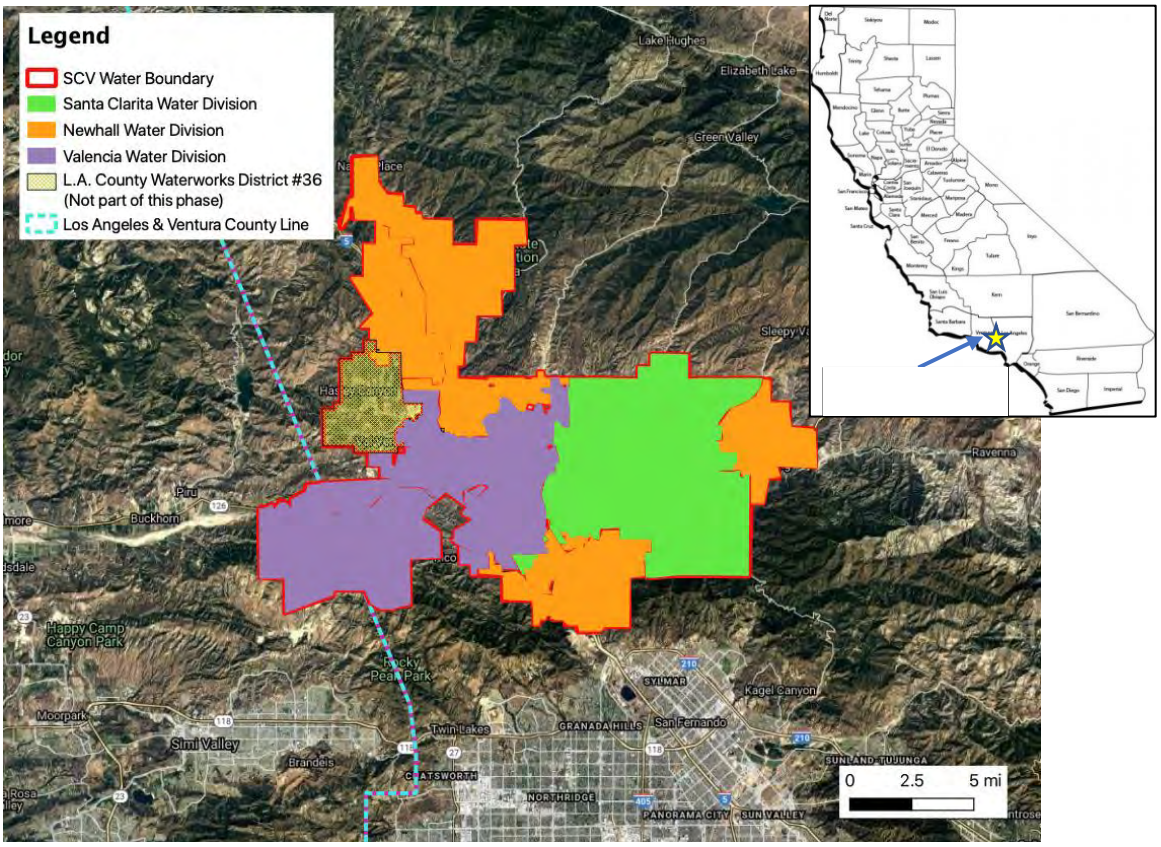
1. Castaic Lake Water Agency (CLWA) – State Water Project Contractor – Wholesale
2. Santa Clarita Water Division (a division of CLWA) – Retail
3. Valencia Water Company (private company owned by CLWA) – Retail
4. Newhall County Water District (with four separate systems of Castaic, Newhall, Pinetree, and Tesoro)– Retail

The AMI Project replaces water meters in three current SCV Water areas as summarized in **Table 1**.

Table 1. New AMI Meter Installation Locations

Division	Number of New AMI Meters
Castaic	1,910
Newhall	424
Pinetree	2,819
Santa Clarita	1,822
Tesoro	1,188
Valencia	13,000
Total	**21,163**

Figure 1. Project Location Map



C. Technical Project Description

As mentioned above, SCV Water was formed through the consolidation of four previous standalone water agencies. The previous water agencies had long engaged in efforts to upgrade water service meters as early as twenty years ago. Being separate in the past, the legacy agencies had their own initiatives, which resulted in SCV Water inheriting various brands of equipment and different types of systems.

Planning and Design: SCV Water has completed its planning by performing pilot projects to incorporate various brands and integration of billing systems. The AMI Project is SCV Water's first step in building upon these efforts in a unified approach.

The Santa Clarita Water Division (SCWD) system employs the Sensus brand and the Valencia Water Division (VWD) system is of the Master brand. The Newhall Water Division has both Sensus and Master brand meters. The AMI Project will utilize both the Sensus and Master brands for the new water meters and base stations as determined by their proximity to the existing systems to integrate their communications. This achieves efficiency by being able to retain the existing communications infrastructure. However, both systems will be tied to one enhanced billing application with the ultimate goal of converting all SCV Water's water meters to AMI meters being read by this one application.

In order to ensure that all AMI meter data will be recorded and sent to SCV Water, a Propagation Study has been completed to identify optimum locations for base receivers.

Customer Engagement Portal (CEP): Currently SCV Water is in process of converting its billing system to encompass all divisions. The new system includes an online Customer Engagement Portal which will enable customer access to real time information about water usage and leak detection.

The new billing platform will include a Meter Data Management (MDM)/Analytics platform that will gather raw usage data from the metering networks and performs validation and editing to cleanse the data for billing, analysis, reporting and monitoring. The MDM identifies high usage meters and non-communicative meters, meters that are associated with vacant accounts but show usage and meters with zero usage on occupied accounts. The MDM delivers accurate, real-time data to the CEP platform.

This effort will be completed in time to receive information from the newly installed meters proposed in this application and convey real time, accurate and detailed leak and billing data, and improve communication networks with customers.

Implementation: This phase of the AMI Project consists of the following components:

1. Replacement of 3,700 meters annually by the SCV Water crew for a total of 11,100 AMI

meters in 3 years for the duration of this grant application ranging in size from 3/4" up to 10". Selected meters are some of the oldest meters within the system that are operating beyond their life expectancy.
2. Replacement of 10,063 additional meters by a contractor ranging in size from 3/4" up to 10" as shown in the Project budget.
3. Connection of approximately 11,000 currently installed AMI capable meters to the CEP system to benefit from the leak detection system.
4. Install up to three base receiver stations and additional repeater stations for communications based on the preliminary Propagation Study.
5. Integrate the new meters to the CEP system to connect all the customers to a centralized portal to observe real-time water use.

Upon execution of agreement for this grant request, SCV Water will start the process for retaining a contractor by advertising for a public bid for equipment needed to implement the Project. The SCV Water Board of Directors will award a contract to the lowest responsive, responsible bidder.

Public Outreach: In addition to the technical aspects of the Project, SCV Water has designed a comprehensive public outreach plan as part of implementing CEP to promote customer awareness and education on the functionality of new AMI meters. This will promote customer awareness that results in time sensitive leak detection capability and water use correction as customers approach inefficient, excessive, and wasteful levels of use.

Environmental Process: SCV Water anticipates that the proposed project will qualify for a California Environmental Quality Act (CEQA) Categorical Exemption because the project will not result in individual or cumulatively significant environmental effects, and therefore falls within Section 43, Code of Federal Regulations, Part 46, Subsection 46.210(f): Routine and continuing government business, including such things as supervision, administration, operations, maintenance, renovations, and replacement activities having limited context and intensity (e.g., limited size and magnitude or short-term effects). SCV Water also anticipates that the project will be considered a National Environmental Policy Act (NEPA) Categorical Exclusion, according to the list of Categorical Exclusions located in the Code of Federal Regulations for the Department of Interior. Environmental documentation will be filed after the grant is executed and the contract is awarded.

SCV Water proposes to perform this work with a combination of in-house labor and contracted labor with the designated project manager overseeing the Project.

Grant Compliance: SCV Water will be responsible for all grant compliance efforts after award and execution of the grant agreement.

D. Evaluation Criteria

D.1. Evaluation Criterion A — Quantifiable Water Savings (28 points)

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

SCV Water is continually assessing its existing infrastructure and exploring all aspects of technology as it applies to water treatment, delivery and distribution. Updating the water meters is a priority for SCV Water. The current water meters are either antiquated manual-read water meters or non-functioning and outdated radar-read water meters without the capability of transmitting usage information to customers.

Water Savings will be achieved from implementation of the following proposed measures:

1. Replacement of 3,700 meters annually by the SCV Water crew for a total of 11,100 AMI meters in 3 years for the duration of this grant application.
2. Replacement of 10,063 additional meters by a contractor.
3. Connection of approximately 11,000 currently installed AMI capable meters to the CEP system to so customers can benefit from the leak detection system

The latest science-based technology in water meters is AMI. This technology allows for water meters to be read remotely in addition to other benefits such as leak detection, automatic billing and online customer interface portals. These components of the AMI conversion will result in direct water savings which is estimated to be **2,946 AFY**. Please see description of estimation methodology below.

Documentation of estimated water savings is described in detail in below sections.

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

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

Portions of the water meter infrastructure in the SCV Water service area is outdated and many meters are beyond their useful life. Significant water loss can occur in the time between water billings with manual-read meters since real time data is not available. Water could be leaking for an entire month before it is discovered on a higher than normal water bill. The water lost due to leaks either increases wastewater flows to the sanitation district, seeps into the ground, or ends up in the storm drain system.

b. *If known, please explain how current losses are being used. For example, are current losses returning to the system for use by others? Are current losses entering an impaired*

groundwater table becoming unsuitable for future use?

SCV Water conducts annual validated water loss audits using American Water Works Association (AWWA) Water Audit Software (WAS) v5.0 Audit Software. The most recent audit for 2020 found an average loss of approximately 9%. This water is lost by seeping into the ground or lost to the storm drain system which is not currently recoverable by SCV Water. Implementation of the AMI Project has proven to provide a mechanism for immediate water leak detection and response to reduce the amount of water waste.

c. *Are there any known benefits associated with where the current losses are going? For example, is seepage water providing additional habitat for fish or animal species?*

There are currently no known benefits associated with current losses due to leaks in the SCV Water System.

Describe the support/documentation of estimated water savings. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Note: projects that do not provide sufficient supporting detail/calculations may not receive credit under this section. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal. In addition, please note that the use of visual observations alone to calculate water savings, without additional documentation/data, are not sufficient to receive credit under this section. Further, the water savings must be the result of reducing or eliminating a current, ongoing loss, not the result of an expected future loss.

The Project will produce water savings in two separate ways:

1. Timely identification and correction of leaks and correction in abnormal consumption resulting in reduced water loss.
2. Customers making behavioral changes in response to the availability of near-real time data consumption metrics provided through the CEP resulting in reduced water consumption.

Based on an Environmental Protection Agency (EPA) report on water loss control for public water systems, water savings estimates resulting from early identification of leaks and overuse led to reductions in water losses. This report estimated that up to 75% of water loss in a system is recoverable (EPA, 2013). A case study was completed regarding the implementation of AMI in the City of Santa Maria, California. The case study found that AMI was able to reduce its non-revenue water loss from 6% down to 2% or by two thirds (Godwin, 2011). We estimated that two-thirds of SCV Water's non-revenue water losses are recoverable due to implantation of the AMI system. Therefore, of SCV Water's 9% of water losses, 6% is estimated to be recovered and therefore additional water savings.

Additionally, two prominent vendors of CEPs (WaterSMART and Smart Water Energy) have documented water reductions ranging from 4-7% with the installation of CEPs. Also, East Bay Municipal Utilities District (EBMUD) published an independent study conducted in 2014 which concluded that providing information to help households compare their water use to neighborhood averages reduced residential water use by approximately 5%. SCV Water based its CEP water savings assumptions on this study (5% reduction in water usage) which is applied to 32,163 meters (11,000 existing AMI capable meters plus 21,163 meters to be installed) of SCV Water's customers/services that will be connected once the Project is completed. There are no available studies regarding the total number of years over which savings will accrue, we have assumed a conservative estimate of five years to be the lifetime of accrued savings. See **Table 2** below for water savings calculations.

As it is noted above, SCV Water is currently in process of implementing a new billing platform which includes a Meter Data Management (MDM)/Analytics platform and an online CEP.

The MDM gathers raw usage data from the metering networks and performs validation and editing to cleanse the data for billing, analysis, reporting and monitoring. The MDM identifies non-communicative meters, meters that are associated with vacant accounts but show usage and meters with zero usage on occupied accounts. Timely identification of these scenarios will enable SCV Water to investigate, diagnose and resolve issues, resulting in reduced water loss and mitigating potential property damage. The MDM delivers accurate, real-time data to the CEP platform. Improved data integrity reduces the need to dispatch technicians multiple times to the same service for the purposes of collecting or verifying meter reads and reduces customer service billing errors. Because collecting usage data via AMI will be more efficient than SCV Water's current collection method, it will shorten the time between read collection and billing.

The CEP provides customers online access to near-real time usage data. Achieving behavioral change of water use habits is difficult with the delivery of a monthly bill whereas providing near-real time access of the same data provides customers the opportunity to take action and employ strategies that will have immediate impact.

Table 2. Water Savings Calculations

Water Savings Calculation Variable	Value	Unit	Calculation	Source
Total potable meters in SCV Water	73,734	Meters		2020 Validated Water Loss
New AMI Meters and existing meters that will be upgraded to have AMI capabilities	32,163	Meters	= 11,000 existing meters + 21,163 planned meters	
Percentage of total smart meters connected to AMI through the Project	44%		=32,163 / 73,734	
Total Water Supplied in 2020 in the above areas	62,335	AFY		2020 Water Audits
Estimated Volume of Water Supplied by AMI smart meters within Project	27,191	AFY	=44% x 62,335	
Percentage of System Water Losses in 2020	9%			2020 Water Audits
Percentage of Recoverable Losses	6%		=2/3 x 9%	1) Godwin, 2011 , 2) EPA, 2013
Annual Recoverable Water Loss	**1,586**	**AFY**	**=6% x 27,191**	
Water Savings from Reduced Water Loss (20-years)	**31,727**	**AFL**	**= 1,586 x 20**	
% Water Savings from CEP (74% of all meters/customers – formula assumes equal % consumption by each meter)	2.2%		= 5% x percentage of meters in project (21,163) and existing meters to be connected (11,000) with CEP relative to meters in above three areas	EBMUD, 2014
Annual water savings from CEP launch	**1,360**	**AFY**	**=2.2% x 62,335**	
Total water Savings from customer access ad utilization of CEP (assumed 5-year life)	**6,798**	**AFL**	**=1,360 x 5**	
Total Annual Water Savings	**2,946**	**AFY**	**=1,586 + 1,360**	
Total Project Lifetime Water Savings	**38,525**	**AFL**	**=31,727 + 6,798**	

Municipal Metering:

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

Please see discussion and Table 2. Water Savings Calculations above that provides the annual water savings calculations, assumptions, and supporting documents.

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

Current distribution losses are determined by using AWWA WAS v5.0 Audit Software that are reported annually. The potential reductions in water use assumptions are based on the Environmental Protection Agency's (EPA) WaterSMART tool, Smart Water Energy, and the EBMUD 2014 study which all assume that individual water use decreases anywhere from 4-7% when AMI is installed.

The Project will produce water savings in two separate but complementary ways:

1. Reductions of water loss through more timely identification and correction of leaks and correction in abnormal consumption; and
2. Reduction in water consumption resulting from customers making behavioral changes in response to availability of near-real time data consumption metrics provided through the CEP system.

As already stated in the application, the CEP provides customers online access to near-real time usage data. Achieving behavioral change of water use habits is difficult with the delivery of a monthly bill whereas providing near-real time access of the same data provides customers the opportunity to take action and employ strategies that will have immediate impact. More frequent engagement on a familiar online platform which customers are already accessing for other account-related purposes will facilitate a better understanding of usage habits, their impact and the overall value of water which will assist in achieving best practices. The CEP will provide a common educational platform for growing families, whose consumption patterns often could benefit from insight and conservation. Accessibility to such data and acting upon it will reduce water loss and waste which will also help to reduce customer water bills.

Also, the AMI system will enable various alerts to be generated. Such alerts will include identification of leaks within the customer's private plumbing system and can be quantified by determining the average flow rate and duration for such events along with the total number of resolved instances. The parameters of the AMI system can be manipulated and SCV Water can set the desired alert criteria for the system. For example, SCV Water can set up an alert at 24 hours of continuous water usage. This notification would be sent to SCV Water and they would contact the customer to inform them that they had continuous water usage for 24 hours and to look for a leak. SCV Water could also set alerts for large spikes in usage showing a large break and SCV Water could notify the customer at the time of the alert.

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

Above mentioned studies are:

1. East Bay Municipal Utilities District (EBMUD), 2014. "New technology reduces home water use by 5 percent". January 14, 2014.
2. Environmental Protection Agency (EPA), 2013. "Water Audits and Water Loss Control for Public Water Systems". July 2013.
3. Godwin, Angela, 2011. "Advanced Metering Infrastructure: Drivers and Benefits in the Water Industry". Water World, August 1, 2011.

The above-mentioned planning documents all cite conservation as the simplest, most cost-effective way to remedy, or at least postpone, a myriad of resource management issues.

According to an article titled "*Advanced Metering Infrastructure Drivers and Benefits in the Water Industry*" published August 1, 2011 in WaterWorld, "water utilities across the country are literally leaking money. They take in, treat and pump water to their customer, but can be losing as much as 30% of their product along the way due to leaks in the distribution system. With an AMI system, the whole distribution network can be continuously monitored by hourly interval reads."

The Water Research Foundation's "*California Single-Family Water Use Efficiency* Study" (2016) documents an average leakage rate of 30.7 gallons per household per day for a California study group from 2005. This equates to 11,200 gallons per year, or 0.0343 AFY per household. The results of this study are higher than what was used above.

Another example was found after reviewing annual water loss audits for the City of Dallas, Georgia. It was determined that in one-year (2014) water loss accounted for nearly 20% of the city's total water supply for that year or 31.3 million gallons.

Additionally, the City of Santa Maria, CA began converting to AMI in December 2009. At the end of one year, with only one-third of their 20,000 meters converted, the water loss revenue was reduced from 6% to 2%, resulting in more than $600,000 in recovered revenue. Other California cities (both large and small) have converted to AMI and experienced similar conservation benefits

This project is the beneficiary of many years of work SCV Water has done to deliver precious water to combat drought and introduce water and energy efficiency to its customers. The depleting local supplies and the difficulties associated with imported supplies have motivated SCV Water to construct and operate one of the most efficient water delivery systems in California. Installing new AMI meters and bringing the already installed AMI smart meters online furthers this effort. This proposed project conserves water through education, real time feedback to SCV Water and residential water users, and financial incentives (through reduced water bills) associated with the project.

d. Installation of distribution system meters will not receive points under this criterion. Accordingly, these projects must be paired with a complementary project component that will result in water savings in order for the proposal to receive credit for water savings, e.g.,

pipe installation using upgraded materials, or individual water service meters.

The SCV Water AMI Project does not include the installation of any distribution system meters. The Project will install and connect a total of 32,163 (21,163 AMI meters plus 11,000 existing AMI meters) to the CEP network which will enable SCV Water to achieve water savings from enhanced leak detection and customers reducing water use through more transparent water data.

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

Table 3. Project Equipment

PROJECT EQUIPMENT			
Component	**Manufacturer**	**Model**	**Quantity**
3/4" Meters	Master Meter	Allegro AMI Meter	14,155
3/4" Meters	Sensus	iPerl Smart Water Meter	4,448
1" Meters	Master Meter Sensus	Allegro AMI Meter iPerl Smart Water Meter	576 45
1 1/2" Meters	Master Meter Sensus	Allegro AMI Meter iPerl Smart Water Meter	132 25
2" Meters	Master Meter Sensus	Allegro AMI Meter iPerl Smart Water Meter	1,660 122
		Total Meters	**21,163**
AMI Base Station/ Repeaters	Master Meter & Sensus	Allegro AMI Network & FlexNet	3

The SCWD system employs the Sensus brand and the NWD and VWD systems are of the Master brand. For this reason, the water meters for this project are a combination of the two brands as determined by their proximity to the existing systems to integrate their communications. This achieves efficiency by being able to retain the existing communications infrastructure. However, both systems will be tied to one enhanced billing application and customer portal system.

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

Actual water savings will be verified upon project completion by comparing to historical water records:

Performance Measure No. 1: Quantifiable Water Savings
A Final Project Implementation Report will be submitted to Reclamation to verify post-Project benefits. The post-project benefit objective for Performance Measure No. 1. is **2,946 AFY** of potable water saved annually through implementation of the Project.

Performance Measure No. 2: Improved Water Management
The Final Project Implementation Report will contain a section entitled Improved Water Management. A portion of the project journal will be dedicated to documenting general management improvements.

Performance Measure No. 3: Implementing Energy Efficiency in Water Management
The Final Project Implementation Report will contain a section entitled Increased Energy Efficiency in Water Management. This will be achieved by comparison of billing from pre-project installation for water production and distribution costs due to reduction in demand. It is estimated that the project will conserve 2,522,333 kWh of energy per year. Other energy savings such as costs of vehicle usage and fuel costs will also be calculated.

D.2. Evaluation Criterion B—Renewable Energy (20 points)

E.1.2.2. Subcriterion No. B.2: Increasing Energy Efficiency in Water Management

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

Currently, SCV Water collects metering data for these meters by driving to each meter location on a monthly basis. By installing 21,163 new meters and connecting 11,000 existing meters to the network in this phase, SCV Water will no longer have to complete the monthly driving routes associated with these meters. This will not only result in substantial water savings, but also reduce the vehicle miles driven, conserve energy and help reduce greenhouse gas (GHG) emissions.

By implementing AMI meters, SCV Water will also conserve energy through reduced electrical usage in the SCV Water system**.** Conserving water that is otherwise wasted through leakage, results in substantial reduction in energy and GHG emissions required for treatment and delivery. The energy savings from reduction in treatment and distribution of potable water and vehicle miles driven to collect the meter information is estimated below.

Energy Savings by Reducing SCV Water's Water System Electrical Usage:
SCV Water averaged the monthly kWh used in all of its facilities and dividing it by Total System Flow provided the average of 855 kWh used per AF of water. The annual energy savings for SCV Water system energy usage as a result of this project would therefore be:

2,946 AFY x 855 kWh/AF = **2,517,860 kWh/year**

Energy Savings from Reduced Vehicle Miles Driven:

This project would create an additional energy savings through reducing fossil fuel consumption. By installing AMI meters, SCV Water staff will no longer need to drive to the 21,163 meter locations to record water usage data. It is conservatively assumed that 72 feet or ~0.0137 miles is driven for each meter recording.

21,163 meters x 0.0137 miles/meter x 12 (times meters read per year) = 3,372 miles/year

Using EPA's average of 25.1 miles/gallon and adding 10 percent for the stop-and-go condition (27.61 miles/gallon), we estimate the following:

3,372 miles per year / 27.61 miles per gallon = 122 gallons/year

U.S. EPA parameters specify 1.25 therms/gallon of fuel and 29.3 kWh/therm. Using these values, there will be approximately **4,473 kWh/year** that will be saved.

Table 4. Summary of Total Energy Savings from Project Implementation

Total Energy Savings	
Source of Energy	**Energy Savings (kWh)**
System Usage	2,517,860
Reduced Vehicle Miles	4,473
Total:	**2,522,333**

In addition to the above energy savings, conserved water from indoor use will result in less wastewater treatment and conserved water from outdoor use will result in reduction of stormwater and its related pollution control.

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

The below chart depicts the calculations for energy savings which would be achieved by reduced water deliveries (due to less water loss to leaks) and from reduced vehicle miles driven and the associated energy consumption.

Table 5. Energy Savings Calculation

Energy Savings Calculations	Value	Unit	Calculation	Source
Energy Savings from Reduced Water Consumption				
Annual Water Conserved	2,946	AFY	From Table 2	From Table 2
Energy Used per Water Unit Produced	855	kWh / AF	Estimate from SCV Water	SCV Water
Total Energy Savings per Year from Reduced Water Consumption	**2,517,860**	**kWH / Year**	**= 2,946 AFY x 855 kWh per AF**	
Energy Savings from Reduced Vehicle Miles Driven				
Number of Meters Connected to Centralized AMI System	32,163	Meters		SCVWA
Estimated Number of Miles Driven for Selected Meters	281	Miles		SCVWA
Number of Times Meter Read per Year	12	Months		
Number of Miles Driven per Year	*3,372*	*Miles*		
Gallons of Gas Used per Mile	27.61	Miles/Gallon	=25.1 miles + 10% for stop-and-go condition	EPA Automotive Trends Report
Total Gallons Per Year	*122*	*Gallons*	*= 3,372 / 27.61*	
Gallons of Fuel to Therms	1.25	therm/gallon	EPA	EPA Parameters
Total Therms	153	*Therms*	=1,475 x 1.25	
Therms to kWh	29.3	kWh/therm	EPA	EPA Parameters
Total Energy Savings per Year from Reduced Vehicle Miles Traveled	**4,473**	**kWh / Year**	**=1,844 x 29.3**	
Total Energy Saved per Annum	**2,522,333**	**kWh**	**=2,517,860 + 4,473**	

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

Energy savings will be achieved from two sources as stated above. The first is from reduced water deliveries due to leak detection and reduced water use from customers being able to

view their water consumption through the online portal. The second is from eliminating the need to drive and manually read each water meter.

SCV Water's water delivery system is still largely dependent on fossil fuels as its source of energy. SCV Water estimates that approximately 855 kWh are consumed per AF delivered which means any reduction in water delivered will equate to direct reduction in fossil fuel consumption and GHG emissions.

GHGs are the major human-influenced drivers of climate change. These gases warm the Earth's surface by trapping heat in the atmosphere. According to the Center For Climate And Energy Solutions: **Transportation is now the largest source of carbon emissions in the United States** and automobiles are the single greatest polluters that rely heavily on petroleum. Burning one gallon of gasoline creates about 20 pounds of CO2—which means the average vehicle creates roughly 6 to 9 tons of CO2 each year.

Regarding eliminating the need to manually read water meters, SCV Water has over 73,542 service connections, out of which only 11,000 have AMI capable meters but are not connected to the CEP network. Currently, SCV Water meter-reading personnel must physically drive to the vast majority of the metered locations within SCV Water boundaries, which span a vast 195 square miles, to manually read water meters every month. This method is extremely inefficient as it consumes excessive time and labor hours and results in substantial vehicle maintenance costs and GHG emissions from the motor vehicle use. Implementation of the proposed Project will allow automated reading of the meters and eliminate the need to drive to every meter on monthly basis resulting in substantial GHG reductions. Please see below for specifics regarding the calculated reduction in emissions from reduced vehicle miles driven.

- *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?*

Yes, the proposed project will reduce pumping in SCV Water. SCV Water relies on a water supply portfolio comprised of local groundwater resources (26% of water supplied in 2020), imported water from the State Water Project (SWP) (39% of water supplied in 2020) and Exchange Programs (34% of water supplied in 2020) all of which require some form of pumping. As mentioned in the previous section, the kWh needed to provide one AF of water is estimated to be 855 kWh. This includes the energy needed to extract, treat, and deliver potable water to all SCV Water customers which includes the cost and energy required to pump water.

In addition, the water savings achieved by implementing the Project will result in reduced need for pumping groundwater, resulting in less wear and tear and extended life of the current pumps. While waste reduction is a good business practice, it also helps in reduction of energy for production and installation.

Also, the AMI networks can be expanded to include additional functionality such as leak detection for distribution meters (which could help avoid a larger-scale leak event and water waste) and remote shutoffs.

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

  The estimated energy savings from reduced water deliveries (realized from conserved water due to leak detection and reduced water use) and vehicle miles driven originates from the point of diversion.

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

  Yes, as mentioned above, this includes the energy needed to extract, treat, and deliver potable water to all SCV Water customers.

  The energy needed for providing water can be a significant portion of all energy use, with a California Energy Commission report estimating that five percent of energy consumption in California can be attributed to the conveyance, distribution, and treatment of water. Advanced water metering reduces real water loss, thus reduces the need for energy to pump and treat water that will remain in local groundwater basins, or to import additional water supplies.

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

  Yes, the project will reduce the vehicle miles driven to each of the 32,163 meters proposed in the Project. As mentioned before, SCV Water has over 73,542 service connections. This Project will automate 44% of the meters reducing the need for SCV Water meter-reading personnel to physically drive to meter location in its vast service area of over 195 square miles, to manually read water meters every month.

  According to the California Office of Environmental Health Hazard Assessment, among the pollutants that humans put into the atmosphere in significant quantities, carbon dioxide's impact is the longest-lived, with effects on climate that extend thousands of years after emissions cease. Publishing by several universities indicate that if we are serious about protecting climate, we need to reduce the CO2.

  Driving to each meter location is extremely inefficient as it results in substantial GHG emissions from the motor vehicle usage. Implementation of the proposed Project will automate this task and eliminate the need to drive to every single meter on monthly basis resulting in substantial GHG reductions.

The GHG emission reductions from reduced motor vehicle use is a benefit to the environment and society as a whole in reducing pollution and combating climate change. The energy saving calculations presented in Table 5 above are conservative as there are additional GHG savings from reduced wastewater treatment that are not considered here.

- *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).*
  Not Applicable.

D.3. Evaluation Criterion C—Sustainability Benefits (20 points)

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

SCV Water relies on a water supply portfolio comprised of local groundwater resources (26% of total water supplied in 2020), recycled water (1%), water from exchanged programs (34%) and imported water from the SWP (39%). The 2,946 AFY water savings from the Project will allow the same amount to remain in SCV Water's water sources that ecosystems also rely upon.

For example, in times of drought where there are limited imported surface supplies, SCV Water relies more heavily on local groundwater resources to meet demands. All water savings from this project will reduce the impact on local groundwater dependent ecosystems by keeping more water in the ground and reducing occurrences of low water levels which can stress these ecosystems.

As discussed in Section 1.8 and in DWR's 2015 State Water Project Delivery Capability Report (2015 DCR), climate change adds another layer of uncertainty in estimating the future availability of SWP source water. Current literature suggests that global warming may change precipitation patterns in California from the patterns that occurred historically.

Due to the current drought conditions, **SCV Water received only 5% of its share of water from the SWP in 2014**. Most recently, SCV Water received a 20% allocation in 2020 and **a 5% allocation in 2021 with a potential 0% allocation forecasted for 2022**. The reduced SWP water delivery to SCV Water, will remain at the San Francisco Bay Delta (the Delta) that is an ecologically sensitive habitat. The Delta provides an ecosystem to a number of endangered fish species (i.e. Delta Smelt) that require higher volumes of water to survive.

In addition, the proposed effort for this Project as the phase I and SCV Water's subsequent efforts to implement AMI in the service area, follows the below guidelines set forth in the 2020 Water Resilience Portfolio that was published on July 28, 2020:

1. **Maintain and diversify water supplies**
2. **Protect and enhance natural ecosystems**
3. **Build connections**
4. **Be prepared**

Implementation of the proposed Project will result in water conservation that is much needed for sustainability of our local and regional environment.

- *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).*

  Yes, the Project will conserve 2,946 AFY of water supplies allowing it to remain in the SCV Water's water resources. Imported water and/or groundwater production will be reduced by the same amount annually to allow water to remain in the system for when it is needed most.

  A December 2016 study from The Ecological Society of America stated that declining streamflow and the accompanying rising stream temperatures have immediately threatened the provision of drinking water, hydropower generation and **health of ecosystems** that rely on water.

  The conserved water will remain in the local groundwater basins, allowing a more sustainable local supply to be managed during drought events. It will also help offset the need for additional imported surface water diversions, which will help prevent potential increase in salinity and algal production, less dilution reduced oxygen levels, and higher temperatures that are detrimental to wildlife production.

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

  In 2020, SCV Water received over 39% of its water supply from SWP. The primary water source for the SWP is the Feather River, a tributary of the Sacramento River. Storage released from Oroville Dam on the Feather River flows down natural river channels to the Delta. While some SWP supplies are pumped from the northern Delta into the North Bay Aqueduct, the vast majority of SWP supplies are pumped from the southern Delta into the 444-mile-long California Aqueduct.

  In extremely dry conditions, SCV Water has had to purchase water from water agencies north of the Delta. The existing water meter system, which is aging and outdated, results in water losses. The conserved water as a result of the AMI Project, will be used to offset **additional** SCV Water transfers from northern California. This conserved water will essentially remain at its source, which is the Delta and its northern tributaries. The Delta is the largest wetland ecosystem on the Pacific Coast of the United States and provides habitat to highly diverse plant and animal life.

The impact on the environment due to recent drought conditions has been tremendous. According to the Pacific Institute, many of the State's environmental flows went unmet during the drought period, **affecting aquatic ecosystems** and decreased protections for endangered species. The recent drought has **caused losses or destruction of fish and wildlife habitat, loss of wetlands, more wildfires and lower water levels in reservoirs, lakes, and ponds**. Dry creeks and rivers led **18 fish species to diminish to near extinction**.

Conservation Projects such as AMI, reduce the need on water supplies and allow the resources such as Delta benefit for survival and recovery of endangered species. Many of the endangered species need higher volumes of water and lower temperatures to survive. Any incremental increase of water helps provide these necessary conditions for the endangered species. Some of the endangered species in the Delta include the Delta Smelt, Chinook Salmon and Sacramento Splittail.

- *Please describe any other ecosystem benefits as a direct result of the project.*
  Implementation of this Project will make an additional 2,946 AFY available. This in turn gives SCV Water operational flexibility in managing its other sources of water such as SWP water and improves local groundwater management. Under the proposed Groundwater Sustainability Plan there is the potential that groundwater pumping may need to be curtailed to avoid impact to groundwater dependent ecosystems.

  As mentioned previously, the Project itself will only implement AMI meters and supporting technology to conserve water resources. Although the Project isn't designed to directly address ecosystem sustainability, any conservation of water resources will ultimately benefit all water users within California.

- *Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?*
  Yes, the primary objective of the Project is to increase water use efficiency and improve water management by reducing water waste resulting from leaks, breaks and inefficient water use and encourage customers to install efficient irrigation devices. The Project will result in 2,946 AFY of water savings which will enable SCV Water to better manage its water resources. Over the lifetime of the Project, it is estimated that 38,525 AF will be conserved. This will provide SCV Water and other SWP water users with increased operational flexibility, particularly in time of drought.

  In addition to the labor-savings benefits, AMI networks provide a reliable collection method irrespective of weather conditions. Implementation of this Project will enable customer service staff to field billing inquiries more effectively by asking targeted questions related to usage patterns. AMI read collection will free up Operations staff which may improve response times to water break emergencies.

  Also, the AMI networks can be expanded to include additional functionality such as leak

detection for distribution meters (could help avoid a larger-scale leak event and water waste) and remote shutoffs.

The method and plan for quantifying this water savings is discussed in more detail in the "Performance Measures" section in this application. Essentially, SCV Water will compare water usage at the replaced meters pre and post Project implementation to determine the water savings from this Project.

Addressing a specific water and/or energy sustainability concern(s). Will the project address a specific sustainability concern? Please address the following:

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

SCV Water demands are met by utilizing four sources: local groundwater from the Santa Clara River Valley East Sub-basin, recycled water, exchange/banking programs and the increasingly scarce imported water from the SWP, which accounted for approximately 39% of SCV Water's total water supply in 2020.

Table 6. SCV Water's Water Supply Portfolio 2020

Source	Quantity (AF)	Percentage of Total Supply
Groundwater	16,207	26%
Recycled Water	623	1%
Imported Water	24,311	39%
Exchange & Banking Programs	21,194	34%
TOTAL	**62,335**	**100%**

Due to ongoing droughts, SCV Water's annual SWP allocation has become increasingly scarce. Every year, the California Department of Water Resources coordinates with the Bureau of Reclamation (operator of the Central Valley Project (CVP)) to determine operations for SWP and CVP water recipients. SWP allocations fluctuate anywhere from 100% to 0% of the contracted SWP amount dependent on water levels of storage reservoirs, environmental needs of the state water system including the Delta, and anticipated snowmelt runoff totals. In recent years, SWP allocations have dwindled down to where municipal contractors receiving SWP water were only allocated **5% of their allotted amount in 2021 with a potential allocation of 0% in 2022**.

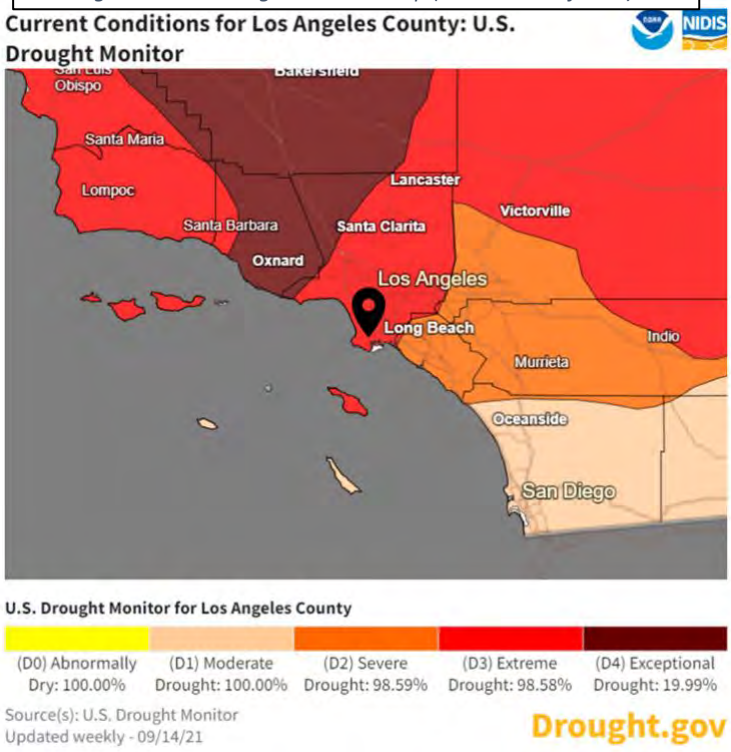
Southern California has experienced more regular significant droughts in the last 15 years. Dry years result in substantial reduction of surface water supplies, which in turn has forced drastic and sudden measures to conserve water. According to droughts.gov., the tool used by the US Drought Monitor, since 2000, the longest duration of drought (D1-D4) in California lasted 376 weeks ending on March 5, 2019.

In more recent years, the extreme impacts of climate change on snow and rainfall in California have become evident considering droughts are more frequent in incidence and longer in duration. In accordance with the U.S. Drought Monitor, the SCV Water service area encompasses areas experiencing Extreme Drought (D3 status) and Exceptional Drought (D4 status) which are the two highest categories on the U.S. Drought Monitor. The last severe drought to affect the State occurred only seven years ago between 2012-2017 with 2013-2014 having extraordinarily dry conditions.

The current drought began in January 2020 with a low precipitation rainy season and worsened over the past couple of years to the current most severe designations. This is only a few years after the 2012-2017 drought that gripped California, with 2013-2014 being one of the driest years on record in the state.

Currently, approximately 46% of California is in the Exceptional Drought condition. A study posted on the Drought.gov website, sponsored by the National Oceanic and Atmospheric Administration (NOAA) Climate Program Office and National Aeronautics and Space Administration (NASA), states that a "dry future is likely unavoidable for the Southwest". The study puts the likelihood of 21-year mega drought events at a roughly 50% chance through 2100. Substantial research on climate change points to a dryer and hotter Western U.S. Therefore, water sustainability projects like this one are critical.

Figure 2. U.S. Drought Monitor Map (Southern California)



In addition, SCV Water service area is experiencing a higher demand in water as SCV Water's population has grown by 12.0% from 2010 to 2020 as compared to the State of California's growth of 6.5% during the same time period.

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

The same climatic conditions that have caused the on-going drought conditions in the SCV Water service area and all of California has also led to increased frequency of wildfires due to the drying of vegetation. Due to severe property damages caused by wildfires, energy

providers, such as Southern California Edison, have been implementing public safety power shutoffs (PSPS) within its service areas during extremely dry and windy events. These shutoffs occur within SCV Water's service area and can affect SCV Water's ability to supply water during PSPS events.

- *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?*

  The Project will conserve approximately 2,946 AFY by implementing AMI meters to 21,163 connections within SCV Water's service area and connected the existing 11,000 meters to the CEP. This will allow SCV Water to more accurately detect when leaks occur to address those leaks promptly thus minimizing water loss. In addition, the installation of smart meters, the transmission infrastructure, and the online customer web portal will allow SCV Water customers to track their daily water use which would encourage SCV Water customers to conserve supplies as well. Over the Project lifetime, it is anticipated that 38,525 AF will be conserved as a result of implementing the Project. Please refer to Table 2 for these calculations and the inputs for each calculation.

  There are a number of research papers that conclude that human induced climate change is primarily caused by the burning of fossil fuels. In addition to the water savings as stated above, this Project will also conserve energy by reducing energy consumption due to additional water deliveries to offset lost water due to leaks. Also, with the installation of AMI meters, SCV Water will no longer have to drive to each meter on a monthly basis thereby conserving energy and reducing carbon emissions. The estimated energy savings is 2,522,333 kWh per year as calculated in Table 5 above.

- *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.*

  As described above, SCV Water obtains most of its potable water supply from imported water from the SWP and from local groundwater. SCV Water is fully dependent on limited water supplies, but at the same time facing steady population growth and a changing climate. Climate change, as highlighted in all of California's water management plans, brings serious uncertainties to the reliability of the water resource for the state's residents, agriculture, businesses and industry. The effects of climate change have been demonstrated in California over the past two decades with more severe and more frequent droughts, as well as intense wildfires. Therefore, SCV Water recognizes that conservation measures are crucial. The AMI Project will also contribute to the state water management objectives as a

whole as detailed in the statewide initiative known as the Water Resilience Portfolio issued in 2020 (discussed in further detail below).

Water savings realized by implementation of the AMI Project will offset the purchase of additional expensive imported transfer water from the SWP. The AMI Project will directly benefit SCV Water as an agency and all its customers with multiple benefits. The reduced water consumption realized through replacing aging, outdated water meters with AMI technology propagates into multiple benefits as summarized below.

1. The Project will produce an estimated amount of water savings of **2,946 AFY** achieved through quick leak detection and early notification of high-use customers as they approach inefficient, excessive, and wasteful levels of water use.
2. The water saved as a result of the Project reduces the need for SCV Water to purchase additional transfer imported water.
3. The reduced amount of imported water transfers from north of Delta contractors results in environmental benefits to the species that rely on this water north of the Delta.
4. The ability to automatically obtain meter readings results in substantial SCV Water labor savings.
5. The ability to automatically obtain meter readings results in substantial decreases in motor vehicle fuel and maintenance costs.
6. The reduced vehicle-miles traveled translates into a reduction in GHG emissions.
7. The labor and financial savings realized through the Project will ultimately be made available for other purposes such as capital projects to upgrade SCV Water's infrastructure, which further improves water reliability and sustainability by eliminating leaks and wasted water.

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

As described above, SCV Water obtains most of its potable water supply from imported water from the SWP and from local groundwater. The conserved water as a result of the Project will offset SCV Water's need to purchase additional imported transfer water in dry years. The benefits stated above will be realized simply by reducing additional diversions from north of the Delta.

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

The AMI Project is estimated to save **2,946 AFY** (38,525 AFL during the lifetime of the Project (AFL)) of water. The conserved water will be used to offset the need to purchase additional costly imported water. No mechanism is necessary.

Other project benefits. *Please provide a detailed explanation of the project benefits and their significance. These benefits may include, but are not limited to, the following:*

1. *Combating the Climate Crisis: E.O. 14008: Tackling the Climate Crisis at Home and Abroad, focuses on increasing resilience to climate change and supporting climate resilient development.*

- *Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.*

The climate crisis is a multi-front issue that is threating all aspects of our world. The main effect on SCV Water is drought and the availability of water supplies. The Project will address the impacts of the climate crisis through two mechanisms. The first is water savings which is realized through early leak detection and increased customer water consumption transparency through access to the online portal. The online portal will provide real time water usage information to SCV Water customers which has historically resulted in lower water use. Through conserving 2,946 AFY of water resources, SCV Water will have more operational flexibility during times of drought which will allow SCV Water to better respond when water supplies dwindle. Additionally, the water savings will allow SCV Water to reduce local groundwater pumping or purchases of additional transfer water from north of the Delta, which will thereby increase the flexibility for all SWP contractors during times of drought.

The second mechanism is energy savings realized by reducing the amount of water delivered due to leaks and by reducing the vehicle miles traveled since AMI meters will not require physically recording each meter every month. The energy savings from these activities is expected to conserve 2,522,333 kWh of electricity per year thereby reducing the GHG emissions. As noted above, GHG reduction is considered the single most effective approach to climate change.

- *Does this proposed project strengthen water supply sustainability to increase resilience to climate change?*

SCV Water's water supply resiliency has been severely affected by prolonged droughts and the subsequent variability in its annual SWP allocations. Considering one of SCV Water's primary water supplies is provided through the SWP and the increasing variability of annual SWP allocations, SCV Water has been emphasizing water conservation to ensure every drop of its water resources is being put to use. This Project will allow SCV Water to mitigate for the reduced reliability and reduce reliance of on SWP as a direct source of water.

As mentioned before, the Project will implement AMI meters, information transmission technology, and a customer engagement portal which will result in 2,946 AFY of water savings and 2,522,333 kWh of energy savings. The conserved water will enable SCV Water to reduce production from local groundwater aquifers and the need for additional imported water purchase transfers in dry years, thereby providing water supply sustainability and operational flexibility for SCV Water and all SWP contractors.

- *Will the proposed project establish and utilize a renewable energy source?*

  No, the Project will not establish nor rely upon a renewable energy source.

- *Will the project result in lower greenhouse gas emissions?*

  Yes, the Project will reduce energy consumption by 2,522,333 kWh per year by reducing SCV Water's vehicle miles driven and the energy required to deliver water to its customers.

  Over the last two decades, the water-energy nexus has gained attention due to local, regional, national, and global concerns regarding energy security, water scarcity, and the impacts of global climate change. For example, the historic 2012-2015 North American Drought impacted electricity generation capacity by restricting surface water withdrawals used for power plant cooling, as well as drastically reducing hydropower resource availability. Situations such as this highlight how water and energy systems are inextricably linked and the potential vulnerabilities this creates.

  The energy needed for providing water can be a significant portion of all energy use, with a California Energy Commission report estimating that five percent of energy consumption in California can be attributed to the conveyance, distribution, and treatment of water. Advanced water metering reduces real water loss, thus reduces the need for energy and GHG emissions to pump and treat water that will remain in local groundwater basins, or to import additional water supplies.

2. ***Disadvantaged or Underserved Communities:*** *E.O. 14008 and E.O. 13985 support environmental and economic justice by investing in underserved and disadvantaged communities and addressing the climate-related impacts to these communities, including impacts to public health, safety, and economic opportunities. Please describe how the project supports these Executive Orders, including:*

a. *Does the proposed project directly serve and/or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety through water quality improvements, new water supplies, new renewable energy sources, or economic growth opportunities.*

   As demonstrated in **Figure 2** below, about 8% of the community in the SCV Water service area are Disadvantaged Communities (DACs). The AMI Project will replace aging and outdated water meters in the SCV Water service area, which will save water, energy and monetary resources throughout SCV Water's service territory. These benefits will be realized through leak detection and real time water use reporting. The reduced water consumption will result in lower water bills which will financially benefit SCV Water customers including those in DACs. Therefore, the Project directly benefits DACs.

   The region is currently in drought conditions again and water supply from the SWP is

unpredictable. Also, the groundwater table will be severely diminished if dry years persist. When the water is in short supply, the following public health and social concerns can occur:

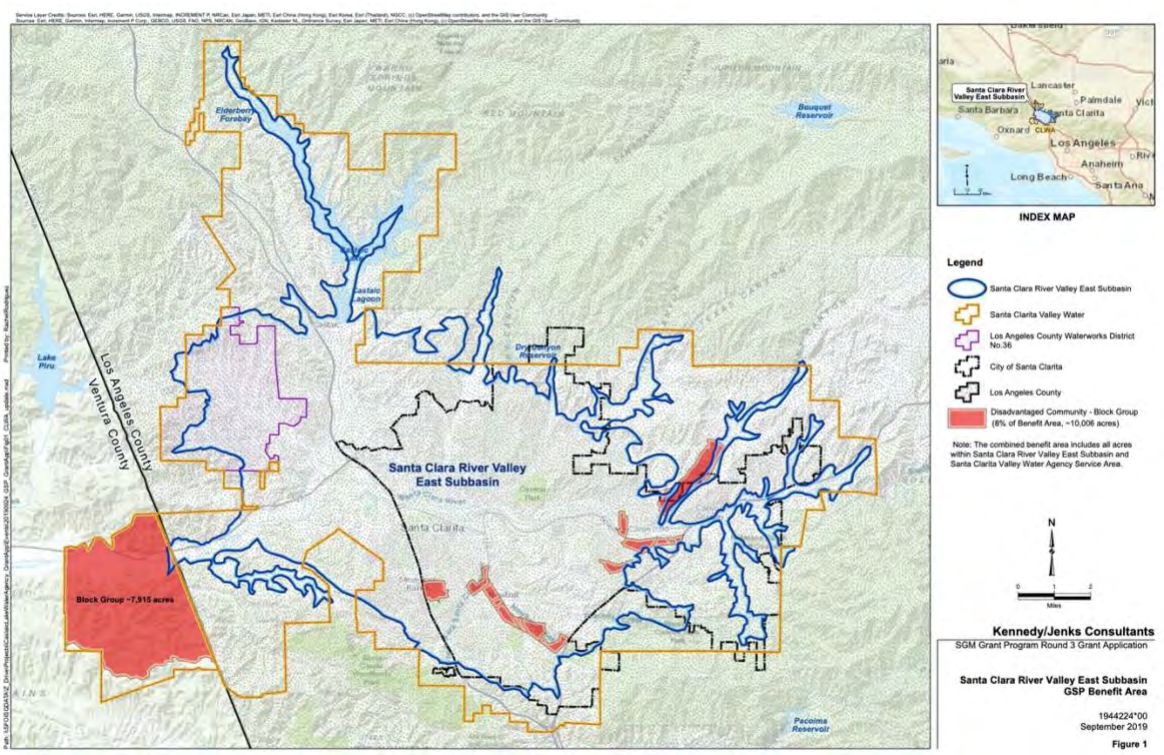
- Impacts to sanitation and hygiene.
- Reduced water usage for the irrigation of landscaping can result in higher dust and related particles, which may exacerbate respiratory conditions such as asthma.
- Reduced fire suppression capabilities

Implementation of this Project will allow the region have access to meet the water demand when it is most needed.

b. If the proposed project is providing benefits to a disadvantaged community, provide sufficient information to demonstrate that the community meets the disadvantaged community definition in Section 1015 of the Cooperative Watershed Act, which is defined as a community with an annual median household income that is less than 100 percent of the statewide annual median household income for the State, or the applicable state criteria for determining disadvantaged status.

As per the California Department of Water Resources DAC Mapping Tool, the median income of those identified as DACs (by 2018 Census Tracts) in SCV Water's service area range from $46,458 - $56,518 per year as compared to the State annual MHI of $75,235. Please see below for a map of DACs within SCV Water's service area.

Figure 3. Map of Disadvantaged Communities in SCV Water Territory



c. *If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes 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.*

The DWR identified DACs within SCV Water's service area is determined by the California Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen 3.0. The CalEnviroScreen 3.0 is a mapping tool that provides a ranking system of each census tract to designate tracts as DACs or non-DACs. This tool takes into consideration a variety of economic, social, and environmental factors and provides each census tract a score from 0 to 100 with 100 being the most severely disadvantaged areas. Census tracts ranked from 80 - 100 are designated as DACs.

3. *Tribal Benefits: The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum "Tribal Consultation and Strengthening Nation-to-Nation Relationships" asserts the importance of honoring the Federal government's commitments to Tribal Nations. Please address the following, if applicable:*

a. *Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?*

While, the proposed project does not directly benefit tribes, shifting demand away from additional imported water transfer purchases in dry years from north of the Delta through this project will make supplies more available to support the ecosystem some of which are considered to be of significance to local tribes.

b. *Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities?*

This is not applicable to this project.

4. *Other Benefits: Will the project address water and/or energy sustainability in other ways not described above? For example:*

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

This is not applicable to this project.

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

SCV Water serves approximately 289,000 people that reside within its service area. The service area includes commercial, industrial, institutional, recreational and residential customers with a total of 73,542 connections.

SCV Water's service area is home to popular recreation facilities such as Castaic Lake State Recreation Area, Placerita Canyon Nature Center, Rocky Mountain Recreation, and several parks that all depend on a healthy source of water for survival. The Six Flags Magic Mountain and Hurricane Harbor amusement parks receive over 10,000 visitors per day that provide economic sustainability for the area.

Also, water is supplied to various types of industries in the service area, including food and beverage, and several manufacturing industries. These industries rely on the water supply to operate and provide services, which helps maintain economic growth in the region. If drought reduces the water available, it could have a major economic impact due to the possible need to reduce production to match the reduction in water. Reduced water supply will impact industries which rely more heavily on water services such as commercial laundries, food processing, and other highly water dependent manufacturing.

As discussed above, the AMI Project will provide multiple benefits to multiple users with its operational improvements and conservation of water resources.

c. Will the project benefit a larger initiative to address sustainability?

The proposed AMI project will benefit several larger initiatives to address water sustainability and reliability, including the following:

- **California Water Resilience Portfolio Initiative:** California Governor Gavin Newsome issued Executive Order Number N-10-19, which is an initiative to develop resiliency to droughts and better manage the State's water resources. To implement the Governor's Executive Order, the state issued the California Water Resilience Portfolio in July 2020. The Portfolio establishes policies and objectives to prepare the state for a water sustainable future. Some of the objectives of the Portfolio are to increase water supply efficiency and better manager mange the State's water resources. The Project contributes to all three of these state objectives, thus furthering this larger initiative.

- **The Climate Change Handbook for Regional Water Planning (Department of Water Resources 2011)** recommends that regions identify strategies that can help them to adapt to climate change as well as mitigate GHG emission, which this project addresses both.

- **DWR California Single-Family Water Use Efficiency Study** cites conservation as the simplest, most cost-effective way to remedy, or at least postpone water resource management issues.

- **Groundwater Sustainability Plan for the Upper Santa Clara River Groundwater Basin (GSP) –** water conservation will help maintain the water supplies in the basin.

- **Santa Clarita Valley Groundwater Sustainability Agency (SCV-GSA) -** any additional water savings will remain in the local groundwater supply to be used for other essential needs.

- **Water Shortage Contingency Plan (WSCP) (Appendix D)** as part of the 2020 Urban Water Management Plan (UWMP)

- **The Santa Clarita Valley Water Use Efficiency Strategic Plan (Appendix C)** identifies implementation of an AMI system as one of the most effective for water conservation measures, achieving higher cost savings per AFY as compared to other conservation measures.

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

Water in California is a very scarce resource and allocating it to the various agencies has always been a complex and challenging task that gets more difficult during droughts. Currently, some of the Northern California agencies are filing a lawsuit against the State Water Resources Control Board over an emergency drought order issued in August 2021 to curtail water diversions. The Project aims to conserve water resources through enhanced operational efficiency. Reducing water consumption will decrease SCV Water's reliance on additional imported water purchases north of Delta, especially during dry years, which is expected to reduce the potential for tensions and conflict with other SWP member agencies.

D.4. Evaluation Criterion D—Complementing On-Farm Irrigation Improvements (10 points)

The Project is not an on-farm irrigation improvement project. Therefore, this criterion is not applicable.

D.5. Evaluation Criterion E—Planning and Implementation (8 points)

D.5.1 Subcriterion D.1— Project Planning

Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Does the project address an adaptation strategy identified in a completed WaterSMART Basin Study? Provide the following information regarding project planning:

1. Identify any district-wide, or system-wide, planning that provides support for the proposed

project. This could include a Water Conservation Plan, SOR, Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.

SCV Water has carried out extensive planning efforts over the years to fully understand the SCV Water's existing assets, customer needs and how they use water and future growth in order to develop the most efficient strategies and infrastructure planning to meet the water challenge. This is exemplified by the following Plans that SCV Water maintains and abides by:

- 2020 Urban Water Management Plan (Appendix B)
- California Water Plan & Water Resilience Portfolio
- Santa Clarita Valley Water Use Efficiency Strategic Plan (WUE SP) (Appendix C)
- Water Shortage Contingency Plan (WSCP) (Appendix D) found in the 2020 Urban Water Management Plan (UWMP)

As it is demonstrated in below section, this is a priority Project for SCV Water.

2. *Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).*

The Santa Clarita Valley WUE SP (updated in 2015) identifies implementation of an AMI system as one of the most effective for water conservation measures, achieving higher cost savings per AFY as compared to other conservation measures. The purpose of the effort was to prepare a comprehensive long-term conservation plan for the Santa Clarita Valley by adopting objectives, policies and programs designed to promote proven and cost-effective conservation practices. The preparation of the WUE SP included input from stakeholders and the community at large. And it incorporated targeted reductions of 20 percent by 2020. The updated WUE SP was supported by a thorough economic analysis that guides water conservation efforts planned and implemented by SCV Water. The economic analysis concluded that water conservation measures were cost effective when compared to other incremental supplies such as recycled water. The updated WUE SP includes:

- Ensure long-term average water supply meets current and future demand
- Meet local water demands
- Achieve the water conservation target of 20 percent per capita by 2020

The conservation measures incorporate education, incentives, and conservation mandates among all the various customers present in the service area.

Also, the 2020 UWMP is focused on water conservation and takes into account the amplification of the effect of prolonged and more frequent droughts anticipated as a result of climate change.

The UWMP considered all factors affecting water supply and demand including droughts, limitations faced by the SWP, groundwater availability and conditions, land use, population, water conservation strategies and other factors. Together, these variables were used to plan for a sustainable and environmentally responsible approach to providing an adequate water supply to the region through 2050.

The UWMP thoroughly addresses reliability planning, water demand management measures and water shortage contingency planning. SCV Water's conservation strategy has a mix of creative solutions to address water supply challenges and achieve SCV Water's and the State's ultimate goal of substantial reductions in water usage. More specifically, the **UWMP has identified AMI technologies as a conservation priority.**

This is yet another report that provides sufficiency and reliability of supplies in the context of existing water demand and discussion of water conservation needs for the service area. In addition to local planning efforts, SCV Water follows the state planning guidelines such as the State of California Water Resilience Portfolio.

3. *If applicable, provide a detailed description of how a project is addressing an adaptation strategy specifically identified in a completed WaterSMART Basin Study or Water Management Options Pilot (e.g., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes)*
For more information on Basin Studies, including a list of completed basin studies and reports, please visit: www.usbr.gov/WaterSMART/bsp.

The Project will conserve 2,946 AFY of water which is consistent with the adaptive strategies listed in the Los Angeles Basin Study conducted by the Bureau of Reclamation that identifies climate change impacts such as wildfire risks, reduced water supply and increased water demands as the issues facing the local and regional agencies. Although AMI is not explicitly mentioned as an adaptive strategy, the overall water conservation will advance the Basin Report's goal of increasing water conservation.

D.5.2. Subcriterion D.2— Readiness to Proceed

- *Identify and provide a summary description of the major tasks necessary to complete the project. Note: please do not repeat the more detailed technical project description provided in Section D.2.2.4.; this section should focus on a summary of the major tasks to be accomplished as part of the project.*

The major tasks for this project can be summarized as follows

- Procure 21,163 AMI meters
- Install 21,163 meters
- Procure and install up to 2 additional base stations and towers and up to 2 repeater

stations.
- Integrate the installed meters and existing 11,000 meters to CEP.

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

  There are no permit requirements for this Project.

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

  The AMI Project is ready for implementation as all preliminary assessment work for the Project has been completed and no additional engineering or design work is needed. SCV Water will be ready to advertise the project once the grant agreement has been executed anticipated to start construction in July 2022.

  SCV Water identified this project's direction since its consolidation in 2018 and has anticipated the need for AMI technology requiring new development to install smart water meters. In addition to new development installing smart water meters, SCV Water also replaces worn or broken water meters with smart meters.

  SCV Water has completed its planning by performing pilot projects to incorporate various brands and integration of billing systems. SCV Water has been preparing for this project by upgrading its billing system to integrate with the AMI communication system. As a result, a wide range of data collection, controls, and analytics capabilities have been developed to take advantage of the added meters to reduce water loss through improved leak detection, reduce operating costs through streamlined billing. In addition, SCV Water has been working with billing software consultants to upgrade the billing system components to interact with the new Cellular Connection Units to receive and produce the billing information for each account.

  SCV Water's investment and planning for this project has resulted in a substantial "head start" as there are 11,000 additional meters currently in the ground awaiting the implementation of this project. Please note that SCV Water is not seeking reimbursement for the cost of these meters. SCV Water has also completed the Propagation Study to identify optimum locations for base receivers.

  SCV Water is eager to start this project and has prepared the technical specifications that will be used to evaluate the proposed systems by bidders. Due to the current delays in delivery of equipment, SCV Water would like the option to procure equipment as soon as possible to ensure that construction begins by July 2022. Currently there is a delay in receiving equipment and the below schedule has allowed an extended time for this task. Meter replacements will start immediately upon receipt of the necessary equipment.

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

There are no new policies or administrative actions needed. In accordance with SCV Water procedures, a construction contract will be awarded by the Board of Directors to the selected contractor for the work.

- *Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. Milestones may include, but are not limited to, the following: complete environmental and cultural compliance; mobilization; begin construction/installation; construction/installation (50% complete); and construction/installation (100% complete)*

Implementation of the Project will take approximately 36 months to complete as detailed in **Table 7** below.

Table 7. Project Schedule

Estimated Project Schedule			
No.	Task/Milestone	Start Date	Completion Date
1	Evaluation of available technology & products		Completed
2	Propagation Study		Completed
4	Develop bid documents & technical specifications		Completed
5	CEQA/ NEPA Environmental Documentation	Immediately upon Notice of Award estimated Jan 2022	June 2022
	Procure equipment for installation by SCV Water labor*	July 2022	December 2023
6	Installation of meters by SCV Water labor	Jan 2023	June 2025
7	Procure a contract for installation of meters	July 2022	July 2023
8	System testing and network interface	July 2023	December 2023
9	Customer Engagement Portal Launch	July 2023	July 2023

**Currently there is a delay in receiving equipment. SCV Water is ready to start this effort as soon as the agreement for this grant is in place.*

D.6. Evaluation Criterion F—Collaboration (6 points)

Up to 6 points may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.

- *Please describe how the project promotes and encourages collaboration. Consider the following:*

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

The proposed Project has wide local and regional support which promotes and encourages local and regional collaboration to meet the goals set by the Governor's office in the published Water Resilience Portfoloio-2020 and achieve California's overarching goal to

increase the reliability of water supply and provide long-term solutions to the effects of climate change and population growth. Letters of support that are included in this application.

Water conservation through the availability of advanced water service meters and daily water usage will generate widespread support among SCV Water's customers as customers will be able to view their daily water use through the customer portal thereby providing water and cost savings to SCV Water's customers. Please see attached for letters of support (Appendix A) for the Project from:

- The Upper Santa Clara River (USCR) Integrated Regional Water Management (IRWM) District,
- Santa Clara River Conservancy (SCRC), and
- The University of California, Santa Barbra (UCSB)

In addition, there is widespread support as indicated below:

- **State Support**: Through their approval of the 2015 Urban Water Management Plan for the Santa Clarita Valley, The Climate Change Handbook for Regional Water Planning (Department of Water Resources 2011) and the DWR California Single-Family Water Use Efficiency Study which cites conservation as the simplest, most cost-effective way to remedy, or at least postpone water resource management issues.

- **Regional Support:**
  SCV Water is a lead or participant in many local and regional planning groups. As a member agency of Santa Clarita Valley Groundwater Sustainability Agency (SCV-GSA), SCV Water partners with Los Angeles County Waterworks District NO. 36, City of Santa Clarita and Los Angeles Department of Regional Planning for sustainable management of groundwater in the Santa Clara River Valley East Subbasin. The stakeholder group for SCV-GSA consist of many large businesses, environmental and industrial leaders in the region. SCV Water will be able to share the results of this project with the other member agencies and the stakeholder for further conservation efforts in the region that will ultimately benefit the Subbasin.

  In addition, SCV Water also leads coordination with other agencies and stakeholders via the Upper Santa Clara River Integrated Regional Water Management (IRWM) Planning process. Interaction and lines of communication will be enhanced with other water suppliers in the Valley as lessons learned are shared with colleagues and industry groups about effectiveness of AMI and customer portals in achieving water conservation as well as through increased promotion of the various rebate programs offered to the customers.

- **Consistent Local Support**: The most recent planning efforts are SCV Water's 2020 Urban Water Management Plan (UWMP) (Appendix B) and 2020 Water Shortage Contingency

Plan (WSCP) (Appendix D). Management of water resources in the service area is guided by the 2020 SCV Water UWMP. The Plan is centered on drought planning and preparedness in response to recent severe droughts, as well as implementation of conservation and efficient use of urban water supplies. In June 2021, the SCV Water Board of Directors adopted the Water Conservation and Water Supply Shortage Ordinance which, among other things, outlines general indoor and outdoor water use efficiency recommendations, watering restrictions, and water use reduction measures specific to declared water shortage conditions. The UWMP section on demand management measures (DMM) describes how each DMM is being implemented. Additionally, the UWMP lays out agency goals for reducing or maintaining per capita water use to comply with water use targets required by the current California Water Conservation Act. **This project is qualified as a conservation project and supports SCV Water's DMMs.**

The UWMP engaged in a robust community engagement component to actively involve communities with diverse social, cultural, and economic elements throughout the SCV Water service area prior to and during preparation of UWMP and discussions of water demands and conservation as documented in Section 8 of this plan.

The Santa Clarita Valley Water Use Efficiency Strategic Plan identifies implementation of an AMI system as one of the most effective programs for water conservation measures, achieving higher cost savings per AFY as compared to other conservation measures.

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

Ultimately, the significance of the SCV Water's collaboration with and support from other agencies and inclusion in various water management programs reinforces the regional commitment to conserve and better manage valuable water resources for the future of California.

San Clarita Valley's climate typically exhibits hot, dry summers, when the daily temperature can easily exceed 100 degrees Fahrenheit and mild winters. Climate is a primary factor that influences water demand within the service area. With the water supplies being so scarce within the region, SCV Water and its partners have recognized the need to manage the water supply in the region as a complete unit to ensure there is ample water resources for all citizens of the Valley now and in the future as the State faces the effects of climate change and population growth.

In addition, SCV Water strives to implement projects that will save significant amounts of valuable water that affect all of California. AMI systems have a proven track record in water conservation beyond drought stages. This is one of the single-most important factors in success of the AMI system and is achieved by customer's involvement in staying informed of their water usage. Also, water usage that meets SCV Water's 15% water conservation goal is assessed a water conservation surcharge thus creating an incentive that will allow the

customer to become an effective partner in water conservation. The water savings achieved through implementation of the AMI system, will benefit all SCV Water partner agencies and their customers.

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

  The AMI Project is the beginning stage of migrating SCV Water's other water service meters to current technology. The Project lays the foundation for SCV Water to entirely upgrade its water meters to AMI infrastructure in that it serves to train personnel in their operation and maintenance. The Project also establishes SCV Water's ability to upgrade its billing process to provide more accurate and detailed leak and billing data and improve communication networks with customers by providing real-time utility billing information customers can access online. The new billing system can be expanded to accommodate future water meter conversions to AMI.

  In addition to the AMI meter installation, SCV Water is in process of developing an online customer portal to access their water account information in real time to help manage their use and conserve water. AMI is a powerful system for evaluation, measurement and verification of data that will allow SCV Water to track real-time impacts of conservation efforts and perform a trending analysis to improve water system management. This application can also be easily expanded to future customers with AMI water meters.

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

  Please see Appendix A for letters of support for this Project.

D.7. Evaluation Criterion G— Additional Non-Federal Funding (4 points)

Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided using the following calculation:

If awarded, SCV Water will provide $7,841,860 in matching funds which is 79.7% of the project costs (29.7% over the minimum 50% non-federal funding). Please see Table 9 in the Project Budget section for details regarding the source of non-federal funds.

D.8. Evaluation Criterion H— Nexus to Reclamation (4 Points)

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

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

- *Does the applicant have a water service, repayment, or O&M contract with Reclamation?*

  SCV Water receives a substantial portion of its water from the SWP. The Project will conserve 2,946 AFY, which will allow SCV Water to mitigate for and reduce reliance on the SWP due to increasingly stringent regulatory and operating criteria in dry years. Most recently, SCV Water received only a 20% allocation of SWP in 2020 and **a 5% allocation in 2021 with a potential 0% allocation forecasted for 2022**. In particular, this project will allow SCV Water to utilize an alternate source of supply to in part mitigate for dry-year reductions associated with the amended (in 2018) Coordinated Operations Agreement between the Bureau of Reclamation and the California Department of Water Resources for the CVP and the SWP.

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

  Please see the response above.

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

  The Project is not on Reclamation lands but the proposed water conservation will reduce the need for additional imported transfer water from north of Delta contractors, thereby assisting BOR and DWR in the management of the CVP and SWP.

- *Is the applicant a Tribe?*

  No the Applicant is not a tribe.

E. Performance Measures

Actual water savings will be verified upon project completion by comparing to historical water records:

Performance Measure No. 1: Quantifiable Water Savings
A Final Project Implementation Report will be submitted to Reclamation to verify post-Project benefits. The post-project benefit objective for Performance Measure No. 1. is **2,946 AFY** of potable water saved annually through implementation of the Project.

Performance Measure No. 2: Improved Water Management
The Final Project Implementation Report will contain a section entitled Improved Water Management. A portion of the project journal will be dedicated to documenting general management improvements.

Performance Measure No. 3: Implementing Energy Efficiency in Water Management
The Final Project Implementation Report will contain a section entitled Increased Energy Efficiency in Water Management. This will be achieved by comparison of billing from pre-project installation for water production and distribution cost due to reduction in demand. Other energy savings such as those in cost of vehicle usage and fuel costs will also be calculated. It is estimated that the project will conserve **2,522,333 kWh** of energy per year.

SECTION 2: PROJECT BUDGET

A. Standard Form 424 Budget Information

This document is included in the separate submission with all of the SCV Water's completed Standard Form 424 copies.

B. Funding Plan and Letters of Commitment

SCV Water has allocated the matching funds required to complete the project. The sources of the cost share are from SCV Water's Capital Improvement Program funds.

As shown in the draft Resolution that is on the agenda for adoption by the Board of Directors on November 16, SCV Water is committed to providing the remaining matching funds to complete the Project.

SCV Water has completed all the feasibility and preliminary work for the Project. The cost for this work has already been incurred and are not included as part of the Project cost. The environmental studies will be completed by SCV Water upon notice of award and are not included as part of this project, so that we will be ready to advertise as soon as the grant application has been executed.

SCV Water is eager to start this project and has prepared the technical specifications that will be used to evaluate the proposed systems by bidders. Due to the current delays in delivery of equipment, SCV Water would like the option to procure equipment as soon as possible to ensure that construction begins by July 2022. Currently there is a delay in receiving equipment and the below schedule has allowed an extended time for this task. Meter replacements will start immediately upon receipt of the necessary equipment.

C. Budget Proposal

Table 8. Total Project Costs by Source

SOURCE	AMOUNT	PERCENTAGE
Costs to be reimbursed with the requested Federal funding	$2,000,000	21.4%
Costs to be paid by the applicant	$7,361,443	78.6%
Value of third-party contributions	$0	-
Totals	**$9,361,443**	**100%**

Table 9. Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	AMOUNT	%
Non-Federal Entities		
SCV Water	$7,361,443	78.6%
Non-Federal Subtotal	**$7,361,443**	**78.6%**
Other Federal Entities		
None	$0	
Other Federal Subtotal	**$0**	
REQUESTED RECLAMATION FUNDING	**$2,000,000**	**21.4%**

Table 10. Project Budget

BUDGET ITEM DESCRIPTION	COMPUTATION		QUANTITY TYPE	TOTAL COST
	$/Unit	Quantity		
Salaries and Wages				**$ 153,828**
Utility Worker – SCVWA	$38.53	1,850	Hour	$ 71,281
Senior Utility Worker - SCVWA	$44.62	1,850	Hour	$ 82,547
Fringe Benefits				**$ 67,248**
Utility Worker – SCVWA	$16.85	1,850	Hour	$ 31,173
Senior Utility Worker - SCVWA	$19.50	1,850	Hour	$ 36,075
Travel				**$ -**
N/A				$ -
Equipment				**$ 222,000**
SCVWA Equipment	$20	11,100	Hour	$ 222,000
Supplies/Materials				**$ 6,240,395**
3/4" Meters (Sensus)	$299.51	4,448	Unit	$ 1,332,220
3/4" Meters (Master)	$236.73	14,155	Unit	$ 3,350,913
1" Meters (Sensus)	$372.45	45	Unit	$ 16,760
1" Meters (Master)	$300.10	576	Unit	$ 172,858
1 1/2" Meters (Sensus)	$1,066.50	25	Unit	$ 26,663
1 1/2" Meters (Master)	$512.34	132	Unit	$ 67,629
2" Meters (Sensus)	$1,180.77	122	Unit	$ 144,054
2" Meters (Master)	$680.30	1,660	Unit	$ 1,129,298
Contractual Construction				**$ 2,676,973**
Contractor Labor (Estimated)	$85	9,966	Hour	$ 847,110
Contractor Supervisor (Estimated)	$108	9,966	Hour	$ 1,076,328
Contractor Equipment	$35	10,101	Hour	$ 353,535
Base Stations, Towers, Repeaters Procurement and Installation	$400,000	1	LS	$ 400,000
Other				**$ -**
TOTAL DIRECT COSTS				**$ 9,360,443**
Indirect Costs				**$ 1,000**
Reclamation Environmental Review				$ 1,000
TOTAL ESTIMATED PROJECT COSTS				**$ 9,361,443**

D. Budget Narrative

Salaries and Wages

SCV Water proposes to perform this work with a combination of in-house labor and contracted labor with the designated project manager overseeing the Project. The budgeted labor rates for SCV Water staff are based on FY2022 salaries and benefits. It is projected that SCV Water staff would replacement approximately 3,700 meters per year over the three (3) year period as part of the Routine Meter Replacement Program. This equates to a total labor cost of approximately $153,828.

Fringe Benefits

The Fringe Benefits reflected in the budget are directly correlated to the hours SCV Water Utility Worker and Senior Utility worker spend on the implementation of this Project. Fringe benefits are expected to total to $67,248.

Travel

Not Applicable.

Equipment

The Project will require the purchase of equipment as detailed in the equipment **Table 7** in the Evaluation Criteria section above. Since the meters to be replaced need to be the same as the meters currently installed to be compatible with the existing network, SCV Water will sole source the meters from Master Meter and Sensus directly.

Materials and Supplies

The cost of material and supplies are covered under Equipment.

Contractual/Construction

This cost item reflects the contractor costs to install the meters and information transmission infrastructure. Contract labor costs are based on recent Rate Sheets provided to SCV Water by a local contractor. It is estimated that contractors will replace approximately 10,100 meters. The associated labor costs are approximately $1,923,438, with estimated equipment costs of $353,535. These costs are estimates and will be updated after the competitive bidding process for contract labor services. Additionally, base stations, towers, and repeaters will be procured and installed by the selected contractor which is expected to be $400,000.

Through a competitive bid process in compliance with State Contract Code, a qualified Contractor will be selected to complete installation of ~10,100 meters. The SCV Water Board of Directors will then award the construction contract to the lowest responsible and responsive bidder. SCV Water will start procurement of the equipment prior to the grant agreement has been executed to ensure the project meets the specified schedule. The meter vendors and SCV Water personnel will install the base stations and repeaters.

Third-Party In-Kind Contributions

Not Applicable.

Environmental and Regulatory Compliance Costs

An allocation of $1,000 has been stipulated in the project budget for the Reclamation's consultant as reflected in **Table 10**.

Other Expenses

No other costs are anticipated to fall into this section that are not covered elsewhere.

Indirect Costs

The only indirect cost considered is the environmental review by Bureau of Reclamation.

Total Costs

The total cost of the project is $9,361,443.

SECTION 3: ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

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

This project involves replacement of existing meters and addition of network collection units that do not require any earth disturbance. Therefore, this Project will not have any impact on the environment and is expected to be exempt from CEQA/NEPA review. Environmental documentation for Categorical Exemption will be filed after the grant is executed and the contract is awarded.

*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**?***

There are no Federal threatened species, endangered species, or designated critical habitat that will be affected by project activities.

*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**.***

There are no wetlands or other surface waters inside the Project boundaries.

When was the water delivery system constructed?

With the completion of the Earl Schmidt Filtration plant in 1980 CLWA began transmission of SWP Water to the retail purveyors.

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 will not result in any modification of individual features of an irrigation system.

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation

office or the State Historic Preservation Office can assist in answering this question.

There are no buildings, structures, or features in the Project area that are listed or eligible for listing on the National Register of Historic Places that will be impacted by this project.

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

There are no known archeological sites in the Project area.

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

The Project will not have a negative or adverse effect on low income or minority populations.

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

The Project will not have any impacts on sacred sites or tribal lands.

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

The Project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species.

SECTION 4: REQUIRED PERMITS OR APPROVALS

There are no permit requirements or other approvals needed for this project.

SECTION 5: LETTERS OF SUPPORT

See **Appendix** A for letters of support for the Project.