AMI Meter Installation Project
Bureau of Reclamation WaterSMART
Water and Energy Efficiency Grants for Fiscal Year 2024

South Tahoe Public Utility District
1275 Meadow Crest Drive
South Lake Tahoe, CA 96150

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Executive Summary

Date: February 20, 2024
Applicant Name: South Tahoe Public Utility District (District)
City: South Lake Tahoe
County: El Dorado
State: California

Applicant Eligibility Requirements: Category A Applicant – Water District
Category: A
Funding Group: I
Total Project Cost:
Funding Request:

Project Summary
The South Tahoe Public Utility District (District), located in El Dorado County, CA, will install 80 advanced metering infrastructure (AMI) meters and meter transceiver units (MXU) on water service connections for residential and multi-family customers. These meters fall into two categories: category one includes the installation of 47 meters in a residential neighborhood that was scheduled to be demolished and redeveloped as part of a larger community transportation system improvement project that was recently abandoned; category two includes the installation of 33 meters in locations throughout the District's service area that presented complexities beyond the standard installation process and increased installation costs. All meters will be connected to the District's existing AMI network and integrated with the WaterSmart customer portal, allowing the District to educate and engage with customers on their water usage, leak detection and incentives to increase efficiency. This project is expected to result in 2.6 acre feet of water savings per year, increasing available groundwater supplies to combat the effects of climate change and reducing vulnerability to drought.

Length of time and estimated completion date for the proposed project:
The length of time of the proposed project is 24 months and is scheduled to begin in December 2024 and conclude in December 2026.

Federal facilities and federal lands:
The Project is not located on a federal facility and will not involve federal Lands.

Relevant background information:
South Tahoe Public Utility District (District) provides water and sewer services throughout its service area within the Lake Tahoe Basin, serving a year-round population of approximately 33,000 residents and a seasonal population of more than 88,000 visitors. The District's service area encompasses 27,000 acres in eastern El Dorado County, CA on the southern shore of Lake

Tahoe. It extends west to include Emerald Bay, east to the California/Nevada state line, and south to include Christmas Valley. The service area includes most, but not all, of the City of South Lake Tahoe and portions of unincorporated El Dorado County. The District provides water to over 14,000 residential and 660 commercial, institutional, and industrial connections.

Water supply system:
The District is the largest water purveyor in the Lake Tahoe Basin, and 100% of the water supply is groundwater. The District maintains 15 wells, with 11 active supply wells and four standby wells currently providing water. The storage and distribution system is comprised of 16 booster pump stations, 23 storage tanks, 26 pressure-reducing valves, and 320 miles of potable water pipe. Due to the District's service area's topography, the distribution system is separated into 15 pressure zones. The 10-year average annual water supply is 5,668 acre-feet.

Project Location

The AMI Meter Installation Project is located within the incorporated City of South Lake Tahoe and portions of El Dorado County, California, approximately 100 miles northeast of Sacramento. Included in this section are three maps detailing the District's service area and the locations where water meters will be installed:

Figure 1: South Tahoe Public Utility District Service Area.
Figure 2: Category One Meter Installation Locations
Figure 3: Category Two Meter Installation Locations

Since the project will occur in various locations, the geographic coordinates of the District's Administrative Office are provided below, as it is centrally located within the service area.

Latitude: 38.92232
Longitude: -119.96911

Please refer to the following pages for Figures 1, 2 and 3.

Figure 1: South Tahoe Public Utility District Service Area

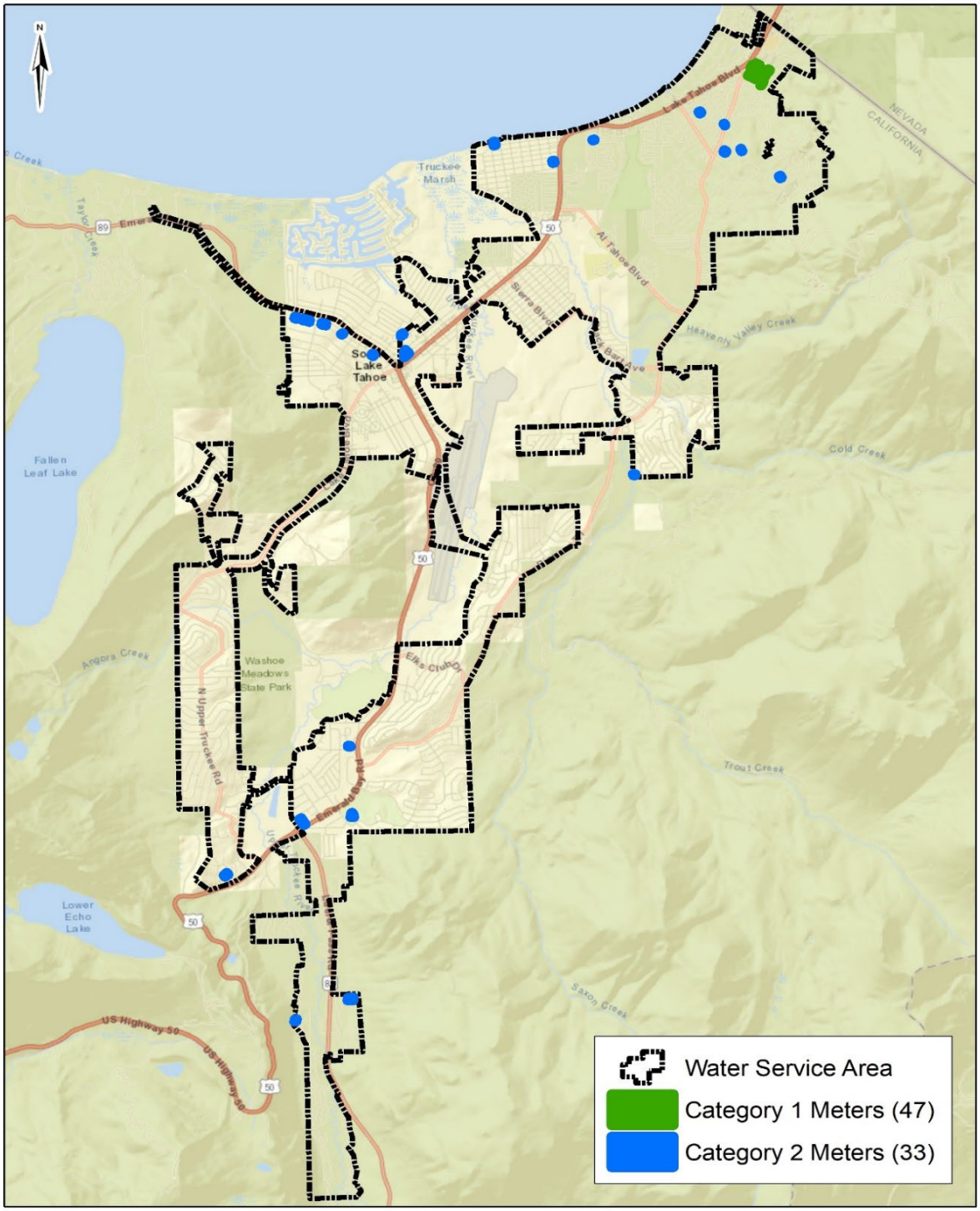


Figure 2: Category One Meter Installation Locations

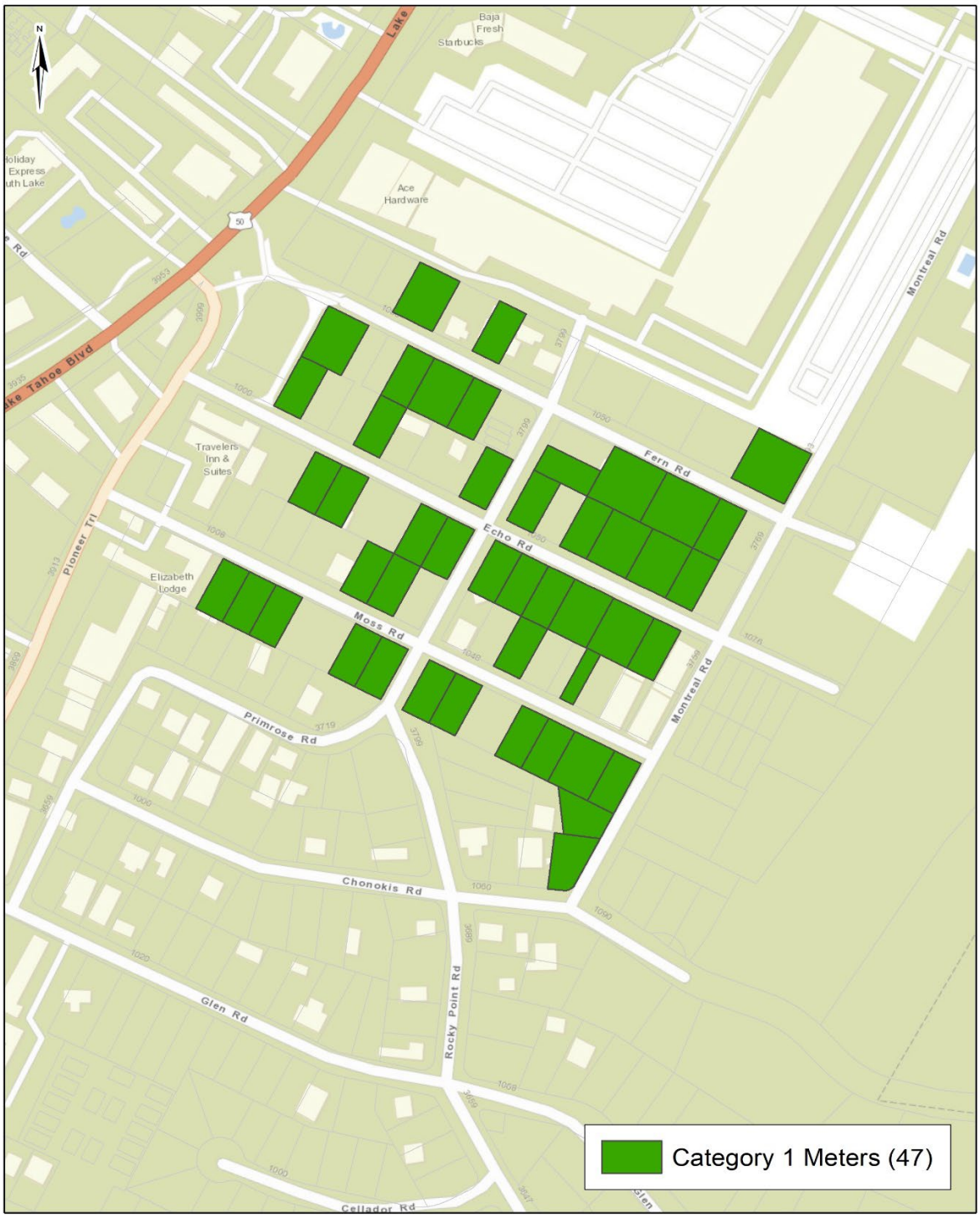
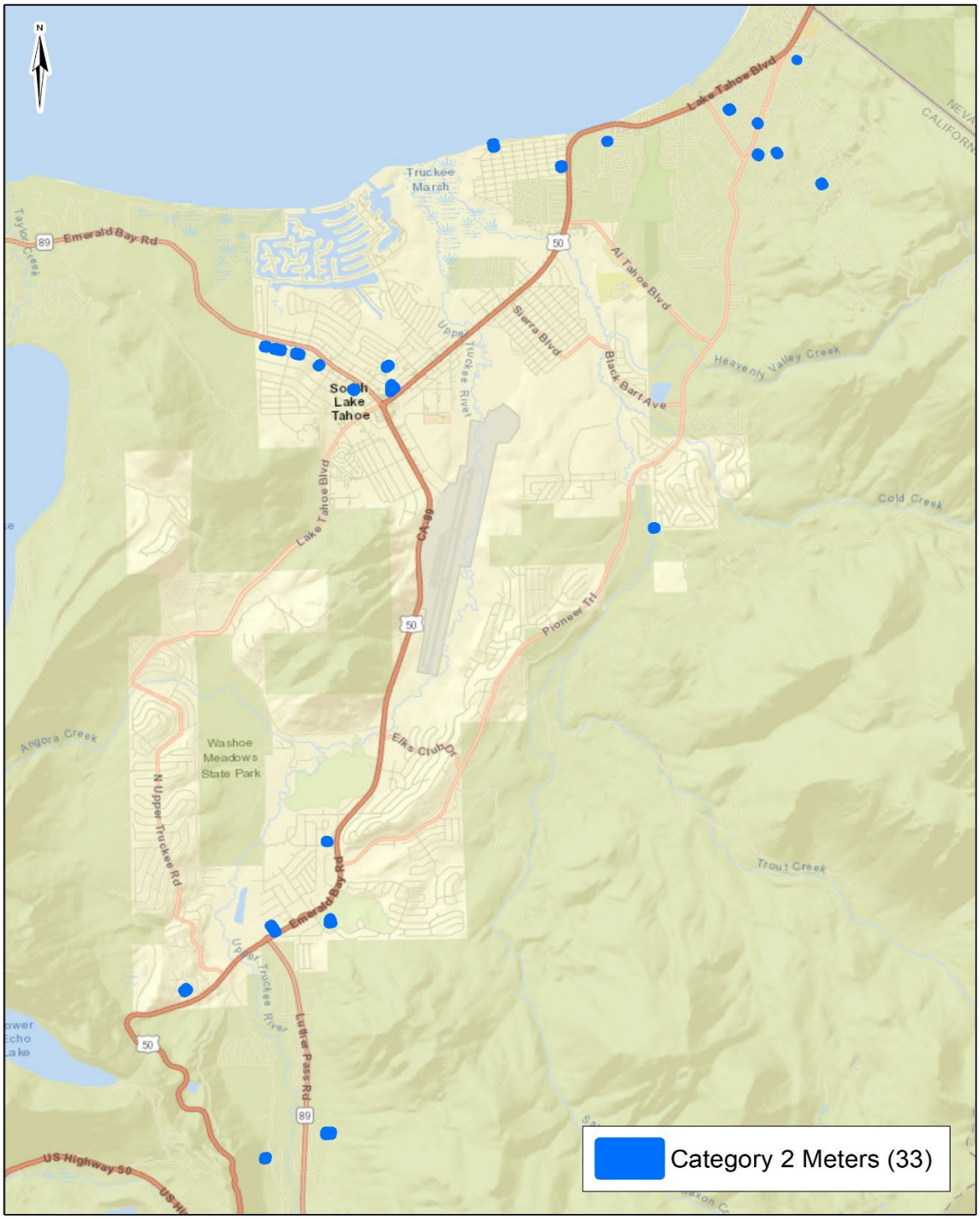


Figure 3: Category Two Meter Installation Locations



Project Description

Background:

South Tahoe Public Utility District (District) is committed to conserving water and fostering a culture of efficient water use in the South Lake Tahoe community. A key component of efficient water use is the ability to measure and monitor usage by customer; this is accomplished through the collection and analysis of data from a water meter installed at the customer's water service connection. Without a water meter, undiagnosed water leaks can persist for long periods of time, leading to extensive water waste.

Since 1992, the District has required that all newly constructed homes have a water meter installed as part of their initial water service connection. However, many of the homes in the service area were built prior to this requirement and did not have a water meter. Over the past 14 years, the District has completed five phases of water meter installation, resulting in over 14,000 meters being installed. There are 80 unmetered residential service connections remaining, representing the final phase of the District's water meter installations.

In 2014, the District began retrofitting meters with Meter Transceiver Units in preparation for the installation of Advanced Metering Infrastructure (AMI) – a two-way communication system to collect detailed metering information throughout the District's service area. This system allowed the District to begin regularly monitoring customer water usage and was followed by the implementation of WaterSmart software, a tool for analyzing water use and engaging with customers on leak repairs and how to use water in the most efficient way possible.

During the past four years, the District has experienced the effects of a pandemic, two catastrophic wildfires, and multiple storm events causing extensive damage to District-owned facilities. As a result of these experiences, the District has shifted its Capital Infrastructure priorities to projects that increase fire suppression capabilities in preparation for future wildfires, as well as to projects that mitigate potential damage from future disasters as the climate changes and the region continues to be affected by severe weather events. This shift in priorities has created a gap in funding needed to support other critical projects that conserve water in the face of climate change and benefit disadvantaged communities in the South Lake Tahoe area. One of those critical projects is the final phase of water meter installations - upon completion of the proposed project, all District water customers will have equal access to the tools and resources available to assist them in using water efficiently and eliminating water waste.

Proposal:

This project will address the described needs by installing 80 water meters in the District's service area, which fall into two categories:

1) 47 meters will be installed in a neighborhood that was scheduled to be demolished and redeveloped as part of a larger community transportation system improvement project that was recently abandoned.
2) 33 meters will be installed throughout the District's service area in locations that presented complexities beyond the standard installation process and increased installation costs. (The District's normal meter installation costs are much higher than in other rural areas due to the depth of the water service that is required because of conditions that cause freezing in the winter months.)

The locations of water meters to be installed under this project are shown on two maps included in the Project Location section titled Figures 2 and 3. Figure 2 shows 47 shaded parcels indicating the properties scheduled to receive a water meter in the neighborhood described under category one. Figure 3 represents the District's entire service area, with 33 blue dots indicating the locations where water meters under category two will be installed. The complexities that exist with these installations include multifamily dwellings that were subdivided and now require separate service connections and meters to each unit, older homes needing service line relocations because the existing service line comes across an adjacent property to what was the nearest watermain at the time the residence was built, and homes where the District has encountered challenges in locating the existing service line due to non-traceable mains and the presence of granite and rock.

The District will prepare and advertise a construction bid and award a construction contract for this project, in accordance with all applicable policies, procedures, and laws. The District will work collaboratively with customers and the selected contractor to complete the necessary tasks for each meter installation. Communication with customers is a crucial component of this project and will occur in advance of the meter installations through the mailing of notification letters a minimum of two weeks prior to the planned installation, signage in the project area, and door hangers on affected properties 24-72 hours prior to the start of work.

Installation of a new water meter usually takes place within a portion of the right of way and a small portion of the corresponding property that will receive the water meter. The area to be disturbed is approximately five (5) feet by eight (8) feet per meter.

Each individual meter installation is expected to include the following elements:

- Excavation to the depth at the existing water service line, typically 48 inches.
- Removal of an approximately 3-foot-long section of existing service pipeline.
- Installation of a 15-inch diameter PVC meter pit that includes a lid and block pad, polyethylene tubing and Sensus iPERL water meter with a meter transceiver unit (MXU). Traffic-rated installations will also include a concrete collar with metal frame and traffic-rated lid.

- Reconnection to the existing water service valve and customer service line.
- Quality control – pressure and quality testing after installation is complete.
- Installation of soil and compacted backfill.
- Property restoration after installation of the meter, which may include: paving, irrigation repairs, fresh wood chips, mulch, and landscaping impacted by installation.

Some installation locations will involve additional construction elements. There are 14 locations that were either connected to the water system from a water mainline located in the street behind the home, causing challenges with regular repairs and maintenance of the meter/water service connection, or are multifamily dwellings where the parcel was subdivided and requires separate connections for each unit. For these locations, the contractor will install a new water service and property connection from the water mainline in front of the home, in addition to the water meter and related components. An additional 14 locations will also have the water service valve replaced/relocated to avoid the occurrence of granite and other natural features that have previously prevented the installation of a meter.

All project areas will also include the installation, maintenance, and removal of erosion control devices around any areas of ground disturbance. Traffic control will be performed by the contractor as needed, including altering traffic patterns and installing signage to accommodate construction activities in the project area. In addition, sheeting, shoring and bracing protection will be installed in accordance with OSHA and Construction Safety Orders of the State of California.

As described above, Meter Transceiver Units (MXUs) will be installed as part of this project, connecting each new meter to the District's existing Automated Meter Infrastructure (AMI). This will allow these meters to transmit real-time data to the District's data center, which can then be used by the WaterSmart Software to assist customers in monitoring leaks and excessive water use. Newly metered customers will be billed for consumption at a flat rate during a one-year educational period, during which time customer bills will show water consumption to inform customers of their usage and demonstrate what their bill would be based on consumption.

The District's Customer Service Department will work proactively with newly metered customers to create a WaterSmart account and set appropriate leak and use notifications for each property. The Water Conservation Department will target these customers for incentives such as indoor appliance rebates, outdoor irrigation system rebates, turf replacement rebates, water wise landscape consultations, and other services as available. This department will also monitor each newly metered account for indications of leaks and offer resources to customers for leak repairs and additional incentives in the form of leak repair rebates.

Evaluation Criteria

Evaluation Criterion A – Quantifiable Water Savings (25 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. Please include a specific quantifiable water savings estimate; do not include a range of potential water savings. Describe the support/documentation of estimated water savings. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.

The District expects to save an average of 2.6 Acre Feet (AF) of water per year as a direct result of this project. According to studies performed and reported on in *The Effects of Universal Metering Programs on Water Consumption, Welfare and Equity,* published in the Oxford Economic Papers in 2019, water consumption was reduced by approximately 12% to 22% after the installation of a water meter on a residential service connection. In *Smart Practices to Save Water: An Evaluation of AMI-enabled Proactive Leak Notification Programs,* published in March 2023 by the Alliance for Water Efficiency, leak notification programs saved 0.6 to 3 gallons per meter, per day. Based on the findings in these studies, and because all new meters will be accompanied by a proactive leak notification program, the District elected to use a conservative estimate that anticipates water consumption will drop on newly metered properties by approximately 15%, or 7.5% per year, by the end of 2027 (two years after installation of the meters).

To calculate the expected total water savings, we used current usage of 151 gallons per capita per day (GPCD) – a data point pulled from the District's Water Loss Audit, submitted annually to the California Department of Water Resources – and multiplied it by the US Census Bureau's estimate of 2.68 people per household in the service area, and again by 80 water meters. Total water savings is displayed in the table on the following page, and utilizes the following formulas:

- Water Saved Per Day Per Person = Previous Year's Current Use x % Savings

- Total Water Savings Per Year (Gallons) = GPCD x People Served (215) x 365 Days Per Year
- Total Water Savings (Acre Feet) = Total Water Savings Per Year (Gallons) / 325,851

Quantifiable Water Savings

Year	End of Project Year	Current Use (GPCD)	% Savings Each Year	% Savings Compared to Baseline	Water Saved Per Day Per Person (GPCD)	Total Water Savings Per Year (Gallons) GPCD x 215 x 365	Total Water Savings (Acre Feet)
2025 (Baseline)	1	151.0	-	-	-	-	-
2026	2	139.7	7.5%	7.5%	11.3	888,729.38	2.7
2027	3	129.2	7.5%	15.0%	10.5	822,074.67	2.5
				Total 2-Year Savings	21.80	1,710,804.05	5.3
				Average Per Year	10.90	855,402.02	2.6

GPCD = Gallons Per Capita Per Day
Average household size in the District's water service area according to data.census.gov = 2.68
80 project connections x 2.68 persons per connections = 215 persons served with this project

Describe current losses.

The District's annual water loss audit calculates water loss at 197.623 MG/Yr. Losses account for unmetered, unbilled water use such as firefighting, flushing, leaks, water theft, or metered inaccuracies. Customers specifically lose water through appliance and irrigation system leaks, cracked or broken pipes, excessive irrigation, overuse of water, and inefficient or damaged appliances. Without connected meters, water is wasted, leak detection is delayed or impossible, more energy is used, and water consumption costs are increased.

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

Where lost water goes is dependent on the type of loss. Indoor water loss, such as leaky faucets and inefficient appliances, is transported to the District's wastewater treatment plant where it undergoes advanced, secondary treatment and is then exported 26 miles over a mountain pass to Harvey Place Reservoir in neighboring Alpine county. Water from outdoor leaks and broken pipes seeps into the ground, making its way back into the groundwater table, flows into nearby bodies of water, or moves into the storm drains that empty directly into Lake Tahoe.

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?

Indoor water waste is returned to the District's wastewater treatment plant and is among the most energy-dependent forms of water loss. In addition to providing drinking water to the service area, South Tahoe Public Utility District is the wastewater treatment service provider for the South Lake Tahoe area. The Porter-Cologne Water Quality Control Act of 1970 requires that wastewater created within the Lake Tahoe Basin be treated by the District and pumped 26

miles outside the Lake Tahoe Basin, over a mountain pass, to protect the watershed. The recycled water is then discharged in Alpine County to be used to water grazing crops.

Leaking water that makes its way outdoors picks up sediment, nutrients, and chemicals, which then enter nearby streams and rivers. When lost water flows into the streets and storm drains, it collects particles from the roads, algae-causing nutrients, and other contaminants that are emptied directly into Lake Tahoe.

Water that seeps back into the ground may reenter the groundwater table for potential reuse by the drinking water system but must be again pumped/extracted from the ground using additional energy.

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?

If unpolluted water is returned to the groundwater table, groundwater discharged to stream channels along rivers and creeks provides a substantial portion of stream flow during late summer and fall and can positively impact wildlife dependent on those flows. Adequate groundwater supply supports surface water habitat for common and sensitive fish, amphibian, and invertebrate species, and adjoining meadow and wetland areas support numerous bird, mammal, and plant species (South Tahoe Public Utility District, 2022).

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. To receive credit for water savings for a municipal metering project, an applicant must provide a detailed description of the method used to estimate savings, including references to documented savings from similar previously implemented projects.*
b. *How have current system losses and/or the potential for reductions in water use by individual users been determined?*
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.*

Please see the detailed description and calculation of water savings and system water loss described above. In addition to the calculation provided, the District estimates a 7.5% drop in water consumption per year based on historical comparisons of similarly implemented projects. The District began installing Advanced Metering Infrastructure (AMI) in 2014, including smart meters, radio transmitting hardware, and connecting customers to the WaterSmart portal in 2017. Since that time, an average reduction of water consumption has been calculated using

our annual water audit report with the California Department of Water Resources; this has been used to calculate GPCD and water savings estimates.

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

The project will install 47 3/4-inch Sensus iPERL meters, 33 1-inch Sensus iPERL meters, and 80 Sensus 520M Singe Port Meter Transceiver Units (MXU).

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

Once the meters are connected to the AMI system, District staff will utilize the Sensus Data Center and WaterSmart platform to measure water use at the time of installation and compare that to current and future consumption monthly and yearly thereafter.

Evaluation Criterion B – Renewable Energy

Subcriterion B.2 – Increasing Energy Efficiency in Water Management (6 points)

Describe any energy efficiencies that are expected to result from the implementation of the water conservation or water efficiency project (e.g., reduced pumping). If quantifiable energy savings are expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt-hours per year.

Pumping, treating, and transporting water requires massive energy and creates pollution. The most cited report on the energy intensity of water systems is the 2005 California Energy Commission's Integrated Energy Policy Report. The report found that 19% of total electricity and 30% of natural gas usage in California is consumed by water systems, and that a typical urban water system in Northern California is estimated to consume 4,000 kWh/MG. Based on this figure, it is estimated that the project will save an average of 6,800 kWh per year within two years after installation.

Energy Saved = 4,000 kWh x Total Water Savings Per Year (MG)

4,000 kWh x 1.71 MG = 6,800 kWh (between the start of year two and the end of year three)

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

Demonstrated by the recent drought and wildfires threatening the District's service area, South Lake Tahoe is at risk for natural hazards and the impacts of climate change. This project will reduce the risk of natural hazards and climate change by preserving the water source to be readily available when needed. Water is supplied 100% from groundwater sources in the South Lake Tahoe area; by improving the efficiency of use, we are adding to the supply that's available for general use and in times of emergencies.

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

The District produces an average of 5,668 AF of water per year from its network of 11 active production wells, with capacities ranging from 260-3,600 gallons per minute. Water is extracted from depths of up to 260 feet using submersible pumps driven by a combination of submersible and vertical turbine motors. Groundwater pumping from the District's production wells is dictated by water use in the distribution system. Reducing water consumption through metering will directly lower energy usage through decreased pumping.

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

Energy savings originate from the site of origin (the wells).

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

Yes, the calculation includes the energy required to treat the water prior to consumption. Water loss puts an undue burden on the District and the energy grid as all water that enters the wastewater treatment system needs to be fully treated, pumped 26 miles over a mountain pass, and discharged outside of the Lake Tahoe Basin.

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

Installing water meters connected to AMI eliminates the need for on-site readings, and therefore, driving to meter locations is not required.

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).

Renewable energy components will not be installed as part of this project.

Evaluation Criterion C – Other Project Benefits (15 Points)

Will the project address a specific water and/or energy sustainability concern? Explain and provide detail of the specific issue(s) in the area that impacts water resilience and sustainability. Describe recent, existing, or potential drought or water scarcity conditions in the project area. Is the project in an area that is experiencing, or has recently experienced, drought or water scarcity?

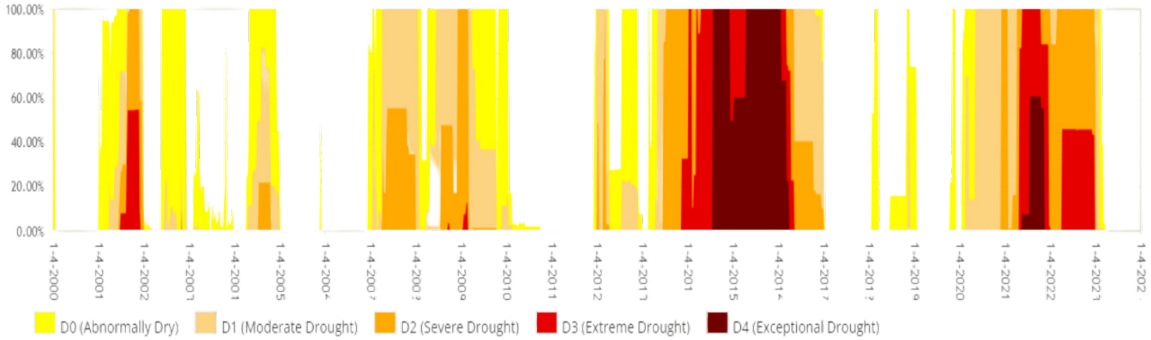
In addition to general energy savings, reduced pollution, and lowered expenses related to energy consumption, the project will contribute to the District's goal to build long-term resilience to drought. Eliminating water loss and unnecessary consumption ensures that only

needed water will be pumped from the groundwater to maximize drinking water and adequate supply during emergencies such as explosive wildfires.

According to the Center for Climate and Energy Solutions, California experienced an extended drought from December 2011 – March 2019, finally broken by a very wet winter in 2019. Dry conditions rose again in 2020 with widespread, prolonged drought exacerbated by heat waves that withered vegetation and intensified wildfires in the state. These dry conditions continued into 2022, with the driest January and February recorded across California since record-keeping began (UC Davis, 2022). El Dorado County has experienced levels of drought varying from abnormally dry to exceptional drought for the last twenty years (see graph below). In March 2022, the National Weather Service Drought Monitor noted that 40% of California suffered from extreme drought, with severe drought conditions evident in the Lake Tahoe Basin. In the Lake Tahoe Basin and the project's service area, the impacts of drought are real and life-changing for area residents and visitors alike.

South Lake Tahoe is no stranger to rampant wildfire and smoke-filled summers. Over the last 15 years, two fires – Angora and Caldor – threatened the region's homes, businesses, infrastructure, and public safety. The most recent Caldor Fire occurred in August 2021 during a prolonged drought in California and the Lake Tahoe Basin. The fire was driven by winds and an extremely receptive fuel bed due to the extended drought. It began in the Middle Fork Consumnes Canyon, expanded rapidly, threatened over 30,000 structures, closed three significant highways, burned 221,835 acres, and heavily impacted South Lake Tahoe and many neighboring communities with evacuations and devastating loss (USDA Forest Service). Unfortunately, we anticipate climate change with increased dry, hot conditions will likely lead to more wildfires threatening our communities.

El Dorado County Drought Status – U.S. Drought Monitor



Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate-informed analysis, if available).

The Integrated Vulnerability Assessment (IVA) of Climate Change in the Lake Tahoe Basin 2020 verifies that the average ambient temperature has risen over the past decade and is expected to intensify. The IVA relies on modeled projections and predictions prepared by UC Davis for two future greenhouse gas emissions scenarios. These models predict that between 2010 and 2100, average annual minimum and maximum temperatures will increase by 2 to 5 degrees Celsius (35.6 – 41 degrees Fahrenheit), similar to current conditions in Carson City, NV and San Jose, CA – two hot and dry cities. These warming temperatures enhance evaporation, reducing surface water and drying out soils and vegetation, leading to intensified hot and dry conditions, increased wildfire risk, and decreased snowpack (California Tahoe Conservancy & Catalyst Environmental Solutions, 2020).

Lake Tahoe is in the Sierra Nevada mountain range. Most South Lake Tahoe groundwater basin recharge occurs in the Sierra Nevada and Carson range. Sierra Nevada means snowy mountain range, and while the area has been blessed with snowfall for most of American history, the range has seen far less snow accumulation in recent years (NASA Earth Observatory, n.d.). Global Climate Models agree that the snowpack will decline significantly due to precipitation mainly falling as rain instead of snow. These warming temperatures, leading to limited snowpack, will diminish the ability to recharge groundwater basins, cause undue stress on forests, increase tree mortality, and disrupt sensitive ecosystems.

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.

It is estimated that the water system uses approximately 19% of the state's electricity and 30% of its natural gas for business and home use, accounting for more than 5% of California's greenhouse gas emissions. Heating and other energy-intensive water use in homes and businesses make up almost 90% of water-related energy use, while treatment, pumping, and conveyance of water and wastewater account for the rest (Public Policy Institute of California, 2022).

According to Liberty Utility's 2020 Power Source Content Label, electricity provided to the Lake Tahoe region is sourced from 37.1% natural gas, 33.1% renewable resources, 12.2% large hydroelectric, 9.3% nuclear, 2.7% coal, 5.4% unspecified, and .2% other. By reducing energy used, the District is contributing to reducing reliance on fossil fuels, nuclear energy, and other sources that create carbon, radioactive waste, and other pollutants that harm the environment.

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

California's water and energy use are closely connected, and improving water use efficiency can reduce both energy consumption and the impacts on the water supply.

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

Yes, the project is designed to manage the water supply more efficiently in several ways:

1) Robust Data Collection: Water meters will be connected to the District's AMI system, and data will be analyzed at least monthly through the Sensus Data Center. Hourly and daily data can be pulled for customers connected to WaterSmart.
2) Improved Leak Detection: WaterSmart detects high-use and notifies customers and the District of potential leaks and water-saving tips.
3) Informed Decisions: WaterSmart allows customers to see current and past meter reads, activate proactive notifications, set up troubleshooting and leak identification, and high consumption reports.
4) Customer Communications: The District can use WaterSmart to manage customer accounts, provide communications via email and text, and utilize the marketing kit with letters and tools to encourage customers to register with the platform and in turn, conserve water.
5) Reduce VMT and staff time: Connecting customers to AMI and WaterSmart eliminates the need for staff vehicle miles traveled and time visiting residences to read meters and problem-solve.

Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.

Water is supplied 100% from groundwater sources within the Tahoe Valley South (TVS) Subbasin. By finalizing the installation of residential meters as proposed, water will be better managed and conserved and will remain in the aquifer for general use, times of drought, and emergencies.

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

The District expects this project will conserve an average of 2.6 AF per year after the installation of meters.

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

Installation of meters and the conservation techniques described will be implemented, allowing the water to remain in the TVS Subbasin to be drawn as needed.

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

All land surrounding Lake Tahoe, including the City of South Lake Tahoe and the project's service area, falls under the authority of the Tahoe Regional Planning Agency (TRPA), as defined in the Bi-State (Nevada and California) Tahoe Regional Planning Compact created in 1969. The Compact has been updated and revised several times since 1980. It gives the TRPA authority to adopt environmental quality standards, called thresholds, and enforce ordinances designed to achieve them. Under the Compact, environmental thresholds are environmental standards necessary to maintain significant scenic, recreational, educational, scientific, or natural values of the region or to maintain public health and safety within the region, including but not limited to standards for air quality, water quality, soil conservation, vegetation preservation, and noise. All these policies regulate the overuse of resources in the Tahoe Valley South (TVS) Subbasin and align with the outcomes of this project.

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

The TVS Subbasin is within the larger structural feature commonly referred to as the Lake Tahoe Basin. Preserving and recharging the groundwater supply may decrease the need to tap Lake Tahoe's water supply. As the largest alpine lake in North America and one of two EPA-designated "Outstanding National Resources Waters" in California, conflict over protecting the lake dates back at least 150 years.

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

Lahontan cutthroat trout, federally listed as a threatened species, occur in the streams within the TVS Subbasin, and the adjacent riparian ecosystems support populations of endangered Sierra Nevada yellow-legged frogs. Groundwater Dependent Ecosystems are also home to species protected by California, including bald eagles, great gray owls, and Sierra Nevada red foxes. Decreasing stress on the groundwater sources serving these species will, in turn, reduce the risk of a negative change to these species' status.

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

The District's well pumping is demand-based and determined generally by the elevation of water in our tanks. Water conservation may result in water remaining in our system for slightly longer. However, there are measures in place (flushing hydrants, tank circulators, etc.) to control water quality in the system, as well as a large network of monitoring points. The effects

of the remaining meters to be installed with this project will have on the water quality in the system are negligible.

Please describe any other ecosystem benefits as a direct result of the project. Does the project seek to improve ecological resiliency to climate change?

There are 130 groundwater-dependent ecosystems (GDEs) within the Lake Tahoe Basin, of which 47 are within the TVS Subbasin. GDEs are areas that owe their biological and physical characteristics to the presence of surface or groundwater, generally along riparian corridors. GDEs are affected by climate change, groundwater management practices, land use changes, and other disturbances. Protecting and preserving groundwater sources by conserving water and improving efficiencies will support the groundwater these ecosystems depend on and help create resiliency in the face of climate change.

The TVS Subbasin is in a unique environmental setting. Water supply operations using groundwater may affect ecological conditions or may be affected by changes in the environment. Groundwater interactions with Lake Tahoe and the rivers and streams within the TVS Subbasin contribute to both groundwater discharge and recharge, depending on the location and the time of year. Responsible management of groundwater resources will also affect plant and animal ecological communities and interconnected surface flows.

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

Installation of 80 residential meters alone will save an estimated 1.7 million gallons of water – the equivalent of 2.5 Olympic swimming pools - in just two years. Once meters are connected to the District's AMI, staff can target leaks and support communities in reducing their water consumption, ensuring more water stays in the environment, and reducing the carbon production associated with supplying and using water.

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

According to the EPA's Greenhouse Gas Equivalencies Calculator, this project will conserve 6,800 kWh of energy, which equates to 5.2 Tons of Carbon Dioxide equivalent. This is comparable to removing the greenhouse gas emissions of 12,178 vehicle miles traveled and Carbon Dioxide emissions from 5,321 pounds of coal burned from the atmosphere.

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

Newly metered customers will be contacted and encouraged to connect to the WaterSmart online customer portal. This system improves sustainability by immediately notifying customers of potential leaks, sharing tips for water savings, connecting them with water conservation

programs, leading to water savings, and building resilience in the face of drought and climate change.

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

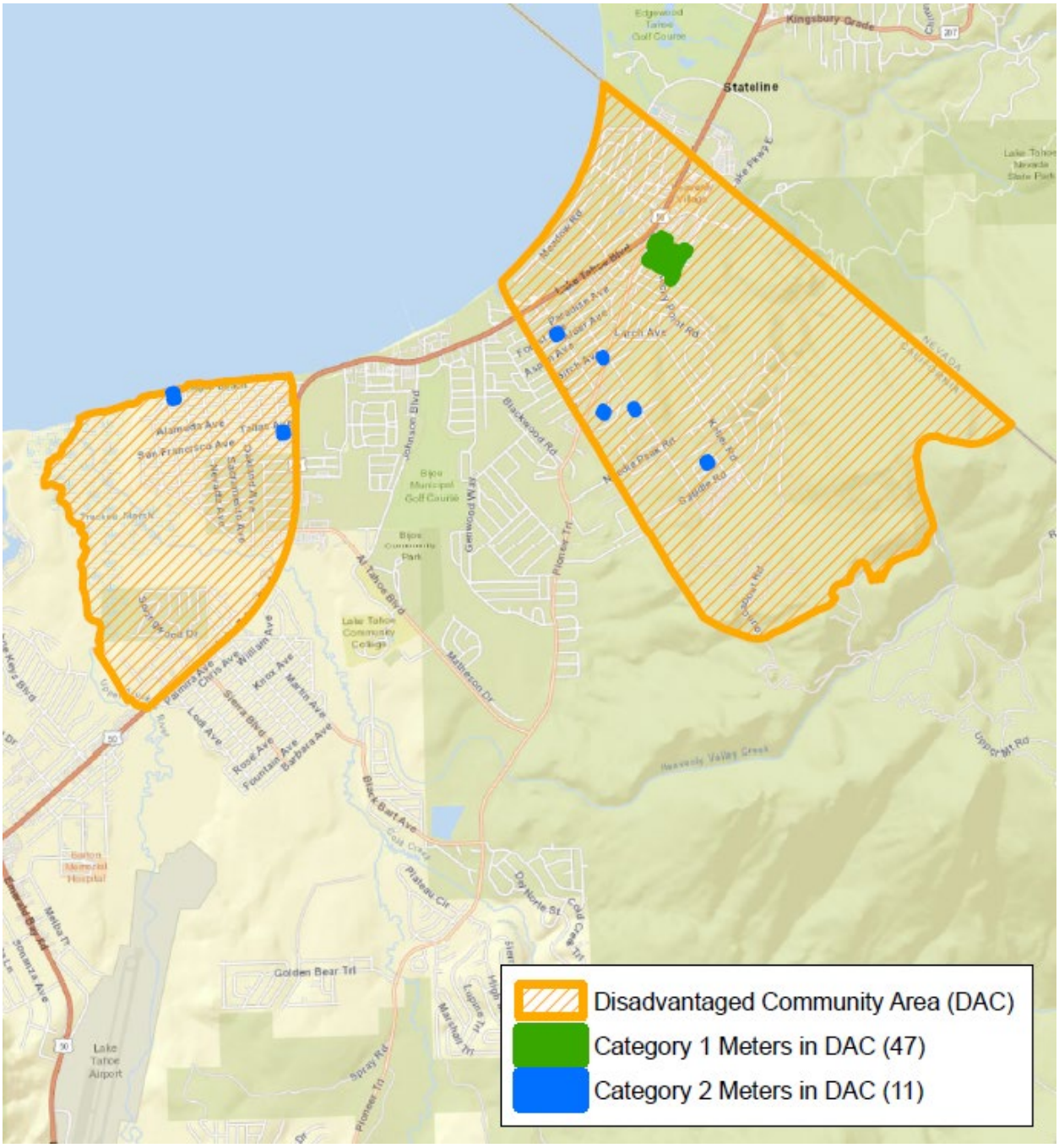
N/A

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

Subcriterion D.1. Disadvantaged Communities

Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), available online at Explore the map Climate & Economic Justice Screening Tool to identify any disadvantaged communities that will benefit from your project.

Census Tract numbers 06017031600 and 06017030302 have been identified as disadvantaged communities by the Climate and Economic Justice Screening Tool and lie within the project's service area. The map below shows the meters that will be installed within identified disadvantaged communities.



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

On September 25, 2012, Governor Edmund G. Brown Jr. signed Assembly Bill (AB) 685, making California the first state nationwide to recognize the human right to water legislatively. Water Code Section 106.3 statutorily recognizes that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." The human right to water applies to all Californians, including disadvantaged individuals, groups, and communities in rural and urban areas, and the District works diligently to extend this right.

This project will improve equality within the project area by installing meters equitably throughout the entire District, including the disadvantaged communities it serves. Each household will be responsible for the water it consumes rather than placing the burden of unchecked consumption on all District customers.

Real-time access to water-use data and leak detection notifications encourages water conservation and helps keep water rates as low as possible. Less water usage at the household level also decreases energy consumption, therefore lowering electricity and gas bills in disadvantaged communities. Connecting metered customers to AMI and the WaterSmart portal also improves communication between customers and the District. The portal can be used to provide information about water-saving incentives and rebates, the District's Low-Income Customer Assistance Program, and El Dorado County's Low-Income Household Water Assistance Program to assist eligible households with paying water bills.

Subcriterion D.2. Tribal Benefits

Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe? Does the proposed project support Tribal led conservation and restoration priorities, and/or incorporate or benefit indigenous traditional knowledge and practices?

This project does not directly serve a Tribe; however, the District partners with the Washoe Tribe of Nevada and California on various water improvement and conservation projects. The Washoe Tribe is a member of the Tahoe Sierra Integrated Regional Water Management partnership, of which the District is the lead agency, and is consulted on projects impacting tribal ties to the Lake Tahoe Basin. Additionally, as Lake Tahoe directly impacts flows to the Truckee River and Nevada, the Paiute Tribe at Pyramid Lake benefits from projects that improve the health of the Lake Tahoe Basin (more details below).

Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety through water quality improvements, new water supplies, increased renewable energy, or economic growth opportunities? Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?

This project protects the current groundwater resources in the TVS Subbasin and Lake Tahoe. This will ultimately help Reclamation meet trust responsibilities to the Paiute Tribe at Pyramid Lake. Water supply sustainability in the Tahoe Basin has a direct benefit to the Paiute Tribe and the Cui-ui and Lahontan Cutthroat Trout fisheries they manage at Pyramid Lake. The Truckee River surface flows from Lake Tahoe to Pyramid Lake and has been recognized for its importance in protecting the cultural and recreational value of the fisheries that exist there. Healthy in-stream flow in the Truckee River increases water levels of Pyramid Lake, which is critical to the Tribe, Pyramid Lake Reservation, and the habitat health of threatened and endangered species found there (Springmeyer, 2011).

Evaluation Criterion F - Readiness to Proceed (8 points)

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

Identify and provide a summary description of the major tasks necessary to complete the project. Note: Do not repeat the more detailed technical project description provided in Section D.2.2.2 Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.

Listed below is a summary description of the major tasks necessary to complete this project:

Task 1 – Project Administration: This task includes management of the Grant Agreement, including compliance with grant requirements, and preparation and submission of supporting grant documents such as Progress Reports, Financial Reports, Reimbursement Requests, and Draft/Final Project Reports.

Milestones: Execute Grant Agreement in accordance with all requirements and conditions

Deliverables: Progress Reports; Financial Reports; Reimbursement Requests; Final Project Report

Task 2 – Construction Planning and Design: This task includes the development and completion of 100% design plans and specifications and related bid documents, locating exact installation locations at each property to receive a meter, and confirmation of meter installation type/size.

Milestones: Complete 100% plans and specifications

Deliverables: Bid plans and specifications

Task 3 – Permitting/Environmental and Cultural Compliance: This task includes preparing applications to obtain all necessary permits for the installation of water meters, as well as the preparation and filing of appropriate CEQA, NEPA, and cultural compliance documentation.

Milestones: Obtain Right-of-Way/Encroachment Permits; Obtain Excavation and Grading Permits; Complete environmental and cultural compliance

Deliverables: All applicable permits; CEQA/NEPA compliance documentation

Task 4 – Supplies/Materials: This task includes purchasing 80 water meters, 80 meter transceiver units (MXU's), and 80 meter lids standardized to comply with the District's Sole Source/Sole Brand purchasing policy. Upon award of a construction bid, these materials will be supplied to the contractor for installation.

Milestones: Purchase of materials

Deliverables: Purchase orders and invoices for materials purchased

Task 5 – Construct and Install: This task includes the advertisement of construction contract bidding, bid opening and evaluation, selection of contractor, award of a construction contract, and issuance of the Notice to Proceed. The selected contractor will perform all construction activities required for the installation of water meters and related components, such as mobilization, demobilization, traffic control, shoring and worker safety, and property restoration. The selected contractor will abide by all cultural, environmental, and local/state/federal regulations. (Note: Grading season in the Lake Tahoe Basin is limited to May 1 through October 15 each year by the Tahoe Regional Planning Agency. Due to this restriction, the project schedule shows construction will occur over the course of two years.)

Milestones: Award construction contract; Begin construction/installation; construction/installation (50%) complete; Construction/installation (100%)

Deliverables: Bid documents; Bid advertisement; Executed construction contract; Notice to Proceed

Task 6 – Construction Management: This task includes managing contractor submittal review, answering requests for information, and issuing work directives. Construction management also includes reviewing/updating the project schedule, conducting inspections, ensuring cultural and environmental compliance, reviewing contractor log submittals and pay requests, construction observation, and outreach to customers as described in the Project Description.

Milestones: Issue Notice of Completion; Process final pay request/retention

Deliverables: Notice of Completion; Project Photos

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

For work performed on private property, the District is allowed access for maintenance and construction based on the service agreement contracts it holds with each individual customer. Additional permits from the City of South Lake Tahoe, El Dorado County, and the Tahoe Regional Planning Agency (TRPA) are required to perform construction to install water meters.

The TRPA enters into agreements with local agencies to streamline the permitting process. These agreements allow local agencies to perform environmental reviews on projects for conformance with TRPA standards and are in the form of a Memorandum of Understanding (MOU) that each partner signs. The District currently has an MOU with the TRPA that allows for the repair and maintenance of underground facilities without requiring additional TRPA review. This allows for increased efficiency and improves the protection of local and natural resources as agreed to in the MOU.

The District will apply for a Right-of-Way Encroachment, Excavation, and Grading Permit for the installation of the meters that are within the Right-of-Way in the City of South Lake Tahoe. For installation of the proposed meters outside the City of South Lake Tahoe, the District will obtain an Encroachment Permit from the El Dorado County Transportation Division. District staff will prepare and submit all required permit applications once a bid for the project has been awarded and in advance of the start of construction.

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

The District has identified the property addresses for all remaining meter installations and is currently working on the design plans and specifications. The District has also developed a proposed project schedule and scope of work.

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

No new policies or administrative actions are required to implement the project.

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

The engineering design and plans are in progress. It is anticipated that the design will be at 80% by early fall 2024, and fully complete and ready for bidding in December 2024.

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

The estimated project schedule is detailed below. In 2016, the District conducted a full Initial Study/Environmental Checklist and a Cultural Resources Inventory to prepare for the installation of up to 5,300 water meters on the remaining unmetered residential properties throughout the District's entire service area, including the proposed project locations. The

expected timeline for environmental and cultural compliance was not discussed with the local Reclamation regional or area office prior to the submittal of this application.

Task / Activity / Milestone	Planned Start Date	Planned Completion Date
Task 1 – Project Administration	**12/01/2024**	**12/01/2026**
Milestone: Execute grant agreement	12/01/2024	12/01/2026
Task 2 – Construction Planning and Design	**12/01/2024**	**04/30/2025**
Milestone: Complete 100% plans and specifications	12/01/2024	04/30/2025
Task 3 – Permitting/Environmental and Cultural Compliance	**12/01/2024**	**04/30/2025**
Milestone: Obtain all necessary permits	12/01/2024	04/30/2025
Milestone: Complete environmental/cultural compliance	12/01/2024	04/30/2025
Task 4 – Supplies/Material	**01/01/2025**	**05/01/2025**
Milestone: Purchase of all materials	01/01/2025	05/01/2025
Task 5 – Construct and Install	**03/01/2025**	**10/15/2026**
Milestone: Award construction contract	03/01/2025	04/30/2025
Milestone: Begin construction/installation	05/01/2025	05/01/2025
Milestone: Construction/installation – 50% complete	05/01/2025	10/15/2025
Milestone: Construction/installation – 100% complete	05/01/2025	10/15/2026
Task 6 – Construction Administration	**05/01/2025**	**10/15/2026**
Milestone: Issue Notice of Completion	10/15/2026	11/15/2026
Milestone: Process final pay request/retention	11/15/2026	12/01/2026

Evaluation Criterion G—Collaboration (5 points)

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

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

The South Tahoe Public Utility District's (District) service area is located along the South Shore of Lake Tahoe, also known as The Jewel of the Sierra. Lake Tahoe is a national treasure of immense ecological significance; the Lake's clarity is world renown. The people who live in the South Shore community recognize the value of fresh, clean water, and its importance to the environment and the community. Water conservation has become a way of life for residents in the community, and as such, they support the District's efforts to protect and preserve the water supply through the implementation of efficiency improvements such as water metering. The District has been performing outreach and engagement with customers on metering and efficient water use for over 14 years by participating in community events, hosting workshops

at the District, sharing information and tips via social media, and direct communication with customers. Documented feedback received from customers through this engagement demonstrated a community desire to have equity in how customers pay for their water use.

This project is also supported by agencies that partner with the District to provide education and resources on efficient water use including The Tahoe Resource Conservation District, Lukins Brothers Water Company, and the Tahoe Keys Water Company. The District currently provides incentives to customers of the water companies mentioned above through a partnership grant from the State of California's Integrated Regional Water Management program.

What is the significance of the collaboration/support?

When the District first began metering water service connections, it created an inequity between those customers that were metered and billed based on the water consumption, and those that were unmetered and paid a flat rate for water, regardless of the amount consumed.

Having all water service connections metered means that all District customers will be billed under the same tiered rate structure, according to their customer class, and all will be billed on their actual water usage. The District can also fully collaborate with all customers, using real-time water use data and the WaterSmart platform to help them identify and repair leaks, and increase the efficiency of their water use.

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

Yes, this project will increase the likelihood of future water conservation improvements by other water users through our robust Water Conservation Program. The District will continue with customer engagement by offering additional workshops and incentives, which are available to all customers.

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

This project will benefit many users including municipal, industrial, environmental, and recreational by preserving the groundwater supply, contributing to drought resiliency. The Lake Tahoe Basin is a world-renowned recreation destination; the groundwater supply has a direct effect on water levels of Lake Tahoe and instream flows of surrounding streams and rivers, which are all of great environmental and recreational significance.

As described in Evaluation Criterion F, the District currently has a Memorandum of Understanding (MOU) with the Tahoe Regional Planning Agency (TRPA) to streamline the environmental permitting process for projects that will benefit the environment and the community. This allows for increased efficiency and provides for increased protection of local and natural resources as agreed to in the MOU.

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

See Appendix 3 – Tahoe Regional Planning Agency Memorandum of Understanding.

Evaluation Criterion H—Nexus to Reclamation (4 points)

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Will the proposed work benefit a Reclamation project area or activity?

This project protects the current groundwater resources in the Tahoe Valley South Subbasin and Lake Tahoe. This will ultimately help Reclamation meet trust responsibilities to the Paiute Tribe at Pyramid Lake. Water supply sustainability in the Tahoe Basin has a direct benefit to the Paiute Tribe and the Cui-ui and Lahontan Cutthroat Trout fisheries they manage at Pyramid Lake. The Truckee River is the only outlet from Lake Tahoe and flows to Pyramid Lake; it has been recognized for its importance in protecting the cultural and recreational value of the fisheries that exist there. Healthy in-stream flow in the Truckee River increases water levels of Pyramid Lake, which is critical to the Tribe, Pyramid Lake Reservation, and the habitat health of threatened and endangered species found there (Springmeyer, 2011).

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

No, the District does not have a water service, repayment, or operations and maintenance (O&M) contract with Reclamation.

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

No, the District does not receive Reclamation water through a Reclamation contractor or by any other contractual means.

Is the applicant a Tribe?

No, the District is not a Tribe.

Performance Measures

Measure 1: Connect Residential Customers
Target: 100% of the District's residential connections will be metered
Tools to measure: District customer service records
How often to measure: Annually
When target will be met: One year after the project start date

Measure 1: Quantifiable Water Savings
Target: 15% (5.3 AF) increase in water savings
Tools to measure: Sensus Data Center
How often to measure: Quarterly
When target will be met: Two years after installed meters are connected to the District's Sensus Data Center

Measure 3: Enhance Community Engagement
Target: 75% of customers with newly installed meters will be connected to the WaterSmart portal
Tools to measure: WaterSmart database
How often to measure: Quarterly
When target will be met: Two years after installed meters are connected to the District's Data Center

Budget Narrative

All costs have been deemed reasonable and justified by performing cost-of-material evaluations, researching current material pricing, and comparing similar programs for contractual and construction items.

a. PERSONNEL

This budget category consists of District salaries and wages based on estimated project hours to be worked as they relate to each major task outlined in Evaluation Criterion F – Readiness to Proceed.

Grant Coordinator: Responsible for overall project administration, including management of the Grant Agreement, grant compliance, preparation and submission of supporting grant documents such as progress reports, reimbursement requests, and draft/final progress and financial reports; serves as the liaison and primary contact between the District and Bureau of Reclamation; and supervises the Grant Assistant and Grant Specialist.
Task 1: 150 hours x $53.72 = $8,058.00

Grant Assistant: Responsible for reviewing grant expenditures, preparing reimbursement requests and financial reports, ensuring accuracy of financial alignment with grant goals and objectives, and ensuring financial reporting requirements are met.
Task 1: 60 hours x $40.80 = $2,448.00

Grant Specialist: Responsible for reviewing the Grant Agreement and tracking reporting and special condition requirements, preparing progress reports, and ensuring all requirements are met.
Task 1: 100 hours x $40.28 = $4028.00

Contracts Administrator: Responsible for administering construction contracts from bidding through closeout, including posting advertisements, communicating with contractors, receiving and reviewing bids, executing contracts, processing change orders, preparing closeout documentation, and general engineer assistance.
Tasks 2, 3, 5, 6: 40 hours x $43.23 = $1,729.20

Project Manager/Senior Engineer, Trevor Coolidge: Responsible for serving as the project manager, including planning, research, design, permitting, bidding, construction and inspection management, cultural and environmental compliance, and direct supervision of Project Inspector/Engineering Tech.
Tasks 2 – 6: 240 hours x $77.00 = $18,480.00

Project Inspector/Engineering Technician: Responsible for performing compliance inspections and quality assurance testing of construction activities, documents such activities, and provides ancillary support in the design, construction, and operational analysis of the project.
Tasks 2-6: 500 hours x $56.93 = $28,465.00

PERSONNEL TOTAL: $63,208.20

b. FRINGE BENEFITS

Fringe benefits are calculated using base salary and job classification. Fringe benefit costs are approximately 36% of employee compensation costs and consist of FICA (7.65%), Workers Compensation (.66 - .1%), and Medical/Dental/Life Insurance (12.3 - 20.8%), CalPERS Retirement Benefit (7.7 - 28.8%), Long Term Disability (.1 - .4%), Retirement Health Savings Plan (.9 - 1.3%). A complete breakdown per position is available upon request.

FRINGE BENEFITS TOTAL: $37,315.90

c. TRAVEL

N/A

d. EQUIPMENT

N/A

e. SUPPLIES

Sensus iPERL Meters, Meter Transceiver Units (MXUs), and Meter Lids will be purchased by South Tahoe Public Utility District in accordance with the District's purchasing policy and installed at 80 parcels in the project area.

Sensus iPERL TRPL Meters and 520M Single Port MXUs: 80 Meters and Lids x $250 = $20,000
80 Meter Lids x $75 x = $6,000

SUPPLIES TOTAL: $26,000

f. CONTRACTUAL

N/A

g. CONSTRUCTION (CONTRACTUAL SERVICES)

The Project will be bid out to a construction contractor following the District's standard procurement policies and any guidance required by the Grant Agreement. District policies include advertising bids and selecting the lowest responsive bid. The duties included below are expected to be performed by one contractor, with subcontractors hired by the contractor as needed. Refer to Appendix 1 for the Engineer's Estimate for a detailed calculation of anticipated costs described below.

Mobilization and Demobilization: This item includes movement of equipment, materials, and personnel to and from the job site, supervision, certificates, permits, submittals and RFIs, utilities, site maintenance, cleanup, dust control, replacement of pavement striping disturbed by construction, and work incidentals to the contract not specifically identified under the remaining items or costs incurred prior to beginning work and after completion of work on the various contract items.
Estimated cost: $85,000.

Construction BMPs: This item includes installation, protection, maintenance, and removal of erosion control devices (best management practices, BMP), with measures acceptable to the District and governing agencies including but not limited to coir logs, filter fence, inlet protection, dust control and sweeping, spoils and stockpile maintenance, temporary hot mix asphalt, and other BMPs necessary to meet the requirements of the City, County, and TRPA Standard Conditions.
Estimated cost: $25,000.

Traffic Control: Traffic Control consists of altering traffic patterns and signage to accommodate construction activities in the project area as well as maintaining proper traffic control measures during construction.
Estimated cost: $50,000.

Sheeting, Shoring, and Bracing or Equivalent: This item includes sheeting, shoring and bracing or equivalent methods for the protection of life and limb, planning, designing, engineering, furnishing, constructing, and removing temporary sheeting, shoring and bracing, and any other work necessary to conform to the requirements of any permits, OSHA and the Construction Safety Orders of the State of California, pursuant to the provisions of Section 6707 of California Labor Code, and all labor, tools, materials and appurtenances complete in place.
Estimated cost: $10,000.

Meter Installation: Installation of base meters and more involved meter installation that includes new water service, meter installation, and property connection.
35 Base Water Meter Installation, 3/4" x $4,750 = $166,250
31 Base Water Meter Installation, 1" x $ 6,100 = $189,100
12 New Water Service, 3/4" Meter Installation, and Property Connection x $18,000 = $216,000
2 New Water Service, 1" Meter Installation, and Property Connection x $19,350 = $38,700
Estimated cost: $610,050.

Traffic-Related Installations: Installation of Traffic-Rated Base Water Meters in the District's service area.
50 Traffic-Rated Installations x $450 = $22,500
Estimated Cost: $22,500

Paving & Dewatering:
3" Asphalt Patch Paving: Complete process of 3" asphalt installation to include replacement of materials that have been lost due to project distress and restoring pavement surfaces within the area disturbed by the construction of the meter installations.
1,600 sq ft x $15 = $24,000
Groundwater Detwatering: Consists of the removal and subsequent disposal of water from the solid substrate at the project site as it is encountered during construction activities.
10 x $500 = $5,000
Paver Driveway Restoration: Labor, material, tools, and equipment required to restore unit paver driveways. Paver installations include all work for the setting of line and grade, provision, and placement of both base and bedding materials.
100 sq ft x $30 = $3,000
Estimated Cost: $32,000

Water Service Valve Replacement:
8 Water Service Valves ¾" x $350 = $2,800
6 Water Service Valves 1" x $500 = $3,000
Estimated Cost: $5,800

CONSTRUCTION TOTAL: $840,350.00

h. OTHER DIRECT COSTS

N/A

i. TOTAL DIRECT COSTS

DIRECT COSTS TOTAL: $966,874.10

j. INDIRECT COSTS

There will be no indirect costs associated with this project.

Summary of non-Federal and Federal Funding Sources

Funding Sources	**Funding Amount**
Non-Federal Entities	
South Tahoe Public Utility District Capital Improvement Funds/General	$483,437.05
Non-Federal Subtotal	$**483,437.05**
Other Federal Entities	
None	$0
Other Federal Subtotal	**$0**
Requested Reclamation Funding:	**$483,437.05**
TOTAL PROJECT FUNDING	**$966,874.10**

Environmental and Cultural Resources Compliance

H.1 Environmental and Cultural Resource Considerations

In 2016, the District conducted a full Initial Study/Environmental Checklist and a Cultural Resources Inventory to prepare for the installation of up to 5,300 water meters on the remaining unmetered residential properties throughout the District's entire service area, including the proposed project locations. Responses to the questions below are extracted from these studies.

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.

Earthwork, including temporary disturbance and excavations, will be necessary for water meter installations. Each individual meter installation will include the following elements:

- Excavation of approximately three cubic yards (CY) of material to 48 inches depth at the existing water service connection.
- Removal of an approximately two-foot-long section of existing service pipeline.
- Installation of a 15-inch diameter PVC meter pit that includes a lid and insulation pad, polyethylene tubing, water meter with a 6-inch Nicor connector, and an MXU remote reader unit.
- Reconnection to the existing residential water service valve and customer service line.
- Installation of fittings and horizontal and vertical adjustments, as necessary.
- Connection of the new water meter and tracer wire to the existing pipeline.
- Installation of bedding and then backfill and compaction.
- Testing of the new water meter connection.
- Returning the site to prior conditions within two weeks upon completion of installation of the meter.

Description of work that will affect air, water, or animal habitat in the project area.

Soil: All CEQA and TRPA Environmental Items listed in the Geology, Soils, Seismic & Land Coverage Checklist were indicated as Less Than Significant or No Impact.

Air Quality: The project supports existing and proposed air quality and greenhouse gas (GHG) reduction efforts. All CEQA and TRPA Environmental Items listed in the Air Quality and Greenhouse Gas Checklists were indicated as Less Than Significant or No Impact.

Water: The Hydrology and Water Quality CEQA and TRPA Environmental Checklist items were all indicated as Less Than Significant or No Impact.

Animal Habitat: The Biological Resources CEQA And TRPA Environmental Checklist items were all indicated as No Impact.

The District will employ Best Management Practices, including water quality protection measures, a dewatering plan, traffic control measures, and restoration plans to decrease the potential impacts on water quality, traffic, and biological and cultural resources.

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?

The Lake Tahoe Basin contains a number of special-status and rare plant species, including threatened and endangered species. Land use or activity restrictions occur in areas inhabited by these species. These species are protected by the TRPA, the Endangered Species Act of 1973 (FESA), the California Endangered Species Act (CESA), the California Department of Fish and Wildlife (CDFW), and/or the California Native Plant Society (CNPS).

California Natural Diversity Data Base (CNDDB) and California Native Plant Society (CNPS) searches were conducted and reviewed to identify sensitive species. A species list was also generated for the project area by the US Fish and Wildlife Service (USFWS).

The proposed meter locations were imported into GIS and compared using the BIOS data from CDFW to determine spatial locations of other sensitive species that may occur in the area. A five-mile buffer surrounding the water meter locations was searched for recorded occurrences in the BIOS database (CNDDB 2016).

Species of Concern:

Bald Eagle: The project area contains suitable roosting habitat in the form of large trees adjacent to the shore of Lake Tahoe. Known observations have been recorded of this species roosting in trees along the shoreline during the winter months. Habitat Present = Yes, Species Present = Yes

Sierra Nevada Yellow-Legged Frog: The project area does not contain suitable habitat features for Sierra Nevada Yellow-Legged Frogs due to the lack of natural perennial water sources required by this species. A suitable habitat is present adjacent to the project area outside of the defined work area. Historical occurrences of the species are known to have occurred in the Desolation Wilderness, Echo Pass, and Star Lake to the west and east of the project area. There are no known occurrences in the immediate project area. GIS modeled mapping from USFS

shows potential suitable habitat within the project area. Habitat Present = No, Species Present = No

All CEQA and TRPA Environmental Items listed in the Biological Resources Checklist were indicated as No Impact.

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.

The project is not located in or near navigable waters of the United States. There will be no construction of structures, modification of existing structures, or any other regulated activity work in, under, or over navigable waters of the United States.

When was the water delivery system constructed?

The water delivery system was constructed in 1950.

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

No, the proposed project will not modify 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.

The Cultural Resources Inventory was conducted by Dr. Susan Lindstrom in 2016. This Inventory assessed cultural resources for 5,300 meters and included the proposed project area. Of those 5,300 meter parcels, 50 contained buildings listed on the Tahoe Meadows National Register of Historic Places District (P-09-5091). The list of 50 buildings was cross-referenced with the proposed meter parcel list, and none of the proposed parcels were found on the Tahoe Meadows National Register of Historic Places District.

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

Any archeological sites are far outside the project area.

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

No, the project will not have any disproportionate or adverse effects on any communities with environmental justice concerns.

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

The results of the archaeological field reconnaissance, the records search by the NCIC, and consultation with the Native American Heritage Commission and the Washoe Tribe disclosed that no historic properties or sacred sites are located within or near areas proposed for meter installation.

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

No, the project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area. To prevent the spread of invasive plant species, the following measures and BMPs will be implemented:

- Construction vehicles, including off-road vehicles, will be cleaned when they come into the Basin or come from a known invasive plant-infested area. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material, or other such debris.
- Equipment will be staged in weed-free areas to prevent vehicles from introducing or spreading invasive species.
- Earth-moving equipment, gravel, fills, or other materials are required to be weed-free. Onsite sand, gravel, rock, or organic matter will be used when possible or weed-free materials from gravel pits and fill sources that have been surveyed and approved will be used.
- Minimize the amount of ground and vegetation disturbance in the construction areas. Upon completion of construction, vegetation will be re-established in the footprint to minimize weed establishment after the removal.

Required Permits or Approvals

For work performed on private property, the District is allowed access for maintenance and construction based on the service agreement contracts it holds with each individual customer. Additional permits from the City of South Lake Tahoe, El Dorado County, and the Tahoe Regional Planning Agency (TRPA) are required to perform construction to install water meters.

The TRPA enters into agreements with local agencies to streamline the permitting process. These agreements allow local agencies to perform environmental reviews on projects for conformance with TRPA standards and are in the form of a Memorandum of Understanding (MOU) that each partner signs. The District currently has an MOU with the TRPA that allows for the repair and maintenance of underground facilities without requiring additional TRPA review. This allows for increased efficiency and improves the protection of local and natural resources as agreed to in the MOU.

In addition to the contracts and agreements described above, the District will apply for a Right-of-Way Encroachment, Excavation, and Grading Permit for the installation of the meters that are within the Right-of-Way in the City of South Lake Tahoe. For installation of the proposed meters outside the City of South Lake Tahoe, the District will obtain an Encroachment Permit from the El Dorado County Transportation Division. District staff will prepare and submit all required permit applications once a bid for the project has been awarded and in advance of the start of construction.

Overlap or Duplication of Effort Statement

The proposed project does not overlap with any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel.

Conflict of Interest Disclosure Statement

Financial Assistance Interior Regulation per 2 CFR §1402.112: No actual or potential conflict of interest exists at the time of submission of this application.

General Procurement Standards per 2 CFR §200.318: The District has and uses documented procurement procedures consistent with State, local, and tribal laws and regulations for acquiring property or services required under a Federal award or subaward. The District maintains written standards of conduct covering conflicts of interest and governing the actions of its employees engaged in the selection, award, and administration of contracts. No employee, officer, or agent may participate in the selection, award, or administration of a contract supported by a Federal award if he or she has a real or apparent conflict of interest. Such a conflict of interest would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization that employs or is about to employ any of the parties indicated herein, has a financial or other interest in or a tangible personal benefit from a firm considered for a contract.

Notification Requirements per 2 CFR §200.318: If funded, the District will notify in writing any conflict of interest to the Bureau of Reclamation.

Restrictions on Lobbying pursuant to 43 CFR §18 and 31 USC §1352: The District will not use funds under this grant for lobbying activities and will provide the required certifications and disclosures.

Uniform Audit Reporting Statement

The District spent $750,000 or more in federal award funds in the previous fiscal year and completed a Single Audit report.

Employer Identification Number: 94-1337914

The District's Single Audit report for fiscal year 2022-2023 is available through the Federal Audit Clearinghouse website.

Certification Regarding Lobbying

Certification for Contracts, Grants, Loans, and Cooperative Agreements
Per 43 CFR Part 18 Appendix A

The authorized official noted on SF-424 Application for Federal Assistance certifies, to the best of his knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the authorized official, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the authorized official shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

(3) The authorized official shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

South Tahoe Public Utility District

1275 Meadow Crest Drive • South Lake Tahoe • CA 96150-7401
Phone 530 544-6474 • Fax 530 541-0614 • www.stpud.us

February 21, 2024

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
PO Box 25507, MS 84-27133
Denver, CO 80225

RE: Letter of Funding Commitment

Please accept this funding plan and letter of commitment on behalf of South Tahoe Public Utility District (District) for the proposed project: AMI Meter Installation.

1. The District will provide the required match of $483,437.05 toward the project's total cost of $966,874.10. This match is comprised of District operating revenue.

2. The funding will be available July 1, 2024.

3. There are no time constraints on the availability of these funds.

4. There are no other contingencies associated with the funding commitment.

Sincerely,

Paul Hughes
General Manager