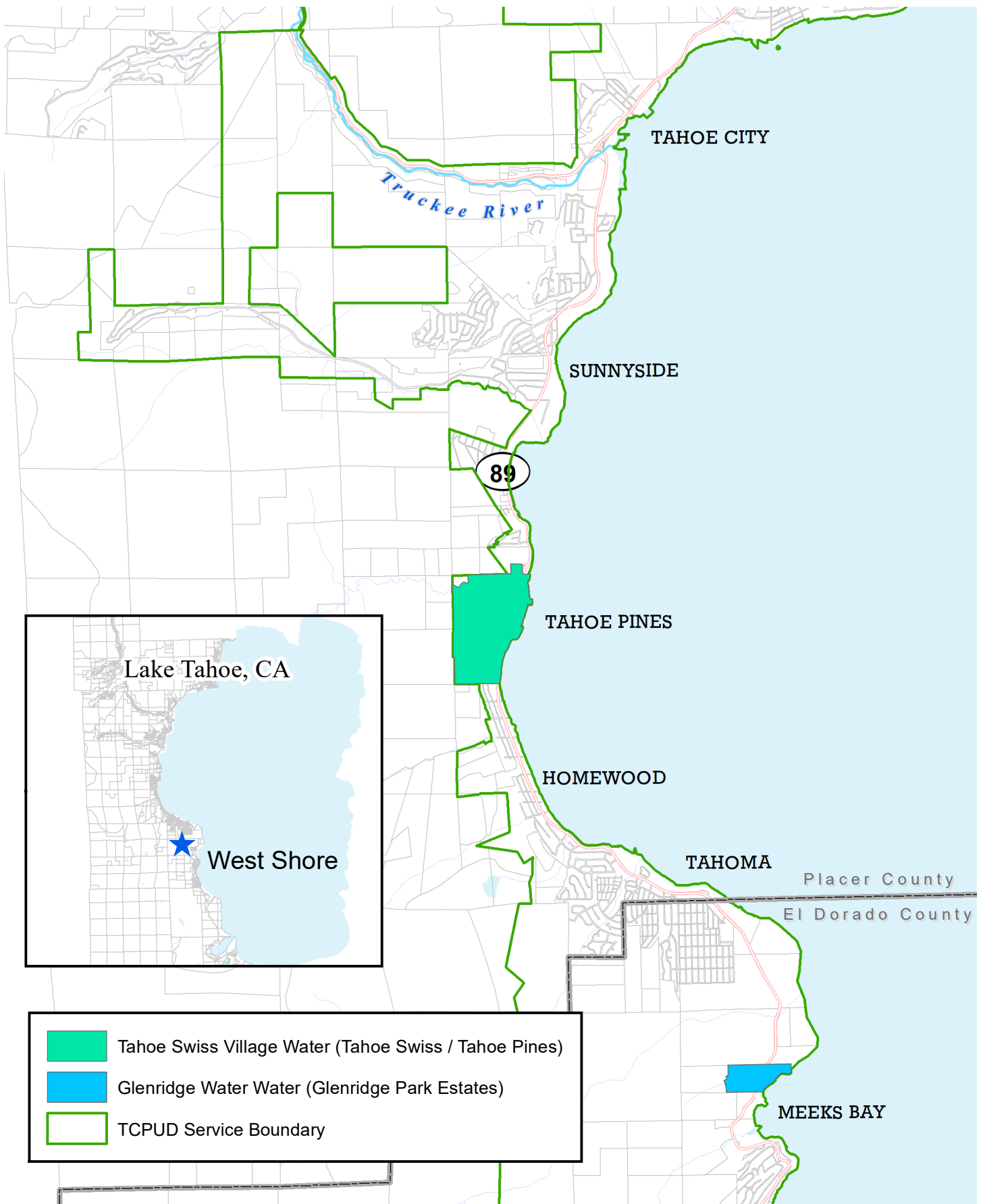




TAHOE CITY PUBLIC UTILITY DISTRICT



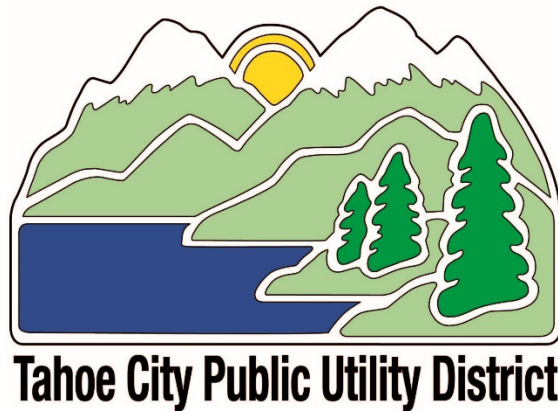
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TAHOE CITY PUBLIC UTILITY DISTRICT
TCPUD Smart Meter
Installation Project - Location Map



Author: KH
Date: 8/20/2024

**Tahoe City Public Utility District
TCPUD Smart Meter Installation Project
WaterSMART Grants: Water and Energy Efficiency Grants for
Fiscal Year 2024
WaterSMART Grant ID Number: R24AS00052**



Project Applicant:	Tahoe City Public Utility District
Project Manager:	Kim Boyd Director of Strategic Affairs kboyd@tcpud.org (530) 580-6286
Applicant Address:	221 Fairway Drive PO Box 5249 Tahoe City, CA 96145

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Technical Proposal and Evaluation Criteria

1.0 Executive Summary

Date: November 13, 2024

Applicant: Tahoe City Public Utility District (TCPUD)

City/County/State: Tahoe Pines and Tahoe Swiss, in Placer County, California and Glenridge Park Estates in El Dorado County, California

Applicant Category: TCPUD is a Category A Applicant (Water District)

Project Summary: Provide location of the Project, a brief description of the work that will be carried out, any partners involved, expected benefits, and how those benefits relate to the water management issues you plan to address

The Project includes the purchase and installation of modern Advance Metering Infrastructure (AMI) Badger Meters for approximately 446 unmetered connections in the three communities on the west shore of Lake Tahoe. The new meters will allow TCPUD to remotely collect, record, and monitor real-time data to improve operational efficiency and reduce water use through effective monitoring of consumption, malfunctions, and irregularities. The new meters will also improve overall customer service through quick resolution of customer inquiries. This Project is expected to result in 75 acre-feet per year water savings and an associated 43,548 kWh annual energy savings.

Project Timeline:

Project Duration – 18 months

Estimated Project Start Date – June 1, 2025

Estimated Project Completion Date – December 31, 2026

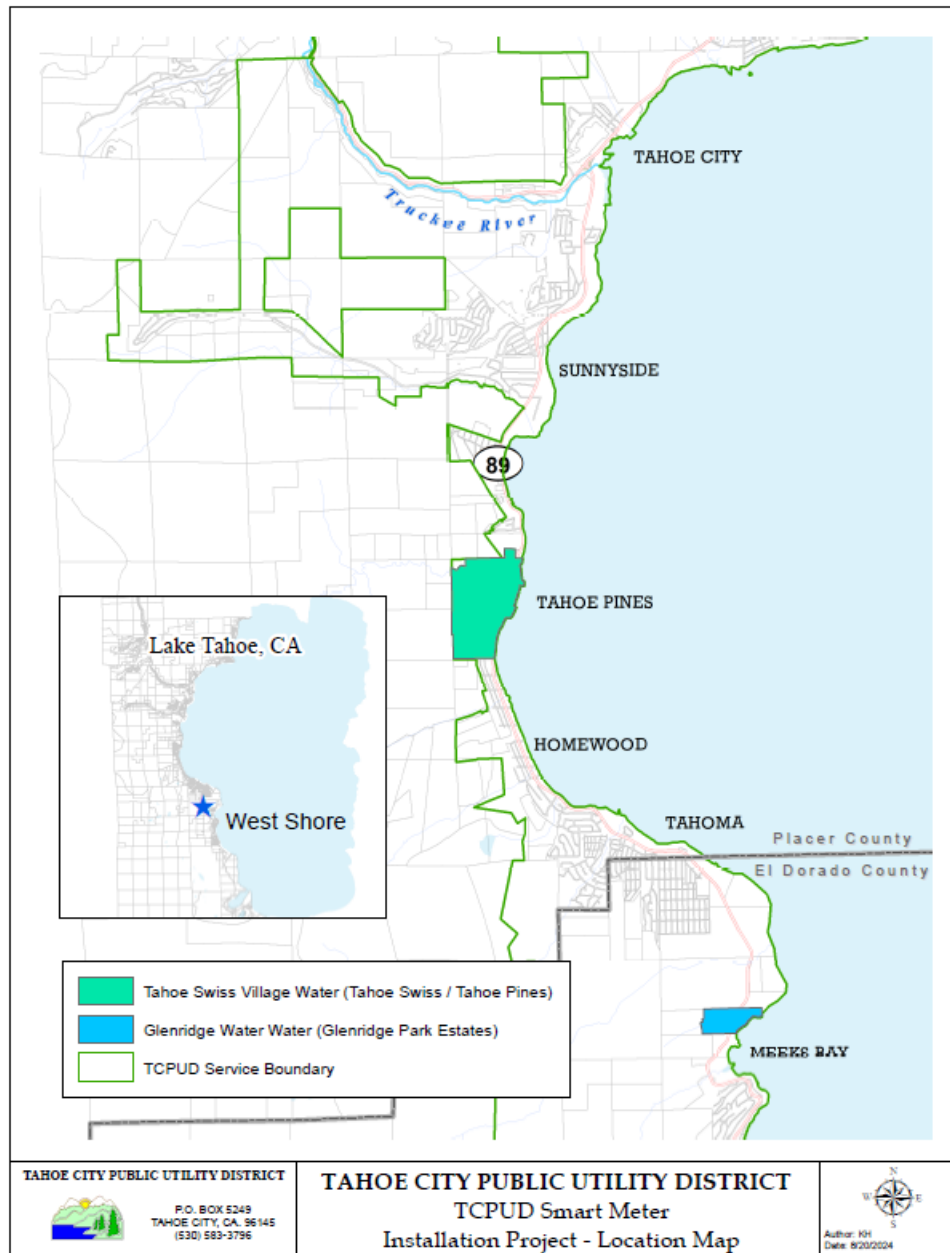
Located on Federal Facility:

This Project is not located on a federal facility.

2.0 Project Location

The Project is located within two water systems, the Tahoe Swiss Village Utility (Placer County) and the Glenridge Park Water Company (El Dorado County), within the TCPUD service area on the west shore of Lake Tahoe. These two water systems serve three residential communities, including Tahoe Swiss, Tahoe Pines, and Glenridge Park Estates located between 5 and 15 miles south of Tahoe City, California.

Figure 1: Project Location



3.0 Project Description: Provide a more comprehensive description of the technical aspects of your Project, including the work to be accomplished and the approach to complete the work. This description should provide detailed information about the Project including materials and equipment and the work to be conducted to complete the Project. This section provides an opportunity for the applicant to provide a clear description of the technical nature of the Project and to address any aspect of the Project that reviewers may need additional information to understand.

The Tahoe City Public Utility District (TCPUD) is a California Special District authorized under the State of California Public Utility District Act with all powers and functions of a utility district. TCPUD's jurisdiction encompasses 31 square miles on the west and north shore areas of Lake Tahoe in

unincorporated portions of Placer and El Dorado Counties. TCPUD currently owns and operates 8 distinct and separately licensed water systems which collectively serve 5,704 municipal water connections. Within the TCPUD's service area, there are thirteen (13) groundwater supply wells and one (1) summer surface water source, fifteen (15) water storage tanks, and six (6) booster pump stations. In total, TCPUD manages 105 miles of water main which distribute approximately 1,746 acre-feet-per year (AFY) of quality drinking water.

In June 2024, TCPUD executed a purchase and sale agreement for two (2) additional water systems from a private company that supplies water to approximately 446 residential customers in three communities on the west shore of Lake Tahoe, which include Tahoe Pines, Tahoe Swiss, and Glenridge Park Estates. The transfer of ownership of these water systems will occur on January 1, 2025. In August 2024, TCPUD executed an Operating Agreement with the seller to allow TCPUD to begin operating the water system before the official transfer. This allowed TCPUD to become familiar with the systems, to make immediate repairs, and to understand the short- and long-term improvements needed for optimal system operation. TCPUD identified a short-term need to install meters on all unmetered connections to maintain water reliability benefits such as quantifiable water savings and a reduction in energy consumption.

TCPUD operates within the delicate environment of Lake Tahoe, California and is subject to a high level of regulatory and environmental compliance and mandates. In addition, TCPUD must meet the California State Drinking Water requirements, which are some of the most stringent in the country. Reducing water use is currently a critical issue in California, where urban water suppliers are facing new mandatory water conservation regulations due to drought conditions and the impacts of climate change. Installing water meters on all unmetered water connections will comply with California State Law AB 2572, established to promote and accomplish water conservation measures. In 2024, TCPUD completed the replacement of approximately 3,500 aged with outdated meters with new Advance Metering Infrastructure (AMI) meter technology on existing residential connections within its entire service territory. Following the replacement of aged meters with new AMI technology, TCPUD met a significant provision of AB 2572 that mandated a 20% per capita water use reduction by 2020.

The nature of TCPUD's small customer base imposes a fairly significant financial burden on ratepayers to fund critical infrastructure needs, including water metering. Most communities utilize new residential and commercial developments as opportunities to finance upgrades to local infrastructure. However, in North Lake Tahoe there has been a lack of new development for a variety of reasons, which reduces the amount of private capital invested in the water systems. This funding request will reduce funding pressures on water customers and allow TCPUD to install infrastructure to maximize water conservation. The installation of meters will improve TCPUD's ability to promote water conservation by tracking and monitoring water use, reporting actual demand, and responding to water leaks in near real-time.

This Project will purchase and install modern AMI meters (sizes ¾", 1", 1 ½" and 2") on 446 unmetered residential water connections. The new AMI meters will be capable of transmitting data using TCPUD's existing AMI data collection network, and with the new technology TCPUD will not rely on manual or drive-by meter reading throughout community routes, and ultimately avoids an increase in greenhouse gas emissions associated with vehicle miles traveled. TCPUD uses the Badger Meter manufacturer because they offer the widest range of flow meter technology, ensures application specific solutions, and provides technology that improves sustainability and maximizes efficiency.

The current quantity of water managed and produced across TCPUD's entire service area is approximately 1746 AFY. The historical 9-year average of the two new water systems is 219.25 AFY (without meters), increasing TCPUD water production total to 1,965.25 AFY. As described in Section 4.1(3) below, TCPUD estimates a reduction of 75 AFY (34% of 219.25 AFY) with the installation of 446 meters on unmetered connections. This will be primarily the result of AMI technology that provides advanced leak detection.

Meter Assembly Installation

The proposed installation of new water meters will occur within the compacted shoulder of roads at the edge of the Placer County and El Dorado County roads right-of-way. Therefore, the entire Project area has been subject to prior ground disturbance. In some cases, it may be necessary to install water meter infrastructure on private property, but in these instances, it will occur within 5' of the property line.

Individual meter box installations include the following elements: excavation of approximately three cubic yards at the existing water service connection; removal of a section of existing pipe; installation of a 15-inch diameter PVC pipe inside a 48-in deep water meter pit with accompanying lid and insulation pad, polyethylene tubing, water meter with 6 foot Nicor connector, and MXU remote reader unit; reconnection to the existing residential water service valve and the existing customer service line, employing fittings and all horizontal and vertical adjustments necessary to install a new meter to the existing pipe; application of tracer wire; placement of bedding; backfill; compaction; and testing. Depending on the actual location of each installation, the work may also include saw-cutting, removal and replacement of pavement and the protection or replacement of existing items such as curbing, sidewalk, pavement, landscaping (sod, wood chips, rock, or other mulch), and other fixtures. Once installed, the meter box is flush with the ground. The work to be performed also consists of the furnishing of all labor, equipment, supplies, and appurtenances to complete, in satisfactory condition, the construction of the Project.

Following construction of individual meter boxes, water meters will be installed and integrated into TCPUD's existing AMI network.

AMI Network and Web-Based Customer Portal

The new AMI meters will be integrated into TCPUD's existing AMI network, which provides a comprehensive understanding of how and when water is used and where it is lost. The existing network remotely collects, stores, and analyzes consumption data on a defined frequency, in this case every hour within a 24-hour period. Unlike drive-by and manual systems, TCPUD's AMI network provides customer service representatives access to daily information about how much water is used by specific customers, which helps them resolve complaints and issues faster. TCPUD uses the EyeOnWater web portal, an easy-to-use dashboard with companion apps for Android and iOS, allowing maximum flexibility for customers. Customers can configure alert preferences and track water usage, identify a leak, leading to maximum water efficiency.

Customer Outreach and Education

TCPUD administers customer outreach and education for AMI metered customers. AMI metering outreach and customer support are on-going in support of TCPUD's recently deployed AMI meters throughout TCPUD's current service area, and include a web-page, email blasts, direct mailers, and

phone calls. For this Project, additional outreach will include a campaign to inform new customers of the meter project, outlining the schedule, benefits, and web-based customer portal EyeOnWater.

4.0 Evaluation Criteria

4.1 Evaluation Criterion A – Quantifiable Water Savings

1) Describe the amount of estimated water savings.

TCPUD's calculation of water savings uses a comparison of water savings from TCPUD's historical annual water use, including a 4-year subset of water production from pre-metered connections (2001-2004), water production during a 2-year meter installation (2007-2008), and a 4-year subset of water production post-metered connections (2010-2013) (Appendix A). The 4-year post-metered data set was selected because the Tahoe Basin, along with all of California, experienced severe drought conditions occurring between 2013-2014, and that water production data would have skewed the data.

The pre-metered water production data set yields an average of 2122.75 AFY and the post-metered water production data set yields an average of 1399 AFY. This represents a 34% decrease in water production from pre-metered to post-metered data. TCPUD obtained historical water production data for the two water systems it will acquire effective January 1, 2025. For both systems, a 9-year historical average is 219.25 AFY. Using a reduction factor of 34%, the estimated water savings is 75 AFY.

2) Describe current losses.

Water losses described in this Project are due to undetected and unresolved customer side leaks as a result of unmetered water connections. If indoors, the water loss is distributed into the wastewater system where additional water is not beneficial and ultimately requires energy to treat before being released into the environment. If outdoors, the water loss is typically caused by irrigation breaks, malfunctioning irrigation systems, or overwatering. Outdoor water leaks or excessive runoff may infiltrate into the ground on or near the site of origin and will travel underground to Lake Tahoe. If not absorbed into the ground onsite, excessive runoff is routed to storm drain systems which eventually reach Lake Tahoe, potentially creating water quality issues for this pristine water body. Leaks or excessive runoff reaching groundwater has a small benefit to groundwater supply, however, the Tahoe Valley – Tahoe North Groundwater Basin is a very low-priority basin as determined by the California Department of Water Resources. More information can be found here:

<https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization>

3) Describe the support/documentation of estimated water savings.

Detection and repair of water leaks is an important component of water conservation. As documented in a report by Rupiper et. al. (2022), water utilities across the nation lose approximately 14-17% of their delivered water to leaks each year. This information was derived from a comprehensive collection of water audit data from over 800 water utilities spanning four states, California, Georgia, Tennessee, and Texas. Additionally, the United States Environmental Protection Agency states that 10% of households have leaks averaging 90 gallons or more each day, or 2,700 gallons per month (Berger et. al 2016). A study conducted in Sacramento, California observed 13% of residential accounts had a leak at 7.5 gallons per hour or greater (Schultz, et al. 2018). This equates to 180 gallons lost to leaks daily, or 5,400 gallons per month. Similarly, a 2014 pilot study at East Bay Municipal Utility District (EBMUD 2014), which supplies water throughout the San Francisco East Bay, installed AMI systems that provided water consumption data to customers through an online

portal and found water savings between 5-50%, with an average of 15%, following the installation of AMI meters.

Locally, in 2020, TCPUD installed 103 AMI water meters on all unmetered service connections in TCPUD's Timberland Water System, and notably reported a 27% reduction in water use using a 3-year historical comparison (TCPUD 2020, funded by Bureau of Reclamation). This data, tied to the installation of new meters on unmetered connections, identified 242 unique leak detection alerts across 61 unique properties using the AMI leak-detection reporting module. Many of these accounted for dripping faucets or running toilets, but also accounted for at least one significant water leak. The AMI technology provided leak alerts, through an online and cellular portal, for over 50% of customers in this small water service area. This is critical information for early leak detection, especially on properties that are not occupied by full-time residents as is common in Lake Tahoe. As described in Section 4.1(1) above, TCPUD used historical water production data subsets from its entire service to estimate a water savings of 34%, equal to 75 AFY.

The following is a list of studies that are referenced to support savings estimates:

Berger, Michael A., Hans Liesel, Piscopo Kate, Sohn Michael D.; Exploring the Energy Benefits of Advance Water Metering. August 2016. <https://www.energy.gov/policy/articles/exploring-energy-benefits-advanced-water-metering>

East Bay Municipal Utility District. "Advanced Metering Infrastructure (AMI) Pilot Studies Update". November 25, 2014.

Rupiper, Amanda, Weill, J., Jessoe, K., and Loge, F. "Untapped Potential: leak reduction is the most cost-effective urban water management tool" Environ. Res. Lett. Vol17, 034021, 2022.

Schultz, W., Javey, S. and Sorokina, A. (2018), Smart Water Meters and Data Analytics Decrease Wasted Water Due to Leaks. J Am Water Works Assoc., 110:E24-E30.

TCPUD. 2020 Final Report, Timberland Municipal Water Meter Installation Project. Bureau of Reclamation Small Scale Water Efficiency Grant – Agreement # R18AP00238.

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

(2) 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.

In addition to the support/documentation described in 4.1 (3) above, TCPUD made a comparison of the total water produced before (data set from 2001-2004) and after (data set from 2010-2013) the installation of water meters within TCPUD's entire water service area, as described in 4.1(1) above. TCPUD has two data sets analyzing water production changes between pre-metered and post-metered connections, one using historical data from TCPUD's entire service area and one using data from a small, discrete water system. The data was analyzed over a consistent period, and considered seasonal fluctuations and other factors, such as severe drought conditions that can affect water

usage patterns. Appendix A shows the historical water production data before and after water meters were installed in existing water systems throughout TCPUD's service area. TCPUD used a reduction factor of 34%, represented by the TCPUD data, to estimate a 75 AFY water savings. Other literature state similar findings, for example, the Alliance for Water Efficiency (2023) found that as measured by utilities who have installed meters, unmetered water consumption can be reduced 15% to 30% when metering and consumption-based rates are implemented.

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

In TCPUD's 2022 Urban Water Management Plan, water loss was reported to be 17 million gallons or 52.1acre feet (2.9%) annually. The document can be found here: <https://www.tcpud.org/utility-services/water/documents-and-reports>.

Additionally, the potential for reductions in water use by individual users will be a function of individual behavior. In a report published by Alliance for Water Efficiency (AWE 2023) found that customers who signed up for an AMI portal, via email or text, led to an average decrease in daily water usage in the range of 6.3 to 12.1%. Anecdotally, after the recent replacement of approximately 3,500 old meters to new AMI meters, TCPUD has identified a trend that could lead to a potential additional 5% in reduction of water use. This will be accomplished through continuing a focused effort to encourage customers to sign up for the AMI web portal, EyeOnWater, currently used by TCPUD for existing AMI meters.

Reference:

Alliance for Water Efficiency. Smart Practices to Save Water: An Evaluation of AMI-enabled Proactive Leak Notification Programs. Chicago, IL: Alliance for Water Efficiency, 2023.

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.

The estimated reductions in water use by residential customers has been determined through literature reviews of peer-reviewed articles and case studies in addition to historical data comparisons within the TCPUD service area and newly acquired service area for which the new AMI meters will be installed. Question 4(2)(a) above describes the calculation for the estimation in detail.

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

TCPUD has obtained a quote from Pace Supply Corp (Attachment 1) for the purchase of Badger AMI water meters and assembly.

Table 1: AMI Water Meter and Assembly Type and Quantity

AMI Manufacturer and Model	Quantity
3/4"BADGER METER BRASS BODY M35 WITH CI BOTTOM METER	395
1" BADGER METER BRASS BODY M70 CI BOTTOM METER	26
1 ½" E-SERIES ULTRASONIC METER, 2-BOLT ELLIPTICAL FLANGE, SS HOUSING, US GAL, 6' NICOR CONNECTOR	15
2" E-SERIES ULTRASONIC METER, 2-BOLT ELLIPTICAL FLANGE, SS HOUSING, US GAL, 6' NICOR CONNECTOR	10
M35 HR-E 8D ENCODER REGISTER, US GAL, 6' NICOR CONNECTOR, S# IN ONLY, TORX	395
M70 HR-E 8D ENCODER REGISTER, US GAL, 6' NICOR CONNECTOR, S# IN ONLY, TORX	26
ORION HLD CELLULAR ENDPOINT, 8" NICOR CONNECTOR, THRU LID INSTALL KIT	446

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

Estimated annualized water saving estimates will be computed by measuring the difference between the post-meter water production and the pre-meter water production in the newly acquired water service area for Tahoe Pines, Tahoe Swiss, and Glenridge Park Estates.

Additionally, TCPUD will promote the EyeOnWater leak notification program, designed for quick customer notification, to minimize the duration of a potential leak. TCPUD will continue to monitor and track the number of AMI web portal EyeOnWater accounts against the total number of new AMI meters in the service area. Studies show customer behavior can be positively influenced when they are provided with reliable, real-time consumption data. For example, East Bay Municipal Utility District (2014) found water savings between 5-50%, with an average of 15%, with AMI systems that provided water consumption data to customers through an online portal.

The leak notification program will establish a 3-gallon continuous water consumption per hour threshold to determine if a possible leak is occurring, and either contact the customer if they are not signed up for the program or monitor their response to the notification. Similarly, TCPUD will monitor unusual spikes in water usage and follow up with customers in the same manner.

Reference:

East Bay Municipal Utility District. "Advanced Metering Infrastructure (AMI) Pilot Studies Update". November 25, 2014.

4.2 Evaluation Criterion B – Renewable Energy***Subcriterion 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).**

TCPUD's service area exists within a mountainous boundary that requires water to be pumped from groundwater wells or lake in-takes to storage tanks, and then through the distribution system. Typically, there are storage tanks in the first pressure zone, and water needs to be pumped a second and third time to the tanks located in the upper-pressure zones. Similarly, TCPUD's wastewater requires pumping as it needs to be conveyed out of the Lake Tahoe basin for treatment. While loss of water into the wastewater conveyance system does occur, for this Project most energy savings

come from a reduction in groundwater pumping; therefore, the wastewater conveyance energy requirement is not part of the Project’s energy calculation.

For this Project within the two water systems (Tahoe Swiss and Glenridge Park), energy for water supply and distribution come from the following water system assets: three (3) wells, one (1) emergency Lake Tahoe in-take, one (1) booster pump, and four (4) tanks. However, the energy savings estimated from implementation of this Project includes the energy associated with pumping from the three (3) groundwater wells only.

Water savings associated with AMI correspond to a reduction in pumping, and therefore energy efficiency. This Project is anticipated to save 75 acre-feet in water, resulting in less 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.

This Project is estimated to save 43,548 Kilowatt-hours (kWh) annually through reduced pumping of potable water.

The total annual energy required to pump water from groundwater wells into the Tahoe Swiss Village Utility (TSVU) and Glenridge Park Water Company (Glenridge) systems is 128,081.48 kilowatt-hours (KWh) (Table 2). This energy requirement was developed by considering the energy required to pump up in elevation changes among tanks, and individual pump motor efficiency. For each water system, the energy savings in KWh is calculated by dividing the total volume of water pumped (MG Pumped) by the gallons per minute (GPM) by 60. The result is the Pump Hours/Yr, which is then multiplied by the Pump KW for each system’s pump. This equals 110,640 KWh for TSVU and 17,441 for Glenridge.

The estimated water savings from this Project is 34%, with equals 75 AFY or 24.2 million gallons. The estimated savings in million gallons pumped equates to a reduction in pumping of 43,547.70 KWh.

Table 2 – Calculation table for KWh savings

	Baseline			34% Reduction
	TSVU	Glenridge	Total	Total Saved
MG Pumped	66767000	4678000	71,445,000	24,291,300
GPM	225	50	275	275
Pump Hours /Yr	4946	1559	6505	2,211
Pump KW	22.371	11.185	33.56	33.56
Total KWh	110,640	17,441	128,081.48	43,547.70

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

According to 2019 data from the Environmental Protection Agency, 25% of greenhouse gases are generated from electricity production. By reducing electricity used for pumping water from groundwater wells through the distribution system, this Project reduces reliance on fossil fuels. As a result, this will reduce environmental damage from harvesting non-renewable resources and their corresponding greenhouse gas emissions during generation. Reduced emissions will also lower

negative effects to human health through improved air quality. This Project offsets climate change through reduced emissions, slowing warming effects on the earth.

Using the EPA's Greenhouse Gas Equivalencies Calculator, found here, <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>, the 43,547.70 KWh savings achieved through reduced pumping and distribution processes of 75 acre-feet of water will result in an avoided 17.89 metric tons of carbon dioxide equivalent emitted into the atmosphere annually.

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?

Potable water for the two water systems is primarily supplied from groundwater wells (3 total) in each system. The Grand Ave Well located in the Tahoe Swiss Village Utility water system has a 30-horsepower pump that produces approximately 240 gallons per minute (gpm). The submersible turbine pump produces water from a groundwater well at an elevation of approximately 6,235 feet to a water storage tank with a base elevation of approximately 6,392 feet. The St. Michaels Well, also located in the Tahoe Swiss Village Utility water system, has a 30-horsepower pump that produces approximately 240 gpm. The submersible turbine pump produces water from a groundwater well at an elevation of approximately 6,245 feet to a water storage tank with a base elevation of approximately 6,392 feet. The Glenridge Well located in the Glenridge Park water system has a 15-horsepower pump that produces approximately 50 gpm. The submersible turbine pump produces water from a groundwater well at an elevation of approximately 6,318 feet to a water storage tank with a base elevation of approximately 6,625 feet.

The Project is anticipated to save 75 AFY, resulting in less 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.

The energy savings estimate will occur at the point of diversion, located at TCPUD's groundwater wells.

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

The calculation does not include energy required to treat the water.

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

Currently, the water connections in these systems are unmetered, and consequently, there are no vehicle miles driven to read meters. Implementing the AMI meter installation Project will result in *avoided* miles driven, but not result in *reduced* miles driven.

Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).

TCPUD utilizes renewable energy components when possible; however, none are included in this Project.

4.3 Evaluation Criterion C—Other Project Benefits

Resilience and Sustainability Benefits. Will the Project address a specific water and/or energy sustainability concern?

This Project will enhance drought resilience and address the future impacts of climate change by making customers more aware of their water use patterns and opportunities to save water. Potential water conservation benefits of AMI can provide immediate drought benefits and/or long-term water supply benefits and include measures such as 1) leak identification and repair, 2) irrigation audits and enforcements, 3) customer billing and behavior, 4) data monitoring, and 5) operational response and adjustments. Some of these benefits will allow customers to make short-term decisions that will affect temporary reduction in water use, others will allow for longer-term decisions that may take years to implement but will have impacts on future water use and some affect both categories.

Explain and provide details of the specific issue(s) in the area that is impacting water resilience and sustainability. Describe recent, existing, or potential drought or water scarcity conditions in the Project area.

Recent and severe drought conditions have impacted all of California, including the Lake Tahoe Basin, and has been well documented. Specifically in Lake Tahoe, the Lake Tahoe Basin Management Unit Climate Change Trend Summary prepared by the US Forest Service Pacific Southwest Region 5 Ecology Program reported the 2012-2016 California drought was arguably the most severe of the last millennium (Griffin and Anchukaitis 2014, Mann and Gleick 2015). The drought occurred due to low precipitation combined with record-high temperatures (Griffin and Anchukaitis 2014). The event greatly reduced mountain snowpack, and spring runoff (DWR 2014, U.S. Geologic Survey 2014, Monitor 2020). The 2015 April snow water equivalent (SWE) was so low that Belmecheri et al. (2016) estimated that this was a one-in-3100-year event. In 2015, there was a multi-year (2012-2015) SWE deficit of approximately 5 trillion gallons of water (-1.78x10⁷ acre feet) in the Sierra Nevada (Margulis et al. 2016), which is equal to 13.5% of the capacity of Lake Tahoe. Given the prediction of more extreme and prolonged drought events (Berg and Hall 2017), the effects observed in this last drought likely portend common conditions in the future (Diffenbaugh et al. 2015). In the eastern Sierra Nevada, droughts have shifted between longer (4-year) periods of drought and periods of wetness, thus increasing the interannual variability in this region (Biondi and Meko 2019).

The summary can be found via this link:

https://www.fs.usda.gov/Internet/FSE_Documents/fseprd985001.pdf

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

Yes, see the response to first bullet above. In response to drought conditions and corresponding severity, TCPUD declares Drought Response Stages 1-6, according to Ordinance 304: Water Conservation and Drought Response Standards, found here https://www.tcpud.org/sites/default/files/Ord%20304_0.pdf. TCPUD is currently in Stage 1, Normal Conditions, described as follows:

- The Owner shall not waste water and shall maintain all water service lines, from the point of delivery to the premises served, in good repair. Under normal, non-emergency conditions, the Owner shall meet the most current water conservation measures mandated by other government agencies or implement the following measures, whichever is more restrictive. Drought Response Stage 1 may require that overall water consumption be reduced by up to 10%.

- Any leak or abnormal use in plumbing and/ or irrigation systems, including running toilets, or any leak in swimming pools, hot tubs, decorative water features or any other receptacle used to store water, shall be repaired when found, but in any case within ten (10) days of notice by the District to repair.
- Use of water which results in flooding or runoff in gutters, streets or onto adjacent property is not allowed.
- Automatic shutoff valves or nozzles will be used whenever a hose is used for cleaning vehicles. This subsection does not apply to any commercial car washing facility that utilizes a recycling system to capture or reuse water. Washing of vehicles is exempted where the health, safety and welfare of the public is dependent upon frequent vehicle cleanings, such as snow removal vehicles and garbage trucks.
- Automatic shutoff valves or nozzles will be used whenever a hose is used for cleaning or clearing walkways, patios, tennis courts, decks, driveways, parking areas or other improved areas, whether paved or unpaved. Unrestricted hoses may be used to alleviate immediate fire or sanitation hazards.
- Use of potable water for street cleaning or construction site preparation purposes shall be prohibited. The prohibition on using potable water does not apply to all uses of water for construction activities (such as mixing concrete) and that it only applies to construction site preparation if no other method is available.

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).

TCPUD is located in the Lake Tahoe Basin and Truckee River watershed. Recently, the Bureau of Reclamation released its study of the Truckee Basin in California and Nevada, projecting that climate change may impact water supplies in the 21st century. This study found that due to warming, basin reservoirs are also projected to have higher rates of evaporation and will be less resilient during future droughts. Lake Tahoe's surface is projected to drop below its natural rim more frequently.

The Study can be found via the link below:

https://acwi.gov/useful-links/truckee_river_basin_study.pdf

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

Liberty Utilities provides electric service to TCPUD's water system. While Liberty Utilities is working to increase its reliance on renewable energy, it estimates its total renewable power mix was 37%, or 63% reliance on unsustainable sources of energy. The Project's proposed reduction in energy usage will reduce TCPUD's demand on fossil fuels.

More information can be found:

<https://california.libertyutilities.com/north-lake-tahoe/residential/evolve/eliminating-coal-from-our-power-mix.html>

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

The Project will reduce water demand and identify customer water losses earlier, meaning ultimately less water will be drawn from Lake Tahoe groundwater supplies. With less water drawn, there will be more water available to maintain healthy habitats, recreational opportunities, and hydropower

generation on the Truckee River. Additionally, TCPUD will utilize less energy thereby reducing our carbon footprint.

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

This Project will allow TCPUD to better understand customer water use patterns in real-time, allowing for more flexible management of the water system by targeting water conservation outreach efforts. For example, having information on what time of day customers are irrigating would allow for better messaging and outreach during droughts. Additionally, providing winterizing tips to prevent leaks is important for second homeowners as they leave their homes unattended for the winter.

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

Water conserved as part of the Project will stay in groundwater aquifers, offsetting groundwater pumping.

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

This Project will conserve 75 acre-feet per year, and the water will remain in the Lake Tahoe watershed and be used to maintain healthy habitats and recreational opportunities.

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

No mechanism is necessary to keep the conserved water in the groundwater aquifers. It will simply not be pumped into the wells for potable water.

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

The interstate compact controlling the Lake Tahoe and Truckee River watersheds is the Truckee River Operating Agreement; however, it only controls surface water, not groundwater. The agreement can be found here: https://www.usbr.gov/mp/troa/final/troa_final_09-08_full.pdf

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

While litigation over water is infrequent in the Lake Tahoe Basin, the Project mitigates water-related conflicts by conserving water. The Truckee River Operating Agreement was implemented in December 2015 and brought resolution to California and Nevada over the allocation of water rights.

Ecological Benefits.

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

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

Yes. Using the [Information for Planning and Consultation tool](#) (IPaC) on the U.S. Fish and Wildlife Service website, the following endangered or threatened species were identified as potentially residing within the TCPUD's watershed and/or river system or being influenced by this area. It identifies the Project location as an Area of Influence (AOI) if a species may be indirectly impacted by activities within the defined space. In this case, the species' habitats would all benefit from the proposed increase in the 75 acre-feet of water maintained within the natural environment and reduction of greenhouse gases because of this Project.

North American Wolverine – Deep, persistent, and reliable spring snow cover (April 15 to May 14) is the best overall predictor of wolverine occurrence in the contiguous United States. The Project's reduction of greenhouse gases will benefit this species.

Sierra Nevada Red Fox – U.S. Fish and Wildlife Service has determined threats to this species include reduced prey availability and competition with coyotes resulting from reduced snowpack levels.

California Spotted Owl – This bird inhabits dense woodlands and riparian zones. This proposed threatened species does not have a recovery plan under the ESA.

Yellow-billed Cuckoo – This bird uses wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. This threatened species has a recovery plan under the ESA.

Northwestern Pond Turtle – This turtle inhabits grasslands and open woodland around ponds. This proposed threatened species does not have a recovery plan under the ESA.

Sierra Nevada Yellow-legged Frog – This frog lives in California's Sierra Nevada mountains in lakes, ponds, marshes, meadows, and streams at elevations ranging from 4,500 to 12,000 feet. This endangered species does not have a recovery plan under the ESA.

Cui-ui – This fish depends on Pyramid Lake for its rearing habitat and the lower Truckee River for its spawning habitat. They are only able to access their spawning habitat when hydrologic conditions are suitable. This endangered species has a recovery plan under the ESA.

Lahontan Cutthroat Trout – This fish's habitat is cold, high-elevation mountain streams in California to lower-elevation and highly alkaline desert lakes in Nevada. This threatened species has a recovery plan under the ESA.

Carson Wandering Skipper – The Carson wandering skipper is a small tawny orange butterfly found in grassland habitats on alkaline substrates. This endangered species has a recovery plan under the ESA.

Monarch Butterfly – Monarch butterflies live mainly in prairies, meadows, grasslands and along roadsides. This candidate species does not have a recovery plan under the ESA.

As this Project seeks to install water meters on unmetered connections, TCPUD only anticipates improved ecological benefits as a result of this Project preserving water in the natural environment. The preserved water will be used to improve water quality and quantity, which are vital to the health and success of the impacted species.

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

The Project will conserve 75 acre-feet of water annually and it will remain in the Lake Tahoe watershed through groundwater stores. Eventually, the groundwater will replenish local streams, wetlands, and lakes to benefit a variety of freshwater ecosystems. Because groundwater is released slowly, it will help moderate stream temperatures and flows, providing critical habitat and flows for fish spawning and other wildlife. Historically, the water level of Lake Tahoe drops below the rim (no water flows out of Lake Tahoe into the Truckee River) every several years. The additional water available to Lake Tahoe will help reduce the frequency and/or duration of these events.

Will the proposed Project reduce the likelihood of a species listing or otherwise improve the species status?

The Project will benefit already listed species, but it is unlikely to reduce the likelihood of listing a species.

Please describe any other ecosystem benefits as a direct result of the Project.

The AMI meters will reduce the amount of irrigation run-off containing chlorinated water, as well as toxic chemicals from the application of fertilizer, herbicides, and pesticides applied to modern lawns and landscaping. The runoff from these landscaped areas can drain to nearby catch basins which drain to nearby streams and Lake Tahoe which are critical freshwater and riparian habitats.

Climate Change: E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.

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

This Project will reduce water losses and reduce water consumption. This will be accomplished through instant leak detection, and proactive demand management using real-time data. The resulting water savings from this Project will reduce the strain on water resources, keep more water in the environment longer, and improve overall water quality. Concurrently, improved water levels and quality have a complementary effect on wildlife habitat and endangered or threatened species that exist in these areas. Climate change makes water supplies and deliveries difficult to predict. This Project helps prepare for and adapt to changing conditions through improved water efficiency.

Does the Project seek to improve ecological resiliency to climate change?

Yes, this Project will reduce water loss and consumption through effective demand management by 75 acre-feet annually. Water conserved by TCPUD will remain in the Lake Tahoe watershed.

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

Because AMI meters reduce vehicle miles traveled to gather meter reads and investigate leaks, the Project mitigates, through avoidance, air pollution through a reduction in miles driven.

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

No

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

No, the benefits described above accurately capture the Project impact.

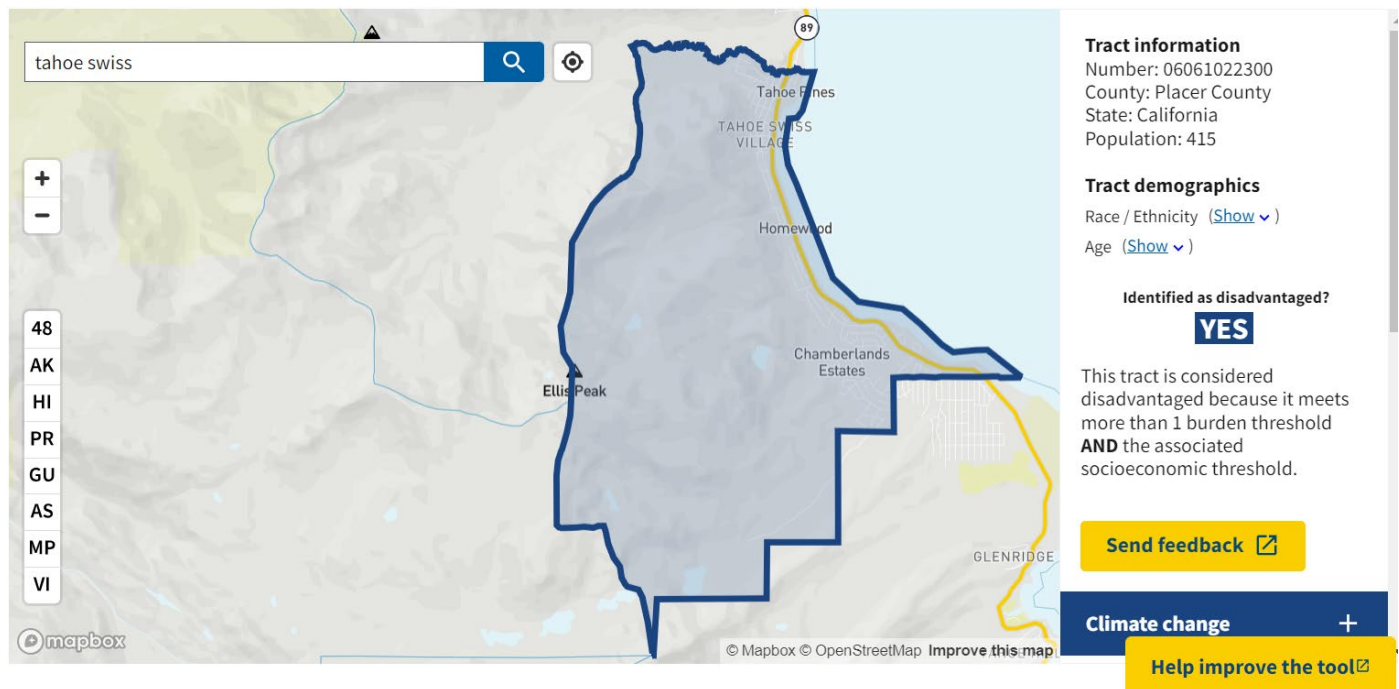
4.4 Evaluation Criterion D—Disadvantaged Communities, Insular Areas, and Tribal Benefits

Subcriterion D.1. Disadvantaged Communities

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

Please use the White House Council on Environmental Quality’s interactive Climate and Economic Justice Screening Tool (CEJST), available online at [Explore the map Climate & Economic Justice Screening Tool \(screeningtool.geoplatform.gov/en/#17.59/36.63278/-105.181329\)](https://www.ejscreeningtool.gov/en/#17.59/36.63278/-105.181329) to identify any disadvantaged communities that will benefit from your Project. The CEJST developed by the White House Council on Environmental Quality is a geospatial mapping tool that utilizes publicly available, nationally consistent data sets related to climate change, the environment, health, and economic opportunity to identify disadvantaged communities. In addition to identifying specific census tracts that are disadvantaged, the CEJST includes the lands of Federally recognized Tribes as disadvantaged communities. In addition, regardless of whether a Federally recognized Tribe has land, all Federally recognized Tribal entities are considered disadvantaged communities for the purposes of the Justice40 Initiative.

The communities of Tahoe Pines, CA and Tahoe Swiss, CA are listed as disadvantaged communities according to the CEJST, and each occupy Census Tract #0601022300. A screenshot from the Climate & Economic Justice Screening Tool is below:



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?

Approximately 370 of the 446 new AMI meters will be installed in the Tahoe Pines and Tahoe Swiss communities, representing 82% of the newly installed meters that will benefit disadvantage communities. Currently, customers are typically not aware of water leaks or overuse until after they have received their monthly bill because water is billed in arrears. The Project will benefit these customers by giving them tools to realize their water use in real-time water and produce water savings by identifying and repairing leaks early and changing their water consumption habits through monitoring their use. This will decrease costs associated with water consumption, thereby reducing costs for these customers.

Subcriterion D.2. Tribal Benefits

This Project does not benefit Tribal nations therefore, it is not applicable to subcriterion D.2.

4.5 Evaluation Criterion E—Complementing On-Farm Irrigation Improvements

This Project does not complement on-farm irrigation improvements.

4.6 Evaluation Criterion F—Readiness to Proceed

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.

TCPUD is prepared to begin the Project immediately upon grant contract execution or when allowed to begin for reimbursement purposes. The Project is identified on TCPUD's 5-year Capital Plan for construction in 2026. TCPUD will complete permitting and environmental compliance in 2025 in alignment with the anticipated award date in spring 2025.

Identify and provide a summary description of the major tasks necessary to complete the Project.

Tasks/Milestones – Project activities and project schedule are described below.

Task 1: Project Management

TCPUD staff will oversee the contractors hired for the Project and perform regular invoicing and reporting in compliance with the Bureau of Reclamation funding agreement.

Task 2: Permitting and Environmental Compliance

TCPUD staff will obtain all permitting and environmental compliance necessary for this Project. TCPUD has determined this Project will include a Categorical Exemption under Section 15303 class 3(d) for the California Environmental Quality Act and will qualify for a categorical exclusion under the National Environmental Policy Act. Local permits are also necessary and will be obtained.

Task 3: Contracting

This Project is a public works project and is subject to a public bidding process. TCPUD will publicize a bid document and award the contract to the lowest responsive bidder. Project bidding, for construction and project management activities, will begin in the fall of 2025.

Task 4: Construction and Project Management

A Contractor will be selected through the public bid process and perform equipment and material procurement, mobilization, excavation, meter box installation, and demobilization. TCPUD will purchase meters, affix meters into meter boxes, and integrate them into existing AMI network.

Task 5: Customer Outreach and Education

TCPUD administers customer outreach and education for AMI meters. AMI metering outreach and customer support are on-going in support of TCPUD's recently deployed AMI meters throughout TCPUD's current service area, and include a webpage, email blasts, direct mailers, and phone calls. For this Project, additional outreach will include a campaign to inform new customers of the meter project, outlining the schedule, benefits, and web-based customer portal EyeOnWater.

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

TCPUD will obtain the following permits:

- Placer County Encroachment Permit
- Caltrans Right-of-Way
- Tahoe Regional Planning Agency Qualified Exempt Grading Permit
- California Environmental Quality Act, Categorical Exemption under Section 15303 class 3(d)
- National Environmental Policy Act, Categorical Exclusion with supplementary Biological/Cultural surveys as needed or required.

Permit applications will be submitted no later than June of 2025 and TCPUD anticipates approval and receipt of permits by the end of December 2025. The project is exempt from the Placer County Grading Ordinance. This Project will be performed as an Exempt Activity under the District's Memorandum of Understanding with the Tahoe Regional Planning Agency (TRPA). TRPA will be notified of the Exempt Activity in writing in advance of mobilization. Should any grading occur, this Project is exempt from the Placer County Grading Ordinance.

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

TCPUD has the capacity and experience to complete design for the meter installation Project in-house. A construction bid package will be prepared by the TCPUD Engineering Manager for the Project.

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

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

The TCPUD will follow its adopted Project implementation procedures to complete this Project. These include a TCPUD Board of Directors resolution to call for bids, an award of a construction contract to the lowest responsive bidder, a Notice to Proceed, and finally after construction is satisfactorily completed a Notice of Completion will be filed with Placer County.

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 design for the Project is routine and straightforward and will be completed in-house in 2025.

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 expected timeline for environmental and cultural compliance has not been discussed with the local Reclamation regional or area office. Table 3 describes the proposed Project schedule.

Table 3: Proposed Project Schedule

TCPUD Smart Water Meter Installation Project								
Project Schedule								
	2025				2026			
Project Planning	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Grant Award								
Customer Outreach and Education								
Permitting and Environmental Compliance								
Grant Invoicing and Reporting								
Project Construction								
Bidding Solicitation and Award								
Mobilization								
Construction								
Construction Administration and Inspection								
Demobilization								
AMI Meter Software Integration								

4.7 Evaluation Criterion G—Collaboration

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?

Many customers in the TCPUD service area are supportive of meter installation. During the transition of ownership of the Tahoe Swiss Village Utility and the Glenridge Park Water Company water systems the customers have expressed widespread support for meter installation. In general, customers enjoy monitoring their consumption and use.

What is the significance of the collaboration/support?

On the customer side, AMI data allows TCPUD to better work with customers to identify, track, and ultimately reduce their water use. For large commercial and industrial water users, AMI data helps them manage their operations and look for ways to save water. In general, hourly data allows for more accurate leak detection, and real-time comparisons against anticipated water usage, which is especially beneficial to second homeowners whose primary residence is elsewhere. With AMI, TCPUD is better able to serve its customers by encouraging the use of tools like leak alerts, high-water use notifications, and water budgets that are dependent on more frequent meter reads.

In addition, TCPUD collaborates with other local water agencies on ways to engage customers and is an active member of the Tahoe Water Suppliers Association, a bi-state organization formed to promote sustainable drinking water.

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

Yes. The implementation of advanced metering that offers real-time and improved accuracy data continues to grow in popularity. TCPUD looks forward to contributing valuable data insights to its regional partners and beyond, that will encourage other communities to introduce similar technology.

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

Yes, this Project will benefit all water users across all sectors that are within TCPUD water service areas.

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

None.

4.8 Evaluation Criterion H—Nexus to Reclamation

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

This Project does not include a connection to a Reclamation Project or Reclamation activity.

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

No

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

N/A

Will the proposed work benefit a Reclamation Project area or activity?

No

Is the applicant a Tribe?

No

5.0 Performance Measures

A.2: Measuring Devices

Measuring Devices A.2.a. Municipal Metering

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the Project (e.g., water saved or better managed, energy generated or saved). For more information calculating performance measure.

This Project includes installing AMI meters on unmetered residential water connections.

Analysis of Consumptive Trend Data: Accurate and timely water consumption is a vital component of effective demand management. TCPUD staff will be able to contact water customers promptly when a potential leak has been identified. The ability to observe and resolve leaks quicker will result in reduced water losses. One of the primary methods used to measure success will be the observation and comparison of water production before and after meter installation. In addition to receiving early leak notifications based on specified parameters (e.g. continuous 3 gallon/hour), TCPUD staff will run regular reports that will identify high water users, or users with a sudden water increase. Customers will be notified, accordingly, and advised of the usage. TCPUD will encourage customers to sign up for notifications through the EyeOnWater online portal, as well as offer resources and recommendations for resolution. TCPUD will continue to observe usage trends following the initial customer contact to see if the water usage has returned to normal.

TCPUD Water and Energy Demands: The water and energy conserved following implementation of this Project will be calculated based on a minimum one-year average of water production before and after AMI meters are installed. Full data analysis, including comparative water use across multiple years and against other TCPUD water services areas are envisioned to be available approximately three years after installation of the Project and once the actual AMI-provided data is assembled. Comparative water usage will be more accurate if it analyzes data over multiple years. Additionally, with reduced water demand, TCPUD expects reduced water production and an associated reduction in energy with less demand on pumping. Another anticipated benefit from the Project is additional information on apparent losses and the potential to identify and track low flow leaks which may ultimately result in significantly reduced demand. The success of specific incidents of leak management and other interventions can be documented on a case-by-case basis as illustrated in

Section 4, Evaluation Criterion A— Quantifiable Water Savings.

For Projects that install or replace existing municipal end-user water service meters, the applicant should consider the following:

Whether the Project includes new meters where none existed previously or replaces existing meters.

This Project includes new meters where none existed previously.

Whether the Project includes individual water user meters, main line meters, or both.

This Project includes individual, residential water user meters.

If the Project replaces existing individual water user meters with new meters whether new technologies (e.g., automatic meter reading [AMI] meters) will be employed.

The new meters will be Smart Meter with Advance Metering Infrastructure (AMI) technology.

Include a description of both pre- and post-Project rate structuring.

Every five years, TCPUD conducts a Water & Sewer Rate Study (Rate Study) to guide the setting of maximum rates for each utility and customer class. The 2024 Rate Study will be considered for approval by the TCPUD Board of Directors on November 15, 2024, and if adopted, new rates will take effect on January 1, 2025. These new rates will impact the customers of the Tahoe Swiss Village Utility and Glenridge Park Water Company, as these customers will officially become customers of TCPUD. These customers are currently unmetered and have been historically billed a flat rate for water annually. Beginning January 1, 2025, these customers will be billed monthly at the TCPUD unmetered rate. Once meters are installed, customers will have a 12-month grace period to monitor household water usage. Following this 12-month period, customer bills will include both the base rate and consumption charges. More information about TCPUD rates can be found at <https://tcpud.org/utility-rates>.

6.0 Budget Narrative

The total proposed Project cost is \$2,641,855. Of this total cost, TCPUD is committing \$2,141,855 in cash towards the Project. We are requesting \$500,000 from the Bureau of Reclamation to complete the Project.

Salaries and Wages

Most of the work will be completed by specialized contractors. However, the Project does require TCPUD staff time for the Administrative Technician- Utilities for web-portal outreach and customer service, Accounting Assistant II for meter billing setup, and the Utilities Operation Specialist II to install the meter body into the meter box and integrate with TCPUD's AMI system. The costs associated with these positions will be contributed by TCPUD and total \$40,447.

Fringe Benefits

Fringe Benefits associated with the salaries and wages above will be contributed by TCPUD and total 30,349.

Travel

TCPUD staff will visit the Project site periodically during implementation and install the meters into the meter boxes. This travel is part of normal staff activity and no reimbursement or match is being

sought. Travel may be required by the consultant/contractor, and these costs will be captured within the ‘Contractual’ budget category with any consultant/contractor cost estimates.

Equipment

TCPUD is using a documented quote from Pace Supply Corp. (Attachment 1) for the cost of the AMI meters. The estimated cost is \$221,415 for meters, registers, and cellular endpoints and will be purchased and paid for by TCPUD. The equipment necessary for this Project includes:

Table 4: Total Equipment Costs (Attachment 1)

Meter Equipment	Unit Cost	Quantity	Total
3/4" Meter Body	118.99	395	\$ 47,001
1" Meter Body	250.99	26	\$ 6,526
1 1/2" Meter Body	781.46	15	\$ 11,722
2" Meter Body	1041.45	10	\$ 10,415
M35 Register	105.99	395	\$ 41,866
M70 Register	105.99	26	\$ 2,756
Cellular Endpoint	188.49	446	\$ 84,067
Sales Tax			\$ 17,063
Total Equipment Cost			\$ 221,415

Materials and Supplies

All materials and supplies are accounted for in the equipment section of the Budget Project or will be purchased by the contractor.

Contractual

TCPUD intends to contact consulting services for permitting, and environmental and regulatory compliance in an amount of \$37,620. These costs are based on similar project costs and will be contributed by TCPUD.

Construction

TCPUD will utilize the public bidding process to bid and award a construction contract for construction of the Project, estimated to cost \$2,312,025. Construction will include mobilization, excavation and installation of meter box, pavement restoration, and demobilization. TCPUD is requesting \$500,000 from the Bureau of Reclamation for construction costs.

Other Expenses

There are no other expenses, all costs required for the Project have been accounted for in prior categories.

Indirect Costs

There are no indirect costs, all costs required for the Project have been accounted for in prior categories.

Budget Proposal and Funding Plan

The non-Federal share of Project costs will be obtained through the TCPUD Water Capital Budget derived from the Water Enterprise Fund. The funding contribution by the TCPUD will be monetary for

contractual expenses related to the purchase irrigation construction installation expenses and environmental and cultural compliance.

There are no other sources of funding supporting this Project. There will be no costs incurred before the Project start date. TCPUD has not requested or received any funding from other Federal partners, and there are no pending funding requests for this Project. Table 4 below describes a summary of non-Federal and Federal funding sources. Table 5 describes the proposed Project budget.

Table 5 – Summary of non-Federal and Federal Funding Sources

	Funding Amount
Non-Federal Entities	
1. TCPUD Water Fund	\$2,141,855
Non-Federal Subtotal	\$2,141,855
Other Federal Entities	
No other federal entities	\$0
Other Federal Subtotal	\$0
Requested Reclamation Funding	\$500,000
Total Project Funding	\$2,641,855

Table 6- Proposed Project Budget

Budget Item Description	Unit Rate	Quantity	TCPUD Funding	USBR Funding Request	Total Cost
Personnel					
Administrative Technician, Utilities	\$42.79	350	\$14,977	\$0	\$14,977
Accounting Assistant II	\$44.37	250	\$11,093	\$0	\$11,093
Utilities Operations Specialist II	\$57.51	250	\$14,378	\$0	\$14,378
Personnel Sub-Total			\$40,447	\$0	\$40,447
Fringe Benefits					
Administrative Technician, Utilities	\$27.96	350	\$9,786	\$0	\$9,786
Accounting Assistant II	\$27.96	250	\$6,990	\$0	\$6,990
Utilities Operations Specialist II	\$54.29	250	\$13,573	\$0	\$13,573
Fringe Benefits Sub-Total			\$30,349	\$0	\$30,349
Construction					
Permitting & Environmental Compliance	Lump Sum	1	\$37,620	\$0	\$37,620
Meter Equipment					
3/4" Meter Body	118.99	395	\$47,001	\$0	\$47,001
1" Meter Body	250.99	26	\$6,526	\$0	\$6,526
1 1/2" Meter Body	781.46	15	\$11,722	\$0	\$11,722
2" Meter Body	1041.45	10	\$10,415	\$0	\$10,415
M35 Register	105.99	395	\$41,866	\$0	\$41,866
M70 Register	105.99	26	\$2,756	\$0	\$2,756
Cellular Endpoint	188.49	446	\$84,067	\$0	\$84,067
Meter Equipment Sales Tax	Lump Sum	1	\$17,063	\$0	\$17,063
Construction Administration	Lump Sum	1	\$271,440	\$0	\$271,440
Construction Contractor	Lump Sum	1	\$1,540,585	\$500,000	\$2,040,585
Construction Sub-Total			\$2,071,060	\$500,000	\$2,571,060
Project Total			\$2,141,855	\$500,000	\$2,641,855

7.0 Environmental and Cultural Compliance

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should consider the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include the answers to:

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

The installation of new water meters will occur within the compacted shoulder of roads at the edge of the Placer County and El Dorado County roads right-of-way. Therefore, the entire project area has been subjected to prior ground disturbance. In some cases, it may be necessary to install water meter infrastructure on private property, but in these instances, it will occur within 5' of the property line from the right-of-way.

Individual meter installations include the following elements: excavation of approximately three cubic yards at the existing water service connection; removal of a section of existing pipe; installation of a 15-inch diameter PVC pipe inside a 48-in deep water meter pit with accompanying lid and insulation pad, polyethylene tubing, water meter with 6 foot Nicor connector, and MXU remote reader unit; reconnection to the existing residential water service valve and the existing customer service line, employing fittings and all horizontal and vertical adjustments necessary to install a new meter to the existing pipe; application of tracer wire; placement of bedding; backfill; compaction; and testing. Depending on the actual location of each installation, the work may also include saw-cutting, removal and replacement of pavement and the protection or replacement of existing items such as curbing, sidewalk, pavement, landscaping (sod, wood chips, rock, or other mulch), and other fixtures. Once installed, the meter is flush with the ground. The work to be performed also consists of the furnishing of all labor, equipment, supplies, and appurtenances to complete, in satisfactory condition, the construction of the Project.

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 Project will not adversely impact any species listed as Federally threatened or endangered or any designated critical habitats.

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 with the Project boundary that potentially fall under CWA jurisdiction as “Waters of the United States”.

4. When was the water delivery system constructed?

The water delivery system was constructed in the 1940's.

5. 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.

This Project will not result in any modifications of or affects to individual features of an irrigation system, as no irrigation systems (e.g., headgates, canals, or flumes) exist with the Project area.

6. 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 Project will take place on the County right of way within the roadway. No Historic Places are with the Project site.

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

There are no known archeological sites within the Project area.

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

No, the Project will not have a disproportionate or adverse effect on communities with environmental justice concerns. In fact, the Project will have equal and positive effect on the local community, including low income and minority populations. The local community will benefit from the water savings the AMI implementation will bring.

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

No, the Project will take place on the County right of way within the roadway. There are no sacred sites or Tribal lands within the Project area.

10. 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 take place on the County right of way within the roadway. Preventative measures will be implemented to ensure the Project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species that may occur in the area.

H.1.1 National Environmental Policy Act

NEPA requires Federal agencies such as Reclamation to evaluate, during the decision-making process, the potential environmental effects of a proposed action and any reasonable mitigation measures. Before Reclamation can make a decision to fund an award under this NOFO, Reclamation must comply with NEPA. Compliance with NEPA can be accomplished in several ways, depending upon the degree and significance of environmental impacts associated with the proposal.

TCPUD will file Categorical Exclusion under the National Environmental Policy Act (NEPA) for this Project with supplementary Biological and Cultural surveys as needed or required. TCPUD will also file a California Environmental Quality Act (CEQA) Notice of Exemption under Section 15303 class 3(d). TCPUD anticipates the qualification of the Exclusion/Exemption for this Project because it involves installing water meters on existing water lines within the compacted shoulder of roads and all work will be done in previously disturbed areas. Implementation of water meters on existing waterlines will yield substantially the same purpose and capacity of the existing infrastructure.

8.0 Required Permits or Approvals

TCPUD will obtain the following permits:

- Placer County Encroachment Permit
- Caltrans Right-of-Way

- Tahoe Regional Planning Agency Qualified Exempt Grading Permit
- California Environmental Quality Act, Categorical Exemption under Section 15303 class 3(d)
- National Environmental Policy Act, Categorical Exclusion with supplementary Biological/Cultural surveys as needed or required.

9.0 SF-424D Assurances

Form SF-424D Assurances – Construction Programs is submitted with this application (Attachment 2).

10.0 Overlap or Duplication of Effort Statement

No overlap or duplication of effort exists in this proposal.

11.0 Conflict of Interest Disclosure Statement

The TCPUD and employees have no conflicts of interest in the procurement of supplies, equipment, construction, and services provisions in 2 CFR Sec 200.318.

Notification

The TCPUD has no conflicts of interest with the DOI awarding agency or pass-through entity.

Restrictions of Lobbying

No federal funds are used by the TCPUD for lobbying activities.

12.0 Uniform Audit Reporting Statement - state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the Federal Audit Clearinghouse website.

The TCPUD filed a Single Audit report for the most recently closed fiscal year, 2023 (EIN 94-6019711 and UEI KSYBP9H44GY9), and the Single Audit report is available through the Federal Audit Clearinghouse.

13.0 Certification Regarding Lobbying

Compliance with 43 CFR Sec18, Appendix A is represented on SF-424 with signature by the TCPUD authorized official (Attachment 3).

14.0 Letter of Support

The Project is well supported but no formal letters of support have been collected for this application.

15.0 Official Resolution

An official Board of Directors Resolution in support of the Project is scheduled to be adopted in December 2024 and will be submitted immediately following the Board's action.

D.3 Unique Entity Identifier and System for Award Management

TCPUD's Unique Entity Identifier is KSVBP9H44GY9, and the TCPUD has an active registration account in the System for Award Management (SAM)