

# Pressure Reducing Valve SCADA Improvements Project

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

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South Tahoe Public Utility District

**Pressure Reducing Valve SCADA Improvements Project**

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## **Executive Summary**

South Tahoe Public Utility District  
Pressure Reducing Valve SCADA Improvements Project

July 31, 2018

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

The South Tahoe Public Utility District (STPUD or District) desires to improve the operational efficiency of its water distribution system by monitoring flow and pressure data at pressure reducing valve (PRV) stations throughout its network. Recommendations for efficiency upgrades (through collection/use of flow and pressure data) at the Project Site - Pioneer Trail/Marshall PRV - include the following improvements:

1. New vault
2. New PRV and piping (with new tee and zone isolation valve)
3. Pressure transmitters upstream and downstream of the PRV
4. Valve controller (with position indicator) for flow monitoring
5. Hydroelectric generator and associated electronics as sole-means of power supply
6. Cellular modem
7. Above-grade control panel
8. Temporary bypass pumping during construction
9. Integration of data, status and alarm signals into the District's existing SCADA system

The proposed Project contributes to accomplishing the goals of the Funding Opportunity Announcement (FOA) by pursuing a Project which aims to conserve, better manage, and more efficiently use water supplies in the Lake Tahoe Basin.

The estimated length of time to complete this project is 16 months with a start date of January 1, 2019 and a completion date of April 30, 2020.

Total Project Cost is \$304,600

The project is not located on a Federal facility.

**Background Data**  
South Tahoe Public Utility District  
Pressure Reducing Valve SCADA Improvements Project

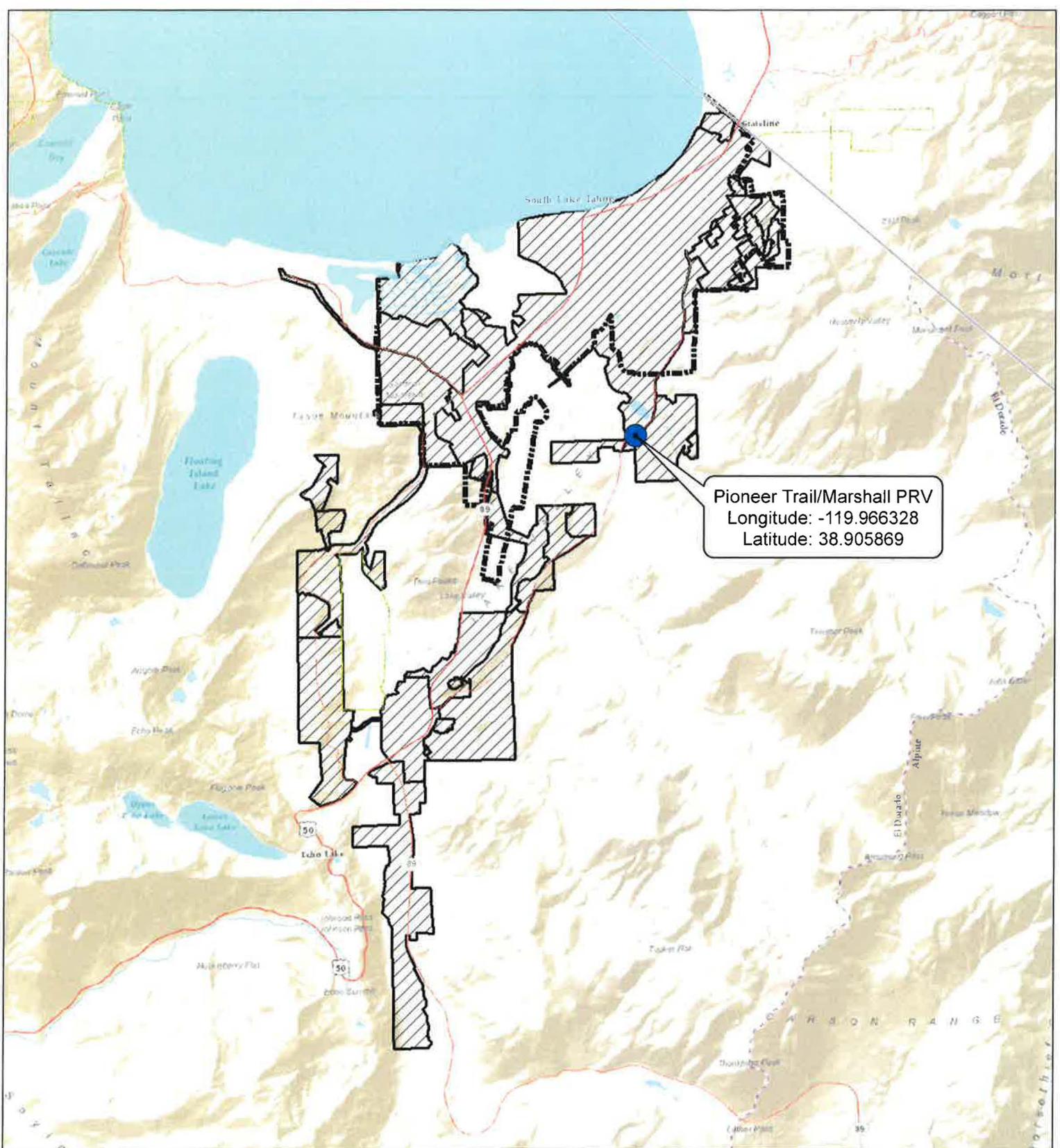
The District serves over 14,000 residential water service connections and 660 commercial and government sites from approximately 11 active groundwater wells out of 16 total well sites in the South Tahoe Groundwater Basin with a total capacity of 15,171 gallons per minute. In 2017 these wells produced approximately 1,832.68 MG or 5624 AFY. Future water demands derived from the 2015 STPUD Urban Water Management Plan (utilizing information from the City of South Lake Tahoe General Plan for future development and Tahoe Regional Planning Agency's limits on growth) were estimated to reach 6,373 AFY by 2035. STPUD water rights under the Truckee River Operating Agreement far exceed this anticipated water demand with 23,000 AFY allocated to all water users within the California boundaries of Lake Tahoe, of which the District is the largest. To deliver this water, the District maintains the following facilities within its service area: over 360 miles of water main, 21 water storage tanks with a total storage capacity of 13,520,210 gallons, 16 booster pump stations and 20 pressure reducing valves (PRV) housed within remote PRV stations.

Within the District's geographically designated water zones are 31 water pressure zones. Many of these zones are fed by the remote PRV Stations mentioned above. The remote PRV Stations are generally located in buried vaults either in or adjacent to a roadway. None of these stations have any power source and so do not currently have any instrumentation that can be monitored remotely. For 17 of the 31 water pressure zones that are fed by one or more remote PRVs (with no other facilities feeding the zone) the District is completely "blind"; there is no flow meter to monitor water delivery into the zone for distribution, there are no pressure gauges to monitor damaging pressure transients (which are common in pressure-regulated zones) or to monitor breaks in the system for emergency response.

The proposed project would address these water delivery system deficiencies and improve the system reliability by improving the "real-time" monitoring capabilities at one of the 17 "blind" PRV stations: Pioneer Trail/Marshall PRV. This project is part of a larger District project planned to bring all 17 PRV stations on-line and tied to the District's Supervisory Control and Data Acquisition system. Each PRV brought on line allows more control within each of the water pressure zones, saving both water and energy through more efficient water system operations.

The Project Area is located in South Lake Tahoe, CA. The Project latitude is 38.905869 and longitude is -119.966328. A map of the Project Area is included below and shows the entire STPUD water system, as well as the location of the pressure reducing station chosen for this application: Pioneer Trail/Marshall.

The District currently has an assistance agreement with Bureau of Reclamation for a 2016 Watersmart Drought Resiliency grant for an Advanced Metering Infrastructure/Water Meter Installation Project (Agreement # R16AP00139), as well as a pending agreement under the 2017 Small-Scale Water Efficiency grant program for a pilot PRV upgrade project (Agreement # R17AP00190).

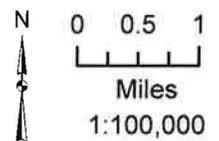


Pioneer Trail/Marshall PRV  
 Longitude: -119.966328  
 Latitude: 38.905869

### Legend

-  Pressure Reducing Valve
-  STPUD Water Service Area
-  City of South Lake Tahoe

### STPUD Pressure Reducing Valve Locations



Map Created 6/2018

**Technical Project Description**  
South Tahoe Public Utility District  
Pressure Reducing Valve SCADA Improvements Project

The proposed project will improve system reliability by improving “real-time” monitoring capabilities at the Pioneer Trail/Marshall PRV Station. This dual-PRV station consists of a 6” fire flow PRV with a 2.5” domestic PRV in a rectangular vault with a circular manhole cover. The station is located in a high traffic thoroughfare and is very dangerous to access with traffic control to perform maintenance. There is no drain and water collects in the vault. While the vault may be sufficient capacity for addition of instrumentation, its location and the condition of the PRV and piping mean that the vault will need to be replaced and relocated out of the roadway to a side street as part of the instrumentation project (approx. 200 lf of piping required). The PRV is set for 140 psi upstream and 120 psi downstream. Based on the hydraulic analysis, this site is suitable for hydro-electric power generation.

Major tasks and deliverables for this Project are described below:

Task 1. Project/Grant Administration

- 1.1 Provide all technical and administrative services as needed for Agreement completion; review all work performed; and coordinate budgeting and scheduling to assure that the Agreement is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.
- 1.2 Ensure that the Agreement requirements are met through completion of progress reports submitted to the Contract Manager when timely and through regular communication with the Contract Manager. The progress reports shall describe activities undertaken and accomplishments of each task during the reporting period, milestones achieved, and any problems encountered in the performance of the work under this Agreement. The description of activities and accomplishments of each task during the reporting period shall be in sufficient detail to provide a basis for payment of invoices and shall be translated into percent of task work completed for the purpose of calculating invoice amounts.
- 1.3 At the completion of this project and prior to final payment, the Project Director shall fill out and provide a draft and a final report to the Contract Manager.

Deliverables: 1.1 Contract Agreement, 1.2 Progress Reports, 1.3, Draft and Final Report

Task 2: Project Planning/Design

- 2.1 Consulting services will be obtained for the planning and design of this project, utilizing current PRV design information, as well as developing a bidding package for the construction.

Deliverables: 2.1 Planning, design and construction specifications documentation; bid documents

Task 3. Environmental Documentation/Compliance

- 3.1 Environmental Documentation: The Project has been determined to be CEQA exempt and an NOE is expected to be filed for this project. In addition, a NEPA environmental checklist to include a cultural and biological survey will be performed, although it is expected that this project will have very little to no soil excavation.

Deliverable: 3.1 CEQA notice of determination filed with El Dorado County and the California State Clearinghouse; NEPA environmental checklist to include cultural and biological survey reports.

#### Task 4: Project Implementation

After completion of project planning documents and permitting, project bidding and contract award, the following activities will occur on site:

- 4.1 Installation of new vault, new PRV, and piping
- 4.2 Installation of pressure transmitters upstream and downstream of the PRV
- 4.3 Installation of a valve controller
- 4.4 Installation of hydroelectric generator and its associated electronics
- 4.5 Installation of a cellular modem and an above-grade control panel
- 4.6 Integration of data, status and alarm signals into the existing SCADA system

Deliverables: 4.6 Annual reporting data from the SCADA/Automated Meter Installation water management reports (reports can be calculated for quarterly data if requested).

#### Task 5: Project Management/Monitoring

- 5.1 Inspection services will be performed by STPUD engineering staff, however, the communications consultant will also be contracted during the project implementation period to provide assistance when needed. The Consultant will provide the following services: attend the mandatory pre-bid meeting, provide as-needed support to the District to address questions and develop any necessary addenda during the bid period (the District intends to bid the project on the District's Planet Bids online bidding system), provide as-needed support to the District during construction to respond to Requests for Information and to address unanticipated conditions, provide as-needed support to the District during construction to review contractor submittals, compile As-Built project drawings at the completion of construction.
- 5.2 STPUD Engineering staff will provide project management services to include oversight of the construction contractor and the communications consultant; review of all bidding documents to ensure compliance with federal regulations; payroll evaluation and consistency with appropriate DOL requirements; processing of pay estimates, process final project certification, etc.

Deliverables: 5.1 Daily inspection reports; 5.2 pay estimates; 5.2 engineer final project certification

#### PROJECT TIMELINE:

The estimated length of time to complete this project is 16 months with a start date of January 1, 2019 and a completion date of April 30, 2020. The schedule includes time for the development of as-built plans and to complete a final report on the project. A full schedule with tasks and deliverable dates is included in the Evaluation Criteria section of this application.

## Evaluation Criteria

### South Tahoe Public Utility District Pressure Reducing Valve SCADA Improvements

#### **Evaluation Criterion A—Project Benefits**

- Expected benefits of the Project include: improving the reliability of the water supply delivery system by providing “real-time” alarms to notify the District of excessive water hammer and pressure loss in the system, improving notification and response times as well as increasing water savings by helping to regulate water flow.
- The proposed project will improve overall water supply reliability by helping the District to collect zone pressure and flow data that is then used to calibrate the STPUD water model, which is the primary tool used by the District to identify and prioritize capital projects to improve system reliability. By allowing the District to track water production into system zones on a “real-time” basis, the District will be better able to identify and correct sources of unaccounted water.
- The proposed project will have a positive impact on a water zone within the District’s system and will provide additional information helpful for the planning and implementation of similar projects in the District’s remaining “blind” pressure zones. Additionally, each PRV brought on line allows more control within each of the District’s water pressure zones, saving both water and energy through more efficient water system operations.
- Although this project is a stand-alone project, STPUD is already engaged in collaboration and information sharing among water managers in the region and acts as the lead agency for two vital workgroups: Tahoe Valley South Groundwater Sustainability Partnership (STPUD is the Groundwater Sustainability Agency as identified by the California Department of Water Resources); and the Tahoe Sierra Integrated Regional Water Management Planning partnership. Through these two partnerships, STPUD engages with other water agencies, regulatory agencies, non-profit agencies, community stakeholders, and tribal representatives within the region. As described above, this project is part of a water delivery system communication update program to provide more accurate water delivery loss data that can be brought to the stakeholders when evaluating projects for implementation within the region.
- All water delivery system increases in efficiency result in a water and energy savings for the water consumer. This project is a part of a system-wide water delivery system communication upgrade that is expected to result in increased efficiency, less water use, and less energy use. All local sectors and economies would benefit.

#### **Evaluation Criterion B—Planning Efforts Supporting the Project**

- This project implements a solution to a problem identified by several different planning efforts. The first is the SCADA Steering Committee and the SCADA Executive Committee, established in 2014. The committees were tasked with developing an integrated plan for standardizing and prioritizing upgrades to system instrumentation, remote control and data collection capabilities across the District’s service areas. The committees have to date prepared (1) a technical memorandum identifying the District’s priorities for SCADA system improvements, and (2) a catalog of existing functionality available at each ancillary water and sewer station. In the Technical Memorandum, communication has been identified as a critical path item for implementing SCADA operational and data collection improvements. Second priority functions of the STPUD SCADA system, as identified by the Committee, are: (1) to provide remote control of equipment and (2) to collect data for system optimization, asset management and design (page 2 of the October 2014 technical memorandum). In the same Memorandum, the committee identifies the following project: “5. Pressure and Flow Measurement for Water System Subzones: The District operates 17 subzones within the water system that are blind to SCADA because they are fed solely by un-instrumented pressure reducing valves (PRVs). The committee recommends that the District add pressure and flow instruments (with related alarms and data acquisition) at these PRVs to improve reliability of water delivery, to inform the maintenance of the PRVs and to provide data for tracking water usage within these zones.” Another planning document that addresses the need for better water data is the Water System Optimization Plan, completed by West Yost and Associates and Kennedy Jenks Consultants in July 2016. In the Executive Summary for this document, on page ES-22, PRV Replacements and Reliability

Improvements are listed as a High Priority Project. (This document is available for review at [www.stpud.us](http://www.stpud.us))

- The proposed Project has been determined a priority in existing planning efforts as part of an overall system-wide upgrade in water delivery communications. The first component of the system-wide upgrade involved the installation of advanced metering infrastructure (AMI), which the District completed in 2018. The AMI allows real-time access to water use data being supplied through a water meter installation project, of which the District has completed three of five phases (phase five will be completed by 2020). Together, the AMI and the water meters will provide a complete synopsis of the consumption side of the water use equation. The proposed Project will provide the District with data on the production side of the water use equation, which will be combined with its customer data to build a complete outline of how much water is being produced by the District, used by its customers, and ultimately forfeited to leaks in the system.

**Evaluation Criterion C—Project Implementation**

- Describe the implementation plan for the proposed project:

**PROJECT TIMELINE (\*Deliverables)**

TASK	SUB- TASK	TASK/DELIVERABLE	Start Date	End Date
1.0		PROJECT ADMINISTRATION		
	1.1	*Contract/Grant agreement	1/01/2019	4/30/2020
	1.2	*Progress Reports/Invoices	Ongoing	
	1.3	*Draft/Final Reports	1/01/2020	4/30/2020
2.0		PROJECT DESIGN		
	2.1	Complete *Design plans; contractor bid documents	3/1/2019	4/15/2019
3.0		ENVIRONMENTAL COMPLIANCE		
	3.1	Complete and File CEQA; NEPA Compliance *Deliverables: CEQA NOE and environmental documents	10/1/2018	12/31/2018
4.0		PROJECT IMPLEMENTATION		
	4.1	Installation of new vault	5/1/2019	7/1/2019
	4.2	Installation of new PRV and piping	5/1/2019	7/1/2019
	4.3	Installation of pressure transmitters	5/1/2019	8/30/2019
	4.4	Installation of valve controller	7/1/2019	8/30/2019
	4.5	Installation of hydroelectric generator	7/1/2019	8/30/2019
	4.6	Installation of cellular modem	7/1/2019	8/30/2019
	4.7	Installation of above-grade control panel	9/1/2019	10/15/2019
5.0		PROJECT MANAGEMENT/Monitoring		
	5.1	Inspection Services *Deliverable: Daily inspection logs	5/1/2019	10/30/2019
	5.2	Project Management/STPUD Staff *Deliverables: Pay estimates and final project engineering certification	1/1/2019	4/30/2020

- Permits: Because the proposed project will not affect the capacity of the District system, the District will seek a Categorical Exemption/Categorical Exclusion for this project. Because the proposed project involves only minimal ground disturbance under existing pavement or compacted road shoulder, it 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.

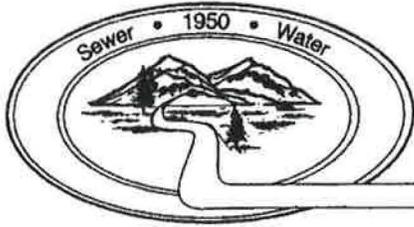
- The consultant on the proposed Project will provide the District with field assessments, design details, bid documents, and project management in support of the efficiency upgrades at the Pioneer Trail/Marshall PRV Station.
- There are no new policies or administrative actions required to implement this project. However, STPUD Board of Directors has approved not only the opportunity to apply for funding for the project, but the implementation of the project as well.
- The District used the Reclamation recommended 2% for the environmental compliance estimate. These costs have been discussed with the local Reclamation office.

***Evaluation Criterion D—Nexus to Reclamation***

- The applicant does not receive Reclamation Project water nor is the Project on Reclamation lands or utilize any facilities; however the Project is in the same basin as a Reclamation activity (Newlands Project) and has a direct bearing on lake levels via water pulled from the South Tahoe aquifer/watershed.

***Evaluation Criterion E—Department of the Interior Priorities (this project meets the following priorities):*** **1a.** The District is working towards water efficiency improvements at six of its existing drinking water production and distribution facilities. To most effectively complete these objectives the District has employed Carollo Engineers, Inc. to conduct studies and produce strategy and design recommendations for the Project. A “Communications Study Report” provides

recommendations for system infrastructure improvements that are needed to support future supervisory control and data acquisition (SCADA) operational and data collection improvements aimed at meeting these goals. This report relied on current “best management practices” to design water efficiency improvements that would help the District to manage water resources with the ultimate goal of preserving the groundwater resources to adapt to future changes in the environment, especially drought events. **1b.** Land use and planning within the Tahoe Region is unique because a large part of the District’s service area is made up of publically-owned vacant lands. These parcels are considered unavailable for future development. The future land use for the District’s service area is limited by Tahoe Regional Planning Agency (TRPA), and much of the development will be infill and re-development. **2a.** Energy savings will be realized through the implementation of this Project. By giving the District an opportunity to manage and regulate water production at optimum levels, energy savings will be realized. As water and sewer providers have among the highest energy usages in the country, a project that helps to minimize energy usage helps to ensure the grid is not overburdened and remains stable to meet community needs. **3a.** The District has been instrumental in implementing Integrated Regional Water Management (IRWM) in the Lake Tahoe area and will continue to address the following issues with stakeholders (comprised of public agencies, water purveyors, non-profit environmental groups, and other interested stakeholders from Alpine, El Dorado, Placer, Nevada and Sierra County): Water supply reliability, water conservation, water quality improvement, stormwater management, flood management, invasive species abatement, contamination cleanup, wetlands enhancements and protections, environmental and habitat improvements and protections. **3b.** The District has long been a leader in providing opportunities for communication among governmental agencies, water authorities, tribes and local communities. Currently, there are three partnerships in which the District serves as lead that foster expanding communication among these groups: Groundwater Sustainability Agency for the Tahoe South groundwater basin, Tahoe Sierra Integrated Regional Water Management partnership, and the Tahoe Water for Fire Suppression Partnership (bi-state fire prevention). These three partnerships have extensive memberships that allow for interaction, integration and communication outreach for water resources.



# South Tahoe Public Utility District

General Manager  
Richard H. Solbrig

Directors  
Chris Cefalu  
James R. Jones  
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## **Funding Plan and Letter of Commitment** South Tahoe Public Utility District Pressure Reducing Valve SCADA Upgrades

July 31, 2018

Bureau of Reclamation  
Acquisition Operations Attn:  
Irene M. Hoiby  
Mail Code: 84-27852  
P.O. Box 25007  
Denver, CO 80225

Please accept this funding plan and letter of commitment on behalf of South Tahoe Public Utility District for the proposed project:

1. STPUD will contribute the match of \$229,600 towards the Bureau of Reclamation funding request of \$75,000. The District will be contributing \$229,600 from the Capital Reserve Funds in the form of reimbursements to the contractor approved for the implementation of this project. There are no other federal funds being requested for this project.
2. The funding proposed will be available January 2019.
3. There are no time constraints on the availability of these funds.
4. The request for funding is less than \$300,000.

This letter of commitment is for \$235,000 and there are no other contingencies associated with the funding commitment.

Sincerely,

Paul Hughes  
Chief Financial Officer

**Budget Proposal/STPUD  
Pressure Reducing Valve SCADA Improvements Project**

BUDGET ITEM DESCRIPTION	COMPUTATION			Recipient Funding	Reclamation Funding	Total Cost
	\$/Unit	Unit	Quantity			
<b>ADMINISTRATIVE TOTAL:</b>				\$ -	\$ -	\$ -
<b>ARCHITECTURAL &amp; ENGINEERING FEES TOTAL:</b>				\$ -	\$ -	\$ -
<b>CONTRACTUAL FEES TOTAL:</b>				\$ -	\$ -	\$ -
<b>PROJECT INSPECTION FEES TOTAL:</b>				\$ -	\$ -	\$ -
<b>ADMIN, CONTRACTUAL, and INSPECTION FEES TOTAL:</b>				\$ -	\$ -	\$ -
<b>CONSTRUCTION (Project will be bid to lowest responsive bidder)</b>	Contractual					
Mobilization and Demobilization	\$ 30,000.00	each	1	\$ 30,000		\$ 30,000
Erosion Control	\$ 1,500.00	each	1	\$ 1,500		\$ 1,500
Groundwater Dewatering	\$ 2,000.00	each	1	\$ 2,000		\$ 2,000
Sheeting, Shoring, and Bracing	\$ 1,500.00	each	1	\$ 1,500		\$ 1,500
Traffic Control	\$ 1,500.00	each	1	\$ 1,500		\$ 1,500
Site Survey	\$ 2,000.00	each	1	\$ 2,000		\$ 2,000
Vault Structure Purchase and Installation	\$ 40,000	each	1	\$ -	\$ 40,000	\$ 40,000
8" PRV	\$ 33,500	each	1	\$ -	\$ 33,500	\$ 33,500
2.5" PRV	\$ 28,000	each	1	\$ 28,000		\$ 28,000
8" Isolation Valve	\$ 1,600.00	each	2	\$ 3,200		\$ 3,200
2.5" Isolation Valve	\$ 1,500.00	each	2	\$ 3,000		\$ 3,000
Internal PRV Piping	\$ 5,000	each	1	\$ 5,000		\$ 5,000
Pipe Stands	\$ 1,000	each	1	\$ 1,000		\$ 1,000
Electrical and Instrumentation Trenches	\$ 125	LF	20	\$ 2,500		\$ 2,500
8" Water Main Installation	\$ 300	LF	200	\$ 60,000		\$ 60,000
4" Patch Paving over Vault Structure and V	\$ 20	SF	1,000	\$ 20,000		\$ 20,000
Control Panel	\$ 38,200	each	1	\$ 38,200		\$ 38,200
Valve Controller	\$ 5,000	each	1	\$ 5,000		\$ 5,000
Pressure Gauges	\$ 500	each	2	\$ 1,000		\$ 1,000
Communication Installation	\$ 20,000	each	1	\$ 20,000		\$ 20,000
Hydrogeneration Unit	\$ 4,200	each	1	\$ 4,200		\$ 4,200
<b>CONSTRUCTION TOTAL:</b>				\$ 229,600	\$ 73,500	\$ 303,100
<b>ENVIRONMENTAL AND REGULATORY COMPLIANCE</b>	Approximately 2% of Total Grant Funded Project Cost			\$ -	\$ 1,500	\$ 1,500
<b>TOTAL PROJECT COSTS</b>				\$ 229,600	\$ 75,000	\$ 304,600

Table 2. Summary of non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
1. Non-Federal Entities	
STPUD Capital Improvement Funds/General Revenue	\$ 229,600
Non-Federal Subtotal:	\$ 229,600
2. Other Federal Entities	\$ 0
No other federal entities	\$ 0
Other Federal Subtotal:	\$ 0
3. Requested Reclamation Funding:	\$ 75,000
<b>Total Project Funding:</b>	\$ 304,600

## Budget Narrative

### South Tahoe Public Utility District Pressure Reducing Valve SCADA Upgrades

1. **PERSONNEL:** There are no personnel costs utilized in this budget.
2. **FRINGE BENEFITS:** There are no fringe benefit costs utilized in this budget.
3. **TRAVEL:** There is no travel budget for this project.
4. **EQUIPMENT:** Equipment will be purchased for this project under the construction contract.
5. **SUPPLIES:** Supplies will be purchased for this project under the construction contract.
6. **CONTRACTUAL:** There are no contractual costs utilized in this budget.
7. **CONSTRUCTION:** This project will be bid out to a contractor and includes the installation of the following: (All costs have been deemed reasonable and justified by performing evaluations and comparisons of like programs at other water agencies throughout California, as well as suppliers' quotes and previous purchases.)
  - Mobilization and demobilization for the project, \$30,000: includes all activities and associated costs for transportation of Contractor's personnel, equipment, and operating supplies to and from the project site including disassembly, removal and site clean up
  - Erosion control measures, \$1,500: all activities associated with protecting the soil surface within the project site and controlling runoff before it develops into an erosive force
  - Groundwater dewatering at the project site, \$2,000: removal and subsequent disposal of water from solid substrate at the project site as it is encountered during construction activities
  - Sheet piling, shoring, and bracing, \$1,500: purchase and installation of an excavation support system in the trench where the vault will be installed; a series of sheet pile, beams, and plates will be utilized to retain the earthen walls around the pit
  - Traffic control, \$1,500: altering traffic patterns and signage to accommodate construction activities in the project area
  - Site survey, \$2,000: visual inspection of the project area which will enable the Contractor to gather information to begin construction activities
  - Vault structure purchase and installation, \$40,000: purchase and sub-surface installation of the concrete vault structure which will house all of the instrumentation at the project site
  - 8" pressure reducing valve, \$33,500: purchase and installation of a valve used to reduce inlet pressure to a lower constant downstream pressure
  - 2.5" pressure reducing valve, \$28,000: purchase and installation of a valve used to reduce inlet pressure to a lower constant downstream pressure
  - 8" isolation valve, \$1,600: purchase and installation of this valve which functions to stop the flow of water into the pipe it is connected to
  - 2.5" isolation valve, \$1,500: purchase and installation of this valve which functions to stop the flow of water into the pipe it is connected to
  - Internal PRV piping, \$5,000: purchase and installation of piping materials for the PRV
  - Pipe stand, \$1,000: purchase of the stand used to support the main pipe during installation
  - Electrical and instrumentation trenches, \$125/LF: excavation of the trench which will be used to house the vault
  - 8" water main installation, \$300/LF: installation of the water main pipe into the PRV and connection lines
  - 4" patch paving, \$20/SF: complete process of asphalt installation over water main and vault structure
  - Control panel, \$38,200: purchase /and installation of the mechanism required to operate the PRV
  - Valve controller, \$5,000: purchase/ installation of the valve which controls the amount of water flowing into the PRV
  - Pressure gauges, \$500/each: purchase/installation of the pressure gauges for each PRV installed during the project
  - Communication installation, \$20,000: integration of data, status, and alarm signals into the SCADA system
  - Hydrogeneration unit, \$4,200: purchase and installation of off-the-grid power supply and storage
8. **OTHER:** There are no other budget items for this project.

*Environmental and Regulatory Compliance:* Based on the recommendation of the Bureau of Reclamation, we have allocated approximately 2% of the total grant funded project costs to cover Environmental and Regulatory Compliance. This budget total is \$1,500. In addition, a large percentage of the environmental compliance for this project was completed on a current PRV project funded by the BOR.

## Description of Potential Environmental Impacts

### South Tahoe Public Utility District Pressure Reducing Valve SCADA Upgrades

South Tahoe Public Utility District will file a CEQA Notice of Exemption for this project. As the implementation of the project is fully on STPUD owned parcels, and includes little or no alteration to land, it is deemed to have an exempt status.

1) *Will the project impact the surrounding environment?* All work is proposed to STPUD infrastructure sites and is the installation of digital flow meters and other communication equipment. There is a slight soil disturbance expected for this project and on impact to the surrounding environment. However, although no impacts are expected, STPUD also follows very stringent Tahoe Regional Planning Agency construction mandates that are designed to minimize any environmental impacts.

2) *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?* No threatened or endangered species or designated critical habitat will be affected by any activities associated with the proposed project, but to ensure this, the project will be evaluated for compliance with the National Environmental Protection Act (NEPA) and the California Environmental Quality Act (CEQA). The work requires no ground disturbance, and will be performed under a Categorical Exclusion /Categorical Exemption. The District will perform a biological and cultural resources assessment and complete an environmental checklist in support of the finding that the project is exempt. The NEPA/CEQA filing will occur in advance of project bidding in September 2017. No other project permits are required.

3) *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 project may have.* There are no wetlands and surface waters inside the project boundaries that fall under the CWA jurisdiction as “waters of the United States”, as this project will be implemented on previously disturbed STPUD infrastructure sites.

4) *When was the water delivery system constructed?* 1950 for original water delivery system.

5) *Will the 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.* There are no proposed modifications to irrigation systems that consist of headgates, canals, flumes, etc. The only modifications are the installation of meters, antennas and pressure gauges at existing STPUD infrastructure sites.

6) *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?* There are no buildings, structures or features in the water district that are listed or eligible for listing on the National Register of Historic Places.

7) *Are there any known archeological sites in the proposed project area?* No, but as part of the environmental checklist process under NEPA, a full cultural resources assessment has been conducted for this project area.

8) *Will the project have a disproportionately high and adverse effect on low income or minority populations?* No, the project would have a beneficial effect on disadvantaged populations by helping to reduce water production and lowered energy costs of water production.

9) *Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?* No, project proposed is on municipal properties only.

(10) *Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?* No, there is no landscaping proposed in this project.

**Required Permits or Approvals**  
South Tahoe Public Utility District  
Pressure Reducing Valve SCADA Upgrades

The project will require compliance with the National Environmental Protection Act (NEPA) and the California Environmental Quality Act (CEQA). The work requires minimal ground disturbance, and will be performed under a Categorical Exclusion / Categorical Exemption. The District has performed a biological and cultural resources assessment and completed an environmental checklist in support of the finding that the project is exempt. The NEPA/CEQA filing will occur in advance of project bidding in February 2019. Construction will occur under Tahoe Regional Planning Agency environmental mandates and no other project permits are required.



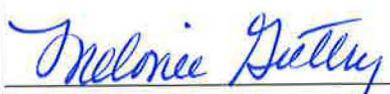
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Randy Vogelgesang, Board President  
South Tahoe Public Utility District

ATTEST:



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Melonie Guttry, Clerk of the Board  
South Tahoe Public Utility District