11/10/2015 21:57:51
CCWD Ebbetts Pass Service Area Automatic Meter Reading Infrastructure Retrofit Pilot Project
Calaveras County Water District - Member
Peter Martin, Water Resources Program Manager,
(209) 754-3094 peterm@ccwd.org
Calaveras County,
Avery to Arnold and vicinity
Stanislaus
Yes
No
"Calaveras County Water District (CCWD) intends to outfit all of its Ebbetts Pass service area with automatic meters and associated infrastructure to establish a piloted program for automatic metering. Automatic Meter Reading (AMR) provides water meter readings remotely, transferring data to a preferred billing system, and can provide useful instantaneous system data to meet the needs of the CCWD for optimization of operations. The project would serve as a first phase launch of planned retrofits districtwide for automatic meters that could serve as a model for other water districts, including those regional partners participating in CalaverasConserves, to meet future water conservation targets, provide better system metrics, and reduce system losses and unaccounted-for water. The project would also lead to reduced safety risks to CCWD staff by reducing manual meter reads, lowered greenhouse gas emissions emitted by CCWD vehicles on routes, and reduced overall operational costs.

The uneven terrain, winter climate, and remote access for many of the meters in CCWD's Ebbetts Pass Service Area have made routine meter reading for staff extremely difficult and sometimes impossible in winter conditions. In one year, staff were unable to access a large portion of the service area for more than six months due to heavy snow conditions. Customers were billed a flat rate and billed for consumption in arrears six months later in the interim. During this time frame, operations and customer billing staff were unable to obtain crucial reads that would have notified operations staff of delivery system breaks or leaks, or given customers knowledge of leaks on their property. CCWD is unable to generate necessary system information during these common long-term weather events that provide evidence to diagnose system losses. This could lead to significant loss of water and even worse, devastating effects to property and infrastructure in the service area.

With the implementation of AMR, CCWD would likely move from bi-monthly billing cycles back to monthly billing cycles due to ease of meter reads. This would empower a customer to actively address their consumptive use and reduce their bills. It also would give them access to more accurate information to address leaks in the home resulting in enhanced conservation in the district. Currently, with traditional water meters, conservation is more or less a guessing game as they await their bi-monthly bill detailing usage.

Lastly, the project would address concerns with disadvantaged households and the ""Human Right to Water"" for our region. Currently, when homeowners fall behind on their bills CCWD staff must go out and manually shut down their service, essentially turning off all water service

to the household. Many manufacturers offer remotely triggered ""flow reduction"" features. If a customer falls behind on their payment to the district, CCWD could remotely trigger a reduced flow to their household to meet the sanitary and health needs. A toilet could continue to be flushed and drinking water could be obtained to ensure health and human safety, but flow would be restricted such that appliances would not work properly and outdoor watering would be impractical or futile.

" Water Supply, Energy Produced/Saved and Greenhouse Gases Avoided "Several case studies throughout California and the US show that a target of 5-10% percent water conservation savings for the service area would be easily realized. Staff would have better access to more timely meter reads to diagnose system leaks. Better system optimization and better customer data empowers home and business owners to make informed conservation decisions that matches their budgetary constraints.

Using 2013 as a baseline, CCWD customers in the Ebbetts Pass service area used a total of 1835 Acre-feet (AF). With the estimate of 5-10% savings, CCWD should expect a total savings of 92-184 AF alone. This does not include the enhancements to leak detection in the system, which would also reduce total water produced at Hunter's treatment plant. CCWD would need to track production vs. water sales to establish this anticipated savings over the life of the project." The amount of greenhouse gas emissions saved from CCWD employees driving to individual meters throughout the system would be significant. Unfortunately, CCWD staff have not had the time to properly assess anticipated energy savings at the time of this submission deadline. Staff will evaluate the anticipated overall emissions saved by reduced driving time before the projects are scored. Improve water supply sources and/or distribution within DAC and urban areas that have declining water quantity/quality or other water system reliability issues (e.g. fire- flow, contamination, etc.), Reduce the negative impacts of storm water, urban runoff, and nuisance water., Improve infrastructure: to meet wastewater discharge or disposal requirements and deliver drinking water that meets drinking water standards and customer expectations., Improve watershed health in support of increased water yield and ecosystem function., Improve energy efficiency and reliability of surface water conveyance systems., Increase current and future water use efficiency (WUE) by both municipal (residential and commercial) and agricultural end users., Develop sufficient reliable and affordable water supplies to meet regional demands of existing and projected water supply needs under a multiyear drought now and into the future. Includes Regional Projects/Programs., Integrate water management within hydrologic region., Contribute to attainment or one or more objectives to CALFED., Address critical water supply/quality needs of DAC. Yes Assessment of vulnerabilities as a result of climate change., Adaptation to climate change., Reduction of greenhouse gas emissions., Reduce energy consumption. Yes Projects that increase the participation of small and disadvantaged communities in the IRWM process, including DAC capacity to identify, develop, and design projects critical to their communities., Develop multi-benefit projects with consideration of affected disadvantaged communities and vulnerable populations., Projects that

address safe drinking water and wastewater treatment needs of DAC’s. Water supply The project would allow the District to better protect the water resources of the Stanislaus River and the Highway 4 corridor in Calaveras County. This project would provide valuable feedback and information that could be integrated with the T-Stan Conservation Grant Program and Calaveras Conserves efforts regionwide. Addittionally, CCWD is in the initial phases of significant infrastructure improvements and pipeline replacement in this service area. This would work hand in hand with CCWD's own policies and goals to achieve systemwide efficiencies in water delivery. Staff have been provided consultant proposals and technical details on the project in the past. They are a few years old and would likely need to be revisited to ensure best available technology for the intended service are is used while providing the best value for ratepayers. CCWD's 2010 Urban Water Management Plan, CCWD's Water Infrastructure Master Plan Since the meters would be replacement or retrofit of existing meters and infrastructure, the project would likely be a categorical exemption or negative declaration. However, CCWD would analyze the need for CEQA permits to ensure all regulatory and permitting requirements are met. CCWD would need to obtain the Board of Director's approval to proceed with the implementation of the project and receipt of grant funds.

"CCWD staff would act in a program management role along with a selected consultant who would complete the physical work. CCWD would have to evaluate how much of the actual work could be done by field staff at a later time. The meters and associated infrastructure are ""off the shelf"" technology that could be implemented within a short timeframe with little to no interruption in service." "1) A preliminary estimate from a consultant has place meter installation and system integration at about $120 per meter. With a current customer count in this service area of 5,782 that would be about $694,000.

2) Additional communication network integration and infrastructure, in addition to billing software upgrades are estimated at $100,000.

3) Upgrades and integration for CCWD staff handheld meter reading devices are estimated at $50,000

4) Additional anticipated troubleshooting and training of billing staff is estimated at $20,000

1) $694,000
2) $100,000
3) $ 50,000
4) $ 20,000
Total = $864,000" "CCWD proposes to provide a 25% cost match for this project, but could provide up 50% cost match depending upon the requirements for Proposition 1 funds. The funds have already been set aside in a ""meter replacement fund"" for the district." "The project would likely need to be implemented during periods where inclement weather is not a factor.

CCWD could begin conceptual planning for the project in Spring/Summer of 2016 depending on the timing of a grant award. Any necessary planning, permitting and design would take 6

months and could be concurrent with inital conceptual efforts. Kickoff of the project could start as early as Spring 2017 with an anticipated implementation/Construction timeframe of 2-3 years depending on aggressiveness of schedule of meter replacement." "This project would be ""soup to nuts"" from planning to full construction/implementation."CCWD will engage potential suppliers of meters in the interim and refine a best cost and benefit analysis prior to a grant award or application.