Yuba IRWMP NYWD-08

Project Solicitation Form[1]

Please fill out the following information to the best of your ability/knowledge. Once the project has been received and a preliminary review completed, the project team will work with you to develop additional information.

Project Sponsor Contact Information

Lead Agency/Organization	North Yuba Water District
Name of Primary Contact(s)	Jeff Maupin, General Manager
Mailing Address	Po Box 299 Brownsville, Ca. 95919
Email Address	jmaupin@nywd.org
Phone (###) ###-####	(530) 675-2567
Project Partners/Collaborators	

General Project Information

Project Title	Domestic Meter Replacement (ARM)
Project Total Budget, based on current knowledge	3,000,000.00
Project Funding Match, if any	0 % Severely Disadvantaged Community (SDAC)
Total Project Funding Request	$3,000,000.00
Can a detailed cost estimate be provided upon request?	Yes
Project Location (map if available)	
City/Community	Brownsville, Challenge, Forbestown, Rackerby - Yuba/Butte
Watershed/subwatershed	
Groundwater Basin	
Project Type (highlight in gray all that apply)	Conceptual Feasibility Study Study/Assessment Planning Engineering/Design Permitting CEQA/NEPA Facility Construction Restoration Monitoring Best Management Practices Acquisition Demonstration/Pilot Project

[1] Completed Project Solicitation Forms should be sent via email to Katie Burdick at admin@burdico.net

Project Description

Write a narrative briefly describing the project components and/or characteristics (maximum of 300 words).

Replace 792 residential water meters, with drive-by read ability, radio's, and computer software. Also requested are Transmission Pipeline meters to help detect pipeline, mainline leaks. A Draft CRWA analysis is being prepared to support the implementation of this program.

I. Project Rationale/Issues Statement

Briefly describe the need for the project and the desired outcomes/deliverables (maximum of 200 words).

NYWD loses approximately 50% of its treated water due a combination of leaky tanks, leaking distribution lines, and old outdated and worn-out meters. Meters range in age from 50 to 2 years. More than half of the meters are more than 30 yrs old.

The Transmission meters will help to recognize main line breaks, or continuous slow mainline leaks. The repair of these leaks will conserve water and ensure highly increased system efficiency.

This project also addresses reducing greenhouse gas emissions by reducing the days needed to complete meter reads by at least 3 days of a vehicle idling for 7 hours each day. Drive-by meters should reduce read time from 4 days to 1. Additionally, water savings will reduce the need to treat such large volumes of water thereby further reducing energy use/greenhouse gas generation.

C.2 – Replacement Meters

Technology has advanced from manually reading meters, to automatic meter reading (AMR), and recently to advanced metering infrastructure (AMI). NYWD manually reads outdated water meters. This is an expensive process in terms of labor costs and under reporting water usage.

AMR systems are a step up from manually reading, by having the meters send a signal that can be received by walk-by, drive-by, or fixed network devices. The electronic data can then be linked to billing and maintenance records. This is a time saving one-way communication from the meter on a time interval consistent with reading and billing cycles.

AMI meters allow two-way communication from the meters to receiving systems usually over a fixed radio network or wireless cellular communication systems. AMI systems can retrieve data nearly continuously, typically every hour, and data management systems provide user interfaces to easily evaluate water usage. These systems can identify leaks almost immediately and can provide notifications to system operators.

There is a need to monitor lower flow rates to identify leaks in addition to typical water use. More accurate flow meters are migrating from conventional positive displacement technologies to ultrasonic and electromagnetic meters for water service connections. Currently, the top manufactures include: Badger, Neptune, Sensus, Master Meter, and Kamstrup.

Walk- and Drive-by AMR systems could be easily deployed at NYWD, while AMI systems would require a communications system in the remote, rural, mountainous terrain. A propagation study was performed and it determined that an AMI system at NYWD is not currently viable. Given the advantages of AMI systems and anticipated advances in technology, it is expected that an AMI system will be a viable option sometime in the near future. As such, if a communication network is not affordably available, then a drive-by AMR system should be evaluated with respect to its compatibility to be upgraded to an AMI system.

It is recommended that NYWD issue a Request for Proposal (RFP) to qualified AMR/AMI water meter manufacturers based on the results of the propagation study. A draft RFP has been developed and is included for NYWD's consideration (Appendix C). The RFP requests manufacturers to supply water meters with the following capabilities:

- 8 Digit Low Flow Resolution
- 1 Hour Read and Data Collection Interval
- Reprogrammable Registers
- Register Replacement without Shutdown
- Communication to Desired System
- Data Logging and Management Interface
- Battery Powered
- Low Battery Alerts
- Leak Alerts
- Tamper Alerts
- Flow Rate Display
- Billing Reads and Software Compatibility

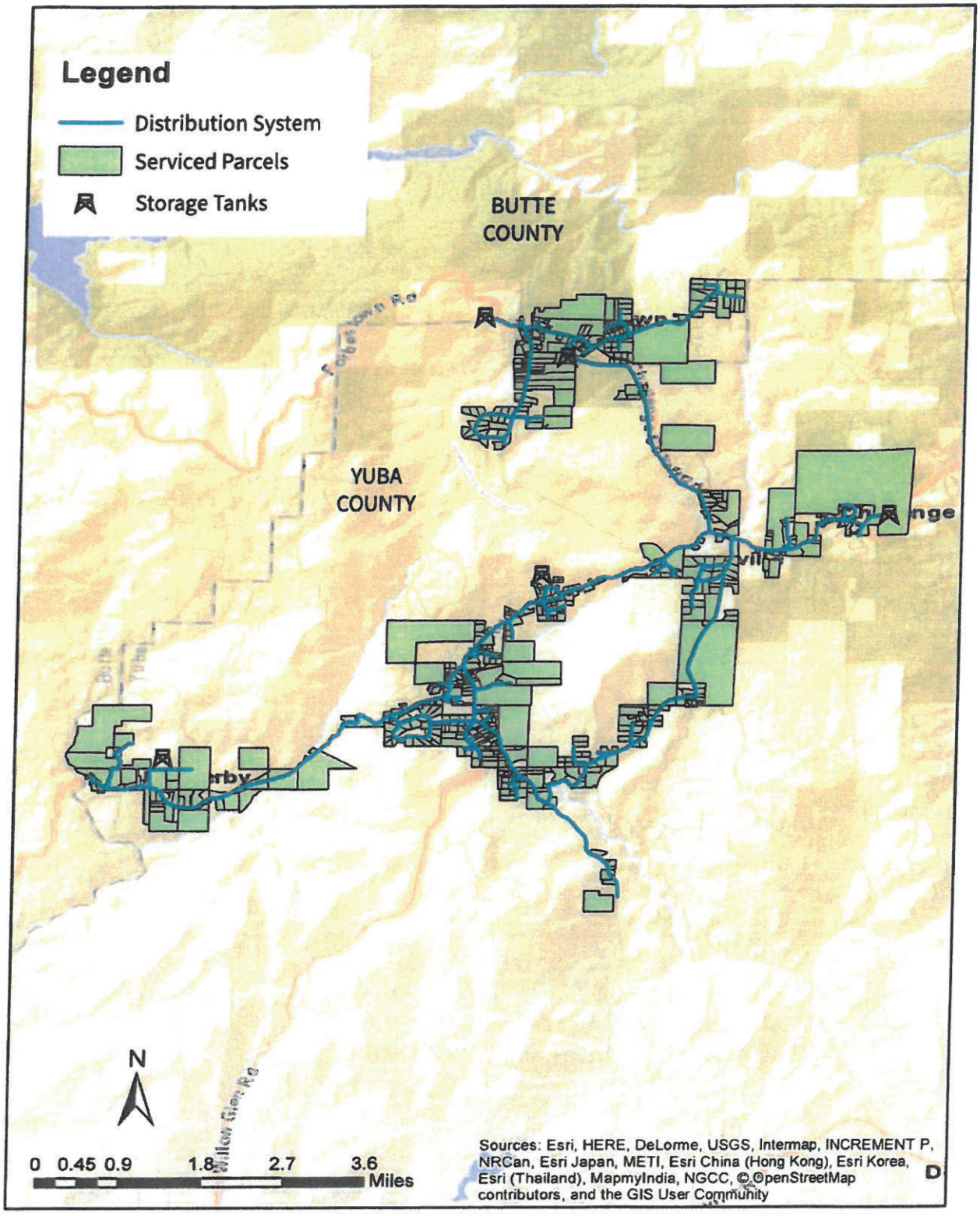
For planning purposes, it is anticipated that NYWD will need 792 new residential water meters with new meter boxes (utility vaults). It is also expected that ten transmission main meters will be installed to evaluate potentially leaking pipelines.

The estimated budget for a new meter program is:

Table 10: Meter Replacement Program

Item	Unit	Qty	Unit Cost	Total Cost
New Residential Meters w/ Box	ea.	792	$2,000	$1,584,000
Transmission Pipeline Meters	ea.	10	$50,000	$500,000
Land Acquisition (possible easements)	ea.	10	$10,000	$100,000
Subtotal				$2,184,000
Engineering and Construction Management			15%	$328,000
Legal and Administrative Fees			10%	$219,000
Contingencies			20%	$437,000
			Total Budget	**$3,168,000**

The environmental impacts of the meter replacement program are considered minimal because the program primarily replaces existing facilities or installs new facilities in conjunction with existing water pipelines and appurtenant facilities.



California Rural Water Association

NYWD SERVICED PARCELS

FIGURE A-2 / A-2

PREPARED FOR: NORTH YUBA WATER DISTRICT | DATE SUBMITTED: MAR 2018 | TA NUMBER: 4999