

Proposition 1 Integrated Regional Water Management (IRWM) Lake of the Woods Case Study

IRWM Project Overview

Name of the Project: Water Main Replacement and Meter Installation Project

Location: Lake of the Woods Mutual Water Company

IRWM Region: Kern IRWM Group

Start Date: October 10, 2016

Completion Date: August 31, 2019

Project Budget – Total Project Cost: \$2,718,852

IRWM Funds: Proposition 84, IRWM Implementation Grant - \$1,415,500

Leveraged Funds: USDA Rural Utility Service Water and Waste Disposal Grant - 1,201,858

Lake of the Woods Mutual Water Company Contribution- \$101,494

Statement of the Problem

Lake of the Woods (LOW) is a Disadvantaged Community (DAC) located on the southwestern side of Kern County. The total population of Lake of the Woods is approximately 1053 residents. LOW Mutual Water Company (MWC) is the not-for-profit company serving approximately 401 households and businesses in that area. In 2013, at the beginning of the drought, LOW MWC's main water supply well (well #5) went dry. During the drought, LOW MWC's remaining four water supply wells drastically fell from a total supply of 300 gallons per minute to 70 gallons per minute, losing over two-thirds of its water supply within a few months. The water distribution system lost nearly 40% of its pumped water due to leaks from old waterlines; there was additional opportunity to conserve water by installing meters on water services.

Project Implementation

The project funded and installed 1,700 feet of water main and isolation valves, 397 residential meters, 4 commercial meters and 4 fire hydrants. The project design included pipeline sizing, fire flow analysis, a fire hydrant location plan and a review of the water main replacement, service line placement, and meter box locations in the rights-of-way.



New water line.



New meters.

Benefits

Water Conservation

Conservation from the water main replacement will be determined by comparing the well production water meters total, versus the customer meters. Mandatory water conservation requirements including a ban on outside watering, car washing and other restrictions, as well as fines, continues to be a system requirement. Water meters will allow users to identify water losses and in conjunction with water conservation literature from the water company help reduce water use. Water savings will also be determined by comparing the overall water use to the historical water use.

Electrical Energy Usage Savings

Electrical energy usage will be reduced due to water conservation and shorter well pumping times needed to overcome water losses through leaking water mains. LOW MWC will measure and monitor overall electrical energy savings through the annual and monthly energy usage of the water well electrical meters, in comparison with previous electrical usage.

Lessons Learned & Next Steps

Additional IRWM funding was sought and allocated to purchase the supporting infrastructure for their radio read meters. This will allow water use to be recorded, metered rates to be set and amount of water lost in the distribution system to be identified for future waterline replacement. There were delays in getting the funding contract. Infrastructure costs then increased during the project due to tariffs and a tight labor market, requiring rebidding of the project, the merge of two current grant sources and applying for additional USDA funds in 2019. During the project, the Mutual had to obtain bridge loan financing for project construction costs due to delayed payment from DWR and from the 5-week Federal government shutdown.

The next steps for LOW MWC include: 1) to identify system water use, draft and set metered water rates, and continue water conservation education 2) to identify distribution system water losses and needed waterline replacement, and 3) secure funding to replace the remaining leaking waterlines. Recommendations include faster turnaround on construction claims submitted to the state to avoid interim/bridge loan financing.