

Proposition 1 Integrated Regional Water Management (IRWM) Buttonwillow Case Study

IRWM Project Overview

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

Community: Buttonwillow County Water District

IRWM Region: Kern IRWM Group

Start Date: October 2014

Completion Date: January 29, 2019

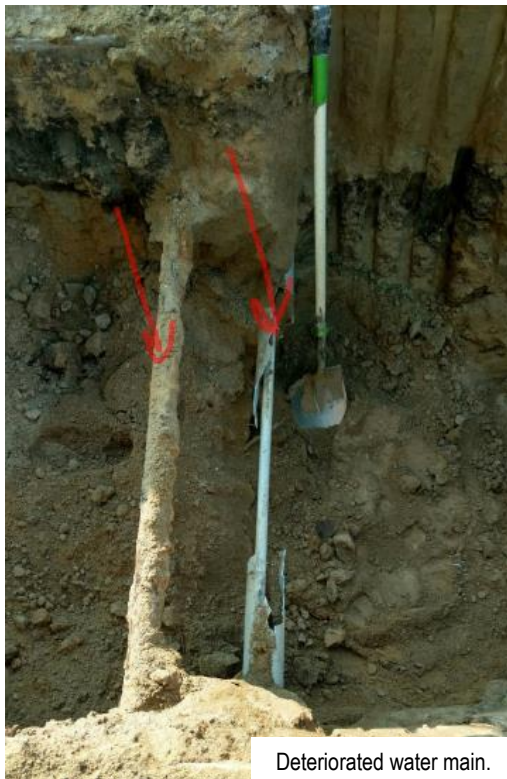
Project Budget

IRWM Funds: Proposition 84, IRWM 2014 Drought Grant - \$3,687,362

BCWD Contribution: \$227,962

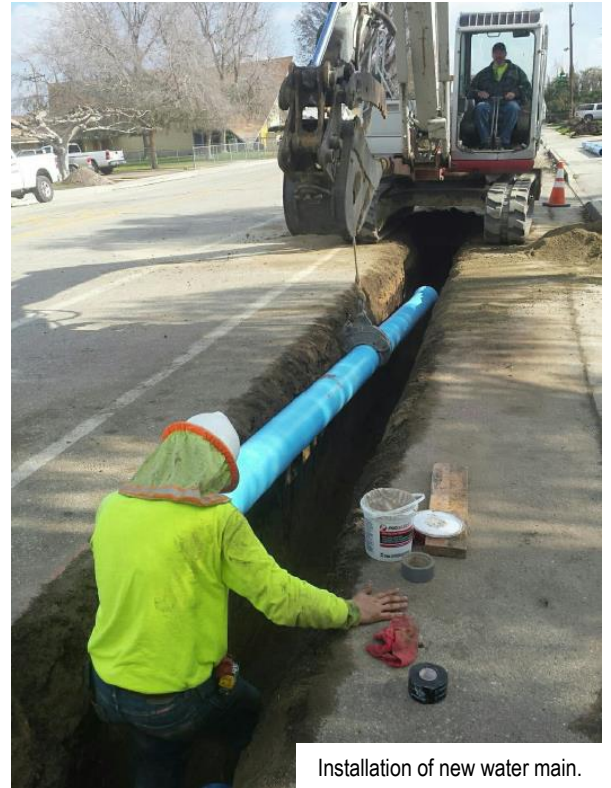
Statement of the Problem

Buttonwillow County Water District (BCWD) manages a water system located on the west side of Kern County. It supplies water to a small, farmworker Disadvantaged Community. The community has three wells and serves a population of about 1,500, with 435 connections. The BCWD had an aging and deteriorating system that was originally built in 1956 and constantly faced mainline leaks and breaks every year, which resulted in the community losing thousands of gallons of water. The water system also faced a water capacity challenge. Furthermore, the service connections throughout the system were not individually metered prior to the project, limiting BCWD's ability to encourage water conservation.



Project Implementation

The project funded and installed 2.5 miles of new 6-inch and 8-inch diameter water mains, about 270 new residential water meters, isolation valves, and approximately 25 fire hydrants in the public right-of-way either in fronting streets or in rear public alleys. Funding was later amended to add the drilling of a new 750-foot deep well with a 500 GPM pumping capacity. The well is located at the Buttonwillow Recreation site on the east side of town. Only the drilling of this well was funded through these funds; it will be equipped and connected to the water system under separate funding. The new well will ultimately replace the existing well that is nearing the end of its useful life; replacement of this well will ensure a more reliable water supply.



Installation of new water main.

Benefits

Water Conservation

Water conservation will be achieved through reduced annual groundwater pumping, since new water mains and valves will substantially reduce losses from existing water mains. Water meters will allow the BCWD to implement metered water rates, encouraging further conservation by customers.

Energy Savings and Greenhouse Gas Emission Reduction

BCWD's energy demand will decrease as less water is pumped to meet customer demand, due to addressing leaks and implementing metered water rates. Proportional to the reduction in customer usage, less wastewater will need treatment at Buttonwillow's wastewater treatment plant, further increasing energy savings.

Due to the reduced energy use, the project will reduce greenhouse gas emissions.

Water Quality Improvement and Fire Flow Protection

Additional secondary benefits of the project include increased water quality and improved fire flow protection. Replacement of leaking main lines better protects against contamination risks throughout the distribution system. This replacement also improves fire flow by making system pressure more reliable and far-reaching.

Lessons Learned & Next Steps

The project timeline changed as the project scope changed during implementation; while the project took longer to complete than anticipated, it accomplished much more than originally planned. When bids came in much lower than estimated, BCWD requested approval of an amendment that would include design and construction of a new well. This was eventually approved, but design needed to be completed for the well before it could be constructed.

The next steps for BCWD include: 1) an assessment of explanations for difference between the expected versus actual project benefits in meeting IRWM priorities as stated in the original IRWM Implementation Grant application, including quantitative metrics, if applicable, 2) provide any additional costs and/or benefits derived from the project since completion, if applicable, and 3) provide any additional information relevant to or generated by the continued operation of the project.



Project completion.