

EXISTING WATER METER REPLACEMENT

Summary

- Replacement of all water meters to eliminate 514 million gallons of water loss per year (MGY).
- Loan amount = \$750,000
- Water saving (green) portion of loan = 100%
- Annual water savings = 514 million gallons (MG)

Background

- The water system serves 800,000 people and has approximately 320,000 residential connections. Total annual water use is 51,388 million gallons or 141 millions gallons per day (MGD).
- Water meters were installed at all connections in 1982, and the manufacturer specified that the meters' useful life would be approximately 25 years. The meters were due for replacement in 2007.
- Increased water loss, due to leaks and inaccurate readings, are attributed to the old meters.¹

Results

- Based on the manufacturer's statement a 25-year-old meter is estimated to be 99% accurate (down from 99.9% at installation) and a 30-year old meter is estimated to be 82% accurate.² Therefore, the annual water loss attributed to meters is estimated at 514 million gallons (1% of annual production) and is expected to worsen over time.
- It takes 1.50 kilowatt hours (kWh) of electricity to treat 1,000 gallons of water. At a cost of 10 cents per kWh, the water loss costs the system at least \$77,000 annually from the electricity required for treatment and pumping.³
- The estimated cost of the meter replacement project is \$750,000; the project will pay for itself in less than 10 years.

Other Benefits

- Replacing the old, leaking meters will increase water efficiency by decreasing the amount of water lost and by providing more accurate water-use information to customers and the system.

Conclusion

- A savings of \$77,000 in annual electricity costs will be realized as a result of reducing water lost from malfunctioning meters by 514 MG.
- Accurate metering of water consumption is an important conservation measure because inaccurate metering provides customers with misleading information regarding water consumption. Providing more accurate water bills will send a stronger price signal to customers and will result in more efficient consumption.
- Water leakage and inaccuracy increases with water meter age; therefore, an investment in water meters today will lead to additional water and dollar savings over time. Also, the water savings from the meter replacement will extend the life of the water supply and delay capital expansion projects.

1 Water Audit Summary Report for Hypothetical Water System. Updated August 2008.

2 User's Manual for Hypothetical Brand Residential Meters. January 1982.

3 Calculations based on electricity bills and total annual water use for 2008.