

Camrosa Water District

Washing Machine Rebate Program

Camrosa Water District (CWD) provides potable, non-potable, and reclaimed water for communities in the southern portion of Ventura County, CA. The population of CWD's service area is 31,000. As of the 2000 Census, the median household income in Ventura County was \$59,666, which is higher than the statewide median of \$47,493.¹

UTILITY DEMOGRAPHICS

As of 2004, the District maintained 11,507 connections, 84% of which were residential. Of their total connections, 9,065 were single family residential, 544 were multifamily residential, 1,280 were commercial, 133 were industrial, 298 were irrigation, 108 were agricultural irrigation, and 79 consisted of fire suppression, line flushing, construction meters, and temporary meters. Camrosa Water District's total service area is 31 square miles. As of 2004, the average per capita water use for the utility as a whole was 290 gallons per capita per day (gpcd).

WASHING MACHINE REBATE

Eligible Customers:	SF
Customers Analyzed:	SF
Program Years:	March 2003 – Present
Years Analyzed:	FY 2003

UTILITY RATE STRUCTURE AND PRICES

Camrosa Water District employs an increasing block rate structure. As of February 2005, the monthly base rate for service is \$5.60 for ¾ inch meters (or \$0.19 per day), which includes zero gallons of water. Single family and multifamily residential usage charges are \$1.10 per HCF for the first 12 HCF of water and \$1.46 per HCF thereafter (\$1.47-\$1.95 per 1,000 gallons).

CURRENT CAPACITY AND WATER SOURCES

The current sources of supply for the customers and properties within CWD's service area comprise a mix of public and private sources including purchasing imported water from Calleguas Municipal Water District (CMWD), groundwater from three groundwater basins, surface water diverted from Conejo Creek, and recycled water from CWD's Water Reclamation Facility. The utility's total capacity from these sources is 46.0 million gallons per day (mgd).

FUTURE PLANS TO MEET DEMAND

The population within CWD's service area is growing at a rate of 0.9% per year. CWD plans to meet future demands through maintaining current sources, water conservation programs, water transfers, and water reuse.

WASHING MACHINE PROGRAM - DESCRIPTION

Camrosa Water District began a washing machine rebate program on March 25, 2003. They issued 93 rebates between March 25 and June 2, 2003. They have since given out 139 additional rebates. The rebate amount was \$300, paid for equally by CWD, Calleguas Municipal Water District (CMWD), and Metropolitan Water District of Southern California

¹ U.S. Census Bureau, QuickFacts.

CAMROSA WATER DISTRICT CONSERVATION PROGRAMS

1st Toilet Distribution, February 8, 1997
2nd Toilet Distribution, June 13, 1998
3rd Toilet Distribution, August 13, 1998
4th Toilet Distribution, April 26, 1999
Ongoing Toilet Distribution, 1999-present
Showerhead Giveaways, 1997-present
Home Water Survey (indoor/outdoor audits), 1994-present
Landscape Water Survey (outdoor audits), 1994-present
Protector del Agua, 1997-present
Public Education, on-going

(MWDSC). The rebate amount was reduced to \$225 for FY 2006.

The washing machines must be from a list of qualifying high efficiency washing machines on CWD's website. Qualifying machines have a water factor of 9.5 or less. Participants fill out the rebate form and return it along with the original receipt. Camrosa Water District customers were also eligible for washing machine rebates from

Southern California Edison and Southern California Gas Company. CWD advertises the program through brochures sent out in customers' water bills and on their website.

METHODOLOGY

Please see the General Methodology for the specific procedures and techniques used for all ECoBA analyses.

The analysis includes only single family households that participated in the program during fiscal year (FY) 2003. The findings refer to this period only, not to the ongoing program. The lifespan of the washing machines installed, which is used as the period of this analysis, was assumed to be twelve years.

All quantified costs and benefits have been discounted to the first year of the analysis (2003) and inflated to 2004 dollars. The discount rate used in this analysis was 4.38%. The CPI values used in this analysis were the 2004 value of 188.9 and the 2003 value of 184.0.

The population studied for this analysis was comprised of participants who received a washing machine rebate during FY 2003. There were 51 usable participants out of a total of 93. Forty-two, or 45%, of the participants were unusable because they moved during the period of analysis or there were periods of two or more months with no water use.

All CWD residential customers that were not participants in this analysis were used as the control group. Participant pre-measure water consumption was 439,157 gallons per year while control group pre-measure water consumption was 244,774 gallons per year. The control group consisted of 8,976 households in FY 2001, 9,032 in FY 2002, 9,015 in FY 2003, 9,169 in FY 2004, and 9,321 in FY 2005.

ASSUMPTIONS

Please see the General Assumptions for the specific conditions and rules underlying all ECoBA analyses.

The estimated average cost of high efficiency washers was \$1000 each and high water use washers were \$400 each. The difference between

the two costs (\$600) is used as the cost to the participant, as it is assumed that they would have purchased a high water use washer had they not received the rebate.

The average cost of installation of a washing machine was assumed to be \$0. This is because many appliance stores offer free installation with the purchase of a new washing machine.

The price of water used in determining the benefits to customers from reduced water bills is the variable portion of CWD's price of water at the tier in which the participants' average water use falls (tier 2: use of 13 or more ccf per month). The price in FY 2004 was \$1.93 per 1,000 gallons, and the price in FY 2005 was the average of the 2004 and 2005 prices (\$1.94 per 1,000 gallons).

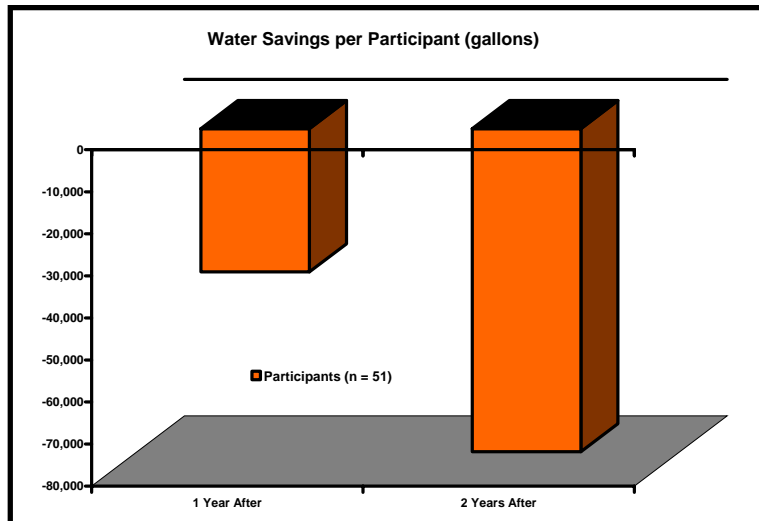
Participants who had two or more consecutive months of no water use were not included in the study.

Calleguas Municipal Water District and Metropolitan Water District of Southern

California each paid \$100 per rebate. Camrosa Water District paid \$100 per rebate for 55% of the rebates and \$0 per rebate for 45% of the rebates.

Advertising costs were \$1500 for the year.

Each rebate took 15 minutes to process at \$30 per hour.

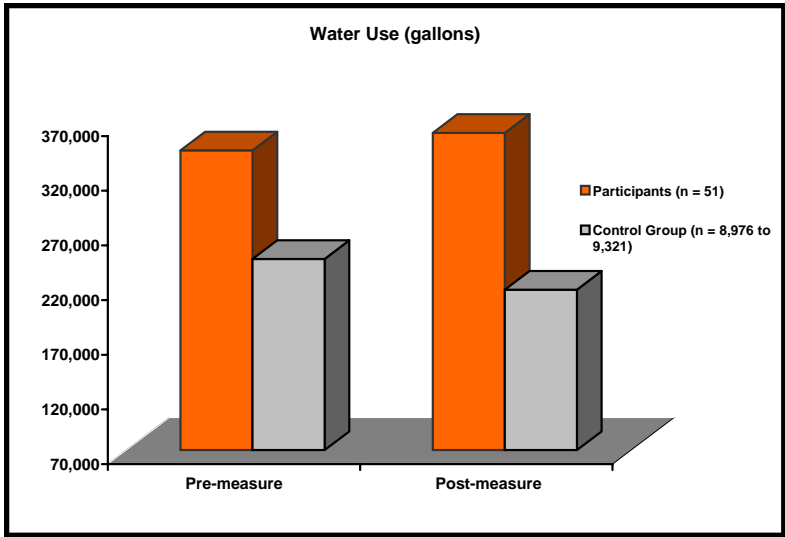


RESULTS - WATER SAVINGS

In the first year after the rebates, no water savings were documented. There was an increase in participant water use, relative to control group water use, of 3,865,693 gallons, or 75,798 gallons per participant per year (gppy) (17.3% of pre-measure water use). The second year after the rebates, no water savings were documented. There was an increase in participant water use, relative to control group water use, of 5,303,321 gallons, or 103,987 gppy (23.7% of pre-measure water use). On average, no water savings occurred; relative water use increased by 4,584,507 gallons (14.1 AF), or 89,892 gppy (20.5% of pre-measure water use). **Over the twelve year assumed lifespan of the conservation devices, there were no water savings; relative water use increased by 55,014,089 gallons (168.8 AF), or 1,078,708 gallons per participant.**

Before the washing machine rebate program, the participant group's water use was **179.4%** of the control group's use, on average. After the program, their water use was **220.9%** of the control group's use, on average. The participant group's water use increased by 9.0% from pre-measure to post-measure, whereas the control group's use

decreased by 11.5%. The resulting water savings attributable to this program was -20.5%.



RESULTS - COST BENEFIT ANALYSIS

Costs and benefits listed below represent the entire lifespan of the program (twelve years).

- ◆ The quantified cost to the utility was \$4,435 (\$87 per participant). This includes payment of financial incentives, \$2,880 (\$56 per participant), and advertising, \$1,555 (\$30 per participant).
- ◆ The quantified benefit to the utility was \$0.
- ◆ The quantified cost to the participants was \$31,415 (\$616 per participant), which includes the difference between the average cost of the high-efficiency washing machines and high water use washing machines.
- ◆ The quantified benefit to the participants was -\$67,954 (-\$1,332 per participant), which includes water bill savings, -\$83,661 (\$1,640 per participant), and financial incentives, \$15,707 (\$308 per participant).
- ◆ The quantified cost to others was \$10,472 (\$205 per participant). This includes the cost to CMWD and MWDC of financial incentive payments.
- ◆ The quantified benefit to others was \$0.

2003 Quantified Costs and Benefits							
Utility				Participants			
Costs		Benefits		Costs		Benefits	
Advertising	\$1,555	Not Quantified		Equipment	\$31,415	Water Bill Savings	-\$83,661
Incentive Payments	\$2,880					Incentive Payments	\$15,707
Total	\$4,435					Total	-\$67,954

UTILITY PERSPECTIVE

Results of the cost benefit analysis show a net benefit (net present value) from the utility perspective of -\$4,435, or -\$87 per participant. The quantified benefits to the utility were less than the quantified costs to the utility. **The cost per acre-foot of water saved from the utility perspective was -\$26.**

PARTICIPANT PERSPECTIVE

Results of the cost benefit analysis show a net benefit (net present value) of -\$99,369 from the participant perspective, or -\$1,948 per participant. The quantified benefits to the participant were less than the

quantified costs to the participant. **The cost per acre-foot of water saved from the participant perspective was -\$186.**

OVERALL PERSPECTIVE

Results of the cost benefit analysis show a net benefit (net present value) from an overall perspective of -\$114,275, or -\$2,241 per participant. The quantified benefits to the utility, participant, and others were less than the quantified costs to the utility, participant, and others. **The cost per acre-foot of water saved from an overall perspective was -\$274.**

UNQUANTIFIED COSTS AND BENEFITS

Costs

- **The customers' time spent installing new washing machines.**
- **Possible landfill disposal of old washing machines.**

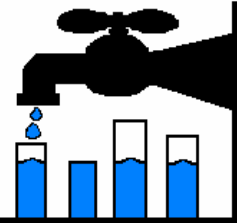
Benefits

- **Savings on sewer bills for participants.**
- **Avoided cost of acquisition and distribution of water saved.**
- **Some participants were eligible for an additional rebate from their energy company.**
- **Environmental benefits of reduced use of water.**
- **Potential income from sale of old washing machines.**
- **Increased public awareness about water conservation.**
- **Increased customer satisfaction.**
- **Reinforces need to conserve water and desirability of conserving.**
- **Water saved for future municipal use.**
- **Customers received new washing machines.**

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Camrosa Water District

Washing Machine Rebate Program



Results of Cost Benefit Analysis-Lifespan (12 Years)

	UTILITY	PARTICIPANT	OVERALL
<u>Present Value Costs</u>			
Costs to Utility	4,435	NA	4,435
Costs to Participants	NA	31,415	31,415
Costs to Others	NA	NA	0
Total Costs	\$4,435	\$31,415	\$46,322
<u>Present Value Benefits</u>			
Total Water Savings	-168.83 AF	-168.83 AF	-168.83 AF
Benefits to Utility	0	NA	0
Benefits to Participants	NA	-67,954	-67,954
Benefits to Others(CMWD & MWDSC)	NA	NA	0
Total Benefits	\$0	\$67,954	-\$67,954
<u>Cost Benefit Calculations</u>			
Net Present Value (NPV) (Total Benefits - Total Costs)	-\$4,435	-\$99,369	-\$114,275
Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings)	-\$26 /AF	-\$186 /AF	-\$274 /AF