

Community Water of Green Valley

Rate Decrease

Community Water Company of Green Valley (CWCGV), a cooperative water utility, is one of five water utilities that serve the town of Green Valley located in the Santa Cruz Valley of Southern Arizona. As of 2003, the town's population was approximately 18,700.¹ The median household income as of the 2000 census was \$40,213.²

UTILITY DEMOGRAPHICS

As of 2003, CWCGV had approximately 9,800 connections, 49.8% of which were residential. Of their total connections, 4,866 were single family residential, 4,672 were multifamily residential, 233 were commercial, 16 were government, and 11 were construction. CWCGV provides service to a population of 15,500 and currently maintains 10,817 connections. CWCGV's total service area is eight square miles. As of 2004, CWCGV's customer water use for the utility as a whole, in gallons per capita per day (gpcd), was 142.

RATE DECREASE	
Cost to Customers:	N/A
Eligible Customers:	SF, MF
Customers Analyzed:	SF, MF
Program Years:	1997
Year Analyzed:	1997

UTILITY RATE STRUCTURE AND PRICES

CWCGV has a uniform price structure. The minimum monthly charge for 5/8" meters, which account for the majority of the utility's connections, is \$12.50 and includes 2,000 gallons of water. Customers pay \$1.07 for every 1,000 gallons over 2,000 gallons. This rate structure has been in place since 1987, with no subsequent rate increases.

CURRENT CAPACITY AND WATER SOURCES

CWCGV depends solely on groundwater and maintains and operates four wells. The company has a current storage capacity of five million gallons.

FUTURE PLANS TO MEET DEMAND

The population within CWCGV's service area is growing at 6% per year. CWCGV plans to meet future demand with current capacity and water sources, and by implementing water conservation measures. CWCGV, in conjunction with other utilities, is studying the possibility of using Central Arizona Project (CAP) water in Green Valley.

RATE DECREASE - DESCRIPTION

In 1997, CWCGV acquired New Pueblo Water Company. After the acquisition, CWCGV was legally obligated to adjust the rates of New Pueblo Water Company customers to equal the rates of other customers. As a result, the former New Pueblo Water Company customers experienced a commodity rate reduction from \$3.50 per 1,000 gallons to \$1.07 per 1,000 gallons.

¹ Arizona Department of Commerce: Green Valley Community Profile.

² U.S. Census Bureau: Profile of General Demographic Characteristics 2000.

METHODOLOGY

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

The analysis includes only single family residential former New Pueblo Water Company customers who were affected by the rate change in 1997. The findings refer to the actual participants analyzed during this time period only, not to any subsequent rate changes or further acquisitions by CWCGV. The lifespan of the rate change was assumed to be 20 years.

OTHER CWCGV CONSERVATION PROGRAMS

Public Education, *ongoing.*

CWCGV has sponsored workshops on a variety of outdoor water conservation topics and publishes monthly water saving tips in the local newspaper.

Showerhead and Faucet Aerator Giveaway, 1992 – present

CWCGV distributes free conservation packets with two low-flow showerheads, two faucet aerators, and one low-flow faucet fixture.

All quantified costs and benefits have been discounted to the first year of the analysis (1997) and inflated to 2004 dollars. The discount rate used in this analysis was 6.2%. The CPI values used in this analysis were the 2004 value of 188.9, and the 1997 value of 160.5

Water use data was acquired for former New Pueblo Water Company customers the two years before and the two years after the rate change. There were a total of 513 New Pueblo Water Company accounts

affected by the acquisition.

The control group in this analysis was comprised of all CWCGV single family residential households in districts similar to participant districts. Districts were chosen based upon consumption levels.

The control group consisted of 3,540 customers in 1995, 3,599 in 1996, 3,657 in 1997, 3,686 in 1998, and 3,766 in 1999. The average number of households in the control group per year was 3,650. The average participant pre-measure water use (41,894 gallons) was less than that of the weighted average pre-measure water use of the control group (67,124 gallons).

ASSUMPTIONS

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

The number of connections is an average of connections from throughout the year.

The rate decrease for New Pueblo customers was a one-time decrease.

Former New Pueblo customers will experience any and all future rate changes as deemed necessary by CWCGV.

The control group is comprised of single family residential households served by CWCGV that are characteristically comparable to the water customers who experienced the rate decrease (Districts 2, 4, 7, 12, 13, 16, and 18).

The price of water used in determining the benefits to customers from

reduced water bills is the variable portion of the utility's price of water. \$1.07 per 1,000 gallons was used throughout the analysis (including future years).

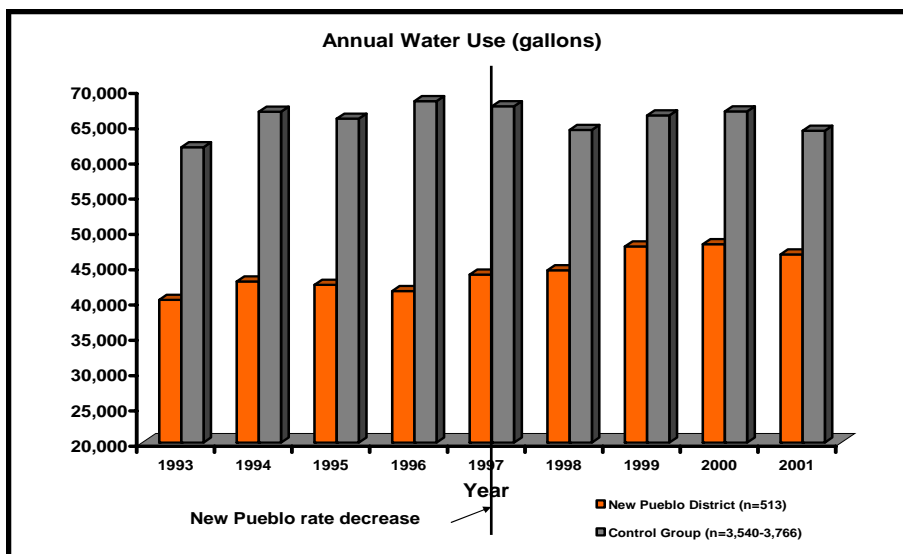
Participants who had two or more consecutive months of no water use were included in the study.

The Consumer Price Index value used in this analysis was the 2004 value of 188.9 and the 1997 value of 160.5.

RESULTS - WATER SAVINGS

In the first year after the rate decrease, no water savings were documented. During that first year, there was an increase in New Pueblo customer water use, relative to control group water use, of 2,186,691 gallons, or 4,279 gallons per participant per year (gppy) (10.2% of pre-measure water use). The second year after the rate decrease, there were no water savings. During that second year, there was an increase in New Pueblo customer water use, relative to control group water use, of 3,312,035 gallons, or 6,394 gppy (15.3% of pre-measure water use). On average, there were no water savings; relative water use increased by 2,749,363 gallons (8.4 AF), or 5,337 gppy (12.7% of pre-measure water use). **Over the twenty year assumed lifespan of the rate decrease, there were no water savings; relative water use increased by 54,987,261 gallons (168.7 AF), or 107,229 gallons per participant.**

During the two years before the rate change, participant water use was 62.4% of the control group's use, on average. During the two years after the rate change water use was 70.6% of the control group's use, on average. The participants' water use increased by 10.0% from pre-measure to post-measure, whereas the control group's use decreased by 2.7%. **The resulting overall water savings attributed to this program was -12.7%.**



RESULTS - COST BENEFIT ANALYSIS

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

- ◆ The quantified cost to the utility was \$0.
- ◆ The quantified benefit to the utility was \$0.
- ◆ The quantified cost to participants was \$0.
- ◆ The quantified benefit to the participants was -\$39,037. This reflects water bill savings. This is a benefit of -\$76 per participant.

QUANTIFIED COSTS AND BENEFITS					
Utility			Participants		
Costs		Benefits	Costs	Benefits	
Rate Change	\$0	Not Quantified	Not Quantified	Water Bill Savings	-39,037
Total	\$0			Total	-39,037

UTILITY PERSPECTIVE

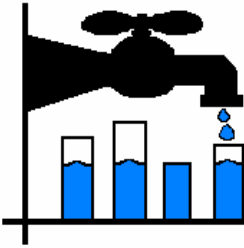
Results of cost benefit analysis show a net benefit (net present value) of \$0 from the utility perspective over the twenty year assumed lifespan of the rate decrease. The quantified costs to the utility were equal to the quantified benefits to the utility. **The cost per acre-foot of water saved from the utility perspective was \$0 as there was no quantified cost to the utility and there were no water savings.**

PARTICIPANT PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of -\$39,037 from the participant perspective over the twenty year assumed lifespan of the rate change. The quantified costs to the participants were greater than the quantified benefits to the participants. **The cost per acre-foot of water saved from the participant perspective was \$0, as there was no quantified cost to the participants, and there were no water savings.**

OVERALL PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of -\$39,037 from an overall perspective over the twenty year assumed lifespan of the rate change. The quantified benefits to the participants and utility were less than the quantified costs to the participants and utility. **The cost per acre-foot of water saved from the overall perspective was \$0 as there were no quantified costs to the utility or the participants, and there were no water savings.**



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Results of Cost Benefit Analysis-Lifespan (20 Years)

	UTILITY		PARTICIPANT		OVERALL
<i><u>Present Value Costs</u></i>					
Costs to Utility	0		NA		0
Costs to Customers	NA		0		0
Costs to Others	NA		NA		0
Total Costs	\$0		\$0		\$0
<i><u>Present Value Benefits</u></i>					
Total Water Savings	-168.7	AF	-168.7	AF	-168.7 AF
Benefits to Utility	0		NA		0
Benefits to Customers	NA		-39,037		-39,037
Benefits to Others	NA		NA		0
Total Benefits	\$0		-\$39,037		-\$39,037
<i><u>Cost Benefit Calculations</u></i>					
Net Present Value (NPV) (Total Benefits - Total Costs)	\$0		-\$39,037		-\$39,037
Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings)	\$0 /AF		\$0 /AF		\$0 /AF

UNQUANTIFIED COSTS AND BENEFITS

Costs

- Cost to utility of implementing and managing the rate decrease.
- Avoided cost of acquisition and distribution of water saved.
- Environmental costs of increased water use.
- Utility faces the cost of developing new water sources.
- Utility faces the cost of constructing new storage facilities.

Benefits

- New information pertaining to customer behavior following rate decreases.

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