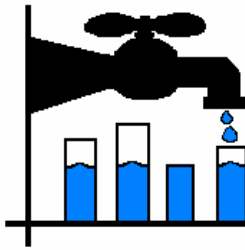


RATES

CASE NARRATIVES

Utility R-1.....	pages 305-310
Utility R-2.....	pages 311-318
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Utility R-4.....	pages 325-330
Utility R-5.....	pages 331-336



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).

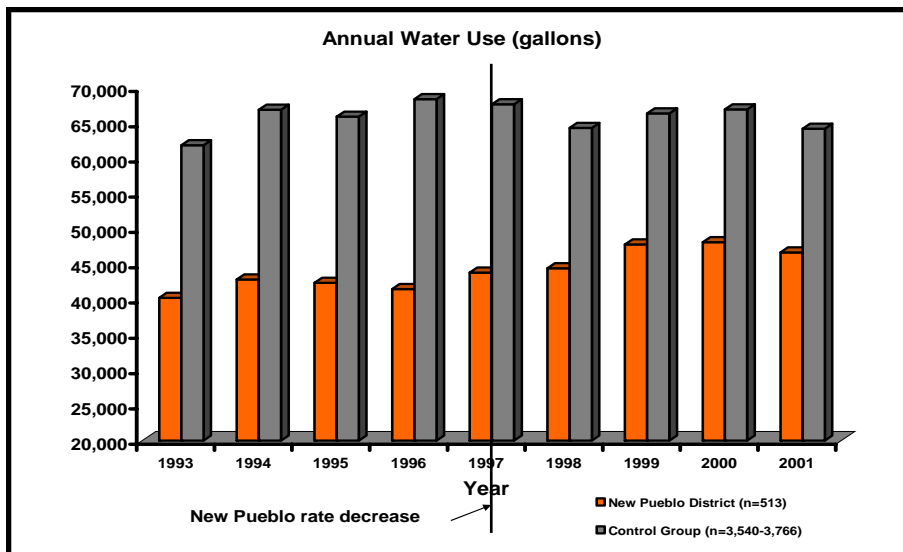
Participants who had two or more consecutive months of no water use were included in the study.

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).

- G The quantified cost to the utility was \$0.
- G The quantified benefit to the utility was \$0.
- G The quantified cost to participants was \$0.
- G 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

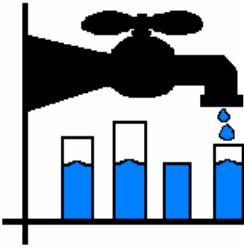
Results of cost benefit analysis show a net benefit (net present value) of \$0 from the utility perspective over the twenty year assumed lifespan of the rate decrease. The quantified costs to the utility were equal to the quantified benefits to the utility. **The cost per acre-foot of water saved from 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.**



Community Water of Green Valley

Rate Decrease

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

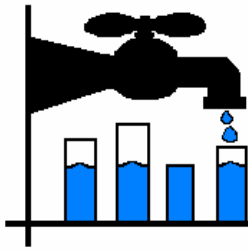
Costs

- 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.

R-1



Indian Wells Valley Water Dist.

Conservation Rates: Increasing Block

Indian Wells Valley Water District (IWWVD) provides water to the City of Ridgecrest, California, and portions of western San Bernardino County and eastern Kern County. IWWVD serves a population of approximately 26,500. As of the 2000 Census, the median household income in Ridgecrest was \$44,971, which is lower than the statewide median of \$47,493.¹

UTILITY DEMOGRAPHICS

IWWVD's retail service area is 38 square miles. As of 2005, IWWVD had 11845 connections, 94.7% of which were residential. Of their total connections, 10,845 were single family residential, 373 were multifamily residential, 580 were commercial, 34 were fire service connections, and 13 were construction meters.

INVERTED BLOCK RATES

Affected Customers:	All
Customers Analyzed:	Residential,
	Master Metered, Commercial, Public
Effective Date:	February 1, 2000

UTILITY RATE STRUCTURE AND PRICES

IWWVD initially adopted increasing block rates for all customers in 1992. See the following analysis of the rate changes for details.

CURRENT CAPACITY AND WATER SOURCES

IWWVD's primary source of water is from groundwater drawn from the Indian Wells Valley Aquifer. IWWVD has a storage capacity of 14.6 million gallons.

FUTURE PLANS TO MEET DEMAND

The population of IWWVD's service area is growing at a rate of about 2.7% per year. IWWVD plans to meet future demands through current sources, adding new wells to the system, and possibly treating brackish water and importing water.

RATE STRUCTURE - DESCRIPTION

IWWVD adopted an increasing block rate structure for all customers on October 26, 1992. The structure was an eight-tier structure, with the highest tier including 8,000 gallons or more of bimonthly residential water use. The average bimonthly water use of residential customers was 34,492 gallons between 1998 and 2004, so for many customers rate structure was, in effect, flat. The rate at the highest tier was \$1.25 per 1,000 gallons. Customers were charged a bimonthly service fee of \$28.00 in addition to the variable charge:

The water district adopted a new, more aggressive rate structure on February 1, 2000. This is the rate structure we are analyzing for the purposes of this study. This rate increase was also an increasing block rate structure, varying by meter size instead of customer class. Customers were then charged a monthly service fee of \$11.77 for 5/8"

¹ US Census Bureau. FactFinder.

x 3/4" meters in addition to the variable charges. The highest tier started at 19,449 gallons per month, with average residential monthly use at 17,249 gallons per month. The rate structure was as follows:

Usage	Price
0-7,480 gallons	\$0.80 per 1,000 gallons
7,481-9,724 gallons	\$1.00 per 1,000 gallons
9,725-11,968 gallons	\$1.20 per 1,000 gallons
11,969-14,212 gallons	\$1.40 per 1,000 gallons
14,213-16,456 gallons	\$1.58 per 1,000 gallons
16,457-19,448 gallons	\$1.75 per 1,000 gallons
19,449+ gallons	\$1.93 per 1,000 gallons

The structure changed slightly again on April 1, 2003. The tiers changed and rate increases were set to increase by 3% per year from 2003 through 2006, and increases in the monthly service fee to \$13.20. This analysis does not include the 2003 changes. The new structure as of 2005 is as follows:

Usage	Price
0-3,740 gallons	\$0.79 per 1,000 gallons
3,741-7,480 gallons	\$0.99 per 1,000 gallons
7,481-11,220 gallons	\$1.22 per 1,000 gallons
11,221-14,960 gallons	\$1.48 per 1,000 gallons
14,961-18,700 gallons	\$1.78 per 1,000 gallons
18,701-22,440 gallons	\$1.98 per 1,000 gallons
22,441+ gallons	\$2.14 per 1,000 gallons

METHODOLOGY

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

The rate change that was analyzed here was the change that became effective February 1, 2000. The methodology for this analysis is different from most of the cases in the study because no control group was available for comparison. This is because the rate structure change affected all customers. Instead of using a control group, the

OTHER INDIAN WELLS VALLEY CONSERVATION PROGRAMS

Showerhead & Aerator Giveaway Program, *ongoing*

**Public Education, *2005-present*
Xeriscape Workshops and a
water conservation website page.**

water savings were calculated solely from the difference in pre- and post-measure water use of residential, master metered, commercial, and public connections. The pre-measure and post-measure

time periods were two years each, January 1998 through December 1999 and January 2001 through December 2002. The average yearly water savings from the two years after the rate change was extrapolated for twenty years, the assumed lifespan of the rate change.

The customer classes analyzed were residential, master metered, commercial, and public. The water savings were calculated for each and the total of the four categories. The cost benefit analysis was performed on the total of the four categories. IWVWD's other customer

classes (construction and fire connections) were not included in the analysis.

All quantified costs and benefits have been discounted to the first year of the analysis (2000) and inflated to 2004 dollars. The discount rate used in this analysis was 6.2%. The CPI values that were used in this analysis were the 2004 value of 188.9 and the 2000 value of 172.2.

It was not possible to follow the individual customers that were present at the time of implementation of the rate change. Instead, the number of connections was used as a proxy. The number of connections varied by month. There was an average of 10,184 residential connections, 346 master metered connections, 473 commercial connections, and 90 public connections, for an average of 11,093 connections total for the period of analysis. The average number of connections over the twenty year lifespan of the rate change was 11,966, which is the value used in the cost-benefit calculations.

ASSUMPTIONS

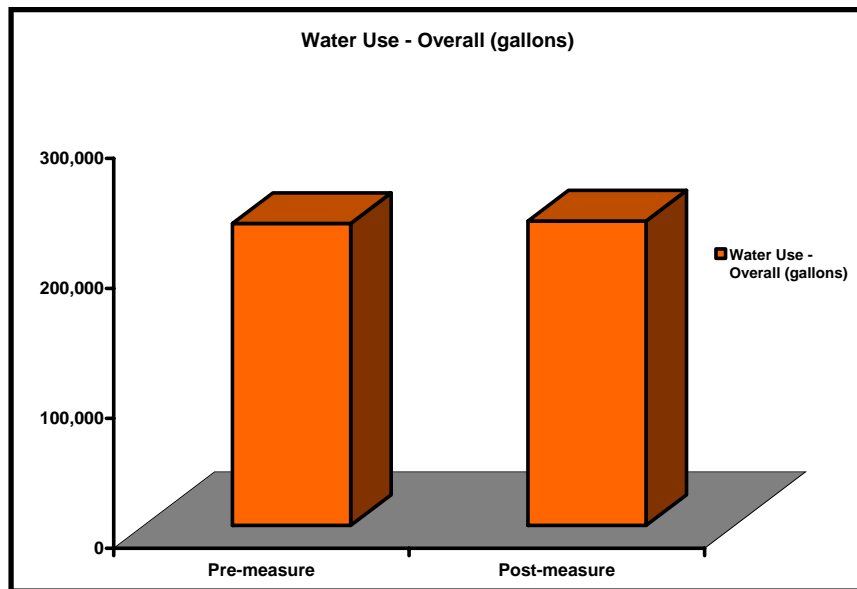
Please see the General Assumptions for the specific conditions and rules underlying all ECoBA analyses.

In calculating the average number of connections over the twenty year period of analysis, it was assumed that the annual growth in connections was equal to the average annual growth between 1998 and 2004.

The discount rate used in this analysis was 6.2%.

The CPI values that were used in this analysis were the 2004 value of 188.9 and the 2000 value of 172.2.

The calculation of water savings and any benefits derived from water savings started the date of the rate structure change, February 1, 2000.

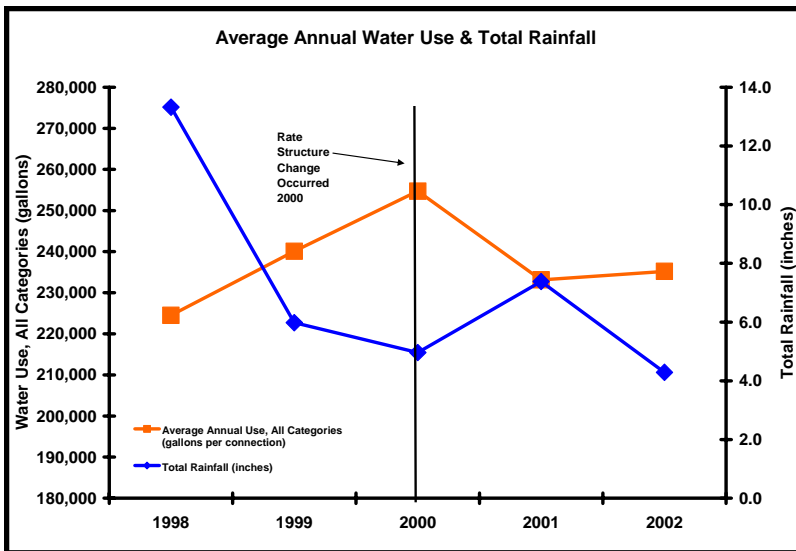


The cost to the utility was \$25,000 for a cost-of-service study preparing for the rate change.

It was assumed that from 2000 through 2002, customers' average water use fell into the 6th tier, regardless of class or meter size. The price at the 6th tier is \$1.75 per 1,000 gallons. It was assumed that from 2003 on, customers' use fell into the 5th tier, regardless of class or meter size. Price at 5th tier was \$1.67 in 2003, \$1.72 in 2004, \$1.78 in 2005, and \$1.83 in 2006 and beyond. These assumptions are based on the average monthly use of residential customers from 1998 through 2002 (17,246 gallons per month).

RESULTS - WATER SAVINGS

For **residential** customers, during the first year after the rate change, no water savings occurred. There was an increase in participant water use of 46,875,895 gallons, or 4,603 gppy (2.3% of pre-measure water use). The second year after, no water savings occurred. There was an increase in participant water use of 73,287,239 gallons, or 7,196 gppy (3.6% of pre-measure water use). On average, no water savings occurred; relative water use increased by 60,081,567 gallons (184.4 AF), or 5,899 gppy (3.0% of pre-measure water use). **Over the twenty year assumed lifespan of the rates, no water savings occurred; relative water use increased by 1,201,631,335 gallons (3,687.7 AF), or 109,086 gallons per participant.**



For **master metered** customers, during the first year after the rate change, no water savings occurred. There was an increase in participant water use of 28,326,576 gallons, or 81,835 gppy (15.0% of pre-measure water use). The second year after, no water savings occurred. There was an increase in participant water use of 32,998,985 gallons, or 95,333 gppy (17.4% of pre-measure water use). On average, no water savings occurred; relative water use increased by 30,662,781 gallons (94.1

AF), or 88,584 gppy (16.2% of pre-measure water use). **Over the twenty year assumed lifespan of the rates, there were no water savings; relative water use increased by 613,255,615 gallons (1,882.0 AF), or 1,657,149 gallons per participant.**

For **commercial** customers, during the first year after the rate change, no water savings occurred. There was an increase in participant water use of 7,788,970 gallons, or 16,462 gppy (4.3% of pre-measure water use). The second year after, water savings amounted to 2,694,506 gallons, or 5,695 gppy (1.5% of pre-measure water use). On average, no water savings occurred; relative water use increased by 2,547,232 gallons (7.8 AF), or 5,384 gppy (1.4% of pre-measure water use). **Over the twenty year assumed lifespan of the rates, there were no water savings; relative water use increased by 50,944,636 gallons (156.3 AF), or 104,054 gallons per participant.**

For **public** customers, during the first year after the rate change, water savings amounted to 53,193,041 gallons, or 592,916 gppy (34.0% of pre-measure water use). The second year after, water savings amounted to 47,322,058 gallons, or 527,475 gppy (30.3% of pre-

measure water use). The average savings per year was 50,257,550 gallons (154.2 AF), or 560,196 gppy (32.1% of pre-measure water use). **The total water savings over the twenty year assumed lifespan of the rates was 1,005,150,991 gallons (3,084.7 AF), or 11,021,392 gallons per participant.**

For **all customers** analyzed, during the first year after the rate change, no water savings were documented. There was an increase in participant water use of 9,454,878 gallons, or 852 gppy (0.4% of pre-measure water use). The second year after, no water savings were documented. There was an increase in participant water use of 32,079,546 gallons, or 2,892 gppy (1.2% of pre-measure water use). On average, no water savings were documented; relative water use increased by 20,767,212 gallons (63.7 AF), or 1,872 gppy (0.8% of pre-measure water use). **Over the twenty year assumed lifespan of the rates, no water savings were documented; relative water use increased by 415,344,237 gallons (1,274.6 AF), or 34,709 gallons per participant.**

RESULTS - COST BENEFIT ANALYSIS

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

- G The quantified cost to the utility was \$27,425 (\$2 per participant). This includes consulting costs, \$27,425 (\$2 per participant).
- G The quantified benefit to the utility was \$0.
- G The quantified cost to the participants was \$0.
- G The quantified benefit to participants was -\$460,127 (-\$1,702 per participant). This includes water bill savings, -\$460,127.

Quantified Costs and Benefits					
Utility			Participants		
Costs		Benefits	Costs		Benefits
Consulting	\$27,425	Not Quantified	Not Quantified	Water Bill Savings	-\$460,127
Total	\$27,425			Total	-\$460,127

UTILITY PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of -\$27,425 from the utility perspective. This is a net benefit of -\$2 per participant. The quantified costs to the utility were greater than the quantified benefits to the utility. **The cost per acre-foot of water saved from the utility perspective was -\$22.**

PARTICIPANT PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of -\$460,127 from the participant perspective. This is a net benefit of -\$38 per participant. 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.**

OVERALL PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of -\$487,551 from an overall perspective. This is a net benefit of -\$41 per participant. The quantified costs to the participants and utility were greater than the quantified benefits to the participants and utility. **The cost per acre-foot of water saved from an overall perspective was -\$22.**

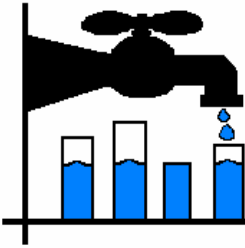
UNQUANTIFIED COSTS AND BENEFITS

Costs

- Cost of instituting rate structure.

Benefits

- Environmental benefits of reduced use of water.
- Avoided cost of acquisition and distribution of water saved.
- Increased public awareness about water conservation.
- Reinforces need to conserve water and desirability of conserving.
- Delays capital improvement projects.
- Water saved for future municipal use.

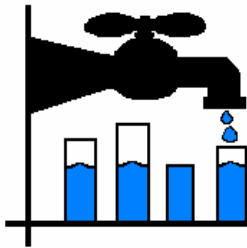


Indian Wells Valley Water Dist.

Conservation Rates: Increasing Block

Results of Cost Benefit Analysis-Lifespan (20 Years)

	UTILITY	PARTICIPANT	OVERALL
<u><i>Present Value Costs</i></u>			
Costs to Utility	27,425	NA	27,425
Costs to Participants	NA	0	0
Costs to Others	NA	NA	0
Total Costs	\$27,425	\$0	\$27,425
<u><i>Present Value Benefits</i></u>			
Total Water Savings	-1,274.64AF	-1,274.64AF	-1,274.64 AF
Benefits to Utility	0	NA	0
Benefits to Participants	NA	-460,127	-460,127
Benefits to Others	NA	NA	0
Total Benefits	\$0	-\$460,127	-\$460,127
<u><i>Cost Benefit Calculations</i></u>			
Net Present Value (NPV) (Total Benefits - Total Costs)	-\$27,425	-\$460,127	-\$487,551
Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings)	-\$22 /AF	\$0 /AF	-\$22 /AF



Medford Water Commission

Conservation Rates: Increasing Block

Medford Water Commission (MWC) provides retail water service to the City of Medford, Oregon, and provides retail water to unincorporated urban and suburban lands. MWC also provides wholesale water to the cities of Central Point, Eagle Point, Jacksonville, Phoenix, and Talent. MWC serves a retail population of approximately 82,000. As of the 2000 Census, the median household income in Medford was \$36,481, which is lower than the statewide median of \$40,916.¹

UTILITY DEMOGRAPHICS

MWC's retail service area is 36.3 square miles. As of August 2005, MWC had 26,370 connections, 88.7% of which were residential. Of their total connections, 21,300 were single family residential, 2,100 were multifamily residential, 2,400 were commercial, 125 were industrial, 85 were municipal, and 360 were fire service connections. The average residential water use is approximately 155 gallons per capita per day (gpcd), and total utility water use is approximately 225 gpcd.

INCREASING BLOCK RATES

Affected Customers: Single Family Residential
Customers Analyzed: Single Family Residential
Effective Date: March 1, 2003

UTILITY RATE STRUCTURE AND PRICES

On March 1, 2003, MWC adopted an increasing block rate structure for single family residential customers. Other customer classes remained with a seasonal rate structure. Customers are currently charged a monthly service fee of \$6.35 for 5/8" x 3/4" meters in addition to a variable charge. The variable charge for single family residential customers is as follows:

Usage	Price	
	Inside City	Outside City
15,000 gallons	\$0.46/1,000g	\$0.63/1,000g
> 15,000 gallons	\$0.64/1,000g	\$0.81/1,000g

CURRENT CAPACITY AND WATER SOURCES

MWC's primary source of water is from Big Butte Springs, with a secondary source of water from the Rogue River. MWC has a storage capacity of 36.5 million gallons.

FUTURE PLANS TO MEET DEMAND

The population of MWC's service area is growing at a rate of 4% per year. MWC plans to meet future demands through current sources, by purchasing additional water rights on the Rogue River, by expanding treatment and transport facilities, through continuing water conservation efforts, and possibly through reuse.

¹ US Census Bureau. FactFinder.

RATE STRUCTURE - DESCRIPTION

MWC adopted an increasing block rate structure for their single family residential customers on March 1, 2003. The rate change was viewed as a first step to charging those customers most responsible for peak costs for those peaks, recognizing that rates overall would still be quite low.

OTHER MEDFORD CONSERVATION PROGRAMS

Outdoor Audits, 2001-present

Public Education, 1992-present

Newsletter articles, a demonstration garden, an ET phone line, high use notifications, and water conservation website.

Seasonal Rate Structure, start date unknown

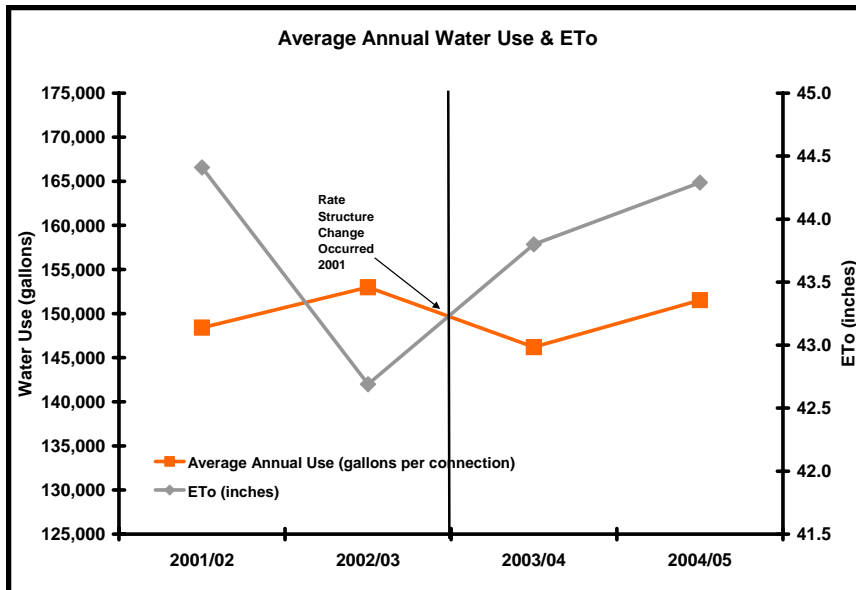
All customer classes except single family residential.

Prior to the change, all customers were subject to a seasonal rate structure, with summer rates \$0.05 per 1,000 gallons higher than winter rates. At the time of the change, the rates inside

the city were \$0.40 per 1,000 gallons during the winter, and \$0.45 per 1,000 gallons during the summer.

The new rate structure includes two tiers, with water use in the second tier charged at \$0.18 more per 1,000 gallons than water use in the first tier. The second tier starts at 15,000 gallons of water use per month. The average monthly water use of a single family residential customer

in the City of Medford is between 12,000 and 13,000 gallons per month.



Water rates are also evaluated for possible increases on March 1 of each year. At the time of the rate change, the price was \$0.40 per 1,000 gallons in the first tier, and \$0.58 per 1,000 gallons in the second tier.

A comparison of average annual water use with reference evapotranspiration

(ETo) is inconclusive. Water use would be expected to go up with increasing ETo, which is the case only between 2003/04 and 2004/05.

METHODOLOGY

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

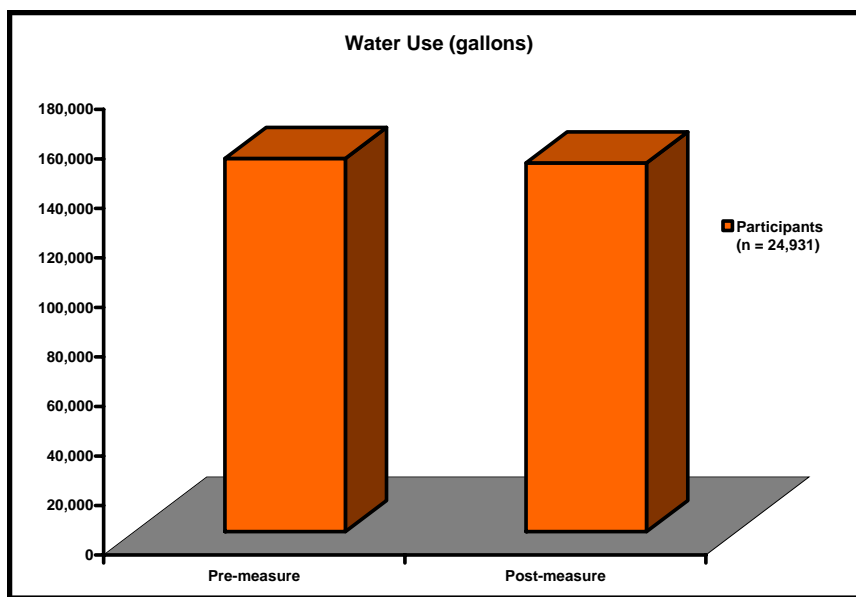
The methodology for this analysis is different from most of the cases in the study because no control group was available for comparison. This

is because the rate structure change affected all single family residential customers. Instead of using a control group, the water savings were calculated solely from the difference in pre- and post-measure water use of inside-city and outside-city single family residential water use. The pre-measure and post-measure time periods were two years each, March 2001 through February 2003 and March 2003 through February 2005. The average yearly water savings from the two years after the rate change was extrapolated for twenty years, the assumed lifespan of the rate change.

The customer classes analyzed were single family residential, both inside the City of Medford and outside the city. The water savings were calculated for each and the total of the two categories. The cost benefit analysis was performed on the total of the two categories. MWC's other customer classes were not included in the analysis because their rate structure did not change.

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 4.8%. The CPI values that were used in this analysis were the 2004 value of 188.9 and the 2003 value of 184.0.

It was not possible to follow the individual customers that were present at the time of implementation of the rate change. Instead, the number of single family residential connections was used as a proxy. The number of connections varied by month. There was an average of 17,338 inside-city single family residential connections, and 1,572 outside-city single family residential connections, for an average of 18,910 connections total.



ASSUMPTIONS

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

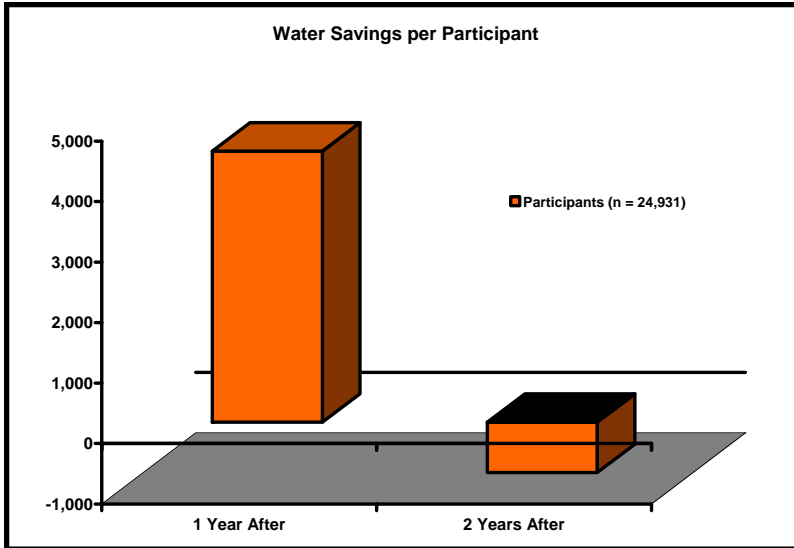
In calculating the average number of connections over the twenty year period of analysis, it was assumed that the annual growth in connections was equal to the average annual growth between 1999 and 2005.

The price of water used in calculating the benefits from water savings was the residential rate at the tier where the average customer's water use fell (tier 1), \$0.42 in 2004/05 and \$0.46 in 2005/06 and beyond.

The discount rate used in this analysis was 4.8%.

The CPI values that were used in this analysis were the 2004 value of 188.9 and the 2003 value of 184.0.

The calculation of water savings and any benefits derived from water savings started the date of the rate structure change, March 1, 2003.



The cost to the utility was \$2,000 in staff time preparing for the rate change.

RESULTS - WATER SAVINGS

For inside-city single family residential customers, during the first year after the rate change, water savings amounted to 103,687,119 gallons, or 4,546 gppp (3.1% of pre-measure water use). The second year after, no water savings were documented. Relative water use increased 23,106,630 gallons, or

1,013 gppp (0.7% of pre-measure water use). The average savings per year was 40,290,245 gallons (123.6 AF), or 1,767 gppp (1.2% of pre-measure water use). **The total water savings over the twenty year assumed lifespan of the rates was 805,804,898 gallons (2,472.9 AF), or 35,332 gallons per participant.**

For outside-city single family residential customers, during the first year after the rate change, water savings amounted to 8,726,862 gallons, or 3,908 gppp (2.4% of pre-measure water use). The second year after, water savings amounted to 1,026,698 gallons, or 460 gppp (0.3% of pre-measure water use). The average savings per year was 4,876,780 gallons (15.0 AF), or 2,184 gppp (1.3% of pre-measure water use). The total water savings over the twenty year assumed lifespan of the rates was 97,535,600 gallons (299.3 AF), or 43,674 gallons per participant.

Quantified Costs and Benefits					
Utility			Participants		
Costs		Benefits	Costs	Benefits	
Labor	\$2,053	Not Quantified	Not Quantified	Water Bill Savings	\$269,229
Total	\$2,053			Total	\$269,229

For all customers analyzed, during the first year after the rate change, water savings amounted to 111,753,307 gallons, or 4,482 gppp (3.0% of pre-measure water use). The second year after, no water savings were documented. Relative water use increased 20,800,016 gallons, or 834 gppp (0.6% of pre-measure water use). The average savings per

year was 45,476,646 gallons (139.6 AF), or 1,824 gppy (1.2% of pre-measure water use). The total water savings over the twenty year assumed lifespan of the rates was 909,532,911 gallons (2,791.3 AF), or 36,482 gallons per participant.

RESULTS - COST BENEFIT ANALYSIS

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

- G The quantified cost to the utility was \$2,053 (\$0.08 per participant). This includes labor costs, \$2,053.
- G The quantified benefit to the utility was \$0.
- G The quantified cost to the participants was \$0.
- G The quantified benefit to participants was \$269,229 (\$11 per participant). This includes water bill savings, \$269,229.

UTILITY PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of -\$2,053 from the utility perspective. This is a net benefit of -\$0.08 per participant. The quantified costs to the utility were greater than the quantified benefits to the utility. **The cost per acre-foot of water saved from the utility perspective was \$1.**

PARTICIPANT PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of \$269,229 from the participant perspective. This is a net benefit of \$11 per participant. The quantified costs to the participants were less than the quantified benefits to the participants. **The cost per acre-foot of water saved from the participant perspective was \$0.**

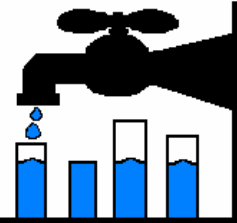
OVERALL PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of \$267,176 from an overall perspective. This is a net benefit of \$11 per participant. The quantified costs to the participants and utility were less than the quantified benefits to the participants and utility. **The cost per acre-foot of water saved from an overall perspective was \$1.**

Results of this analysis show a net loss of revenue to the utility resulting from the rate change, however, this may not be the case depending on how much water was used in higher tiers.

Medford Water Commission

Conservation Rates: Increasing Block



Results of Cost Benefit Analysis-Lifespan (20 Years)

	UTILITY	PARTICIPANT	OVERALL
<u>Present Value Costs</u>			
Costs to Utility	2,053	NA	2,053
Costs to Participants	NA	0	0
Costs to Others	NA	NA	0
Total Costs	\$2,053	\$0	\$2,053
<u>Present Value Benefits</u>			
Total Water Savings	2,791.25 AF	2,791.25 AF	2,791.25 AF
Benefits to Utility	0	NA	0
Benefits to Participants	NA	269,229	269,229
Benefits to Others	NA	NA	0
Total Benefits	\$0	\$269,229	\$269,229
<u>Cost Benefit Calculations</u>			
Net Present Value (NPV) (Total Benefits - Total Costs)	-\$2,053	\$269,229	\$267,176
Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings)	\$1 /AF	\$0 /AF	\$1 /AF

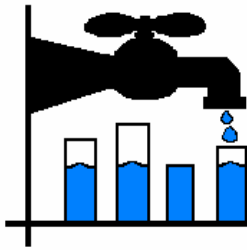
UNQUANTIFIED COSTS AND BENEFITS

Costs

- n/a

Benefits

- Savings on sewer bills.
- Avoided cost of acquisition and distribution of water saved.
- Environmental benefits of reduced use of water.
- Increased public awareness about water conservation.
- Reinforces need to conserve water and desirability of conserving.
- Delays capital improvement projects.
- Water saved for future municipal use.



St. Johns County Utility Dept. Conservation Rates: Increasing Block

St. Johns County Utility Department (SJCUD) provides retail water and wastewater services to St. Johns County located in northeastern Florida along the Atlantic coast. SJCUD serves a population of approximately 55,000. As of the 2000 Census, the median household income in St. Johns County was \$50,099, which is higher than the statewide median of \$38,819.¹

UTILITY DEMOGRAPHICS

SJCUD's service area is 72.3 square miles. As of August 2005, SJCUD had 20,156 connections, 95% of which were residential. Of their total connections, 19,068 were single family residential, 149 were multifamily residential, 863 were commercial, 5 were industrial, 43 were governmental, and 28 were mixed use connections. The average single family residential water use is approximately 145 gallons per capita per day (gpcd), as of 2004.

INCREASING BLOCK RATE

Affected Participants:
Participants Analyzed:
Effective Date:

Whole Utility
Single Family,
Multi-family, Commercial, Governmental
April 1, 2001

UTILITY RATE STRUCTURE AND PRICES

On April 1, 2001, SJCUD adopted an increasing block rate structure. Since 2001, the individual prices per block have increased. As of July 2005, participants are charged a monthly service fee of \$9.81 for 5/8" x 3/4" meters in addition to a variable charge:

CURRENT CAPACITY AND WATER SOURCES

SJCUD's primary source of water is from Floridan and surficial wells. SJCUD has a storage capacity of 7.5 million gallons.

FUTURE PLANS TO MEET DEMAND

The population of SJCUD's service area is growing at a rate of 9% per year. SJCUD plans to meet future demands by adding capacity and converting to a reverse osmosis treatment plant.

RATE STRUCTURE - PROGRAM DESCRIPTION

SJCUD adopted an increasing block rate structure on April 1, 2001. Prior to the change, all participants were subject to a base charge that included up to 4,000 gallons and an additional charge per 1,000 gallons thereafter. Just before the rate change, the price was \$5.26 per 1,000 gallons above 4,000 gallons per month.

As of the April 2001 rate change, the new rate structure included a monthly base rate and four usage categories:

¹ US Census Bureau. FactFinder.

Usage	Price
0-4,000 gallons	\$2.92 per 1,000 gallons
4,001-8,000 gallons	\$3.94 per 1,000 gallons
8,001-15,000 gallons	\$5.32 per 1,000 gallons
15,001 gallons and over	\$7.18 per 1,000 gallons

Water rates have increased on October 1st of each year since 2001 and on July 1st in 2005. In 2005, the usage categories changed slightly, so that current prices are as follows:

Usage	Price
0-5,000 gallons	\$2.49 per 1,000 gallons
5,001-10,000 gallons	\$3.11 per 1,000 gallons
10,001-20,000 gallons	\$5.24 per 1,000 gallons
20,001 gallons and over	\$7.60 per 1,000 gallons

METHODOLOGY

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

The methodology for this analysis is different from most of the cases in the study because no control group was available for comparison. This is because the rate structure change affected all participants. Instead

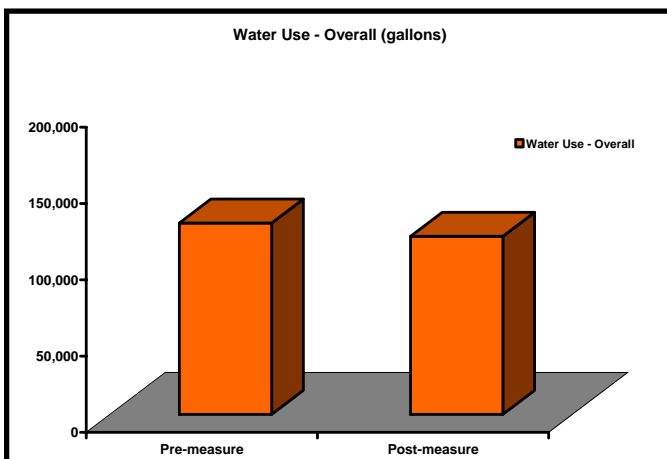
OTHER ST JOHNS CONSERVATION PROGRAMS

St. Johns County Utility Department had no other conservation measures in place during the period of this conservation ordinance analysis.

of using a control group, the water savings were calculated solely from the difference in pre- and post-measure water use. The pre-measure and post-measure time periods were two years each, April 1999 through March 2001 and April 2001 through March 2003. The average yearly water savings

from the two years after the rate change was extrapolated for twenty years, the assumed lifespan of the rate change.

All quantified costs and benefits have been discounted to the first year of the analysis (2001) and inflated to 2004 dollars. The discount rate used in this analysis was 5.35%. The CPI values that were used in this analysis were the 2004 value of 188.9 and the 2001 value of 177.1.



It was not possible to follow the individual participants that were present at the time of implementation of the rate change. Instead, the number of connections was used as a proxy. The number of connections varied by month. There was an average of 10,351 single family residential connections, 98 multifamily connections, 480 commercial connections, and 40 governmental connections, for an average of 10,969 connections total

for the period of analysis. The average number of connections over the twenty year lifespan of the rate change was 18,804, which is the value used in the cost-benefit calculations.

ASSUMPTIONS

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

In calculating the average number of connections over the twenty year period of analysis, it was assumed that the annual growth in connections was equal to the average annual growth between April 1999 and March 2003.

The price of water used in calculating the benefits from water savings were averages of "block 3" rates from the period from April 2001 to October 2004.

Accounts that had zero usage during the course of the year were eliminated from the total connections for that year.

The discount rate used in this analysis was 5.35%.

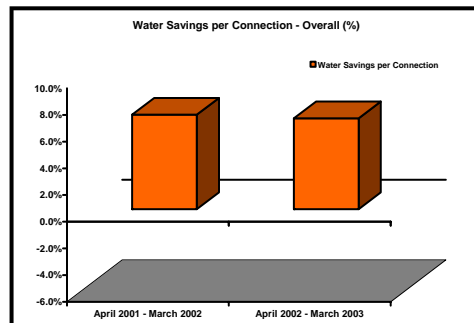
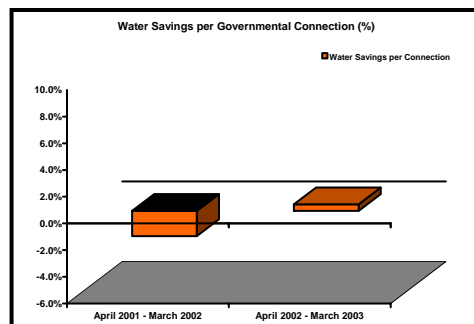
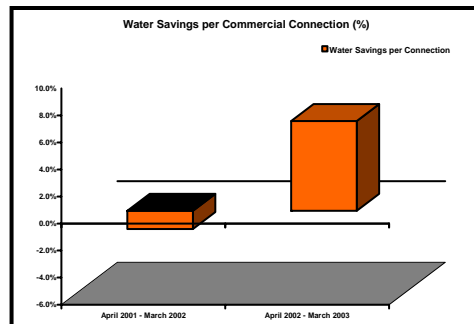
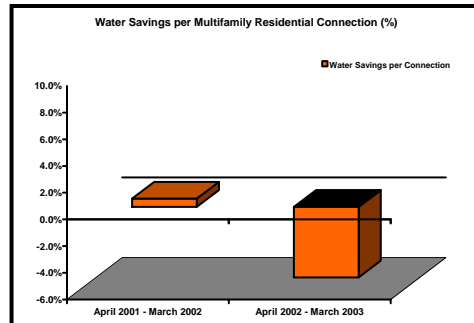
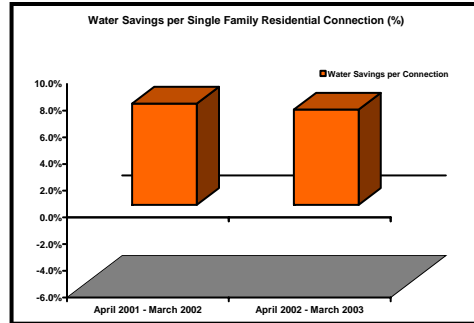
The CPI values that were used in this analysis were the 2004 value of 188.9 and the 2001 value of 177.1.

The calculation of water savings and any benefits derived from water savings started the date of the rate structure change, April 1, 2001.

RESULTS - WATER SAVINGS

For single family residential connections, during the first year after the rate change, the water savings amounted to 100,975,570 gallons, or 9,755 gallons per participant per year (gppy) (7.6% of pre-measure water use). The second year after, water savings amounted to 95,040,259 gallons, or 9,182 gppy (7.1% of pre-measure water use). The average savings per year was 98,007,915 gallons (300.8 AF), or 9,468 gppy (7.4% of pre-measure water use). The total water savings over the twenty year assumed lifespan of the rates was 1,960,158,294 gallons (6,015.5 AF), or 107,992 gallons per participant.

For multifamily residential connections, during the first year after the rate change, the water savings amounted to 39,715 gallons, or 407 gallons per participant per year (gppy) (0.6% of pre-measure water use). The second year after, no water savings occurred. There was an increase in water use of 341,619 gallons, or 3,504 gppy (5.3% of pre-measure water use). On average, no water savings occurred; water use increased by 150,952 gallons (0.5 AF), or 1,548 gppy (2.3% of pre-measure water use). Over



the twenty year assumed lifespan of the rates there were no water savings; water use increased by 3,019,043 gallons (9.3AF), or 25,694 gallons per participant.

For commercial connections, during the first year after the rate change, no water savings occurred. There was an increase in water use of 495,996 gallons, or 1,034 gallons per participant per year (gppy) (1.4% of pre-measure water use). The second year after, water savings amounted to 2,441,536 gallons, or 5,089 gppy (6.7% of pre-measure water use). The average savings per year was 972,770 gallons (3.0 AF), or 2,028 gppy (2.7% of pre-measure water use). **The total water savings over the twenty year assumed lifespan of the rates was 19,455,404 gallons (59.7 AF), or 32,211 gallons per participant.**

For governmental connections, during the first year after the rate change, no water savings occurred. There was an increase in water use of 46,428 gallons, or 1,161 gallons per participant per year (gppy) (1.9% of pre-measure water use). The second year after, water savings amounted to 12,134 gallons, or 303 gppy (0.5% of pre-measure water use). On average, no savings occurred; water use increased by 17,147 gallons (0.1 AF), or 429 gppy (0.7% of pre-measure water use). **No water savings occurred over the twenty year assumed lifespan of the rates; water use increased by 342,936 gallons (1.1 AF), or 6,659 gallons per participant.**

For all connections analyzed, during the first year after the rate change, the water savings amounted to 97,396,518 gallons, or 8,880 gallons per participant per year (gppy) (7.1% of pre-measure water use). The second year after, water savings amounted to 93,704,669 gallons, or 8,543 gppy (6.8% of pre-measure water use). The average savings per year was 95,550,593 gallons (293.2 AF), or 8,711 gppy (6.9% of pre-measure water use). **The total water savings over the twenty year assumed lifespan of the rates was 1,911,011,870 gallons (5,864.7 AF), or 10,163 gallons per participant.**

RESULTS - COST BENEFIT ANALYSIS

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

Quantified Costs and Benefits					
Utility			Participants		
Costs		Benefits	Costs	Benefits	
Planning & Research	\$37,332	Not Quantified	Not Quantified	Water Bill Savings	\$6,842,739
Total	\$37,332			Total	\$6,842,739

- G The quantified cost to the utility was \$37,332 (\$2 per connection), which includes the costs of planning and research.
- G The quantified benefit to the utility was \$0.
- G The quantified cost to the participants was \$0.
- G The quantified benefit to participants was \$6,842,739 (\$364 per connection), which includes the benefit of water bill savings.

UTILITY PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of -\$37,332 from the utility perspective. This is a net benefit of -\$2 per participant. The quantified costs to the utility were greater than the quantified benefits to the utility. **The cost per acre-foot of water saved from the utility perspective was \$6.**

PARTICIPANT PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of \$6,842,739 from the participants perspective. This is a net benefit of \$364 per participant. The quantified costs to the participants were less than the quantified benefits to the participants. **The cost per acre-foot of water saved from the participant perspective was \$0.**

OVERALL PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of \$6,805,407 from an overall perspective. This is a net benefit of \$362 per participant. The quantified costs to the participants and utility were greater than the quantified benefits to the participants and utility. **The cost per acre-foot of water saved from an overall perspective was \$6.**

UNQUANTIFIED COSTS AND BENEFITS

Costs

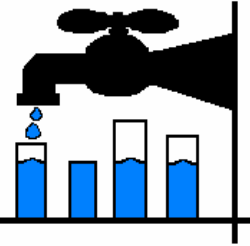
- Cost of instituting rate structure.

Benefits

- Financial savings on sewer bills for participants.
- Avoided cost of acquisition and distribution of water saved.
- Environmental benefits of reduced use of water.
- Increased public awareness about water conservation.
- Reinforces need to conserve water and desirability of conserving.
- Delays capital improvement projects.
- Water saved for future municipal use.

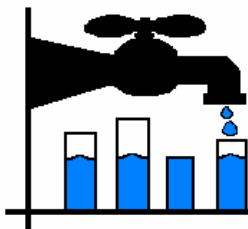
St. Johns County Utility Department

Conservation Rates: Increasing Block



Results of Cost Benefit Analysis-Lifespan (20 Years)

	UTILITY	PARTICIPANT	OVERALL
<u>Present Value Costs</u>			
Costs to Utility	37,332	NA	37,332
Costs to Participants	NA	0	0
Costs to Others	NA	NA	0
Total Costs	\$37,332	\$0	\$37,332
<u>Present Value Benefits</u>			
Total Water Savings	5,864.67 AF	5,864.67 AF	5,864.67 AF
Benefits to Utility	0	NA	0
Benefits to Participants	NA	6,842,739	6,842,739
Benefits to Others	NA	NA	0
Total Benefits	\$0	\$6,842,739	\$6,842,739
<u>Cost Benefit Calculations</u>			
Net Present Value (NPV) (Total Benefits - Total Costs)	-\$37,332	\$6,842,739	\$6,805,407
Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings)	\$6 /AF	\$0 /AF	\$6 /AF



Sandy City Public Utilities Dept.

Seasonal Conservation Rates

Sandy City Public Utilities Department serves the community of Sandy, Utah, located west of the Wasatch Mountains, and south of Salt Lake City in Salt Lake County. According to Utah Demographics and Statistics, the approximate population of Sandy is 89,319¹. As of the 2000 Census, median household income in Sandy was \$66,458².

UTILITY DEMOGRAPHICS

The total service area of the Utilities Department is 24.6 square miles. The population of this service area is 100,000. As of 2004, Sandy City Public Utilities Department's customers' water use was 216 gallons per capita per day (gpcd).

Sandy City Public Utilities Department has a total of 26,870 connections in its service area. Of these connections, 24,861 are single family residential, 483 are multifamily residential, 1,064 are commercial, 96 are irrigation, 248 are parks/landscape, 42 are school, 34 are municipal, and 42 are unmetered connections.

SEASONAL CONSERVATION RATES	
Type of Program:	Rate Structure
Eligible Customers:	ALL
Customers Analyzed:	ALL
Program Years:	2001
Years Analyzed:	2001

UTILITY RATE STRUCTURE AND PRICES

Sandy City Public Utilities Department uses a seasonal rate structure. The monthly base rate for service is \$15.33 for single family customers, which includes 8,000 gallons of water. Single family residential usage charges are as follows:

APRIL—SEPTEMBER	\$0.93 per 1,000 gallons
OCTOBER—MARCH	\$1.68 per 1,000 gallons

CURRENT CAPACITY AND WATER SOURCES

Sandy City Public Utilities Department has a storage capacity of 32.4 million gallons. The utility's current water sources are groundwater and surface water.

SEASONAL RATE STRUCTURE—DESCRIPTION

Sandy City Public Utilities Department adopted its conservation rate structure in April, 2001. It replaced a uniform rate structure. The new structure is a seasonal rate structure; the variable rate is 81% higher in the summer months (\$1.68 per 1,000 gallons April through September) than in the winter months (\$0.93 per 1,000 gallons October through March). The first 8,000 gallons of water are included in the customer's base charge throughout the year.

Around the time that the utility implemented the seasonal rate structure, there were additional factors that may have also affected water use

R-5

¹ U.S. Bureau of the Census, Sub county Population Estimates 2000-2003.

² U.S. Census Bureau, American Fact Finder.

among utility customers. In 2001, a coalition formed by Utah's governor expanded Jordan Valley Water Conservancy District's Slow-the-Flow

water conservation campaign statewide. The Division of Water Resources distributed a second version of Utah's M&I Water Conservation Plan in 2001. In May 2001, Sandy City Public Utilities Department updated its water conservation plan. There was also a continuing drought in the area.

OTHER SANDY CITY CONSERVATION PROGRAMS

Audits, 1999-present
Administered by Utah State University Extension.

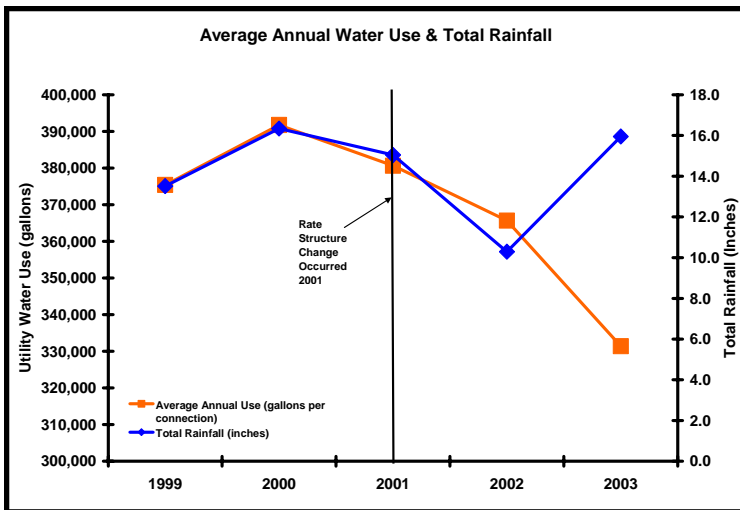
Conservation Ordinances, 2001-present
In 2001, a landscape ordinance was amended to include a time of day watering restriction.

Public Education, 2001-present
Conservation packets, brochures, newsletter articles, booths at Exposition Centers, a water conservation garden, and teaching conservation in schools.

METHODOLOGY

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

The methodology for this analysis is different from most of the cases in the study because no control group was available for comparison. This is because the rate change affected all of the utility's customers. Instead of using a control group, the water savings was calculated solely from the difference in pre- and post-measure water use of the participants (the entire utility). The pre-measure and post-measure time periods were two years each. The average yearly water savings from two years after the rate change was extrapolated for twenty years, the assumed lifespan of the rate change.



All quantified costs and benefits have been discounted to the first year of the analysis (2001) and inflated to 2004 dollars. The discount rate used in this analysis was 5.35%. The CPI values that were used in this analysis were the 2004 value of 188.9 and the 2001 value of 177.1.

It was not possible to follow the individual customers of the utility at the time of the rate change. Instead, the total number of connections at the utility was used as a proxy.

The number of connections varied by year. There were 25,642 in 1997, 26,351 in 1998, 25,945 in 1999, 26,217 in 2000, 26,360 in 2001, 26,595 in 2002, and 26,634 in 2003.

In addition to data collected to estimate water savings and perform cost benefit analysis, historical weather data was collected for additional

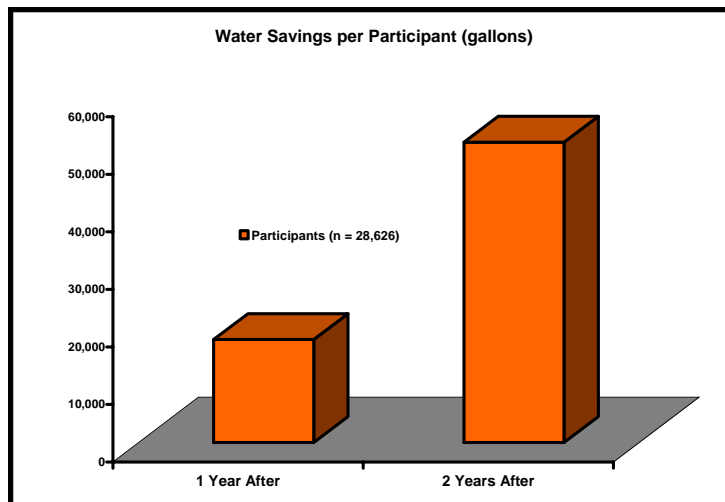
information. Two gauges of weather were gathered; mean annual temperature and total annual rainfall. This data was collected from the National Climatic Data Center, data file Surface Data, Monthly U.S. TD3220.

ASSUMPTIONS

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

The rate change occurred in April, 2001. However, the calculation of water savings and any benefits derived from water savings were not started until January 1, 2002.

The price of water used in the analysis was a weighted average of summer and winter rates, with summer use occurring at 6 times the amount of winter use. The resulting price was \$1.39 per 1,000 gallons in 2002, \$1.48 per 1,000 gallons in 2003, and \$1.57 per 1,000 gallons in 2004 (and assumed to be \$1.57 for the rest of the lifespan).



The number of connections at the utility in 2003 was unknown. The average increase in connections per year was determined. This figure was added to the number of 2002 connections to result in the assumed number of connections for 2003.

RESULTS -- WATER SAVINGS

The first year after the 2001 rate change, there was a water savings of 476,178,322 gallons, or 17,905 gppy (4.7% of pre-measure water use). The second year after the rate change, water savings were 1,389,969,644 gallons, or 52,188 gppy (13.6% of pre-measure water use). The average water savings per year was 933,073,983 gallons (2863.5 AF), or 35,046 gppy (9.1% of pre-measure water use). **The total water savings over the twenty year assumed lifespan of the rate change was 18,661,479,664.3 gallons (57,270.0 AF), or 651,918 gallons per participant.**

The directional change in water use from year to year marginally corresponds with the change in temperature from year to year. Two observations are not consistent with the pattern of the rest of the data.

From 1990-1991, the average yearly temperature decreased while average yearly water used increased. The converse occurred from 2002-2003—average yearly temperature increased while average yearly water use decreased. There are most likely other unaccounted for variables (which may or may not be quantified) that have impacted the average yearly water usage over the period of the analysis.

³ The savings on participants' water bills was calculated by multiplying the amount of water saved by the price of water (\$1.57 per 1,000 gallons) at Sandy City Public Utilities

In addition, the magnitude of change corresponds less closely. Utility water use is less correlated with yearly rainfall than with average yearly temperature. Both the direction and magnitude of change from year to year are varied.

RESULTS - COST BENEFIT ANALYSIS

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

- G The quantified cost to the utility was \$0.
- G The quantified cost to the participants was \$0.
- G The quantified benefit to the utility was \$0.
- G The quantified benefit to the participants was \$3,983,524. This benefit includes the savings on participants' water bills, \$3,983,524 (\$139 per participant).

UTILITY PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of \$0 from the utility perspective. 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.**

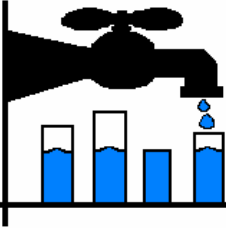
PARTICIPANT PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of \$3,983,524 from the participant perspective. The quantified costs to the participants were less than the quantified benefits to the participants. **The cost per acre-foot of water saved from the participant perspective was \$0.**

Quantified Costs and Benefits			
Utility		Participants	
Costs	Benefits	Costs	Benefits
Not Quantified		Not Quantified	Water Bill Savings \$3,983,524
			Total \$3,983,524

OVERALL PERSPECTIVE

Results of cost benefit analysis show a net benefit (net present value) of \$3,983,524 from an overall perspective. The quantified costs to the participants and utility were greater than the quantified benefits to the participants and utility. **The cost per acre-foot of water saved from an overall perspective was \$0.**



Sandy City Public Utilities Dept.

Seasonal Conservation Rates

Results of Cost Benefit Analysis-Lifespan (20 Years)			
	UTILITY	PARTICIPANT	OVERALL
<u>Present Value Costs</u>			
Costs to Utility	0	NA	0
Costs to Participants	NA	0	0
Costs to Others	NA	NA	0
Total Costs	\$0	\$0	\$0
<u>Present Value Benefits</u>			
Total Water Savings	57,269.90 AF	57,269.90 AF	57,269.90 AF
Benefits to Utility	0	NA	0
Benefits to Participants	NA	3,983,524	3,983,524
Benefits to Others	NA	NA	NA
Total Benefits	\$0	\$3,983,524	\$3,983,524
<u>Cost Benefit Calculations</u>			
Net Present Value (NPV) (Total Benefits - Total Costs)	\$0	\$3,983,524	\$3,983,524
Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings)	\$0 /AF	\$0 /AF	\$0 /AF

UNQUANTIFIED COSTS AND BENEFITS

Costs

- Administrative costs to develop the rate structure.
- Printing rate schedules.
- Inform customers.

Benefits

- Environmental benefits of reduced water use.
- Avoided cost of acquisition and distribution of water saved.
- Increased public awareness of the need to conserve water.
- Increased customer satisfaction with the utility.
- Reinforcing the need to conserve.
- Reduced groundwater depletion, surface water consumption.

R-5

