# Albuquerque Water Res. Div.

## Landscape Rebate Program

The City of Albuquerque Water Resources Division is a municipal water provider serving the City of Albuquerque, a large city located in north central New Mexico. The Division provides water to approximately 449,000 people. The 1999 median household income in Albuquerque was $38,272, which is higher than the statewide median of $34,133.[1]

### UTILITY DEMOGRAPHICS

As of 2003, the City of Albuquerque Water Resources Division had 162,608 connections, 90.1% of which were residential. Of their total connections, 146,484 were single family residential, 13,177 were commercial (multifamily residential connections are included with commercial), 114 were industrial, approximately 1,000 were irrigation, and 1,833 were institutional (schools, government agencies, hospitals) water customers. The city's total service area is approximately 180 square miles. As of 2004, Albuquerque customers' water use, in gallons per capita per day (gpcd), was 177.[2]

**LANDSCAPE REBATE PROGRAM**

| | |
|---|---|
| **Rebate Amount:** | **$.40 sq./ft., max $800** |
| **Eligible Customers:** | **SF, ICI** |
| **Customers Analyzed:** | **SF** |
| **Program Years:** | **1996 - present** |
| **Analysis Years:** | **1997 - 2001** |

### UTILITY RATE STRUCTURE AND PRICES

The City of Albuquerque has a uniform rate structure. The 2004 monthly water charges are $6.04 for 5/8'' and 3/4'' meters, which includes zero gallons of water. The charge per hundred cubic feet (ccf) of water is $1.23 per ccf ($1.64 per 1,000 gallons). The commodity rate includes the cost per unit, state of New Mexico conservation fee, contributions to the Sustainable Water Supply program, and contributions to the Water Resources Management Program.[3]

### CURRENT CAPACITY AND WATER SOURCES

As of 2003, the Water Resources Division had storage capacity of 211 million gallons per day of treated water.[4] The utility's 94 wells are supplied by the Santa Fe Group Aquifer.[5]

### FUTURE PLANS TO MEET DEMAND

The population of Albuquerque increased substantially between 1990 and 2000; during that decade, the population increased by 15.9%.[6] The City of Albuquerque continues to grow at a rate of 1.5% per year.[7] The utility plans to meet future demand by reducing groundwater use, expanding and changing water sources, implementing and continuing conservation programs, reusing water, purchase, and constructing a purification facility.

[1] US Census Bureau.
[2] City of Albuquerque Water Conservation Home.
[3] City of Albuquerque Water Utility Department.
[4] City of Albuquerque. Citizen Services—Frequently Asked Questions.
[5] City of Albuquerque. Water Quality Report 2003.
[6] US Census Bureau.
[7] US Census Bureau.

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## REBATE PROGRAM - DESCRIPTION

The City of Albuquerque Landscape Rebate Program is an incentive program for residential and commercial customers who convert their high water use turf to Xeriscape. Eligible customers receive $0.40 per square foot converted, and must convert at least 500 square feet of high water use landscape. The maximum rebate for residential and commercial customers is $800 and $5,000, respectively. Customers wishing to participate in the rebate program must first submit an application to the city detailing their landscaping plans. City inspectors visit the property to ensure that existing landscape is in fact high water use (customers with existing water efficient landscapes are ineligible). If the application is approved, customers have six months in which to complete the conversion. Upon project completion, customers must arrange a final inspection, thereafter, the appropriate rebate amounts are credited to customers' accounts.[8]

**OTHER CITY OF ALBUQUERQUE CONSERVATION PROGRAMS**

**Toilet Rebates, *1996-present***
**Showerhead/Aerator Rebates and Replacements, *2000-present***
**Washing Machine Rebates, *2000-present***
**Water Harvesting System Rebates, *2002-present***
**Graywater System Rebates, *2003-present***
**Irrigation System Rebates, *2003 -present***
**Conservation Rates, *2001-present***
**Indoor/Outdoor Audits, *1998-present***
**Leak Detection for Customers, *1998-present***
**Public education, *1999–present***
**Conservation Ordinances, *1996-present***
**Dishwasher/Hot Water Recirculator Rebate Program, *2003-present***

The program has significantly increased in popularity since its initiation in 1996. Changes to the financial incentive amount have contributed to the programs rising popularity. From 1996 to 1999, the rebate amount was $0.25 per square foot converted. In 2000, the rebate amount increased to $0.40 per square foot converted. In 2003, the city increased the maximum rebate amount for commercial users to $5,000, which resulted in increased commercial participation.

The landscape rebate program is part of the city of Albuquerque's larger water conservation campaign (financial incentives, public education, water use audits, etc.). The city specifically targets high water users for all conservation programs.

## 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 received landscape conversion rebates during the years 1997 through 2001. The water savings were calculated and a cost benefit analysis was performed for the years 1997, 1998, 1999, 2000, and 2001. The findings refer to these five years only, not to the ongoing program. The

[8] Xeriscape Rebate and Designs.

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lifespan of the landscape conversion, which is used as the period of analysis, was assumed to be 10 years.

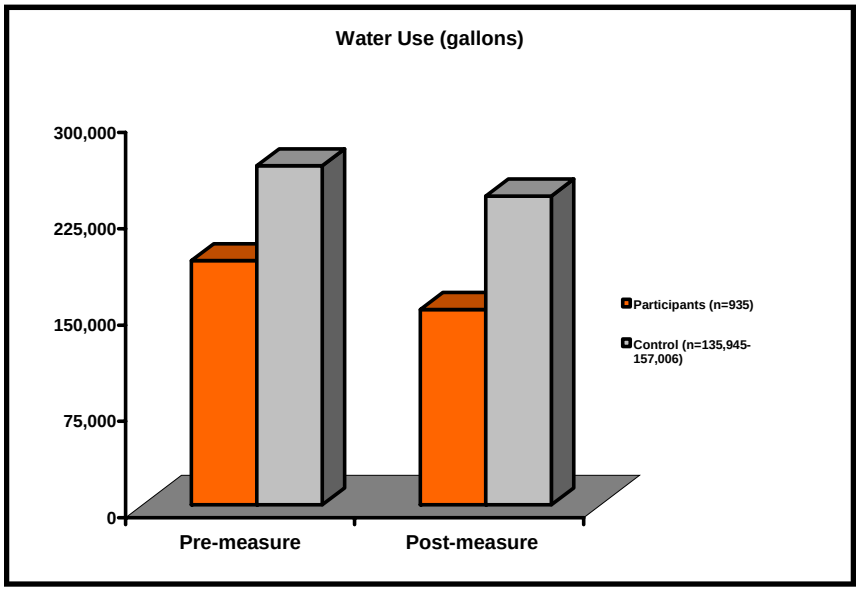
All quantified costs and benefits have been discounted to the first year of the analysis (1997) and inflated to 2004 dollars. The discount rate used for this analysis was 6.1%. The CPI values that were used in this analysis were the 2004 value of 188.9 and the 1997 value of 160.5.

The population studied for this analysis was comprised of all participants who received a landscape conversion rebate during 1997, 1998, 1999, 2000, and 2001. There were 104 usable participants out of 104 total participants in 1997, 155 out of 159 in 1998, 192 out of 195 in 1999, 197 out of 201 in 2000, and 287 out of 294 in 2001, for a total of 935 usable participants out of 953. Approximately 2%, or 18, of the possible participants were unusable because there was insufficient raw data, they were not single family residential customers, or they have moved during the period of analysis.

All City of Albuquerque single family residential households that did not participant in the landscape conversion rebate program were used as the control group. However, the weighted average annual pre-measure water use of the participants (190,236 gallons) was lower than that of the control group (264,155 gallons).

For 1997 landscape conversion rebates, the control group consisted of 135,841 households in 1995, 138,467 in 1996, 140,708 in 1997, 143,241 in 1998, and 146,430 in 1999.

For 1998 landscape conversion rebates, the control group consisted of 138,416 households in 1996, 140,657 in 1997, 143,190 in 1998, 146,379 in 1999, and 148,985 in 2000.




For 1999 landscape conversion rebates, the control group consisted of 140,620 households in 1997, 143,153 in 1998, 146,342 in 1999, 148,948 in 2000, and 151,813 in 2001.

For 2000 landscape conversion rebates, the control group consisted of 143,148 households in 1998, 146,337 in 1999, 148,943 in 2000, 151,808 in 2001, and 154,735 in 2002.

For 2001 landscape conversion rebates, the control group consisted of 146,247 households in 1999, 148,853 in 2000, 151,718 in 2001, 154,645 in 2002, and 156,719 in 2003.

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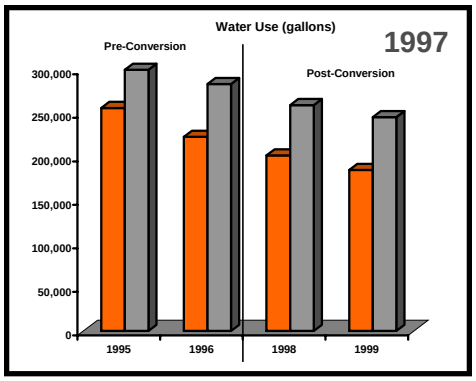
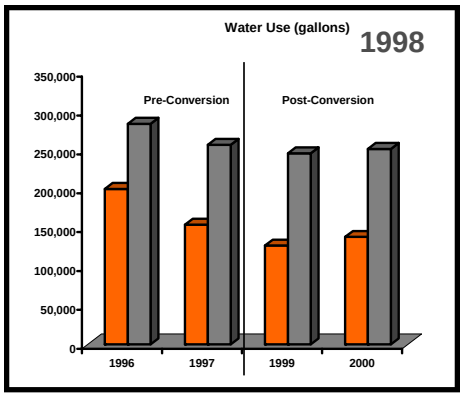
## ASSUMPTIONS

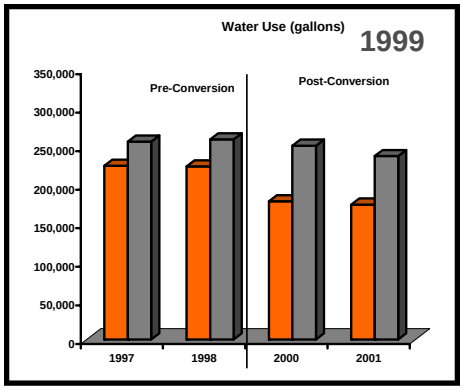
*Please see the General Assumptions for the specific conditions and rules underlying all ECoBA analyses.*

There was a no minimum square footage requirement for the landscape conversions.

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




PARTICIPANTS

CONTROL GROUP

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We estimated $50,000 per year in advertising costs for this program.

We estimated $70,000 per year in labor for this program, including Xeriscape inspector ($50,000/yr) and clerical staff ($20,000/yr).

We assumed a cost of $3.50 per square foot to the participant for labor and materials for the landscape conversion.

We assumed the variable water rate of $1.23 per ccf since 1997.

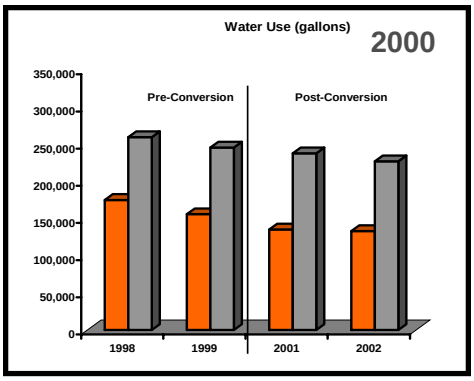
## RESULTS - WATER SAVINGS

In the first year after the 1997 landscape conversion rebates, water savings amounted to 1,184,258 gallons, or 11,387 gallons per participant per year (gppy) (4.8% of pre-measure water use). The second year after the landscape conversion rebates, water savings amounted to 1,744,853 gallons, or 16,777 gppy (7.0% of pre-measure water use). The average water savings per year was 1,464,556 gallons (4.5 AF), or 14,082 gppy (5.9% of pre-measure water savings). **The total water savings over the ten year assumed lifespan of the landscape conversions was 14,645,557 gallons (44.9 AF), or 140,823 gallons per participant.**

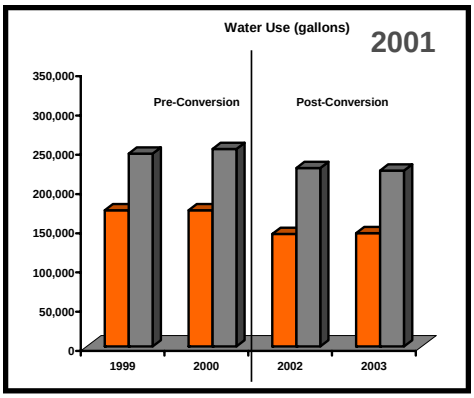
The first year after the 1998 landscape conversion rebates, water savings amounted to 5,241,184 gallons, or 33,814 gppy (19.1% of pre-measure water use). The second year after the rebates, water savings amounted to 4,118,516, or 26,571 gppy (15.0% of pre-measure water use). The average water savings per year was 4,679,850 gallons (14.4 AF) or 30,193 gppy (17.1% of pre-measure water use). **The total savings over the ten year assumed lifespan of the landscape conversions was 46,798,504 gallons (143.6 AF), or 301,926 gallons per participant**.

The first year after the 1999 landscape conversion rebates, water savings amounted to 7,615,701 gallons, or 39,665 gppy (17.7% of pre-measure water use). The second year after the rebates, water savings amounted

to 6,206,817 gallons, or 32,327 gppy (14.4% of pre-measure water use). The average water savings per year was 6,911,259 gallons (21.2 AF) or 35,996 gppy (16.0% of pre-measure water use). **The total water savings over the ten year assumed lifespan of the landscape conversions was 69,112,591 gallons (212.1 AF), or 359,961 gallons per participant.**




The first year after the 2000 landscape conversion rebates, water savings amounted to 4,065,211 gallons, or 20,636 gppy (12.5% of pre-measure water use). The second year after the rebates, water savings amounted to 3,098,622 gallons, or 15,729 gppy (9.5% of pre-measure water use). The average water savings per year was 3,581,917 gallons (11.0 AF) or 18,182 gppy (11.0% of pre-measure water use). **The total water savings over the ten year assumed lifespan of the landscape conversions was 35,819,166 gallons (109.9 AF), or 181,823 gallons per participant.**




The first year after the 2001 landscape conversion rebates, water savings amounted to 4,390,978 gallons, or 15,300 gppy (8.8% of pre-measure water use). The second year after the rebates water savings amounted to 3,418,305 gallons, or 11,910 gppy (6.9% of pre-measure water use). The average water savings per year was 3,904,642 gallons (12.0 AF) or 13,605 gppy (7.9% of pre-measure water use). **The total water savings over the ten year assumed lifespan of the landscape conversions was 39,046,418 gallons (119.8 AF), or 136,050 gallons per participant.**

PARTICIPANTS
CONTROL GROUP

In the first year after the landscape conversions, the total water savings for the five years studied amounted to 22,497,333 gallons, or 24,061 gppy (12.7% of weighted pre-measure water use). In the second year after the landscape conversions, the total water savings amounted to 18,587,114 gallons, or 19,879 gppy (10.5% of weighted pre-measure use). **The total water savings over the ten year assumed lifespan of the landscape conversions was 205,422,235 gallons (630.4 AF), or 219,703 gallons per participant.**

During the two years before participating in the program, participants' water use was 72.0% of the control group's use, on average. During the two years after participating in the program, their water use was 63.3% of the control group's use, on average. The participants' water use decreased by 20.0% from pre-measure to post-measure, whereas the control group's use decreased by 8.9%. **The resulting overall water savings attributed to this program was 11.1%.**

## RESULTS - COST BENEFIT ANALYSIS

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

**1997 LANDSCAPE CONVERSION REBATES**

- The quantified cost to the utility was $150,005. This includes the

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cost of advertising, $58,847, the cost of financial incentives, $8,772, and the cost of labor, $82,386. This is a cost of $1,442 per participant, including $566 for advertising, $84 in financial incentives, and $792 in labor.

- The quantified benefit to the utility was $0.
- The quantified cost to the participants was $122,805. This includes the cost of the landscape conversion and relevant materials, $122,805. This is a cost of $1,181 per participant.
- The quantified benefit to the participants was $29,451. This includes financial incentives, $8,772, and water bill savings $20,679. This is a benefit of $283 per participant, including $84 in financial incentives and $199 in water bill savings.

**UTILITY PERSPECTIVE - 1997**

Results of the cost-benefit analysis show a net benefit (net present value) of -$150,005 from the utility perspective. This is a net benefit of -$1,442 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 $3,338.**

| 1997 Quantified Costs and Benefits | | | | | | |
|---|---|---|---|---|---|---|
| Utility | | | Participants | | | |
| Costs | | Benefits | Costs | | Benefits | |
| Advertising | $58,847 | Not Quantified | Conversion Materials | $122,805 | Financial Incentives | $8,772 |
| Financial Incentives | $8,772 | | | | Water Bill Savings | $20,679 |
| Labor | $82,386 | | | | | |
| Total | $150,005 | | Total | $122,805 | Total | $29,451 |

**PARTICIPANT PERSPECTIVE - 1997**

Results of the cost benefit analysis show a net benefit (net present value) of -$93,355 from the participant perspective. This is a net benefit of -$898 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 $2,732.**

**OVERALL PERSPECTIVE - 1997**

Results of cost benefit analysis show a net benefit (net present value) of -$243,360 from an overall perspective. This is a net benefit of -$2,340 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 $6,070.**

**1998 LANDSCAPE CONVERSION REBATES**

- The quantified cost to the utility was $161,872. This includes the cost of advertising, $55,464, the cost of financial incentives $28,758, and the cost of labor, $77,650. This is a cost of $1,045 per participant, including $358 for advertising, $186 in financial incentives, and $501 in labor.
- The quantified benefit to the utility was $0.

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- The quantified cost to the participants was $402,614. This includes the cost of the landscape conversion and relevant materials, $402,614. This is a cost of $2,598 per participant.
- The quantified benefit to the participants was $91,179. This includes financial incentives, $28,758, and water bill savings, $62,421. This is a benefit of $589 per participant, including $186 in financial incentives, and $403 in water bill savings.

| 1998 | | Quantified Costs and Benefits | | | |
|---|---|---|---|---|---|
| Utility | | | Participants | | |
| Costs | | Benefits | Costs | | Benefits | |
| Advertising | $55,464 | Not Quantified | Conversion Materials | $402,614 | Financial Incentives | $28,758 |
| Financial Incentives | $28,758 | | | | Water Bill Savings | $62,421 |
| Labor | $77,650 | | | | | |
| Total | $161,872 | | Total | $402,614 | Total | $91,179 |

**UTILITY PERSPECTIVE - 1998**

Results of the cost-benefit analysis show a net benefit (net present value) of -$161,872 from the utility perspective. This is a net benefit of -$1,045 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 $1,127.**

**PARTICIPANT PERSPECTIVE - 1998**

Results of the cost-benefit analysis show a net benefit (net present value) of -$311,434 from the participant perspective. This is a net benefit of -$2,009 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 $2,803.**

**OVERALL PERSPECTIVE - 1998**

Results of cost benefit analysis show a net benefit (net present value) -$473,306 from an overall perspective. This is a net benefit of -$3,054 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 $3,930.**

**1999 LANDSCAPE CONVERSION REBATES**

- The quantified cost to the utility was $160,545. This includes the cost of advertising, $52,275, the cost of financial incentives $35,085, and the cost of labor, $73,185. This is a cost of $836 per participant, including $272 for advertising, $183 in financial incentives, and $381 in labor.
- The quantified benefit to the utility was $0.
- The quantified cost to the participants was $491,191. This includes the cost of the landscape conversion and relevant materials, $491,191. This is a cost of $2,558 per participant.
- The quantified benefit to the participants was $121,958. This includes financial incentives, $35,085, and water bill savings,

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$86,873. This is a benefit of $635 per participant, including $183 in financial incentives, and $452 in water bill savings.

| 1999 Quantified Costs and Benefits | | | | | | |
|---|---|---|---|---|---|---|
| Utility | | | Participants | | | |
| Costs | | Benefits | Costs | | Benefits | |
| Advertising | $52,275 | Not Quantified | Conversion Materials | $491,191 | Financial Incentives | $35,085 |
| Financial Incentives | $35,085 | | | | Water Bill Savings | $86,873 |
| Labor | $73,185 | | | | | |
| Total | $160,545 | | Total | $491,191 | Total | $121,958 |

**UTILITY PERSPECTIVE - 1999**
Results of the cost-benefit analysis show a net benefit (net present value) of -$160,545 from the utility perspective. This is a net benefit of -$836 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 $757.**

**PARTICIPANT PERSPECTIVE - 1999**
Results of the cost-benefit analysis show a net benefit (net present value) of -$369,233 from the participant perspective. This is a net benefit of -$1,923 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 $2,316.**

**OVERALL PERSPECTIVE - 1999**
Results of cost-benefit analysis show a net benefit (net present value) of -$529,779 from an overall perspective. This is a net benefit of -$2,759 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 $3,073.**

**2000 LANDSCAPE CONVERSION REBATES**

- The quantified cost to the utility was $151,426. This includes the cost of advertising, $49,270, the cost of financial incentives $33,178, and the cost of labor, $68,978. This is a cost of $769 per participant, including $250 for advertising, $169 in financial incentives, and $350 in labor.
- The quantified benefit to the utility was $0.
- The quantified cost to the participants was $290,310. This includes the cost of the landscape conversion and relevant materials, $290,310. This is a cost of $1,474 per participant.
- The quantified benefit to the participants was $75,624. This includes financial incentives, $33,178, and water bill savings, $42,446. This is a benefit of $384 per participant, including $169 in financial incentives, and $215 in water bill savings.

**UTILITY PERSPECTIVE - 2000**
Results of the cost-benefit analysis show a net benefit (net present value) of -$151,426 from the utility perspective. This is a net benefit of -

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$769 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 $1,378.**

| 2000 | Quantified Costs and Benefits | | | | | |
|---|---|---|---|---|---|---|
| Utility | | | | Participants | | |
| Costs | | Benefits | | Costs | | Benefits | |
| Advertising | $49,270 | Not Quantified | | Conversion Materials | $290,310 | Financial Incentives | $33,178 |
| Financial Incentives | $33,178 | | | | | Water Bill Savings | $42,446 |
| Labor | $68,978 | | | | | | |
| Total | $151,426 | | | Total | $290,310 | Total | $75,624 |

**PARTICIPANT PERSPECTIVE - 2000**

Results of the cost-benefit analysis show a net benefit (net present value) of -$214,686 from the participant perspective. This is a net benefit of -$1,090 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 $2,641.**

**OVERALL PERSPECTIVE - 2000**

Results of cost benefit analysis show a net benefit (net present value) of -$366,112 from an overall perspective. This is a net benefit of -$1,858 per participant. The quantified costs to the participants and the utility were greater than the quantified benefits to the participants and the utility. **The cost per acre-foot of water saved from an overall perspective was $4,019.**

**2001 LANDSCAPE CONVERSION REBATES**

- The quantified cost to the utility was $162,046. This includes the cost of advertising, $46,437, financial incentives, $50,597, and labor, $65,012. This is a cost of $565 per participant, including $162 for advertising, $176 in incentives, and $227 in labor.
- The quantified benefit to the utility was $0.
- The quantified cost to the participants was $442,723. This includes the cost of the landscape conversion and relevant materials, $442,723. This is a cost of $1,543 per participant.
- The quantified benefit to the participants was $94,203. This includes financial incentives, $50,597, and water bill savings, $43,606. This is a benefit of $328 per participant, including, $176 in financial incentives and $152 in water bill savings.

**UTILITY PERSPECTIVE - 2001**

Results of the cost-benefit analysis show a net benefit (net present value) of -$162,046 from the utility perspective. This is a net benefit of -$565 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 $1,352.**

**PARTICIPANT PERSPECTIVE - 2001**

Results of the cost-benefit analysis show a net benefit (net present value) of -$348,520 from the participant perspective. This is a benefit of -$1,214 per participant. The quantified costs to the participant were

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greater than the quantified benefits to the participants. **The cost per acre-foot of water saved from the participant perspective was $3,695.**

| 2001 | Quantified Costs and Benefits | | | | | |
|---|---|---|---|---|---|---|
| Utility | | | Participants | | | |
| Costs | | Benefits | Costs | | Benefits | |
| Advertising | $46,437 | Not Quantified | Conversion Materials | $442,723 | Financial Incentives | $50,597 |
| Financial Incentives | $50,597 | | | | Water Bill Savings | $43,606 |
| Labor | $65,012 | | | | | |
| Total | $162,046 | | Total | $442,723 | Total | $94,203 |

**OVERALL PERSPECTIVE - 2001**

Results of the cost benefit analysis show a net benefit (net present value) of -$510,567 from an overall perspective. This is a net benefit of -$1,779 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 $5,047.**

**LANDSCAPE CONVERSION REBATES - ALL YEARS**

- The quantified cost to the utility was $785,895. This includes the cost of advertising, $262,294, the cost of financial incentives, $156,390, and the cost of labor $367,211. This is a cost of $841 per participant, including $281 for advertising, $167 in financial incentives, and $393 in labor.
- The quantified benefit to the utility was $0
- The quantified cost to the participants was $1,749,643. This includes the cost of the landscape conversion and relevant materials $1,749,643. This is a cost of $1,871 per participant.
- The quantified benefit to the participants was $412,414. This includes financial incentives, $156,390, and water bill savings, $256,024. This is a benefit of $441 per participant, including $167 in financial incentives, and $274 in water bill savings

**UTILITY PERSPECTIVE - ALL YEARS**

Results of the cost benefit analysis show a net benefit (net present value) of -$785,895 from the utility perspective. This is a net benefit of -$841 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 $1,247.**

**PARTICIPANT PERSPECTIVE - ALL YEARS**

Results of the cost benefit analysis show a net benefit (net present value) of -$1,337,229 from the participant perspective. This is a net benefit of -$1,430 per participant. The quantified costs to the participants were greater than the quantified benefit to the participants. **The cost per acre-foot of water saved from the participant perspective was $2,775.**

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**OVERALL PERSPECTIVE - ALL YEARS**

Results of cost-benefit analysis from an overall perspective show a net benefit (net present value) of -$2,123,124 from an overall perspective. This is a net benefit of -$2,271 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 $4,022.**

| ALL YEARS | Quantified Costs and Benefits | | | | | |
|---|---|---|---|---|---|---|
| Utility | | | | Participants | | |
| Costs | | Benefits | | Costs | | Benefits | |
| Advertising | $262,294 | Not Quantified | | Conversion Materials | $1,749,643 | Financial Incentives | $156,390 |
| Financial Incentives | $156,390 | | | | | Water Bill Savings | $256,024 |
| Labor | $367,211 | | | | | | |
| Total | $785,895 | | | Total | $1,749,643 | Total | $412,414 |

**UNQUANTIFIED COSTS AND BENEFITS**

**Costs**

- **Landfill disposal of high water use landscaping.**
- **Time spent converting the landscape.**
- **Time spent arranging and awaiting pre- and post-conversion inspections by the city.**
- **Aesthetics.**
- **Loss of function.**

**Benefits**

- **Financial savings on sewer bills for participants.**
- **Avoided costs of acquisition and distribution of water saved.**
- **Environmental benefits of reduced water use.**
- **Increased public awareness about water conservation.**
- **Water savings for future municipal water use.**
- **Reduced surface water use.**
- **Newly xeriscaped landscapes.**

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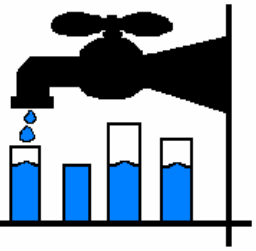
# Albuquerque Water Res. Div.
## Landscape Rebate Program



## 1997 Results of Cost Benefit Analysis-Lifespan (10 Years)

| | UTILITY | PARTICIPANT | OVERALL |
|---|---|---|---|
| *Present Value Costs* | | | |
| Costs to Utility | 150,005 | NA | 150,005 |
| Costs to Participants | NA | 122,805 | 122,805 |
| Costs to Others | NA | NA | 0 |
| Total Costs | $150,005 | $122,805 | $272,810 |
| *Present Value Benefits* | | | |
| Total Water Savings | 44.95 AF | 44.95 AF | 44.95 AF |
| Benefits to Utility | 0 | NA | 0 |
| Benefits to Participants | NA | 29,450 | 29,450 |
| Benefits to Others | NA | NA | 0 |
| Total Benefits | $0 | $29,450 | $29,450 |
| *Cost Benefit Calculations* | | | |
| Net Present Value (NPV) (Total Benefits - Total Costs) | -$150,005 | -$93,355 | -$243,360 |
| Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings) | $3,338 /AF | $2,732 /AF | $6,070 AF |

## 1998 Results of Cost Benefit Analysis-Lifespan (10 Years)

| | UTILITY | PARTICIPANT | OVERALL |
|---|---|---|---|
| *Present Value Costs* | | | |
| Costs to Utility | 161,872 | NA | 161,872 |
| Costs to Participants | NA | 402,614 | 402,614 |
| Costs to Others | NA | NA | 0 |
| Total Costs | $161,872 | $402,614 | $564,485 |
| *Present Value Benefits* | | | |
| Total Water Savings | 144 AF | 144 AF | 144 AF |
| Benefits to Utility | 0 | NA | 0 |
| Benefits to Participants | NA | 91,179 | 91,179 |
| Benefits to Others | NA | NA | 0 |
| Total Benefits | $0 | $91,179 | $91,179 |
| *Cost Benefit Calculations* | | | |
| Net Present Value (NPV) (Total Benefits - Total Costs) | -$161,872 | -$311,434 | -$473,306 |
| Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings) | $1,127/AF | $2,803 /AF | $3,930 /AF |

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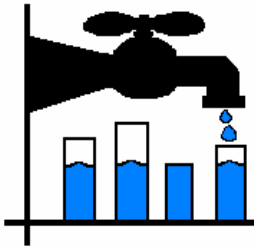

# Albuquerque Water Res. Div.

## Landscape Rebate Program

### Results of Cost Benefit Analysis-Lifespan (10 Years) 1999

| | UTILITY | PARTICIPANT | OVERALL |
|---|---|---|---|
| *Present Value Costs* | | | |
| Costs to Utility | 160,545 | NA | 160,545 |
| Costs to Participants | NA | 491,190 | 491,190 |
| Costs to Others | NA | NA | 0 |
| Total Costs | $160,545 | $491,190 | $651,736 |
| *Present Value Benefits* | | | |
| Total Water Savings | 212.10 AF | 212.10 AF | 212.10 AF |
| Benefits to Utility | 0 | NA | 0 |
| Benefits to Participants | NA | 121,957 | 121,957 |
| Benefits to Others | NA | NA | 0 |
| Total Benefits | $0 | $121,957 | $121,957 |
| *Cost Benefit Calculations* | | | |
| Net Present Value (NPV) (Total Benefits - Total Costs) | -$160,545 | -$369,233 | -$529,778 |
| Cost Effectiveness Analysis(CEA) (Total Costs ÷ Total Water Savings) | $757 /AF | $2,316 /AF | $3,073 /AF |

### Results of Cost Benefit Analysis-Lifespan (10 Years) 2000

| | UTILITY | PARTICIPANT | OVERALL |
|---|---|---|---|
| *Present Value Costs* | | | |
| Costs to Utility | 151,425 | NA | 151,425 |
| Costs to Participants | NA | 290,309 | 290,309 |
| Costs to Others | NA | NA | 0 |
| Total Costs | $151,425 | $290,309 | $441,735 |
| *Present Value Benefits* | | | |
| Total Water Savings | 109.92 AF | 109.92 AF | 109.92 AF |
| Benefits to Utility | 0 | NA | 0 |
| Benefits to Participants | NA | 75,623 | 75,623 |
| Benefits to Others | NA | NA | 0 |
| Total Benefits | $0 | $75,623 | $75,623 |
| *Cost Benefit Calculations* | | | |
| Net Present Value (NPV) (Total Benefits - Total Costs) | -$151,425 | -$214,686 | -$366,112 |
| Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings) | $1,378 /AF | $2,641 /AF | $4,019 /AF |

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# Albuquerque Water Res. Div.
## Landscape Rebate Program

## 2001

**Results of Cost Benefit Analysis-Lifespan (10 Years)**

| | UTILITY | PARTICIPANT | OVERALL |
|---|---|---|---|
| *Present Value Costs* | | | |
| Costs to Utility | 162,046 | NA | 162,046 |
| Costs to Participants | NA | 442,723 | 442,723 |
| Costs to Others | NA | NA | 0 |
| Total Costs | $162,046 | $442,723 | $604,769 |
| *Present Value Benefits* | | | |
| Total Water Savings | 119.83 AF | 119.83 AF | 119.83 AF |
| Benefits to Utility | 0 | NA | 0 |
| Benefits to Participants | NA | 94,203 | 94,203 |
| Benefits to Others | NA | NA | 0 |
| Total Benefits | $0 | $94,203 | $94,203 |
| *Cost Benefit Calculations* | | | |
| Net Present Value (NPV) (Total Benefits - Total Costs) | -$162,046 | -$348,520 | -$510,566 |
| Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings) | $1,352 /AF | $3,695 /AF | $5,047 /AF |

## ALL YEARS

**Results of Cost Benefit Analysis-Lifespan (10 Years)**

| | UTILITY | PARTICIPANT | OVERALL |
|---|---|---|---|
| *Present Value Costs* | | | |
| Costs to Utility | 785,894 | NA | 785,894 |
| Costs to Customers | NA | 1,749,642 | 1,749,642 |
| Costs to Others | NA | NA | 0 |
| Total Costs | $785,894 | $1,749,642 | $2,535,537 |
| *Present Value Benefits* | | | |
| Total Water Savings | 630.42 AF | 630.42 AF | 630.42 AF |
| Benefits to Utility | 0 | NA | 0 |
| Benefits to Customers | NA | 412,413 | 412,413 |
| Benefits to Others | NA | NA | 0 |
| Total Benefits | $0 | $412,413 | $412,413 |
| *Cost Benefit Calculations* | | | |
| Net Present Value (NPV) (Total Benefits - Total Costs) | -$785,894 | -$1,337,228 | -$2,123,123 |
| Cost Effectiveness Analysis (CEA) (Total Costs ÷ Total Water Savings) | $1,247 /AF | $2,775 /AF | $4,022 /AF |

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