

CALIFORNIA URBAN WATER CONSERVATION COUNCIL
BEST MANAGEMENT PRACTICES
RETAIL WATER AGENCY ANNUAL REPORT

G.W.D.

JUN 18 2003

ENGINEERING DEPT

REPORT PERIOD JULY 1, 1996 TO JUNE 30, 1997

REPORT DUE BY: November 1, 1997

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CUWCC
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SACRAMENTO, CA 95814-4408

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SECTION 1 -- WATER AGENCY AND SERVICE AREA INFORMATION

1. AGENCY NAME Goleta Water District
2. ADDRESS 4699 Hollister Drive
3. CITY, STATE ZIP Goleta, CA 93110
4. NAME OF CONSERVATION COORDINATOR Jim Merlo
5. PHONE (805) 964-6761 / FAX (805) 964-7002 / E-MAIL ADDRESS _____
6. NAME OF PERSON PREPARING THIS REPORT Micahel Moore
7. PHONE (805) 383-3373 / FAX (805) 383-3371 / E-MAIL ADDRESS mrmoore@rbf.com
8. YEAR AGENCY SIGNED THE MOU 1996 / DATE THIS REPORT SUBMITTED Feb. 16, 1998
9. THIS AGENCY IS A(N) MUNICIPALITY _____ SPECIAL DISTRICT XX
INVESTOR OWNED _____ MUTUAL _____
10. IS THIS AGENCY ALSO A WATER WHOLESALER? YES _____ NO XX
IF "YES," PLEASE COMPLETE BOTH WHOLESALE AND RETAIL REPORTS.
11. IN ADDITION TO WATER, UTILITY SERVICES PROVIDED BY THIS AGENCY INCLUDE:
SEWER _____ ELECTRICITY _____ GAS _____ RECLAIMED WATER XX OTHER _____
12. IS THIS AGENCY A BUREAU OF RECLAMATION CONTRACTOR? YES _____ NO XX
13. IS THIS AGENCY A STATE WATER PROJECT CONTRACTOR? YES _____ NO XX
14. LIST COMMUNITIES SERVED: Goleta Valley and Isla Vista
15. DIRECT FINANCIAL CONTRIBUTIONS TO CUWCC DURING REPORT PERIOD: \$ 0

EXHIBIT CT 60

Goleta Water District Toilet Rebate Program

The Goleta Water District (GWD) determined in 1972 that its water demand exceeded its reliable supply. The community voted (Ordinance 72-3) for to impose a water connection moratorium until supply could be brought into balance with demand. Very few new District meters have been installed in the District's service area since 1972, although substantial commercial construction (using wells in the overdrafted groundwater basin) has been permitted by the County Supervisors.

It is difficult to develop new affordable water supplies in Santa Barbara County (the last new supply was the construction of Cachuma Reservoir in 1955) so GWD looked to efficiency improvements to extend the existing water supply. The installation of efficient plumbing fixtures in new and existing structures was projected to provide to have a long-term benefit to the District. In 1974 the District began requiring 3.5 gallon toilets in new construction and remodels (California required 3.5 gallon toilets in 1979) and in January 1983 the requirement was changed to ultra-low-volume (ULV) 1.6 gallon toilets.

The functioning of the newly installed ULV toilets was monitored during 1982 and 1983 and they were found to be effectively accepted by consumers. Because of the water supply shortage, the possibility of replacing the existing five to seven gallon toilets with ULV toilets was, and is, seen as a method of extending GWD water supply. During 1984, District staff researched the possibility of retrofitting all existing toilets with ULV toilets. The billing insert for July 1985 was used to survey community interest in ULV toilets and the demand was determined to be about 2,000 toilets. The District then researched whether to provide the toilets and installation at no cost to the customer, add a \$2.00 monthly charge to the bill to cover the cost of the toilet, or rebate a portion of the toilet purchase price.

After considering the wide variance between the cost per acre foot of water saved by the different approaches, the ULV toilet supply limitations and the advantages of a voluntary program, the District determined that a rebate program would be the most effective way to promote the installation of ULV toilets.

Toilet Rebate Program Assumptions

The Federal Housing and Urban Development Department 1984 residential plumbing use study determined that a person flushes the toilet four times a day at home. So, when an existing five to seven gallon toilet is replaced by an ULV toilet about 4.0 gallons per flush is saved, resulting in a savings of 16 gallons per person per day at home. Assuming this savings happens every day of the year, the annual savings is about 0.018 acre-feet per person per year - an estimated residential savings of 1325 AF of water saved each year by the 74,000 people served by the Goleta Water District. An additional 660 AF could be saved at businesses, restaurants and hotels.

The savings obtained by replacing old style toilets with ULV gallon toilets will average about 27 AF per 1,000 residential toilets replaced. The total number of toilets in the District is estimated to be 50,000 (22,000 dwelling units averaging two toilets per unit plus 6,000 commercial toilets).

Toilet Rebate Program - Description

The following describes the Rebate Program up until April 30, 1989.¹ The District purchased low-flow toilets from: IFO, in lots of 300, at \$121 each, Aqua Line, in lots of 350, at \$94 each and Universal Rundle, in lots of 450, at \$79 each. The toilets were stored on District property until sold at cost to participating plumbing retailers, who sold them to the public at a modest markup (125% of purchase price). The 14 local plumbing retail stores, including several bath & tile stores, were program participants. Most of the retail stores sold the toilets for less than the recommended retail price (IFO - \$150, Aqua Line - \$118, UR - \$99). These prices were still high compared to the bottom-of-the-line toilets that meet State standards of 3.5 gallons per flush. Therefore, a rebate of \$80 per replaced toilet was (and is) paid directly to the property owner - resulting in a price of between \$19 and \$70 per toilet.²

Approximately 600 toilets were kept in stock on District property and this required a revolving fund of approximately \$70,000. The interest cost of the revolving fund was approximately \$7,000 per year (10% of \$70,000) for the duration of the program. Advertising costs were about \$4,000 per year - this included periodic newspaper ads, flyers for plumbing stores, and billing inserts. The estimated operating cost of this program was \$11,000 per year.

As of May 1, 1989, the District no longer acts as a warehouse for the local plumbing stores. The number of 1.6 gallon toilets sold in Goleta/Santa Barbara is now so large (about 1,000 per month) that each plumbing retailer orders their own truckloads of these toilets.

Toilet Rebate Program - Appraisal

The District's Toilet Rebate Program resulted in the payment of rebates for the replacement of 463 old toilets during 1987, 615 toilets during 1988 and 10,112 during 1989. Another 4,100 ULV toilets have been sold by retailers and most of these were installed in the District at remodels, additions and new construction.

Between January 1987 and June 1988 the number of toilets sold averaged just over 50 per month. When the rebate increased from \$50 to \$80 per toilet on July 1, 1988, the number of toilet sold increased temporarily. When rationing was announced in February the number increased dramatically and about 10,000 rebates were paid during 1989.

The economic consequences to a water agency of paying a rebate of \$80 per toilet, figured on a 20 year repayment at 10%, are given in the following tabulation (\$50 rebates = \$270 AF)

Number of Toilets Replaced	Initial Cost	Annual Cost	Annual Water Savings	Unit Cost \$/AF
1,000	\$80,000	\$1,950 ³	27 AF	\$370

The other sources of water available to the Goleta Water District will cost from \$800 to \$2,000 per acre foot and take from 3 to 10 years to develop.

The economic consequences to the customer of purchasing two ULV toilets are given in the following tabulation. The two water rates (\$1.35 and \$2.25) represent tiers two and four of the District's four tier structure. For accounts that are high water users the payback period (amount of time it takes for water savings to pay for the cost of the toilet) is significantly shorter.

Number of Toilets Replaced	Toilet Cost of 2	Installation Cost of 2	Annual Water Savings	Years to Payback
2	\$40 ⁴	\$100 ⁵	24 HCF @ \$1.35	<4 years
2	\$40	\$00 ⁶	24 HCF @ \$1.35	<2 years
2	\$40	\$100	24 HCF @ \$2.25	2 years
2	\$40	\$00	24 HCF @ \$2.25	<1 year

Toilet Rebate Program - Results

The following results are based on the five year water use histories of 260 District accounts that received rebates between January 1986 and February 1988. February 1988 was the cut off date for inclusion because twelve months of post-rebate water use data was considered minimum for inclusion in the research data base. The average reduction per account gives the same weight to the savings at a home with one ULV toilet as it does to a home with three ULV toilets. The weighted water use reduction per account is considered more indicative of the ULV water saving potential.

Two-hundred and twenty single-family accounts installed 337 toilets during the research period. Two thirds (150) of these accounts had reduced water use, when compared with their five year history, averaging 25% per account. One third (70) accounts had increased water use, averaging 25%. When all the single family account data is combined, the average reduction per account is 6%. The installation of more than one toilet at an account results in a greater savings of water. When savings are weighted by the number of toilets installed, the reduction in water use is 9% per account.

Thirty-four multi-residential accounts installed 160 toilets during the research period. Two thirds (22) of these accounts had reduced water use, when compared with their five year history, averaging 24% per account. One third (12) accounts had increased water use, averaging 21%. When all the multi-residential account data is combined, the average reduction per account is 9%. The installation of ULV toilets in more than one unit at the account results in a greater savings of water. When the savings are weighted by the number of toilets installed, the average reduction in water use is 17% per account.

Toilet Rebate Program - Special Considerations

Until 1988 there was a limited number of ULV toilets available for purchase. However, since AquaLine and Universal Rundle began production during Fall 1988 there have been no supply problems. The ULV toilets are now available in multiple colors and styles.

1. A small percentage of bathroom floors need new flooring due to the foot-print variation between old and new toilets. That is, the shape of toilet bases vary and where floor coverings have been installed to the outside edge of the base of the existing toilets rather than under the base, a gap may exist. Floor replacement may be an added expense to the toilet replacement.
2. Wall hung and prison toilets are not yet available in 1.6 gallon models.
3. Goleta area plumbers were critical of the ULV toilets at the beginning of the rebate program. Now, most local plumbers have experience with ULV toilets and are ULV supporters.

4. The local sanitary district has expressed concern about the reduction in waste water flow. We are unaware of any problems with either the lateral or main sewer lines during the six years ULV use in the Goleta area (since May 1, sewer flow has dropped from 6.5 MGD to 5.0 MGD).

Toilet Rebate Program - Conclusion

This program has been so successful that the District is currently studying ways to finance the cost (during rationing this is especially difficult). The use of efficient plumbing fixtures is the most cost effective source of an expanded water supply and requires no lengthy environmental and development studies.

The benefits which accrue to both the individual customer and the community as a whole from this voluntary rebate program have resulted in excellent public relations for the District. The voluntary participation of the retail plumbing community in the rebate program is an outstanding example of the community benefits which result from private industry/government partnerships.

For more information contact:

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 Goleta Water District
 P.O. Box 788
 Goleta, CA 93116
 (805) 967-8605

1 The only changes since the program's December 1986 beginning are: the rebate was increased from \$50 to \$80 per toilet when the wholesale cost of the toilets increased, and the City of Santa Barbara joined the Rebate Program on August 1, 1988.

2 Buyers of 10 toilets or more often are able to purchase the UR Atlas for \$84, AquaLine for \$99.

3 The Goleta Water District's Toilet Rebate Program administrative costs include the following. The Program makes extensive use of interns from a local university. All information is based on the following averages:

Inspections per week	60
Inspections per month	250
Average number of toilets per inspection	3
Number of \$80 rebates per month	750
Number of inspections per hour	4

Intern Tasks and Information

Perform all inspections	60 hours a month
Paper work	16 hours a month (complete/file rebate forms, maintain computer data base)
Intern payrate	\$6.50 an hour (most interns also receive academic credit)
Intern worktime per month	76 hours (5 interns at 15-16 hours per week each)

Full-time Staff

Accounting staff	20 hours per month (preparing rebate checks)
Conservation staff	32 hours per month (schedule appointments, answer questions, explain rebate program)
Staff payrate	\$13.10 per hour

Additional Costs

car rental	\$280.87 per month
car phone	\$118.00 average monthly charges (phone purchase: \$549.00)

Approximate monthly cost of the toilet rebate program: **\$1,625.00**

Cost per inspection:	inspection/paper work	\$2.00
	car, gas & telephone	\$1.75
	administration cost	\$2.75
	Total cost per inspection	\$6.50.

4 Assuming the least expensive toilets are purchased.

5 This is the average cost paid for this service by District customers during the last 18 months.

6 Where the installation cost is \$0, the assumption is that the toilets are installed by the homeowner.