



**MWD**

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

FILED by order  
of the Board of Directors of  
The Metropolitan Water District  
of Southern California  
at its meeting held APR 14 1992

39571

*[Signature]*  
Executive Secretary

9-9

March 31, 1992

To: Board of Directors (Water Problems Committee--Information)  
(Finance and Insurance Committee--Information)

From: General Manager

Subject: Update on Ultra-Low-Flush Toilet Conservation Program

Report

To date, your Board has approved Ultra-Low-Flush Toilet (ULFT) programs with 12 member agencies under Metropolitan's Conservation Credits Program (Credits). With Metropolitan's financial support in the amount of \$11.1 million, these programs retrofitted 201,267 existing high-volume toilets with ULFTs. In addition, the City of Los Angeles retrofitted about 120,000 toilets without Metropolitan's financial support. In signing the Best Management Practices (BMP) Memorandum of Understanding in December 1991, Metropolitan committed to implement programs to retrofit existing toilets with ULFTs throughout its service area.

Better information on the actual water savings attributable to the retrofit of ULFTs is critical to Metropolitan in order to ascertain the cost effectiveness of these programs and to determine appropriate future strategies to encourage ULFT retrofits. To develop better information on the water savings and costs of ULFT retrofits, Metropolitan has funded state-of-the-art statistical studies of the results of ULFT retrofit programs.

Initially, Metropolitan estimated water savings for ULFT retrofit programs using a standard method which calculates savings based on assumptions regarding average savings per flush, number of flushes per day per person, and the average number of people per household.

To develop more refined estimates, Metropolitan conducted comprehensive studies of the first-year participants in ULFT retrofit programs in the cities of Los Angeles and Santa Monica. Statistical methodologies were used to control for variations in household characteristics and climatic conditions, determine the effect of the fifth year of drought, and accurately measure actual changes in water use.

The results of the studies estimate actual water savings from the retrofit of toilets alone to be as follows:

Water Savings in Gallons per Household per Day

	<u>Los Angeles</u>	<u>Santa Monica</u>
Single Family	35.7	34.4
Multi-family	35.0	26.6

The earlier method indicated estimated savings to be at about 48 gallons per household per day. The empirical studies indicate that actual measured water savings is on average about 25 - 30 percent less than originally estimated.

While estimated level of savings based on these more precise analytical methodologies is less than previous estimates, the actual, verifiable water savings attributable to ULFT retrofit programs still is significant and the programs appear to be cost effective. Based on current total program costs with \$100 rebates to customers, the estimated regional cost for ULFT retrofit programs is about \$450 per acre-foot of water saved.

These studies of ULFT performance provide strong statistical evidence that program results depend upon climate and demographic characteristics in the area implementing the program. In particular, the presence of rationing programs appears to significantly influence water savings results. Based on available evidence, it appears that households which installed ULFTs adjusted other water uses under rationing. For example, retrofitted single-family households, when compared to non-retrofitted households, appeared to use more water outdoors to reduce the lifestyle impacts of rationing. In cooperation with the California Urban Water Conservation Council, staff intends to continue studies of this important conservation BMP.

In the near-term, it is anticipated that Metropolitan will continue to co-fund ULFT retrofit projects with its member agencies through a modified program that provides for an equitable distribution of available funds among its member agencies.

Regarding future retrofit of ULFTs, staff is analyzing several policy alternatives to meet the requirements of the ULFT BMP. Alternative implementation strategies under consideration include: toilet rebate programs with differing rebate amounts; programs using different financial incentives such as no-interest loans to consumers and member agencies; and implementation approaches relying on legislation such as AB 1224 (Killea) which was considered by the legislature during 1991 and would have required retrofit of toilets upon property resale. These implementation alternatives are being compared with respect to estimated water savings, likely market penetration rates, and costs to water agencies and Southern California water users.

#### Board Committee Assignments

This letter is referred to:

The Water Problems Committee for Information because of its authority regarding policies on water conservation, pursuant to Administrative Code Section 2481(i); and

The Finance and Insurance Committee for information because of its jurisdiction to study and advise in matters concerning the disposition of funds, pursuant to Administrative Code Section 2441(c).

#### Recommendation

For information only.

  
Carl Boronkay

MDM:kmk

MDMLF