



# 2010 High-Efficiency Washing Machine Rebate Program

## Pagosa Area Water and Sanitation District



## Summary and Results

February 2011

## INTRODUCTION

The following provides a program summary and results from the Pagosa Area Water and Sanitation District's (PAWSD or District) 2010 High-Efficiency Clothes Washer rebate program. Section 1.0 provides background information, Section 2.0 presents a summary of results, Section 3.0 provides program results at a glance, and Section 4.0 summarizes the influence of the program on the community as well the District.

### 1.0 BACKGROUND

Research data indicates that the second highest *indoor* water use for the residential sector is for clothes washing. The percentages are broken-down and illustrated in Figure 1 below.

**Figure 1 - Average Residential Indoor Water Use**



Source: Albuquerque Bernalillo Water Utility Authority.

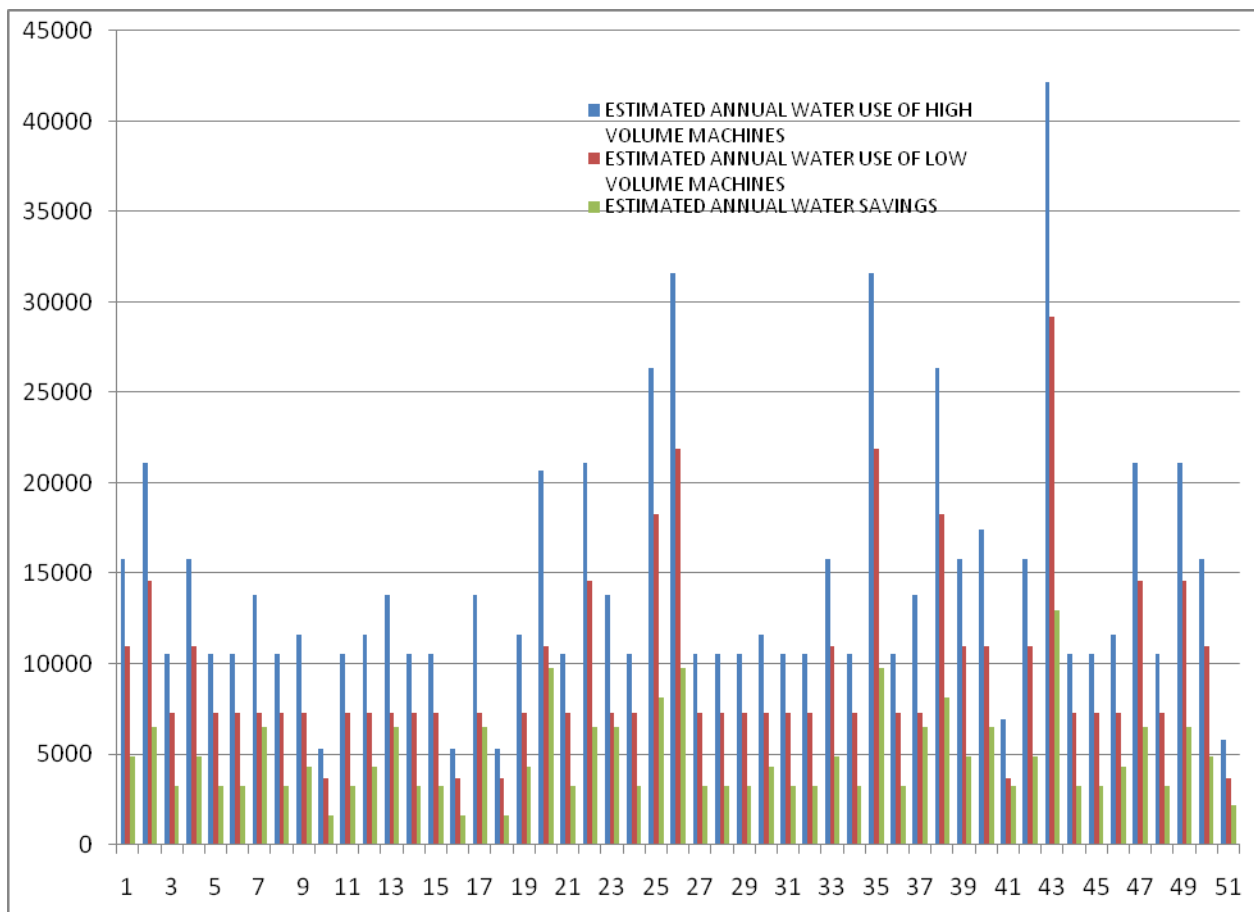
Based on the above-referenced information, and after years of a very successful toilet rebate program, the PAWSD Board of Directors and staff decided to initiate a high-efficiency clothes washer rebate program beginning in 2007. The goal of the program is to reduce water use within the District boundaries by encouraging the replacement of high-volume clothes washers with low volume, high efficiency machines

The water savings between old and new machines occurs mostly in the difference and efficiency of design. The old standard top loading, vertical axis, washer hasn't changed much since its debut in 1949. New front loading, horizontal axis, washers are better designed to do more washing with less water. A vertical axis machine must fill the entire drum with water to allow the clothes to soak while the agitator circulates the load. A horizontal axis machine needs only to fill the bottom quarter of the drum with water while clothes "tumble" through and soak.

### 2.0 PAWSD 2009 HIGH-EFFICIENCY CLOTHES WASHER REBATE PROGRAM SUMMARY OF RESULTS

As shown in Appendix A, there were a total of 51 washing machines replaced in 2010. The program was initially funded with \$3325 for 2010. The total rebate amount issued was \$6275 made possible by a fund transfer of \$3000 from the Toilet Rebate Program. The average washing machine purchase price was approximately \$685. The average washing machine replaced was 41 gallons per load. The average number of residents per household was 3, while the average gallons of water saved per household was approximately 13.2 gallons per day. Figure 2 (below) illustrates each participating rebate account's average total annual high - versus low-volume washing machine water use with associated water savings.

**Figure 2 - Participating Rebate Accounts Washing Machine Water Use Before and After Replacement, with Associated Annual Water Savings**



### 3.0 PAST YEARS AT A GLANCE

#### High Efficiency Washing Machine Rebate Program Overview

	2007	2008	2009	2010	Total
Washing Machines Replaced	35	38	32	51	156
Total Rebate Cost	\$4,375	\$4,750	\$4,000	\$6,375	\$19,500
Estimated Average Annual Water Savings (gallons)	229,044	203,115	188,400	245,791	
# of years as multiplier	4	3	2	1	
Total gallons through 2010	916,176	609,345	376,800	245,791	2,148,112
Total Acre Feet (AF)	2.81	1.87	1.16	0.75	6.59
Estimated Average Water Saving <u>per household</u> (gallons)	6,544	5,345	6,077	4,819	
# of years as multiplier	4	3	2	1	
Total gallons through 2010	26,176	16,035	12,154	4,819	
Annual Avoided Cost Savings (@ \$11.77/1000)	\$2,696	\$2,391	\$2,217	\$2,893	
# of years as multiplier	4	3	2	1	
Total savings through 2010	\$10,783	\$7,172	\$4,435	\$2,893	\$25,283

### 5.0 SUMMARY AND CONCLUSIONS

To-date, the rebate program has aided in the replacement of 156 washing machines in the PAWSD service area. **The washing machine rebate program is estimated to have saved the District approximately 6.59 AF of water thus far. Based on a current cost to treat and distribute potable water (\$7.94/1000 gallons) and the cost to collect and treat the resulting wastewater (\$3.83/1000), it is estimated that the cumulative avoided cost to the District is approximately \$25,283.** As current water resources begin to be stretched thin, the cost to procure new water increases the value of the resource exponentially. Based upon the PAWSD 2008 Water Conservation Master Plan, the cost for new water resource procurement and development is \$20,000 / AF. Using this number, the 6.59 AF of water savings has a value of \$131,800.

In looking at the program results for the last four years, it is apparent that the program has met with considerable success and has been well-received within the community; even amidst a period of economic recession. Additional funding was required to satisfy the overwhelming community demand. Many of the washing machines purchased came from local retailers. It is recommended that the washing machine rebate program be continued for 2011.

