



METHODOLOGY

WATER SAVINGS METHODOLOGY

- ◆ For all program participants, water use data was acquired for two calendar years before their participation in the program (pre-measure) and two calendar years after their participation (post-measure).
- ◆ Unless otherwise stated in individual analyses, water use data was acquired for all single family residential households in the utility for the same time periods; these households form the control group for single family residential programs.
- ◆ For cases in which all single family residential households were used as the control group, participants and their water use were removed from the data. The participants were subtracted from the number of single family connections for a given year and the total participant water use was subtracted from the total single family residential water use for that same year.
- ◆ For analyses in which the control group furnished by the utility varies in number by year, a weighted average of water use is calculated to determine pre-measure average water use, and post-measure average water use.
- ◆ For residential programs, only participant households whose residents resided there for the full analysis period were included in the study. The results of the study refer to those participants only; no data was extrapolated for participants other than those directly included in the study.
- ◆ The actual amount of water saved, attributable to the conservation measure in question, was determined by using both pre-measure and post-measure water use data, and participant and control group water use data. Mean water use was calculated for both groups pre-measure and post-measure. Water savings were calculated as the difference in the percent increase (or decrease) of average control group and participant water use from pre-measure to post-measure.

ECONOMIC METHODOLOGY

- ◆ In addition to water use data, all available cost and benefit data was compiled. Any costs or benefits that accrued over time were projected into the future; however, any costs or benefits that were one-time costs or benefits were not projected into the future. Any water savings and benefit data that were extrapolated were done so according to the estimated lifespan of the measure.
- ◆ Costs and benefits were discounted to the base year (the first year

of the analysis) using the Office of Management and Budget's (OMB) Circular A-94, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs".

- ◆ Once discounted, costs and benefits were inflated to current year dollars so that any reported \$1 benefit or cost is the same as any other reported \$1 benefit or cost. This inflation was done using the Consumer Price Index (CPI) for all Urban Consumers in the following the equation:

$$\text{Dollars at current year} = \text{dollars at base year} \times \frac{\text{CPI for current year}}{\text{CPI for base year}}$$

- ◆ The cost benefit analysis was performed by subtracting discounted costs from discounted benefits on a year-by-year basis. This resulted in a net value of the program for each year of the analysis. Yearly net values were summed to form a net present value of the program as a whole for the analysis period.
- ◆ In addition to the net present value, the costs were divided by the water savings to determine the cost per acre foot (AF) of water saved for each case study.
- ◆ For many of the programs analyzed, we looked at only a snapshot of a longer running, or ongoing, program.
- ◆ For multi-year programs, each year was analyzed separately. While each year is essentially an individual case, the first year of the multi-year analysis was considered the base year for cost and benefit calculations.