WESTERN RESOURCE ADVOCATES

THE CASE FOR CONSERVATION
PRE-RINSE SPRAY VALVES

FACT SHEET #3

Water conservation plays a key role in helping communities meet growing demand and reduce the need to invest in expensive water development projects. Many utilities have implemented cost-effective programs that have resulted in significant water savings. Understanding the components of a successful program and the costs involved make for better decisions. There are many examples of successful water conservation programs. This factsheet presents some of the most well-researched efforts, including water savings, costs, pros and cons, and things to consider when developing a program.

Why are they effective?

Conservation programs that target high-volume commercial and institutional water users can yield significant water (and energy) savings for a community. The Environmental Protection Agency estimates that pre-rinse spray valves (PRSV), which are used to remove food and grease as the initial step in dishwashing lines, account for nearly one-third of all water use in a commercial kitchen. Some existing valves have flow rates as high as 5 gallons per minute (gpm), but as of 2006, national standards have required flow rates of 1.6 gpm or less, with some manufacturers producing quality fixtures that use even less. Industry standards also measure the speed with which these devices clean, and many water-efficient devices do the job faster than conventional devices, which further adds to water savings. In addition to saving water, lower flow rates reduce the amount of hot water used, which reduces energy bills – making them a doubly-smart business choice.

What are the program components?

Inefficient high-water use PRSVs are easily replaced with low-water use valves. Successful programs typically consist of a bulk buy of the device combined with active outreach and installation assistance. For example, a pilot program in Colorado Springs, CO found that voluntary pick up and installation of the devices were not effective and that contracting an outside party to install the devices was too expensive. Therefore the utility used its own conservation staff to install PRSVs. This particular program offered four different models to allow customers a choice in determining what was best for their business, ranging in flow rate from 0.65 to 1.28 gpm. The installation visit also included efforts to educate customers on additional water and energy conservation programs offered by the utility. Critical to program success was building support from business managers and visiting kitchens when business was slow. While most PRSV programs target restaurants – grocery stores, hospitals, schools, and commercial kitchens are also strong candidate participants.

Programs may be financed through water customer revenue, general funds, grants, by developers as part of a community's water demand mitigation program, or in cooperation with an energy utility. In fact, a joint energy/water utility rebate presents a natural opportunity for collaboration and is among the easier programs to implement because it uses a program design common to many utilities.

In a 2013 study, Western Resource Advocates found that "Joint efficiency programs have the potential to help meet the growing needs for efficiency at reduced cost. Utilities that have collaborated… have overwhelmingly found such programs to be a good business decision. The benefits are manifold: higher participation rates, increased customer satisfaction, coordinated and complementary program design, and an improved reputation from working smarter — not harder."

What are the water savings and costs? - Case Studies

Colorado Springs Utilities initiated a PRSV program in 2010 after determining that efficient PRSVs were not widely installed in the community. As part of their outreach strategy, they emphasized a cost savings of $700-$900 a year in water and energy bills. In all, Colorado Springs replaced a total of 500 valves. They calculated program costs based on an average cost of $50 per spray valve for the 362 valves distributed in 2011. East Bay Municipal Utility District (EBMUD), in Oakland, CA, has had a free 1.6 gpm valve replacement with installation program for ten years that is promoted by advertising the energy and water cost savings. EBMUD estimates annual combined water, sewer, and energy savings of $700 to over $1,800 depending on the flow rate of the replaced valve.

Utility	Target Sector	Fixtures Replaced	Savings/Fixture (gallons/yr)	Costs/Acre-Foot
Colorado Springs Utilities, Colorado	Commercial, Institutional	362	55,250	$293
EBMUD, California	Commercial, Institutional	5,000	39,900	$208

Colorado Springs Utilities found that this single program met about one-third of its water-conservation goal, and the cost/acre-foot of the conserved water was much cheaper than that of developing new water supply.

Things to Consider

The difference in PRSV efficiencies pre- and post-retrofit, length of daily usage, and per unit price of water and energy are key parameters when calculating water, energy, and cost savings. Newer facilities may have more effiicient PRSVs than older establishments, and kitchen activity levels and hours of operation vary from site to site. For these reasons, a pilot program may be helpful to determine the average flow rate of existing PRSVs and potential water savings.

This is a relatively easy, cost effective program for communities looking to move beyond residential conservation programs. However, staff time can be considerable given the hands-on nature of visiting each facility and installing the device. Communicating the combined water and energy savings can make this program an easy sell to customers looking at their business bottom line.

33%

Percentage of water used in a typical commercial kitchen by PRSVs.

1.28 gpm

Flow rate of an EPA WaterSense Certified PRSV.

53,000 gallons

Amount of water saved per year by replacing a 2.5 gpm PRSV with a WaterSense model.

References:

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