

ATTACHMENT 3: WORK PLAN

Description of the Project: Bathroom Fixture Replacement Program in Bakersfield District

Cal Water has implemented and continues to implement a broad portfolio of water conservation programs in all of its districts. These programs confer a variety of benefits on Cal Water's customers, including but not limited to:

- Improved water supply reliability
- Immediate reductions in water and energy bills for program participants
- Long-term economic benefits to all customers
- Enhanced ability to cope with current and future drought impacts
- Compliance with regulatory requirements, particularly those of SBx7-7 and AB 1420.

Toilets represent the largest residential indoor water end use. They also are an important end use in various commercial sectors. Showering is the third largest residential indoor water end use, and high-quality, low-consumption showerheads are relatively inexpensive. Faucet aerators are likewise a very low-cost way to save water. All of these technologies have the important advantage of requiring no behavioral changes on the part of customers. Water and energy savings associated with such behavioral changes are unreliable and short-lived.

In all three cases, continuing improvements in technology have allowed for significant cost-effective water and energy savings. The most challenging issue has always been motivating customers to install these measures. Cal Water, like many other water utilities, has offered rebate programs and (in the case of showerheads and aerators) kit distribution programs. Those programs have been successful in accelerating installations of these devices and reducing water consumption.

The goal of this Project is to replace qualified toilets with high-efficiency toilets, and retrofit qualified showerheads and bathroom faucet aerators. These fixtures will be directly installed by a contractor on customers' premises. Cal Water has been shifting its focus toward such direct install programs for a number of reasons, including:

- Reliability of savings. The design of Cal Water's direct install program makes it much easier to forecast activity levels. Direct installation of these fixtures ensures that the most efficient and effective devices are used, they are actually installed, and they are installed properly.
- Past rebate and kit distribution programs, as well as ongoing natural replacement of these fixtures, have, to a large extent, "picked the low-hanging fruit," i.e., the customers that required smaller incentives, financial and otherwise, to participate. There is still a significant inventory of high-consuming fixtures; their owners are less likely to respond to rebate and kit distribution approaches. In particular, low income customers have proven difficult to reach with rebates and kit distribution approaches. It is much easier to target these customers with a direct install program. As described below, Cal Water will be targeting low-income and multi-family customers, who have typically been underserved by rebate programs.
- An inherent difficulty of rebate programs is the phenomenon of "free ridership." A free rider is a customer who receives a rebate to install a fixture that he/she was going to install in any event. Studies differ on precisely how severe this problem is, but all agree that it is a factor that dilutes

the cost-effectiveness of rebate programs. Direct install programs are much less subject to free ridership.

The number of efficient-fixture installations is limited by Cal Water’s existing budget. The funding requested for this Project will supplement Cal Water’s existing budget and, as specified below, will result in additional installations in excess of what Cal Water would be able to achieve with Company funding alone.

Installations will be done by a single contractor. The program will be overseen by Cal Water staff.

The Project recognizes the advancements in water efficiency technology in recent years. The Energy Policy Act of 1992 required all toilets sold in the U.S. to be Ultra-Low-Flush Toilets (ULFTs) that use no more than 1.6 gallons per flush (gpf), and showerheads that use no more than 2.5 gallons per minute (gpm). This year marks the first year that California requires all toilets sold and/or installed to be High Efficiency Toilets (HETs) that use no more than 1.28 gpf. Cal Water’s program will install fixtures that go well beyond these efficiency levels. Table 1 shows the fixture specifications that the direct installations will be required to meet.

Table 1. Water Use Efficiency of Replaced and Installed Fixtures

Fixture	Water Efficiency of Replaced Units	Water Efficiency of Installed Units
Toilet: Residential	At least 1.6 gpf	No more than 0.8 gpf
Toilet: Commercial	At least 1.6 gpf	No more than 1.28 gpf
Showerhead	At least 2.5 gpm	No more than 2.0 gpm
Aerator	At least 1.0 gpm	No more than 0.5 gpm

The water savings associated with all of these fixtures also results in significant System energy and GHG savings, as well as energy and GHG savings embedded in imported water. In addition, the showerheads and aerators result in significant energy and GHG savings associated with water heating.

Cal Water is targeting the Bakersfield district because:

- The marginal water source for Bakersfield is purchased water, which has significant embedded energy savings.
- The bulk of Bakersfield customers are in qualifying DAC census tracts.

Table 2 shows the anticipated activity levels by class of service over the term of the grant.

Table 2. Projected Program Activity Levels

Single-Family	Multi-Family	Commercial-Industrial-Institutional
400	500	400

Table 3 shows the estimated annual and lifetime water, energy and GHG savings associated with the project.

Table 3. Project Water, Energy, GHG Savings

Water Savings (mg)		Energy Savings (kwh)		GHG Reductions (kg CO ₂ e)	
Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
20	498	587,000	14,684,000	114,000	2,855,000

PROJECT PROPONENT

California Water Service Company
1720 North First Street
San Jose, CA 95112

ATTN: Ken Jenkins
(310) 257-1484
kjenkins@calwater.com

WORK PLAN TASKS

Task 1. Direct Project Administration and Reporting

Cal Water will be responsible for overall project management, grant reporting and invoicing, fulfilling all grant and project requirements, and coordinating with contractors and consultants. This task includes preparation of quarterly progress reports and invoices, a Project Completion Report, a Grant Completion Report, Post-Performance Reports as required, uploads to the GRanTs system, and communication/liaison with the DWR Grant Manager.

Task 2. Project Design

The design of this Project is based on a similar program that Cal Water operated between 2011 and 2013. A contractor will be chosen to provide customers with installation of high-efficiency toilets, bathroom faucet aerators, and high-efficiency showerheads, to recycle the replaced devices as practicable, and to offer follow-up customer service for a minimum of one year after the installation date. These services will be provided to the customer at no cost.

Specifically, the contractor will be responsible for:

- Equipment procurement. Contractor will procure high-efficiency toilets rated at 0.8 gpf for single-family and multi-family customers or 1.28 gpf for Commercial-Industrial-Institutional (CII) customers. Cal Water will provide the contractor with high-efficiency showerheads (2.0 gpm) and bathroom faucet aerators (0.5 gpm).
- Equipment installation
- Fixture recycling

- Program Administration (e.g. tracking, billing, customer service)
- Weekly Progress Reports sent electronically to Cal Water
- Follow-up customer service (minimum of one year from the date of installation)

The program will be marketed to single-family customers by Cal Water and to multi-family and CII customers by a combination of Cal Water and the Contractor. Single-family marketing will begin with a Cal Water direct mailing specifically targeting low-income customers. If this mailing does not achieve the target activity levels, a direct mailing to other single-family customers will be undertaken. Cal Water customer service representatives will also inform customers about the program when appropriate.

Marketing to multi-family and CII customers will be primarily through Contractor canvassing of the service area. As necessary, Cal Water will supplement this with direct mailings and phone calls.

Task 3. Bid Process, Contractor Selection, and Contract Award

Cal Water will issue a Request for Proposals to qualified contractors no later than January 2015 for its Company-funded Bathroom Fixture Replacement program. Based on proposals received and contractor interviews, Cal Water will make a selection and negotiate a contract with the selected contractor. Selection will be based on firm qualifications, the quality of the proposers' scope of work, budget, schedule, and staff assigned to the project. Cal Water expects to select a contractor by February 2015. Selection and contract award will be based on Cal Water's standard procurement policies. The Company plans to use the same contractor for this supplemental program in Bakersfield.

In addition, Cal Water will issue an RFP to engage a consultant to perform a rigorous statistical evaluation of the program. This evaluation and the need to have this consultant on board early on to guide data collection is described in Task 6 below.

Task 4. Fixture Installations

All installations will be performed by a state-licensed plumber. All installations will be per manufacturer's recommendations and all applicable codes. All work will be done in a professional manner. Copies of any product warranties, and warranty cards describing the call-back period, will be left with the customer, in addition to information on how to reach the firm in case of questions, problems, or complaints about the products and installation. Background checks will be conducted on all contractor employees, agents, and subcontractors that will be providing services on the property of Cal Water customers.

Task 5. Fixture Recycling

Where logistically and financially feasible, the contractor will provide recycling services to include collection, dismantling, hauling and recycling of all recyclable parts. The contractor will provide documentation (e.g. recycling receipt) which verifies the volume of material recycled. These will be provided to Cal Water with monthly invoices, and results will be included in the project reports.

Task 6. Project Monitoring

Cal Water will develop a Monitoring Plan that meets DWR requirements, and submit this to DWR for approval prior to monitoring activities. All installations will be tracked and recorded by the Contractor and reported to Cal Water as the program progresses. Along with data on installations, cost data will also be maintained and tracked. Cal Water will make post-installation inspections to verify that the correct equipment is installed. This inspection will take place within six weeks of completion of installation on approximately 10% of installations.

The contractor will be responsible for reconciling equipment receipt, distribution, installation, and recycling statistics on an ongoing basis. Weekly Project Reports will be sent to Cal Water's Program Manager with the aforementioned data.

Based in part on this data, Cal Water will conduct a rigorous statistical evaluation of savings associated with the Project. While monitoring the numbers and types of installations, installation costs, and customer satisfaction is critical, it is of equal or greater importance to rigorously evaluate the water and energy savings that result from the Project. The figures in Table 3 are estimates based on the best information that is available in the industry, Cal Water prior program experience, and a limited statistical evaluation of a past Cal Water fixture replacement program for multi-family customers. It is essential to carefully assess the savings that result from this program.

To ensure that the correct data is collected in a form that will facilitate the evaluation, the program must be designed with the savings evaluation in mind. For that reason, Cal Water will have a contract in place at the outset of the Project with the consultant that will conduct the evaluation. That consultant will base the statistical analysis on installations done in the first 9 months of the program. The analysis will begin one year after that so that 12 months of post-installation data is available. See Attachment 5 for a detailed Project schedule.