



Citizens' Water Advisory Committee
City of Tucson
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DATE: January 10, 2014

TO: Honorable Mayor and Council Members

FROM: Amy McCoy, Chair
CWAC Conservation &
Education Subcommittee

SUBJECT: Citizens Water Advisory Committee (CWAC) FY 2014 Conservation Mid-Year Report

The CWAC Conservation & Education Subcommittee is pleased to provide Mayor and Council the mid-year update on Tucson Water Conservation Program activities.

Since the mid-1970s, Tucson Water has employed a wide range of methods to address water demand concerns. As a result, the community maintains a level of per capita consumption among the lowest in the desert southwest. While changes in consumer water use practices have resulted in diminished peak demand patterns, the utility must continue to provide year-round programs to encourage behavioral change and efficient use of water throughout the year.

Public information programs form the foundation for all conservation efforts. Marketing the various conservation initiatives is critical to their success. The CWAC Conservation & Education Subcommittee fully supports efforts to utilize various marketing approaches to promote them. We are pleased to see that participation rates in programs continue to increase, and we believe it is important to move forward with planning and evaluation efforts to ensure long-term targets identified in the Community conservation Task Force Report are met, as well as any other measures that are identified through a strategic planning process.

The attached report provides details on Tucson Water's conservation programs. Participation in the efficiency (rebate) programs continues to increase, resulting in 43,638,612 gallons of water through December of FY 2014.

Honorable Mayor and Council Members
CWAC's FY 2014 Conservation Mid-Year Report

The Subcommittee approved the Conservation Financial Plan and will continue to work with Tucson Water staff to ensure that reliable and cost effective-conservation is available to the community, and is consistent with regulatory requirements and Long Range Plan goals.

We are very pleased with the results of the Conservation Program in managing water demand. We look forward to continuing our oversight role in this effort in FY 2015

Attachment: FY 2014 Water Conservation Mid-Year Report

Tucson Water
Water Conservation Program FY 2014 Mid-Year Report

This report describes the activities of the Tucson Water Conservation Program from July 1, 2013, through December 31, 2013. The program is funded through a conservation fee currently set at seven cents per hundred cubic feet (ccf) assessed to all potable water users. The Conservation and Education Subcommittee of the Citizens' Water Advisory Council (CWAC) is charged with overseeing the Conservation Fee Fund and works with staff to review and provide feedback on staff recommendations related to water conservation programs. Each month, CWAC and the Ward Offices receive a detailed report showing activities, expenditures, outreach, and staff labor.

Tucson Water has a long-standing and successful history of conservation education and outreach. Since July 2008, this program has been supplemented with a set of incentives offered to customers to encourage adoption of water-saving devices and practices. All such incentives are introduced as pilot projects and are evaluated after a three-year period for water efficiency impacts and cost-effectiveness before being adopted as part of the permanent conservation program. Those still under evaluation are identified as pilot projects.

Objectives for FY 2014 are to increase participation in Tucson's incentive programs and continue to reduce Tucson's gallons per capita per day (gpcd). The strategy is to strengthen the marketing approach for all programs with public service announcements (PSAs), bill inserts, direct mailings, print ads, web ads, and social media.

Tucson's gpcd decreased from 136 in 2011 to 131 in 2012 and is expected to decrease for 2013. (This is due in part to the economy and the continued culture of water conservation in Tucson.)

Accomplishments in public information include: ongoing improvements and updates on Tucson Water's website; re-branding of Tucson Water by introducing the Water Reliability program, this includes a strategic advertising campaign, a new unified graphic design look for all printed materials, a pilot web-based communications survey, and in-store displays promoting all conservation and rebate programs.

Other notable efforts include an increase in community and youth education opportunities in Tucson. Youth education programs were expanded into middle school classrooms through a contract with Environmental Education Exchange (EEExchange). Arizona Project WET (Water Education for Teachers) implemented the teacher internship program, which was deferred during fiscal year 2012-2013. Project WET and SmartScape Programs were implemented through intergovernmental agreements (IGAs) with the University of Arizona.

In FY 2014, Tucson Water will expand the adult education program with Contractor Landscape Irrigation Training & Certification. Tucson Water will offer Irrigation Association (IA) developed training to address inefficiencies in landscape irrigation systems and management. Participants will have the opportunity to become certified with the IA after completing the training. Classes will include Landscape Irrigation Auditor, Landscape Irrigation Design, Landscape Drip Design, Advanced Irrigation Design for Water Conservation, Irrigation System Installation & Maintenance, and Smart Technologies for Irrigation Management.

1. Community Education Programs

1.1 SmartScape

Since 1989, the City of Tucson has executed a series of intergovernmental agreements with the University of Arizona for a landscape water conservation program designed to reduce water consumption in commercial, industrial, multi-family, and residential water uses. It includes workshops on desert-wise landscaping, drip irrigation, and irrigation scheduling. Through December of this fiscal year, 1,076 people attended one of the 44 workshops offered.

2. Youth Education Programs

2.1 Arizona Project WET

In partnership with the University of Arizona, this program offers students and teachers opportunities to learn about local water resources. These Tucson Water-sponsored programs reached 4,580 students through December of this fiscal year:

- 3rd Grade Sweetwater Wetlands Field Trips - Students participate in four activities focused on resources, water cycle, conservation, and quality (17 presentations, 43 classes, 985 students).
- 3rd Grade Groundwater Flow Model Presentations - an interactive presentation that provides an overview of the status of the aquifer, groundwater storage, contamination, and clean-up (63 presentations, 1,545 students).
- 6th Grade Groundwater Flow Model Presentations - an interactive presentation that provides an overview of the status of the aquifer, groundwater storage, contamination, and clean-up (25 presentations, 559 students).
- School Water Audit Program (SWAP) – through the application of science and mathematics, students investigate and quantify water use at school, and they engineer and implement water conservation solutions (3 classes, 84 students).
- Drinking Water Chemistry Kits – designed to provide middle and high school students, without a significant background in chemistry, the opportunity of testing the quality of potable, river, and pond waters. The kits have been invaluable for water-related science projects (4 classes, 84 students).

Arizona Project WET has also helped redesign the Teacher Internship Program. Now called the Tucson STEM Academy, the program has been shortened from a two-week course to a five-day course in the summer along with follow-up days in the classroom with the participating teacher and their students. STEM stands for Science, Technology, Engineering, Math, and is a principal focus which meets the national standards.

The program, for middle and high school teachers, covers water management issues facing the community and provides opportunities to interact with the utility in an educational setting while focusing on science, technology, engineering, and math. The new program was held June 17-20, 2013. Twenty-five teachers attended who will potentially reach more than 3,000 students.

2.2 Environmental Education Exchange (EEExchange)

Through December of this fiscal year, these three programs produced by EEExchange reached more than 5,709 K–6 students:

- “Da Drops” is offered to 1st-3rd grade. It is designed to teach about the water cycle and the public water system (137 presentations, 3,494 students).
- “Our Water, Our Future” for 4th and 5th grade addresses the water cycle, supply, quality, use, and conservation (73 presentations, 1,845 students).
- “Tucson Toolkit” is designed for 6th grade and focuses on water cycle, supply usage, environmental concerns, and conservation (2 schools, 3 teachers, 370 students).

Tucson Water is also working with EEExchange to develop an enhanced middle school program that will be implemented in spring 2014.

3. Efficiency Programs – Incentive/Rebate

	FY09	FY10	FY11	FY12	FY13	¹FY14	Total
Single-Family HET	353	2,949	2,622	1,717	1,901	1,392	10,934
Multi-Family HET	11	378	234	1,237	3,632	1,9,17	7,409
Commercial HET	3	428	382	342	136	218	1509
Low Income HET	0	542	943	294	651	611	3041
High-Efficiency Urinal	0	0	10	1	4	38	53
Gray Water	0	0	2	9	11	5	27
Rainwater Harvesting	0	0	0	0	295	158	453
Irrigation Upgrade	0	2	12	8	8	1	31

Table 1: Total Number of Rebates by Program Year

¹ July through December of FY14

3.1 High-Efficiency Toilet (Single-Family)

This rebate program, which began in July 2008, is designed to encourage residential customers to retrofit older 3.5 or more gallons-per-flush toilets with high-efficiency models. Through December of this fiscal year, 1,392 toilets have been retrofitted, bringing the total to 10,934 since its introduction.

3.2 High-Efficiency Toilet (Multi-Family)

This rebate program, which began in July 2008, is designed to encourage multi-family customers to retrofit older 3.5 or more gallons-per-flush toilets with high-efficiency models. Through December of this fiscal year, 49 multi-family properties have taken advantage of the rebate program, and 1,917 toilets have been retrofitted, bringing the total to 7,409 since its introduction.

3.3 High-Efficiency Toilet (Commercial/Industrial)

This rebate program, which began in July 2008, is designed to encourage commercial/industrial customers to retrofit older 3.5 or more gallons-per-flush toilets with high-efficiency models. Through December of this fiscal year, 218 toilets have been retrofitted, bringing the total to 1,509 since its introduction.

3.4 High-Efficiency Toilet Replacement (Low-Income)

This program offers toilet replacement for qualifying low-income homeowners who are Tucson Water customers. The non-profit Community Home Repair of Arizona (CHRPA) qualifies participants and does the installation, while Tucson Water provides financial assistance for the reimbursement of toilets purchased and installed. Through December of this fiscal year, 611 toilets have been replaced, bringing the total to 3,041.

In 2013, CHRPA began repairing leaks on other bathroom fixtures with funding by Tucson Water for materials provided.

3.5 High-Efficiency Urinals (Pilot)

This rebate program, which began in January 2011, is designed to encourage commercial customers to retrofit high water-use urinals with high-efficiency models. Participation has been very low. Beginning January 2013, the rebate was increased from \$200 to \$500 and the range of options expanded to include waterless models. Through December of this fiscal year, 38 high efficiency urinal installations have been approved for rebates.

3.6 Rainwater Harvesting Incentive (Pilot)

The residential rainwater harvesting incentive program is the latest addition of water-saving incentives offered by Tucson Water and was introduced in June 2012.

Tucson Water rebates qualifying residential rainwater harvesting system costs under two levels of funding: Level 1 - Simple/Passive (Rain Garden) rebates 50 percent of the cost of eligible materials and labor up to \$500; Level 2 - Complex/Active System (Rain Tank) rebates system costs up to \$2,000 based on gallon capacity. Applicants can decide which funding level to apply for based on the amount of rainwater they aim to capture onsite and the type of practices they want to implement. Applicants may apply for both a passive and an active rebate not exceeding \$2,000 for the combination.

The response from the community has been very positive. Sixteen rainwater harvesting workshops were held and 377 people attended a workshop required to qualify for the program. Tucson Water has processed 158 rebate applications through December of this fiscal year. Qualifying workshops were offered through SmartScape, Southern Arizona Rain Gutters (SARG), and Watershed Management Group (WMG)

3.7 Gray Water Incentives (Pilot)

This rebate program, which began in January 2011, is designed to encourage homeowners to install gray water systems for landscape irrigation. Participants must attend a workshop before applying for the incentive. Three workshops were held through December of this fiscal year with a total of 46 people attending. Five rebates were issued through December of this fiscal year.

The rebate amount increased from \$200 or one third of the cost to install a system to 50 percent of the cost up to \$1,000 in January 2013. Tucson Water is optimistic, however, participation remains low.

3.8 Irrigation System Upgrades (Pilot)

This program is intended to encourage efficiency upgrades to commercial irrigation systems. The participation rate for completion of projects has been very low throughout and the program was put on hold for re-evaluation. Through December of this fiscal year, seven rebates have been issued. A revised program will be implemented early 2014 to encourage increased participation.

4. Community Outreach

4.1 WaterSmart Program 2013

After significant consideration, Tucson Water rebranded its Beat the Peak program. As a result of investments made in water supply and infrastructure, along with a noticeable change in customers water use habits, summertime peaking concerns have been eliminated. As a result, Tucson Water introduced its WaterSmart Program to better reflect the changing drivers for water conservation programming, and to emphasize efficient use of water all year long. This brings together the key elements that have made it a valuable resource for customers. The name has existed for several years, but in separate forms and references to individual projects (i.e., WaterSmart Business Programs for certification, WaterSmart classes for residents).

The WaterSmart Program includes Tucson Water's rebates and incentives for residential and commercial customers, schedules of free SmartScape residential workshops, offers of free residential water audits, videos, and free publications with tips and resources, and WaterSmart Program information in English and Spanish.

Since the rework, redesign, and modification, promotion of the new WaterSmart Program has included media releases (coinciding with City of Tucson Twitter alerts and Facebook posts), an article in "Your Water Connection" newsletter, increased distribution of the brochures in English and Spanish, and a new web page for online access to all facets of the program.

5. Community Programs

5.1 Water Waste Enforcement

Two Utility Service Representatives conduct water waste inspections throughout the Tucson Water service area. Water waste typically involves overwatering, malfunctioning irrigation systems, hose washing of hard surfaces, and misting systems operating in unoccupied areas.

The fine structure is:

- First offense, a minimum of \$250
- Subsequent offences within three years, a minimum of \$500

Inspectors made 425 visits this year and issued 257 verbal and 18 written warnings. Three businesses went to court and paid fines. All others resolved their water waste issues. Additionally, the inspectors conducted 23 commercial water audits assisting customers in reducing their water-use and achieving cost savings.

5.2 WaterSmart Business (WSB) Program

This program helps business owners and managers identify ways to conserve water and be more efficient with their water use. Businesses participating in the program are recognized for achieving reductions in water usage.

In efforts to garner greater participation in the WSB program, several changes to the program are proposed:

- Redesign the reduction in water-use percent criteria for certification. Instead use a custom approach to evaluating certification levels, which seek to evaluate each class and site for its unique characteristics and opportunities to conserve water.
- Conduct a "water conservation walk through" or provide a professional water audit. Site complexity will determine whether a walk through by Tucson Water staff or a professional audit is performed.

- Use a custom commercial rebate to assist businesses in meeting the water efficiency outlined in their walk through or professional audit. The custom commercial audit will be based on performance measures.

5.3 Water Harvesting Demonstration Sites

There are currently 16 demonstration sites throughout the city that familiarize Tucsonans with a variety of water harvesting and usage projects. Staff works closely with all of these sites which include ward offices, Tucson Botanical Gardens, Reid Park Zoo, two community gardens, and a bike path. Sites are in various stages of development: some have been completed, some are under construction, and others have not yet broken ground. A website featuring a guided tour of the sites is near completion. (See Appendix A for a complete list of demonstration sites.)

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Appendix A – Water Harvesting Demonstration Sites

Blue Moon Community Garden
1501 N. Oracle Road

Centennial Park
NW corner of Main and Paseo Redondo

Community Food Bank
3003 S. Country Club Road

Food Conspiracy Co-Op
725 E. Seventh Street (Administration Building)

Ewing Irrigation
4250 S. Station Master Drive

4th Avenue Bicycle Blvd.
(Grant to Fort Lowell Road)

Native Seeds/SEARCH
3584 E. River Road

Reid Park Zoo
1100 S. Randolph Way

REPP Design & Construction
2502 N. 1st Avenue

Tri-Sports.com
4495 S. Coach Drive

Tucson Botanical Gardens
2150 N. Alvernon Way

Watershed Management Group
1137 N. Dodge Road

Ward 1
940 W. Alameda Street

Ward 2
7575 E. Speedway Blvd.

Ward 3
1510 E. Grant Road

Ward 6
3202 E. 1st Street