

# **2016 Monterey Peninsula Water Conservation Program Annual Report**

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**PREPARED BY**  
**CALIFORNIA AMERICAN WATER, COASTAL DIVISION**  
**IN PARTNERSHIP WITH**  
**THE MONTEREY PENINSULA WATER MANAGEMENT DISTRICT**



## EXECUTIVE SUMMARY

This report documents conservation efforts undertaken by California American Water's Coastal Division and the Monterey Peninsula Water Management District (MPWMD) during 2016 pursuant to the Partial Settlement Agreement between the Office of Ratepayer Advocates, the Utility Reform Network, and California American Water Company on Revenue Requirement as to the Conservation Budget for the Monterey District under the California Public Utilities Commission (CPUC) A.13-07-002 (July 1, 2013).

California American Water, in collaboration with MPWMD, has prepared this report to provide a record of the Coastal Division water conservation programs and activities implemented in 2016, as well as California American Water's projected efforts for 2017. Reports for previous years are available by contacting either California American Water or the MPWMD.

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## SUMMARY OF REPORTING REQUIREMENTS

The following are the mandatory Coastal Division reporting requirements. Additional information has been provided in this report to document other conservation efforts undertaken by California American Water and MPWMD during 2016. The report breaks out (1) conservation activities California American Water undertakes on its own, (2) conservation activities MPWMD undertakes from its own budget, (3) programs MPWMD undertakes that are funded through the California American Water conservation surcharge. The report includes:

- A brief explanation of the need for each activity, the nature of the activity, measurable goals, and the results and achievements for each program (including information such as number of units distributed or installed, estimated water—and energy if quantifiable – savings in water and dollars, etc.).
  - A summary of the conservation plan for the following year with timelines, implementation plans and budgeted amounts for each type of activity.
  - Electronic spreadsheets that include estimated water savings for each customer receiving an audit, a rebate, or a retrofit for years 2015 & 2016.
  - Estimated water savings for each device offered through California American Water and MPWMD's conservation programs funded through the California American Water conservation surcharge.
  - An Evaluation of the effectiveness of the Outreach Program.
  - An annual analysis of the weather-adjusted consumption in the Coastal Division.
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## ABBREVIATIONS USED THROUGHOUT THE REPORT

The following abbreviations are found throughout this report.

CAW – California American Water

MPWMD – Monterey Peninsula Water Management District

AFA – Acre-feet annually

BMP – Best Management Practice

CHECW – Commercial High Efficiency Clothes Washer

CIMIS – California Irrigation Management Information System

CLIA – Certified Landscape Irrigation Auditor

CPUC – California Public Utilities Commission

CUWCC – California Urban Water Conservation Council

ORA – Office of Ratepayer Advocates

$E_t$  – Evapotranspiration

GPF – Gallons per Flush

GPM – Gallons per Minute

GRC – General Rate Case

HECW – High Efficiency Clothes Washer

HET – High Efficiency Toilet (1.28 GPF)

IAHWS – Instant-Access Hot Water System

MCBC – Monterey County Business Council

RSOD – Rain Sensor Shut Off Device

SMS – Soil Moisture Sensor

UHET – Ultra High Efficiency Toilet (0.8 GPF)

ULFT – Ultra Low Flush Toilet (1.6 GPF)

WBIC – Weather based (or “Smart”) irrigation system controller

## CALIFORNIA AMERICAN WATER, COASTAL DIVISION– 2016 PROGRAMS FUNDED BY THE CONSERVATION SURCHARGE

### SUMMARY OF CALIFORNIA AMERICAN WATER PROGRAMS

The programs funded by the conservation surcharge during 2016 are summarized and described following the table.

*TABLE 1. CALIFORNIA AMERICAN WATER 2016 PROGRAMS FUNDED BY  
CONSERVATION SURCHARGE*

Program	Cost	Need For Program	Nature of Activity	Measurable Goal	Result of Achievements	Estimated Savings (AF)
Water Wise House Calls	None (funded by Labor budget)	Residential conservation including high use evaluations	Customers given assessment of indoor & outdoor water usage, recommended irrigation schedule, water saving devices including hourly usage data collection utilizing AMI meter reading system	Audits upon request and immediate investigation of high use	380 audits completed	2016 Estimated Savings 13.75 AF (Actual Savings for 2015 based on usage records for 248 Audits: 22.8 AF)
Residential Plumbing Retrofit	\$59,482	Provide conservation devices to customers to reduce consumption	Distribution of water saving devices at events, and walk ins.	Reduce waste water from high flow water fixtures	See Conservation Devices Section	39.91 AF
Rebates	\$522,709	Provide rebates to customers to encourage water reductions	Provide incentives to customers for upgrading to high efficiency/water saving fixtures and appliances	See MPWMD Section.	1,928 SF rebates; 101 MF rebates; 47 CII rebates.	28.88 AF



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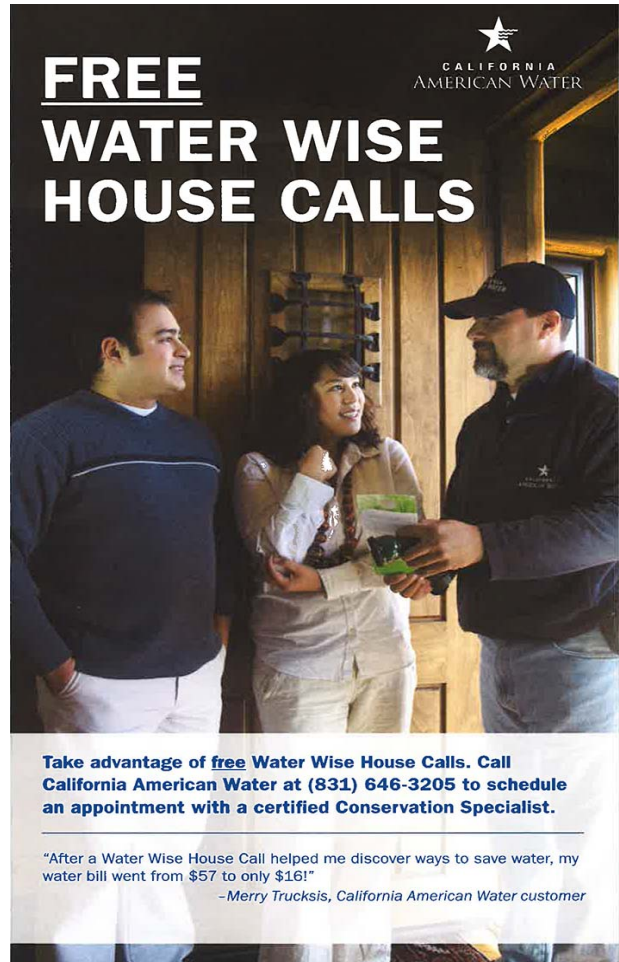
CII Audits	\$10,942	CII Audits by Water Wise Consulting	Water use survey includes: audit of water fixtures, water & behavior use patterns, report includes findings, recommended actions, and payback periods for retrofits and/or replacement of fixtures	Goal is 35 CII Audits	Completed 2 CII Audits	0.05 AF Estimate Savings Total 16 Audits for 2015 Based on usage <b>records:</b> saved 12 AF
Rain Sensor Installation Program	\$8,849	Program for Residential Customers with high usage during spring and winter months	CAW (through contractor) installs free rain sensors for qualified customers	Goal is 50 Rain Sensors	Completed installation of 39 Rain Sensors	Not Quantifiable
Landscape Grant Program	\$25,000	Provide incentives for cities schools and parks to upgrade irrigation systems to encourage conservation	Grant funding for replacement of turf, upgrading of irrigation systems, installation of water saving technology.	Goal is 1 project	Completed the replacement of inefficient sprinkler heads to the efficient rotary nozzles for 9 schools of the Monterey Peninsula Unified School District	Salvation Army Project – Upgrade Irrigate System 0.70 Acre Feet
Public Outreach and Education	\$160,755	Promote Water Conservation, SWRCB Cease and Desist Order & California Drought	Promote quantifiable BMP programs, educate customers and communicate water issues and efforts needed for Monterey Peninsula	Support BMP programs, attend events, and reduce spring water usage.	Multimedia conservation campaign with community involvement	Not quantifiable

## RESIDENTIAL AUDITS (WATER WISE HOUSE CALLS)

California American Water has been providing free Water Wise House Calls to its customers since 2008 and utilizes in-house trained audit staff at no cost to the Conservation Budget. The program is available to residents of single and multi-family properties and to owners and managers of apartments and condominiums, offering free residential audits to identify ways by which the customer can save water indoors and outdoors.

California American Water's conservation staff completed 380 Water Wise House Calls in 2016. In addition, conservation staff completed 416 high bill investigations where customers were assisted in identifying root causes of high water use.

California American Water promoted the Water Wise House Call program through bill inserts, rebate brochures, offering the service to customers who visited the office to make payments and by targeting customers who had received high water bills and had been billed in the higher tiers of CAW's five-tiered rate design.



**FREE  
WATER WISE  
HOUSE CALLS**

CALIFORNIA  
AMERICAN WATER

Take advantage of **free** Water Wise House Calls. Call California American Water at (831) 646-3205 to schedule an appointment with a certified Conservation Specialist.

"After a Water Wise House Call helped me discover ways to save water, my water bill went from \$57 to only \$16!"  
- Merry Trucksis, California American Water customer

During the Water Wise House Calls (audits) & high bill investigations, California American Water identified common inefficiencies and water waste in many of the Monterey residences. The most common occurrences were:

- Toilet and faucet leaks
- Irrigation controllers set to run too long resulting in water waste
- Misaligned and broken sprinkler heads
- Customer service line leaks

California American Water's conservation staff assisted customers by showing them how to read their water meters and convert cubic feet to gallons so that customers can better monitor their daily usage and compare the meter readings to the billing units identified on their water bills. In addition, conservation staff also assisted customers by properly adjusting their irrigation controllers to meet the plant water needs and to irrigate in compliance with MPWMD's two day a week watering schedule. Conservation staff also provided free water conserving devices to

customers. The audit reports also include recommendations on utilizing the rebate program for the replacement of high water-use fixtures and appliances at customers' homes.

**California American Water offers free Water Wise House Calls.** A certified Conservation Specialist will visit your home, check for leaks, and identify ways you can save water both indoors and out. Our experts will teach you how to read your meter and help you develop an irrigation schedule based on your landscaping. We would like to help you save water and money by offering you a free Water Wise House Call. In addition to helping lower your water bill, you will also be helping to preserve our most precious resource: water.

**A WATER WISE HOUSE CALL PROVIDES:**

- ◆ **Leak Detection:** We will help you identify leaks inside and out. Leaks are not only big water wasters, they can also be very costly.
- ◆ **Read Your Water Meter:** We will show you how to read your water meter to find possible leaks. By monitoring your meter regularly, you can catch and fix leaks more efficiently.
- ◆ **Free Plumbing Retrofit Materials:** We will check your showerhead and faucet flow rates as well as toilet flush volumes. Free low-flow showerheads and faucet aerators for the bathroom(s) and kitchen will be provided where needed.
- ◆ **Schedules and Tips:** We will help you create appropriate landscape irrigation schedules and show you water saving tips. Resources on planting native and drought tolerant plants will also be provided.

**WHO'S ELIGIBLE?**  
All residents in the California American Water Monterey District are eligible for a free Water Wise House Call. Residents of single-family homes, condominiums, town houses, apartments, and mobile homes are all welcome to participate.


**MAKE WISE WATER USE PART OF YOUR DAILY ROUTINE**

**Inside**

- ◆ Run dishwashers and clothes washers only when they are full. If you have a water-saver cycle, use it.
- ◆ Check for leaks in your toilet. Place a few drops of food coloring in the tank. If, after 10 minutes, color appears in the bowl, you have a leak.
- ◆ Turn off the tap while brushing your teeth or washing dishes in the sink.

**Outside**

- ◆ Make the most of your water by watering in the early morning. As much as 30 percent of water can be lost to evaporation by watering during midday.
- ◆ Use drip irrigation to water plants.
- ◆ Plant appropriately for your local climate. Check with local nurseries for non-invasive, drought-tolerant plants.



California American's Water Wise House Call program showed a 12-month water savings of 22.8 acre feet of water for participating customers in 2015 (year 2015 was used to provide a complete year of post-retrofit consumption). There were 248 audits and of those, 212 accounts showed water savings in the 12 months after the audit.

The audit reports also included recommendations on utilizing the rebate program for the replacement of specific appliances at customer's homes.

The effectiveness of the Water Wise House Call program was evaluated through the evaluation of water savings, as well as by inclusion of an evaluation survey form along with a pre-stamped envelope in the customer report package. 113 surveys were returned. The customer evaluation surveys received from the Water Wise House Call service showed high customer appreciation.

Comments included on the evaluation form acknowledged that the staff was courteous, helpful and knowledgeable:

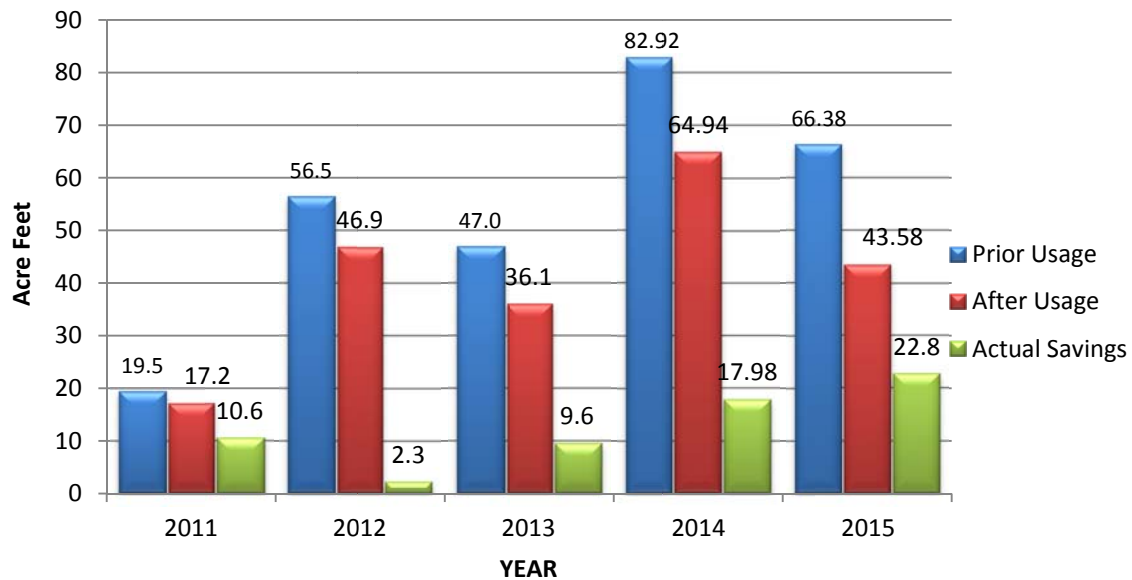
- “Ray was extremely helpful and courteous; he went out of his way to be helpful!!”
- “Kelly gave excellent service and she explained everything clearly.”
- “Harriet was thorough, an excellent teacher and very patient.”
- “Melissa was amazing, very professional and knowledgeable.”
- “Ray is an outstanding employee and did an excellent job!”
- “We appreciated Kelly’s friendly manner, her knowledge and ability to explain her findings to us as well as her speedy submission of our water audit analysis.”
- “Harriet: This is one of the best services we ever had from a utility company.”
- “Melissa: I am very I impressed with the water wise house call, but more specifically Melissa. She explained everything in an easy way to understand....and how quickly I received the report.”

The Water Wise House Call program has been very successful in conserving water. Providing customers with an irrigation schedule, low flow devices, and recommendations for retrofits has been instrumental in saving 63.49 acre feet over a 5-year period, 2011 through 2015 and instituting long lasting behavioral changes for participating customers. The savings are based on actual usage records, collected 12 months prior to the audit and 12 months after the audit. Table 2 summarizes these findings.

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TABLE 2. 2011 THROUGH 2015 WATER WISE HOUSE CALLS PROGRAM

## Water Wise House Calls 2011 - 2015 Actual Water Savings



### 2011- 2015 Residential Water Wise House Calls

Year	Prior Usage	After Usage	Actual Savings	Usage Reduction %	Number of Audits	Number Residents Using Less Water	Number Residents Using More Water	Residents Using Less Water %	Residents Using More Water %
2011	19.5	17.2	-2.3	11.8%	75	35	40	46.7%	53.3%
2012	56.5	46.9	-9.6	17.0%	169	116	53	68.6%	31.4%
2013	46.98	36.08	-10.9	23.2%	206	163	43	79.1%	20.9%
2014	82.92	64.94	-17.98	21.7%	345	290	50	85.5%	15.9%
2015	66.38	43.58	-22.8	34.3%	248	212	36	85.5%	14.5%



## LEAK DETECTION



California American Water Conservation staff identifies leaks and difficult-to-diagnose high water bills by utilizing meter reading data logging software and downloading up to 180 days of usage, hour by hour, from the company's AMI meters (representing approximately 50% of the meters currently in the ground).

This data allows for the evaluation of hourly usage patterns which have aided in identifying the date range in which high usage occurred, and resulted in the identification of issues including improperly programmed irrigation controllers, leaks in the irrigation system, toilet leaks, service line leaks, and hoses left running. This new technology assisted us in determining the root cause of high water bills for 437 customers. The report also allows for identification of potential backflow issues which could compromise the quality of the water system and pose potential health risks to our customers.

### Data Log Report for Residential Customers

MIU#	date	time	meter reading	10CF consumption	gallon consumption	minor backflow	major backflow	intermittent leak	continuous leak
1830129621	Saturday, September 24, 2016	6:11 AM	10449.585	0.02	1.496	1	0	0	0
1830129621	Saturday, September 24, 2016	7:11 AM	10449.605	0.001	0.0748	1	0	0	0
1830129621	Saturday, September 24, 2016	8:11 AM	10449.606	0.043	3.2164	1	0	0	0
1830129621	Saturday, September 24, 2016	9:11 AM	10449.649	0.135	10.098	1	0	0	0
1830129621	Saturday, September 24, 2016	10:11 AM	10449.784	0.743	55.5764	1	0	0	0
1830129621	Saturday, September 24, 2016	11:11 AM	10450.527	1.77	132.396	1	0	0	0
1830129621	Saturday, September 24, 2016	12:11 PM	10452.297	2.281	170.6188	1	0	0	0
1830129621	Saturday, September 24, 2016	1:11 PM	10454.578	2.855	213.554	1	0	0	0
1830129621	Saturday, September 24, 2016	2:11 PM	10457.433	1.738	130.0024	1	0	0	0
1830129621	Saturday, September 24, 2016	3:11 PM	10459.171	1.744	130.4512	1	0	0	0
1830129621	Saturday, September 24, 2016	4:11 PM	10460.915	1.753	131.8724	1	0	0	0
1830129621	Saturday, September 24, 2016	5:11 PM	10462.678	1.752	131.7976	1	0	1	0
1830129621	Saturday, September 24, 2016	6:11 PM	10464.44	1.771	132.4708	1	0	1	0
1830129621	Saturday, September 24, 2016	7:11 PM	10466.211	1.759	132.8212	1	0	1	0
1830129621	Saturday, September 24, 2016	8:11 PM	10467.98	1.753	131.1244	1	0	1	0
1830129621	Saturday, September 24, 2016	9:11 PM	10469.733	1.77	132.396	1	0	1	0
1830129621	Saturday, September 24, 2016	10:11 PM	10471.503	1.744	130.4512	1	0	1	0
1830129621	Saturday, September 24, 2016	11:11 PM	10473.247	1.734	129.7032	1	0	1	0
Saturday, September 24, 2016 Total					1907.8488				
1830129621	Sunday, September 25, 2016	12:11 AM	10474.981	1.746	130.8008	1	0	1	0
1830129621	Sunday, September 25, 2016	1:11 AM	10476.727	1.217	91.0316	1	0	1	0
1830129621	Sunday, September 25, 2016	2:11 AM	10477.944	0	0	1	0	1	0
1830129621	Sunday, September 25, 2016	3:11 AM	10477.944	0	0	1	0	1	0
1830129621	Sunday, September 25, 2016	4:11 AM	10477.944	0	0	1	0	1	0
1830129621	Sunday, September 25, 2016	5:11 AM	10477.944	0.018	1.3464	1	0	1	0
1830129621	Sunday, September 25, 2016	6:11 AM	10477.962	0	0	1	0	1	0
1830129621	Sunday, September 25, 2016	7:11 AM	10477.962	0	0	1	0	1	0
1830129621	Sunday, September 25, 2016	8:11 AM	10477.962	0.529	39.5692	1	0	1	0
1830129621	Sunday, September 25, 2016	9:11 AM	10478.491	0.038	2.8424	1	0	1	0
1830129621	Sunday, September 25, 2016	10:11 AM	10478.529	0.038	2.8424	1	0	1	0
1830129621	Sunday, September 25, 2016	11:11 AM	10478.567	0.061	4.5628	1	0	1	0
1830129621	Sunday, September 25, 2016	12:11 PM	10478.628	1.834	137.1832	1	0	1	0
1830129621	Sunday, September 25, 2016	1:11 PM	10480.462	2.333	174.5084	1	0	1	0
1830129621	Sunday, September 25, 2016	2:11 PM	10482.795	1.843	137.8564	1	0	1	0
1830129621	Sunday, September 25, 2016	3:11 PM	10484.638	1.722	128.8056	1	0	1	0
1830129621	Sunday, September 25, 2016	4:11 PM	10486.36	0.024	1.7952	1	0	1	0
1830129621	Sunday, September 25, 2016	5:11 PM	10486.384	0	0	1	0	1	0
1830129621	Sunday, September 25, 2016	6:11 PM	10486.384	0.012	0.8976	1	0	1	0

## RESIDENTIAL & COMMERCIAL PLUMBING RETROFIT

California American Water has been offering various free water savings devices for its residential and commercial customers including showerheads and kitchen faucet aerators with a flow rate of 1.5 gallons per minute, bathroom faucet aerators with a flow rate of 0.5 gallons per minute, leak detection tablets/kits and outdoor water saving tools such as soil moisture meters and hose nozzles that automatically shut off when not in use.

As per prior practice, California American Water tracked the distribution of the various water savings devices in 2016 to identify the total number of each device distributed. The various devices were distributed to California American Water customers in a variety of means including but not limited to:

- Community events (at Company booth/display)
- California American Water front desk (walk-in customers)
- Residential Water Wise House Calls
- Commercial audits
- New customer welcome packets
- Upon customer request
- Special giveaway offer advertised in the residential customer's monthly water bills

In addition to the standard devices listed under the CUWCC's former BMP 2 requirements, California American Water also offered a variety of outdoor devices. The total number of each type of water saving device distributed in 2016 to California American Water's residential customers in Monterey are listed in Table 3. Water saving device distribution by MPWMD is discussed in the MPWMD section of this report.

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**TABLE 3. COASTAL DIVISION: RESIDENTIAL PLUMBING RETROFIT DETAIL**

Water Saving Device	# of units/ activities	Estimated water savings per unit per year	Estimated Annual measure savings (AFY)
Showerheads	2,201	0.0062	13.64
Handheld Showerheads	266	0.0062	1.65
Bathroom Faucet Aerators	5,000	0.0017	8.5
Kitchen Faucet Aerators	3,450	0.0017	5.86
Leak Detection tablets	5,900	0.0007	4.13
Leak Detection Kits	910	0.0007	0.637
High Efficiency Pre-Rinse Spray Valve	14	0.392	5.49
Shower Timers	2,680	unknown	unknown
Dish Squeegees	2,308	unknown	unknown
Hose Shut Off Nozzles	2,160	Varies	Varies
Moisture Meters	1,796	unknown	unknown
<b>Total</b>	<b>26,685</b>		<b>39.91</b>



## LARGE LANDSCAPE AUDITS AND WATER BUDGETS

Landscape water audits and budgets are required by MPWMD's Regulation XV, Rule 172 and California American Water's Conservation Plan Rule 14.1.1 for the main system including Ryan Ranch, Hidden Hills and the Bishop systems.

Each year, California American Water identifies new customers who require landscape water audits and budgets. Customers who require landscape water audits and budgets include large residential customers whose water usage averages 320 units (23,936 gallons) per month, dedicated irrigation meters, irrigation of areas greater than three acres, and irrigated open space. These select customers are required to adhere to their budgets during Stage 2 (and higher) Water Conservation under Rule 14.1.1.

California American Water's usage records indicate that the majority of customers who have established water budgets are well below the irrigation budgets that were established during the time the audits were completed which is mainly attributed to CAW's 5-tiered rate structure, turf removal, improvement and upgrading of irrigation systems, the installation of rain sensors, and customers taking advantage of the rebate program.

Since California American Water and the Monterey Peninsula Water Management are in the process of adopting a revised Conservation and Rationing Plan which does not mandate the requirement of landscape audits and budgets, it was decided to conduct landscape audits only as deemed necessary or by customer request.

Details of the large landscape audit program are described in MPWMD's Conservation Activities section.

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## LANDSCAPE GRANT PROGRAM

California American Water's successful landscape grant program, implemented in 2011, continued in 2016 to reduce the water demand of municipal properties by changing landscaping and upgrading irrigation systems. California American Water's large landscape grant program focuses on replacing turf on city properties and schools with low water use plants, and/or



installation of water saving irrigation technology. The grant award is intended to provide funding for a demonstration project with high visibility, significant water savings, exemplary landscaping, and/or use of water-saving irrigation technology.

In September of 2015, California American Water received a landscape grant proposal from the Salvation Army to upgrade its irrigation systems for three of its adjacent properties located in Seaside that services its school that supports an athletic field, two housing

facilities for the homeless, afterschool care, apartments for emergency and transitional housing, and a daycare center for the homeless. Two bids were received for approximately \$30,000 where one of the landscaping companies removed \$5,000 as a donation leaving the proposal at \$25,000.

After reviewing the proposal and conducting an onsite inspection, the irrigation system was found to be antiquated, inefficient and in need of repair. Shrubs and plants were being irrigated with highly inefficient spray heads which needed to be converted to automatic drip and parts of the system were completely shut off.

In 2016, California American Water awarded the Salvation Army \$25,000 to convert existing high use sprinklers to automatic drip, replace all high use sprinkler heads with efficient rotary nozzles, install a new irrigation controller for the school's athletic fields and turf areas, and install wireless rain sensors for all its existing controllers.

Rotary nozzles deliver larger droplet streams of water at a lower application rate, thus reducing wind deflection and increasing irrigation efficiency. Because the water is applied more slowly, more water can soak into the soil. In addition, rotary nozzles' highly efficient water delivery reduces soil erosion and run off, saving water and money. The potential estimated annual water savings for this project amount to 162,600 gallons. The project began in September of 2015 and was completed in March of 2016.

**Salvation Army**  
162,600 Gallons Estimated Water Savings for 3 properties

Replacement of High Use Inefficient Sprinklers to High  
Efficiency Rotary Nozzles



High Water-Use Inefficient Fixed Spray  
Sprinklers

Low Water-Use Efficient Rotary  
Nozzle Sprinklers



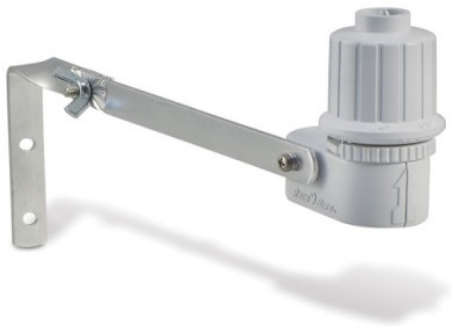
## RAIN SENSOR INSTALLATION PROGRAM

California American Water continued its Rain Sensor Installation Program through its contractor EcoTech and has installed 440 rain sensors since the program began in 2011 for residential and non-residential customers. In addition, soil moisture sensors were offered to select customers in 2015 that have landscapes which would benefit from this add-on to the Sensor Program. In 2016, there were a total of 39 rain sensors installed.

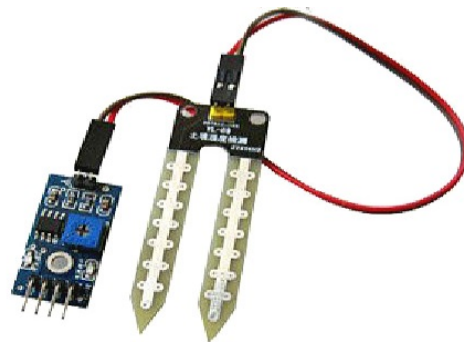
The rain sensor has a shut off device which automatically signals the irrigation controller to curtail irrigation when it rains, and allows watering to resume when needed. The rain sensor can be programmed to halt irrigation for up to 72 hours after a rainfall event.

Potential candidates for rain sensors are customers who have been billed in the 4<sup>th</sup> and 5<sup>th</sup> tier of California American Water's five-tiered residential rate structure during the months of January through April and during the months of November and December, indicating possible over-irrigation occurring during those months. These customers would have exceeded their allotments during these months.

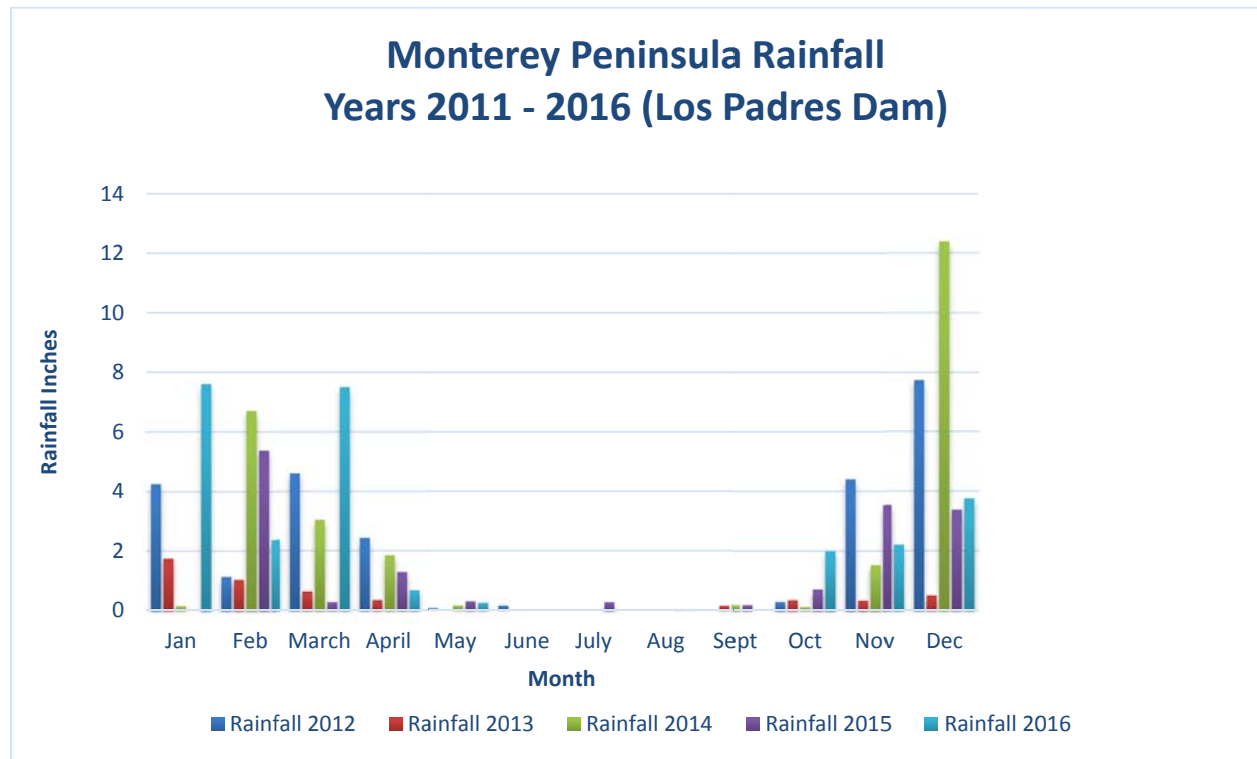
Rain Sensor



Soil Moisture Sensor



**TABLE 4. MONTEREY PENINSULA MONTHLY RAINFALL 2011 – 2016 (LOS PADRES DAM WEATHER STATION)**



Monthly Rain Fall for Years 2011 through 2016 (Los Padres Dam)													
Year	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total s
Rainfall 2011	3.2	6.77	8.63	0.37	1.26	1.84	0	0	0	1.63	2.66	0.17	26.53
Rainfall 2012	4.26	1.14	4.61	2.43	0.06	0.14	0	0	0	0.3	4.41	7.74	25.09
Rainfall 2013	1.75	1.04	0.64	0.35	0	0	0	0	0.14	0.36	0.34	0.51	5.13
Rainfall 2014	0.16	6.7	3.03	1.85	0.15	0	0	0	0.19	0.13	1.53	12.4	26.13
Rainfall 2015	0	5.39	0.28	1.29	0.29	0	0.3	0	0.19	0.72	3.54	3.38	15.35
Rainfall 2016	7.6	2.37	7.49	0.68	0.24	0	0	0	0	2	2.21	3.76	26.36

## COMMERCIAL, INDUSTRIAL, INSTITUTIONAL (CII) AUDITS

California American Water continued its commercial audit program established in 2009 along with its contract with Water Wise Consulting to conduct commercial, institutional, and industrial audits during 2016. Water Wise Consulting completed 2 audits with an estimated potential savings of 0.05 acre feet following the implementation of the audit recommendations. Since the program began in 2009, over 259 commercial customers have participated in the audits and have implemented water saving measures.

California American Water's conservation staff follow up with the customers on site and in person to review the audit reports and provide free devices, such as faucet aerators and pre-rinse spray valves. Customers were also requested to sign a statement confirming their receipt of the report and their consent for MPWMD to receive a report copy.



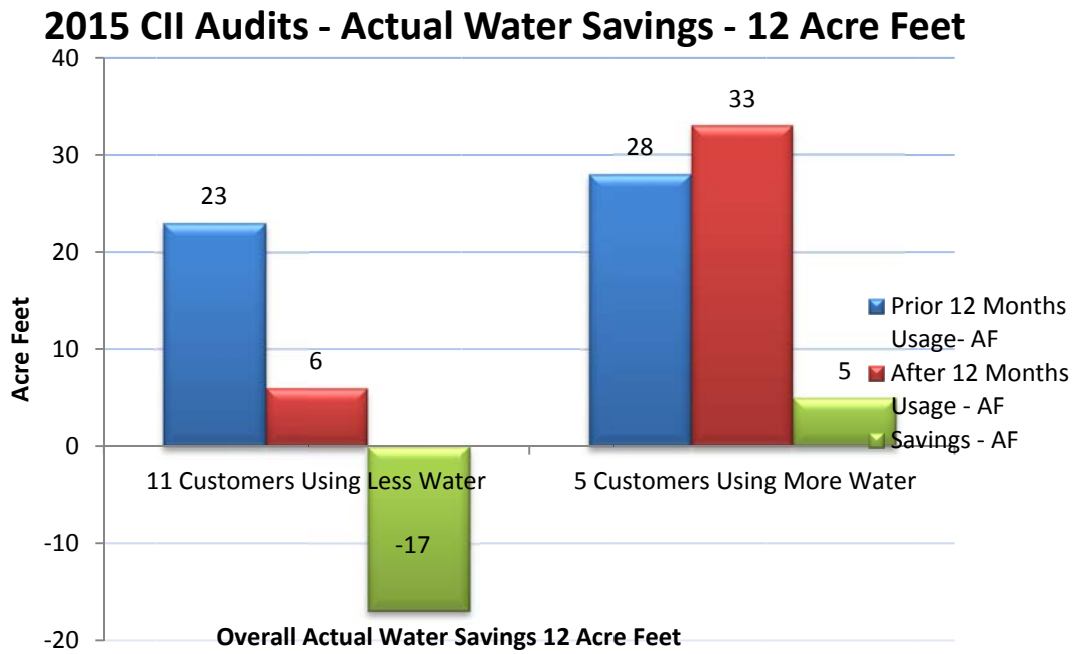
Customers were given audit reports that focused on applicable water-saving devices, and estimated water and cost savings together with expected payback periods for such upgrades. The payback period calculations included the rebate incentives available to CII customers through the California American Water and MPWMD Rebate Program.

Conservation Specialist Harriet Fox reviews commercial audit report with Canterbury Woods' representative

The actual water savings for the audits shown here reflect year 2015 audit activity to show a full 12 months of post audit water usage as required.

Comparing pre-audit and post-audit usage, there were a total of 12 acre feet of water savings, however, 11 of the 16 audits showed a savings of 12 acre feet, whereas 5 customers increased their usage by 5 acre feet during 2015. Many of these customers have water meters that serve not only indoor plumbing fixtures but also outdoor irrigation. Due to the continued drought, some customers had an increase in summer outdoor water usage to maintain their landscape which is a potential reason for the increase in consumption seen for these 5 customers.

TABLE 5. COMMERCIAL, INDUSTRIAL, & INSTITUTIONAL AUDITS – WATER SAVINGS



	11 Customers Using Less Water (AF)	5 Customers Using More Water (AF)
Prior 12 Months Usage - AF	23	28
After 12 Months Usage - AF	6	33
Savings- AF	-17	5
Number of Audits	11	5
Increase or Decrease In Usage	-74%	18%

## RATE BEST MANAGEMENT PRACTICE INSPECTIONS

In 2013, California American Water changed its non-residential rate structure that now places customers in one of four rate divisions based on compliancy with indoor and outdoor best management practices also known as Rate BMP's. Non-residential customers were required to complete a survey to determine their appropriate rate category.

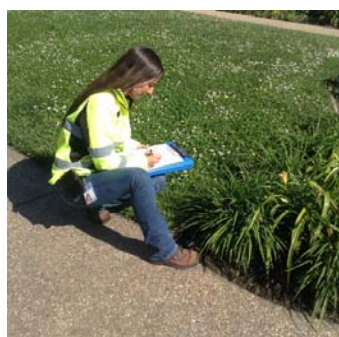
To ensure that non-residential customers are complying with the BMPs that placed them in one of the four rate divisions, California American Water, in partnership with the Monterey Peninsula Water Management District in 2016 began the process of inspecting non-residential properties.

Since the MPWMD's water use efficiency requirements are more stringent than CAW's Rate BMP indoor water fixture requirements, MPWMD conservation staff inspect indoor fixtures and identify customers that have outdoor irrigation and report findings to CAW's Conservation Department. CAW conservation staff inspects customers that have been identified as having landscaping. They also utilize MPWMD's findings to ensure customers comply with the Rate BMP's and placed in the appropriate rate division. Customers that are determined to be non-compliant have 30 days to make necessary corrections to avoid a potential change in rate classification.

In 2016, 941 inspections were completed by CAW and the MPWMD. There were 77 customers that were non-compliant with the Rate BMP's. Thirty-two made corrections within the 30 days to avoid paying the higher rate.

### Rate BMP Survey Inspection Summary

Date	Total Completed Indoor and/or Outdoors by CAW & MPWMD	Indoor Audits Completed MPMWD	Mixed Use: Indoors completed MPWMD/ Outdoors by CAW	Mixed Use (Indoor and outdoors) by CAW	Dedicated Irrigation Meters Completed by CAW
<b>2016 Totals</b>	<b>941</b>	<b>411</b>	<b>129</b>	<b>29</b>	<b>372</b>



California American Water's Conservation Specialist Melissa Ward inspecting a commercial property to ensure the customer is Rate BMP compliant. Melissa is checking the sprinkler types to confirm the turf grass is irrigated with either gear driven rotor sprinklers, multi stream, multi trajectory rotating sprinklers, and/or high efficiency fixed spray nozzles. In addition, all landscape customers are required to have an irrigation controller with a water budget feature and a rain sensor.





CALIFORNIA  
AMERICAN WATER

511 Forest Lodge Road, Suite 100, Pacific Grove, CA 93950 | Phone: (831) 646-3205 | Fax: (831) 646-3204

NON-RESIDENTIAL INSPECTION REPORT

Water Usage Survey For:

Business Name: \_\_\_\_\_  
Owner's Name: \_\_\_\_\_  
Person Contacted: \_\_\_\_\_ Rate Division: \_\_\_\_\_  
Service Address: \_\_\_\_\_  
City \_\_\_\_\_ Account Number \_\_\_\_\_  
State \_\_\_\_\_ Zip Code \_\_\_\_\_ Premise Number \_\_\_\_\_

**INDOOR:**

☐ Inspected by M.P.W.M.D. Date: \_\_\_\_\_ Reference #: \_\_\_\_\_

**OUTDOOR:** Do you water outside? Y / N

Compliance

Y N N/A

☐ ☐ ☐ Automated irrigation controller: \_\_\_\_\_ Water Budget Feature \_\_\_\_\_ Rain Sensor \_\_\_\_\_ Soil Sensor \_\_\_\_\_

Remarks: \_\_\_\_\_

☐ ☐ ☐ Turf grass: Gear drive rotor sprinklers \_\_\_\_\_ Multi-stream, multi-trajectory rotators (MP Rotators) \_\_\_\_\_

High efficiency fixed spray nozzles \_\_\_\_\_ Subsurface low volume emitters \_\_\_\_\_

Remarks: \_\_\_\_\_

☐ ☐ ☐ Shrub beds: \_\_\_\_\_ Size of bed (width): \_\_\_\_\_ Type of heads: \_\_\_\_\_

(The use of standard fixed spray nozzles will not be allowed in landscape beds measuring 3' or less)

☐ ☐ ☐ Hand watering by hose: \_\_\_\_\_ Hose nozzle: \_\_\_\_\_

**Is outdoor watering essential to your business? (Examples: nurseries, golf courses, public parks, ball fields and cemeteries)?**

☐ Yes ☐ No ☐ Not Sure ☐ Not applicable If yes, type of business: \_\_\_\_\_

**How much of your property is irrigated?**

☐ Less than 10% ☐ More than 10% ☐ Not applicable

**INSPECTOR NOTES:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_

This Form certifies that an inspection was conducted at the above address for your commercial business to verify compliance with the Rate Best Management Practices (BMP's) for your current rate division. At the time of inspection, the property was found to be ☐ In ☐ Out of compliance with your current rate division.

**Action Required**

☐ Items not in compliance must be corrected within thirty (30) days to avoid a potential change in rate classification.

☐ Re-inspection required. Please call 831-646-3205 to schedule appointment.

I acknowledge receipt of the BMP inspection report as provided by California American Water.

Auditor Initials \_\_\_\_\_

Acknowledgement of Receipt \_\_\_\_\_

Date \_\_\_\_\_

## SCHOOL EDUCATION AND OUTREACH

In 2016, California American Water continued reaching its key objectives for ongoing school education and outreach in water conservation.

The key goals included:

- Ongoing relationship building with the Water Awareness Committee (WAC);
- Outreach to students at community events offering free educational materials;
- Outreach to students in-class and at afterschool activities to offer education regarding water conservation.



### **Zun Zun School Performances**

California American Water, through the WAC, offered school presentations by the Zun Zun performance group. In 2016, Zun Zun provided fifteen 45-minute performances within California American Water's service territory. The performances reached a total of 5,075 students and covered topics such as the water cycle, watershed, indoor conservation and conservation tips, including information about fixing leaks.

Students were encouraged to participate during the event through a song and dance presentation of the water cycle. Conservation tips were also presented to the students such as taking shorter showers, not letting the faucet run when brushing teeth, using a positive shut off nozzle at the end of a hose when watering the plants, and to notify their parents when they see leaks at home or their school teacher when they see leaks at school.

**TABLE 6. SCHOOL EDUCATION PROGRAM – ZUN ZUN PERFORMANCES**

Date	School	Performances	Number of Students	City
2-23-16	San Carlos School	2	350	Monterey
4-27-16	International School	2	280	Seaside
5-24-16	Ord Terrace School	2	490	Seaside
5-25-16	Highland School	2	400	Seaside
6-1-16	Walter Colton Middle School	1	225	Monterey
6-2-16	Del Rey Woods School	2	500	Monterey
6-2-16	Foothill School	2	330	Monterey
9-3-16	Monterey County Fair	2	2,500	Monterey

California American Water offered conservation presentations for students attending the Monterey County Fair during Labor Day Weekend. The attendees consisted of elementary and up to the 5<sup>th</sup> grade students and totaled approximately 2,500 students for both events. There were four 30-minute presentations for each event where CAW conservation staff first presented a short video on the water cycle and then discussed how the students can save water at home and how to report leaks to their parents. Each student was given educational materials on conservation and water saving devices to take home to their parents.



Water Awareness Committee attends Kid's Day at the Monterey County Fair to instruct children on how to conserve water (left). Zun Zun performed on the Main Stage (right).

## CONSERVATION EVENTS

California American Water held many conservation events throughout 2016 participating in many with the Monterey Peninsula Water Management District. Events included the Good Old Days in Pacific Grove, a rain barrel give away at Del Rey Woods School, earth days, a zombie run in Pebble Beach with a safety theme, and landscape irrigation classes with the MPWMD.

### 2016 Monterey County Fair

California American Water sponsored and participated in the annual Monterey County Fair for four days by holding a conservation booth and providing water saving devices, handouts and tips on how to conserve water. The company also participated in the Water Awareness Committee's (WAC) Water Awareness Day which is later described in the WAC section.

Pictured: CAW Director of Operations Eric Sabolsice interacting with a customer at the conservation booth and operating the conservation spinning wheel game where participants select a conservation question and if answered correctly, win a prize. This game was a huge success and an educational tool especially for the young crowd who visited the booth.



### Toilet Leak Demo Display

A big hit at the Monterey County Fair was the company's Toilet Leak Demo Display built by Distribution Foreman Joseph Riso, which teaches customers how to check for toilet leaks, which are the major cause of high usage water bills and how to read and detect leaks at the meter. The display was built with a clear toilet tank that flushes into a storage container where the water goes through a meter and is then recirculated with a pump back into the tank. It is also on wheels for easy transport. During the Monterey County Fair, many customers stopped by our booth and were thankful to learn how to check for leaks and especially how to read their water meters.



### Monterey County Fair Landscape Contest

California American Water Conservation Staff was again awarded Best of Show for their *Gardens of Monterey County in 2016: Featuring Rain Water to Landscape*. In 2015, CAW staff had also won Best of Show for featuring native plants.





The entry also was again awarded First Place in the Water-Wise Landscape Design contest hosted by the Water Awareness Committee of Monterey County. This competition was developed to promote water conservation awareness in Monterey County. The campaign “encouraged the replacement of thirsty lawns with attractive, low maintenance, drought tolerant landscaping that reduces water use and protects water quality from harmful fertilizer and pesticide runoff.”

Garden displays were judged on the use of native and drought tolerant plants, water-wise irrigation technology, use of soil conditioners, ease of garden maintenance, and overall design. Our entry featured native and drought tolerant plants and incorporated the use of mulch with a rain barrel and drip irrigation to maintain a healthy and attractive garden with minimal water usage.



Award for Best of Show Featuring Rain Water to Landscape of Drought Tolerant Plants



Water Wise Landscaping Award from the Water Awareness Committee of Monterey County

### Free Water Wise Workshops

California American Water in partnership with the Monterey Peninsula Water Management District held Free Water Wise Workshops during the summer of 2016. The classes were held in CAW's training room and at Carmel Middle School. A postcard describing the 5 landscape classes was mailed to customers who were billed in tiers 3 through 5 of California American Water's residential tiered rate structure who normally irrigate during the summer months. Events are also described in MPWMD's section of this report.

**DROUGHT-PROOF YOUR LANDSCAPE**  
**5 opportunities to REDUCE YOUR OUTDOOR WATER USE and SAVE MONEY**

---

Join the Monterey Peninsula Water Management District and California American Water for  
**FREE WATER WISE WORKSHOPS**  
Get Money and Water-Saving Information



- ❶ **Rainwater Harvesting 101** | May 14, 2016 | 2 sessions | 10 a.m. or 1 p.m. | CAW Office
- ❷ **Greywater: From Laundry to Landscape** | May 21, 2016 | 2 sessions | 10 a.m. or 1 p.m. | CAW Office
- ❸ **Get to know your Irrigation Controller** | June 4, 2016 | 9 a.m. to 10 a.m. | CAW Office
- ❹ **Quick and Easy Irrigation Changes to Save Water** | June 4, 2016 | 10 a.m. to 12 p.m. | CAW Office
- ❺ **How to Convert Thirsty lawn to a Drought Tolerant Garden** | June 25, 2016 | 1 p.m. to 4 p.m. | Carmel Middle School

LOCATION INFORMATION:  
**California American Water Office:** 511 Forest Lodge Road, Suite 100 in Pacific Grove (behind Rite Aid at the Country Shopping Center)  
**Carmel Middle School:** 4380 Carmel Valley Road in Carmel

**Sign up for classes:**

- Register online at [www.montereywaterinfo.org](http://www.montereywaterinfo.org)
- Call (831) 658-5601

Registration is required to attend the classes to ensure you get a seat.  
This event is free and open to the public.



## Free Water Wise Landscape Workshop Classes



Rain Bird representative Cadia Velasquez teaches quick and easy irrigation changes to conserve water



Ewing Irrigation expert Greg Grey shows customers how to get to know their irrigation controllers



Customers learning how to sheet mulch at Carmel Middle School



MPWMD's Conservation Analyst Stephanie Kister and CAW's Conservation Supervisor Joe DiMaggio assist in sheet mulching.

## Rain Barrel Event Giveaway



California American Water in November of 2016 held a rain barrel distribution event at the Monterey Peninsula Unified School District's Del Rey Woods School, in Del Rey Oaks. The event was promoted through the delivery of 5,000 flyers to select customers in CAW's service area that could best benefit from the water saving devices, and in addition advertised in CAW's and MPWMD's Facebook pages.

The program was implemented on a first come first served basis where customers were given vouchers for future delivery of the rain barrel. Customers were required to complete an application and confirming the rain barrel would be utilized at their home service address. In addition, customers were given informational handouts on gardening and water conservation tips for the landscape.

In December of 2016, all rain barrels were personally delivered to each residential customer.





## WATER AWARENESS COMMITTEE ACTIVITIES

California American Water coordinated with the Water Awareness Committee (WAC) to offer school education opportunities and outreach. Activities included class presentations as well as interactive school assemblies. Both California American Water and the MPWMD are founding members of WAC.



In addition to school education programs, WAC Sponsored a Water Awareness Day Celebration at the Monterey County Fair in September. The event was held on Saturday, September 4, 2016. This family friendly event featured booths including California American Water, the MPWMD, and the Marina Coast Water District.

California American Water in partnership with the Monterey Peninsula Water Management District also joined WAC by participating in the City of Monterey's cutting day held in March and the annual Master Gardener Event held each April in Carmel.

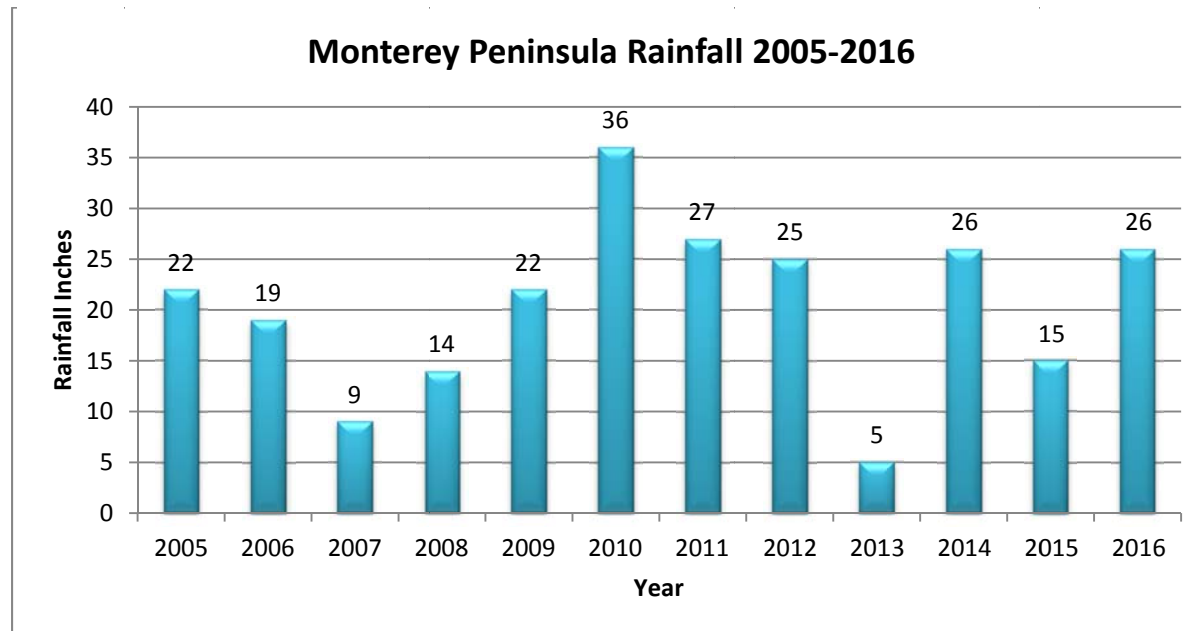


WAC Members participating in the annual Master Gardens Event in April of 2016. Customers who visited the booth were given water conservation devices and tips on how to save water outdoors and encouraged to take advantage of the rebate programs.

## WEATHER ADJUSTED CONSUMPTION IN THE COASTAL DIVISION

California American Water staff produced an analysis of weather-adjusted consumption in the Coastal Division by calculating the acre-feet consumed per rainfall inch. (This information is provided separately due to privacy policies.) As expected, overall consumption is highest during the summer months and lower during the winter months. Consumption also rises as rainfall decreases: from 2005 through 2016, consumption was highest when rainfall was lowest (2013) and conversely, consumption was lowest when rainfall was highest (2010).

*TABLE 7. MONTEREY PENINSULA RAINFALL – 2005 – 2016 LOS PADRES DAM*



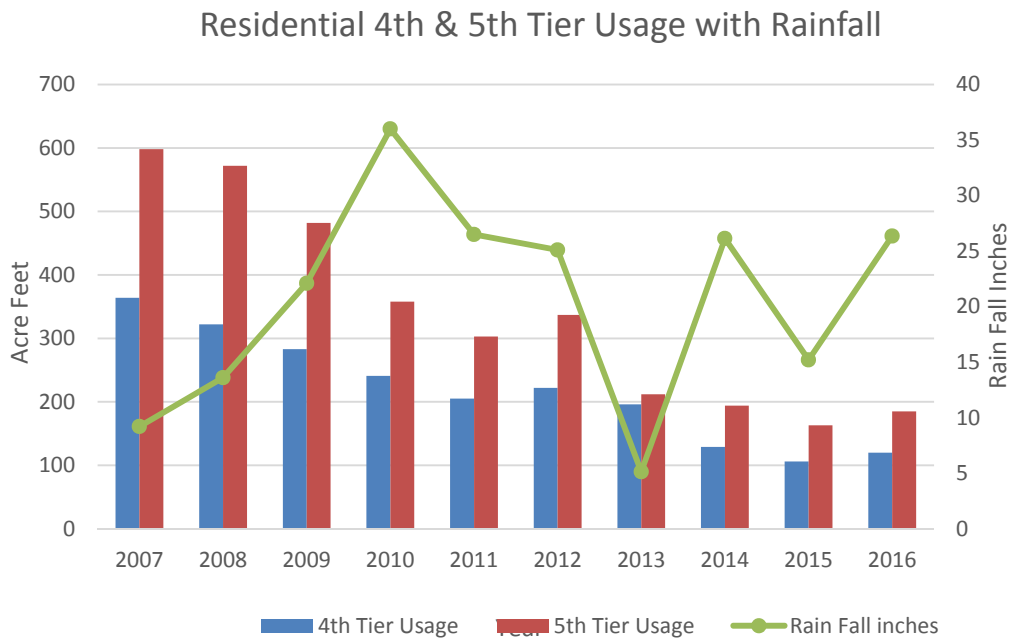
## RESIDENTIAL FIVE-TIERED RATE DESIGN

California American Water's five-tiered residential allotment rate structure has also been instrumental in reducing overall outdoor water usage in addition to the aggressive conservation programs administered by CAW and the MPWMD. Each residential customer is allotted 1,122 gallons per tier each month for indoor usage. Current tiered rates are: \$0.6142, \$1.3229, \$3.4104, \$6.9296, and \$8.9870. Normally, the base allotment is enough to cover indoor usage and limited outdoor usage, which is billed at the first, second, and third tiers. Most outdoor usage for large residential water users is billed at the 4<sup>th</sup> and 5<sup>th</sup> tier.

There has been a significant reduction in fifth tier usage, dropping from 598 acre feet in 2007 to 185 acre feet in 2016, a percentage reduction of 71%. To monitor the effectiveness of programs offered by CAW and the MPWMD, since 2009, California American Water tracks actual usage of customers who receive residential and commercial audits, rebates, rain sensors, or participate in other conservation programs. Customer usage records indicate a significant savings as explained in this report.

Rainfall during the winter and summer months also affects outdoor usage. Comparing rainfall records from 2007 to 2016; 4<sup>th</sup> and 5<sup>th</sup> tier usage normally decreased during years of high rainfall and increased during years of low rainfall.

**TABLE 8. RESIDENTIAL 4TH AND 5TH TIER USAGE & 2016 RAINFALL - YEARS 2007 - 2016**



**Residential 4th & 5th Usage Acre Feet with Rainfall**

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
4th Tier Usage	364	322	283	241	205	222	196	129	106	120
5th Tier Usage	598	572	482	358	303	337	212	194	163	185
Rain Fall inches	9.2	13.6	22.1	36	26.5	25.1	5.13	26.13	15.2	26.35

## WATER WASTE PREVENTION

Emergency drought restrictions from the State Water Resources Control Board (“SWRCB”) continued in 2016 including a mandated 8% reduction in water use for California American Water customers in the Monterey Service area. California American Water in partnership with the Monterey Peninsula Water Management District continued to monitor water waste for its main system and satellite systems.



**CAV-03**

**VIOLATION OF DROUGHT RULES**

Dear Customer:  
The State of California has banned wasteful uses of water. California American Water has instituted mandatory conservation rules. Repeated violations of these rules may result in penalties or discontinuance of water service.

Please contact our local conservation staff at (831) 646-3205 if you have questions or concerns about the violation. California American Water may follow up with you to ensure problems have been corrected.

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

SERVICE ADDRESS: \_\_\_\_\_

WAS CUSTOMER NOTIFIED IN PERSON? Y / N

VIOLATION OF RULE: ☐ 1st ☐ 2nd  
(Additional violations will result in penalties of \$100 or more)

EMPLOYEE INITIALS: \_\_\_\_\_

**Description of Violation**

- ☐ Overspray on hardscape
- ☐ Watering within 48 hours of rain
- ☐ Washing hardscapes with water
- ☐ Washing vehicle without hose nozzle
- ☐ Non-recirculating fountain in use
- ☐ Violation of watering day schedule
- ☐ Violation of time of day restrictions
- ☐ Restaurant serving water without request
- ☐ Leak observed on customer property  
(Leaks must be fixed within 72 hours of receipt of this notice)

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

  
CALIFORNIA  
AMERICAN WATER  
(831) 646-3205 • www.californiaamwater.com  
CAV-03

In addition, California American Water continued water waste reporting and enforcement procedure in response to the SWRCB’s Drought Restriction regulations. This procedure utilizes a Violation of Drought Rules hang tag used by field service workers to notify residents of leaks and violations, with follow-up by conservation staff and the Monterey Peninsula Water Management District to ensure that water waste is addressed within 72 hours of notification whenever possible.

Customers who received the 72-hour notification were identified as having leaks through our meter reading billing edit system, customer initiated high bill investigations or violation of drought rules identified by customers and field staff. A total of 215 door tags were left with customers to inform them of the violation. Customers identified with leaks were then monitored to ensure timely repair.

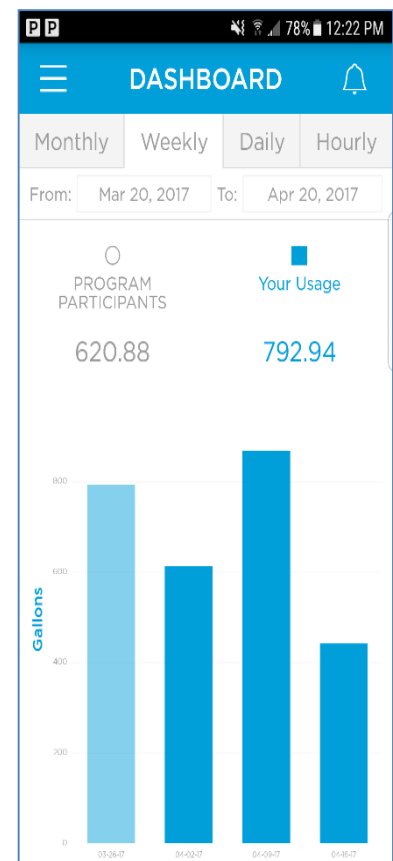
## WEB BASED PILOT MONITORING PROGRAM

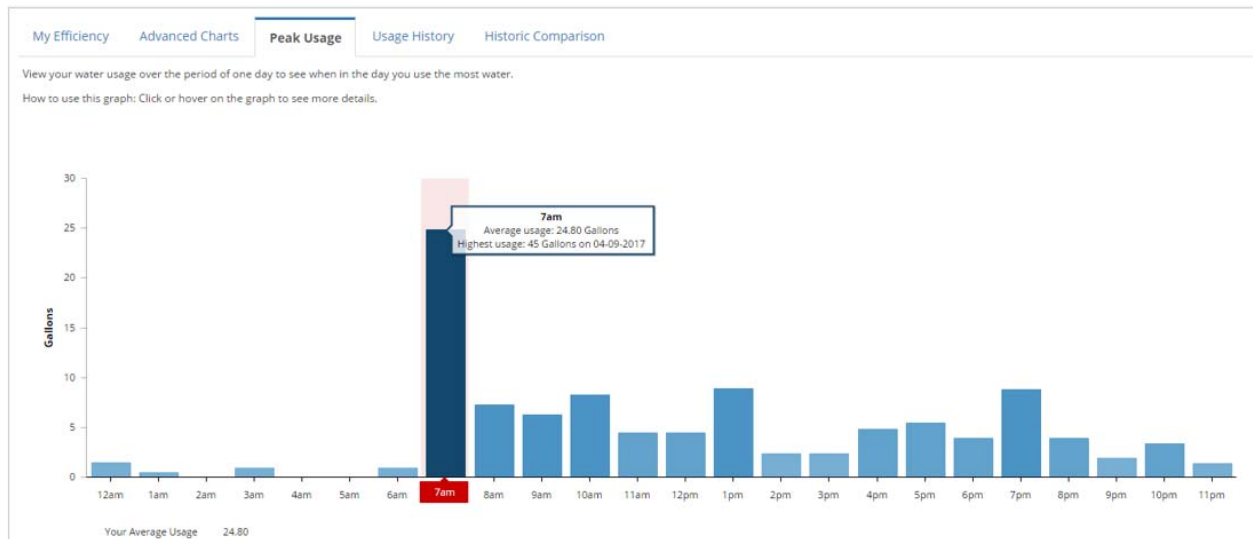
In 2015, California American Water launched a web-based pilot program aimed at conserving water by giving customers the tools they need to monitor their water usage in near real-time basis. Approximately 200 Monterey Peninsula businesses and residential customers who were selected to participate in this pilot program had a device added to the water meter which transmits hourly reads to a customer portal that can be viewed on any computer. In 2016, an app was launched through both the Android and the Apple store, which provides even easier access for customers on the go. With the app, customers can quickly monitor their usage and address any leak alerts they have received.



The customer portal has undergone some changes in 2016, which provide even more ways for customers to manage their consumption. Customers can drill down to see any range of usage, from yearly down to hourly, and can move easily through different time periods to see their past usage history. A new “Peak Usage” chart has also been added, which identifies on average, which hours of the day a customer uses the most water. This is very helpful in reducing consumption by making water usage trends easy to see. They are also able to compare any specific period with another, which makes it clear to see what changes in habit do to water consumption.

In addition to providing easy to read graphs to view usage history, the portal also generates leak alerts if the system detects continuous usage. These alerts are sent directly to the customer so they can immediately begin identifying and stopping any leaks that may be occurring at their premise. Local customer service is also taking a proactive approach to stop any water waste by pulling these reports daily to ensure customers are addressing any issues quickly. California American Water is continuing to identify which reports provide the most value in assisting customers in conserving water, and is streamlining the process for customers to sign up to participate and begin viewing their usage.





This is an example of how customers can monitor their individual water use daily via a website or app which allows them to view their hourly usage and peak times when the water is consumed the most. As a customer hovers over the chart bars, a popup message displays the average and highest usage in gallons. Customers can also click on a bar in the chart to drill down into smaller time increments and increase or decrease the time range. In addition, customers can view a historical comparison of the same period the previous year by selecting the historical comparison tab.



## WATER WASTE APP

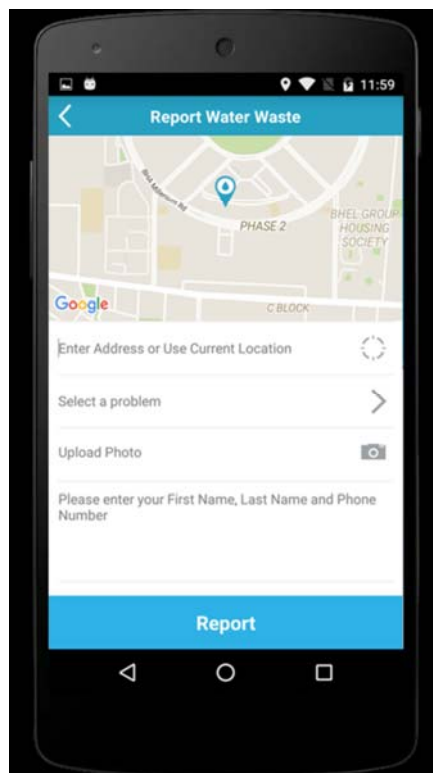
California American Water introduced a new app in 2016 statewide, available for download in the Apple and Android app stores, which allows customers and other concerned residents to report water waste when they see it. Photos are geo-tagged and uploaded directly so that California American Water can investigate the leak or waste.

In 2016, California American Customers utilized the app for reporting leaks and violations of the conservation rules. Customers were contacted and notified of the violation.

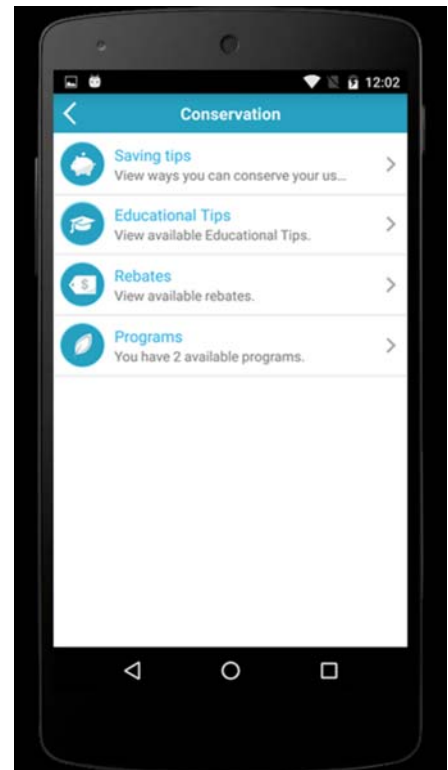
Through the app, California American Water customers can also learn about the conservation programs offered in each of our districts across the state. Raising awareness of our Water Wise House Calls, rebates for water saving home appliances and free water smart devices will help customers control water use.



Home Screen



Report Water Waste Screen



Conservation Tips Screen



## PUBLIC OUTREACH

All public outreach and educational efforts are managed by California American Water's local external affairs and conservation departments in cooperation with MPWMD's conservation department.

California American Water utilizes professional marketing and design services to develop professional and effective educational brochures, direct mailers, print media advertisements, and other marketing items. The company continued its proactive outreach campaign to help keep water consumption within production limits on the Seaside Basin and Carmel River.

This year's efforts were largely centered on drought mitigation and ensuring the district complied with the Governor's statewide cutback order. Numerous mailers were sent to customers reminding them of the drought restrictions and the Rule 14.1 and Rule 14.1.1 stages and rules. Radio ads were also leveraged for this campaign with similar messages. This included mailers about rebates, water schedules and specific watering restrictions.

The campaign was highly successful; in California American Water's Monterey District, consumption in August was down 16.5% in 2016 compared to 2013, while in 2015 it was down 15.7%. These reductions are occurring in an area that already had some of the lowest per-capita water consumption in the state.

## PUBLIC RADIO ANNOUNCEMENTS

California American Water sponsors the Monterey Peninsula's local public radio station and is featured on regular radio spots. This year, the company made a major push for conservation by offering specific water saving tips for residents, which included information on rebates and recommended outdoor watering schedules. Themes included: promotion of general conservation tips and the company's Savings are in Season campaign. KAZU FM has a strong listenership within California American Water's Monterey Peninsula service territory. Informal customer feedback to the announcements has been overwhelmingly positive.

Annual conservation outreach radio underwriting expense: \$26,903

## WEBSITE: MONTEREY WATER FACTS

California American Water and MPWMD continued supporting the shared website for the Monterey area, which was established in 2009. The site serves as a one-stop, user-friendly resource for local water users to access information on rebate programs, home water audits, regulatory restrictions on the area's water supply, and tips for saving water indoors and out.

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The website has information for commercial and residential users and provides in-depth information on “water wise” landscaping. The web address is publicized through direct mail and print advertising efforts and periodically listed on California American Water customers’ bills. The site additionally contains links to the Alliance for Water Efficiency, Water Sense, and the American Council for a Water Efficient Economy. In addition, California American Water and the MPWMD continued to support their joint Facebook and Twitter pages. These pages are updated bi-weekly with quick tips about conservation and other important news concerning water in the Monterey Peninsula.

Website cost: \$0

## MONTEREY WATER CONSERVATION FACEBOOK PAGE

California American Water in partnership with MPWMD continued its Monterey Water Conservation Facebook page to keep local contacts informed about conservation efforts. The page provides timely conservation tips and news about upcoming events and local water issues.

Facebook cost: \$0

## DROUGHT EMAIL BLASTS

California American Water produced multiple email campaigns to remind customers of the governor’s water conservation cutback orders during the drought. These email blasts were delivered statewide to all California American Water customers.

Statewide drought email campaigns cost: \$7,746

## MAILERS/BILL INSERTS

Throughout the year, the company included inserts on various subjects, including water quality information, payment arrangements, rates, and its low-income program. In 2016, California American Water customers received individual mailers and bill inserts about mandatory drought restrictions and Rule 14.1 and Rule 14.1.1 compliance, as well as information on how residents can do their part to help meet these goals. In addition to Monterey-specific mailings, which primarily concerned conservation tools and tips for homes and gardens, Monterey Peninsula California American Water customers received two statewide mailers on the state’s drought and the Water Waste App.

Monterey-specific mailer cost: \$ 100,946

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**Spring into Savings!**  
Now is a great time to make your yard more drought-friendly. Changes in outdoor water use can equal big savings.

PHOTO: JEFFREY M. HARRIS/ISTOCKPHOTO.COM

CALIFORNIA  
AMERICAN WATER  
5111 Forest Lodge Road, Suite 100  
Pacific Grove, CA 93950

RECYCLED  
US POSTAGE  
PAID  
050504  
D000

**Conserving is better together.** Thanks to your hard work in conserving, our Monterey District water system is meeting the statewide water conservation goal. Let's keep up the good work and continue to save! California American Water is here to help you with **springtime landscaping tips**.

**Watering Techniques:**

- Group plants with similar water requirements together so each gets only the water it needs.
- Water tree roots. Water towards the edge of the tree canopy – not at the base.
- Water newer trees with a bucket. New trees need less water, fewer times a week during the first year.

**Yard Care Ideas:**

- Use mulch and compost to help retain water in gardens and around trees.
- Aerate your soil at least once a year to help water penetrate deeper into soil.
- Set your lawn mower to a higher height setting. Longer grass keeps the soil moist.

**Irrigation System Improvements:**

- Use drip irrigation for plants and trees to get water only where it is needed.
- Replace the battery in your irrigation controller when the time changes.
- Install a rain sensor that will shut off your irrigation system when it rains.

**REMINDER:** If you don't have a rain sensor, turn off your sprinklers during and for 48 hours after it rains.

For more tips and information, visit **MontereyWaterInfo.org**

CALIFORNIA  
AMERICAN WATER MONTEREY PENINSULA  
WATER  
MANAGEMENT DISTRICT

**Did You Know?**  
An irrigation system that has a leak as small as 1/32nd of an inch in diameter can waste **6,300 gallons** of water per month.

**Actual size of 1/32nd inch leak!**



**Take Time to Fix Leaks**  
Take time to look for signs of leaks and make repairs immediately:

- **Sprinkler leaks:** Check your landscape for soft spots.
- **Hose leaks:** Check for dripping water at the connection to the spigot. The hose washer may need to be replaced.

Example of “Spring into Savings” water conservation customer mailer sent in 2016

## SOCIAL MEDIA

California American Water continued its social media support of conservation outreach by complimenting and echoing the same messaging produced in its radio and mailer campaigns. This includes routine updates to both the company's own Facebook page and the one it shares with MPWMD, which focuses on conservation.

California American Water also maintains a Twitter account, which it uses to inform its followers of various news items, including conservation tips and rebate offers.

Social media cost: \$0

## EARNED MEDIA CAMPAIGN

California American Water also worked with local media to promote awareness of the company's free Water Waste App, which allows customers and other concerned residents to report water waste when they see it. Additionally, the company collaborated with local media to promote national programs such as the Environmental Protection Agency's Fix a Leak Week, National Drinking Water Week and National Water Awareness Month. Press releases were distributed to local media including the *Monterey County Herald*, *Carmel Pine Cone*, *Monterey County Weekly*, KAZU FM, KSBW TV, KION TV, KCBA TV, KSMS TV.

## CALIFORNIA AMERICAN WATER, COASTAL DIVISION - 2017 PROGRAM GOALS

The 2017 California American Water programs funded by the Conservation Surcharge are summarized in the following table and described in detail in the narrative that follows.

*TABLE 7. CALIFORNIA AMERICAN WATER COASTAL DIVISION: SUMMARY OF 2017 PROGRAM GOALS*

Program	Budget	Implementation Plan	Timeline
Residential Audits	Budget	Complete 200 SF and 10 MF audits	Offer audits throughout 2017
Residential Plumbing Retrofit	\$8,200	Continue providing devices to residential and non-residential customers, walk-in, and events.	Residential Water Wise House Calls and efforts throughout the year at events, walk-ins, etc.
Rain Sensor Installation Program	\$8,000	Install 25 Residential Rain sensors and/or Soil Moisture Sensors	Jan through Dec 2017
Large Landscape Upgrade Grant Program	\$25,000 2015 - 2017	Provide grants for expenses for equipment, materials, and/or installation to upgrade to conservation friendly landscapes	Jan through Dec 2017
Public Outreach and Marketing Campaign	\$123,333	Continue to support public awareness and participation in the organizations' joint-conservation programs	Ongoing throughout 2017
Outreach and Education Seminars & Programs	\$10,000	Continue to partner with Water Awareness Committee, continue to offer Landscape Irrigation Workshops, create conservation booklet, offer in-class presentations	Ongoing throughout 2017
Zun Zun Performances and WAC Activities	\$5,000	Market to schools in Summer of 2017 with events in the fall.	Performances in 2017 WAC ongoing.



CII Rate BMP Survey Inspections	\$1,000	Inspect 150 non-residential properties for compliance with Rate Best Management Practices to determine rate category and collaborate with the MPWMD to complete indoor inspections & CAW complete outdoor inspections	Ongoing 2017
CII Audits	\$20,000	Offer CII Audits to 10 customers – greatest potential need & to comply with the new BMP Compliance Rate Structure	Ongoing 2017

## RESIDENTIAL WATER WISE HOUSE CALLS

California American Water will continue to provide Residential Water Wise House Calls to its customers in 2017. With the continued drought and Governor Brown's Executive Order B-29-15, it is expected that the number of customer requests for this service will increase, especially during the summer months when usage is highest as customers irrigate their landscapes. Efforts to promote customer participation will include offering Water Wise House Calls for customers with high water bills and promoting the program at events and through California American Water ads. California American Water's conservation staff set a target goal of 200 single family audits and 10 multi-residential audits to be completed in 2015 and surpassed its goal and completed 380 house calls in 2016. The expectation is to complete 200 Residential Water Wise House Calls in 2017.

## RESIDENTIAL PLUMBING RETROFIT

California American Water will continue to provide low flow conservation devices and conservation kits to residential customers in the Monterey service area, and will require customers to sign up to receive devices at events, front desk, etc. so that the company can log the information and identify how devices are distributed. The focus will be on the hospitality industry such as hotels and motels to convert hundreds of bathroom aerators from 1.5 GPM aerators to 0.5 GPM aerators. California American Water will also look for upgraded low flow devices and new technologies that provide greater water savings. Current devices include 1.5 GPM showerheads, 1.5 GPM kitchen faucet aerators, and 0.5 GPM bathroom aerators. In addition, California American Water will promote 1.5 GPM showerheads for customers who have retrofitted in past years with the 2.5 GPM. The company will continue to track the devices specifically given to single and multi-family residents.

## LARGE LANDSCAPE UPGRADE GRANT PROGRAM

California American Water will continue its successful Large Landscape Grant Program developed and implemented in the fall of 2010 for large landscape customers including cities,

schools and parks. In 2016, a total of \$25,000 was awarded to the Salvation Army to upgrade its sprinklers systems for its school and adjacent properties.

The funding is to help upgrade current landscape and irrigation systems to increase water efficiency, and to help cover the expenses for equipment, materials, and/or installation. Sites are specifically chosen for high visibility and visitor traffic to maximize educational value and promote similar retrofits at customer sites.

In 2017, California American Water's objective is to fund one landscape grant project at a cost of \$20,000 to a school district in the company's service area. The proposed sites will be selected based on projected potential water savings, cost to retrofit, educational value of site, project participation and engagement from the program partner and other criteria.

Each year, the sites will be reviewed identifying their actual usage compared to their expected usage and the actual water savings will be calculated. This information will be reported to the CPUC annually to monitor the success of the program.

## Rain Sensor Installation Program

California American Water will continue the rain sensor installation program that began in November of 2011, which provides free direct installation of rain sensors to residential, commercial and public authority customers and will also begin the installation of soil moisture sensors through its contractor, EcoTech. The focus will continue to be on customers who have the greatest potential to reduce their water usage especially during the winter season.

Focus will continue to be on customers who are billed in the 4<sup>th</sup> and 5<sup>th</sup> tier of California American Water's five tier residential rate structure during the three consecutive winter months of December, January and February.

The estimated cost is \$150 per customer, which includes \$40/hour labor for 2.5 hours plus the cost of each rain sensor estimated at \$50.

## CII AUDITS

California American Water will continue in 2017 to provide commercial, institutional and industrial audits, and plans to complete up to 10 CII audits in 2017 utilizing experienced contracted consultants.

The focus will continue to be on auditing customers who have the greatest need and potential to achieve significant water savings. California American Water will continue to meet with each customer who receives a CII audit and offer rebates and any programs that may assist in reducing overall water usage.

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## RATE BEST MANAGEMENT PRACTICE SURVEY INSPECTIONS

California American Water in 2013 changed its non-residential rate structure that now places customers in one of four rate divisions based on compliance with indoor and outdoor BMP's. Non-residential customers were required to complete a survey to determine their appropriate rate category.

To ensure that customers are complying with the BMPs that placed them in one of the four rate divisions, California American Water, in partnership with the Monterey Peninsula Water Management District, is inspecting non-residential properties.

Customers who are confirmed to be out of compliance with the indoor and/or outdoor requirements will have 30 days to make necessary corrections to avoid a potential change in rate classification. These customers are contacted by CAW conservation staff 30 days after the inspection to verify compliance. If the customer is not compliant, the classification is changed to Rate Division 4, which is the non-compliant rate, until necessary corrections have been made. Customers are required to provide proof of corrections by providing a receipt to CAW and/or verification for indoor compliance by the MPWMD.

## MONTEREY PENINSULA WATER MANAGEMENT DISTRICT – 2016/17 PROGRAMS FUNDED BY THE CONSERVATION SURCHARGE

MPWMD programs funded by the Conservation Surcharge for the period of January 2016 through April 18, 2017 are summarized in the following table and described in detail in the narrative that follows. As of April 18, 2017, MPWMD programs are fully funded through the District's User Fee.

*TABLE 8. MONTEREY PENINSULA WATER MANAGEMENT DISTRICT: SUMMARY OF 2016/17 PROGRAMS*

Program	Program Costs	Need For Program	Nature of Activity	Measurable Goal	Results	Estimate Savings
Water Conservation Representative	Unavailable	One staff position with focus on water waste enforcement and water efficiency.	Water waste enforcement and follow-up, public outreach/ events, property inspections, audits, etc.	Immediate response to water waste and 100% compliance within 1-30 days	4 fines issued for repeat failure to correct water waste within 72 hours. All water waste violations were corrected	Not quantifiable
Water Conservation Technician	Unavailable	Administration of CAW/MPWMD Rebate Program	Receive, process, qualify, record & issue Rebates	Manage rebate check processing within 6 weeks of receipt	Successful, but dependent on other depts.	Not quantifiable
Water Conservation Workshops/ Training	\$17,810	Provide education and hands-on learning. Focus is on reducing outdoor and CII water use.	Focus on Laundry to Landscape Workshops, Graywater and CII efficiency requirements	Attendance by at least ten persons per event	Exceeded expectations	Not quantifiable

Community Gardens	\$17,810	Provide educational opportunity for public to view water efficient landscapes, irrigation and practices	Implement demonstration gardens through public participation and hands-on workshops	Provide at least three demonstration sites in MPWMD	Demonstration gardens were constructed at Garland Ranch, Lagunita Mirada Park, and Carmel Middle School	Not quantifiable
Water Wise Gardening for Monterey County	\$10,000 for two annual licenses	MPWMD has licensed product for web use, rather than reprinting CDs. Licenses for MPWMD and WACMC	Monterey area-specific interactive gardening software designed to assist customers with water efficient plant choices.	Provide notice of software availability at all events, on websites, social media, and through televised Board meetings	6,503 unique hits on software in 2015	Not quantifiable
Water Audits & Budgets	\$0	No longer required as of March 2016. Audits were available to large irrigators as recommended by CAW.	Outdoor irrigation that meets certain specifications is required to obtain a landscape water audit and budget and to adhere to the budget during Stages 2-4.	Water use stays within budgeted amount		
Pressure Regulator Pilot Program	\$0	High system pressures and failed pressure regulators	Identify areas of high pressure for PRV program	Replace 30 PRVs and measure savings	Unable to implement program within timeframe	TBD
Linen/Towel Reuse Program	\$7,000	Supports hotel room notification of linen and towel reuse program.	Distribute towel & linen reuse signs and water upon request notices	Reduction in laundry, and water and energy consumption	Ongoing program	Up to 133 AFA @ 80% occupancy



CIMIS Station Maintenance	\$2,300	CIMIS data is used by weather-based irrigation controllers to schedule irrigation times.	MPWMD sponsors three CIMIS stations in Zone 2/3 and Zone 3. MPWMD maintains the stations.	Reduced outdoor water use during low ETo	Data is available on CIMIS website	Not quantifiable
Conservation Devices	\$61,500	Provide conservation devices to customers to reduce consumption	Provided showerheads, shower-savers, faucet aerators, hose nozzles, and other items	Reduce wasted water	See Conservation Devices Section	24.6 AFA
Conservation Printed Material	\$4,300	The printed material program acquires updates and distributes water conservation materials to the.	Purchased water conservation workbooks for elementary ages to promote water conservation and an understanding of water supply. Other material for education.	Support BMP programs, provide at 3+ events, and reduce water usage.	MPWMD distributed conservation materials, including conservation program handouts at community events and meetings	Not quantifiable
Water Waste Prohibitions	N/A	Eliminate water running to waste and other forms of water waste.	Notification to waster and follow up to ensure corrections as needed.	Achieve compliance within reasonable time period	62 instances of Water Waste were compliant within reasonable time	Not quantifiable
Website Upgrades	\$3,100	Update conservation website	Moved to new platform & updated	Launch May 2017		Not quantifiable

## WATER CONSERVATION REPRESENTATIVE AND TECHNICIAN

The Conservation Representative position was included in MPWMD's budget request with the full support of California American Water and is an ongoing position. Funding for the position was included in the MPWMD portion of the conservation surcharge in the 2005 General Rate Case (D.06-11-050), the 2007 General Rate Case (D.09-05-029), the 2010 General Rate Case (D.10-07-007), the 2013 General Rate Case (A.10-07-007) and the 2015 General Rate Case (A.13-07-002). The position is primarily responsible for water waste enforcement and water conservation education and training, including responding to reports of water waste and completing site investigations and organizing and overseeing public educational opportunities. The position also conducts conservation inspections and community outreach, provides information and educates the public on the need for water conservation and water demand management, assists other agencies and the general public in understanding MPWMD requirements and rules, performs inspections on properties to ensure compliance with water efficiency standards, rules and regulations, organizes and oversees water efficiency training and seminars, and assists in research, analysis, and reporting on water demand management and conservation programs.

One-half of the Conservation Technician position was included in the 2015 General Rate Case. This person processes rebates for MPWMD and CAW. MPWMD has been processing rebates since the beginning of the program to ensure that only voluntary installation of devices and appliances receive rebates. Mandatory retrofits do not qualify. The Conservation Technician reviews each application against MPWMD's extensive database of property information to qualify an application. The application is processed and added to the database before a rebate check is processed. Certain applications require pre-qualification (lawn removal) or measurements (cisterns), or must include certification from a building inspector (greywater systems). Due to the extreme popularity of the local rebate program, more than half of the position's time is spent on the rebate program.

## WATER CONSERVATION WORKSHOPS/TRAINING AND COMMUNITY GARDENS

MPWMD has focused its training agenda on helping provide the tools necessary for gardeners, landscapers, builders, homeowners, plumbers and others to maximize water efficiencies. During 2016, five educational workshops were held. Interest and attendance was less than what was seen in 2015. Topics were focused on graywater re-use, irrigation efficiency, rainwater harvesting, and lawn conversion. A demonstration rainwater harvesting system was installed at Garland Park which receives thousands of visitors each year. A lawn conversion project was started at the Carmel Middle School. Staff trained 15 people to quickly update their irrigation system to be more water efficient. Greywater installation kits containing a three-way diverter valve, PVC connections, irrigation tubing, and other components were provided to class participants that committed to installing a system in their home.

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- June 25, 2016, How to Convert Thirsty lawn to a Drought Tolerant Garden, 45 attendees. Class ran from 1 pm to 4 pm at the Carmel Middle School, 4380 Carmel Valley Road, Carmel. Topics covered included:
  - Convert turf irrigation spray heads to drip
  - Environmentally friendly way to remove turf through sheet mulching
  - Tour drought tolerant plant options appropriate for the Central Coast
  - Design ideas
- May 21, 2016, Greywater Re-Use, 13 attendees. Topics Included:
  - The Definition of a Greywater System
  - The Various Components of a Greywater System
  - The Advantages of a Greywater System
  - Local Building Codes related to Greywater Systems
- May 14, 2016, Rainwater Harvesting 101, 17 attendees. This American Rainwater Catchment System Association (ARCSA) directed class explored the basics of Rainwater Harvesting. Two sessions were held.
- June 4, 2016, Quick and Easy Irrigation Changes to Save Water 15 attendees. Topics Included:
  - How to convert spray heads to rotary nozzles
  - How to convert spray to drip
  - Sizing your drip emitters appropriately
  - How to install a rain sensor
- June 12th, Rainwater Harvesting System Demo Install at Garland Ranch, 15 attendees

## WATER WISE GARDENING FOR MONTEREY COUNTY



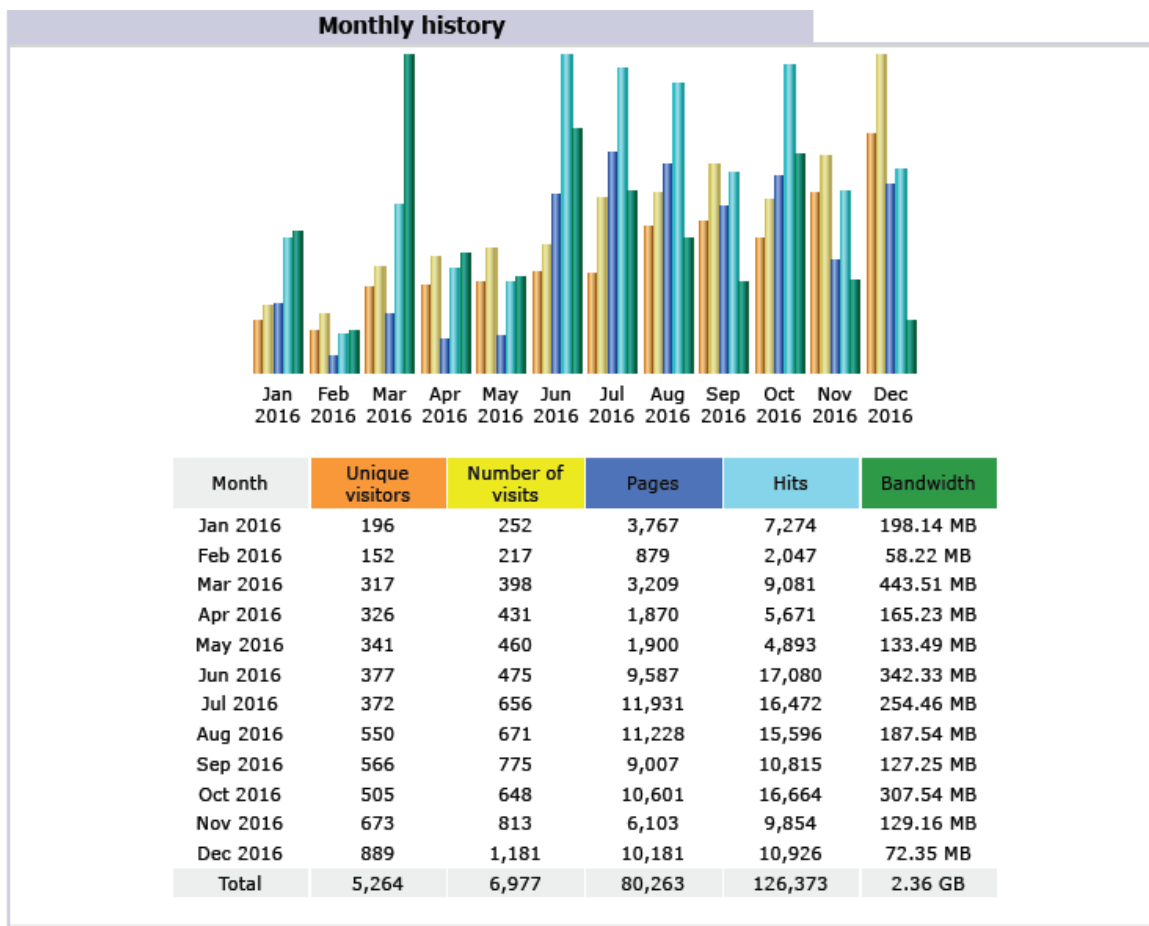
Water Wise Gardening for Monterey County is a highly desirable landscape planning software that was designed specifically for Monterey County. The GardenSoft software was developed with sponsorships from California American Water and MPWMD through the WAC. It provides photos of various types of local gardens examples, including front and back yards, hillsides, raised planters, shrub and perennial borders, walkways, parking strips, patio areas, theme gardens, native gardens, decks, fences, gates, surfaces, benches, trellises, low-maintenance gardens, and Mediterranean style gardens. There are hot-links embedded within the garden images of plants which link to photography, plant or material identification, and related information. Users search

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for plants relevant to specific Monterey County areas by botanical name or common name, by look or color, by general variety, and much more. A brief questionnaire leads the user to the appropriate plants to solve their gardening wants or needs. A series of pages are provided listing watering tips on a month-by-month basis and general lawn and planting area instructions for each month of the year.

The software is available as a web application for an annual subscription of \$5,000 for unlimited access and that can be reached via links from the California American Water/MPWMD conservation website ([www.montereywaterinfo.org](http://www.montereywaterinfo.org)) and from the WAC website (<http://www.monterey.watersavingplants.com/monterey.php>). During 2016, the web application had 5,264 unique hits on the websites. A breakdown of site hits by month is shown on Table 9.

TABLE 9. WATER WISE GARDENING FOR MONTEREY COUNTY, WEBSITE HITS BY MONTH, 2016

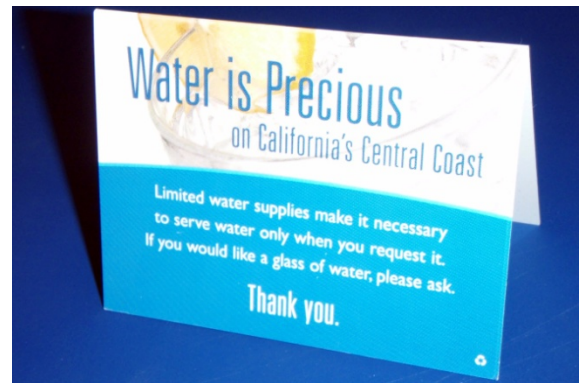


## LINEN/TOWEL REUSE PROGRAM

The linen/towel reuse program provides cards giving guests the option of reusing or obtaining new linens and towels in hotel rooms, for restaurant “drinking water served only on request” tent cards, and for conservation message mirror clings. These programs are mandatory within the MPWMD. In September 2015, MPWMD began systematically verifying that all non-residential uses met the requirements. Non-compliant businesses were given 30 days to make corrections.

During 2016-2017, MPWMD distributed the following:

- Towel Cards – 750 pieces
- Water Service on Request Cards (see photo on right) – 3,200 pieces
- Linen Reuse Pillow Cards – 2,000 pieces
- Conservation Message Mirror Clings – 2,500 pieces



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## California Irrigation Management Information System (CIMIS)

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During 2016-2017, MPWMD staff continued its coordination with the California Department of Water Resources staff and local golf course operators, including Laguna Seca Golf Ranch and the City of Pacific Grove to maintain locations for CIMIS stations in ETo Zones 2 and 3. The locations provide full coverage ETo data for the Monterey Peninsula. MPWMD staff maintains the stations by cleaning the devices periodically and checking the site conditions.

## WATER AUDITS/BUDGETS

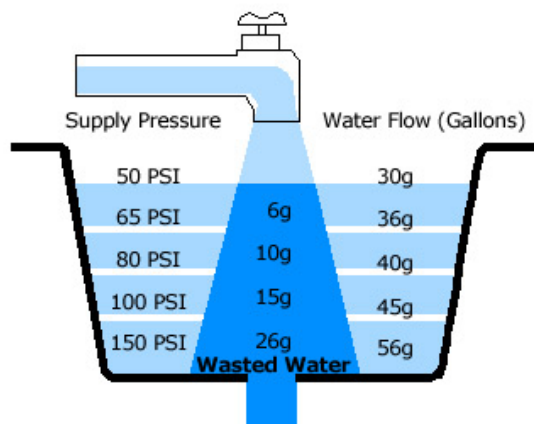
No water audits/budgets were conducted by outside auditors during 2016-2017. Staff at both MPWMD and CAW are certified auditors and conduct audits as needed. Audits done during 2016-2017 were conducted by CAW to verify compliance with commercial Rate Best Management Practices.

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## PRESSURE REGULATOR PILOT PROGRAM

High water pressure in a home is analogous to high blood pressure. Appliances and water-using devices are designed to optimally work at certain pressures. Pressure above optimal increases the likelihood of leaks and breaks in the water lines and appliances due to excessive



force on the plumbing. Water conservation devices such as toilets, showerheads, clothes washers, dishwashers, and faucet aerators use more water than they are designed to use when pressure is high (see graphic). High pressure is often the cause of leaks in these appliances/devices and in water heaters and softeners, ice machines, irrigation systems, etc.

Building codes require water pressure regulating devices or valves (“PRVs”) when the pressure exceeds 80 pounds per square inch (“psi”). A PRV is a bell-shaped device often

located on the main line inlet pipe and usually near the house shut off valve outside the home. Recommended water pressure in a home is 50-60 psi; the maximum safe allowable pressure is 80 psi. California Plumbing Code, section 608.2 states;

“Excessive Water Pressure. Where static water pressure in the water supply piping is exceeding 80 psi (552 kPa), an approved-type pressure regulator preceded by an adequate strainer shall be installed and the static pressure reduced to 80 psi (552 k Pa) or less.”

PRVs control both the water pressure and the flow rate of the incoming water supply. A damaged or worn out pressure regulator can result in destructively high water pressure in the building. Private pressure reducing valves have a lifetime of approximately ten years. Most customers know little about the device’s function or that it must be periodically checked to be sure it is operational. In our area, failed PRVs are prevalent. Homeowners and commercial property owners are often not knowledgeable about their PRVs, not realizing that they have these devices and that they fail over time. In other cases, there is no PRV and the incoming water pressure far exceeds optimum pressure.

MPWMD was approved to initiate a pilot Pressure Reducing Valve Program as part of this conservation budget. The goal is to reduce consumption and expand the lifetime of water efficient appliances by ensuring that water pressure is maintained at an optimum level. To achieve this goal, staff has been collecting pressure readings and considering a program to reduce pressure on the customer’s side of the meter. MPWMD has been collaborating with Mike Rachel of Peninsula Home Inspections LLC, who has collected pressure data for more than 200 homes in the California American Water system between 2012 and 2016. His testing

identified a high percentage of homes that had water pressure levels that exceeded 60 psi, and he has also found a high incidence of non-functioning pressure reducing valves.

For example, in 2015, MPWMD staff and Mr. Rachel conducted pressure testing at homes in an area of Monterey (Alta Mesa Circle) and determined that pressure in that residential neighborhood exceeded 145 psi: Approximately half of the homes they tested had failed pressure reducing valves. In one case, the homeowner said her freezer's ice maker broke due to high water pressure. In another, an irrigation system was not functioning properly, with emitters popping off as the result of the high pressure and no pressure reducer on the irrigation system.

MPWMD staff have been testing water pressure as part of the inspection process and has collected more than 200 readings to date. The information is being mapped to identify areas with pressure between 80-100 psi (as one data point) and above 100 psi (as another data point). Staff proposes to target high pressure areas for a pilot program whereby the District would provide PRVs for installation by licensed plumbers. The participant's water use will be tracked to determine savings and the success of the program.

MPWMD will be pursuing water pressure reduction during the next several years. In addition to mapping areas of the California American Water distribution that have high pressure by measuring pressure at the building, MPWMD will initiate an educational campaign and add a rebate for pressure reducing valves. In addition, MPWMD will consider a program to provide free PRVs in areas that experience abnormally high water pressure such as neighborhoods in valleys or with water pressure above 125 psi.

## CONSERVATION DEVICES and PRINT MATERIALS

MPWMD provided customers with various free water savings devices including 1.5 GPM showerheads and 0.5 GPM faucet aerators for the bathroom, 1.5 GPM aerators for the kitchen, leak detection tablets/kits and outdoor water saving tools. During 2016-2017, MPWMD tracked the distribution of the various water savings devices to identify the total number of devices distributed and where or how they were distributed to customers. For all conservation related events, customers who received water conserving devices were verified as California American Water customers.

The various devices are distributed at many events, including but not limited to:

- Community events, including presentations
  - MPWMD Front Desk (walk-in customers) and upon customer request
  - On-site inspections
-

- During water waste enforcement visits

In addition to the standard devices listed under the CUWCC's BMP 2 requirements, MPWMD also offered a variety of devices to help improve water use efficiency. Items included in this list were funded by both the conservation budget and by MPWMD.

Table 10 provides information for each type of water saving device (and estimated water savings when available) distributed by MPWMD during 2016-2017.

*TABLE 10. MPWMD CONSERVATION DEVICE DISTRIBUTION*

	Savings (AF) per Device	Number	Total
Showerheads	0.00616	2400	14.78
Hand Held Showerheads	0.00616	632	3.89
Pistol Grip nozzles		1787	
Moisture Meters		1304	
Faucet aerators 0.5	0.0017	0	0.00
Faucet aerators 1.5	0.0017	925	1.57
PRSV	0.3921	10	3.92
Kitchen Squeegees		900	
Shower Timer		202	
Leak Detector Tablets	0.0007	550	0.39
Water Wise CD		0	0.00
<b>Total Annual Savings in AF:</b>			<b>24.56</b>

## LAWN REBATE PROGRAM

Although lawn removal rebates are not funded by the MPWMD portion of the conservation budget, there has been interest by the CPUC and others about the extent of lawn that has been removed. The process has been very effective since the program redesign in 2012. MPWMD requires prequalification for a rebate before removal of the grass, and a deed restriction is recorded on the property title to ensure that the lawn is not replaced for at least 15 years.

2013 – Nineteen properties removed some or all their lawn in 2013. A total of 31,008 square-feet of lawn was removed.

2014 – 43 properties removed 58,781 square feet of lawn in 2014. The average removal was 1,277 square feet per site. Lawn removal ranged from 380 to 4,200 square-feet.

2015 – 38 properties removed 56,805 square feet of lawn. The lawn rebate program paid out \$52,247 in 2015. The average size residential lawn removal project was 1,450 square feet.

2016 – 15 Properties removed 26,812 square feet of lawn. The lawn rebate program paid out \$21,828 in 2016. The average size residential lawn removal project was 1,787 square feet.

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## **MONTEREY PENINSULA WATER MANAGEMENT DISTRICT – 2016 PROGRAMS FUNDED BY MPWMD**

The following projects and activities were funded during 2016 by MPWMD.

### **MANDATORY WATER EFFICIENCY REQUIREMENTS**

A primary MPWMD responsibility is enforcement of its conservation and efficiency requirements for new construction, remodels/additions, change of ownership/use, expansion of use, visitor serving facilities, existing non-residential uses and water waste. MPWMD sends two to three inspectors into the field daily to conduct site inspections. Non-compliance is followed up with enforcement procedures until compliance is achieved.

MPWMD conducted 2,663 inspections of properties in 2016, 1,102 of which were inspected for change of title compliance (some properties required more than one inspection) and 614 verified compliance through other methods. During 2016 1,462 properties transferred ownership in the MPWMD.

Water Permit inspections were also conducted to verify that required retrofits were completed, although most Water Permits issued at this time do not result in significant water savings and are usually the result of offsets (credits) whereby the applicant has installed highly water efficient fixtures to offset new water fixtures. MPWMD staff conducted 792 inspections to verify either compliance with Water Permit conditions or to pre-inspect a property to document existing conditions prior to issuing a Water Permit.

Water savings associated with the MPWMD's retrofit requirements that were verified by inspection in 2016 were estimated to add 11.3 AFA to annual conservation savings.

Water Permits have numerous water efficiency requirements attached as conditions of approval. MPWMD enforces these restrictions through recordation of deed restrictions that specify the requirements. Of the 1,104 Water Permits issued in 2016, all properties had a requirement for a deed restriction prior to issuance of the final permit. A portion of those properties had deed restrictions from a previous Water Permit that had to be updated. MPWMD's deed restrictions on the property title alert new owners to the MPWMD's regulations, making it easier to remove contingencies. Although deed restrictions do not guarantee that a property will exist continually in a state of compliance with the Water Permit, a deed restriction increases the probability that current and future property owners will be informed of the permit conditions.

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## Non-Residential Water Efficiency Requirements

In 2009, MPWMD adopted strict retrofit requirements for existing non-residential water users. The requirements included mandatory retrofitting of toilets, showerheads and faucet aerators, as well as other required actions. By the end of 2013, all non-residential customers were required to install High Efficiency Toilets (if the toilet was not already 1.6 gallons per flush), High Efficiency Urinals and other aggressive retrofits. MPWMD staff began systematically canvassing neighborhoods during 2015 to verify compliance with these non-residential water efficiency requirements. The effort continued through 2016.

The calendar year of 2016 saw MPWMD staff perform 744 inspections in total, with 456 properties (61%) in passing status, and 288 properties (39%) failing. The most common reason for failure (38%) was the “other” category (lack of conservation signage, missing faucet aerators or no access to water fixtures). The second most common reason was non-ULF (over 1.6 gallon per flush) toilets at 29% of the total failures.

The Non-Residential inspections have been performed for the cities of Sand City, Seaside and Pacific Grove in their entirety. A portion of both Monterey and Carmel by the Sea have received inspections as of this date. MPWMD will continue to perform inspections until all the non-residential properties of Monterey have been checked for the required retrofits.

## 2013 Water Efficiency Requirements




*ALL non-residential water users must install:\**

High efficiency toilets ( 1.28 gallons per flush (gpf) unless already ultra low flush ( 1.6 gpf)	High efficiency clothes washers (water factor <5.0)
High efficiency urinals ( 0.5 gpf)	Water efficient ice machines
Showerheads: 2.0 gallons per minute (gpm)	Water efficient pre-rinse spray valves ( 1.6 gpm)
Public Washbasins: 0.5 gpm or 0.25 gpm for automatic shutoff	Placards or decals promoting water conservation in restrooms, kitchens and dining areas
Private washbasins ( e.g., hotel or motel guest rooms and hospital patient rooms): 1.5 gpm max.	Drinking water (tap) provided only upon request. Notification is required at each table or on the menu
All other sinks: 2.2 gpm max.	Towel and linen reuse programs

*\*As applicable*

MONTEREY PENINSULA  
**WATER**  
MANAGEMENT DISTRICT

**www.montereywaterinfo.org**



## CONSERVATION PROGRAM STAFFING

The Water Demand Division of the MPWMD employs a staff of seven (including one and one-half positions funded by the conservation surcharge). MPWMD expended approximately \$650,000 in regular full-time labor costs for the conservation staff in 2016. Additional costs are associated with overhead costs (including staff time from other divisions of the MPWMD, including the General Manager's office and Support Services), transportation/vehicle expenses, office supplies, training, and travel.

MPWMD partially funds the administration costs of the Rebate Program, including an accountant who processes and issues the rebate checks, and an office specialist who opens mail, and who prepares the checks for mailing and delivers them to the postal service. During 2016, MPWMD continued employment of a temporary full-time employee at an additional cost of \$42,000 to assist with data migration from paper to electronic format. The MPWMD's direct involvement in the administration of the program ensures that program savings are tracked and are not double-counted in another MPWMD program or in any program administered by California American Water.

## WATER CONSERVATION WEBSITE

The water conservation partnership website, [www.montereywaterinfo.org](http://www.montereywaterinfo.org) is hosted on MPWMD's server, with full editing capabilities by both California American Water and MPWMD staff. As a quality control measure, there are a limited number of employees authorized to make changes to the website. The website is designed to provide information with a focus on the Monterey Peninsula's water conservation and efficiency programs. During 2016, MPWMD staff regularly provided time to update and maintain the information on the joint website.

For 2017, the Conservation Website will be switched over to WordPress, an easier web application to maintain the information. This will enable faster updates and will give the website a better "feel."

## REBATE PROGRAM

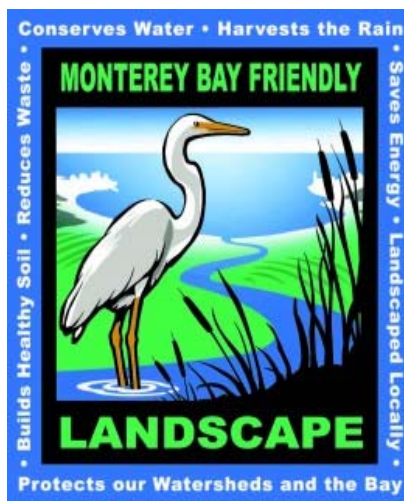
The Monterey Peninsula's Rebate Program continued through 2016. During 2016, 2,076 applications were received, of which 1,602 were approved. This is in keeping with the approval level of rebates from previous years. Between one-quarter to one-third of the applications are denied because of MPWMD permit or conservation requirements for the device(s) or because the device does not meet the standards for a rebate. During 2016, \$537,239 was refunded for purchase and installation of the many items covered by the Rebate Program.

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**TABLE 11. 2016 REBATE PROGRAM SUMMARY**

	Rebate Paid	Number of devices	Estimated AFA	Gallons Saved (Approximate)
High Efficiency Toilet (HET)	\$20,539	207	8.64	2.8 Million
Ultra-Low Flush to HET	\$43,766	443	4.43	1.4 Million
Ultra HET	\$28,566	195	1.95	635,000
High Efficiency Dishwasher	\$23,125	185	0.6	181,000
High Efficiency Clothes Washer	\$306,257	611	10.24	3.3 Million
Instant-Access Hot Water System	\$5,290	28	Varies	Varies
On Demand Systems	0	0	0	Varies
Zero Use Urinals	0	0	0	0
Pint Urinals	0	0	0	0
Cisterns	\$74,451	63	Varies	Varies
Smart Controllers	\$135,312	10	Varies	Varies
Rotating Sprinkler Nozzles	\$792	198	Varies	Varies
Moisture Sensors	0	0		
Lawn Removal & Replacement	\$32,245	25	3.07	1.0 Million
Graywater	0	0	Varies	Varies
<b>Total</b>	<b>\$537,240</b>		<b>28.9</b>	<b>9,411,200</b>

## MONTEREY BAY-FRIENDLY LANDSCAPING



Monterey Bay-Friendly Landscaping & Gardening programs are a collaborative effort between Ecology Action, MPWMD, CA Landscape Contractors Association (Central Coast Chapter), Ecological Landscaping Association, Monterey Bay Master Gardeners, Surfrider Foundation, Resource Conservation Districts, and more than 20 public agencies representing water utilities, solid waste and recycling, storm water management. The primary goal of Monterey Bay-Friendly Programs is to encourage behavior changes that lessen the impact of conventional landscape practices on the local environment by providing home gardeners, landscape professionals, and local governments with the necessary skills and resources to create beautiful, healthy, and sustainable gardens, and landscapes.

MPWMD supports Monterey Bay-Friendly Landscapes by supplying signs and posting information at [www.MontereyWaterInfo.org](http://www.MontereyWaterInfo.org).

## BEST MANAGEMENT PRACTICES (BMPs)

By approving MPWMD Resolution 2012-12, the Board of Directors adopted three highly respected resources for information on water efficiency Best Management Practices or BMPs. BMP's include mandated retrofits of the District, as well as water efficiency retrofits and devices that go beyond the District's requirements. Adoption of these specific informational resources<sup>1</sup> allows the Non-Residential sector to have a consistent source of information that can be used to budget for and implement proven retrofit technology and programs to save water and money.

A Best Management Practice (BMP) is a conservation measure or device that results in proven, cost-effective water savings. BMPs normally result in significant water savings and are generally accepted among water efficiency experts. Examples include High Efficiency Toilets (HET) and High Efficiency Urinals (HEU). Industries such as food service, laundromats, medical and health care systems, and hotels and motels have BMPs specific to their end uses of water. In many cases, BMP implementation requires an initial expenditure with a reasonable return on investment.

The Rebate Program offers significant financial support to achieve BMPs. In addition, MPWMD and California American Water can assist with auditing businesses to identify potential retrofits and to document completed BMPs. Both the District and California American Water have other programs that can provide assistance to achieve BMP compliance for large irrigated areas and for local schools.

## SAVE WATER GO BLUE!



### SAVE WATER GO BLUE!

MPWMD staff also attended numerous community events to promote water efficiency. As part of its drought response, MPWMD provided \$50 rain barrel "vouchers" to participants in its rainwater harvesting classes that could be redeemed at local retailers.

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<sup>1</sup> East Bay Municipal Utilities District's WaterSmart Guidebook (<http://www.ebmud.com/sites/default/files/pdfs/WaterSmart-Guidebook.pdf>), Alliance for Water Efficiency's Resource Library (<http://www.allianceforwaterefficiency.org/resource-library/default.aspx>) and CUWCC's Resource Center Product Information (<http://cuwcc.org/docDetail.aspx?id=230>)

## OTHER CONSERVATION/WATER EFFICIENCY ACTIVITIES

MPWMD continued to participate on the State Water Board's informal workgroup on next steps for water conservation regulations. MPWMD also participated in the Association of California Water Agencies discussions on statewide drought response, and served on the Monterey County Drought Task Force. Presentations were made at WaterSmart Innovations, in Las Vegas.

MPWMD staff presented to conservation-related presentations to the hospitality industry and business coalition representatives, local service organizations, Monterey County Association of Realtors and individual realtor offices, homeowner's associations, local jurisdictions, and other groups. Specific training for hospitality industry managers and operators was help to acquaint them with cost-effective ways to reduce water and energy use in their businesses.