# 2013 Monterey Peninsula Water Conservation Program Annual Report



Prepared by California American Water, Monterey County District in Partnership with the Monterey Peninsula Water Management District





## EXECUTIVE SUMMARY

This report documents conservation efforts taken by California American Water's Monterey County District and the Monterey Peninsula Water Management District (MPWMD) during 2013 pursuant to the Partial Settlement Agreement between the Division 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) decision D.12-06-016 (June 7, 2012).

California American Water, in collaboration with MPWMD, has prepared this report to provide a record of the Monterey County District water conservation programs and activities implemented in 2013, as well as projected efforts for 2014. Previous year reports are available by contacting either California American Water or the MPWMD.

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# **Conservation Helps the Community**

Conservation is viewed as a means to stretch existing water supplies to reduce stress to the environment and increase community protection from drought. Limited water supplies and the community's vulnerability to droughts have spurred local water conservation efforts since the mid 1980s. The efficient use of water is also a component in determining the necessary size for water supply projects to meet current and future water needs. The Monterey Peninsula has long been a leader in efforts to conserve and use water efficiently, having developed and implemented successful conservation programs for over 30 years.

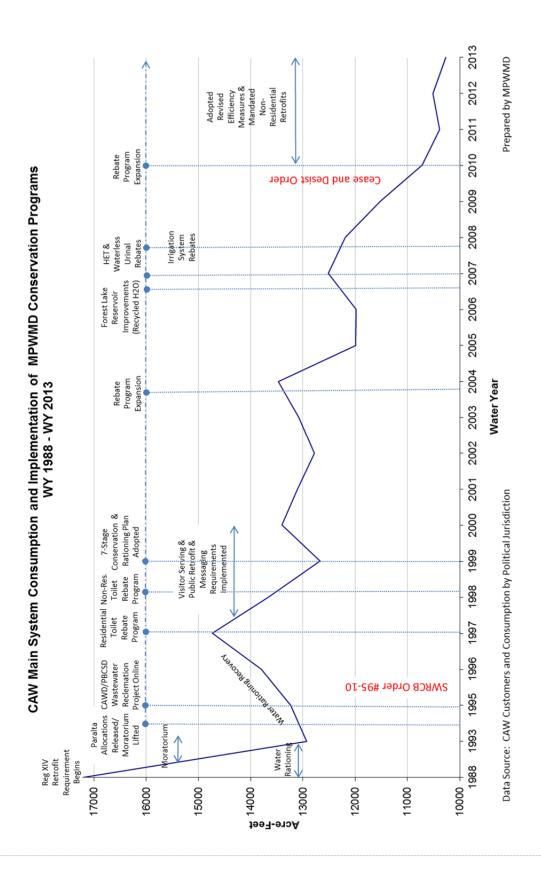
The Monterey Peninsula Water Resource System (MPWRS) is California American Water's primary source of supply for the Monterey Peninsula. The two primary water resources available to the Monterey area are the Carmel River Aquifer and groundwater in the coastal subareas of the Seaside Groundwater Basins.

The Carmel River System is subject to State Water Resources Control Board (SWRCB) Order 95-10 and Water Rights Order No. 2009-0060 (Cease and Desist Order or CDO). The CDO, which was issued October 20, 2009, limits California American Water's diversions from Carmel River sources to 9,945 acre-feet ("AF") in Water Year 2016 (beginning October 1, 2015), minus any water recovered by the Aquifer Storage and Recovery ("ASR") Project or produced by the Sand City Desalination Project. California American Water's base amount of diversions from the Carmel River under the Cease and Desist Order will be reduced over the next several years to a low of 3,376 AF in Water Year 2018 beginning October 1, 2017. The nearly final dramatic reduction will result in a "cliff" when production levels are reduced from 9,703 AF in Water Year 2016 to 4,813 AF in Water Year 2017.

The Seaside Groundwater Basin was adjudicated in 2006. The adjudication established specific production allocations. California-American Water's current production allocation from the Seaside Groundwater Basin is limited to 2,816 AF. Under the adjudication, this allocation is reduced over time and will be 1,474 AF in Water Year 2021. These reductions will eliminate the existing overdraft and the potential for seawater intrusion in the Seaside Groundwater Basin. The reductions apply to the entire Seaside Groundwater Basin, including the Laguna Seca subarea, which supplies California American Water's Bishop, Hidden Hills, and Ryan Ranch systems.

Based on the best information available at this time, the community will be able to achieve the specified reductions for both water supply sources through Water Year 2014 without a need for water rationing. Further decreases are scheduled for Water Years 2015 and 2016, before the "cliff" in 2017. Both the CDO and the Seaside Adjudication Decision support and justify the costs of the conservation program.

Projected timelines and constraints identified for the components of a Monterey Peninsula Water Supply Project (A.12-04-019), currently under consideration by the CPUC, indicate that a water supply project (or projects) that fully legalize the Monterey Peninsula's water supply may not be completed and operational before the CDO cliff occurs. Continued conservation will provide some relief from the required production curtailment and may prevent the community from being subject to fines or other enforcement actions. Conservation may even preclude mandatory rationing. California American Water and MPWMD are committed to continuing their successful partnership in the coming years.





# Summary of Reporting Requirements

The following are the mandatory Monterey County District reporting requirements. Additional information has been provided in this report to document other conservation efforts undertaken by California American Water and MPWMD during 2013. 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, whether to be implemented by California American Water or MPWMD and budgeted amounts for each type of activity.
- Electronic spreadsheets that includes estimated water savings for each customer receiving an audit, a rebate or a retrofit for years 2012 & 2013. *This information is confidential and is therefore provided under separate cover.*
- Estimated water savings for each device offered through California American Water and MPWMD's conservation programs funded through the California American Water's conservation surcharge.
   California American Water and MPWMD are to establish consistent water saving estimates for years 2012 & 2013. This information is confidential and is therefore provided under separate cover.
- An Evaluation of the effectiveness of the Outreach Program.
- An annual analysis of the weather-adjusted consumption in the Monterey County District
- Rain Sensor Shut Off Device and Soil Moisture Sensor Pilot Study Project

# 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
- DRA Division of Ratepayer Advocates
- Eto 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, Monterey County District – 2013 Programs Funded by the California American Water Conservation Surcharge

## **Summary of California American Water Programs**

The programs funded by the conservation surcharge during 2013 are summarized in <u>Table 2</u> and described following the table.

Program	Cost	Need For Program	Nature of Activity	Measurable Goal	Result of Achievements	Estimated Savings (AF)
Residential Audits (Formerly BMP 1)	None (funded by Labor budget)	Meet former BMP 1 of CUWCC MOU, customer requests	Customers given assessment of indoor & outdoor water usage, individualized water budget, recommended irrigation schedule, water saving devices	Marketing objective - 5% response with audit requests 676 single- family and 68 multi-family audits	Marketing Ads 40% 205 audits completed	2013 Estimated Savings 8.2 AF (Actual Savings for 2012 based on usage records: 9.6 AF)
Residential Plumbing Retrofit (Formerly BMP 2)	\$19,735	Meet BMP 2 requirement (75% saturation)	Distribution of water saving devices at events, walk-ins, mailer responses	Number of Devices Distributed	2,413 Showerheads, 1,830 Kitchen Aerators, 6,180 Bath Aerators	28.57 AF
Large Landscape Audits and Water Budgets (Formerly		Required by MPWMD Regulation XV. Meet CUWCC BMP	CAW staff provides water usage history and other customer data to consultant	42 Large Residential; Audits . & 20 Dedicated Irrigation Audits	See MPWMD Conservation Activities Section	Audits Not Completed

### Table 2. California American Water 2013 Programs Funded by Conservation Surcharge

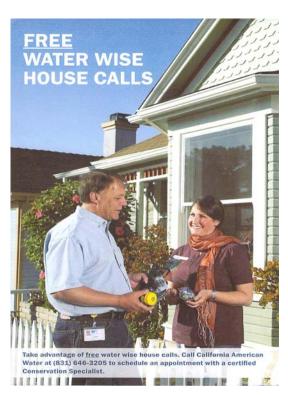
Program	Cost	Need For Program	Nature of Activity	Measurable Goal	Result of Achievements	Estimated Savings (AF)
BMP 5)		objective of 90% dedicated irrigation meters assigned water budgets	completing audits and water budgets. Contact customers about audit by calls and/or letters.			
Rebates (Formerly BMPs 6, 9, 14)	\$891,88 1	Meet CUWCC former BMPs 6,9,14 objectives and MPWMD Ordinances.	Provide incentives to customers for upgrading to high efficiency/water saving fixtures and appliances	2,362 SF rebates; 156 MF rebates; 358 CII rebates.	2,362 SF rebates; 156 MF rebates; 358 CII rebates.	57.38 AF
Public Outreach and Education (Formerly BMP 7)	\$105,70 7	Meet CUWCC former BMP 7 and meet demand goals under Rule 95-10.	Promote quantifiable BMP programs, educate customers and communicate current water issues and efforts needed on the Monterey Peninsula.	Support BMP programs, attend 3+ events, and reduce spring water usage.	Multimedia conservation campaign with community involvement	Not quantifiable
CII Commercial Industrial & Institutional Audits	\$56,500	CII Audits by WaterWise 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	Goal is 35 CII Audits	Completed 57 CII Audits	9 AF Estimate Savings Actual Savings for 12 audits in 2012 based on usage records: 8 customers saved 5 AF)

Program	Cost	Need For Program	Nature of Activity	Measurable Goal	Result of Achievements	Estimated Savings (AF)
			fixtures			
Rain Sensor Installation Program	\$19,184	Meet former BMPs 3 & 5 of CUWCC MOU, customer requests	CAW (through contractor) installs free rain sensors for qualified customers	Goal is 50 Rain Sensors	Completed installation of 100 Rain Sensors	2012: 6 AF based on usage records 2013: 100 Rain Sensors installed (savings to be analyzed in future report)

## **Residential Audits (Water Wise House Calls)**

California American Water continued its Water Wise House Call Program (residential audits) in 2013 utilizing in house trained audit staff at no cost to the Conservation Budget. The program consisted of offering free residential audits for single and multi-family properties to identify ways the customer can save water indoors and out.

California American Water's promoted the Water Wise House Call program specifically through bill inserts, newspaper ads, rebate brochures, offering the service to customers who visited the office to make payments and by targeting customers who had received high water bills due to CAW's accelerated 5 tiered rate design.



California American Water's conservation staff 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. During the Water Wise House Calls (audits), California American Water identified common inefficiencies and water waste in some of the Monterey residences. The most common such occurrences were:

• Toilet and faucet leaks

• Irrigation controllers set to run too long resulting in water waste

Misaligned and broken sprinkler heads

California American Water's conservation staff completed 205 Water Wise House Calls in 2013, compared to 187 calls in 2012.

California American's Water Wise House Call program showed a 12-month water savings of 9.6 acre feet of water for participating customers in 2012 (year 2012 was used to provide a complete year of post-retrofit consumption). There were 169 audits and of those, 116 accounts showed water savings in the 12 months after the audit.

A Water Wise House Call usually took between one and four hours to complete, depending on the number of the indoor water fixtures and extent of outdoor landscaping. Larger properties, and those consisting of multi-residential customers, generally required two conservation specialists. Analysis of collected field data and generation of the final report usually averaged between one to two hours. The total average time to complete the audit and the report was approximately four to five hours.

California American Water offers <u>free</u> 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 <u>free</u> 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 <u>free</u> 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 WATER The audit reports also included recommendations on utilizing the rebate program for the replacement of specific appliances at customers' homes.

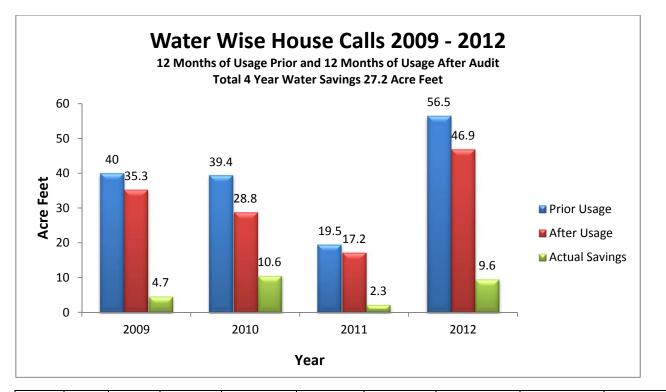
The Water Wise House Call program was monitored by including an evaluation form along with a pre-stamped envelope in the customer report package. Forty-five surveys were submitted. The customer evaluation surveys received from the Water Wise House Call service showed high customer appreciation. Comments included on the evaluation form acknowledged that the staff was courteous, helpful and knowledgeable:

- "Melissa did a great job with the report and explanations."
- "Ray was excellent and the bathroom shower now uses less water."
- "I was very impressed with Veronica, her knowledge and she was very courteous."
- "Ray helped us better monitor our usage daily."
- "Veronica is an excellent representative for your company."
- "Thank you Ray for showing me to how read my meter."
- "Veronica was very professional and easy to communicate with."

There were no costs for the Water Waste House Call program in 2013, other than labor and related overhead expenses. The audits were completed by internal Conservation staff.

The Water 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 27.2 acre feet over a 4 year period, 2009 through 2012. The savings are based on actual usage records, collected 12 months prior to the audit and 12 months after the audit. <u>Table 3</u> summarizes these findings.

Table 3. 2009 through 2012 Water Wise House Calls Program



Year	Prior Usag e	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 %
2009	40	35.3	-4.7	11.8%	92	60	32	65.2%	34.8%
2010	39.4	28.8	-10.6	26.9%	118	83	35	70.3%	29.7%
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%

## **Residential Plumbing Retrofit**

California American Water provided residential customers with various free water savings devices including showerheads, faucet aerators for the bathroom and kitchen, leak detection tablets/kits and outdoor water saving tools, such as moisture meters that measure the moisture of the soil and hose nozzles that automatically shut off when not in use.

In 2013, California American Water tracked the distribution of the various water savings devices to identify the total number of each device distributed and where or how they were distributed to customers. For all conservation related events, customers who received water conserving devices were required to provide service addresses. This process helped to ensure that California American Water customers are the ones who benefit from the program.

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)
- On-site Audits
- Upon customer request
- Special giveaway offer (through the Front Desk staff) 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 2013 to California American Water's residential customers in Monterey are listed in <u>Table 4</u>. Water saving device distribution by MPWMD is discussed in the MPWMD section of this report.

				Estimated		Estimated	Estimated
		\$ per		water		Annual	Lifetime
		unit,		savings	Unit	measure	measure
Water Saving	# of units/	activity,	Total \$	per unit	lifespan	savings	savings
Device	activities	etc.	spent	per year	(yrs)	(AFY)	(AF)
Showerheads	2,413	\$3.50	\$8,446	0.0062-	5	14.96	74.8
Bathroom Faucet Aerators	6,180	\$0.48	\$2,472	-0.0017	5	10.51	52.5
Kitchen Faucet Aerators	1,830	\$2.75	\$5,032	0.0017	5	3.11	15.55
Leak Detection tablets	3,520	\$0.06	\$1,408	Varies	5	2.46	12.32
High Efficiency Pre Rinse Spray Valve	116	\$26.00	\$3,016	0.392	5	45.46	227.3
Shower Timers	2,700	\$1.65	\$4,455	unknown	5	unknown	unknown
Dish Squeegees	568	1.89	\$1,074	unknown	5	unknown	unknown
Hose Shut Off Nozzles	1,462	\$3.30	\$4,825	Varies	3	Varies	Varies
Moisture Meters	1,344	\$2.50	\$3,360	unknown	5	unknown	unknown
Shower Timers	2,700	\$1.50	\$4,050	Varies	5	Varies	Varies

#### Table 4. Monterey County District: BMP 3 & 4 Residential Plumbing Retrofit- Detail

Water Saving Device	# of units/ activities	\$ per unit, activity, etc.	Total \$ spent	Estimated water savings per unit per year	Unit lifespan (yrs)	Estimated Annual measure savings (AFY)	Estimated Lifetime measure savings (AF)
Total	11,897	\$2.02	\$19,688	-	5	27.73	140.65 <sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Total water savings only include savings for showerheads (0.0062 AFA/device), faucet aerators (0.0017 AFA/device), toilet flappers (0.0047 AFA/device) and leak detection tablets (0.0007 AFA/device). Water savings assumptions shown are based on CUWCC BMP Water Savings Worksheets for each device.

## Large Landscape Audits and Water Budgets

Landscape water audits and budgets are required by MPWMD's Regulation XV, Rule 172.

California American Water reviewed its records based on water year October 1, 2011 through September 30, 2012 to identify customers who met the criteria to receive a landscape audit and budget and who have not had an audit in the past. There were 31 customers that exceeded the threshold of 320 units (23,936 gallons) or more on an average monthly basis, 11 customers who also exceeded 320 units or more with lot sizes of three acres or greater and 20 high water use customers with dedicated irrigation meters. There were a total of 62 required landscape audits to be completed by September 30, 2013. California American Water provided the MPWMD the list of customers that needed the required audit completed by the MPWMD on December 29, 2013.

The landscape water audits and landscape water budgets are done through third party contractors administered by the MPWMD. California American Water staff coordinates audits once they are retained through the MPWMD.

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

### Landscape Grant Program – Water Use Analysis

California American Water continued its Landscape Grant Program to reduce the water demand of municipal properties by changing landscaping and upgrading irrigation systems. California American Water marketed the large landscape grant program with a focus on replacing turf on city properties with low water use plans, and/or installation of water saving irrigation technology. The grant award was intended to provide funding for a demonstration project with high visibility, water savings, exemplary landscaping, and/or use of water saving-irrigation technology.

Letters outlining the program were sent to cities of Monterey, Pacific Grove, Seaside, Sand City, and Carmel by the Sea, Del Rey Oaks and also the County of Monterey.

In the fall of 2013, California American Water received 3 proposals from the City of Monterey and 1 proposal from the City of Pacific Grove. After reviewing the proposals from each of the applicants, California American Water selected project sites that had the greatest potential water savings including high visibility.

California American Water reviewed the 3 proposals from the City of Monterey and awarded \$50,000 for the city's project to assist in the removal of approximately 20,000 square feet of turf at its Laguna Grande Park on Virgin Avenue in Monterey and in addition partner with the city's Neighborhood Improvement Program and the Monterey Regional Park District who will provide further funding. The total estimated cost of the project is \$265,000 with a potential annual savings of 2 acre feet.

The funding for the project will be from the following sources:

Neighborhood Improvement Program	\$225,000
California American Water	\$50,000
Monterey Peninsula Regional Park District	\$15,000
Total Estimated Cost	\$265,000

Laguna Grande Park was built in 1981 and features barbecue picnic areas, volleyball courts, play equipment, walking and bike paths and a large turf area where the new soccer field will be located. The funding will for the new artificial turf is basically to provide children and residents with an athletic field to play organized sports. This park serves not only the residents of the City of Monterey but shares boundaries and a bridge with a water way to the City of Seaside's portion of the park. The City of Seaside has a large yearly event in their section of the park called "Jazz in the Park," which draws several thousand people to the shared recreation area.



California American Water awarded \$20,000 to the City of Pacific Grove to remove 5,600 square feet of turf and replace with native drought tolerant landscaping at its Lovers Point Park - an area with high visibility and with potential water savings of 175,000 gallons a year. The project is to begin in the late spring of 2014 and be completed by the summer.



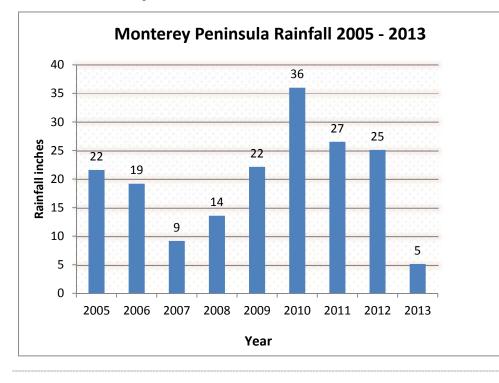


Table 5. Monterey Peninsula Rainfall - 2005 - 2013 Los Padres Dam Weather Station

## **Rain Sensor Installation Program**

California American Water continued its new Rain Sensor Installation Program that was implemented in 2011.

California America Water contracted with EcoTech Services, Inc., to install rain sensors for our high use customers.

## 2013 Rain Sensor Efforts and Water Savings Analysis

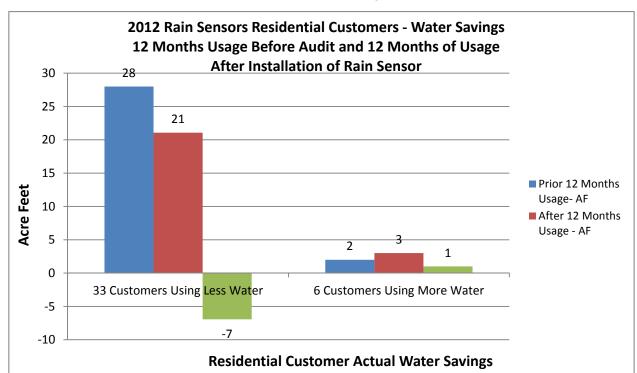
California American Water continued its Rain Sensor Installation Program which began in November of 2011, and through its contractor EcoTech, installed 100 rain sensors for residential and non-residential customers in 2013. Since the program began in 2011, a total of 345 rain sensors have been installed.

Potential candidates for the rain sensor program in the past have been targeted by various means such as customers who usage was billed in the highest tiers during the winter months, large residential water users, dedicated irrigation metered customers and commercial businesses.

In 2013, California American Water targeted multi residential customers whose usages exceeded the monthly allotments for indoor usage during the months of January through April and during the months of November and December indicating irrigation occurring during those particular months, and also non residential customers with

a coding of an irrigation allotment who also experienced high usage during the same months. Letters were sent to 264 multi residential customers and 318 letters were sent to non-residential customers.

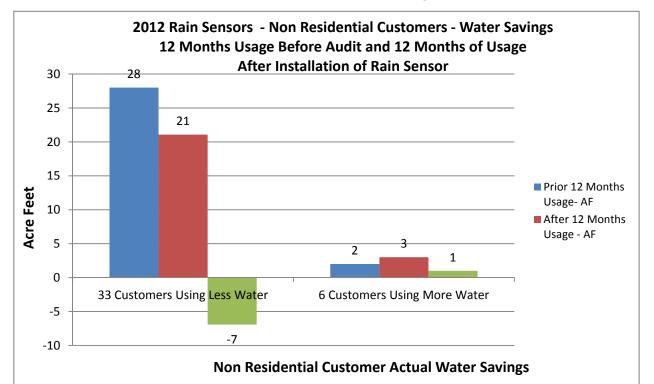
The average rainfall for the Monterey Peninsula measured at the Los Padres Dam weather station amounts to an average of 21 inches over the past eight years. In 2012, we recorded 25 inches of rainfall. To effectively determine the success of the rain sensor program, it was necessary to review rainfall and weather conditions, along with customer actual usage records. A total of 62 rain sensors were installed for 46 residential customers and for 39 customers who resided at their residence and who had 12 months of prior usage history at the time of the installation and also 12 months of usage after the installation were used as a basis to determine the potential water savings. A total of 33 customers consumed 7 acre feet less water and a total of 6 customer consumed 1 acre foot of additional water. The total water savings amounts to 6 acre feet.



#### Table 6. 2012 Residential Rain Sensor Water Savings

	Customers Using Less Water	Customers Using More Water
Prior 12 Months Usage - AF	28	2
After 12 Months Usage - AF	21	3
Savings- AF	-7	1
Number of Rain Sensors Installed	33	6
Increase or Decrease In Usage	-25%	50%

A total of 32 rain sensors were installed for 25 non-residential customers. For the non-residential customers who had 12 months of prior usage history at the time of the installation and also 12 months of usage after the installation were used as a basis to determine the potential water savings. A total of 9 customers consumed 4 acre feet less water and a total of 14 customers consumed an additional 3 acre foot of water. The total water savings amounts to 1 acre feet. Since many of these customers were large users with master meters where the landscaping is not a major part of the total usage consumed, there actually could be an increase in the actual water saved.



### Table 7. 2012 Non - Residential Rain Sensor Water Savings

	Customers Using Less Water	Customers Using More Water
Prior 12 Months Usage - AF	20	13
After 12 Months Usage - AF	16	16
Savings- AF	-4	3
Number of Rain Sensors Installed	9	14
Increase or Decrease In Usage	-20%	19%

## **Rain Sensor & Soil Moisture Sensor Pilot Study**

California American Water is always searching for potential opportunities to continue its mission of conserving water. Customer usage billed at the 4<sup>th</sup> and 5<sup>th</sup> tier of CAW's five tiered rate design during the winter months for residential and multi residential customers, and high usage during the winter months for irrigation meters could be an indicator of unnecessary application of water during the rainy and cool months. Winter rainfall limits the need for supplemental irrigation, however there are landscape managers and homeowners reluctant to turn off their irrigation systems. There are also customers who are unsure of how much water to apply to their landscapes throughout the year and may be over irrigating.

The rain shut off device that automatically signals the irrigation controller to stop watering when it rains, and allows watering to resume when needed, has been instrumental in reducing usage since CAW initiated the rain sensor installation program in 2011. An added feature to assist customers in furthering reducing usage is the soil moisture sensor which can be used throughout the year to assist customers in monitoring their usage and to refrain from overwatering their landscapes.

In 2012, the company initiated a pilot study project to evaluate the performance and winter savings potential of rain shut off devices versus soil moisture sensors installed as an add on devices to existing controllers.

La Mesa Village, a residential housing community with 735 homes for military members attending the Monterey's Naval Post Graduate School was chosen as the site to conduct the study because many of the residential units have an irrigation controller that is not aided by a central controller. Without the aid of a central controller, the landscape contractor has limited scheduling flexibility to reset the many hundreds of controllers on a monthly basis. California American Water Supervisor Joe DiMaggio, the company's landscape irrigation consultant Bob Costa, and Fran Cohen with La Mesa Village executed the study.

There were 10 rain shut off devices (RSOD) installed as an add on feature to ten Rainbird ESP modular controllers located at 15 selected private residences throughout La Mesa Village, where each controller generally operated two turf zones. For the soil moisture sensor study, there were 10 SMS installed at an additional 15 selected private residences, where each controller generally operated two turf zones. Five residential properties with similar irrigation conditions were selected as control units for the RSOD and additional five residential properties were selected as control units for the SMS. La Mesa Village usage is billed on a master meter and in order to analyze the actual water savings, each turf zone at each location was monitored with a 24 hour meter to record in minutes, the time the valve operated. At the conclusion of the project, the minutes of the operation for the monitored turf zones were converted to gallons and a water use comparison developed.

Bob Costa, CAW's landscape consultant completed the study over a two year period due to unpredictable rainfall. During the months of December and early January, the peninsula experienced significant rainfall and below normal through the remaining months. The inconsistent rainfall pattern resulted in the landscape contractor maintaining the selected control controllers in the off mode and on mode for extended periods of time; however the sites chosen for the installation of the rain and soil moisture sensors were in the on mode position during the entire study.

The study indicates a noticeable difference between rain shut off device and the soil moisture sensor for both seasons. The rain shut off device allowed irrigation to resume within 2 to 4 days, while the soil moisture sensor prevented irrigation for extended periods in as much as an excess of two weeks. While the study indicates the

noticeable difference, Bob Costa continues to recommend the installation of the rain shut off device and points out the significant challenge that soil moisture sensor may pose to the inexperienced water manager or homeowner. Since there is such a noticeable difference in the difference of the water savings between the two devices, California American Water started offering the installation of the soil moisture sensors to its customers as long as the customer receives extensive training from its contractor Eco Tech who installs the devices.

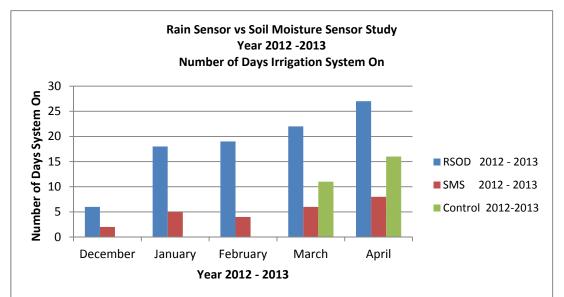


Table 8. 2012 -2013 Rain Sensor Shut Off Device (RSOD) vs Soil Moisture Sensor Study (SMS)

Month	RSOD 2012 - 2013	SMS 2012 - 2013	Control 2012-2013
December	6	2	0
January	18	5	0
February	19	4	0
March	22	6	11
April	27	8	16
Total Days	92	25	27

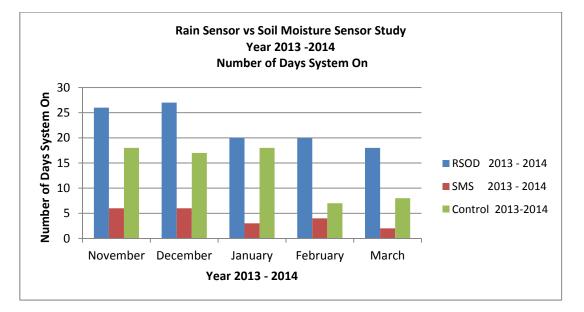


Table 9. 2013 -2014 Rain Sensor Shut Off Device (RSOD) vs Soil Moisture Sensor Study (SMS).

#### Number of Days System On

Month	RSOD 2013 - 2014	SMS 2013 - 2014	Control 2013-2014		
November	26	6	18		
December	27	6	17		
January	20	3	18		
February	20	4	7		
March	18	2	8		
Total Days	111	21	68		

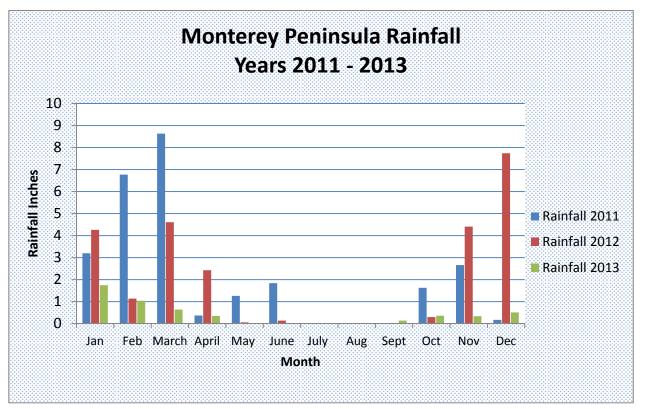


Table 10. Monterey Peninsula Monthly Rainfall 2011 - 2013 (Los Padres Dam Weather Station)

Monthly Rain Fall for Years 2011 through 2013 (Los Padres Dam)													
Year	Jan	Feb	March	April	Мау	June	July	Aug	Sept	Oct	Nov	Dec	Totals
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

## Commercial, Industrial, Institutional (CII) Audits

California American Water continued its contract with WaterWise Consulting to conduct commercial, institutional, and industrial audits during 2013. Water Wise Consulting completed 51 audits with an estimated potential savings of 60.99 acre feet following the implementation of the audit recommendations.

California American Water anticipated there would be an increase in the number of audits requested by the nonresidential customers due the new Best Management Practice Compliant Rate Design along with a 35% increase in the rates.

Under the prior rate design, businesses were allowed a certain amount of water at lower rates. That amount, called an allotment, was calculated according to type of business and other factors such as square footage, any water used above an individual's allotment was charged at higher rates. This system proved problematic for customers who have found their water allotment did not match their business' actual water needs, particularly as business volume tends to fluctuate.

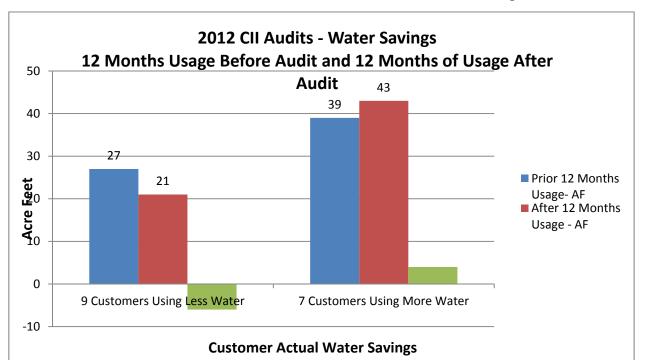
Under the new rate design, there are four different rates for four divisions of commercial customers.

- Division 1 Commercial customers that are fully Rate Best Management Practice compliant indoors and outdoors and irrigate no more than 10% of their property. Currently \$1.55 per 100 gallons
- Division 2 Commercial customers that are fully Rate Best Management Practice compliant indoors and outdoors – and have a business where outdoor watering is essential to their businesses. (Example: nurseries, golf courses and public parks, ball fields and cemeteries). Currently \$1.91 per 100 gallons
- Division 3 Commercial customers that are fully Rate Best Management Practice compliant indoors and outdoors and irrigate more than 10% of their property. Also included is dedicated irrigation metered customers. Currently \$2.12 per 100 gallons.
- Division 4 Commercial customers that are not Rate Best Management Practice compliant in one or more aspect of their indoor or outdoor usage. Currently \$4.235 per 100 gallons.

California American Water's conservation staff followed 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 that 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

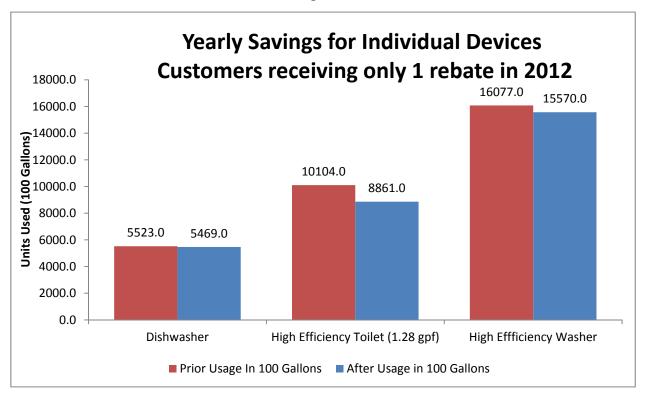
The actual water savings for the audits shown here reflect year 2012 audit activity in order to show a full 12 months of post audit water usage as required. Comparing pre-audit and post-audit usage, there was a total of 1.3 acre feet of water savings, however, 9 of the 16 audits showed a savings of 6 acre feet, whereas 7 customers increased their usage by 4 acre feet during 2012. The slight increase in usage could be the result of an increase in business activity for some of these customers since the economy has improved.



### Table11. Commercial, Industrial, & Institutional Audits - Water Savings

	Customers Using Less Water	Customers Using More Water
Prior 12 Months Usage - AF	27	39
After 12 Months Usage - AF	21	43
Savings- AF	-6	4
Number of Audits	9	7
Increase or Decrease In Usage	-28%	10%

To measure the effectiveness of the Rebate Program, California American Water Collected 12 months of usage after the customer participated in the rebate program. Customers selected for this analysis had a complete twelve months of consumption history prior to and after the rebate, and only a single rebate in 2012. The chart below measures the effectiveness of the rebate program for only the month of December of 2012 when the rebate funding was once again replenished.



### Table12. Effectiveness of the Rebate Program

Rebate Type	Prior Usage In 100 Gallons	After Usage in 100 Gallons	Usage Difference	% Reduction	# of Rebates	# of Lower Usage	# of Higher Usage
Dishwasher	5,523	5,469	-54	-0.98%	8	6	2
High Efficiency Toilet (1.28 gpf)	10,104	8,861	-1,243	-12.30%	15	10	5
High Efficiency Washer	16,077	15,570	-507	-3.15%	22	15	7
Totals	31,704	29,900	-1,804	-5.69%	45	31	14

## **School Education and Outreach**

In 2013, 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 conservation.

#### In School Education - Zun Zun Performances



California American Water, through the Monterey County Water Awareness Committee, offered school assembly presentations by the Zun Zun performance group. In 2013, Zun Zun provided eleven 45 minute performances within California American Water's service territory at San Carlos School and La Mesa Village School. The performances reached a total of 2,420 students and covered topics such as the water cycle, watershed, indoor conservation and conservation tips, including fixing leaks.

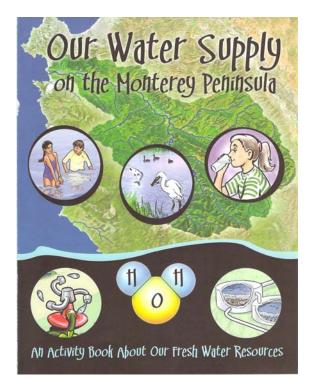
#### Table13. School Education Program - Zun Zun Performances

Date	School	Performances	Number of Students	City
8-20-13	Del Rey Woods	2	490	Seaside
8-21-13	BayView Academy	2	300	Monterey
8-23-13	La Mesa	2	550	Monterey
8-27-13	Highland	2	450	Monterey
8-28-13	Monterey Bay Charter	1	230	Pacific Grove
8-29-13	Foothill	2	400	Monterey

## Water Awareness Committee (WAC) Activities

California American Water coordinated with the local Water Awareness Committee (WAC) to offer school education opportunities and outreach. Activities included class presentations, as well as the interactive school assemblies. Both California American Water and the MPWMD were 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, August 31, 2013. This family-friendly event featured booths including: California American Water, MPWMD and Marina Coast Water District.



## **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. Due to timing features of California American Water's last GRC filing, the 2012 Monterey conservation outreach budget did not receive funding approval until late in the year from the CPUC. Despite this, the company continued its proactive outreach campaign to help keep water consumption within production limits on the Seaside Basin and Carmel River.

With only a few months remaining in the year after funding approval, the company capitalized on its "Savings are in Season" campaign as its principal outreach message. This campaign featured the joint rebate program highlighting the numerous eligible appliances as potential holiday gifts. California American Water continued its multimedia campaign to promote water efficient behaviors and eliminate water waste with numerous social media postings and several YouTube videos. In 2013, the following conservation outreach activities, described below, were conducted:

### 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 its "Freebates" campaign, highlighting the many and varied free conservation materials and rebates offered to customers. In addition to its freebates campaign, California American Water also kicked off its "Monterey Cares," a comprehensive conservation/customer service campaign that featured targeted conservation messaging.. The company also sponsored its "Turn off your Sprinklers" campaign, a print advertisement series encouraging customers to adjust irrigation in preparation for the rainy season.2013, the company ran a multi-week- sponsorship aired on KAZU FM, the local NPR radio station. 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. Advertisement was also conducted in the Carmel Pine Cone, The Monterey Herald, and various other radio stations some of which included Spanish speaking audiences.

Annual conservation outreach radio underwriting expense: \$46,457

### **Television Advertising**

California American Water was unable to conduct any television advertisement regarding conservation. Television advertising cost: \$0

### Print Advertising Campaign

California American Water, leveraging its discount, long-term print advertising contracts with local newspapers, managed to put out a robust print campaign of multiple and repeated messages of various conservation themes. This year the company made a major push for its "Freebates" campaign, highlighting the many and varied free conservation materials and rebates offered to customers. In addition to its "Freebates" campaign, California American Water also kicked off its "Monterey Cares," a comprehensive conservation/customer service campaign that featured targeted mailers and other advertisements, promoting responsible water use.. The company also sponsored its "Turn off your Sprinklers" campaign, a print advertisement series encouraging customers to adjust irrigation in preparation for the rainy season. Colored inserts were run in the Carmel Pine Cone and Monterey County Weekly. In addition, advertisements were purchased in both publications to run through the rest of 2013 in the Pine Cone and intermittently with the Herald. Each of these publications boasts a circulation between 30,000 to 35,000 on the Monterey Peninsula--which roughly equates to the number of California American Water residential service connections within the MPWMD boundaries. Ad themes centered on rebates and basic residential water conservation and drought messages.

#### Print advertising campaign cost: \$ 70,839

#### 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, regulated restrictions on the area's water supply and tips for saving water indoors and out.

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 happening in water on the Monterey Peninsula.

#### 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.

#### 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 2013, California American Water customers received an individual mailing entitled "Freebates," which featured the latest conservation rebate offerings through the joint California American Water/MPWMD rebate program. The mailers included the various rebates in the mailing which included dishwasher, toilet and clothes washer rebates. Also included were rebates for rain sensors, irrigation controllers and efficient sprinkler nozzles.

Mailer cost: \$17,400



Example of our "Freebates" customer mailling sent in May.

#### Social Media

California American Water continued its social media support of conservation outreach by complimenting and echoing the same messaging produced in its print, 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 offerings.

In 2013, California American Water started a Pinterest page, which features photos and descriptions of the various appliances and water saving devices eligible for rebates.

#### Earned Media Campaign

California American Water also worked with local media to promote participation in events as well as national programs such as the Environmental Protection Agency's Fix a Leak Week, National Drinking Water Week and National Water Awareness Month, during which California American Water authored Opinion Editorials on water conservation for the Monterey County Herald. 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.

#### Community and Outreach Events

Each year, California American Water and MPWMD participate in various community fairs and events, staffing a conservation booth where California American Water customers can interact with water conservation experts, take advantage of free water saving devices and obtain information about indoor and outdoor water saving appliances and techniques. In 2013, California American Water and MPWMD participated in the following events: Pacific Grove Good Old Days, Earth Day, and through membership in the Water Awareness Committee of Monterey County, the Monterey County Fair.

Costs associated with attending such events included sponsorship fees and booth costs, marketing of event, materials and giveaways for customers visiting the booth, and booth displays pieces.

## Weather-Adjusted Consumption in the Monterey County District

California American Water staff produced an analysis of weather-adjusted consumption in the Monterey County District by calculating the acre feet consumed per rainfall inch. (This information is provided under separate cover.) 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 2013, consumption was highest when rainfall was lowest (2013) and conversely, consumption was lowest when rainfall was highest (2010).

### **Residential – Five Tiered Rate Design**

California American Water's five-tiered residential allotment rate structure has also been instrumental in reducing outdoor water usage. Each residential customer is allotted 15 units per tier or 1,122 gallons per person per month. Current tiered rates are: \$0.4299, \$0.8976, \$2.2183, \$4.9280, and \$6.5642. Normally, the base allotment is enough to cover indoor usage and limited outdoor usage, which is billed at the first, second, and third tiers. The majority of outdoor usage for large residential water users is billed at the 4<sup>th</sup> and 5<sup>th</sup> tier.

The aggressive conservation programs of California American Water and the MPWMD, along with the residential five tiered rate design, have been instrumental in reducing overall water usage and particularly usage in the 4<sup>th</sup> and 5<sup>th</sup> tier. Fifth tier usage has dropped from 598 acre feet in 2007, to 212 acre feet in 2013, a percentage reduction of 65%. In addition, California American Water has been tracking actual usage of customers who receive audits, rebates, rain sensors, and who participate in other conservation programs since 2009. 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 2005 to 2013; 4<sup>th</sup> and 5<sup>th</sup> tier usage normally reduced during years of high rain fall and increased during years of low rain fall.

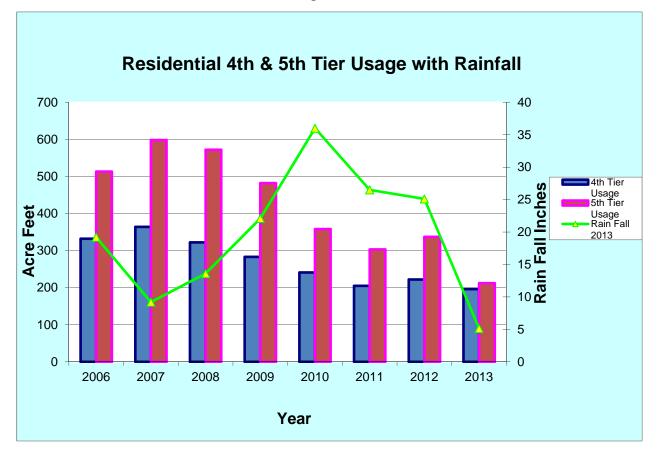


Table 14. Residential 4<sup>th</sup> and 5<sup>th</sup> Tier Usage & 2013 Rainfall - Years 2005 to 2013

Residential 4th & 5th Usage with Rainfall

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
4th Tier Usage	334	332	364	322	283	241	205	222	196
5th Tier Usage	460	513	598	572	482	358	303	337	212
Rain Fall	21.6	19.2	9.2	13.6	22.1	36.0	26.5	25.1	5.13

# California American Water, Monterey County District – 2014 Program Goals

California American Water has provided a summary of its conservation activates for 2013 as Table 15.

Table 15. California American Water Monterey County District: Summary of 2013 Program Goals

Program	Budget	Implementation Plan	Timeline
Residential Audits (Former BMP 1)	Labor Budget	Complete 200 SF and 10 MF audits	Offer audits throughout 2014
Residential Plumbing Retrofit (Former BMP 2)	\$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 (BMP 5)	\$33,333	Install 125 Residential or Non Residential Rain sensors and/or Soil Moisture Sensors	Jan through Dec 2014
Large Landscape Upgrade Grant Program (BMP 5)	\$475,000 2012 - 2014	Provide grants for expenses for equipment, materials, and/or installation to upgrade to conservation friendly landscapes	Summer-Fall of 2014
Public Outreach and Marketing Campaign (Former BMP 7)	\$123,333	Continue to support public awareness and participation in the organizations' joint- conservation programs	Ongoing throughout 2014
Outreach and Education Seminars & Programs (Former BMP 7)	\$10,000	Continue to partner with Water Awareness Committee, continue to offer Landscape Irrigation Workshops, create conservation booklet, offer in-class presentations	Ongoing throughout 2014
Zun Zun Performances and WAC Activities (Former BMP 8)	\$8,200	Market schools in Summer of 2013 with events in the fall.	Performances in 2014 WAC ongoing.

CII Audits (Former BMP 9)	\$75,000	Offer CII Audits to 25 customers – greatest potential need & to comply with the new BMP Compliance Rate Structure	Ongoing 2014
Conservation Intern(s) (Former BMP 12)	\$30,000	Conservation Intern continues to assist with regulatory reporting requirements, planning, creation and implementation of conservation programs, processing of audits, and assist customers.	Ongoing 2014

## **Residential Audits**

In 2014 California American Water will continue to provide Water Wise House calls to its customers. It is expected that the number of customer requests for this service will increase due the new rate structure and the increase in rates, especially during the summer months when usage is highest. Additional efforts to promote customer participation will include offering water wise house calls for customers with high water bills and promoting the program 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 2014.

## **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 also require customers to sign up to receive devices at events, front desk, etc. so the company can log the information and identify how devices are distributed. The focus will be on the hospitality industry such as hotels, 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, 1.0 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 as required for the BMP report to the CUWCC.

## 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 that are cities, schools and parks. In 2013, a total of \$70,000 was awarded to two key cities with a combined potential annual savings of 1 million gallons or 3 AFA. The projects are expected to be completed by October of 2014.

The funding is to offer assistance to 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 in order to maximize educational value and promote similar retrofits at customer sites.

In 2014, California American Water's objective is to fund 1 to 3 landscape grant projects at a cost of \$50,000 and offer the landscape program to the Monterey Peninsula Unified School District, Carmel Unified School District and the Pacific Grove Unified School District 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 start the installation of soil moisture sensors through its contract EcoTech. The focus will continue to be the customers who have the greatest potential need to reduce their water usage especially during the winter season.

We will continue to focus 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. In addition, we will continue to focus on capturing water savings from customers who are unsure of when to begin and to cease irrigating or turn off their controllers either during the months of March, April, October and/or November

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 2014 to provide commercial, institutional and industrial audits, and plans to complete up to 30 CII audits in 2014 utilizing experienced contracted consultants.

The focus will continue to be 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 also offer rebates and any programs that may assist in reducing overall water usage.

# Monterey Peninsula Water Management District – 2013 Programs Funded by the California American Water Conservation Surcharge

The 2013 MPWMD programs funded by the Conservation Surcharge are summarized in the following table and described in detail in the narrative that follows.

Table 16. Monterey Peninsula Water Management District: Summary of 2013 Programs

Program	Program Costs	Need For Program	Nature of Activity	Measurable Goal	Results	Estimate Savings
Water Conservation Representative	\$81,781 at actual cost	One staff position with focus on water waste enforcement and water efficiency and conservation.	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	All water waste violations were verified compliant within timeline	Not quantifiable
Water Conservation Seminars	N/A	Provide education and hands-on learning. Focus is on reducing outdoor and CII water use.	Laundry to Landscape Workshops and CII efficiency requirements	Attendance by at least ten persons per event	Exceeded expectations	Not quantifiable
Water Wise Gardening for Monterey County	\$5,000	MPWMD has licensed product for web use, rather than reprinting CDs.	Monterey area- specific interactive gardening software designed to assist customers with water efficient plant choices for landscaping.	Provide notice of software availability at all events, on websites, social media, and through televised Board meetings	3,806 unique hits on software in 2013	Not quantifiable

Program	Program Costs	Need For Program	Nature of Activity	Measurable Goal	Results	Estimate Savings
Water Audits & Budgets	\$1,500	This program was temporarily halted pending acquisition of budgeting software.	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	Program has been restarted in 2014.	
Linen/Towel Reuse Program	N/A	Supports hotel room notification of linen and towel reuse program.	Customers encouraged to reuse towels and linens. Drinking water is to be provided only upon request.	Reduction in laundry, and water and energy consumption	Ongoing program	Up to 101 AFA @ 60% occupancy
CIMIS Station Maintenance	\$1,368	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.	Reduced outdoor water use during low ETo	Data is available on CIMIS website	Not quantifiable
Conservation Devices	\$10,846	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	72.4 AFA
Conservation Printed Material	\$0	The printed material program acquires updates and distributes water conservation materials to	Printed and distributed post cards to CII users promoting water efficiency requirements	Support BMP programs, provide at 3+ events, and reduce water usage.	MPWMD distributed conservation materials, including the new postcard at community events and meetings	Not quantifiable

Program	Program Costs	Need For Program	Nature of Activity	Measurable Goal	Results	Estimate Savings
		the public via local retailers, organizations, and other means of notification.				
Water Waste Prohibitions	N/A	Eliminate water running to waste and other forms of water waste.	Notification to property occupant and follow up to ensure corrections as needed.	Achieve compliance within reasonable time period	84 instances of Water Waste were compliant within reasonable time	Not quantifiable

#### Water Conservation Representative

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), and the 2010 GRC (D.12-06-016). The position is primarily responsible for water waste enforcement, including responding to reports of water waste and providing enforcement and site investigations. 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.

### Water Conservation Seminars/Workshops

MPWMD has focused its training agenda to help provide the tools necessary for gardeners, landscapers, builders, homeowners, plumbers and others to maximize water efficiencies. During 2013, MPWMD hosted two Laundry to Landscape workshops. These courses provide classroom instruction followed by hands-on experience with installation of simple greywater irrigation systems utilizing the clothes washer rinse cycles.

During 2013, MPWMD sponsored two of these classes and had 50+ people in attendance at each. Because of the popularity, MPWMD will be conducting these workshops regularly in 2014.

#### 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 Water Awareness Committee of Monterey County. 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 are able to search 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 information pages are provided that list 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) and from the Water Awareness Committee website (<u>http://www.monterey.watersavingplants.com/monterey.php</u>). During 2013, the web application had 3,806 unique hits on the websites. A breakdown of site hits by month is shown on <u>Table 17</u>.

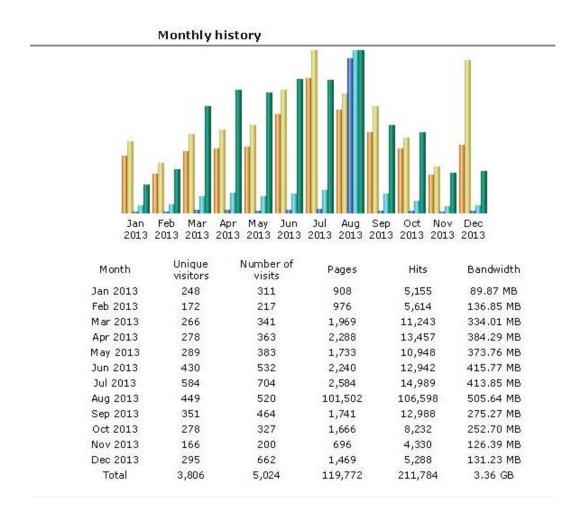


Table 17. Water Wise Gardening for Monterey County, Website Hits by Month, 2013

## Water Audits/Budgets

The Landscape Water Audits and Landscape Water Budgets program was not implemented during 2013 as MPWMD attempted to obtain auditing software that would allow manipulation of the landscape water budgets. Unfortunately, the software was not available in a timely manner, and MPWMD moved forward with audits in 2014 utilizing the less flexible methodology.

The audit involves an on-site analysis of existing plant types and locations, soil types, existing irrigation and watering practices and equipment. The CLIA then determines a watering budget based on those factors and efficient water use. Stage 2 Water Conservation (and higher stages) implements enforcement of Landscape Water Budgets to maintain regulatory compliance. During Stage 2, all water users required to have a Landscape Water Budget must manage outdoor irrigation within their budget. Use in excess of the Landscape Water Budget is considered Water Waste and is subject to Water Waste fees and enforcement. Every October (i.e., beginning of a new Water Year), California American Water reviews their customer consumption database to determine which customers are subject to the audit/budget requirement.

## 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.

During 2013, MPWMD distributed the following:

- Towel Cards 900 pieces
- Water Service on Request Cards (see photo on right) 300 pieces
- Linen Reuse Pillow Cards 1,000 pieces
- Conservation Message Mirror Clings 14,500 pieces



## The California Irrigation Management Information System (CIMIS)



During 2013, 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.

## **Conservation Devices and 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. In 2013, 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 a number of events, including but not limited to:

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

Water Saving Device	# of units/ activities	\$ per unit, activity, etc.	Total \$ spent	Estimated water savings per unit per year	Unit lifespan (yrs)	Estimated Annual measure savings (AFY)	Estimated Lifetime measure savings (AF)
Showerheads	1,250	\$3.59	\$4,488	0.0062	5	7.75	38.75
Showerheads, Hand-Held	600	\$8.95				0	0
Bathroom Faucet Aerators	1,040	\$0.48	\$499	0.0017	5	1.768	8.84
Kitchen Faucet Aerators	150	\$2.75	\$413	0.0017	5	0.255	1.275
Leak Detection tablets	870	\$0.06	\$52	Varies	5		
High Efficiency Pre Rinse Spray Valve	12	\$26.00	\$312	0.392	5	4.704	23.52
Shower Timers	148	\$1.65	\$244	unknown	5	unknown	unknown
Dish Squeegees	100	1.89	\$189	unknown	5	unknown	unknown
Hose Shut Off Nozzles	718	\$3.30	\$2,369	Varies	3	Varies	Varies
Moisture Meters	360	\$2.50	\$900	unknown	5	unknown	unknown
Shower Timers	148	\$1.50	\$222	Varies	5	Varies	Varies
Total			\$9,688	-	5	<u>14.477</u>	72.385

<u>Table 18</u> provides information for each type of water saving device (and estimated water savings when available) was distributed by MPWMD during 2013.

# Monterey Peninsula Water Management District – 2013 Programs Funded by MPWMD

The following projects and activities were funded during 2013 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 one to two inspectors into the field daily to conduct site inspections. Non-compliance is followed up with enforcement procedures until compliance is achieved.

MPWMD conducted 2,199 inspections of properties in 2013, 1,308 of which were inspected for change of title compliance. During 2013, 1,374 properties transferred ownership in the MPWMD.

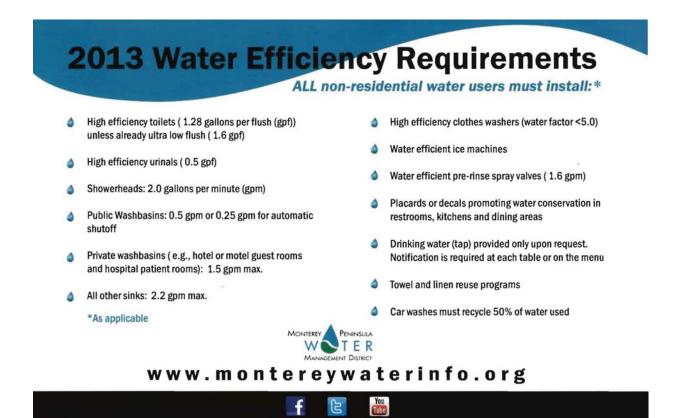
Water Permit inspections were also conducted to verify that required retrofits were completed, although most Water Permits issued at this time do not result in significant water savings and are usually the result of offsets (credits) whereby the applicant has installed highly water efficient fixtures to offset new water fixtures. MPWMD staff conducted 891 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 2013 were estimated to add 18.949 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 895 Water Permits issued in 2013, 513 (57%) 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.

### **Expanded 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. A summary of the requirements are shown below on a postcard delivered to all non-residential customers and property owners:



#### **Conservation Program Staffing**

The Water Demand Division of the MPWMD employs a staff of five (including one position fully funded by the conservation surcharge). MPWMD budgeted approximately \$450,000 in regular full-time labor costs for the conservation staff in 2013. 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 funds the administration costs of the Rebate Program, including one Conservation Technician who determines rebate qualifications have been met and arranges for verification inspections and deed restrictions as needed (included in staff costs, above), 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 2013, MPWMD continued employment of a temporary full-time employee at an additional cost of \$37,000 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, <u>www.montereywaterinfo.org</u> 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 factual information with a focus on the Monterey Peninsula's water conservation and efficiency programs. During 2013, MPWMD staff regularly provided time to update and maintain the information on the joint website.

### **Rebate Program Start Up**

The Monterey Peninsula's Rebate Program restarted on November 19, 2012. MPWMD worked with California American Water to implement an effective advertising campaign and to promote non-residential rebates prior to the mandatory retrofit deadline.

During 2013, 2,871 applications were received, of which 2,248 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 2013, \$922,563 was refunded for purchase and installation of the many items covered by the Rebate Program.

#### **Promotion of Alternate Water Supplies**

As water availability on the Monterey Peninsula dwindles, the use of alternative water sources has become an area of extreme interest. The MPWMD has supported the use of rainwater harvesting for decades, but has recently become involved in a roundtable of interested parties to promote the local use of rainwater, graywater and stormwater. This group is coordinated by the Monterey County Business Council (MCBC), and includes

representatives from MPWMD, California American Water, Monterey County Health Department, Monterey and Seaside's Building Officials, Ecology Action of Santa Cruz, MCBC, local landscaping professionals and others.

During 2013, MPWMD partnered with Ecology Action to promote greywater reuse.

### **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>2</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.

When funding is available, 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.

<sup>&</sup>lt;sup>2</sup> East Bay Municipal Utilities District's WaterSmart Guidebook

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

# Monterey Peninsula Water Management District – 2014 Program Goals

In 2014, MPWMD will continue to focus its efforts to develop and implement regulations and strategies to reduce non-residential and outdoor consumption. The current efforts of MPWMD and California American Water have been quite successful in reducing upper tier (i.e., Tier 4 and Tier 5) and non-residential water use. Outdoor water use continues to receive recognition as the most likely place to achieve significant water savings on the Monterey Peninsula. MPWMD will also begin focusing efforts on enforcing water efficiency requirements in the CII sectors, and educating these customers about other potential and cost-effective retrofits.

Program	Funding	Budget	Implementation Plan	Timeline
Landscape Water Audits	CAW	\$200,000	Contract with CLIA to conduct landscape water audits and prepare landscape water budgets pursuant to MPWMD Rule 172	2014
CLIA training	CAW	\$5,000	CLIA training in conjunction with another outdoor efficiency workshop	Fall 2014
School Retrofit Program	CAW	\$200,000	Initiate cost-effective retrofits in Monterey Unified School District schools	Through 2014
Rebate Program	CAW	N/A	Rebate program for cost-effective retrofits. MPWMD provides administration—Rebate fund by California American Water	Ongoing
Water efficiency training and education	MPWMD	\$25,000	Sponsor workshops, trainers, speakers and other community and industry-specific events	Through Dec 2013
Alternate Water Source Demonstration Project	CAW	\$20,000	Sponsor portable display to educate public on alternative water source use.	December 2014
Sponsor and/or participate in community water efficiency events	MPWMD	\$5,000	Provide sponsorship and staff outreach at local water efficiency- related events and conferences	Annually
Linen and Towel Program	CAW	\$7,000	Continue supporting program with existing inventory and outreach	As needed
Water Wise	CAW	\$5,000	Annual license for web-based	Annually

#### Table 19 depicts MPWMD's planned programs for 2014.

Program	Funding	Budget	Implementation Plan	Timeline
Gardening for Monterey County (Garden Soft)			software	
Conservation	CAW/	\$50,000	Purchase water conservation and	As needed
devices	MPWMD		efficiency devices to provide to customers free or at reduced charge	
CIMIS stations	CAW	\$2,400	Maintain three CIMIS stations on the Monterey Peninsula	Ongoing
Revise Non- Residential Rationing Plan	MWPMD	N/A	Work with stakeholders and others to prepare new water rationing plan	By October 2014
Enforcement of MPWMD regulations	MPWMD	N/A	Implementation and enforcement of MPWMD policies and regulations	Ongoing

## Landscape Water Audits

MPWMD will contract to complete required landscape water audits and to have a CLIA develop landscape water budgets for properties required to have audits pursuant to MPWMD Rule 172. This requirement has been on hold, first pending funding and later while MPWMD attempted to obtain budgeting software. Audits will proceed in 2014. Properties requiring audits/budgets are identified annually by California American Water through a review of consumption records at the conclusion of the Water Year (i.e. September 30). Adherence to a water budget is required in Stages 2-4 of MPWMD Regulation XV and California American Water Rule 14.1.1. During 2014, MPWMD will expand the program to include public parks that have mixed use meters, such as those that include a restroom or other use on the meter.

### **CLIA Training**

CLIA training will be conducted during Fall 2014. The training will be offered with a scholarship for completion of the course.

## **School Retrofit Program**

The School Retrofit Program is designed to grant money to educational facilities on the Monterey Peninsula to achieve cost-effective water-saving retrofits that might otherwise not occur due to budget constraints or conflicting funding priorities. In anticipation of funding in the 2012-2014 General Rate Case, MPWMD had all schools audited in late 2011. The results of the audits are used to identify the most cost-effective retrofits.

During 2014, MPWMD and California American Water will target the schools for additional conservation savings. Incentives will be available to encourage extensive lawn removal and other innovative retrofits.

## **Rebate Program**

MPWMD will continue to promote and administer the Rebate Program.

### Water Efficiency Training and Education

MPWMD will work with California American Water and other interested agencies to sponsor training and workshops that benefit California American Water's customers. The goal of any training conducted on the Monterey Peninsula is to attract local professionals and gardeners who do business on the Peninsula. In addition, other workshops and courses will be targeted to the homeowner or business owner to help them with water efficiencies on their own properties. Finally, a specialist in CII water efficiency will be brought in to educate hospitality and other large commercial users about potential retrofits and cost/benefits associated with those projects.

#### **Alternative Water Source Demonstration Project**

MPWMD will provide assistance with the development of one or more alternative water source demonstration projects, including a moveable display that demonstrates rainwater, greywater and stormwater reuse that can be used at outreach events. The MCBC roundtable group plans to implement several pilot programs in the next year to demonstrate the use of greywater/rainwater for toilet flushing. MPWMD and California American Water will be part of this effort. MPWMD will continue to work with the Monterey County Department of Environmental Health to facilitate the use of alternative water sources in both commercial and residential settings.

### Sponsor and/or Participate in Community Water Efficiency Events

MPWMD frequently participates in community events, most of which are summarized under California American Water's Outreach section of this report. MPWMD will provide staff to educate the public about its programs and will offer free water saving devices. A key reason for both MPWMD and California American Water's participation in these events is that each has expertise in their area and can respond to different questions from the public. For example, questions about rates are referred to California American Water staff and questions about regulations are referred to MPWMD staff.

In addition to outreach events, MPWMD water efficiency staff will be making presentations to area business groups to promote water efficiency practices during the drought. These presentations will take place throughout 2014. Along with speaking, MPWMD will be providing mailing information to owners/tenants of non-residential properties through direct mail pieces.

#### Linen and Towel Program

MPWMD will continue to support distribution of mirror clings and other visitor-serving commercial signage that promotes water conservation during 2014. MPWMD will also be working with the Monterey County Hospitality Association and Chambers of Commerce during 2014 to educate the industry about mandatory efficiency requirements and drought-related practices to reduce water use. In addition, MPWMD will provide information about rebate opportunities via industry newsletters and email blasts, through District newsletters and speaking engagements, and through the local media. MPWMD will support the efforts to achieve BMPs for the various businesses and industries on the Peninsula.

## Water Wise Gardening for Monterey County (GardenSoft)

MPWMD will renew the web license annually during this rate cycle and will promote the availability of the software through social media, televised board meetings and other outreach opportunities.

### **Conservation Devices and Publications**

During 2014, MPWMD will coordinate with California American Water to acquire and distribute devices and publications to help customers reduce water consumption. Brochures will be updated and reprinted. In addition, MPWMD staff will be preparing a comprehensive brochure to inform the public about the conservation and water efficiency requirements of the MPWMD.

#### **CIMIS Stations**

MPWMD will continue to maintain three CIMIS stations on the Monterey Peninsula during 2014. MPWMD staff performs periodic maintenance at the station to clean the equipment for optimal performance. Costs associated with the CIMIS stations are only for cellular lines to transmit data to the Department of Water Resources.

### **Revise Non-Residential Rationing Plan**

MPWMD, with assistance from California American Water, will facilitate further a review and revision of the Non-Residential water rationing plan. The current plan relies on allotments that were discontinued in the commercial rate structure implemented in 2013. The revised plan will be presented to the MPWMD Board of Directors for action in late 2014.

### **Enforcement of MPWMD Regulations**

MPWMD will continue its inspection and enforcement procedures to achieve compliance with its water efficiency rules and to help the public achieve compliance with the various rules. Also planned for 2014 is a revision to the water waste enforcement process to make it more effective and efficient. MPWMD will shift its efforts to document compliance with commercial BMPs.