


WEST BASIN MUNICIPAL WATER DISTRICT

WATER EFFICIENCY
Master Plan
2011-2015

Part of West Basin's Water Reliability 2020 Program

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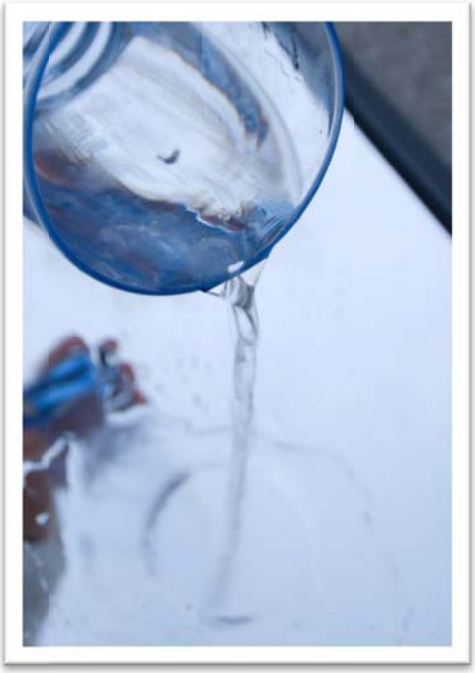


EXECUTIVE SUMMARY

As an innovative leader in Conservation and Water Efficiency programs, West Basin Municipal Water District (West Basin) continues to develop new and interesting locally-controlled water supplies that will ensure a reliable water supply for the future.

In 2005, West Basin developed its first Conservation Master Plan. Since then, West Basin has developed new programs, acquired outside funding sources and successfully implemented the programs outlined in the five-year Plan.

The first Plan was so effective that West Basin took it one step further and designed a unique and collaborative program to collectively work with all eight of its local water retail agencies to develop an integrated Water Use Efficiency planning approach for the next 5 years.

West Basin, in collaboration with its eight water retail agencies, designed a program that would create comprehensive Water Efficiency Plans for each of the retail agencies as well as update West Basin's Plan. West Basin's water retail agencies include three private water companies (California Water Service Company, Golden State Water Company, and California American Water Company) four cities (El Segundo, Inglewood, Lomita, and Manhattan Beach) and the Los Angeles County Department of Public Works (Waterworks District #29).

As part of West Basin's new Water Reliability 2020 Program, West Basin's goal is to double its water conservation and efficiency efforts by the year 2020.

To fund this new planning approach, West Basin applied to the United States Department of the Interior – Bureau of Reclamation (Bureau), and in 2008 was awarded a grant for this unique and comprehensive planning effort.

With the Bureau's partnership, West Basin hired an experienced consultant to work with each of West Basin's retail agencies and, with a 1:1 matching investment from each agency, assisted them in developing their own individual Water Use Efficiency Plans.

West Basin also used the results from its first Conservation Master Plan to update and create this new 2011-2015 Water Use Efficiency Plan. As part of the update to West Basin's Plan, a new integrated Water & Energy Implementation Plan was also developed (Chapter 6). This Plan builds on the relationship that West Basin has developed with the South Bay Environmental Services Center and the energy utilities. This integrated approach will allow West Basin and the energy utilities to leverage their resources and offer both water and energy efficiency programs to residents, businesses and the public sector.

The 2015 Plan takes into account the new legislation, initiatives, partnerships and funding opportunities that have come to fruition over the last five years that will ensure that West Basin is doing all it can to help residents, businesses and the public sector do all they can to be water efficient.

The Water Efficiency Master Plan is described in seven chapters providing detailed information on the planning process, data procurement and analysis, available water conservation opportunities, defined potential program concepts and the stakeholder process. A recommended program mix, funding opportunities, and suggested updates to the Master Plan are also included.

Introduction of Chapters

Chapter 1 provides a summary of the current state of conservation and explains the Master Planning process. The specific tasks presented are as follows:

- Assess Regulatory Compliance and Review Regional Water Reduction Goals
- Strategy for WE Master Plan
- Program Analysis
- Selected Conservation Programs
- Consistency with the Water-Energy Plan
- Five Year Action Plan
- Perform Economic Analysis

Chapter 2 provides the regulatory compliance analysis. The strategies and programs included in the Plan are designed to meet the requirements of the following:

- Senate Bill x7-7 (SBx7-7) requirement for 20% per capita water use reduction by 2020;
- California Urban Water Conservation Council's Best Management Practices; and
- Assembly Bill 1420 which amends the Urban Water Management Planning Act. The amendment requires that water management grants or loans made to urban water suppliers and awarded or administered by DWR, the State Water Resources Control Board, or California Bay-Delta Authority or its successor agency be conditioned on implementation of the water Demand Management Measures (DMMs).
- Additional legislation and compliance measures are also covered in this chapter.

On February 28, 2008 Governor Schwarzenegger presented a plan to achieve a 20 percent reduction in per capita water use statewide by 2020 (commonly known as 20x2020), with an incremental milestone of 10 percent reduction by year 2015. This initiative was incorporated into law as SBx7-7. Chapter 2 sets forth the analysis of the SBx7-7 or 20% by 2020 (20x2020) requirements for West Basin. This data intensive background work required collecting data from multiple agencies, including West Basin, Metropolitan Water District of Southern California (Metropolitan) and other sources. This chapter details information on data gathering methods, data content, data validation, and a target calculator model that was used to assess potential compliance with 20x2020 and regional water reduction goals.

Chapter 3 presents a strategy that was developed for West Basin to reach water saving goals that are logical and straightforward. It includes leveraging regional funding from the Southern California's water importer, Metropolitan, building on regional WE programs based on cost-effectiveness and advancing ongoing West Basin programs where most effective.

Chapter 4 describes the analysis of existing and potential conservation programs. It first summarizes the conservation efforts achieved to date. The chapter summarizes aggregate data sources of conservation activity such as those from Metropolitan. Additional conservation at the retail level is also summarized. The second part of this chapter provides a list of potential conservation measures considered to augment existing conservation activities. For each measure, the WE Master Plan provides a screening level assessment of its appropriateness.

Chapter 5 provides specific program portfolios packaged strategically to achieve future conservation goals. Each program is a conservation measure as described in Chapter 4 paired with a specific delivery mechanism (e.g., toilet rebate, direct installation, etc.). A portfolio contains a set of programs that work in concert to achieve specific conservation goals or to meet a specific budget. (Appendix A documents the accompanying economic analysis to assess the costs and benefits of each program and portfolio.) This chapter also explains how input from West Basin helped direct the program and portfolio design. It also describes in detail the selected water conservation programs developed in collaboration with West Basin. Each program is described in detail in this chapter.

Chapter 6 discusses how the regional partnership with energy utilities—the Water Energy Plan—can be used to broaden the scale of WE implementation.

Chapter 7 provides a Five Year Action Plan that details the timing and resource requirements of the Recommended Program Portfolio. The plan will include both the part of the regional West Basin WE Master Plan that relates to its member agencies, as well as any programs specific to West Basin.

Appendix A summarizes the results of the cost effectiveness analysis of a set of existing and potential water conservation programs.

Although specific programs have been identified, West Basin's Plan is meant to be dynamic and flexible. The flexibility will allow West Basin to take advantage of new opportunities that may arise over the next five years. This Plan is considered to be a workable living document that will be used to guide West Basin's staff and financial resources to meet its short- and long-term water efficiency goals.

Chapter 1: Current Situation and the Planning Process

Introduction

Conservation is a critical resource component of regional Integrated Resource Planning undertaken by both West Basin and Metropolitan. The West Basin Water Efficiency (WE) Plan depicts a portfolio of conservation programs that deliver a high volume of water savings at a cost-effective price to West Basin. This WE Master Plan also contains an implementation plan to address how the conservation programs can be best implemented.

By implementing a portfolio of conservation programs, West Basin will benefit in the following ways:

- Water Reliability 2020 Program (WR2020) - Help meet West Basin's Water Reliability 2020 Goals of decreasing imported water by increasing local-control of water supplies by increasing the use of water efficiency, recycled water, and adding ocean-water desalination.
- Help meet State Compliance Requirements and Water Reduction Goals - State law sets forth per capita water demand reductions that are quantified for 2015 and 2020. Regional water reduction goals can also be met through water efficiency programs.
- Environmental Stewardship – As one of West Basin's five Core Commitments: West Basin is committed to sustainable and environmentally-friendly business practices.
- Uncertainties with Imported Supplies - California's water resources are becoming increasingly stretched due to population, housing growth, and decreased water supply from Northern California and Colorado River water projects. Agencies need to adapt by stretching water supplies and increasing efficiencies.
- Planning for Drought Conditions - It is inevitable that Southern California, as well as the state, will experience another drought. The big question is when and how severe the next one will be. One way to lessen the severity of a drought's effect on West Basin is to prepare in advance by creating communities that operate at a high level of efficiency.
- Cost avoidance for purchased water - Although West Basin has projected adequate water supplies for the near future, the cost of water has risen dramatically in recent years and is expected to continue. The best way to avoid purchasing expensive imported water is to use less through efficiency. Programs offered throughout the service area are an effective mechanism.

With a commitment to achieve a conservation water demand reduction of 20% by 2020, West Basin is committed to responsible environmental leadership. The WE Master Plan is the blueprint for implementation of this goal.

One of West Basin's primary goals is to decrease its dependence on imported water and to increase its local control of water supplies by developing a strategic and diversified portfolio of programs. West Basin's mission is to meet this goal by aggressively increasing its water recycling program, increasing water use efficiency and research programs, and adding ocean-water desalination.

Water Conservation or Demand Management is an important part of West Basin's water supply mix, making up about 6% in 2005, with the goal of reaching 12% by 2020.

Current Situation

In 2005, West Basin developed its first comprehensive Conservation Master Plan (CMP). The CMP identified water conservation opportunities within the various sectors and a 5-Year Action Plan was developed to meet the goals of the CMP.

Since 2005, West Basin has been successfully implementing the CMP. The CMP targets the Commercial, Industrial and Institutional sector (also called CII), residential and landscape sectors as priority programs. The CMP also identified the resources needed to implement the programs. For example, in order to implement new programs focused on CII, the CMP identified that a full-time equivalent (FTE) staff position would be needed to develop and implement the programs. In 2007, West Basin was successful in hiring a qualified Water Use Efficiency Specialist to implement new programs for the CII sector.

The CMP also identified that grants and partnerships that would be needed to implement the programs. Over the last five years, West Basin has been successful in acquiring millions of dollars of local, state and federal funds to develop and implement the new programs.

In 2008, West Basin implemented its Water Reliability 2020 program to advance a comprehensive approach to reliability on a local level - recycled water, ocean-water desalination and conservation or water efficiency. As mentioned above, the goal of this program is to decrease dependence on imported water supplies and to increase local water reliability by doubling water recycling, doubling water conservation and developing ocean-water desalination as a potable source of supply.

The planning process used to develop the WE Master Plan was conducted in a logical and transparent manner. Tasks were established in detail prior to the start of the process with clearly defined deliverables for each task and its milestone. The tasks and deliverables are listed in Table 1.1.

The Water Efficiency (WE) Planning Process

Table 1.1 Water Efficiency Master Plan Tasks and Deliverables

Task #	*Description*	*Deliverable*
#1	Identify Compliance Requirements	• BMP compliance status • AB1420 compliance status
#2	Identify Water Savings Targets / Goals	• 20x2020 compliance target and status • Regional water reduction goals
#3	Analyze End Use Characteristics	• Database of retail agency customers • Customer accounts by sector • Summary of demand by sector • Total number of customers by type
#4	Discuss Program Ideas	• Assessment of past programs • Program concepts list with devices, program formats and non-device opportunities
#5	Develop Flexible WE Program Portfolios	• Program cut sheets for recommended new programs and high performing existing programs and strategies
#6	Identify Partnerships	• Regional programs • Water/Energy Plan
#7	Quantify Active and Passive Savings	• Historical water savings from programs • Estimated saturation of devices • Program evaluation spreadsheet with tracking and evaluation functionality • Economic analysis software module
#8	Identify budgets and resources for selected programs	• Identify budgetary requirements, annual and lifetime water savings, potential third party funding • Selection of final programs
#9	Finalize *West Basin WE Master Plan*	• Final *West Basin WE Master Plan*

Task 1 required that a Best Management Practice (BMP) compliance assessment be performed. BMP revisions were completed in December 2008 by the California Urban Water Conservation Council (CUWCC) with anticipation of the passage of California Assembly Bill (AB) 1420. AB 1420 requires the California Department of Water Resources (DWR) and other State funding agencies to condition loans and grants for urban water supplier water management programs on implementation of Demand Management Measures as documented in the Urban Water Management Planning Act (also known as CUWCC BMPs). (West Basin can choose to report on a Gallons Per Capita Method to be consistent with the recent passage of SBx7-7.) The WE Master Plan is consistent with the Gallons Per Capita method compliance methodology.

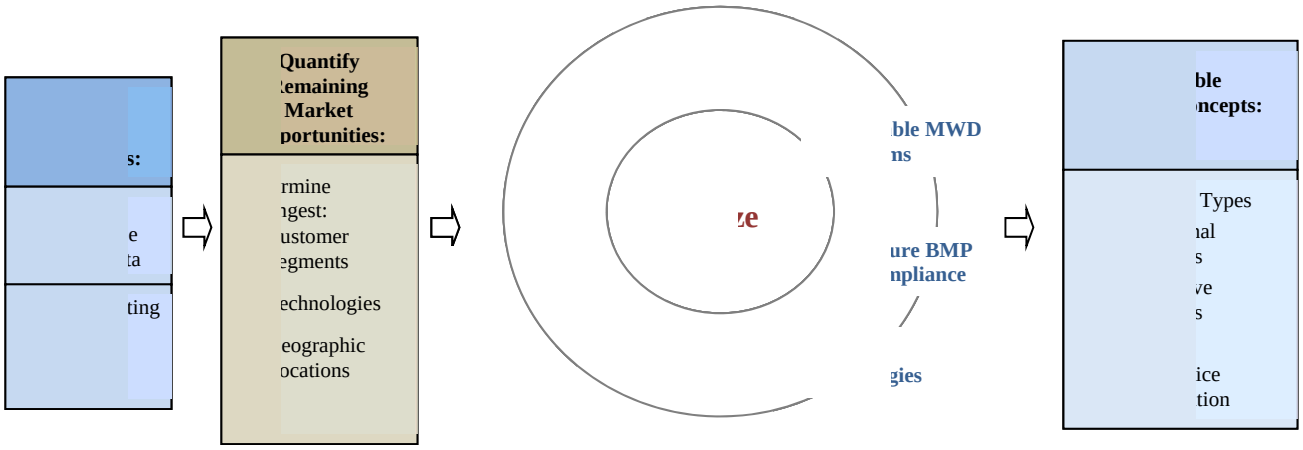
Task 2 sets forth the analysis of the SBx7-7 20x2020 requirements for West Basin. The data intensive background work required collecting data from the retailers, West Basin, Metropolitan, and other sources. This task documents key data used in the analysis, including service area population, connections, and water demand. This task details information on

data gathering methods, data content, data validation, and the target calculator model that was used to quantify the SBx7-7 2015 and 2020 targets and regional water reduction goals.

Task 3 involves gathering and organizing water use data by customer class and subclass. This data was used as inputs to calculate the SBx7-7 20x2020 targets (Chapter 2) and to populate the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (Chapter 4 and Appendix A).

Task 4 started the brainstorming of potential conservation programs through a thorough analysis of past programs. Historical water use efficiency programs were evaluated for measured saturation and remaining opportunities. For ***Task 4***, the AWE Conservation Tracking Tool was used to model past and prospective water savings and to conduct an economic analysis (Appendix A). With known opportunities and markets for specific technologies, the goal of ***Task 4*** was to develop a program concept list. The list was a "first pass" at program concepts. These concepts are similar to puzzle pieces in that they are not fully designed programs but, instead, components of a successful program. A concept might be a technology that offers high water savings or a marketing strategy that is known to deliver a high customer response. The developed program concept list included potential devices, program formats and non-device opportunities. An overview of Task 1-4 activities is shown in Figure 1.1 below:

Figure 1.1 Actions Taken to Complete Tasks 1 - 4



In ***Task 5***, flexible program portfolios were created. The program concept list (completed during Task 4) was reworked and refined into actual program formats. Program "cut sheets" were created for each recommended program with detail regarding budgets, funding, potential market, water savings opportunities, cost/benefit, and marketing approaches. Fourteen program cut sheets were created for programs that would deliver quantifiable water savings.

Task 6 identified potential partnerships for co-funding of WE programs. This work included work with regional energy utilities under the auspice of the *Water & Energy Implementation Plan* (see Chapter 6).

Task 7 quantified the passive AWE's and active water savings. The fourteen programs were evaluated using the Tracking Tool. Using the Tracking Tool, West Basin is able to better understand the economic and water savings performance for each program potential.

Final selection of programs was completed under ***Task 8.*** Of the fourteen programs, several were eliminated for various reasons including minimal opportunity for savings, low cost-benefit or high budget requirements. Ten programs were selected for implementation in the final WE Master Plan. In addition, West Basin decided to continue their successful education and outreach programs. Budgetary requirements were identified and compiled in the Tracking Tool.

The final task, ***Task 9,*** was the creation of the final regional *Water Efficiency Master Plan*.

A schematic of the process of accomplishing Tasks 5-9 is shown in Figure 1.2 below.

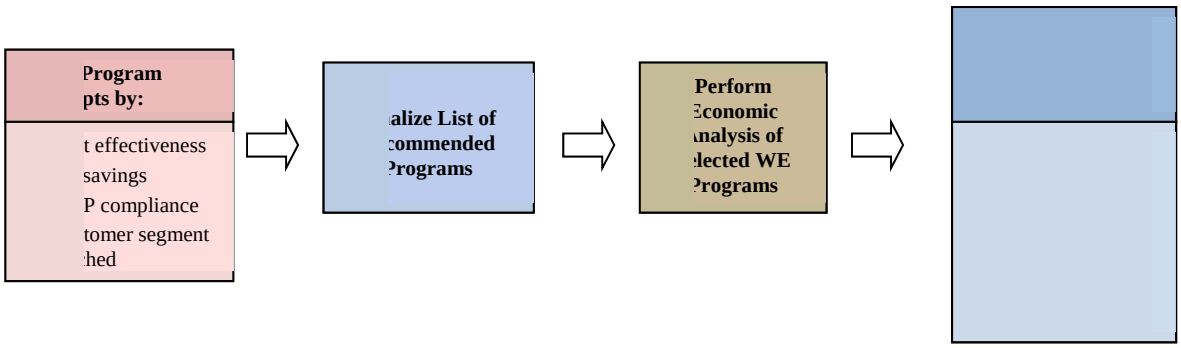


Figure 1.2 Actions Taken to Complete Task 5 - 9

Chapter 2:

Overview

The strategies and programs included in the WE Master Plan are designed to meet the following compliance requirements:

- SBx7-7 requirement for 20% per capita water use reduction by 2020
- California Urban Water Conservation Council's Best Management Practices (BMP)
- Assembly Bill 1420 Statute which amended the Urban Water Management Planning Act. The amendment requires that water management grants or loans made to urban water suppliers and awarded or administered by DWR, the State Water Resources Control Board, or California Bay-Delta Authority or its successor agency be conditioned on implementation of the water Demand Management Measures (DMMs).
- AB1881 Landscape Ordinance which mandated increased water efficiency for both new and existing landscape development statewide.

West Basin is a signatory to the Memorandum of Understanding (MOU) regarding Urban Water Conservation in California. As a signatory to the MOU, West Basin is required to provide BMP "Activity Reports" biennially. These reports provide specific details of the agency's efforts to implement each particular BMP. The most recent activity reports filed with the CUWCC were for the 2007-2008 BMP reporting cycle. The BMPs are functionally equivalent to the DMMs written in Water Code Section 10631 of the Urban Water Management Planning Act (Act). The Act requires an agency to describe each of the DMMs that have been implemented unless the agency is a signatory to the MOU. The Act allows an agency to provide the BMP Activity Report in-lieu of describing each of the DMMs.

Furthermore, AB 1420 (Laird/Feuer), effective January 1, 2009, makes award of all state water management grants and loans contingent on full compliance with the implementation of water demand management practices described in the Act. DMMs are water conservation measures, programs and incentives that prevent the waste of water and promote the reasonable, beneficial and efficient use and reuse of available supplies.

Lastly, effective on January 1, 2010, SBx7-7 requires a 20% reduction in statewide urban per capita water use by the year 2020 and requires urban retail water suppliers to establish a baseline and set targets to meet those goals by 2015 and 2020.

Regulatory Compliance

West Basin devised a strategy to meet all compliance requirements in the most cost-effective manner feasible. Below is a chart showing the compliance requirements and associated strategies for each:

Table 2.1 Compliance Requirements

Regulatory Agency or State Organization	*Requirements*	*Approach*
AB 1881	Model Landscape Ordinance	Requirements for improvement of outdoor water efficiency, including water budgets.
20x2020	Reduce per capita water use by 10% by 2015 and Reduce per capita water use by 20% by 2020	By implementing active water efficiency programs, policy initiatives, and increasing recycled water supplies, West Basin is projected to be on track to meet per capita water reduction goals for both target years.
CUWCC	Reduce per capita water use by 18% by 2018*	West Basin can utilize CUWCC's new GPCD option, which offers a per capita methodology to track compliance. This will align with the requirements of 20x2020 as well.
AB 1420	Fulfill BMP commitments	Lines up with actions taken to meet CUWCC BMP compliance.
AB 715	High-Efficiency Toilets and Urinals	Requires that only HETs and urinals can be sold and installed as of January 1, 2014.
AB 1061	Common Interest Development	Requires common interest developments to allow property owners to comply with local water-efficient landscape ordinances.
SB 407	Inefficient Plumbing Fixtures	Requires replacement of inefficient plumbing fixtures.
CalGreen	Building Codes	Adoption of CalGreen (2010), the state's mandated green building code (California Code of Regulations Title 24, Park 11).
Plumbing Codes	High Efficiency Toilets	Plumbing code updates requiring new toilet installed after July 2011 to meet US EPA WaterSense performance standards (California Code of Regulations Title 24, Part 5).
Water-Energy Pilots	Water-Energy Pilots	Authorization for water-energy pilot projects and evaluations of embedded energy savings (California Public Utilities Commission Decision 12-07-050, 2007).

**Changes are currently underway to align the CUWCC requirements with the 20x2020 goals.*

AB 1881 Landscape Ordinance

In 1990, the Department of Water Resources (DWR) along with a host of other water industry stakeholders developed the original Model Landscape Ordinance or AB 325. The legislation was developed to address the water waste in landscape areas. The ordinance required that renovated and new landscape developments would implement new stricter water efficiency measures. It stipulated that cities and large landscape areas would use a host of tools to improve the irrigation system efficiency. Some of the tools included the use of a water budget to properly irrigate the landscape.

In 2008, the State, along with the water industry and environmental groups, felt that the original legislation needed to be updated and developed new legislation called AB 1881 to update the "Model Landscape Ordinance." During the next two years, DWR worked closely with the various stakeholders that could help improve the ordinance and those who would be impacted by the ordinance. Since 1990, there have been many new technological advances made in the irrigation industry. For example, during the last few years, sprinkler controllers have been improved and now can use current weather information to develop proper or "realistic" water schedules. Also, low watering precipitation sprinkler nozzles were developed to use less water and reduce water runoff. Improvements in the use of drip irrigation and the continued acceptance of using more non-turf materials, such as native plants and permeable materials has become more popular and widely accepted.

Therefore, the new "Model Landscape Ordinance" that was adopted by the state on January 1, 2010, provides cities and other large landscape areas with the tools necessary to abide by the water efficiency requirements of the law.

West Basin Municipal Water District was involved in the stakeholder process and provided the State with input on the new legislation.

SBx7-7 2015 and 2020

Although the current goals for each of the regulatory agencies and state organizations vary, all are moving to a gallons-per-capita per day (GPCD) savings goal that is in line with the 20x2020 per capita water use reduction goals.

The objective of this analysis is to calculate the base daily per capita water use, the interim water use, and the 2020 per capita water use targets for each of the customer agency service areas using the methods described in SBx7-7. This report documents the development of baselines and targets for each West Basin retailer, other pumpers in West Basin's service area, and the City of Torrance.

Section 10608.20(b) of SBx7-7 lists four different ways in which targets can be determined, three of which are specified in the legislation.

The three methods defined in the bill have the potential to result in very different water use targets, depending on a water supplier's geographic location and historical usage. The legislation allows water suppliers to select the method they prefer. There are many issues that retailers may wish to consider in making their choice, including:

- the relative magnitudes of the targets based on the three methods

- the methods' degree of consistency with GPCD
- compliance options in the MOU

The accompanying spreadsheet model allows retailers to easily evaluate the different baselines and GPCD targets. This model also automates the calculation of base daily per capita water use, interim water use and 2020 targets. The model shows the four baseline options for each retailer and it selects the one that results in the least restrictive target. Additional detail on the most current SB7x-7 developments is contained in the presentation prepared by project team member David Mitchell for the first project meeting with participating retailers.

Data needed to Determine Requirements

Data on population from various sources was utilized for each retailer according to how the data was developed and what was available. Generally speaking, Geographic Information Systems (GIS) methods have the potential to accurately identify the service areas, especially when the service area crosses a city boundary or Census tract/block. A method commonly used in Urban Water Management Plans (UWMPs) is summing population for the Census tracts/blocks identified within the service area. From a method point of view, the demographic analysis conducted for the Plan is the best available because it utilized GIS methods with Traffic Analysis Zone (TAZ) and TAZ cells are smaller than Census tracts. Data sources utilized included the following:

- Demographic GIS analysis performed by the Center for Demographic Research (CDR) to support the 2006 Conservation Master Plan using data at the TAZ level of analysis. (Years 2005 and later in 5 year increments).
- Historical GIS data provided by West Basin for the years 1990 and 2000.
- When service area boundaries are coincident with an incorporated City, the California Department of Finance has an extensive historical data source.
- Data in the 2005 (most recent) UWMP was utilized, and the methods and sources varied among retailers with frequent reliance on Census data and the California Department of Finance.

For the SB7-7x analysis and for other planning needs in this Plan update process, we collected at least fifteen years of data (1995-2009).

The Target Calculator defines gross water use as follows: Gross water use equals the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding:

1. Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier
2. Net volume of water that the urban retail water supplier places in long-term storage
3. Volume of water the urban retail water supplier conveys for use by another urban water supplier
4. Volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24

For the purpose of this analysis, we collected and entered data on the following:

- Volume of Water Entering Distribution System in Each Year
- Volume of Recycled Water Delivered in Each Year

The figures for volume of water entering the distribution system were pulled from a West Basin spreadsheet that tracks sales to the retailers of ground water, imported water, and recycled water sources. Data were summed for each retailer for calendar years (CY) 1995 to 2009 and for fiscal years (FY) 1994-95 to 2008-09. The FY summations were used to validate the water sales figures in a separate spreadsheet that contains a 10-year history of water sales.

West Basin Population Sources

The West Basin GIS-derived population for 1990 and 2000 is higher than that of the 2005 population. Unless the service area has experienced a population loss during this period, one possible explanation is that the earlier GIS results were based on Census tracts or something other than TAZ.

- 2005 population from 2006 CMP developed by CDR.
- 2010 population from 2006 CMP developed by CDR.
- 1990-2000 population estimated by taking the population per connection in 2005 and applying the actual number of connections in 1990, 1995 and 2000.

Population and Service Connections

Tables 2.2 and 2.3 below were derived from the original CMP and the current population projections from the CDR.

Table 2.2 Historical Population Estimates for the Service Area

West Basin Historical	
Year	Population
1995	792,126
1996	795,255
1997	798,444
1998	801,694
1999	805,005
2000	808,378
2001	811,814
2002	815,313
2003	818,877
2004	822,505
2005	826,199
2006	829,959
2007	833,787
2008	837,683

Table 2.3 Future Population Estimates for the Service Area

West Basin Projected	
Year	Population
2010	880,816
2015	910,623
2020	940,049
2025	968,077
2030	994,957

Table 2.4 reflects the demographic data broken down by agency.

Table 2.4 Demographic data by Agency

West Basin Demographic Data by Retail Agency: Population					
Retail Agency	**2010**	**2015**	**2020**	**2025**	**2030**
California American Water Co.	19,160	20,170	21,171	22,039	22,868
California Water Service Co. - Dominguez (West)	147,215	151,372	155,476	159,395	163,165
California Water Service Co. - Hawthorne	53,598	56,587	59,533	62,332	65,014
California Water Service Co. - Hermosa/Redondo	94,521	97,768	100,962	104,029	106,970
California Water Service Co. - Palos Verdes	71,549	72,768	73,839	74,874	76,005
City of El Segundo	16,753	17,446	18,133	18,827	19,496
City of Inglewood	96,699	98,892	101,053	103,121	105,105
City of Lomita	20,018	20,114	20,205	20,297	20,382
City of Manhattan Beach	36,487	36,996	37,500	37,978	38,437
Golden State Water Co. - West Basin	295,078	306,240	317,254	327,806	337,932
LA County Waterworks District 29	29,738	32,270	34,923	37,379	39,583
	880,816	910,623	940,049	968,077	994,957

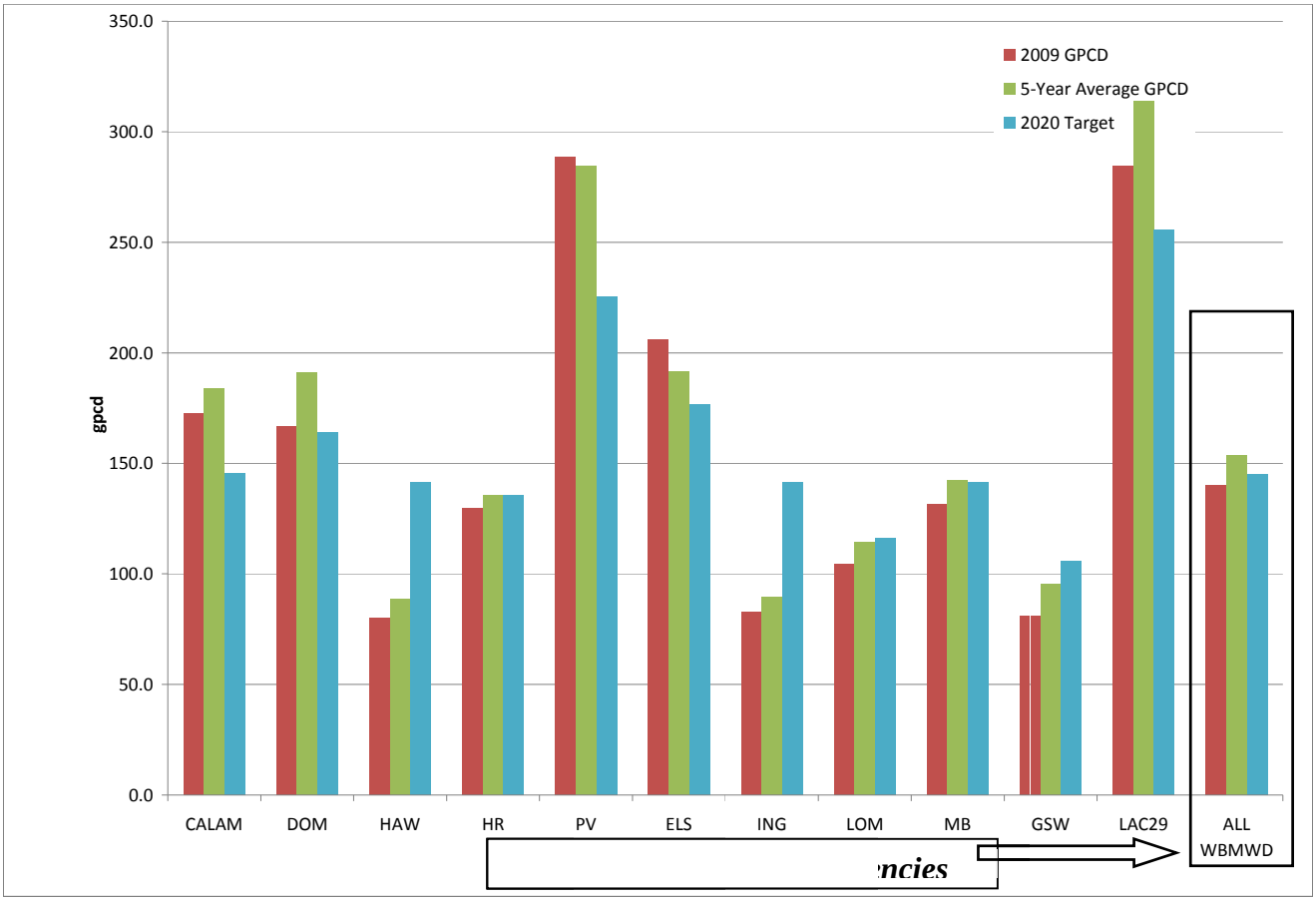


Figure 2.1 Recent Per Capita Demand (2009 and 5-Year Average) Compared to SBx7-7 2020 Target

Service Area Reduction Goals

One of the main overarching goals of West Basin is to decrease its dependence on imported water and to increase its local water supply availability by developing a strategic and diversified portfolio of programs. West Basin has established a pragmatic approach to increasing its water recycling programs, increasing water use efficiency and researching the feasibility of ocean water desalination.

West Basin's Water Reliability 2020 Program targets the reduction of imported water use by up to 50%. This goal depends on West Basin doubling its water recycling, doubling its water conservation savings and using ocean water desalination. As part of its analysis, West Basin has developed a goal of doubling its water conservation savings from 10,000 acre feet to over 20,000 acre feet of active and passive savings by the year 2020.

West Basin will achieve this goal by using several strategies including continuing to support and collaborate with the regional water agency, Metropolitan, on regional education, rebate and incentive programs, and continuing to foster local partnerships with its retail water agencies, cities, energy utilities, environmental groups and others. There are currently several

water retailers that partner with West Basin and contribute cost-sharing funding to local programs. Also, West Basin continues to build stronger alliances with the local energy utilities as a way to collaborate and offer residents and businesses with joint energy and water use efficiency programs.

West Basin will continue to seek local, state and federal grants. Over the past five years, West Basin has been very successful in acquiring grants for new cost-effective programs.
By continuing these partnerships and programs, West Basin is on target to double its water conservation savings.

Chapter 3:

Through implementation of the Plan, West Basin will bring about a reduced dependence on the State's water system while meeting water reduction goals.

The program strategy developed for West Basin's to meet its goals is as follows:

1. **Secure majority of regional water savings from water agencies/investor owned utilities (IOUs) with established program funding** with the understanding that economic circumstances have required many water agencies to reduce conservation budgets, savings opportunities lie with the water agencies that have program funding mechanisms.

2. **All water agencies to leverage Regional Programs** both the investor-owned utilities and municipalities will take advantage of the many available regional programs. Municipal water agencies, with no agency-specific program funding, will rely heavily on the regional programs for customer participation. Both Metropolitan and West Basin provide regional conservation or water efficiency programs.

   The programs are as follows:

   Metropolitan Water District (current)
   - SoCalWater$mart Program for single family residential water efficient measures
   - Save A Buck Program for commercial water efficient measures

   West Basin Municipal Water District (current)
   - HET Give Away Events (requires agency co-pay)
   - Green Living & Energy Direct Installation Program
   - Ocean Friendly Weather-Based Irrigation Controller (WBIC) Direct Installation Program
   - Ocean Friendly WBIC Incentive Program
   - Commercial Restroom Retrofit Program
   - Recirc & Save Audits and Incentives Program
   - Cash for Kitchens Program
   - Landscape Surveys & High Efficiency Nozzle Direct Install Program (Recent Grant Awarded)
   - Hotel / Motel HET Direct Install Program (Recent Grant Awarded)

   West Basin Municipal Water District (future)
   - Water Budget Pilot Program
   - Turf Removal Demonstration Project

3. **Target markets with highest water savings opportunity** comprising a large percentage of West Basin's total water demand, landscape usage and the Commercial, Industrial and Institutional (CII) sectors are the key markets for water use efficiency.

4. **Provide program innovation to transform the landscape and (CII) markets** by studying the successes and shortfalls of current and future programs (such as the high efficiency nozzle direct installs and CII process water projects). West Basin will select the most cost-effective array of programs for future offerings. In addition, West Basin will conduct a turf removal demonstration project utilizing typical customer sites with low project costs to illustrate to customers the viability of turf replacement. West Basin will also continue with smart controller installations and incentives along with high efficiency nozzle incentives. On the CII side, West Basin will continue to work with trade allies and chemical companies to educate them about the available programs and incentives available for cooling towers and process improvements. Ultimately all efforts will be directed toward achieving market transformation in these sectors.

5. **Maximize the water / energy relationship** utilizing a two-phase approach, West Basin will work with the South Bay Environmental Services Center (SBESC) to integrate water/energy saving benefits. Over the short-term, West Basin will select programs that offer the most potential for water savings. In the long-term, West Basin will work to obtain California Public Utilities Commission (CPUC) credit for embedded energy savings achieved in water use efficiency programs.

6. **Secure outside funding for programs:** Future opportunities for grants and funding will be pursued whenever possible in order to drive down the cost per acre-foot of water saved. Funding sources to be pursued include:

    - Federal grants through the United States Bureau of Reclamation;
    - Efficiency grants offered through the California Department of Water Resources;
    - Regional grants and incentives offered by Metropolitan; and
    - Continue local funding partnerships with the water retailers.

7. **Provide sustained education and outreach to customer:** West Basin and its customer agencies will communicate the continued and urgent need for water use efficiency and will direct customers to available programs. This will be accomplished through school education, regional advertising, and communication regarding local ordinances.

8. **Advocate for State and regionally appropriate rules, regulations and ordinances for the efficient use of water:** Legislation requiring enhanced water efficiency product performance, as well as implementation of local, state, and national ordinances can significantly aid water demand reduction. West Basin and its agencies will advocate for responsible passive savings initiatives.

Within the West Basin region, the three water retailers, L.A. County Water Works District #29, Golden State Water Company (Golden State) and California Water Service Company (Cal Water), which have been identified below as "Group 1," have funding to operate local programs within their territories. Cal Water has the largest budget of the three, followed by Golden State and L.A. County Water Works District #29.

Table 3.1 Group #1 Strategy Snapshot

Group #1:	***Strategy:***
• LA County Water Works Districts #29 • Golden State Water Company • California Water Service Company	1. Fund and operate local programs 2. Leverage & promote regional programs 3. Continue education and outreach

Table 3.2 is the Group 1 programs, listed by water agency:

Table 3.2 Group 1 Programs

LA County Water Works #29 Programs:	• Turf Removal Incentives • HET Rebates • Landscape Incentives • Yard Makeover Incentives
Golden State Water Company Programs:	• Turf Removal Incentives • HET Incentives • CII Surveys • Landscape Surveys • Conservation Kits
California Water Service Company Programs:	• HEW, HET and Urinal Rebates and Vouchers • HET and Urinal Direct Install • Audits and Surveys • High Efficiency Nozzle Web Voucher • Conservation Kit Distribution • WBIC Vendor Distribution and Contractor Incentive • Large Landscape Water Use Reports • Large Landscape Surveys and Irrigation System Rebates • Food Service Incentives • Cooling Tower and Industrial Process Audits and Incentives

The cities and water agency listed below have been identified as "Group 2" and will utilize public relations budgets to actively promote participation in the many regional programs available to their customers. In addition, these agencies will continue to provide education and outreach about water use efficiency. One of the benefits of West Basin's and Metropolitan's programs is that local cities can increase participation by helping to promote these available programs to their residents and water agency customers.

Table 3.3 Group #2 Strategy Snapshot

Group #2:	***Strategy:***
• City of El Segundo • City of Inglewood • City of Lomita • City of Manhattan Beach • California American Water Company	1. Leverage & promote regional programs 2. Continue education and outreach

Chapter 4:

Chapter 4 describes the development of specific program portfolios packaged strategically to achieve future conservation goals. Each program is a conservation measure (product or service) paired with a specific delivery mechanism (e.g., toilet rebate, direct installation, etc.). Each portfolio contains a set of programs that work in concert to achieve specific conservation goals or to meet a specific budget. An economic analysis assesses the costs and benefits of each program and portfolio. This chapter also explains how input from the retail agency workshops has helped direct the program and portfolio design.

Program and Portfolio Description

As a result of an exhaustive search of the literature, consultation with experts in the field, knowledge of conservation programming by other water suppliers, and the experience of the project team, a universe of more than 75 water-use efficiency concepts were defined. At this point in the process, the goal was to be as inclusive as possible. The list was therefore intentionally large to ensure that all possible program concepts were considered.

For the purpose of this plan, a conservation or water efficiency program concept is comprised of two components:

- Targeted technologies or changes in customer behavior; and
- A delivery mechanism by which customers will be encouraged or required to adopt the technology (s) or change their behavior.

Each program may apply to multiple customer classes (Single Family, Multi-Family, Commercial/ Industrial/Institutional, and Large Landscape).

Once the universe of program concepts was defined, the next step was to subject each program concept to a careful qualitative screen, the objective of which was to eliminate those program concepts that were clearly inappropriate. For this purpose, screening criteria were developed. For each program concept, answers were elicited ("yes" or "no") for each of these criteria. A "yes" answer on all of these criteria was considered to be essential for program success. Thus, a negative response to any one of the criteria for a particular program concept eliminated that concept from further consideration. Once the initial qualitative screen had completed, results were shared and feedback solicited on conservation program concepts at the bi-monthly project meetings.

The final set of programs passing the qualitative screen for West Basin is shown in Table 4.1.

Table 4.1 Program Concepts Passing Qualitative Screen

		CUSTOMER CLASS			
Technology/Intervention	**Delivery Mechanism**	**Single Family**	**Multi-Family**	**CII**	**Large Landscape**
INDOOR					
HE Toilets	Customer rebates or vouchers	x	x	x	
	Vendor, distributor & contractor incentives	x	x	x	
	Distribution (by utility, community group, vendor)	x	x	x	
	Direct install	x	x	x	
Urinals	Customer rebates or vouchers			x	
	Vendor, distributor & contractor incentives			x	
	Distribution (by utility or vendor)			x	
	Valve replacement			x	
Clothes washers: in-unit, common area, & coin-op	Customer rebates & vouchers	x	x	x	
	Vendor, distributor & contractor incentives	x	x	x	
Showerhead (2.0, 1.5 gpm)/ flapper/aerators	Kit distribution or install	x	x	x	
Shower timers, Reminder cards	Distribution	x	x	x	
Cooling Towers	Customer rebates, customized incentives			x	
Food Steamers	Customer rebates			x	
Steam Sterilizers	Customer rebates			x	
Vacuum Pumps	Customer rebates			x	
Spray valves	Customer rebates			x	
	Audits			x	
Industrial process	Audits & incentives			x	
OUTDOOR					
Large Landscape Surveys					x
Weather-Based Irrigation Controller (WBIC)	Direct Install	x	x	x	x
	Customer rebate	x	x	x	x
	Vendor, distributor & contractor incentives	x	x	x	x
	Distribution	x	x	x	x
Irrigation System (including, but not limited to, high efficiency nozzles for pop-up heads, drip, soil moisture sensors, rain shut off, pressure control)	Customer rebate	x	x	x	x
	Vendor, distributor & contractor incentives	x	x	x	x
Landscape design	Customer rebate	x	x	x	x
	Vendor, distributor & contractor incentives	x	x	x	x
Turf buy back (Cash for Grass)	Customer rebate	x	x	x	x
Large Landscape Water Use Reports					x

		CUSTOMER CLASS			
Technology/Intervention	**Delivery Mechanism**	**Single Family**	**Multi-Family**	**CII**	**Large Landscape**
Pool, hot tub covers & other upgrades	Customer rebate or voucher	x	x	x	
GENERAL					
Audits & Surveys (including high bill contacts)		x	x	x	x
Water use meter alerting device		x	x	x	
Water recycling, grey water use, rainwater harvesting	Customized incentives	x	x	x	
Education/outreach		x	x	x	x

The savings and cost parameters associated with each of these program concepts were then identified and each program concept was subjected to a preliminary quantitative analysis. These results were reviewed in the West Basin bi-monthly Master Plan meetings.

Chapter 5:

A detailed benefit-cost analysis was then performed for all programs passing the qualitative screen, the results of which are shown in Appendix A. From these programs, a portfolio of programs was selected by West Basin. The selected programs include both existing and new regional programs.

Chapter 5 provides summary information for each program including: program descriptions, measure(s) offered, target customer segments, marketing methods, delivery mechanisms, production numbers, program funding and costs, as well as summary economic evaluation results. Details of the economic evaluation are included in the AWE Tracking Tool titled "WBMWD_RegionalPrograms_AWE Conservation Tracking Tool_Base_v10b.xls."

The selected programs are listed in the table below.

Table 5.1 Regional Water Conservation Programs

Program
MWD REGIONAL PROGRAMS
Save-A-Buck CII Rebate Program
SoCalWater$mart Residential Rebate Program
WEST BASIN PROGRAMS
High Efficiency Toilet Give Away Program
Green Living for Apartments and Condos Program
Cash for Kitchens; Training and Incentive Program
Commercial Restroom Retrofit Program
Ocean Friendly Landscape Program
Recirc & Save; Education and Incentive Program
Landscape Surveys & High Efficiency Nozzle Direct Installation Program
Turf Removal Demonstration Program

Save A Buck Commercial Incentive Program

The SAVE-A-BUCK Commercial Incentive Program, administered by Metropolitan, provides rebates to commercial customers who upgrade with pre-approved water efficient technology or equipment. Program implementation is conducted through Metropolitan's regional vendor. The vendor is responsible for the marketing, administration and processing of incentives. The standard Incentive amounts are set by Metropolitan and based upon water savings. Member and retail water agencies can add to the incentives.

SAVE-A-BUCK is one of Metropolitan's foundational programs and is funded through FY 11/12. It is anticipated to be funded on an on-going basis and for the purposes of this plan has been projected to be implemented through FY 15/16.

Table 5.2 Save A Buck Overview

Target Market	Budget	Planned Program Timeframe
• Commercial • Industrial • Institutional	$0	5 years FY 11/12 – FY 15/16

Program Advantages:

- No cost to West Basin.
- High potential water savings.
- Ease of implementation.
- Addresses hard-to-reach commercial market.
- Several measures also reduce sewer flows and energy consumption.

Program Challenges:

- Future Metropolitan funding levels are uncertain.
- The rebate amount does not cover the entire cost of the device and installation, therefore the customer must be willing to cover the difference.

Program Marketing:

This program includes very limited marketing; therefore West Basin should consider supplemental outreach to local trade allies. This would include generating a list of trade allies, conducting email and phone outreach, as well as business-to-business meetings with target businesses. Examples of trade allies that could leverage the SAVE-A-BUCK incentives include: plumbing fixture suppliers, plumbing contractors, food service equipment suppliers, cooling tower treatment companies, irrigation equipment suppliers and landscape contractors.

Program Funding:

Metropolitan funds the administration, marketing and incentives for the SAVE-A-BUCK Program.

Table 5.3 SAVE-A-BUCK Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Rebate Amount	Number of Rebates per year
High Efficiency Toilets	$50	742
Ultra Low Volume Urinals	$200	Units counted under West Basin's Commercial Restroom Retrofit Program
Conductivity Controllers	$625	Annual historic production under Metropolitan's programs for each activity less than 1 per year, therefore no future projections. West Basin is targeting these devices through its CII Programs.
pH Controllers	$1,750	
Food Steamers	$485	
Air Cooled Ice Machines	$300	
Dry Vacuum Pumps	$125 per HP	
Water brooms	$110	Units counted under West Basin's Cash for Kitchens Program
Smart Controllers (WBIC)	$25 per station	75 (in year 5)
High Efficiency Nozzles	$3 per nozzle	51

Table 5.4 SAVE-A-BUCK Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
High Efficiency Toilets	13,849	0.0425	20	0.850
Ultra Low Volume Urinals	39,982	0.1227	20	2.454
Conductivity Controllers	209,848	0.6440	5	3.220
pH Controllers	633,455	1.9440	5	9.720
Food Steamers	81,463	0.2500	10	2.500

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
Air Cooled Ice Machines	50,181	0.1540	10	1.540
Dry Vacuum Pumps	29,848	0.0916	7	0.641
Water brooms	49,985	0.1534	5	0.767
Smart Controllers (WBIC)	100,884 per station	0.0129	10	0.129
High Efficiency Nozzles	1,303	0.0039	5	0.0199

Below are charts documenting the total program savings, cost per acre-foot and avoided supply. The first chart is per activity for the program and the second is for all activities combined.

Table 5.5 SAVE-A-BUCK Water Savings and Economic Evaluation Results by Activity

Program Water Savings and Economic Evaluation Results by Activity

Activity	Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
High Efficiency Toilets	131	3,154	$0 (no cost to West Basin)	$1,995,282
Ultra Low Volume Urinals	Units counted under West Basin's Commercial Restroom Retrofit Program			
Conductivity Controllers	Annual historic production less than 1 per year for each activity, therefore no future projections. Units counted under West Basin's CII Program			
pH Controllers				
Food Steamers				
Air Cooled Ice Machines				
Dry Vacuum Pumps				
Water brooms	Units counted under Cash for Kitchens Program			

Program Water Savings and Economic Evaluation Results by Activity

Activity	Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
Smart Controllers (WBIC)	42	464	$0 (no cost to West Basin)	$417,011
High Efficiency Nozzles	1	5	$0 (no cost to West Basin)	$4,490

Table 5.6 SAVE-A-BUCK Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
174	3,623	$0 (no cost to West Basin)	$2,416,783

SoCalWater$mart Residential Incentive Program

The SoCalWater$mart Program offers residential customer rebates from a menu of indoor and outdoor devices. The program is operated by Metropolitan's regional vendor. The vendor is responsible for the marketing, administration and processing of incentives. In 2010, the program delivered the highest volume of savings of all regional programs.

The standard Incentive amounts are set by Metropolitan and based upon water savings. Member and retail water agencies can add to the incentives. Agencies can also provide high efficiency toilet and turf removal incentives to their customers under the program. They are required to pay the full incentive and vendor administrative costs. Several of West Basin's agencies provide additional incentives. The details of these increased incentives are documented in retail agencies individual plans.

SoCalWater$mart is one of Metropolitan's foundational program and is funded through FY 11/12. It is anticipated to be funded on an on-going basis and for the purposes of this plan has been projected to go through FY 15/16. The program has had several programmatic changes over the last two years including:

- Toilet and synthetic turf incentives have been eliminated.
- A minimum of 25 high efficiency nozzles must be purchased per application and the pressure regulator requirement for nozzles has been removed.
- Several rebate amounts have changed. The charts below reflect the new rebate amounts.

Table 5.7 SoCalWater$mart Overview

Target Market	Budget	Planned Program Timeframe
• Residential	$0	5 Years FY 11/12 – FY 15/16

Program Advantages:

- Zero cost to West Basin.
- Ease of Implementation for West Basin.
- High efficiency clothes washer incentives offer excellent public relations.

Program Challenges:

- Uncertain funding levels from Metropolitan.
- Marketing levels fluctuate and can cause market confusion.

Program Marketing:

Marketing is conducted through Metropolitan's vendor. Marketing includes outreach to industry actors including: plumbing manufacturers, dealers and contractors, appliance manufacturers, dealers and contractors as well as irrigation equipment suppliers and landscape contractors. At times marketing activities are reduced and therefore West Basin should consider augmenting outreach to sustain program awareness and limit confusion.

Program Funding:

Metropolitan funds the administration, marketing and incentives for the SoCalWater$mart Program.

Table 5.8 SoCalWater$mart Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Rebate Amount	Number of Estimated Rebates per year
High Efficiency Clothes Washers, Water Factor (WF 4.0)	$85	600
Smart Irrigation Controllers (WBICs) , SWAT Approved	$80	100 per year in FY 14/15 and FY 15/16 FYs 11/12 – 13/14 are counted under Ocean Friendly Program
High Efficiency Nozzles for Pop Up Spray Heads	$3	455

Table 5.9 SoCalWater$mart Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
High Efficiency Clothes Washers, WF 4.0	11,250	0.03452	14	0.4833
Smart Irrigation Controllers (WBICs) , SWAT Approved	13,505	0.04144	10	0.4144
High Efficiency Nozzles for Pop Up Spray Heads	1,303	0.0039	5	0.0199

Below are charts documenting the total program savings, cost per acre-foot and avoided supply. The first chart is per activity for the program and the second is for all activities combined.

Table 5.10 SoCalWater$mart Water Savings and Economic Evaluation Results by Activity

Activity/Measure Water Savings and Economic Evaluation Results by Activity

Activity	**Average Annual Savings *(acre-feet)***	**Lifetime Savings *(acre-feet)***	**Cost per Acre-Foot**	**Avoided Supply Costs**
High Efficiency Clothes Washers, WF 4.0	81	1,450	$0 (no cost to West Basin)	$1,196,200
Smart Irrigation Controllers (WBICs), SWAT Approved	8	83	$0 (no cost to West Basin)	$74,432
High Efficiency Nozzles for Pop Up Spray Heads	5	46	$0 (no cost to West Basin)	$40,053

Table 5.11 SoCalWater$mart Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	**Lifetime Savings *(acre-feet)***	**Cost per Acre-Foot**	**Avoided Supply Costs**
94	1,579	$0 (no cost to West Basin)	$1,310,685

High Efficiency Toilet Give Away Program

Although since 1992 only ultra-low flush toilets (1.6 gallons per flush) can be sold in California, there is still an opportunity for significant water savings from toilet retrofits within the West Basin service area. The newest technology, a high efficiency toilet (HET), can use 20% less water at 1.28 gallons per flush. HETs continue to provide some of the most cost effective water savings when replacing high volumes toilets. The current program offers the highest volume of water savings of all regional programs at 6,611 acre-feet over the life of the toilets.

The HET Distribution Program offers free HETs to single-family customers through single day distribution events. To assure the replacement of high volume toilets, customers are pre-screened. Customers are required to contact the implementation vendor prior to the give-away event. Customers then come to the event and receive a free HET. Customers are responsible for installation and are required to return the old high water use fixture following the distribution event.

Table 5.12 HET Give Away Overview

Target Market	Budget	Market Potential	Planned Program Timeframe
• Residential	$833,604	46,000 High Volume Toilets	5 Years

Program Advantages:

- Good public relations.
- High cost-effectiveness ranking.
- Long term water savings due to the 20-year life of the product.

Program Challenges:

- Targeting existing high volume units.
- Potential for replacement of already efficient toilets.
- Uncertain Metropolitan funding levels.

Program Marketing:

Marketing is conducted though a number of ways including: community outreach, direct mail and door hanging.

Program Funding:

The program is currently funded by West Basin, Metropolitan and local customer agencies.

Table 5.13 HET Funding

Metropolitan Funding per Toilet	Retailer Funding Per Toilet	West Basin Funding per Toilet
$50	$86	$74

Table 5.14 HET Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Offer	Number of Estimated Devices per year
High Efficiency Toilets	Free HET	2,000

Table 5.15 HET Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
High Efficiency Toilet	10,771	0.033	20	0.661

Table 5.16 HET Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
275	6,611	$206	$4,182,755

Green Living for Apartments and Condos Program

Green Living for Apartments and Condos offers free installation of water- and energy-savings devices for apartments, condominiums, townhomes, duplexes, triplexes, and mobile homes. The program is a unique collaboration of conservation partners, including the South Bay Environmental Services Center (SBESC), Southern California Edison (SCE) and Southern California Gas Company (SoCalGas). SBESC markets the program and SCE and SoCalGas provide energy conservation measures.

Devices offered include water-efficient showerheads, kitchen faucet aerators, compact fluorescent light bulbs and high efficiency toilets. Projected water saving from this program includes only the savings from the HETs.

A major program challenge is that many multi-family sites have already been retrofitted with ULFTs and HETs. Currently the program is targeting condos and small multi-family sites such as duplexes and triplexes in order to secure the remaining 1,500 units.

The program is currently implemented through a West Basin vendor. The vendor is responsible for program marketing, purchase and installation of the devices and program tracking and reporting.

Table 5.17 Green Living Overview

Target Market	Budget	Market Potential	Planned Program Timeframe
• Residential – Multi-family	$35,805	31,395 Remaining High Volume Units	1 Year

Program Advantages:

- Targets high per fixture savings due to the number of people per household.
- High cost effectiveness ranking.
- Long term water savings during the 20 year life of HETs.
- Several measures also reduce sewer flows and energy consumption.

Program Challenges:

- High market saturation of efficient (ULFT) toilets in the apartment sector.

Program Marketing:

West Basin, its vendor and partners currently market the program through direct outreach to multi-family and condo owners and managers. West Basin's vendor utilizes an apartment directory, and information is disseminated to the public through web sites, e-mail blasts, flyers, door hangers and other local efforts.

Program Funding:

The program is currently funded through 2011.

Table 5.18 Green Living Funding

Metropolitan Funding per Toilet	West Basin Funding per Toilet
$227	$22.50

Table 5.19 Green Living Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Offer	Number of Estimated Installations per year
High Efficiency Toilets	Free Installation of HETs	1,500 in FY 11/12

Table 5.20 Green Living Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure (acre-feet)
High Efficiency Toilets	19,816	0.608	20	1.216

Table 5.21 Green Living Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
91	1,824	$34	$1,141,970

Cash for Kitchens Training and Incentive Program

The Cash for Kitchens Program provides food service establishments with free water-use assessments, free training materials, free water saving devices as well as information regarding available water use efficiency incentives. Assessments are conducted alongside SoCalGas technical representatives who provide customers with information about energy efficiency in food service operations as well as available energy efficiency incentives. In addition, the customer learns about SCE programs that may be available to them. The Program is administered in partnership with the SBESC.

SBESC markets the program, conducts the water assessment and distribution of the water savings devices. In addition, SBESC coordinates the visits with the SoCalGas and reports all recommendations to both the customer and West Basin staff.

Table 5.22 Cash for Kitchens Overview

Target Market	Budget	Market Potential	Planned Program Timeframe
• Commercial Food Service Operations – Flow Restrictors • Commercial Food Service Operations – Pre-Rinse Spray Valves • Commercial Food Service Operations – Water Brooms	$4,224 $9,434 $24,628	2,621 Restaurants	5 Years (Total $38,286)

Program Advantages:

- Low cost program to implement.
- Provides sewer flow reduction and gas savings.
- Large potential of inefficient fixtures available for conversion.
- No cost to participant for site assessment and faucet flow restrictors, pre-rinse spray valves and water brooms.

Program Challenges:

- Program funding is only confirmed through 2012. West Basin must secure additional funding for future years.
- Additional measures such as ice machines and dishwashers require significant replacement costs to the customer.

Program Marketing:

Marketing is conducted through the SBESC. Activities include direct outreach to food service operations and advertising on the SBESC and West Basin websites.

Program Funding:

The Program is funded in part by West Basin, the Metropolitan and the Water Replenishment District (WRD).

Table 5.23 Cash for Kitchens Funding

Activity	West Basin Funding	Metropolitan Funding
Flow Restrictors	$20	
Pre-rinse Spray Valves	$50	
Water Brooms	$165	$110

Table 5.24 Cash for Kitchens incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Offer	Number of Estimated Devices Distributed per year
Flow Restrictors	Free Flow Restrictors	38
Pre-rinse Spray Valves	Free Pre-rinse Spray Valves	128
Water Brooms	Free Water Brooms	102

Table 5.25 Cash for Kitchens Activity/Measure Water Savings and Annual activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
Flow Restrictors	4,015	0.0123	5	0.0616
Pre-rinse Spray Valves	49,855	0.1529	5	0.7649
Water Brooms	49,986	0.1534	5	0.7670

Table 5.26 Cash for Kitchens Activity/Measure Water Savings and Economic Evaluation Results

Activity/Measure Water Savings and Economic Evaluation Results

Activity	Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
Flow Restrictors	1	12	$354	$10,169
Pre-rinse Spray Valve	14	128	$71	$112,799
Water Brooms	11	102	$234	$89,462

Table 5.27 Cash for Kitchens Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
26	242	No calculated separately	$212,430

Commercial Restroom Retrofit Program

The Commercial Restroom Retrofit Program targets customers for the direct installation of high efficiency toilets, ultra-low volume urinals and faucet flow restrictors. The first Phase of the program ends in March 2012; however, plans are underway to continue the toilet replacement portion of the program. Urinals and flow restrictors will be eliminated.

The program is implemented through West Basin's contract vendor. The vendor is responsible for marketing the program, purchasing and installing the fixtures as well as program tracking and reporting.

Table 5.28 Commercial Restroom Retrofit Overview

Target Market	Budget	Market Potential	Planned Program Timeframe
• Commercial	$32,324	79,000 Toilets 39,000 Urinals	5 Years

Program Advantages:

- Replacing frequently used, high volume fixtures offers significant water savings.
- Targets commercial market.
- Large number of high volume units still available in the commercial market.
- Toilets and urinal offer long term savings due to the 20-year plus life of the products.
- Provide sewer flow reduction.

Program Challenges:

- Program funding is only confirmed through 2012. West Basin must secure additional funding for future years.

Program Marketing:

Program marketing is conducted by the program vendors, West Basin and the SBESC through direct outreach to commercial property owners and managers. In addition, West Basin works with their retail agencies to identify targets and conduct outreach. Hotels are a prime target of the program.

Program Funding:

The Program is funded in part by West Basin, Metropolitan and the California Department of Water Resources (DWR), United States Bureau of Reclamation (USBR), and individual retailers.

Table 5.29 Commercial Restroom Retrofit Funding

Activity	West Basin Funding	Metropolitan Funding	DWR Funding	USBR Funding
High Efficiency Toilets: Phase II DWR & MWD Funded	$25	$50	$90	$10
High Efficiency Toilets: Phase II USBR Funded	$25	-	-	$325
Ultra Low Volume Urinals	$9	$200	$90	-
Faucet Flow Restrictors	$14	-	$30	-

Table 5.30 Commercial Restroom Retrofit Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Offer	Number of Estimated Installations per year
High Efficiency Toilets	Free Installation of HETs	Phase 1: 0 remaining Phase 2: 1,150
Ultra Low Volume Urinals	Customer Co-pay for the Installation.	Phase 1: 40
Faucet Flow Restrictors	Free Installation of Flow Restrictors	Phase 1: 97

Table 5.31 Commercial Restroom Retrofit Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure (acre-feet)
High Efficiency Toilets	13,849	0.0425	20	0.8500
Ultra Low Volume Urinals	39,982	0.1227	20	2.4540
Faucet Flow Restrictors	4,015	0.0123	2	0.2464

Table 5.32 Commercial Restroom Retrofit Activity/Measure Water Savings and Economic Evaluation Results

Activity/Measure Water Savings and Economic Evaluation Results

Activity	Average Annual Savings	Lifetime Savings	Cost per Acre-Foot	Avoided Supply Costs
High Efficiency Toilets	49	978	$54	$611,863
Ultra Low Volume Urinals	5	98	$5	$88,696
Faucet Flow Restrictors	1	2	$594	$2,047

Table 5.33 Commercial Restroom Retrofit Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
55	1,078	Not calculated	$702,606

Ocean Friendly Landscape Program

The Ocean Friendly Landscape Program was one of thirteen projects that received funding from the State of California through the Integrated Regional Water Management Plan (IRWMP). The program, in partnership with the Surfrider Foundation, provides free native, ocean-friendly landscaping workshops, educational demonstration gardens, and incentives for smart irrigation controllers.

A challenge for the program is motivating customers to install smart controllers. Customers still need significant education regarding the value of smart controllers as well as how to operate them over time to achieve water savings while continuing good plant health.

The project has several components including:

Activity	***Program Goal***
• Centralized smart controllers for large landscape over 1 acre	1,117 controllers
• Smart controller incentives for single family homes	1,350 controllers
• Ocean-friendly landscape workshops	40 classes
• Ocean-friendly landscape demonstration gardens	10-15
• Runoff reduction studies	2 site studies

The program is currently implemented through various organizations. HydroEarth provides for the centralized controllers and their installation for large landscape sites. Residential smart controller incentives are offered through Metropolitan's SoCalWater$mart Incentive Program. The landscape design firm G3LA developed the curriculum and implemented the Ocean-friendly landscape workshops. G3LA was also hired to design the demonstration gardens. Landscape contractors will be hired through a competitive bid process to build these gardens. The runoff reduction study of two sites in Malibu is being conducted by HydroEarth measuring dry season urban runoff (volume and loading) before and after the installation of smart controllers.

Table 5.34 Ocean Friendly Landscape Overview

Target Market	*Budget*	*Market Potential*	*Planned Program Timeframe*
• Residential • Large Landscape Sites	$0 for WBICs Metropolitan and USBR funds workshops and demonstration gardens	8,152 large landscape controllers 76,000 single family controllers	Years

Program Advantages:

- Program aides in market transformation of the landscape market.
- Opportunity for partnership with watershed organizations and environmental groups.

Program Challenges:

- Finding good candidates for smart controllers.
- Motivating customers to purchase and install smart controllers.

Program Marketing:

Marketing of the WBICs for large landscape sites is conducted by the program vendor. Marketing of the WBICs for residential sites is conducted through Metropolitan's SoCalWater$mart regional vendor, RSG.

Program Funding:

The Program is funded by West Basin, Metropolitan, DWR, the USBR, and retail customer agencies.

Table 5.35 Ocean Friendly Landscape Funding

Activity	West Basin Funding	Metropolitan Funding	DWR Funding	USBR Funding
Centralized smart controllers for large landscape over 1 acre		$625/acre ($25/valve)	DWR	$1,235
Smart controller incentives for single family homes		$80	$155	
Ocean-friendly landscape workshops	West Basin			
Ocean-friendly landscape demonstration gardens			DWR	
Runoff reduction studies			DWR	

Table 5.36 Ocean Friendly Landscape Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Rebate Amount / Offer	Number of Estimated Rebates per year
Smart Controller (WBIC) Direct Install for Large Landscape	Free installation of Centralized Smart Controllers	133
Smart Controller (WBIC) Incentives for Single Family	$235 (=155DWR+80MWD)	217

Table 5.37 Ocean Friendly Landscape Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
Smart Controller (WBIC) Direct Install for Large Landscape	191,438	0.5875	10	5.875
Smart Controller (WBIC) Incentives for Single Family	13,505	0.0414	10	0.4144

Table 5.38 Ocean Friendly Landscape Activity/Measure Water Savings and Economic Evaluation Results

Activity/Measure Water Savings and Economic Evaluation Results

Activity	Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
Smart Controller (WBIC) Direct Install for Large Landscape	196	2,350	$0 (for devices)	$2,085,477
Smart	22	269	$0 (for	$238,834

Activity/Measure Water Savings and Economic Evaluation Results

Activity	Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
Controller (WBIC) Incentives for Single Family			devices)	

Table 5.39 Ocean Friendly Landscape Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
218	2,619	$0 (for devices)	$2,324,310

Recirc & Save Education and Incentive Program

The Recirc & Save Program focuses on two opportunities for major water savings:

1. Industrial Process
2. Cooling Towers

Surveys and Incentives are offered to qualifying commercial and industrial customers.

Cooling Towers

There are three categories of cooling tower upgrades:

1. Maximize performance through low cost measures- A standard conductivity controller can be used to monitor the water chemistry and reduce the amount of blow down and make-up water. Installing a new conductivity controller and increasing the cycles of concentration to 3 to 3.5 cycles can save a significant amount of water. A standard controller costs ranging $400 to $800.

2. Upgrade cooling tower system with mid-level cost measures by adding a pH controller- A pH controller is a more sophisticated type of controller that monitors the pH of the water. The pH controller combined with acid-based chemical treatment can push the cycles of concentration to 5 to 7 cycles. This upgrade, although higher in initial costs than Category 1, typically yields much higher savings. The costs of a pH controller range from $2,400 to $4,000.

3. Upgrade cooling tower system with high level technologies – There are an array of ultra-high efficiency options available today. Options might include: zero blow down technologies, installation of a water softening system, utilization of recycled water for the cooling tower, water from other equipment within a facility can be recycled and reused for cooling tower make-up.

Industrial Process Water Use

Industrial process water use comprises approximately 10% of all demand in West Basin's service territory. Five industry sectors offer the most promising opportunities and are targeted for participation in the program:

- Food processing
- Textiles
- Fabricated metals
- Electronics
- Industrial laundries

West Basin has contracted an engineering firm, URS Corporation, to conduct the evaluations and provide customer support in the decision making process. Process improvements with the highest water savings at the lowest cost are the target for evaluation. After the evaluation, customers receive a detailed report documenting the process improvement, estimated savings and payback as well as next steps to conduct the upgrade.

Cooling tower customers receive a simple report detailing customer costs vs. benefit and payback, as well as education on the retrofit options.

To ensure the highest implementation rate, URS and West Basin staff also conduct follow up with customers to provide support in the decision making process.

Contracts are then secured with participating customers detailing the project, estimated savings, incentive amounts and monitoring and evaluation requirements. Incentive amounts are based upon estimated savings. Customers are required to measure usage for 30 days prior to installation of the upgrade. The customer then receives half of the total incentive. The water savings is measured over the first year of installation. The second portion of the incentive is paid based upon the actual water savings, as measured on a water bill.

This program is scheduled to sunset in December 2012.

Table 5.40 Recirc and Save Overview

Target Market	Budget	Market Potential	Planned Program Timeframe
• Commercial • Industrial	$0 for incentives West Basin funds administration and marketing	815 Cooling Towers 196 Industrial Sites	2 Years

Program Advantages:

- Large water savings per site.
- Program drives the market for process water reuse and water reduction products and services.

Program Challenges:

- Low opportunity for process water use reduction within many of West Basin retail agencies (except specific agencies).
- High initial survey costs.
- Large incentives are required to drive down customer payback to less than 2 years.
- Decreases potential recycled water supply.

Program Marketing:

The Program vendor and West Basin conduct direct outreach to commercial and industrial customers. Retail agencies support outreach through direct communication with their customer base.

Program Funding:

Standard and pH cooling tower conductivity controller's incentives are partially funded through the SAVE-A-BUCK program. Industrial process water use and cooling tower upgrades such as "zero blow down" are funded through Metropolitan's Pay-for-Performance Program. Evaluations are funded by DWR.

Table 5.41 Recirc and Save Funding

See below.

Table 5.42 Recirc and Save Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Rebate	Number of Estimated Rebates per year
Industrial Process Upgrades	$3.00 per 1,000 gallons	3 projects per year

Table 5.43 Recirc and Save Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
Industrial Process Upgrades	2,052,861	6.299	10	62.999

Table 5.44 Recirc and Save Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
34	378	$0 (for Incentives only)	$334,269

High Efficiency Nozzle Program

One of the newest technologies in the landscape market is high efficiency nozzles (HE Nozzles) for pop up spray heads. The HE Nozzles are a retrofit for standard pop up sprinkler heads. Pop up sprinkler heads are the most common sprinkler type and there are hundreds of thousands located within West Basin's service territory. The retrofit is a simple process. The old pop up nozzle is removed and replaced with the new high efficiency nozzle. HE Nozzles provide a low cost solution for landscape efficiency; a traditionally complex and expensive target opportunity. Due to the high cost-benefit ratio, this program can be offered to all types of customers including single family, multi- family and commercial.

The HE Nozzle Program has two implementation strategies:

1. The direct installation of high efficiency nozzles along with a landscape survey
2. Web vouchers for free nozzles

The direct installation of high efficiency nozzles or Landscape Irrigation Efficiency Program (Program) is a proposed grant through the U.S. Bureau of Reclamation. The Program requires a direct installation format in order to ensure that the product is actually installed and the system properly adjusted for optimal performance. The Program would provide customers with landscape evaluations and high efficiency nozzle installations. The Program would be offered to both residents and businesses throughout West Basin's service area. Interested sites would receive an evaluation of their landscape to determine potential issues with the landscape and the irrigation system as well as to ascertain the number and type of retrofit nozzles needed.

West Basin would hire a vendor to implement the program. During the site visit the vendor would evaluate the existing nozzles as well as to determine the types of new nozzles needed. In addition, the vendor would conduct minor repairs to customer irrigation system. $3,000 has been budgeted to help pay for any minor pipe fitting damages that may occur and to help for any follow-up site visits that may be required to assist customers with their new sprinkler nozzles.

During the site survey, the vendor would also provide a list of recommended system improvements with an appropriate water budget and watering schedule. These tools will help customers (and their landscape maintenance provider) understand how much water their site actually needs to remain healthy and attractive.

At the program conclusion, sites would be evaluated for water savings as well as marketing and program design effectiveness. Results of the evaluation would be compared against the high efficiency nozzle installation program. West Basin would use the results for future planning. Programs would be redesigned based upon the feedback as well as annual activity production.

The voucher program offers customers free nozzles through a web-administrated format. Customers would log onto the program website and enter their account information in order to validate their eligibility. Customers would then be led through a mandatory video explaining how the nozzles work, how to identify the nozzles you need and how to install the nozzles. The customer is then emailed a voucher as well as forms to assist them in documenting the types of nozzles needed for their site. Irrigation equipment suppliers would

be enlisted in the program to redeem vouchers and provide customers with the required nozzles. After the customer receives their voucher they would visit a participating supplier and pick up the nozzles. They would also be required to install the nozzles. Suppliers would bill West Basin for all redeemed vouchers.

West Basin would outsource program administration. West Basin may consider contracting with Western Municipal Water District (Western MWD) to operate the program under their FreeSprinklerNozzles.com program. In 2009-10 Western MWD invested in the development of a web site and database system to offer nozzles via the voucher program. Several of West Basin's customer agencies have contracted with Western MWD to participate in this program.

Table 5.45 High Efficiency Nozzle Overview

Target Market	Budget	Market Potential	Planned Program Timeframe
• Commercial • Residential	*Direct Install:* $55,367 *Voucher:* $320,009 Total: $75,377	1.5 Million Nozzles	*Direct Install:* 2 years FY 12/13 and FY 13/14 *Voucher:* 4 years FY 12/13 – FY 15/16

Program Advantages:

- Cost effective.
- Enormous savings potential and can quickly escalate to thousands per year.
- Reduced run-off.
- Doesn't impact recycled water supply.

Program Challenges:

- Nozzles come in numerous models, keeping the required inventory on hand for the direct install component and customers determining their site needs can be difficult.

Program Marketing:

Marketing could consist of bill inserts, direct mail, door hangers, web site advertisements, and local newspaper ads.

Program Funding:

The direct install program would be funded by the USBR, West Basin, and possibly retail customer agencies. The voucher program would be funded by West Basin.

Table 5.46 High Efficiency Nozzle Funding

Activity	Metropolitan Funding	West Basin Funding	USBR Funding
HE Nozzle Direct Install	$	$6.50	Surveys, Marketing, Installation (approx. $100,000)
HE Nozzle Voucher	$1.50	$2.00	

Table 5.47 High Efficiency Nozzle Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Offer	Number of Nozzles Installed / Distributed per year
HE Nozzle Direct install	Free installed nozzles	20,000 per year for 2 years
HE Nozzle Voucher	Free nozzles	35,000 per year for 4 years

Table 5.48 High Efficiency Nozzle Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
HE Nozzles	1,303	0.0039	5	0.0199

Table 5.49 High Efficiency Nozzle Activity/Measure Water Savings and Economic Evaluation Results

Activity/Measure Water Savings and Economic Evaluation Results

Activity	Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
HE Nozzle Direct Install	26	154	$354	$135,015
HE Nozzle Voucher	350	2,800	$109	$2,472,900

Table 5.50 High Efficiency Nozzle Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	**Lifetime Savings *(acre-feet)***	**Cost per Acre-Foot**	**Avoided Supply Costs**
376	2,954	Depends on Implementation	$2,607,915

Water Budget Program

A water budget is the calculated amount of water a customer needs for their site for a specific month. A Water Budget Program (not Water Budget Rate Structure) would provide customers with information on their monthly or bi-monthly usage vs. budget allocation. Each customer would be given a water budget allocation based on their lot size and the local weather. The water budget allocation would vary monthly based on seasonal outdoor watering needs.

Customers would be sent a report via email with detailed information on their site and their monthly budget vs. their actual use. The water budget provides information and guidance as to reasonable water usage for a customer's site. The budget is a tool customers can use to make informed choices about their water usage each month. If a customer is over their budgeted amount they would be given a list of recommendations and next steps.

The program would target single family sites. Lot sizes would be calculated using GIS or Google Pro for 60% of the sites, the remaining 40% would require a site visit (or customers could provide self-reported acreage). A vendor would be hired to collect the water usage from each respective water agency, enter the acreage and local weather data, calculate the budget and generate the customer report. This could be a onetime annual report or could be sent bi-monthly.

The Municipal Water District of Orange County (MWDOC) Landscape Certification Program, similar to the one proposed, experienced a reduction of 20%.

At the program conclusion, sites would be evaluated for water savings as well as marketing and program design effectiveness. Results of the evaluation would be compared against the high efficiency nozzle installation program. West Basin would use the results for future planning. Programs would be redesigned based upon the feedback as well as annual activity production.

Table 5.51 Water Budget Overview

Target Market	*Budget*	*Market Potential*	*Planned Program Timeframe*
• Residential	$26,692	80,000 single family customers	1 Year

Program Advantages:

- Targets landscape market to aid in market transformation.
- Educated customers will initiate changes on their own with sustainable savings.
- Doesn't impact recycled water supply.

Program Challenges:

- No verifiable water savings (unless there is a follow up inspection).
- Savings duration is unknown.
- Site ownership changes could reduce water savings if modifications in water use were behavioral or temporary (i.e. irrigation schedule).
- MWD does not fund water budget programs since they are not device driven.

Program Marketing:

West Basin in cooperation with their retail water agencies would conduct outreach to customers. Outreach would be conducted through standard marketing methods including direct mail and web site advertising.

Program Funding:

The program is funded entirely by West Basin.

Table 5.52 Water Budget Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Offer	Number of Estimated Sites/Budgets per year
Water Budget	Water budget calculation and communication regarding performance to budget	68 for 1 year

Table 5.53 Water Budget Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
Water Budget	33,889 (20% of average usage)	0.104	10	1.04

Table 5.54 Water Budget Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings ***(acre-feet)***	**Lifetime Savings** ***(acre-feet)***	**Cost per Acre-Foot**	**Avoided Supply Costs**
7	71	$416	$62,319

Turf Removal Demonstration Program

The Turf Removal Demonstration Program incentivizes customers to remove high water consuming turf and replace it with alternative solutions such as low water using climate-appropriate plants and surfaces that allow for ground water infiltration and reduce runoff. The project would retrofit 24 sites within each of West Basin's five districts. Previously, many water agencies have chosen commercial sites for demonstration gardens or garden tours have included more affluent large homes that are not realistic comparisons for the average customer's home. For this project, the selected sites would be "typical" single family homes within West Basin's service territory. Each site would not only demonstrate how aesthetically pleasing low water using gardens can be, but that it can also be affordable.

Qualifying applicants would be eligible to receive $5,000 per home for the retrofit of their front yard. They would be offered a variety of landscape templates to choose from all which would typically cost a customer $5,000 or less to install. Participating customers would agree to photo shoots, front yard advertising and participation in garden tours. West Basin would implement the program through internal staff. Staff would solicit landscape templates from landscape architects, advertise the program, select qualified applicants, coordinate the turf removal projects, generate post retrofit advertising including photos to be used in marketing and educational materials and the website as well as regular garden tours.

The objective of the program is to help transform the public's attitude towards low water using landscapes and limiting turf areas.

Table 5.55 Turf Removal Demonstration Overview

Target Market	*Budget*	*Market Potential*	*Planned Program Timeframe*
• Residential – single family	$142,126	80,000 single family homes	3 Years

Program Advantages:

- Aides in market transformation of the landscape market.
- High potential for future water savings.
- Reduces runoff.
- Does not impact recycled water supply.

Program Challenges:

- High per site expense for West Basin.
- Many customers still prefer turf.

Program Marketing:

West Basin staff would advertise the program through the West Basin website and retail water agencies efforts such as bill inserts.

Program Funding:

The program is funded entirely by West Basin.

Table 5.56 Turf Removal Demonstration Incentive Amount and Annual Activity

Incentive Amount and Annual Activity

Measure/Device	Rebate Amount / Offer	Number of Estimated Rebates per year
Turf Removal	$5,000 per yard incentive	8 per year for 3 years 24 sites total

Table 5.57 Turf Removal Demonstration Activity/Measure Water Savings and Annual Activity

Activity/Measure Water Savings and Annual Activity

Activity / Measure	Savings per Measure *(gallons per year)*	Savings per Measure *(acre-feet per year)*	Lifespan of Measure *(years)*	Lifetime Savings of Measure *(acre-feet)*
Turf Removal	21,766	0.0667	10	0.6679

Table 5.58 Turf Removal Demonstration Water Savings and Economic Evaluation Results

Program Water Savings and Economic Evaluation Results

Average Annual Savings *(acre-feet)*	Lifetime Savings *(acre-feet)*	Cost per Acre-Foot	Avoided Supply Costs
1	16	Not applicable. Program is a demonstration project	$14,294

Chapter 6:

Background

Water and energy are inextricably linked. More and more emphasis is being placed on the water and energy nexus and will be the spectrum through which we see efficiency programs and municipal resource efficiency efforts in the years to come. Integrated approaches to end user programs as well as energy efficiency in the municipal water arena are just two examples of how water and energy will continue to be integrated. West Basin has been proactive in both of these instances. West Basin is a member of the Climate Action Registry and has already invested in renewable energy (solar panels were installed at our water recycling facility) and energy efficiency. Energy recovery equipment is being tested at our ocean water desalination demonstration facility, the ECLWRF is using a SCADA system and variable speed pumps to use energy in the most efficient way. West Basin will continue on this path and as a result is looking further down the line to integrate of energy efficiency into customer water efficiency programs.

Since 2006 the SBESC has been under contract with West Basin to market and implement water conservation programs. The SBESC is considered a program of the South Bay Cities Council of Governments (SBCCOG). The SBESC was formed by an original partnership between the SBCCOG, SCE and SoCalGas. Over the past four years the SBESC has done a first-rate job not only in promoting West Basin's programs but also in bringing additional agencies into the partnership including: Los Angeles Metropolitan Transportation Authority (Metro), County of Los Angeles, Sanitation Districts of Los Angeles, and the City of Torrance. The advantage to working with the SBESC is that West Basin is exposed to and able to work closely with these other partners.

While this partnership in recent years has been beneficial, one of the challenges West Basin currently faces is fully integrating its water conservation and education programs into available energy and gas utility partner programs at the beginning planning stages. Investor owned utilities (IOUs) such as SCE and SoCalGas conduct program implementation in three year cycles. One of the goals of this document is to better plan for coordinated efforts between the water and energy utilities and get out in the front of these three year cycles in the planning phase to best integrate efforts.

Objective

The objective of this portion of the plan is for West Basin to identify all the programs and opportunities from this unique partnership arrangement with the SBESC and its partners and provide a plan to leverage those programs and services. Specifically West Basin is looking to evaluate all of these programs and select the programs that have the highest likelihood of success. The chosen programs will then have a focused implementation effort including a detailed implementation plan as part of this document.

In addition, West Basin is looking to develop a long-term strategy to integrate water into local energy programs and receive credit from the California Public Utilities Commission (CPUC) for the embedded energy savings of water conservation programs. This includes moving the

state toward adoption of a policy that recognizes the embedded energy that exists in water. West Basin and other water agencies (including IOUs) would seek to assist SCE and SoCalGas in receiving energy saving credits for making investments in water efficiency programs.

General Strategy

Short Term: The strategy of the short-term plan is to select the programs that offer the most potential for water savings as well as ability to demonstrate successful partnership models. The elements of the short-term strategy are outlined in Section 7-XX (the timeline).

Long Term: The strategy of the long-term plan is to encourage the adoption of the embedded energy policy which would allow energy utilities to obtain CPUC credit for embedded energy savings of water use efficiency program. The long-term strategy elements will be developed during 2011 in order to be more tangible for the 2012 rate cases which affect program cycle 2014-2017.

Key elements of the long-term strategy are to:

1. Leverage the best opportunity programs for the next two years
2. Demonstrate success from these programs
3. Creating a regional "task force"
4. Develop a regional strategy
5. Obtain CPUC credit for embedded energy savings
6. Designing potential programs for future rate cases
7. Obtaining approval for potential programs

Incorporating water measures into existing successful energy programs provides the most ideal opportunity for water and energy program integration. This includes programs that are outsourced by SCE and SoCalGas. West Basin may more easily negotiate services and payment through these outside companies than with SCE. West Basin would build on the success of these programs, streamlining methodologies creating larger and longer term opportunities for the next CPUC program cycle (2014-2017). Development of this program cycle will take place in 2012 during the rate case process.

West Basin would work with other water agencies to develop a regional strategy. This would include a plan to lobby the investor owned utilities as well as the CPUC to gain credit for embedded energy savings. The plan would include potential programs for the next rate case as well as a proposal and back up documentation to receive credit for embedded energy savings.

West Basin is also very involved in an organization called the California Water and Energy Coalition (CalWEC). CalWEC's mission is to collaboratively promote and develop publicly responsible practices to provide a sustainable and cost-effective supply of water and energy recognizing the resource challenges and significant linkage between California's limited water and power resources. West Basin will use its involvement in this group to move this long term strategy forward. West Basin can also use this platform to promote the work it is doing through the short term strategies as a basis of practical support for the larger goal of embedded energy policy.

Partners

West Basin purchases imported water from Metropolitan and wholesales the imported water to 17 cities, mutual water companies, investor-owned utilities, water districts and private companies in coastal Los Angeles County. West Basin provides drinking and recycled water to a 185-square mile service area with a population of nearly 900,000.

West Basin's short term goal is to integrate water efficiency programs and strategies with complimentary utility program offerings with like goals through partnerships and co-funding opportunities. Applicable programs will be incorporated into long term goal and supply planning. West Basin has eight retail water customers from both the public and private sectors. These retail water agencies, listed below, are important stakeholders and in some instances major program partners. West Basin acknowledges that these stakeholders have various degrees of interest and motivations as well as abilities to partner and participate in the integration of water and energy programs.

West Basin Retail Customer Agencies:

California Water Service (Cal Water)

Cal Water is an investor-owned utility that serves the areas of Hermosa Beach, Redondo Beach, the Palos Verdes Peninsula, as well as portions of Hawthorne, Torrance, Carson, Compton, Long Beach, and Harbor City. As an investor-owned utility operating in California, Cal Water is regulated by the CPUC and subject to all rules, reporting, and regulation subject to their scope of operation. Their next rate case to be presented to the CPUC is scheduled for 2012. The programmatic strategies and offerings provided to customers from Cal Water are directly correlated with their upcoming CPUC rate case as it pertains to their long-term goals.

Cal Water participates in conservation programming through Metropolitan's residential SoCalWaterSmart and commercial SAVE-A-BUCK programs. They also participate in West Basin programs such as Cash for Kitchens via their retailer/wholesaler relationship with West Basin.

Golden State Water Company (Golden State)

Golden State Water Company is an investor-owned utility serving an area of approximately 51,300 customers in Southwest Los Angeles County, including all of Gardena and Lawndale, and portions of Carson, Compton, El Segundo, Hawthorne, Inglewood, Redondo Beach, and unincorporated Athens, Del Aire, El Camino Village, Lennox and Gardena Heights. As an investor-owned utility operating in California, Golden State Water is regulated by the CPUC and subject to all rules, reporting, and regulation subject to their scope of operation. Their next rate case to be presented to the CPUC is scheduled for 2012. The programmatic strategies and offerings provided to customers from Golden State Water are directly correlated with their upcoming CPUC rate case as it pertains to their long term goals.

Golden State participates in conservation programming through Metropolitan Water District of Southern California's residential SoCalWaterSmart and commercial SAVE-A-BUCK programs. They also participate in West Basin's agency run programs such as Cash for Kitchens via their retailer/wholesaler relationship with West Basin.

California American Water Company (Cal Am)

California American Water is in investor owned utility serving retail water connections in western Los Angeles County. Cal Am participates in conservation programming through Metropolitan's residential SoCalWaterSmart and commercial SAVE-A-BUCK programs. They also participate in West Basin programs such as Cash for Kitchens via their retailer/wholesaler relationship with West Basin.

Water Replenishment District (WRD)

Water Replenishment District is one of the top retail water purchasers of West Basin. WRD manages groundwater in a 420-square mile service territory for nearly four million residents in 43 cities of southern Los Angeles County. WRD participates in West Basin programs such as Cash for Kitchens.

City of El Segundo

The City of El Segundo serves a population of more than 16,000 residents. The City participates in conservation programming through Metropolitan's residential SoCalWaterSmart and commercial SAVE-A-BUCK rebate programs. They also participate in West Basin programs such as Cash for Kitchens via their retailer/wholesaler relationship with West Basin.

City of Inglewood

The City of Inglewood provides water to 86% of the premises and maintains more than 15,000 service connections serving an estimated population of 90,000. The City participates in conservation programming through Metropolitan's residential SoCalWaterSmart and commercial SAVE-A-BUCK rebate programs. The City also participates in West Basin programs such as Cash for Kitchens via their retailer/wholesaler relationship with West Basin.

City of Lomita

The City of Lomita has a population of 20,046. The City participates in conservation programming through Metropolitan's residential SoCalWaterSmart and commercial SAVE-A-BUCK programs. They also participate in West Basin programs such as Cash for Kitchens via their retailer/wholesaler relationship with West Basin.

City of Manhattan Beach

The City of Manhattan Beach is 3.94 square miles with 13,225 service connections serving water to a population of over 36,700. The City participates in conservation programming through Metropolitan's residential SoCalWaterSmart and commercial SAVE-A-BUCK programs. They also participate in West Basin programs such as Cash for Kitchens via their retailer/wholesaler relationship with West Basin.

Los Angeles County Waterworks District No. 29 (District 29)

Los Angeles County Waterworks District No. 29 serves the Malibu area with an estimated population of 20,120 maintaining 7,450 service connections. District 29 participates in conservation programming through Metropolitan's residential SoCalWaterSmart and commercial SAVE-A-BUCK programs. District 29 also participates in West Basin programs such as Cash for Kitchens via their retailer/wholesaler relationship with West Basin.

Partnering Organizations:

South Bay Environmental Services Center (SBESC)

As indicated above, the South Bay Environmental Services Center is a program of the South Bay Cities Council of Governments, a joint powers authority of 16 cities established to provide a greater quality of life for Los Angeles County. As a JPA, the SBESC is able to leverage larger budgetary spending to facilitate programs for residents, businesses, public agencies, schools and special districts. The SBESC helps cities, agencies and districts to partner with other utility providers in conservation programming efforts.

Southern California Gas Company (SoCalGas)

Southern California Gas Company is the largest gas utility in the nation providing energy to 20.9 million consumers through 5.8 million meters in more than 500 communities. The company's service territory includes approximately 20,000 square miles of diverse terrain throughout Central and Southern California, from Visalia to the Mexican border. As a utility operating in California, they are regulated by the CPUC and subject to all rules, reporting, and regulation subject to their scope of operation. All IOUs presented their previous rate cases to the CPUC in June 2009; delayed approval of that rate case pushed the program cycle out one year. We are currently in the 2011-2013 program cycle. SoCalGas presents rate cases every three years. SoCalGas' next rate case to be presented to the CPUC is scheduled for 2012. The programmatic strategies provided to customers from SoCalGas are aligned with their long-term goals and directly correlate with their upcoming CPUC rate case.

Southern California Edison (SCE)

Southern California Edison supplies power to nearly 14 million people in 180 cities encompassing 50,000 square miles. As a utility operating in California they are regulated by the CPUC and subject to all rules, reporting, and regulation subject to their scope of operation. Their next rate case to be presented to the CPUC is scheduled for 2012 (see explanation above). The programmatic strategies and offerings provided to customers

from SCE are directly correlated with their upcoming CPUC rate case as it pertains to their long term goals.

Current/Available Programs

There are many energy programs marketed and/or implemented through the South Bay Center. These programs target residents, businesses and the public sector. See the table below for a list of programs that has been analyzed for integration of energy-efficiency measures and/or combined implementation strategies. Listed in Table 6.1are the programs, the market they target and the lead implementation agency.

Table 6.1: Programs Analyzed for Energy Integration

Program or Service	Target Market	Lead Implementation Agency
Cash for Kitchens	Restaurants and other Food Service Operations	West Basin in coordination with SBESC and SoCalGas
Green Living & Energy Direct Install Program	Multi-family Sites	West Basin
SCE Non-Residential Audit Program	Commercial Site	SCE
Small Business Direct Installation Program	Small Businesses	SCE 3rd Party
Energy Upgrade in California (LA County Energy Program)	Single Family Homes (Multi-family and commercial to be phased in)	L.A. County through General Contractors
Government Energy Leader Program	Public Sector Agencies	SBESC
Schools Food Service Rebate Program	Schools	SBESC
Home Energy and Water Surveys	Single Family Homes	SCE
Commercial Restroom Retrofit Program	Commercial Facilities	West Basin
Recirc & Save Program	Industrial Facilities	West Basin

In addition to these programs, the SBESC conducts general outreach, workshops and an Energy 101 class. All of these programs and services will be leveraged to include education on water use efficiency as well as promotion of programs.

Selected Programs

In order to provide a more focused effort and achieve the maximum level of success, the West Basin team evaluated each program and selected five specific programs to focus on. Programs were chosen due to their likelihood and/or readiness to be implemented, likelihood of success, ability to produce significant water savings, available budget and cost effectiveness.

The five highest priority programs have detailed plans included in this section. These five programs include:

Cash for Kitchens West Basin has been working with the SBESC to offer a program for businesses and public agencies with kitchens in the South Bay. Through this program food service customers receive a water-use assessment and training materials. Sites may also qualify for free water saving devices such as pre-rinse kitchen sprayers, faucet aerators, flow restrictors and waterbrooms. The SBESC coordinates with SoCal Gas's Commercial Service Technicians to provide a more robust offering to the customers they visit.

SCE Non-Residential Audit Program Conducted internally by SCE for small to medium sized businesses. Customers are provided a free energy audit of their site by SCE trained professionals.

Energy Upgrade in California (LA County Energy Program) This program offers incentives of up to $4,500 for single family residential customers who complete qualifying energy-saving home upgrade projects. This partnership program between SCE, SoCal Gas and L.A. County currently provides basic through advanced home weatherization methods enabling sponsoring agencies administrative cost sharing with calculable kWh and Therm savings.

Green Living & Energy Direct Install Program This program offers rebates, free devices and free installation for water-saving devices for multi-family site. Devices offered include water-efficient showerheads, kitchen faucet aerators, compact fluorescent light bulbs and high-efficiency toilets.

Small Business Direct Install SCE uses contracted vendors, including FCI, CRI Lighting and Electrical and FESS Comprehensive Energy Solutions to conduct energy assessments and subsequently install energy efficiency measures in small to medium sized commercial customers free of charge. This program is open to all non-corporately owned customers and requires only two hours per site while businesses remain open for operation.
The chart below highlights the program offer as well as the reasons it was selected for focused implementation.

Table 6.2: Programs Selected for Energy Integration

Program	Offer	Selection Factors
Cash for Kitchens	Water efficiency evaluation, educational materials and rebates	• Existing grant • SBESC in partnership with SCG conduct evaluations and product distribution • SCG targets food service due to the Therm savings opportunity • Food service equipment has opportunity for

Program	Offer	Selection Factors
		Therm and water savings • Highly cost effective program • Future grant potential is high • Significant number of food service operations in West Basin territory • Cost effective based upon selected measures • Lower cost due to shared costs and existing grants
SCE Commercial Surveys	Audit	• SCE management is highly motivated to partner with water agencies • Collecting data on water measures, specifically plumbing fixtures, is easy • SCE conducts 4,500 surveys per year, many in West Basin territory • Lower cost due to shared costs
Energy Upgrade in California (L.A. County Energy Program)	Whole house incentives through trained contractors	• New/innovative program • SBESC currently marketing program • Ability to secure services from private program contractors • Target areas match West Basin IOU retail agency areas with programs and funds (containing demographics likely to participate in energy efficiency financing programs) • Low cost to produce leads with high probability or program participation
Green Living & Energy Direct Install Program	Direct installation	• Existing grant • Highly cost effective • Current grant offers ability to offer free product & installation • Continue until grant ends in 2011
Small Business Direct Installation Program	Direct installation of energy measures	• Successful pilot in Carson area through Cal Water • Ability to secure lead generation services from SCE's existing vendor, FCI. • Target areas (Redondo & Hermosa Beach) match Cal Water's service area • Cal Water has an existing commercial HET direct installation program • Ideal opportunity to demonstrate water and energy utility collaboration (second yr. of program) • Low cost to produce leads with high probability or program participation

Program Implementation

West Basin will begin (or continue) the implementation of these five programs in the first part of the five year plan. Due to varying stages of programs implementation, West Basin will have to devote more staff and resources into implementing some programs more than others. Below is a list of programs with the required tasks and responsible parties to either continue implementation and maximum participation or incorporate water use efficiency measures into new programs.

Table 6.3: Water Energy Program Implementation

Energy Upgrade in California **(L.A. County Energy Program)**		
Tasks		Implementing Agency
	Working with Cal Water and Golden State: -Select target areas -Finalize approved list of water use efficiency measures (consider phases i.e. plumbing first then landscape) -Establish funding amount for general contractors conducting customer outreach -Determine who will conduct installation -Confirm any customer co-pay requirements	West Basin
	Conduct outreach to general contractors to obtain interest in conducting customer outreach (offering free water use devices while marketing energy efficiency upgrades) and verify volume and capability is there	West Basin
	Secure partnership/MOU with Cal Water and Golden State to pay general contractors – Verify timing for direct installation or distribution programs are up and running	West Basin
	Generate policies and procedures for program including contractor customer outreach, program enrollment, product installation, program reporting and contractor payment	West Basin/Cal Water
	Develop and conduct contractor kickoff meeting and training	West Basin
	Create program marketing package including -Program brochure -Cost/benefit analysis worksheet -Product cut sheets -Program application	West Basin/Cal Water
	Launch program: general contractors begin customer outreach	West Basin
	Obtain paperwork for enrolled customers	Cal Water/Golden State
	Schedule customer for installation services	Cal Water/Golden State

	Conduct installations	Cal Water/ Golden State
	Perform installation verification	Cal Water/Golden State
	Report results to team: West Basin, Cal Water, Golden State, SBESC, and general contractors	West Basin
	Generate "press release" and communicate results to regional water agencies, IOUs and CPUC	West Basin
Small Business Direct Install		
Tasks		Implementing Agency
	Confirm target areas and determine market potential (possibly obtain customer lists) also verify timing	West Basin
	Verify Cal Water programs, funds and payment structure for customer outreach services	West Basin
	Secure purchase order/agreement with FCI for customer outreach services	Cal Water
	Develop marketing piece and customer data collection/enrollment form	Cal Water
	Launch program: FCI to begin customer outreach	West Basin/SCE 3rd Party Vendor
	Obtain customer leads from FCI	Cal Water
	Conduct installations	Cal Water
	Perform installation verification	Cal Water
	Report results to team: West Basin, Cal Water, FCI and SCE	West Basin
	Generate "press release" and communicate results to regional water agencies, IOUs and CPUC	West Basin
Cash for Kitchens		
Tasks		Implementing Agency
	Program is already in operation, continue to administer and operate	West Basin/SBESC
	Gather data on current results including number of evals, number of measures distributed – gas and water	West Basin/SBESC
	Interview customers to verify installations of measures (gas and water), overall satisfaction and savings (if possible verify savings)	SBESC
	Meet with SCG, SBESC to review results and brainstorm improvements	West Basin
	Prioritize and implement improvements	West Basin/SBESC
	Tabulate results and add "success stories" to regional water agency, IOU and CPUC communication	West Basin

Green Living & Energy Direct Install Program		
		Implementing Agency
Tasks	Program is already in operation, continue to administer and operate	West Basin
	Meet with implementation vendor, Bottomline Utility Solutions to determine best way to maximize production	West Basin
	Continue aggressive marketing and installations	West Basin
	Evaluate customer service and water savings of participating customers and document results	West Basin
	Determine best way to display result to show successful implementation and partnership	West Basin
	Generate final report with production and water savings results	West Basin
SCE Commercial Surveys		
		Implementing Agency
Tasks	Working with IRWD determine final measures and scope for SCE evaluators	West Basin /IRWD
	Evaluate options to incentivize SCE evaluators	West Basin
	Meet with Cal Water to verify ability pay for evaluator incentives, install HETs and process to receive data and leads from SCE	West Basin
	Document policies and procedures	West Basin /IRWD
	Meet with SCE management to finalize scope, confirm program territories, and if possible evaluator incentivization	West Basin/IRWD
	Generate grant for outside program funding	West Basin
	Create marketing piece to provide to SCE	West Basin/IRWD
	Generate data collection forms	West Basin/ SCE
	Obtain paperwork for enrolled customers	Cal Water
	Schedule customer for installation services	Cal Water
	Conduct installations	Cal Water
	Perform installation verification	Cal Water
	Report results to team: West Basin, Cal Water, Golden State, SBESC, and general contractors	West Basin
	Generate "press release" and communicate results to regional water agencies, IOUs and CPUC	West Basin

Short –Term Strategy Timeline

This timeline illustrates the flow of work needed to occur in order to organize, launch and administer the needed partnerships and outlined programs within this section. As outlined below, the Spring and Summer of 2011 includes immediate implementation details for West Basin staff for all programs not currently operating.

Table 6.4 Timeline for Short-Term Strategy

	Mar -11	Apr -11	May-11	Jun -11	Jul-11	Aug -11	Sept -11	Oct-11	Nov-11	Dec -11
Energy Upgrade in California										
Working with Cal Water and Golden State: -Select target areas -Finalize approved list of water use efficiency measures (consider phases i.e. plumbing first then landscape) -Establish funding amount for general contractors conducting customer outreach -Determine who will conduct installation -Confirm any customer co-pay req.										
Conduct outreach to general contractors to obtain interest in conducting customer outreach (offering free water use devices while marketing energy efficiency upgrades) and verify volume and capability										
Secure partnership/MOU with Cal Water and Golden State to pay general contractors – Verify timing for direct installation or distribution programs are up and running										
Generate policies and procedures for program including contractor customer outreach, program enrollment, product installation, program reporting and contractor payment										
Develop and conduct contractor kickoff meeting and training										
Create program marketing package including -Program brochure -Cost/benefit analysis worksheet -Product cut sheets -Program application										
Launch program: general contractors begin customer outreach										
Obtain paperwork for enrolled customers										
Schedule customer for installation services										
Conduct installations										
Perform installation verification										

	Mar -11	Apr -11	May-11	Jun -11	Jul-11	Aug -11	Sept -11	Oct-11	Nov-11	Dec -11
Report results to team: West Basin, Cal Water, Golden State, SBESC, and general contractors										
Generate "press release" and communicate results to regional water agencies, IOUs and CPUC										
Small Business D.I. Program										
Confirm target areas and determine market potential (possibly obtain customer lists) also verify timing										
Verify Cal Water programs, funds and payment structure for customer outreach services										
Secure purchase order/agreement with FCI for customer outreach services										
Develop marketing piece and customer data collection/enrollment form										
Launch program: FCI to begin customer outreach										
Obtain customer leads from FCI										
Conduct installations										
Perform installation verification										
Report results to team: West Basin, Cal Water, FCI and SCE										
Communicate results to regional water agencies, IOUs and CPUC; media										

	Mar -11	Apr -11	May-11	Jun -11	Jul-11	Aug -11	Sept -11	Oct-11	Nov-11	Dec -11
Cash For Kitchens										
Program is already in operation, continue to administer and operate										
Gather data on current results including number of evaluations, number of measures distributed – gas and water										
Interview customers to verify installations of measures (gas and water), overall satisfaction and savings (if possible verify savings)										
Meet with SCG, SBESC to review results and brainstorm improvements										
Prioritize and implement improvements										
Tabulate results and add "success stories"										

to regional water agency, IOU and CPUC communication	
Green Living & Energy Direct Install Program	
Program is already in operation, continue to administer and operate	
Meet with implementation vendor, Bottom line Utility Solutions to determine best way to maximize production	
Continue aggressive marketing and installations	
Evaluate customer service and water savings of participating customers and document results	
Determine best way to display result to show successful implementation and partnership	
Generate final report with production and water savings results	
SCE Commercial Surveys	
Working with IRWD determine final measures and scope for SCE evaluators	
Evaluate options to incentivize SCE evaluators	
Meet with Cal Water to verify ability pay for evaluator incentives, install HETs and process to receive data and leads from SCE	
Document policies and procedures	
Meet with SCE management to finalize scope, confirm program territories, and if possible evaluator incentivization	
Generate grant for outside program funding	
Create marketing piece to provide to SCE	
Generate data collection forms	
Obtain paperwork for enrolled customers	
Schedule customer for installation services	
Conduct installations	
Perform installation verification	
Report results to team: West Basin, Cal Water, Golden State, SBESC, & contractors	
Generate "press release" and communicate results to regional water agencies, IOUs and CPUC	

Program Implementation

West Basin will begin (or continue) the implementation of these five programs in 2011. Due to varying stages of programs implementation, West Basin will have to devote more staff and resources into implementing some programs more than others. Table 6.3 is a list of programs with the required tasks and responsible parties to either continue implementation and maximum participation or incorporate water efficiency measures into new programs.

Table 6.1 Energy Program List

Energy Upgrade in California **(L.A. County Energy Program)**			
		Owner	Target Date
Tasks	Working with Cal Water and Golden State: -Select target areas. -Finalize approved list of water use efficiency measures (consider phases i.e. plumbing first then landscape). -Establish funding amount for general contractors conducting customer outreach. -Determine who will conduct installation. -Confirm any customer co-pay requirements.	West Basin	April 2011
	Conduct outreach to general contractors to obtain interest in conducting customer outreach (offering free water use devices while marketing energy efficiency upgrades) and verify volume and capability of vendors.	West Basin	April 2011
	Secure partnership/MOU with Cal Water and Golden State to pay general contractors. Verify timing for direct installation or distribution programs to be up and running.	West Basin	May 2011
	Generate program policies and procedures including contractor customer outreach, program enrollment, product installation, program reporting and contractor payment.	West Basin, Cal Water	June 2011
	Develop and conduct contractor kickoff meeting and training.	West Basin	June 2011
	Create program marketing package including: -Program brochure -Cost/benefit analysis worksheet -Product cut sheets and application	West Basin, Cal Water	June 2011
	Launch program - general contractors begin customer outreach.	West Basin	July 2011
	Obtain paperwork for enrolled customers.	Cal Water Golden State	August 2011
	Schedule customer for installation services.	Cal Water Golden State	August 2011
	Conduct installations.	Cal Water Golden State	September 2011
	Perform installation verification.	Cal Water Golden State	October 2011
	Report results to team: West Basin, Cal Water, Golden State,	West Basin	November 2011

	SBESC and general contractors.		
	Generate "press release" and communicate results to regional water agencies, IOUs and CPUC.	West Basin	December 2011

Small Business Direct Install			
		Owner	Target Date
Tasks	Confirm target areas and determine market potential (possibly obtain customer lists) and also verify timing.	West Basin	March 2011
	Verify Cal Water programs, funds and payment structure for customer outreach services.	West Basin	March 2011
	Secure purchase order/agreement with FCI for customer outreach services.	Cal Water	March 2011
	Develop marketing piece and customer data collection/enrollment form.	Cal Water	April 2011
	Launch program: FCI to begin customer outreach.	West Basin/FCI	June 2011
	Obtain customer leads from FCI.	Cal Water	June 2011
	Conduct installations.	Cal Water	July 2011
	Perform installation verification.	Cal Water	August 2011
	Report results to team: West Basin, Cal Water, FCI and SCE.	West Basin	November 2011
	Generate "press release" and communicate results to regional water agencies, IOUs and CPUC.	West Basin	December 2011

Cash for Kitchens			
		Owner	Target Date
Tasks	Program is already in operation - continue to administer and operate.	West Basin SBESC	On-going
	Gather data on current results including number of evaluations and number of measures distributed – gas and water.	West Basin SBESC	March 2011
	Interview customers to verify installations of measures (gas and water), overall satisfaction and savings (if possible verify savings).	SBESC	April 2011
	Meet with SCG and SBESC to review results and brainstorm improvements.	West Basin	May 2011
	Prioritize and implement improvements.	West Basin SBESC	June 2011
	Tabulate results and add "success stories" to regional water agency, IOU and CPUC communication	West Basin	December 2011

Green Living & Energy Direct Install Program			
		Owner	Target Date
	Program is already in operation, continue to administer	West Basin	on-going

Tasks	and operate.		
	Meet with implementation vendor to determine best way to maximize production.	West Basin	March 2011
	Continue aggressive marketing and installations.	West Basin	June 2011
	Evaluate customer service and water savings of participating customers and document results.	West Basin	July 2011
	Determine best way to display result to show successful implementation and partnership.	West Basin	August 2011
	Generate final report with production and water savings results.	West Basin	December 2011
Non-Residential Audit Program			
Tasks		Owner	Target Date
	Working with IRWD determine final measures and scope for SCE evaluators.	West Basin IRWD	March 2011
	Evaluate options to incentivize SCE evaluators.	West Basin	April 2011
	Meet with Cal Water to verify ability pay for evaluator incentives, install HETs and process to receive data and leads from SCE.	West Basin	May 2011
	Document policies and procedures.	West Basin IRWD	June 2011
	Meet with SCE management to finalize scope, confirm program territories and if possible evaluator incentivization.	West Basin IRWD	June 2011
	Generate grant for outside program funding.	West Basin	Mar 2011
	Create marketing piece to provide to SCE.	West Basin IRWD	July 2011
	Generate data collection forms.	West Basin SCE	July 2011
	Obtain paperwork for enrolled customers.	Cal Water	August 2011
	Schedule customer for installation services.	Cal Water	August 2011
	Conduct installations.	Cal Water	September 2011
	Perform installation verification.	Cal Water	October 2011
	Report results to team: West Basin, Cal Water, Golden State, SBESC and general contractors.	West Basin	November 2011
	Generate “press release” and communicate results to regional water agencies, IOUs and CPUC.	West Basin	December 2011

Timeline

This timeline in Figure 6.1 illustrates the flow of work needed to occur in order to organize, launch and administer the needed partnerships and outlined programs within this chapter. As outlined below the spring and summer of 2011 includes immediate fast-based implementation details for West Basin staff for all programs not currently operating.

Figure 6.1 Energy Program Implementation Timeline

	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sept-11	Oct-11	Nov-11	Dec-11
Energy Upgrade in California										
Working with Cal Water and Golden State: -Select target areas. -Finalize approved list of water use efficiency measures (consider phases i.e. plumbing first then landscape). -Establish funding amount for general contractors conducting customer outreach. -Determine who will conduct installation. -Confirm any customer co-pay requirements.										
Conduct outreach to general contractors to obtain interest in conducting customer outreach (offering free water use devices while marketing energy efficiency upgrades) and verify volume and capability of vendors.										
Secure partnership/MOU with Cal Water and Golden State to pay general contractors – Verify timing for direct installation or distribution programs are up and running.										
Generate policies and procedures for program including contractor customer outreach, program enrollment, product installation, program reporting and contractor payment.										
Develop and conduct contractor kickoff meeting and training.										
Create program marketing package including: -Program brochure -Cost/benefit analysis worksheet -Product cut sheets and application										
Launch program: general contractors begin customer outreach.										
Obtain paperwork for enrolled customers.										
Schedule customer for installation services.										

	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sept-11	Oct-11	Nov-11	Dec-11
Conduct installations.										
Perform installation verification.										
Report results to team: West Basin, Cal Water, Golden State, SBESC and general contractors.										
Generate "press release" and communicate results to regional water agencies, IOUs and CPUC.										
Small Business D.I. Program										
Confirm target areas and determine market potential (possibly obtain customer lists) also verify timing.										
Verify Cal Water programs, funds and payment structure for customer outreach services.										
Secure purchase order/agreement with FCI for customer outreach services.										
Develop marketing piece and customer data collection/enrollment form.										
Launch program: FCI to begin customer outreach.										
Obtain customer leads from FCI.										
Conduct installations.										
Perform installation verification.										
Report results to team: West Basin, Cal Water, FCI and SCE .										
Generate "press release" and communicate results to regional water agencies, IOUs and CPUC.										

	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sept-11	Oct-11	Nov-11	Dec-11
Cash For Kitchens										
Program is already in operation, continue to administer and operate.										
Gather data on current results including number of evaluations and number of measures distributed – gas and water.										
Interview customers to verify installations of measures (gas and water), overall satisfaction and savings (if possible verify savings).										
Meet with SCG and SBESC to review results and brainstorm improvements.										
Prioritize and implement improvements.										
Tabulate results and add "success stories" to regional water agency, IOU and CPUC communication.										

Green Living & Energy Direct Install Program										
Program is already in operation, continue to administer and operate.										
Meet with implementation vendor, Bottom Line Utility Solutions to determine best way to maximize production.										
	Mar-11	**Apr-11**	**May-11**	**Jun-11**	**Jul-11**	**Aug-11**	**Sept-11**	**Oct-11**	**Nov-11**	**Dec-11**
Continue aggressive marketing and installations.										
Evaluate customer service and water savings of participating customers and document results.										
Determine best way to display result to show successful implementation and partnership.										
Generate final report with production and water savings results										
SCE Commercial Surveys										
Working with IRWD to determine final measures and scope for SCE evaluators.										
Evaluate options to incentivize SCE evaluators.										
Meet with Cal Water to verify ability pay for evaluator incentives, install HETs and process to receive data and leads from SCE.										
Document policies and procedures.										
Meet with SCE management to finalize scope, confirm program territories and if possible, evaluator incentivization.										
Generate grant for outside program funding.										
Create marketing piece to provide to SCE.										
Generate data collection forms.										
Obtain paperwork for enrolled customers.										
Schedule customer for installation services.										
Conduct installations.										
Perform installation verification.										
Report results to team: West Basin, Cal Water, Golden State, SBESC and general contractors.										
Generate "press release" and communicate results to regional water agencies, IOUs and CPUC.										

Chapter 7: -

This chapter documents West Basin's action five-year action plan for the Water Efficiency Master Plan. Highlights include:

Table 7.1 Base Plan Overview

Base Plan Overview	
Cost per Acre-foot*	$93 per acre-foot
Five Year Water Savings (Active Programs only)	5,361 acre-feet
Five Year Water Savings (Active and Passive)	12,838 acre-feet
Lifetime Water Savings	17,071 acre-feet
Avoided Supply Costs	$15,310,337
Average Annual West Basin Budget	$296,843
Five Year Total West Basin Budget	$1,484,214

Implementation Schedule

Budgets are fairly well determined for 2012/2013, but as circumstances shift over time, the years beyond are less certain. Program planning will always be a fluid process. On a regular and ongoing cycle, program plans and schedules will need to be revised and updated.

The launch and end dates for Fiscal Year 2011/2012 regional programs are documented in Table 7.2 below. As with the implementation plan, there may be some minor modifications as final details come to light:

Table 7.2 Program Implementation Schedule

Program	***Start Date***	***End Date***
Save A Buck Commercial Incentive Program	On-going	Based Upon MWD Funding For Planning Purposes Estimated to run through FY 15/16
SoCalWater$mart Residential Incentive Program	On-going	Based Upon MWD Funding For Planning Purposes Estimated to run through FY 15/16
High Efficiency Toilet Give Away Program	On-going	FY 15/16
Green Living for Apartments and Condos Program	On-going	September 2011
Cash for Kitchens; Training and Incentive Program	On-going	Grant Ends 2012 - West Basin to Solicit New Grants Program Expect to Continue through FY 15/16
Commercial Restroom Retrofit Program	On-going	December 2011
Ocean Friendly Landscape Program	On-going	FY 13/14
Recirc & Save; Education and Incentive Program	On-going	December 2012
High Efficiency Nozzle Program	January 2012	Direct Install Component December 2013 Voucher Component June 2016
Turf Removal Demonstration Program	July 2012	December 2015

Program "cut sheets" in *Chapter 5* outline the details for each program and include program description, measure(s) offered, target customer segments, marketing methods, delivery mechanisms, production numbers, program funding and costs and summary economic evaluation results. Details of the economic evaluation are included in the AWE Tracking Tool titled *"WBMWD_RegionalPrograms_AWE Conservation Tracking Tool_Base_v10b.xls."*

West Basin Role

West Basin's role is to act as liaison between Metropolitan as the wholesale agency for Southern California and West Basin's retail customer agencies. Since Metropolitan's funding is limited, plays a large role in West Basin's conservation and efficiency programs, and is often distributed on a first-come, first-served basis, West Basin will need to be aggressively positioned with Metropolitan to ensure placement in the funding queue. To maximize the success of Metropolitan's programs, West Basin will want to generate a list of prime customer targets and initiate regional marketing.

In addition to marketing Metropolitan's programs, West Basin will administer all of its own regional programs. This role will encompass such duties as:

- Securing outside funding through local, state and federal grants;
- Hiring outside vendors when necessary and managing their services over the life of the program(s);
- Developing operational plans, procedures and schedules for each program;
- Monitoring start up and on-going activities for each program; and
- Tracking and reporting production and progress towards goals for each program.

Retail Agency Role

Retail customer agencies are carrying the responsibility of complying with the 20x2020 per capita water use reduction requirement set by the State. They have a vested interest in aggressively pushing forward with a local plan that builds on West Basin's regional plan. Customer agency plans have been designed to complement West Basin's plan and maximize results.

To bolster the success of the plans, retail agencies need to post programs on their website, print literature and promote the program vigorously. Additionally, developing targeted lists and direct marketing should be initiated to further increase program participation.

The bulk of water savings for the West Basin service area is coming from retail agencies with established local program funding. West Basin will actively support the implementation of these programs. CalWater, Golden State and District 29 each have aggressive programs documented in their respective implementation plans. West Basin will continue to partner with its retail customer agencies and provide its programs for the City water providers that have limited budgets.

Program Implementation Strategy

Maximizing efficiencies is a priority for West Basin and its customer retail agencies. To streamline implementation for water efficiency programs, accommodate staffing limitations, and utilize the expertise of consultants, the programs listed in Table 7.3 will be outsourced to industry vendors:

Table 7.3 Program Implementation Strategy

Program	*Implementation Strategy*
Save A Buck Commercial Incentive Program	Implemented through Metropolitan's vendor.
SoCalWater$mart Residential Incentive Program	Implemented through Metropolitan's vendor.
High Efficiency Toilet Give Away Program	Implemented through West Basin's vendor.
Green Living for Apartments and Condos Program	Implemented through West Basin's vendor.
Cash for Kitchens; Training and Incentive Program	Evaluations done by SBESC in collaboration with SoCalGas.
Commercial Restroom Retrofit Program	• Phase 1: West Basin Vendor. • Phase 2: West Basin Vendor.
Ocean Friendly Landscape Program	• Large Landscape WBICs implemented through a West Basin Vendor. • Residential WBICs implemented through Metropolitan's SoCalWater$mart Rebate Program. • Landscape Workshops & Demo Gardens implemented by West Basin vendors. • Water Run-off Study implemented by a West Basin vendor.
Recirc & Save; Education and Incentive Program	Implemented through West Basin's vendor.
High Efficiency Nozzle Program	To be outsourced.
Turf Removal Demonstration Program	Program will be administered internally.

Activities Implemented by Year

The projected number of activities to be implemented per year are shown in table 7.4. Please note that many of the selected programs consist of multiple activities. For example, the SoCalWater$mart Program consists of HE clothes washers, HE nozzles, WBIC (subscription) and WBIC (no subscription). For conducting the cost and benefit analysis it is necessary to evaluate activities with different savings and costs separately.

For planning purposes, activity estimates were generated using historical performance and professional assumptions. Professional assumptions are based on experience with similar programs and market knowledge. As stated earlier, implementation volumes will be adjusted over time as industry changes occur.

Table 7.4 Projected Number of Activates Implemented per Year

Projected Number of Activities Implemented per Year

Class	Activity Name	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	5 Year Total
Single Family	HE Clothes Washer, SoCalWater$mart Rebate	600	600	600	600	600	3,000
Single Family	HE Nozzles, SoCalWater$mart Rebate	455	455	455	455	455	2,275
Single Family	WBIC < 1 acre, SoCalWater$mart Rebate	0	0	0	0	100	100
Commercial	HE Nozzles, Save A Buck Commercial Rebate	51	51	51	51	51	255
Commercial	HET (Tank) Rebate, Save A Buck Commercial Rebate	742	742	742	742	742	1,484
Commercial	WBIC, Save A Buck Commercial Rebate	0	0	0	0	75	75
Single Family	HET Give Away Events	2,000	2,000	2,000	2,000	2,000	10,000
Multi-Family	Green Living & Energy Direct Install	1,500	0	0	0	0	1,500
Irrigation	Ocean Friendly Large Landscape WBIC Direct Install	100	150	150	0	0	400
Single Family	Ocean Friendly Single Family WBIC Incentives	225	225	200	0	0	650
Commercial	Restroom Retrofit Phase 1 (Urinals)	40	0	0	0	0	40
Commercial	Restroom Retrofit Phase 1 (Faucets/Flow Restrictors)	97	0	0	0	0	97
Commercial	Restroom Retrofit Phase 2 (Toilets, DWR + MWD Funded)	500	0	0	0	0	500
Commercial	Restroom Retrofit Phase 2 (Toilets, USBR Funded)	650	0	0	0	0	650
Industrial	Recirc & Save; Audits and Incentives, Industrial Process Upgrades	3	3	0	0	0	6
Commercial	Cash for Kitchens, Flow Restrictors	38	38	38	38	38	190

Class	Activity Name	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	5 Year Total
Commercial	Cash for Kitchens, Pre-rinse Spray Valves	34	34	34	34	34	170
Commercial	Cash for Kitchens, Water brooms	27	27	27	27	27	135
Irrigation	High Efficiency Nozzle Direct Installation Program	0	3,840	3,840	0	0	7,680
Irrigation	High Efficiency Nozzle Voucher Program	0	35,000	35,000	35,000	35,000	140,000
Single Family	Water Budget Program Pilot	68	0	0	0	0	68
Single Family	Turf Removal Demonstration Project	0	8	8	8	0	24

Water Savings

The chart in Figure 7.1 depicts the annual savings for regional programs over the five year implementation from FY11/12 to FY 15/16. Savings are for active programs only.

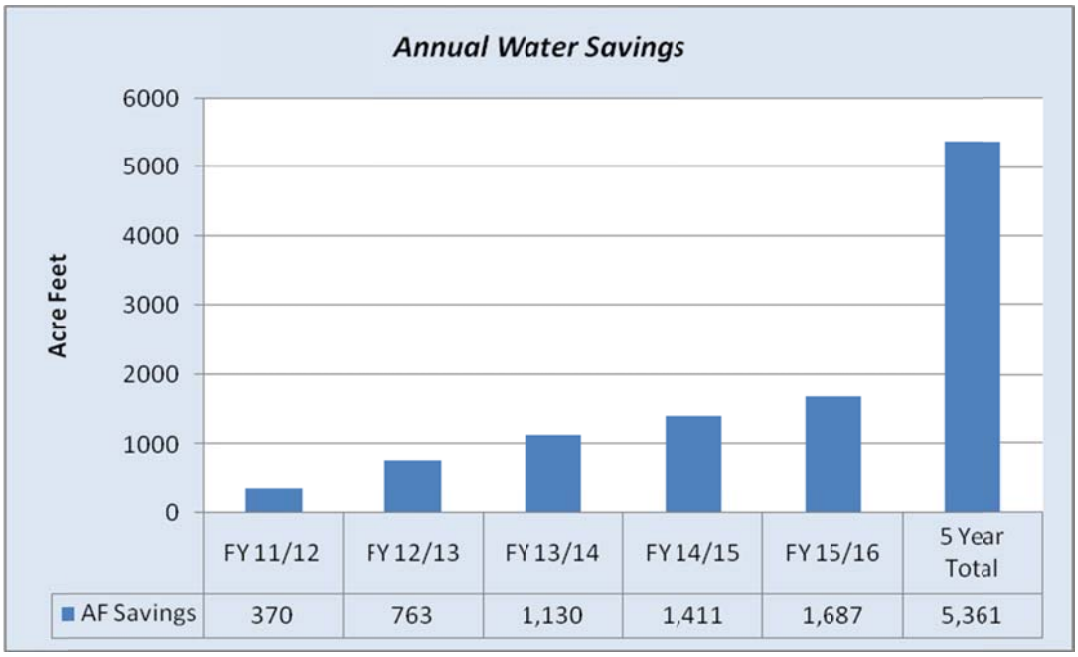


Figure 7.1 Annual Water Savings

Figure 7.2 represents regional active programs savings achieved by 2015 and 2020, as well as lifetime savings.

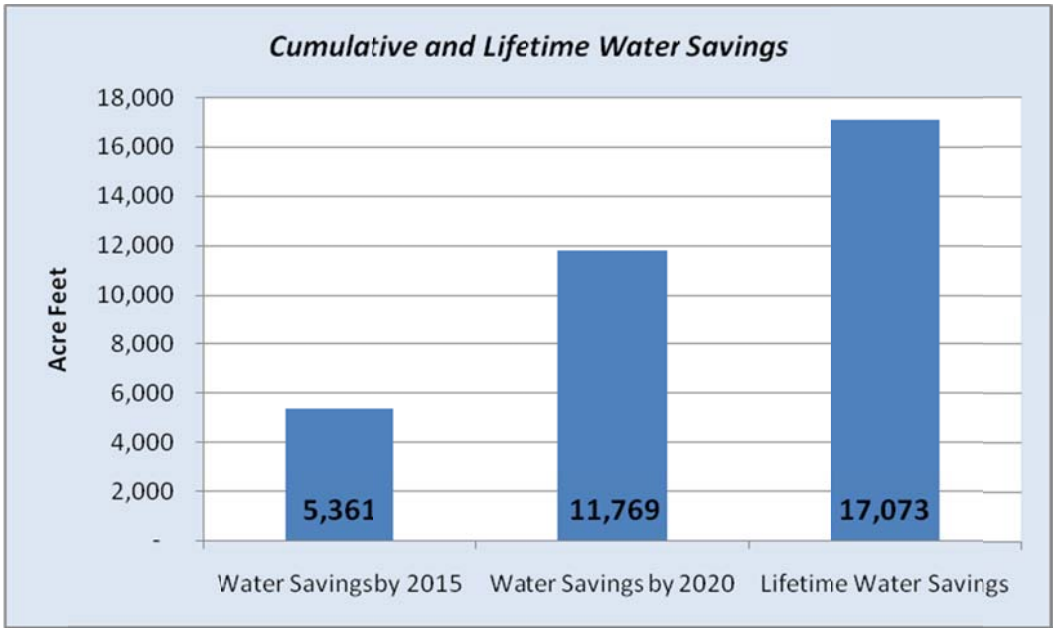


Figure 7.2 Cumulative and Lifetime Water Savings

Water Savings by Sector

Table 7.5 and Figure 7.3 below depict the water savings by sector for both passive and active savings. The savings are fairly well dispersed among the sectors. As expected, the commercial, industrial and institutional sector has the least amount of savings due to local opportunity.

Forty two percent of the projected savings will be achieved from the single family sector, predominately through high efficiency toilets. The majority of multi-family water savings are also from toilets.

Table 7.5 Breakdown of Annual Water Savings by Sector

Sector	Annual Water Savings (AF)					
	FY 11/12	**FY 12/13**	**FY 13/14**	**FY 14/15**	**FY 15/16**	**Total**
Single Family	319	696	1,052	1,493	1,912	5,472
Multi-family	244	410	567	798	1,020	3,039
Commercial, Industrial and Institutional	166	272	355	492	624	1,909
Irrigation	59	302	546	685	826	2,418
Total	**788**	**1,680**	**2,520**	**3,468**	**4,382**	**12,838**

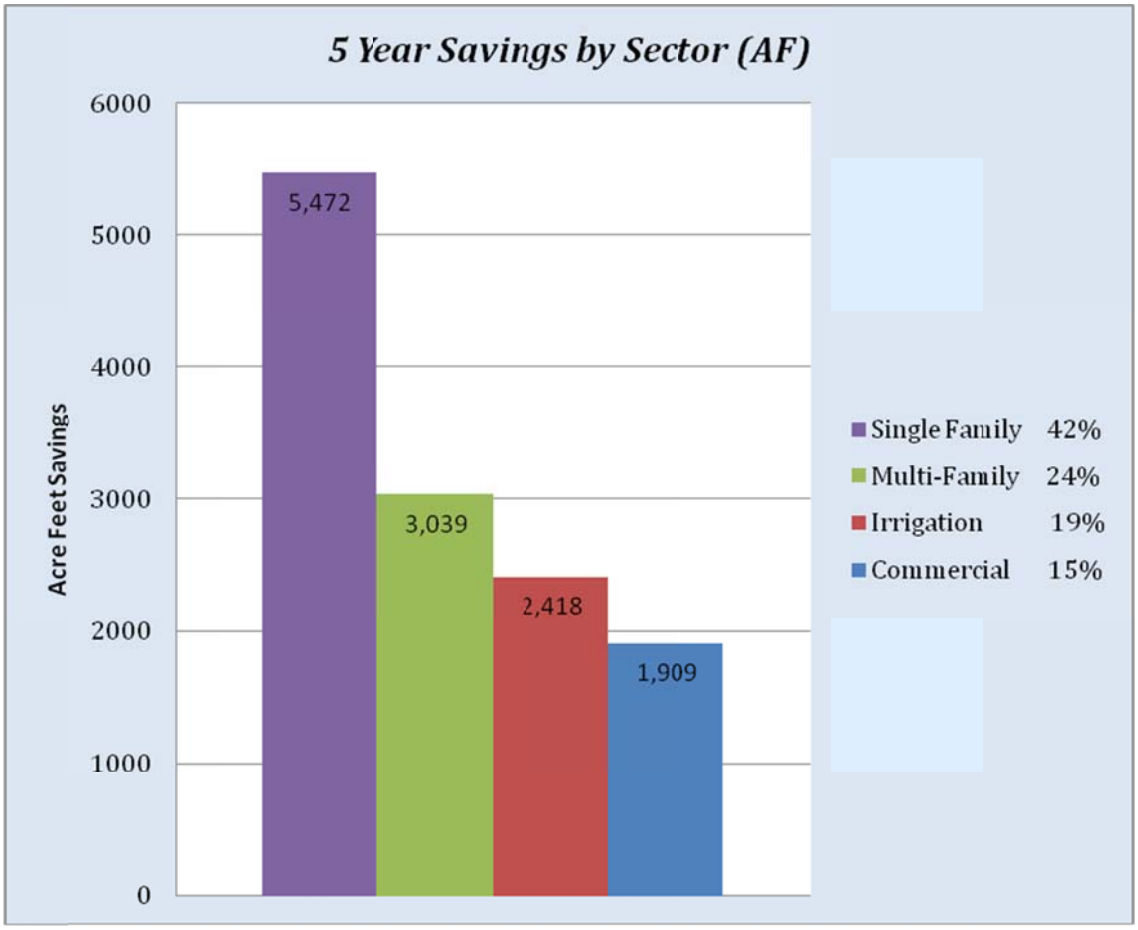


Figure 7.3 Graph of Five Year Acre-Feet Savings by Sector

Savings by Activity

Table 7.6 presents the acre-feet of water savings by activity for each year of the planning period. The HET Give Away Events continue to offer the highest lifetime water savings at 6,611 acre-feet over their twenty year life span. When combined with the HET Commercial Incentive, HET Green Living Direct Installation Program, and HETs installed under the Restroom Retrofit Program, toilets represent by far the largest savings at 12,567 acre-feet. The landscape programs including HE Nozzles, WBICs, Water Budgets and Turf Removal represent the next largest opportunity at 5,789 acre-feet over the life of the product(s).

Table 7.6 Water Savings by Activity

Water Savings by Activity

Activity	Average Annual Water Savings (acre-feet)	Lifetime Water Savings (acre-feet)
HE Clothes Washer, SoCalWater$mart Rebate	81	1,450
HE Nozzles, SoCalWater$mart Rebate	5	46
WBIC < 1 acre, SoCalWater$mart Rebate	8	83
HE Nozzles, Save A Buck Commercial Rebate	1	5
WBIC, Save A Buck Commercial Rebate	42	464
HET (Tank) Rebate, Save A Buck Commercial Rebate	131	3,154
HET Give Away Events	275	6,611
Green Living & Energy Direct Install	91	1,824
Ocean Friendly Large Landscape WBIC Direct Install	196	2,350
Ocean Friendly Single Family WBIC Incentives	22	269
Restroom Retrofit Phase 1 (Urinals)	5	98
Restroom Retrofit Phase 1 (Faucets/Flow Restrictors)	1	2
Restroom Retrofit Phase 2 (Toilets, DWR + MWD Funded)	21	425
Restroom Retrofit Phase 2 (Toilets, USBR Funded)	28	553
Recirc & Save; Audits and Incentives, Industrial Process Upgrades	34	378
Cash for Kitchens, Flow Restrictors	1	12

Water Savings by Activity

Activity	Average Annual Water Savings (acre-feet)	Lifetime Water Savings (acre-feet)
Cash for Kitchens, Pre-rinse Spray Valves	14	128
Cash for Kitchens, Water brooms	11	102
High Efficiency Nozzle Direct Installation Program	26	154
High Efficiency Nozzle Voucher Program	350	2,800
Water Budget Program Pilot	7	71
Turf Removal Demonstration Project	1	16

Programmatic Savings

As stated earlier, programs often consist of multiple activities. Table 7.7 presents the estimated savings rolled up for the selected ten programs.

Table 7.7 Water Savings for Selected Programs

Water Savings by Program

Activity	Average Annual Water Savings (acre-feet)	Lifetime Water Savings (acre-feet)
SoCalWater$mart Residential Rebates	94	1,579
Save A Buck Commercial Rebates	174	3,623
HET Give Away Events	**275**	**6,611**
Green Living & Energy Direct Install	91	1,824
Ocean Friendly Landscape Program	218	2,619

Water Savings by Program

Activity	Average Annual Water Savings (acre-feet)	Lifetime Water Savings (acre-feet)
Restroom Retrofit Program	55	1,078
Recirc & Save; Audits and Incentives	34	378
Cash for Kitchens	26	242
High Efficiency Nozzle Voucher Program	376	2,954
Water Budget Program Pilot	7	71
Turf Removal Demonstration Project	1	16

Passive vs. Active Savings Assumptions

Some of the most significant water savings measures in California have recently come, not from local active program efforts but, rather, from state or national updates to plumbing and building codes. These changes are referred to as "passive," simply because they require no active program efforts from local agencies. For example, code requirements such as flush volumes for toilets, first adopted nationally in 1992, re-shaped the residential and commercial plumbing industry and encouraged the development of new technologies at a pace not seen in decades. The following are some of the most impactful codes responsible for significant passive water savings:

- The United States Energy Policy Act specifies maximum flow rates for many plumbing devices, including toilets, showerheads and faucets;
- United States Environmental Protection Agency Energy Star® Program certifies individual devices for water and energy efficiency standards;
- The California Energy Commission establishes water efficiency standards for clothes washers;
- Effective January 1, 2014, California Assembly Bill 715 requires high-efficiency toilets and urinals to be installed in all new residential construction.

West Basin's current demand forecasts already take into account savings from the federal Energy Policy Act of 1992. However, it is necessary to calculate the passive savings from other activities, specifically California's AB 715, and the natural replacement rate of clothes washers with high efficiency models. For the purposes of this plan, passive savings were calculated for the following measures:

- Single-Family High Efficiency Toilets (HETs)
- Multi-Family HETs
- Single-Family High Efficiency Washers (HEWs)
- Multi-Family HEWs
- Commercial HETs

Table 7.8 provides the estimated passive and active water savings to be achieved over the next five years.

Table 7.8 Passive and Active Water Savings

Passive and Active Water Savings	Annual Water Savings (acre-feet)				
	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16
Passive Water Savings	418	917	1,390	2,057	2,694
Active Water Savings	370	763	1,130	1,411	1,687
Total Water Savings	**788**	**1,680**	**2,520**	**3,468**	**4,381**

Historical and Projected Water Savings

The graph in Figure 7.4 shows past water savings combined with projected future water savings for active programs. Savings decline over time as the water efficiency life of the device declines (i.e. the savings from a high efficiency toilet installed in 2003 will terminate in 2023).

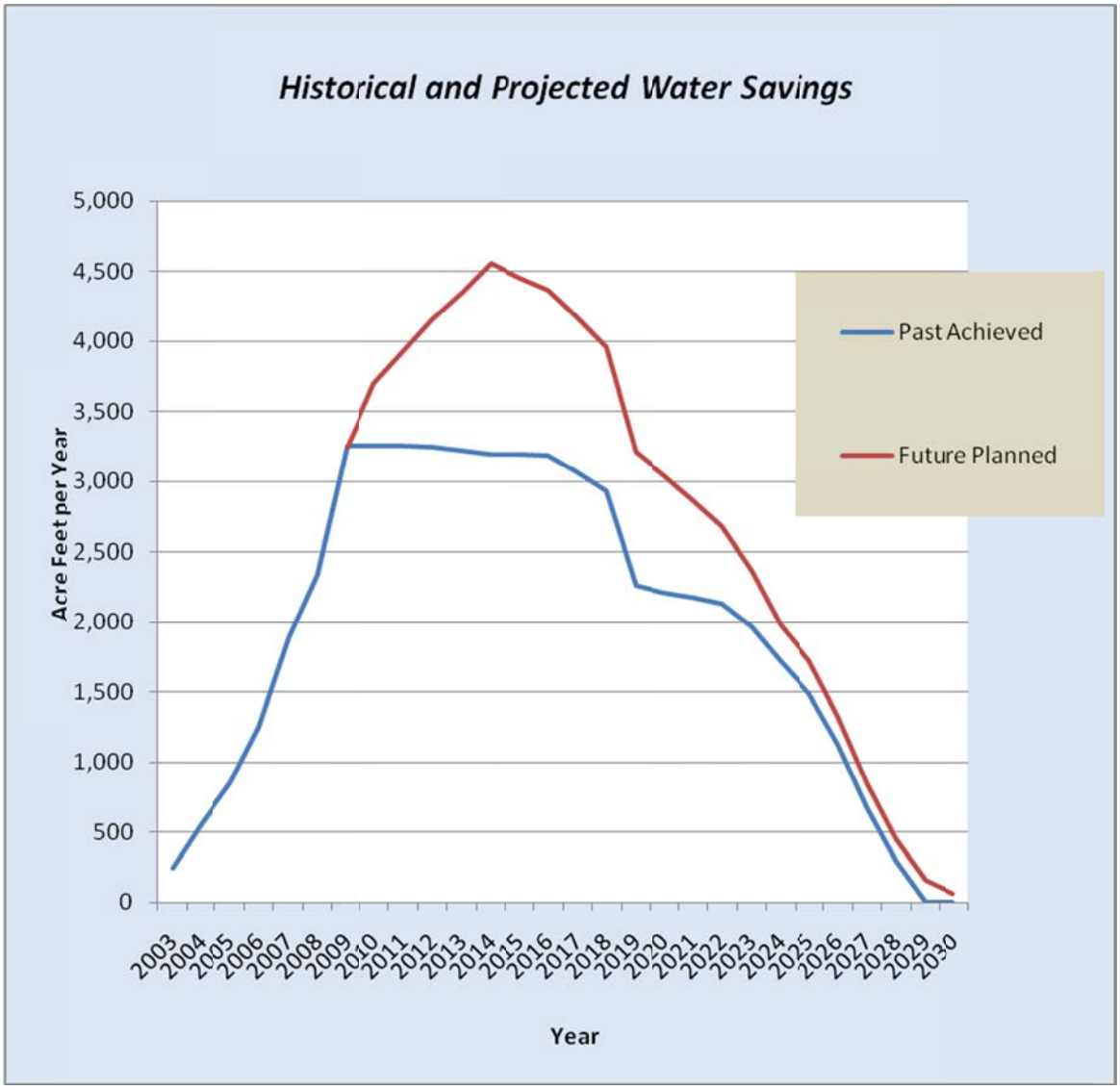


Figure 7.4 Historical and Projected Water Savings

Budget by Year

West Basin prepares annual budgets with line items dedicated to water conservation activities. The annual budget for each year of the five-year planning period, based upon the plan, is in Table 7.9. The budget amounts shown reflect the financial commitment of West Basin and are exclusive of Metropolitan, DWR or USBR grants or local retail agency funding. Budgets include only program implementation costs for administration, marketing, incentives and installations. Budgets do not include costs for education, internal staff or other expenses.

Table 7.9 West Basin Budget by Year over Five Years

West Basin Budget

Program Year	Annual Program Budget ($/Yr)
FY 11/12	$259,046
FY 12/13	$318,899
FY 13/14	$328,466
FY 14/15	$309,384
FY 15/16	$268,420
5 Year Total	**$1,484,214**

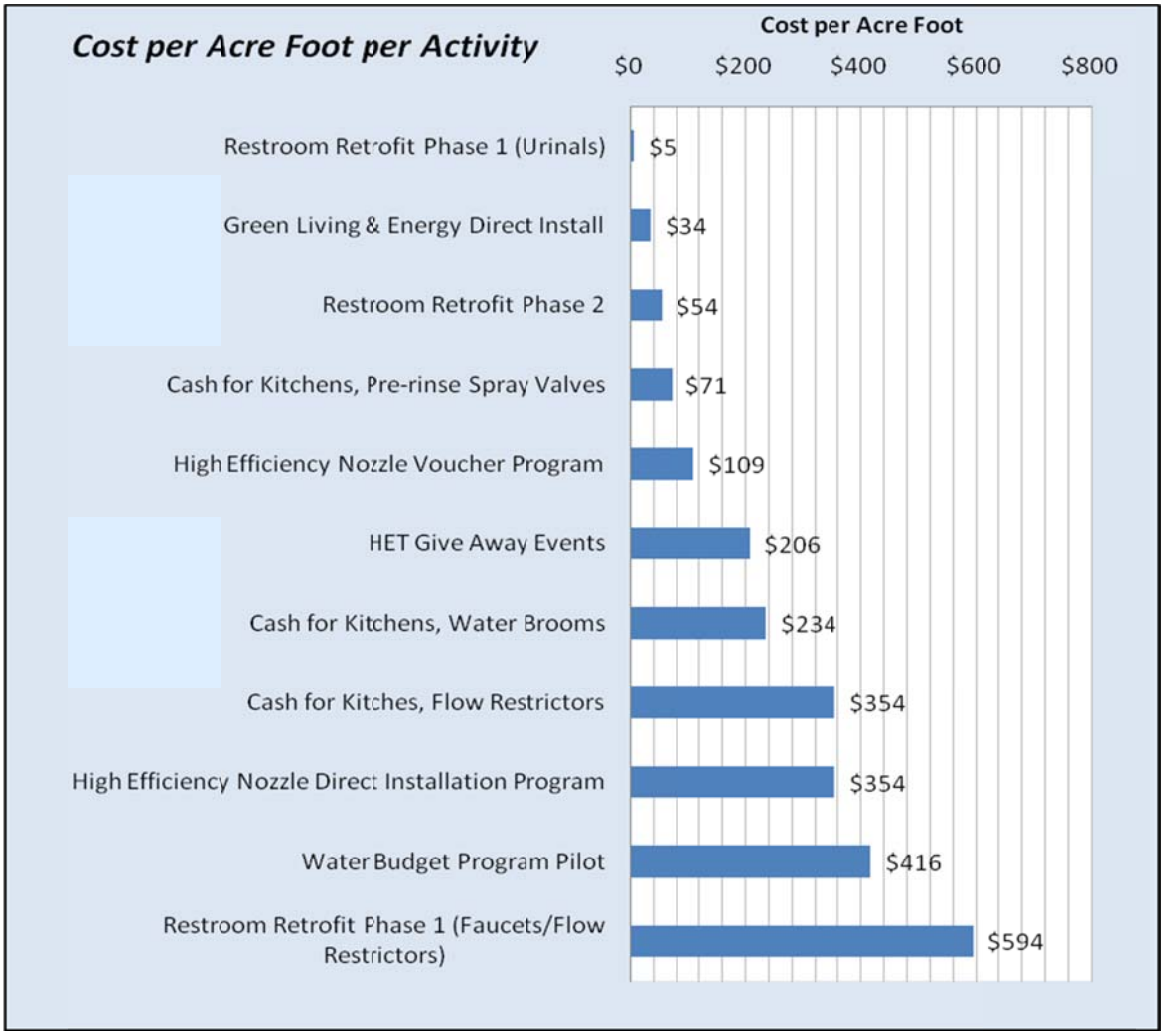
Each of the retail water agencies has an annual budget. Due to financial constraints, many of the municipal agencies do not have budgets specific for water use efficiency programs. Others such as the cities of Lomita and Manhattan Beach have budgets that are for education and outreach activities only. California American Water Company's service territory of Baldwin Hills is only a minor portion of their entire service territory, so a specific budget has not been allocated for Baldwin Hills alone. CalWater, Golden State and District 29 have locally funded programs as well as education and outreach budgets. Details of these budgets are provided in each agency's individual plan.

West Basin Costs and Benefits

This Plan is estimated to save more than165,490 acre-feet of water valued at a $93 per acre-foot cost to West Basin. This falls well below West Basin's current cost to purchase water from Metropolitan for $811 per acre-foot. The avoided costs equate to $15,310,337. The overall benefit to cost ratio is 12.25. On the following pages are details of the economic analysis.

Figure 7.5 below shows the cost per acre-foot per activity for programs with West Basin funding. Activities without program funding such as SoCalWater$mart's HEW Rebates are not included in the graph because the cost to West Basin is $0.

Figure 7.5 Cost per Acre-Foot per Activity



Activities with zero cost to West Basin include:

1. HE Clothes Washer, SoCalWater$mart Rebates
2. HE Nozzles, SoCalWater$mart Rebates
3. WBIC < 1 acre, SoCalWater$mart Rebates
4. HET Nozzles, SAVE-A-BUCK Commercial Rebates
5. HET (Tank) Rebate, SAVE-A-BUCK Commercial Rebates
6. Ocean Friendly Large Landscape WBIC Direct Install
7. Ocean Friendly Single Family WBIC Incentives
8. Recirc & Save; Audits and Incentives, Industrial Process Upgrades

The three lowest-cost water savings activities are:

1. Restroom Retrofit Phase 1 (Urinals)
2. Restroom Retrofit Phase 2 (Toilets)
3. Cash for Kitchens, Pre-rinse Spray Valves

Table 7.11 documents the avoided supply costs and benefit to cost ratio per activity. All of the activities have respectable benefit to cost ratios, with the lowest being -0.12 and the highest performer being 246.17. The Turf Removal Demonstration Project is calculated at -0.12, however this is not a standard water use efficiency program. The Turf Removal Demonstration Project is just that, a demonstration project that will aid in the long term transformation of the landscape market. Therefore it is not being evaluated for its cost effectiveness, but more so for its impact on the individual customer's likelihood to use water efficiently in their landscape and, over time, remove unneeded turf.

Many of the activities with extremely high benefit-to-cost ratios such as the Restroom Retrofit Phase 1 (urinals) at 246.17 have significant funding from MWD and other grants or require a significant customer copayment.

The program with the highest avoided supply cost is the HET Give Away Events, reducing West Basin water purchases by $4.4 Million. The active programs total $15,310,337 in avoided supply costs and have a total benefit-to-cost ratio of 12.25.

Table 7.10 Avoided Cost and Benefit-to-Cost Ratio per Activity

Avoided Cost and Benefit-to-Cost Ratio per Activity		
Activity	**Avoided Cost**	**Benefit to Cost Ratio**
HE Clothes Washer, SoCalWater$mart Rebate	$1,196,200	Zero Cost to West Basin
HE Nozzles, SoCalWater$mart Rebate	$40,053	Zero Cost to West Basin
WBIC < 1 acre, SoCalWater$mart Rebate	$74,432	Zero Cost to West Basin
HE Nozzles, Save A Buck Commercial Rebate	$4,490	Zero Cost to West Basin
HET (Tank) Rebate, Save A Buck Commercial Rebate	$1,995,282	Zero Cost to West Basin
WBIC CII Save A Buck Rebate	$417,011	Zero Cost to West Basin
HET Give Away Events	**$4,182,755**	**5.98**
Green Living & Energy Direct Install	$1,141,970	33.81
Ocean Friendly Large Landscape WBIC Direct Install	$2,085,477	Zero Cost to West Basin
Ocean Friendly Single Family WBIC Incentives	$238,834	Zero Cost to West Basin
Restroom Retrofit Phase 1 (Urinals)	$88,696	246.17
Restroom Retrofit Phase 1 (Faucets/Flow Restrictors)	$2,047	1.51

Avoided Cost and Benefit-to-Cost Ratio per Activity		
Activity	**Avoided Cost**	**Benefit to Cost Ratio**
Restroom Retrofit Phase 2 (Toilets, DWR + MWD Funded)	$266,027	21.26
Restroom Retrofit Phase 2 (Toilets, USBR Funded)	$345,836	21.26
Recirc & Save; Audits and Incentives, Industrial Process Upgrades	$334,269	Zero Cost to West Basin
Cash for Kitchens, Flow Restrictors	$10,169	2.87
Cash for Kitchens, Pre-rinse Spray Valves	$112,799	14.24
Cash for Kitchens, Water brooms	$89,462	4.33
High Efficiency Nozzle Direct Installation Program	$135,015	2.82
High Efficiency Nozzle Voucher Program	$2,472,900	9.48
Water Budget Program Pilot	$62,319	2.47
Turf Removal Demonstration Project	$14,294	0.12
Total	**$15,310,337**	**12.25**

Customer Costs and Benefits

To better understand the value that may be perceived by the customer in relation to the planned programs, the per unit costs and avoided utility bills are shown in Table 7.11 below. For the purposes of this evaluation, regional rates for water, sewer, electricity and gas were used.

Table 7.11 Customer Avoided Utility Bills and Benefit to Cost Ration per Activity

Customer Avoided Utility Bills and Benefit to Cost Ratio per Activity		
Activity	**Unit Cost per Acre-foot**	**Avoided Utility Bills**
HE Clothes Washer, SoCalWater$mart Rebate	$1,977	$892,205
HE Nozzles, SoCalWater$mart Rebate	$54	$25,894
WBIC < 1 acre, SoCalWater$mart Rebate	$1,353	$(41,271)
HE Nozzles, Save A Buck Commercial Rebate	$54	$3,372
HET (Tank) Rebate, Save A Buck Commercial Rebate	$282	$2,156,086
WBIC CII Save A Buck Rebate	$661	$55,889
HET Give Away Events	$0	$5,115,793
Green Living & Energy Direct Install	$0	$2,816,561
Ocean Friendly Large Landscape WBIC Direct Install	$0	$1,592,260
Ocean Friendly Single Family WBIC Incentives	$1,989	$(287,129)
Restroom Retrofit Phase 1 (Urinals)	$177	$105,766
Restroom Retrofit Phase 1 (Faucets/Flow Restrictors)	$0	$3,695
Restroom Retrofit Phase 2 (Toilets, DWR + MWD Funded)	$0	$372,553
Restroom Retrofit Phase 2 (Toilets, USBR Funded)	$0	$484,319
Recirc & Save; Audits and Incentives, Industrial Process Upgrades	Costs vary significantly per project	$260,715
Cash for Kitchens, Flow Restrictors	$0	$16,173
Cash for Kitchens, Pre-rinse Spray Valves	$0	$179,404
Cash for Kitchens, Water brooms	$0	$72,003
High Efficiency Nozzle Direct Installation Program	$0	$110,319
High Efficiency Nozzle Voucher Program	$272	$1,302,509
Water Budget Program Pilot	$481	$13,887
Turf Removal Demonstration Project	$8,671	$(103,273)
Total	**NA**	**$4,065,865**

Key points from the customer cost benefit analysis:

- Activities with a high per-unit cost such as the Turf Removal Demonstration Project and the WBIC incentive program require a significant customer co-payment. Although these measures are not as cost effective as other programs, many customers elect to implement them for other reasons.
- Commercial customers installing ultra-low volume urinals via the Restroom Retrofit Program will spend only $177 to save $2,644 in utility costs.
- Each high efficiency nozzle installed under the voucher program will save customers $9. Most customers will be able to self-install and, on average, may save $270 over the five year life of the product.

Outside Funding Opportunities

Outside funding sources have provided critical financial support to local water conservation programs for several decades. Regional, state and federal agencies have a long history of making funds available to local water agencies for the implementation of prioritized programs. In the form of incentives, grants and loans, these financial mechanisms underscore the shared goals of water conservation and efficiency within California's water industry. West Basin has a long history of success in accessing these funds to support implementation of its numerous programs. Between 2003 and 2009, West Basin successfully secured more than $8 million in outside funding for Conservation and Water Efficiency programs. West Basin will continue to pursue all grants and financial incentives for current and future programs and expects to offset a significant portion of program costs with outside funding.
As the State and Federal economies continue in a recovery phase into the foreseeable future, the availability of outside funding will likely be less consistent and more competitive than in recent years. Therefore, it is important that West Basin has a clear understanding of the outside funding possibilities that include realistic expectations of their availability. This chapter provides a description of current outside funding sources as well as brief projections as to their availability in the near future.

Metropolitan Water District

Metropolitan has been a consistent source of outside program funding for its member agencies for many years. Its support has come in various forms and West Basin has consistently utilized these funds for program implementation. For FY 11/12, Metropolitan makes available the following financial support opportunities to local agencies:

- **SoCalWater$mart:** provides direct rebates to single family and multi-family residential customers for the installation of high efficiency clothes washers, smart landscape controllers and high efficiency nozzles;
- **SAVE-A-BUCK:** provides direct rebates to commercial, industrial and institutional customers for a menu of water saving devices;
- **Agency Administered Programs**: Each Metropolitan member agency will be allocated a specific budget for locally implemented programs. It is anticipated that

Metropolitan's contribution to West Basin's conservation programs next year, which are not part of Metropolitan's menu of programs will be an estimated $270,000.

State of California, Department of Water Resources

In recent years, the State's primary funding contribution to conservation programs has come from Proposition 50, the Water Security, Clean Drinking Water, and Coastal & Beach Protection Act of 2002. Given the slow pace of the economic recovery in California, it is unknown whether Prop 50 funds will be available in the foreseeable future. Other State agencies that focus on water, such as the California State Water Resources Control Board, offer grant programs that focus primarily on water quality and storm water issues and are not directly relevant to water conservation or efficiency. At this time, it is advisable to develop local conservation plans for the next two years absent expectations of any significant state financial contribution.

United States Department of Interior, Bureau of Reclamation

Federal financial contributions to local agency water conservation programs have come primarily from the United States Bureau of Reclamation (USBR). USBR currently offers two water conservation grant opportunities under the SoCalWater$mart program: the Challenge Grant and Water and Energy Efficiency Grants. West Basin is applying this year for three grants including:

High Efficiency Nozzle Direct Installation Program

The proposed program, described in the grant application as the Landscape Irrigation Efficiency Program, will provide landscape surveys and high-efficiency irrigation nozzles to residents in the Commercial, Industrial and Institutional (CII) sector throughout West Basin's service area, saving a projected 1,478 acre-feet at a total program cost of $387,885. The interested sites will receive a site survey of their landscape to determine problems with the landscape and the irrigation system that will determine the type and number of existing nozzles to be replaced with water efficient nozzles. The residential or business landscape manager will also receive a list of system improvement recommendations along with an appropriate water budget and irrigation watering schedule.

Water Star Schools (JULY AWARD NOTIFICATION)

The proposed West Basin Municipal Water District (West Basin) Water Star Schools Pilot Program (program or project) will update existing indoor and outdoor water conservation devices in 10 schools throughout the West Basin service area. Schools targeted for this pilot project will be both public middle and high schools. The devices to be installed include the 50 high-efficiency toilets, 50 high-efficiency urinals, 200 faucet aerators, 200 faucet flow restrictors, 10 pre-rinse spray valves, 10 water brooms, 2 connectionless steamers, 2 ice machines, 25 showerheads, 5 conductivity controllers, 2 pH controllers, 20 landscape irrigation controllers, 150 rotating irrigation nozzles, 2,500 pop-up spray head irrigation nozzles and 2,000 Water Star kits.

Joint Energy and Water Commercial Audit Program (SEPTEMBER AWARD NOTIFICATION)

Southern California Edison, Irvine Ranch Water District and West Basin cooperative submittal.

The proposal is to implement a joint audit pilot program within the IRWD and West Basin service areas. In the West Basin segment, the pilot would take place within the service areas of two investor-owned retail agencies, California Water Service Company and Golden State Water Company. Water Agencies propose to leverage the existing SCE commercial audit activity to gather water-use information about the site (just as the energy-use information is gathered) to encourage customers to make upgrades to their water-use equipment by presenting them with incentives and direct install services. 400 businesses will be included in this pilot program (in both IRWD and WBMWD split 50%/50%). Total devices to be installed as a result of leads developed by the SCE Audits include: 550 HET, 50 HEU, 300 faucet aerators, 300 pairs of faucet flow restrictors.

Other Federal Sources

The American Recovery and Reinvestment Act of 2009 has recently made over $35 million dollars available in California for energy and water conservation rebates. The Cash for Appliances component of the ARRA offered a supplemental rebate in the amount of $100 for qualifying HE clothes washers. It is not known at this time whether the program will be extended.

The United States Environmental Protection Agency currently offers financial assistance to local agencies for watershed, water quality and water distribution and treatment systems upgrades. At this time, financial support is not available for water conservation/efficiency programming.

Plan Updates

The business plan is a working document and, as such, must be modified and updated as changes occur and program years roll out. West Basin and the member agencies will need to regularly review the plan and make adjustments accordingly.

Changes and/or reviews of the business plan should take place in line with the following conditions:

- When programs are added, subtracted or modified;
- As grants are received, put on hold or denied;
- On a yearly basis in order to meet the annual reporting requirements;
- Every 5 years to meet the Urban Water Management Plan report cycle.

The economic analysis of West Basin's Conservation Programs was conducted using the Alliance for Water Efficiency Water Conservation Tracking Tool.
This appendix summarizes the results of the cost effectiveness analysis of a set of existing and potentially new water conservation programs. These conservation programs came out of the Stakeholder Workshops for the West Basin's WE Plan.
The program cost-effectiveness is assessed from:

1. A Regional Water Agency Perspective to determine if the programs make sense for water agencies to implement for the region. This perspective includes all program costs to water agencies (West Basin's costs plus outside funding) compared to the water savings. Programs not regionally cost effective were excluded from further analysis

2. A Retailer Perspective to determine attractiveness from the viewpoint of West Basin. This perspective includes only the direct program costs to West Basin (excluding outside funding) compared to the water savings.

This appendix provides the summary of results of the cost-effectiveness analysis. The results are summarized in the following four tables/figures:

Table A.1: Savings and Cost Assumptions (Per Participant)

Table A.2: Conservation Program Benefits

Table A.3: Program Ranking by Cost per Acre-Foot

Table A.4 Activity Ranking by Benefit-to-Cost Ratio for West Basin

Table A.1 Savings and Cost Assumptions:

The estimates and assumptions for the conservation program yield (magnitude and duration) are found in *Table A.1: Water Savings Assumptions and Inferred Savings (Per Participant)*. The water savings are expressed in terms of the magnitude (in gallons per year per participant) and the duration of expected savings over the life of the intervention (years). From these three inputs, one may infer the expected stream of water savings. The program cost assumptions for utility and participant perspectives follow. The program cost assumptions are provided by the following cost components per participant: upfront costs, marketing costs, installation costs, and O&M costs. These cost components are then summed into a total cost per participant.

Table A.1 Water Savings Assumptions and Inferred Savings (Per Participant)

Program Name	Name	Class	ıvings, k Period of Annual ıvings)	Savings, Useful Life (yrs)	ial :	rticipant ısts, On-going ($/Yr)	ınt ;, Ga	Participan t Savings, Electricity (KWh/Gal	ımbing le, Unit ıvings gpy)	Plumbing Code, Natural Replacement Rate NRR (%)

Table A.2: Conservation Program Benefits:

This table ranks the saving provided for each program in Avoided Supply Costs.

Table A.2: Conservation Program Benefits

Activity Name	Avoided Supply
HET Give Away Events	$4,182,755
High Efficiency Nozzle Voucher Program (FreeSprinklerNozzles.com)	$2,472,900
Ocean Friendly WBIC Direct Install (Large Landscape)	$2,085,477
HET (Tank) Rebate, CII Save A Buck Rebate	$1,995,282
HE Clothes Washer, SF **SoCal WaterSmart** (Rebate only 4.0 or better.)	$1,196,200
Green Living & Energy Direct Install, MF HETs	$1,141,970
WBIC CII Save A Buck Rebate	$417,011
Restroom Retrofit Phase 2 (Toilets, USBR Funded)	$345,836
Recirc & Save Audits and Incentives, Industrial Process Reuse	$334,269
Restroom Retrofit Phase 2 (Toilets, DWR+MWD Funded)	$266,027
Ocean Friendly WBIC Incentives (Single Family)	$238,834
High Efficiency Nozzle Direct Installation Program	$135,015
Cash for Kitchens, Pre-Rinse Spray Valves	$112,799
Cash for Kitchens, Water Brooms	$89,462
Restroom Retrofit (Urinals)	$88,696
WBIC (no subscription) < 1 acre, SF SoCalWaterSmart Rebate	$74,432
Water Budget Program (SF)	$62,319
HE Nozzles, SF **SoCalWaterSmart** Rebate	$40,053
Turf Removal Incentive Program [Front Yard Demo Program]	$14,294
Cash for Kitchens, Flow Restrictors	$10,169
HE Nozzles for Pop Ups Save A Buck Rebate	$4,490
Restroom Retrofit (Faucets/Flow Restrictors)	$2,047
Cooling Tower Cond Contr Save A Buck Rebate	unknown
Cooling Tower pH Controller **Save A Buck** Rebate	unknown
ULVZ Urinal Save A Buck Rebate	unknown
Recirc & Save Audits and Incentives, Cooling Tower	unknown
Residential (Resource Action) School Kit Program	unknown

Table A.3: Program Ranking by Cost per Acre-Foot

This table ranks the cost per acre foot of water saved for each of the programs.

Table A.3 Program Ranking by Cost per Acre-Foot

	Activity Name	Regional Cost ($/AF)
1	HE Clothes Washer, SF **SoCal WaterSmart** Rebate only 4.0 or better	$0
2	HE Nozzles, SF **SoCalWater$mart** Rebate	$0
3	WBIC (no subscription) < 1 acre, SF **SoCalWater$mart** Rebate	$0
4	HE Nozzles for Pop Ups **Save A Buck** Rebate	$0
5	**HET (Tank) Rebate, CII Save A Buck** Rebate	$0
6	WBIC CII **Save A Buck** Rebate	$0
7	**Ocean Friendly** WBIC Direct Install (Large Landscape)	$0
8	**Ocean Friendly** WBIC Incentives (Single Family)	$0
10	**Recirc & Save** Audits and Incentives, Industrial Process Reuse	$0
11	**Restroom Retrofit** (Urinals)	$5
12	**Green Living** & Energy Direct Install, MF HETs	$34
13	**Restroom Retrofit Phase 2** (Toilets, USBR Funded)	$54
14	**Restroom Retrofit Phase 2** (Toilets, DWR+MWD Funded)	$54
15	**Cash for Kitchens**, Pre-Rinse Spray Valves	$71
16	**High Efficiency Nozzle** Voucher Program (FreeSprinklerNozzles.com)	$109
17	**HET Give Away** Events	$206
18	**Cash for Kitchens**, Water Brooms	$234
19	**Cash for Kitchens**, Flow Restrictors	$354
20	**High Efficiency Nozzle** Direct Installation Program	$354
21	**Water Budget** Program (SF)	$416
22	**Restroom Retrofit** (Faucets/Flow Restrictors)	$594
23	**Turf Removal** Incentive Program [Front Yard Demo Program]	$9,198
24	**Cooling Tower Conditioning Controller Save A Buck** Rebate	unknown
25	Cooling Tower pH Controller **Save A Buck** Rebate	unknown
26	**ULVZ Urinal Save A Buck** Rebate	unknown
27	**Recirc & Save** Audits and Incentives, Cooling Tower	unknown
28	**Residential (Resource Action) School Kit** Program	unknown

Table A.4 Activity Ranking by Benefit-to-Cost Ratio for West Basin

This table ranks the calculated benefit-to-cost ratios for the programs that are funded by West Basin. To interpret these ratios, remember that the higher the number, the better the overall performance. Measures falling below 1.0 are not deemed cost effective.

Table A.4 Activity Ranking for West Basin's Benefit-to-Cost Ratios

Activity Name	B/C Ratio
Restroom Retrofit (Urinals)	246.17
Green Living & Energy Direct Install, MF HETs	33.81
Restroom Retrofit Phase 2 (Toilets, DWR+MWD Funded)	21.26
Restroom Retrofit Phase 2 (Toilets, USBR Funded)	21.26
Cash for Kitchens, Pre-Rinse Spray Valves	14.24
High Efficiency Nozzle Voucher Program (FreeSprinklerNozzles.com)	9.48
HET Give Away Events	5.98
Cash for Kitchens, Water Brooms	4.33
Cash for Kitchens, Flow Restrictors	2.87
High Efficiency Nozzle Direct Installation Program	2.82
Water Budget Program (SF)	2.47
Restroom Retrofit (Faucets/Flow Restrictors)	1.51
Turf Removal Incentive Program [Front Yard Demo Program]	0.12

Analysis Outcome

With the analysis complete, program and activity performance has been clearly delineated. Results of the analysis are positive, overall, and reveal that 21 measures cost less than Metropolitan's Untreated Water rate of $854. The Turf Removal incentive did not meet this performance level, with a cost of $9,198 per acre-feet of savings. This program could not be justified on direct avoided water supply costs alone. However, turf removal is intended as a public education program, where the benefits are not so easily measured in dollars or gallons.

Of particular interest are the following findings:

- The Restroom Retrofit Urinal replacement program had the lowest cost per acre-foot at $5. Not surprisingly, activities and programs that were substantially funded by Metropolitan, such as ULV (Ultra Low Volume) Urinal Rebates, had a low cost per acre-foot.

- Programs administered and marketed by Metropolitan, DWR and other agencies (SoCalWater$mart, SAVE-A-BUCK and Ocean Friendly) are very beneficial to West Basin's bottom line because the costs are absorbed by these agencies.

Project Summary

In Summary, West Basin is pleased with the integrated approach it designed and implemented along with its eight local water retailers in creation of this Master Plan and the eight retail agency master plans. There were many benefits to this approach, including:

- Closer integration of program marketing, funding and implementation;
- Identification of local agency and regional 20% x 2020 water reductions targets;
- Development of the first "Water & Energy Implementation Plan"; and
- Development of cost-effective water efficiency programs to meet West Basin's Water Reliability 2020 Program.

West Basin thanks the United States Bureau of Reclamation, once again, for its cost-sharing partnership, along with all eight customer retail agencies, each whom provided a cost-share for the development of their individual Water Efficiency Plan.

West Basin will use this Master Plan and the analytical tools used to develop the Plan to continue to produce effective programs and strategies for the next five years.

By collaborating with its retail agencies and the South Bay Environmental Services Center on this project, West Basin is leading an effort in its service area to develop greater local control of its water supplies to ensure water reliability for the future.