

COMPLETE RESTROOM RETROFIT: PHASE 2



FINAL PROJECT REPORT

Agreement No. RP10AP35286

West Basin Municipal Water District

17140 South Avalon Boulevard, Suite 210, Carson, CA 90746

Prepared for:

RECLAMATION

Managing Water in the West

Recipient Information

West Basin Municipal Water District (West Basin)
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Project Name: Restroom Retrofit Program Phase 2

Assistance Agreement Number: RP10AP35286

Date of Award: July 2010

Date of Project Start: September 22, 2010

Original Completion Date: February 28, 2012

Extended Completion Date: January 31, 2013

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Project Summary

Water use in restrooms accounts for more than 40% of total water consumption for many Commercial, Industrial and Institutional (CII) facilities. West Basin Municipal Water District (West Basin) designed and implements the Complete Restroom Retrofit Program (Program) to specifically address water use in restrooms in the CII sector. The Program consists of retrofitting existing older, high-water using devices with new, high-efficiency devices such as toilets (HET), urinals (HEU) and faucet flow control valves (FCV).

The Program has been rolled out in a multi-phase manner and is currently in its third iteration. In 2006, West Basin received grant funding from the Department of Water Resources to be targeting the CII sector (Phase 1). In 2010, West Basin applied for additional grant funding from USBR to leverage the success and remaining funding from Phase 1.

The Program consists of contacting owners and managers of commercial sites to identify high-water using devices such as toilets and urinals and to retrofit those existing older with new, high-efficiency devices to effectively reduce water use in restrooms and lower the site's total water consumption.



Final Project Description

Following notification of award, West Basin released a Request for Proposals to seek qualified plumbing contractors through an open, competitive qualification process to implement Phase 2 of the Program. Through the open bid process, two contractors were selected and awarded the project. These contractors worked directly with commercial site owners/managers to identify eligible toilets and urinals for retrofit, discuss benefits and gain the interest of the site management to schedule an assessment and begin the process of retrofitting older eligible fixtures. They also were responsible for the purchase and installation of the HET. Customer service is very important for these projects and a high standard for all work was met to ensure high levels of customer satisfaction.

Though eligible sites had been identified during Phase 1 of the Program, additional outreach began in Q3 of 2010 and continued throughout the duration of the program. The contractors pursued a variety of CII facilities including hotels, schools, city facilities, and small commercial businesses. Often times, projects at large CII sites can take several months to from the time of initial contact with a site through the final installation but have higher than average water saving potential. In addition to a potential corporate approval process, the site needs to be fully assessed to determine fixture eligibility. This would all take place prior to any ordering of product or installation scheduling activities.

**Complete Restroom Retrofit Phase 2: RP10AP35286
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West Basin's contractors began purchasing and installing devices starting in February 2011 with the first installations occurring March 2011 and completed by November 2012.

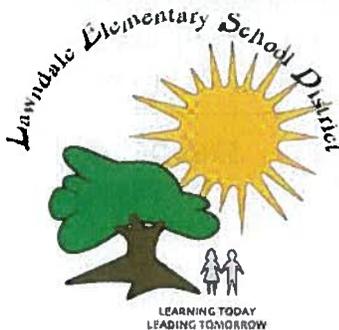
Table 1-1: Milestone Tracking, Phase 2 Complete Restroom Retrofit: Projected vs. Actuals

HET Installations	Total # HET	April 2011	June 2012	November 2012
Goal	1,325	40%	80%	100%
		530	1,060	1,325
Actual	1,336	44%	95%	101%
		590	1,277	1,336

Accomplishment of Project Goals

Overall objectives of the project were met and exceeded as can also be seen in Table 1-1. A total of 1,336 HET were installed by the contractors at a large variety of CII sites; thereby reducing water demand by 90 Acre Feet (AF) annually for the next 20 years for a lifetime savings of 1,713 AF.

Through this program, HET were installed at the following sites: Double Tree by Hilton, Manhattan Beach Marriott, Manhattan Beach Village Shopping Center, Gateway Plaza, Garden Tower Inn, Baytower, Culver City Palms YMCA, Pacific Corporate Towers, various City of Torrance facilities, Gardena YMCA, City of Hawthorne, City of Hermosa Beach, The Crowne Plaza Hotel, International Discount Outlet, Crenshaw Wholesale, Ramona's Mexican Food Products, Somar Corp, Lawndale Care Center, Lawndale Unified School District, Half Moon Motel, Sunny Hills Palladium, Palos Verdes Healthcare Center, Shell Oil, Lennox Middle School, Nadar's LA Popular, Mattel, Mary and Joseph Retreat Center, Inglewood Unified School District, Lewis Industrial Complex, City of Manhattan Beach, Glentek, Los Angeles Unified School District.





Project objectives were met at a lower cost than anticipated which resulted in a lower cost overall project cost and cost share for USBR. West Basin is therefore de-obligating \$44,050 in USBR cost share from this project. West Basin ended up receiving more contribution from our local partners than anticipated which helped increase local cost share and reducing the federal share to implement the project. Table 1-2 shows a comparison of projected Program costs to the actual amounts spent to reach the objectives.

Table 1-2: Project Summary

Project Cost Summary	Total	USBR	Local Share
Projected Program Costs (percentage cost share)	\$645,696.00	\$295,750.00 (46%)	\$349,446.00 (54%)
Actual Program Outlays (percentage cost share)	\$613,767.64	\$251,700 (44%)	\$362,067.64 (56%)

West Basin Total Water Supply

West Basin serves a population of nearly one million people, purchasing imported water from the Metropolitan Water District of Southern California (MWD), and wholesaling the imported water to 17 cities and several unincorporated areas in Los Angeles County area. MWD is a State Water Project Contractor and also brings water from the Colorado River via the Colorado River Aqueduct. Typically, water from the State Water Project and Colorado River Aqueduct are blended at a 45/55 level, with water imported from the Colorado River to West Basin's service area estimated at 70,565 AF/year (AFY) which is 55% of the five-year average water use of 128,300 AF.

As an imported water wholesaler and a MWD member agency, West Basin sold approximately 139,263 AFY of imported water and 28,500 AFY of recycled water in Fiscal Year (FY) 2011/12. Groundwater amounts for less than 20% of water used in the West Basin service area (~20,000 AF) MWD typically does not have a specific annual water allocation. In Fiscal Year 2009/10, MWD implemented a Water Supply Allocation Plan which does provide a limit of imported water purchases due to the drought conditions. The agency extended this into Fiscal Year 2010/11 which in effect reduced the 10-year average. The imported water demand has consistently decreased, but the 10-year average use has been 121,101 AFY.

Amount & Explanation of Estimated Water Conserved

As can be seen in Table 1-3, over 90 AFY and approximately 1,713 AF over the 20-year lifetime of the devices will be saved as a result of Phases 1 and 2 of the Program.

Table 1-3: Water Savings Summary

Project Water Savings Summary	Quantity	Water Savings per unit (AF)	Annual Water Savings (AF)	Device Lifetime	Lifetime Water Savings (AF)
Phase 1: HET	199	0.0425*	8.4575	20	169.15
Phase 1: HEU	126	0.1227*	15.4602	20	309.204
Phase 1: FCV	806	0.0123 [†]	9.9138	10	99.138
Phase 2: HET	1336	0.0425*	56.78	20	1,135.6
TOTAL SAVINGS (Projected Water Savings Goal)			90.61 (86.98)		1,713 (1,711)

* Metropolitan Water District savings estimate

† State of California's Flex Your Power savings estimate

Estimated savings based on the following assumptions: HET are estimated to save 0.0425 AF per year and 0.850 AF over a 20 year useful device lifetime per regional "deemed" savings numbers approved by MWD. HEU (also referred to Ultra Low Water Urinals or Pint Urinals) are estimated to save 0.1227 AFY and 2.454 AF over a 20 year useful device lifetime also according to MWD. The high-efficiency faucets flow restrictors are estimated to save 5,000 gallons or 0.0123 AFY and 0.123 AF over a 10 year useful device lifetime; this is the only device in the program that does not have a 20 year life.

MWD does not provide an incentive for the faucet flow control valve and therefore does not have deemed savings data for this device. In this case, the savings estimate was derived from the State of California's "Flex Your Power" water reduction estimates for faucet aerators of 0.0123 AFY assuming reduction from a minimum 2.2 gpm to a maximum 1.5 gpm retrofit. The majority of the faucets retrofitted through this Program ended up with a lower flow rate of 1.0 gpm or 0.5 gpm; as a result, the estimated savings rate provided in this report can be seen as a conservative estimate.

Additionally, the flow control valves are much more permanent than a typical faucet aerator that can be easily tampered with. These under the counter devices will stay in place for what we assume, about 5 times the length of time of a typical aerator giving it an estimated 10 year lifetime. A specification sheet for this product has been included in this report as Appendix 8.

Use of Conserved Water

The water conserved can either remain in the environment to benefit the Sacramento-San Joaquin Delta and/or Colorado River systems. It can also be made available for other users to account for regional demand increases.



Collaboration, Stakeholders and Partnerships

Collaborative partnerships were critical to the implementation of this Project. All funding partners involved were developed through a collaborative process to produce regional benefits. Funding from the Department of Water Resources provided through Las Virgenes Municipal Water District (Las Virgenes) was distributed as a result of the leadership within the Integrated Regional Water Management Program (IRWMP) which allowed funds from a grant awarded originally to Las Virgenes spent outside their jurisdiction to benefit the larger region.

Partnerships with two of our retail California Water Service Company, Golden State Water Company and our regional partner the City of Torrance are reassessed on an annual basis. The outcome of this grant benefits multiple entities and increases water supply reliability through demand management measures. In addition to retail agency money, regional funding is available on a "per unit" reimbursement basis through MWD. West Basin accesses this funding to provide local cost share for projects. The South Bay Cities Council of Governments and its program the South Bay Environmental Services Center are key collaborative partners as well providing regional cohesion to outreach efforts.

Final Funding Information

Local share cost funding partners are critical to securing grant funding and implementing projects. Funding is committed by West Basin partners during the program design/grant application phase of a project; however, the amounts may vary by the time the project is completed. Table 1-4 reflects the change from the projected amount of local cost share funding to the final amounts provided.



The table shows Golden State Water Company (Golden State) was not projected to contribute funds to the project, however funding became available later and was applied to the local cost share. Also, funding from the Metropolitan Water District was also increased due to availability of additional funds through the Member Agency supported program.

However the reverse can also be true. The amounts projected to be spent on Phase 1 of the project and the contributions from the California Water Service Company (Cal Water) were both reduced. Installations in the Cal Water service area ended up being accounted for under a different project and Cal Water paid for the entirety of the installations at one site. This reduced the amount of funding they ultimately contributed to this program. Ironically, installations for Phase 1 are still being completed at the time of this report. Those project costs are therefore not reflected in the local cost share. The remaining \$31,729.17 will be spent during Q2 and Q3 2013 outside of the time scope of this project.

Table 1-4: Final Funding Information: Local Cost Share Break Down Projected v. Actual

Local Cost Share - Funding Partners	Projected Local Cost Share	Final Funding Information
West Basin (in-kind contribution)	\$ 33,156	\$ 24,398.53
Phase 1: Department of Water Resources, West Basin	\$181,915	\$150,185.83
Phase 2: Las Virgenes Municipal Water District	\$ 45,000	\$ 45,810.00
Phase 2: Metropolitan Water District	\$ 30,000	\$ 61,400.00
Phase 2: California Water Service Company	\$ 20,000	\$ 13,375.00
Phase 2: City of Torrance	\$ 39,375	\$ 34,445.00
Phase 2: Golden State Water Company	\$0	\$ 16,110.28
Phase 2: West Basin	\$0	\$16,343.00
TOTAL LOCAL COST SHARE	\$349,446	\$362,067.64

No Renewable Energy was added as a result of this project.

Future Tracking of Project Benefits

West Basin has obtained water consumption records for sites comprising approximately 20% of the participants. These sites include: Doubletree by Hilton, Manhattan Beach Marriott, Pacific Corporate Towers, and Lawndale Care Center, Mary and Joseph Retreat Center and the City of Manhattan Beach facilities.

West Basin staff will continue to track the water consumption of these sites semi-annually to monitor water savings. However, it must be said that it is difficult to truly see the impact of the retrofits in the water consumption data. There are many other factors that can affect water usage at commercial sites. For instance, a hotel that has an increase in the number of guests and this would make the water consumption appear to stay neutral or even increase after the installations. The same could be said for a site like the Lawndale Care Center where the number of residents can change and have an effect on the water usage. This does not mean that the retrofits have no impact; it simply means that it is difficult to detect from water consumption data analysis alone. To refine this data, it would be useful to conduct customer interviews and ask hotel managers to submit data to track the number of guests for a given month. To do this, you also must establish pre-installation baseline information as well as post-installation information. Water consumption record analysis can be found in Attachment 7. The analysis shows that while trends in water use showed water use decreasing in most cases, sometimes the date of the installation did not necessarily correlate with the start of the water consumption decreases. For instance, the Pacific Corporate Towers site showed a steep decline in water usage between the years 2008-2010. While this could be attributed to a decline in occupancy during the years of the economic downturn, we cannot say for certain. However, it could be argued that the usage though increasing at a slower rate from 2010-2012 could be attributed to the installation of the high-efficiency plumbing fixtures.

What can also be seen from Attachment 7 is that data received from retail agencies in many different forms from monthly reads (every 28-32 days) to monthly readings. The data has been made uniform to reflect AFY.

Other pertinent issues regarding the project

Coordinating large commercial installations is critical and can be challenging. There are times that a large site will be interested and pursued with much technical assistance only to be put "on hold" for one internal reason or another. The reasons range from aligning with construction or refurbishment schedules working within the parameters of the Program. Lack of corporate support for any potential additional costs that may be associated with the retrofit is also cited. Since water is still relatively inexpensive, if there is any perceived cost associated with the Program, these projects can often be placed on the proverbial "back burner".

Scheduling tasks take significant coordination between the contractor's administrative staff and site engineering staff. Specific scheduling requests – late hours, weekends, phased installation approach – to accommodate for the "flow" of that specific business or type of business are often requested. For example, schools prefer installations after hours

or on weekends while a hotel is busiest during these times and would likely prefer a phased approach to lessen the full impact of the installation on their guests.

There may also be slight delays arising multiple layers in the approval process as the project gets closer to implementation. While smaller commercial sites are easier to assess and schedule, large sites definitely have more organizational layers but often times have the highest water savings potential. Water efficiency in the CII sector is still critical to address. Obstacles remain but experience offers lessons to handle specific types of business.

ATTACHMENT 1: FINAL PROJECT COSTS TABLE

Attachment 1: Final Project Costs Table

		Unit	Quantity	Recipient \$\$	USBR \$\$	TOTAL
Salaries/Wages	Hours	\$42.08	152	\$6,396.16		\$6,396.16
		\$34.93	152	\$5,308.81		\$5,308.81
Phase 1						
Admininstration	Hours	\$40.00	171	\$6,840.00		\$6,840.00
Equipment	Toilets	\$150.32	199	\$29,913.68		\$29,913.68
	Urinals	\$320.00	126	\$40,320.00		\$40,320.00
	Faucets 1	\$20.00	756	\$15,120.00		\$15,120.00
	Faucets 2	\$260.43	50	\$13,021.60		\$13,021.60
Construction/Installation	Toilets	\$63.91	199	\$12,718.81		\$12,718.81
	Urinals	\$120.57	126	\$15,192.17		\$15,192.17
	Faucets 1	\$14.46	756	\$10,931.76		\$10,931.76
	Faucets 2	\$122.56	50	\$6,127.81		\$6,127.81
Phase 2						
Equipment	Toilets	\$216.73	1336		\$102,068.00	\$289,551.28
				Las Virgines MWD	\$45,810.00	
				Metropolitan Water District	\$61,400.00	
				Golden State Water Company	\$16,110.28	
				California Water Service Company	\$13,375.00	
				City of Torrance	\$34,445.00	
				West Basin	\$16,343.00	
Construction/Installation	Toilets	\$102.00	1336		\$136,272.00	\$136,272.00
Administration	Toilet	\$10.00	1336		\$13,360.00	\$13,360.00
Final Reporting	Hours	\$77.01	25	\$1,925.25		\$1,925.25
Indirect Costs	Hours	\$60.84	177	\$10,768.31		\$10,768.31
TOTALS					\$362,067.64	\$251,700.00
						\$613,767.64

ATTACHMENT 2: PROJECT BENEFITS FORM

ATTACHMENT 2: PROJECT BENEFITS FORM

COMPLETED BENEFITS FORM
WATER CONSERVATION FIELD SERVICES PROGRAM
ACTIVITY/PROJECT BENEFITS FORM

Applicant's Name: WEST BASIN MUNICIPAL WATER DISTRICT

Please check the appropriate water management benefits for agricultural or urban measures that you anticipate addressing in you proposal. Where available, please provide an estimate of the benefit to units (i.e. Acre Feet, Dollars, and Percentages) and backup for calculations, if available.

It is **essential** to establish benefits of the Program. Please help us with your best estimate for each benefit (direct and indirect) that applies.

- | | |
|---|------------------------------------|
| <input type="checkbox"/> Reduces Leaks and Seepage | _____ Acre Feet/Year |
| <input type="checkbox"/> Reduces System Spills | _____ Acre Feet/Year |
| <input checked="" type="checkbox"/> Makes More Water Available/Saves Water | <u>92.48</u> Acre Feet/Year |
| <input type="checkbox"/> Reduces Operation Costs | _____ \$ /Year |
| <input type="checkbox"/> Reduces Energy Costs | _____ \$ /Year |
| <input type="checkbox"/> Reduces Waste Treatment Costs | _____ \$ /Year |
| <input type="checkbox"/> Improves Crop Yield | _____ Percent/Year |
| <input type="checkbox"/> Reduces On-Farm Costs | _____ \$ /Year |
| <input type="checkbox"/> Reduces Per Capita Use | _____ Gallons/Capita/Day |
| <input type="checkbox"/> Provides Technical Training | _____ # of People |
| <input type="checkbox"/> Provides Water Conservation Education | _____ # of People |
| <input type="checkbox"/> Improves Water Supply Reliability | <u>20</u> Frequency (Years) |
| <input type="checkbox"/> Delays Construction of New Supplies | _____ Years |
| <input type="checkbox"/> Reduces Drainage/Erosion | _____ Tons |
| <input type="checkbox"/> Improves Water Quality | _____ % reduction of _____ |
| <input type="checkbox"/> Enhances Aquatic/Riparian Habitat | Describe: _____ |
| <input type="checkbox"/> Protects/Assists endangered species efforts | Describe: _____ |

ATTACHMENT 3: TOTAL PROGRAM OUTLAYS

Attachment 3: Total Program Outlays
Invoices Paid Phase I (Q3 2009 - Q2 2013)

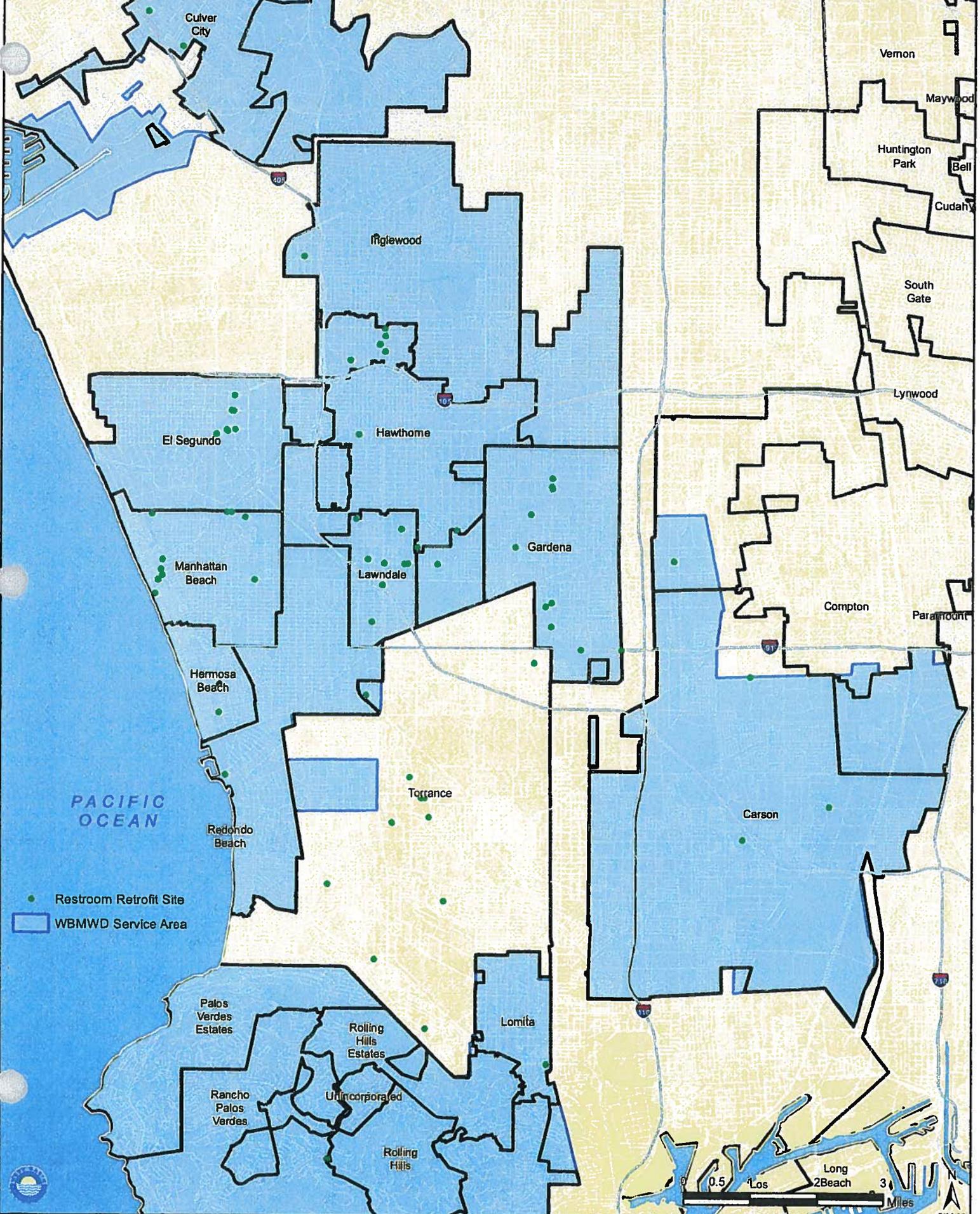
Vendor Name	Invoice Date	Invoice No.	Amount	Payment Date	Check No.
ECOGREEN SERVICES	10/13/2009	12951MF	\$ 12,867.27	11/12/2009	52244
ECOGREEN SERVICES	11/28/2009	12953MF	\$ 14,946.66	1/8/2010	52590
ECOGREEN SERVICES	12/22/2009	12954MF	\$ 3,219.42	1/28/2010	52766
ECOGREEN SERVICES	12/29/2009	12955MF	\$ 258.53	1/28/2010	52766
ECOGREEN SERVICES	12/31/2009	12956MF	\$ 13,568.61	1/28/2010	52766
ECOGREEN SERVICES	1/6/2010	12957MF	\$ 421.83	1/21/2010	52713
ECOGREEN SERVICES	2/10/2010	12958MF	\$ 2,700.00	3/11/2010	53095
ECOGREEN SERVICES	3/22/2010	12963MF	\$ 2,517.64	4/8/2010	53329
ECOGREEN SERVICES	3/22/2010	12964MF	\$ 1,007.05	4/8/2010	53329
ECOGREEN SERVICES	3/22/2010	12967MF	\$ 2,972.47	4/8/2010	53329
ECOGREEN SERVICES	3/22/2010	12968MF	\$ 2,112.65	4/8/2010	53329
ECOGREEN SERVICES	4/26/2010	12976	\$ 3,280.00	5/13/2010	53622
ECOGREEN SERVICES	4/26/2010	12977-R	\$ 791.28	5/13/2010	53622
ECOGREEN SERVICES	5/21/2010	12987	\$ 421.83	6/10/2010	53829
ECOGREEN SERVICES	5/21/2010	12988	\$ 632.75	6/10/2010	53829
ECOGREEN SERVICES	5/31/2010	12989	\$ 30,399.20	6/24/2010	53921
SOUTHWEST ENVIRONMEN	6/28/2010	32993	\$ 20,550.00	7/8/2010	54069
ECOGREEN SERVICES	10/14/2010	13003	\$ 413.53	11/24/2010	55907
ECOGREEN SERVICES	10/14/2010	13004	\$ 632.75	11/24/2010	55907
ECOGREEN SERVICES	10/14/2010	13005	\$ 2,014.11	11/24/2010	55907
ECOGREEN SERVICES	10/14/2010	13006	\$ 1,054.58	11/24/2010	55907
ECOGREEN SERVICES	6/24/2011	062411	\$ 2,067.63	6/30/2011	57615
ECOGREEN SERVICES	10/31/2011	103111	\$ 3,794.20	11/17/2011	58576
ECOGREEN SERVICES	11/7/2011	110711-A	\$ 11,974.33	12/8/2011	58727
ECOGREEN SERVICES	11/7/2011	110711-B	\$ 898.29	12/1/2011	58661
ECOGREEN SERVICES	11/18/2011	111811-B	\$ 2,995.95	1/5/2012	58947
ECOGREEN SERVICES	11/20/2011	112011	\$ 2,260.74	1/5/2012	58947
ECOGREEN SERVICES	12/6/2011	120611	\$ 1,027.19	12/22/2011	58841
ECOGREEN SERVICES	2/7/2012	020712	\$ 3,560.00	3/8/2012	59433
ECOGREEN SERVICES	2/9/2012	020912	\$ 4,825.34	3/1/2012	59387
Total			\$ 150,185.83		

Invoices Paid Phase II Complete Restroom Retrofit Program

Vendor Name	Invoice Date	Invoice No.	Amount	Payment Date	Check No.
SOUTHWEST ENVIRONMEN	4/5/2011	33128	\$ 68,320.00	4/21/2011	57091
SOUTHWEST ENVIRONMEN	4/5/2011	33130	\$ 13,725.00	4/21/2011	57091
SOUTHWEST ENVIRONMEN	4/19/2011	33138	\$ 305.00	5/19/2011	57345
SOUTHWEST ENVIRONMEN	4/29/2011	33150	\$ 97,600.00	5/19/2011	57345
BOTTOM LINE UTILITY SOL	7/1/2011	828	\$ 5,550.00	9/15/2011	58104
BOTTOM LINE UTILITY SOL	8/1/2011	901	\$ 41,030.00	9/15/2011	58104
SOUTHWEST ENVIRONMEN	9/21/2011	33270	\$ 1,305.00	10/6/2011	58314
SOUTHWEST ENVIRONMEN	9/21/2011	33271	\$ 975.00	10/6/2011	58314
SOUTHWEST ENVIRONMEN	9/21/2011	33272	\$ 2,500.00	10/6/2011	58314
SOUTHWEST ENVIRONMEN	9/21/2011	33273	\$ 2,590.00	10/6/2011	58314
SOUTHWEST ENVIRONMEN	9/21/2011	33274	\$ 1,950.00	10/6/2011	58314
BOTTOM LINE UTILITY SOL	9/30/2011	1047	\$ 60,310.00	10/27/2011	58426
SOUTHWEST ENVIRONMEN	11/1/2011	33291	\$ 5,180.00	12/1/2011	58688
SOUTHWEST ENVIRONMEN	11/17/2011	33310	\$ 6,100.00	2/16/2012	59310
BOTTOM LINE UTILITY SOL	11/21/2011	1320	\$ 13,450.00	7/5/2012	60296
BOTTOM LINE UTILITY SOL	12/20/2011	1486	\$ 9,990.00	7/5/2012	60296
BOTTOM LINE UTILITY SOL	2/8/2012	1564	\$ 8,000.00	7/5/2012	60296
BOTTOM LINE UTILITY SOL	2/22/2012	2012F	\$ 74,270.00	2/24/2012	59373
SOUTHWEST ENVIRONMEN	2/23/2012	33376	\$ 2,030.00	2/24/2012	59363
SOUTHWEST ENVIRONMEN	5/14/2012	33429	\$ 1,750.00	6/7/2012	60128
BOTTOM LINE UTILITY SOL	1/11/2013	5064	\$ 22,243.00	2/7/2013	61914
TOTAL			\$ 439,173.00		

**ATTACHMENT 4: MAP
PHASE 1 & 2 INSTALLATIONS**

Complete Restroom Retrofit Installation Sites: Phases 1 and 2



**ATTACHMENT 5: LIST
PHASE 1 & 2 INSTALLATIONS**

Attachment 5: List Phase 2 Installations

Date	SITE NAME	# of High-Efficiency Toilets	Invoice #	Total Invoiced
3/1/2011	Double Tree	225	33128/33138	\$ 68,625
3/1/2011	Manhattan Beach Marriott	365	33130/33150	\$ 111,325
6/24/2011	Manhattan Beach Village Shopping Center	4	828	\$ 1,480
7/5/2011	Gateway Plaza	8	828	\$ 2,960
	Gateway Plaza	16	901	\$ 3,520
7/1/2011	Garden Tower Inn	4	901	\$ 880
7/8/2011	Baytower	2	901	\$ 740
7/20/2011	Culver City Palms YMCA	8	901	\$ 2,960
7/20/2011	Pacific Corporate Towers	60	901	\$ 22,200
6/28/2011	Torrance	32	901	\$ 11,840
	Torrance	120	1047	\$ 44,400
8/5/2011	Gardena YMCA	4	1047	\$ 1,480
9/12/2011	City of Hawthorne	2	1047	\$ 740
9/14/2011	City of Hermosa Beach	14	1047	\$ 5,180
9/21/2011	Crowne Plaza	3	33270	\$ 1,305
9/21/2011	International Discount Outlet	7	33272	\$ 2,500
9/21/2011	Crenshaw Wholesale	7	33273	\$ 2,590
9/21/2011	Ramona's Mexican Food Products	6	33274	\$ 1,950
9/21/2011	Somar Corp	3	33271	\$ 975
11/1/2011	Ramona's Mexican Food Products	14	33291	\$ 5,180
8/3/2011	Lawndale Care Center	9	1320	\$ 1,980
10/31/2011	Lawndale School District	31	1320	\$ 11,470
11/17/2011	Half Moon Motel	20	33310	\$ 6,100
12/1/2011	SunnyHills Plladium	32	1486	\$ 11,840
12/1/2011	Palos Verdes Healthcare Center	10	1486	\$ 3,700
12/1/2011	Shell Oil	8	1486	\$ 2,960
12/1/2011	Lennox Middle School	32	1564	\$ 8,000
2/23/2012	Nadar's LA Popular	7	33376	\$ 2,030
3/31/2012	Mattel	128	2012F	\$ 44,060
2/27/2012	Mary and Joseph Retreat Center	12	2012F	\$ 4,440
2/17/2012	Inglewood School District	8	2012F	\$ 2,960
3/6/2012	Lewis Industrial Complex	25	2012F	\$ 5,500
1/9/2012	City of Manhattan Beach	45	2012F	\$ 17,310
5/14/2012	Glentek	6	33429	\$ 1,750
10/23/2012	Los Angeles Unified School District	59	5064	\$ 22,243
TOTAL		1336		\$ 439,173

Phases II Installations	HET	1336	Acre Feet Water Savings per unit	Water Savings in Acre Feet	
				Annual	Lifetime
			0.0425	56.78	1135.6

Attachment 5: List Phase 1 Installations

Invoice Date	Customers	Installation Numbers			Invoice #	Total Amount Invoiced
		HET	HEU	Faucet Flow Restrict		
10/13/2009	Torrance Marriott			500	12951MF	\$ 12,867.27
11/28/2009	Torrance Marriott				12953MF	\$ 14,946.66
1/28/2010	Torrance Marriott				12954MF	\$ 3,219.42
12/29/2009	Torrance Marriott				12955MF	\$ 258.53
12/31/2009	CSUDH		10		12956MF	\$ 13,568.61
1/6/2010	Garden Valley Church	1			12957MF	\$ 421.83
2/10/2010	CSUDH		10		12958MF	\$ 2,700.00
3/22/2010	CSUDH		10		12967MF	\$ 2,972.47
3/22/2010	Lennox Small Businesses	11			12968MF	\$ 2,112.65
3/22/2010	Mattel - Phase I		28		12963MF	\$ 2,517.64
3/22/2010	1960 Grand - Phase I				12964MF	\$ 1,007.05
4/26/2010	Admin Only				12976	\$ 3,280.00
4/26/2010	Coast Plating	3	1		12977	\$ 791.28
5/21/2010	Lennox Small Businesses				12988	\$ 632.75
5/21/2010	Lennox Small Businesses				12987	\$ 421.83
5/31/2010	1960 Grand - Phase 2		24	50	12989	\$ 30,399.20
6/7/2010	Torrance Marriott	150			32993	\$ 20,550.00
10/14/2010	Boeing		3		13003	\$ 413.53
10/14/2010	Caprice Engineering	3			13004	\$ 632.75
10/14/2010	Torrance Marriott		4		13005	\$ 2,014.11
10/14/2010	Texlon	5			13006	\$ 1,054.58
7/11/2011	Ritz Carlton		5		62411	\$ 2,067.63
11/7/2011	AMAN Technical Center	2			110711-B	\$ 898.29
11/18/2011	New Philedelphia AME Church	8	4	20	103111	\$ 3,794.20
11/18/2011	Northrop Grumman		25	96	110711-A	\$ 11,974.33
11/18/2011	Freeman Medical Towers	15			111811-B	\$ 2,995.95
11/20/2011	Northrop Grumman				112011	\$ 2,260.74
12/6/2011	Union Bank	1	2		120611	\$ 1,027.19
2/9/2012	Freeman Medical Towers FCV			140	20912	\$ 4,825.34
2/7/2012	Admin Invoice				20712	\$ 3,560.00
TOTALS		199	126	806		\$ 150,185.83

Phases I Installations (Q3 2009 - Q1 2012)	Acre Feet Water Savings per unit	Water Savings in Acre Feet		
		Annual	Lifetime	
HET	199	0.0425	8.4575	169.15
URINAL	126	0.1227	15.4602	309.204
FAUCETS	806	0.0123	9.9138	99.138
TOTAL WATER SAVINGS			33.8315	577.492

**ATTACHMENT 6: IN-KIND
CONTRIBUTION CALCULATIONS**

Attachment 6: In-Kind Contribution Calculation

West Basin Municipal Water District Restroom Retrofit Phase 2 In-Kind Contributions				
In-Kind Contribution Pay Period	Program	Task	Time	Salary
10/1/2012-1/31/2012	Restroom Retrofit Phase 2	Administrative	17.00	\$ 42.08
1/31/2013- 4/30/2013	Restroom Retrofit Phase 2	Final Reporting	25.00	42.08
TOTAL			42.00	

Backup-information for In-Kind Funding on the following page

Salaries and Wages	\$1,767.36 (\$42.08 x 7 hours)
Fringe Benefits	\$34.93 (83% of District Overhead)
	\$1,466.91
Direct Costs	\$3,234.27 Direct Cost Sum
Indirect Costs	\$2,555.07 Indirect Cost Sum (79% of District Overhead and Fringe Benefits)
Total	\$5,789.34 (Sum of Direct and Indirect Costs)

West Basin Municipal Water District Restroom Retrofit Phase 2 In-Kind Contributions				
In-Kind Contribution Pay Period	Program	Task	Time	Salary
10/1/2010-1/31/2013	Restroom Retrofit Phase 2	TOTAL Administrative	152.00	\$ 42.08
TOTAL			152.00	

Backup-information for In-Kind Funding on the following page

Salaries and Wages	\$6,396.16 (\$42.08 x 7 hours)
Fringe Benefits	\$34.93 (83% of District Overhead)
	\$5,308.81
Direct Costs	\$11,704.97 Direct Cost Sum
Indirect Costs	\$9,246.93 Indirect Cost Sum (79% of District Overhead and Fringe Benefits)
Total	\$20,951.90 (Sum of Direct and Indirect Costs)

West Basin Municipal Water District Restroom Retrofit Phase 2 In-Kind Contributions				
In-Kind Contribution Pay Period	Program	Task	Time	Salary
1/31/2013- 4/30/2013	Restroom Retrofit Phase 2	Final Reporting	25.00	42.08
TOTAL			25.00	

Backup-information for In-Kind Funding on the following page

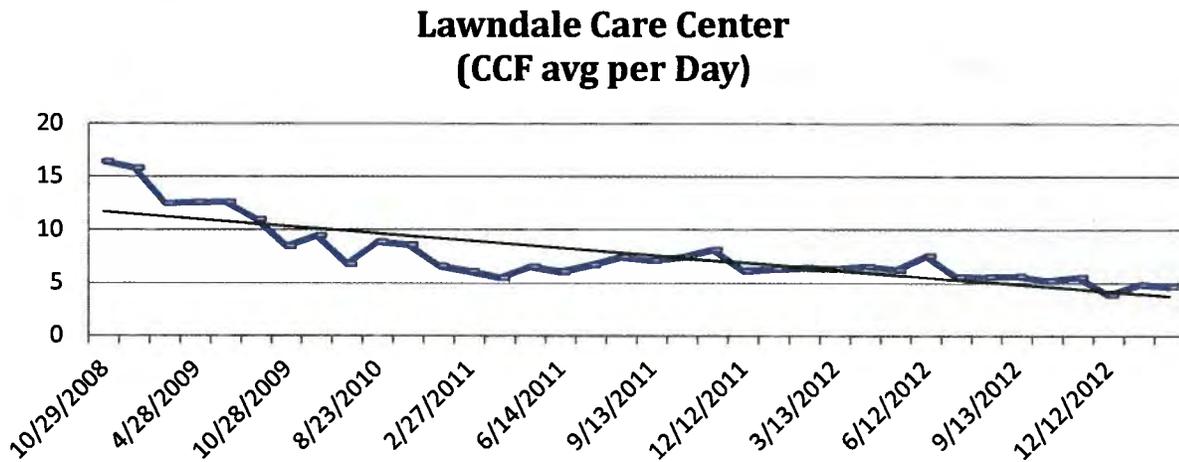
Salaries and Wages	\$1,052.00 (\$42.08 x 7 hours)
Fringe Benefits	\$34.93 (83% of District Overhead)
	\$873.16
Direct Costs	\$1,925.16 Direct Cost Sum
Indirect Costs	\$1,520.88 Indirect Cost Sum (79% of District Overhead and Fringe Benefits)
Total	\$3,446.04 (Sum of Direct and Indirect Costs)

**ATTACHMENT 7: WATER
CONSUMPTION ANALYSIS**

Attachment 7: Water Consumption Analysis

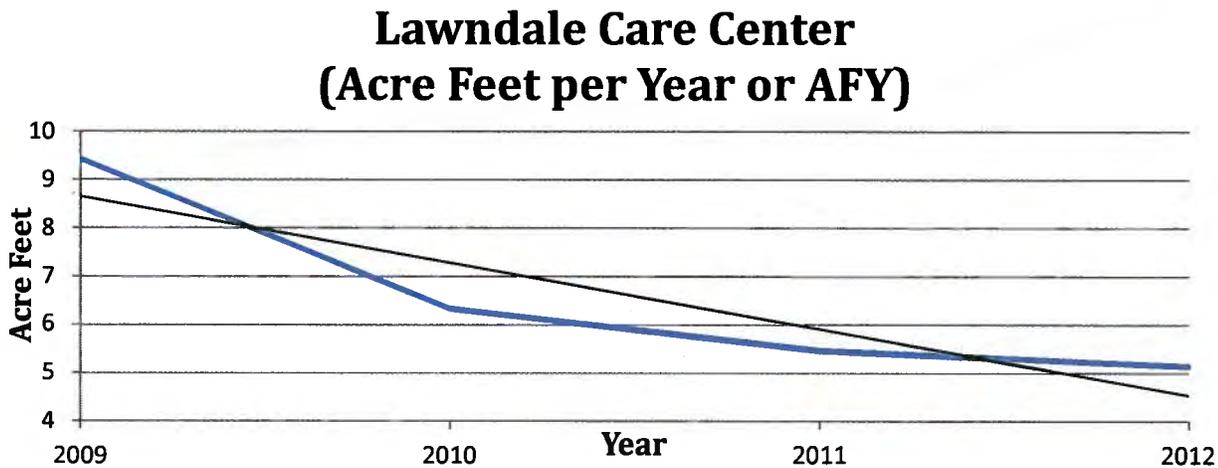
Figures 7-1 and 7-2 both demonstrate data from the Lawndale Care Center and are an example of how data comes to West Basin in many different forms. Figure 7-1 shows data provided from Golden State Water Company and is represented by monthly meter reads in this example. However most data received from other retail agencies was provided in monthly hundred cubic feet (CCF) data that was converted to annual Acre Foot consumption by taking the total annual CCF, multiplying by 748 gallons per CCF and then dividing by 325,851 gallons per acre foot to get the annual acre foot usage. Figures 7-2 through 7-8 are shown in AFY.

Figure 7-1



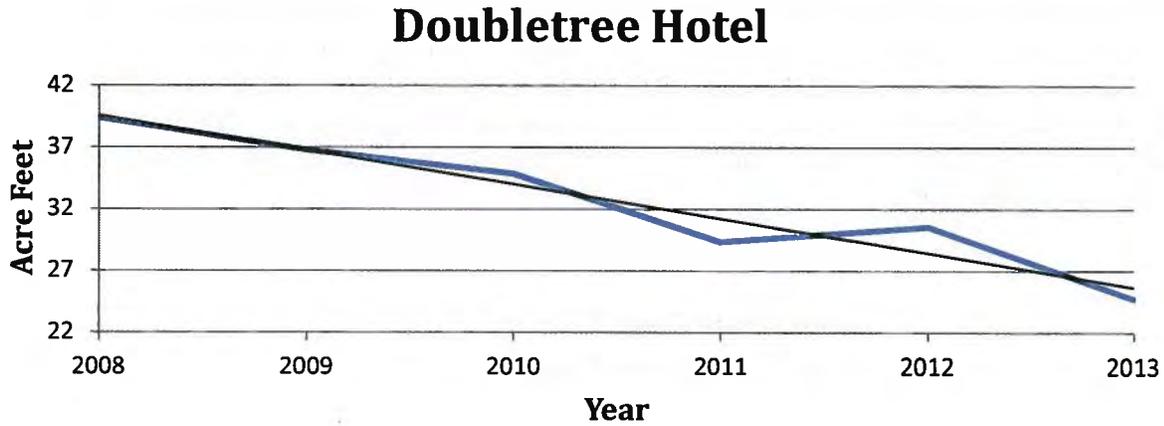
Site Name: Lawndale Care Center
Date of Retrofit: 8/3/2011
Retail Agency: Golden State Water Company
Number of HET installed: 9
Estimated Water Reduction: 166 CCF per year (or .5 CCF reduction per day) or 0.3825 AFY

Figure 7-2



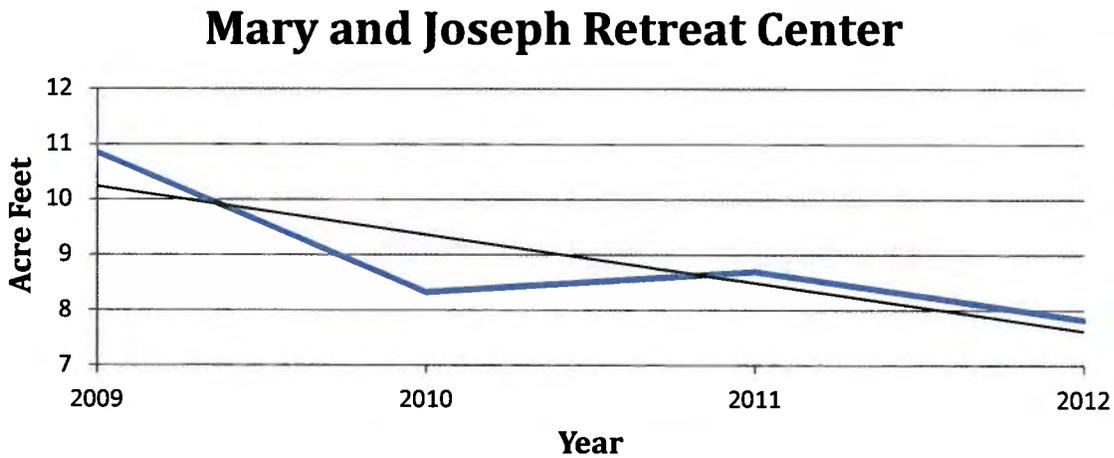
Attachment 7: Water Consumption Analysis

Figure 7-3



Site Name: Doubletree Hotel
Date of Retrofit: 3/1/2011
Retail Agency: California Water Service Company
Number of HET installed: 225
Estimated Water Reduction: 9.5625 AFY

Figure 7-4

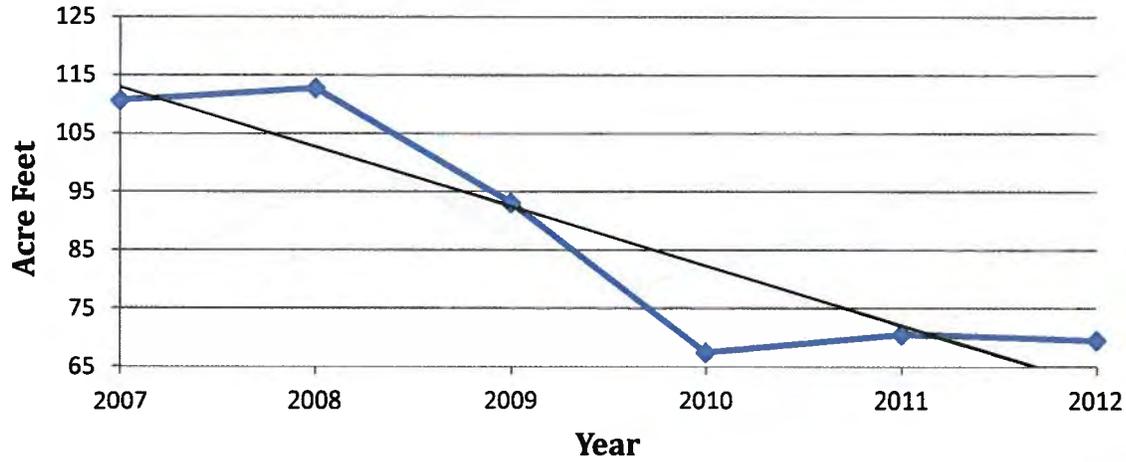


Site Name: Mary and Joseph Retreat Center
Date of Retrofit: 2/27/2012
Retail Agency: California Water Service Company
Number of HET installed: 12
Estimated Water Reduction: 0.51 AFY

Attachment 7: Water Consumption Analysis

Figure 7-5

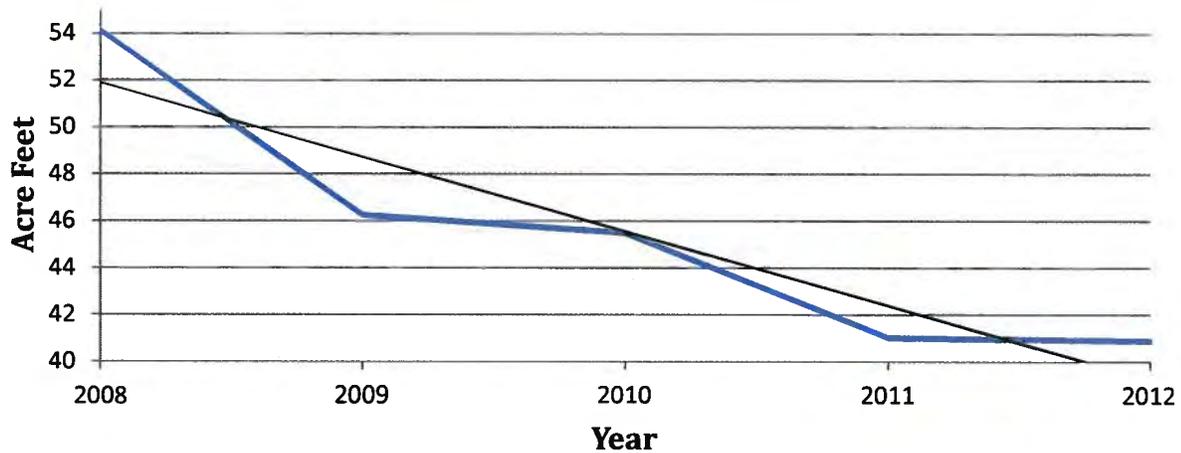
Pacific Corporate Towers



Site Name: Pacific Corporate Towers
Date of Retrofit: 7/20/2011
Retail Agency: City of El Segundo
Number of HET installed: 60
Estimated Water Reduction: 2.55 AFY

Figure 7-6

Manhattan Beach Marriott

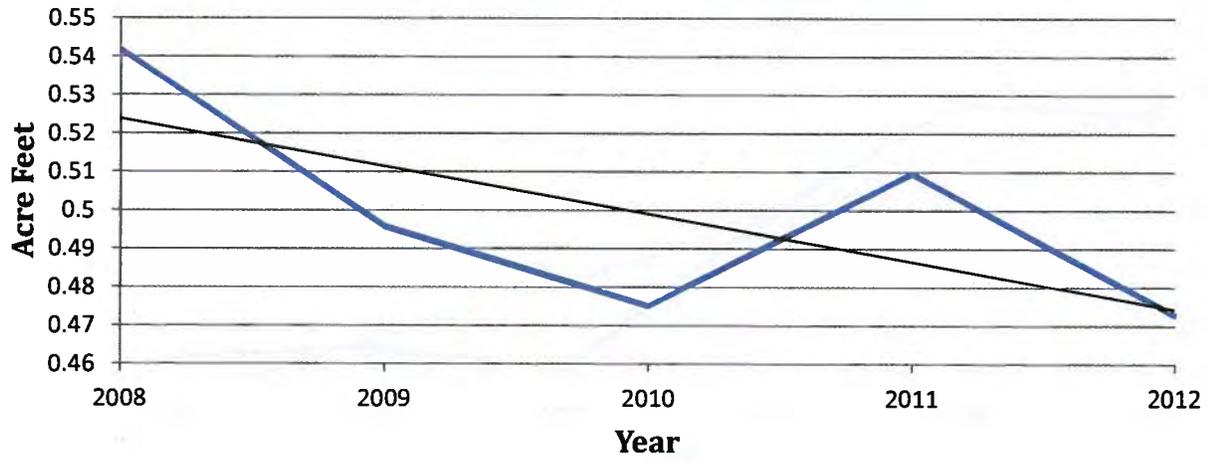


Site Name: Manhattan Beach Marriott
Date of Retrofit: 3/1/2011
Retail Agency: City of Manhattan Beach
Number of HET installed: 365
Estimated Water Reduction: 15.51 AFY

Attachment 7: Water Consumption Analysis

Figure 7-7

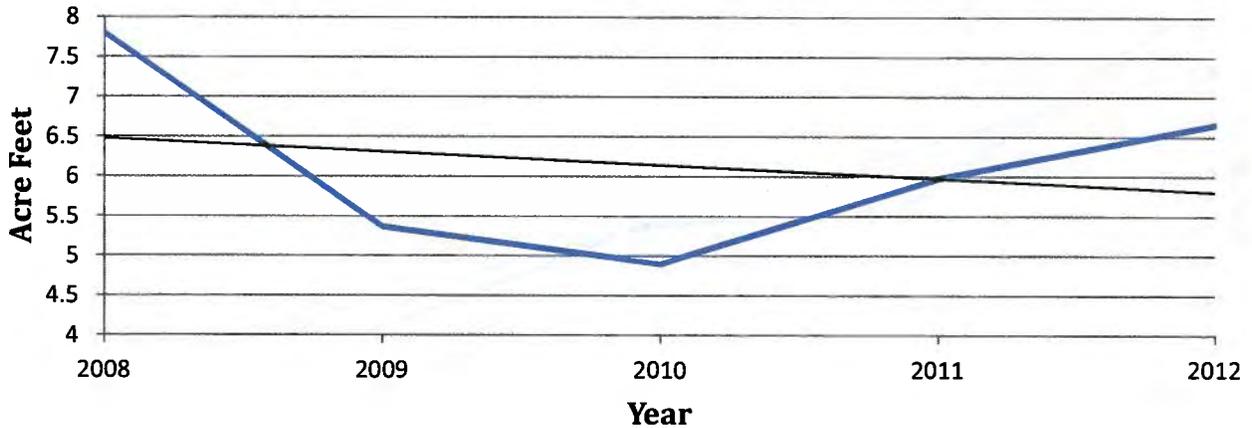
Pier Roadhouse Restrooms, City of Manhattan Beach



Site Name: Pier Roadhouse Restrooms, City of Manhattan Beach
Date of Retrofit: 1/9/2012
Retail Agency: City of Manhattan Beach
Number of HET installed: 9
Estimated Water Reduction: 0.3825 AFY

Figure 7-8

Pier Restrooms, City of Manhattan Beach



Site Name: Pier Restrooms, City of Manhattan Beach
Date of Retrofit: 1/9/2012
Retail Agency: City of Manhattan Beach
Number of HET installed: 9
Estimated Water Reduction: 0.3825 AFY

**ATTACHMENT 8: PRODUCT
SPECIFICATION SHEET
FLOW CONTROL VALVE**



PRODUCT SPECIFICATIONS

Watermiser™ 3/8" Angle Stop Custom Flow Control Valve 303 Stainless Steel for Bathroom & Kitchen Sinks. U.S. Patent Application No. 13/570,197

- Maintains Water Pressure & Rinsability while Significantly Reducing Water Usage
- Customized to fit Client's GPM flow needs
- Easy installation on a 3/8" angle stop
- No Clogging / No ongoing maintenance
- 2 to 4 LEED Points Available
- NSF/ANSI 61 Certified Washer
- **Limited Lifetime Warranty**



CERTIFIED BY IAPMO

Part No.	Description
FCVSS – 0.50	Flow Control Valve – Stainless .50 GPM
FCVSS – 0.75	Flow Control Valve – Stainless .75 GPM
FCVSS – 1.00	Flow Control Valve – Stainless 1.0 GPM
FCVSS – 1.25	Flow Control Valve – Stainless 1.25 GPM
All FCVSS	Two Flow Control Valves per Package



How does the Custom Flow Control Valve work?

Watermiser™ Custom FCVSS is attached to your bathroom™ sink or kitchen faucet at the angle stop, as well as with the shower between the post and the showerhead. It reduces the volume of water GPM's used while maintaining the water pressure PSI.

Will the Flow Control Valve fit on all standard faucets & showers?

Yes. The Custom FCV is a universal thread for 95% of standard faucets and showers and is customized to fit GPM flow needs while maintaining great 'rinsability.'

Is the Custom Flow Control Valve easy to install?

Absolutely. The FCV can easily be installed underneath your sink at the angle stop and at the shower between the post and showerhead.

Will the Custom Flow Control Valve clog?

No. In fact, the US Patent states no clog. Particles and materials swirl at the bottom of the FCV and disintegrate.

Why use Watermiser™ Custom Flow Control Valve?

Guaranteed to save on your water and sewer bill, which means you are guaranteed to save \$'s.



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