

**WaterSmart
Water and Energy Efficiency
Grant Program**

**High Efficiency Clothes Washer
Direct Install Program
Riverside County, California**

Final Project Report



Agreement #R10AP35284

**Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92572**

June 30, 2013

1. Recipient Information:	
Recipient Name: (Name, contact person, address and phone number)	Elizabeth Lovsted 2270 Trumble Road Perris, CA 92572 (951) 928-3777 ext. 4307
Project Name:	High Efficiency Clothes Washer Direct Install Program
Assistance Agreement No:	R10AP35284
Date of Award: (Month, Year)	September 24, 2010
Estimated Completion Date (Month, Year)	June 30, 2013
Actual Completion Date: (Month, Year)	June 30, 2013

2. Final Funding Information	Funding Amount
Non-Federal Entities	
1. EMWD	\$320,500
2. SoCal Gas	\$616,250
Non-Federal Subtotal:	\$936,750
Requested Reclamation Funding:	\$299,500
Total Project Funding	\$1,236,250

3. One Paragraph Project Summary:
The High Efficiency Clothes Washer Direct Install Program reduced demand for imported water by retrofitting pre-2004 clothes washers with high efficiency clothes washers (HECW). Through this program EMWD, in partnership with the Southern California Gas Company (SoCalGas), successfully retrofitted 1,700 clothes washers that use an average of 42 gallons or more per 3-cubic foot load of clothes with HECWs that use a maximum of 12 gallons for the same size load. The project produced a quantifiable reduction of demand by single family residential customers participating in the program. The program had a goal of saving 57.39 acre feet per year (AFY) through the replacement of 1,700 washers. All the washers were installed and EMWD verified the average saving per washer to be slightly higher than estimated. The calculated an annual water savings for the program is 57.80 AF. With an estimated lifespan of 14 years, the total water savings for the program is 809 AF. The program (1) reduced water demand for single family residential customers and the energy consumption required to deliver imported water to EMWD; and (2) reduced energy consumption to wash and dry clothes. The project reduced the existing demand of EMWD customers.

4. Final Project Description: Briefly describe components of the project and the work completed, including each element of the scope of work and the work completed at each stage of the project. Please include maps, sketches, and/or drawing of the features of the completed project, as appropriate. In addition, please describe any changes in the project scope.

After the award of funding and contract execution with USED, this project consisted of three main phases. These phases were (1) program planning and outreach; (2) program implementation; and (3) program completion.

- 1) **Program Planning and Outreach:** In this phase of the project EMWD and SoCalGas developed a set of Terms and Conditions, and an inter-utility agreement contract was executed for the installation of 1,700 HECWs. EMWD provided SoCal Gas with its boundary map and zip codes and SoCal Gas was tasked with identifying qualifying low-income residential customers in EMWD's retail service area. EMWD also took the lead in designing an Excel based database that allowed for the tracking of historic and future water usage for each participating customer. Together SoCal Gas and EMWD developed an outreach program that included providing information in EMWD's newsletter and promoting the program on EMWD's website. Program planning occurred from October to December 2010. Outreach for the program continued throughout the implementation phase.
- 2) **Program Implementation:** During the implementation phase of the program 1,700 HECWs were installed in the homes of EMWD customers that qualified for the SoCalGas Low-Income Energy Efficiency (LIEE) program. Installation was completed at no cost to the participating residents. SoCalGas provided EMWD with customer information for qualified program participants. EMWD provided funding to SocalGas where the resident is a customer of both SoCalGas and EMWD. EMWD also completed invoices and reporting requirements for MWD and the USBR. Customer data was used to populate the database to track the participant's water usage. 1,700 washers were installed from December 2010 through May of 2013.
- 3) **Program Completion:** After 1,700 HECWs were installed, EMWD staff used the information collected in the database and meter data to measure actual water savings. EMWD staff then prepared this report with water and energy savings analysis and program results

5. Accomplishment of Project Goals: Describe the goals and objectives of the project and whether each of these was met. Where appropriate, state the reasons why goals and objectives were not met, and describe any problems or delays encountered in completing the project. Please include whether or not the project was completed within cost.

The HECW Direct Install Program successfully installed 1,700 HECW for eligible customers meeting both water and energy savings goals. HECWs were installed from December of 2010 through May of 2013 and the program was completed within the budget.

Water savings were verified two ways. First an account of each HECW installed was kept in the database and the water savings target was calculated based on the water factor of the HECW installed. 1,700 washers were installed as proposed for the program. Average water savings per washer was also verified. The participants benefiting from the proposed program were part of EMWD's retail market. Since all of EMWD's retail customers are metered, participant's water use was measured for a year after the HECWs were installed and compared to use in prior years to determine savings. Comparing annual water use pre and post washer installation for a sample of participants, a slightly higher savings than estimated rate was measured. Water savings for the project were verified to be 57.80 AFY slightly higher than the program goal of saving 57.39 AFY.

Table 1. Water Savings

Total HECWs Installed	Verified Savings per Washer Installed (AFY)	Total Program Savings (AFY)
1,700	0.034	57.80

Energy savings are based on a reduction in energy needed to import water to EMWD and a reduction in energy needed to wash and dry clothes. It was estimated that 154,137 kWh of energy would be saved by reducing imported water delivery by 57.39 AFY. Verified water savings were slightly higher than estimated at 57.80 AFY for an energy savings of 155,239 kWh.

Table 2. Energy Efficiency – Imported Water Supply

	% of Imported Water	Estimated AFY Saved	Energy Used (KWh/AFY)	Energy savings (kWh)
SWP	62%	35.836	2910	104,283
CRA	38%	21.964	2320	50,956
Total		57.8		155,239

In addition to the energy savings from the reduction in imported water, less energy is used for clothes washing. SoCal Gas estimates the energy savings per washer to be 48 kWh/Year. SoCal Gas uses the energy savings from the washing machines installed to justify the installation program and has to validate savings before the Public Utilities Commission to justify the cost of the direct install program. The projected 1,700 washers were installed with an energy savings of 81,600kWh/Year.

Table 3. Energy Efficiency – HECWs

Total HEWs	Savings Per HEW (kWh/Year)	Program Savings(kWh/Year)
1,700	48	81,600

The program also met reasonableness of cost projections. As seen, actual costs were as projected and savings were slightly higher than expected so the cost per acre-foot saved was within 1% of the projected..

Table 4. Reasonableness of Cost

Total Project Costs	Acre Feet Conserved	Improvement Life	\$/Per Acre Foot Saved
\$1,236,256	57.80	14	\$1,528

6. Discussion of Amount of Water Conserved, Marketed or Better Managed: In responding to the questions set forth below, Recipients should rely on the best data or information available. Actual field measurements should be used whenever possible (e.g., baseline data or post-project data derived from measuring devices, diversion records, seepage tests, etc.) Where actual field measurements are not available, water savings (or amounts marketed or better managed) may be estimated based on studies, other similar improvement projects, or anecdotal evidence.

A. Recipient's total water supply (average, annual, available water supply in acre-feet per year): Past and Projected Potable Retail Supply

Source	Annual Water Supply					Projected Available Water Supply
Source	2008	2009	2010	2011	2012	2015
MWD	81,661	72,155	67,944	63,970	73,455	101,730
Wells	23,016	22,880	21,535	23,171	21,155	20,700
Total Supplies	104,677	95,036	89,479	87,141	94,610	122,400

EMWD's 5 year average supply is 94,189 AF. EMWD delivers potable water from two sources groundwater wells and imported water from MWD. The sources of MWD's imported water are the Colorado River Aqueduct and the State Water Project. EMWD uses imported water to meet the demands of its customer that exceed groundwater supply availability. There are no current restrictions on water deliveries from MWD. In recent years, EMWD imported water use has declined due to a reduction in demand. This is due to current economic conditions,

and conservation efforts by existing customers. The HECW Direct Install Program was part of EMWD's conservation program and saves 57.80 AFY.

The 2010 EMWD Urban Water Management Plan projects 122,400 AFY will be available to meet potable retail water demands in 2015. If consumer demand remains low, EMWD will continue to limit water deliveries from MWD.

B. Amount of water conserved, marketed or better managed as a result of the project (in acre-feet per year):

This program has a verified annual water savings of 0.34 AFY per washer. The total lifetime savings for the 1,700 washers installed, with an estimated lifespan of 14 years is 809 AF.

C. Describe how the amounts stated in response to 6.B were calculated or estimated:
In responding to this question, please address (1) – (3) below.

(1) Describe the information/data being relied on to calculate/estimate the project benefits. State how that data/information was obtained, if appropriate. Provide any other information necessary to explain how the final calculation/estimate of project benefits was made.

The water savings verification used the meter reads for individual residential customers. The customers benefiting from the program are part of EMWD's retail market. Since all of EMWD's retail customers are metered. EMWD had enough information to compare annual water use pre and post installation to develop and actual average annual water savings.

The data from the 1,700 single family residential accounts that participated in the high efficiency clothes washer install was analyzed. A sampling of accounts were selected to verify water savings based on:

- Install date: Washer was installed for a full year
- Continuous billing: No disruption of use for 12 months pre and post installation
- Usage within an average tolerance. Accounts with extremely high or extremely low demand that indicated were excluded.

Out of 1,700 accounts 861 meet the criteria and were used to calculate the savings of the installed washing machines.

(2) As appropriate, please include an explanation of any concerns or factors affecting the reliability of the data/information relied on.

EMWD measures single family residential use with one meter; usage is a combination of indoor and outdoor use. Several factors could have an effect on the use of water both pre and post installation including: outdoor use, persons per household, changes in household income, and weather changes. The large sample size should average out changes in individual homes such as income or household size, but all of the evaluated accounts could be influenced by changes in weather.

To determine if water savings may have been due to cooler weather patterns, EMWD evaluated

average monthly evapotranspiration (ETo) and precipitation. Attachment A shows the average monthly evapotranspiration (ETo) and precipitation in EMWD's service area during the installation period. Generally, in 2011, when most of the accounts evaluated had washers installed, there was higher precipitation and lower ETo than in 2012 and 2013. Customers would need to water less in 2011 and more in 2012 and 2013 to compensate for the change in ETo and precipitation. When the comparison was done it showed that there was still a water savings even though there should have been an increase in usage due to lower precipitation and higher ETo.

(3) Attach any relevant data, reports or other support relied on in the calculation/estimate of project benefits, if available. Please briefly describe the data/information attached, if any.

A listing of accounts evaluated and the results of the evaluation is included as Attachment B.

D. Use of Conserved Water: Please explain where the water saved, better managed, or marketed as a result of the project is going (e.g. used by the recipient, in stream flows, available to junior water users, etc.

The conserved water will improve the ability of EMWD to meet the demand of its retail market during periods of water shortage. As a result of saving water through the HECW Direct Install Program, EMWD has reduced deliveries of imported water from MWD. The sources of MWD's imported water are the Colorado River Aqueduct and the State Water Project. MWD stores water throughout the region in the years excess water is available and draws for storage when imported supplies are insufficient to meet demand. Reducing demand on MWD increase the amount of water that can be stored to meet demand during periods of water shortage.

E. Future tracking of project benefits: Please state whether and how the recipient plans to track the benefits of the project (water saved, marketed or better managed) in the future. If no actual field measurements are currently available to support the estimate of project benefits in 6.B., please state whether actual field measurements will become available in the future. If so, please state whether the Recipient is willing to provide such data to Reclamation on a voluntary basis once it is available.

EMWD verified savings for the washers installed. In the future water use for participating customers will continue to be tracked for billing purposes. EMWD can continue to evaluate savings in the future and is willing to cooperate with the Bureau of Reclamation on future measurement requests.

7. Discussion of Amount of Renewable Energy Added: If your project included the installation of a renewable component, please describe the amount of energy the system is generating annually. Please provide any data/reports in support of this calculation.

This project does not include the installation of renewable energy component.

8. Describe how the project demonstrates collaboration, stakeholder involvement or the formation of partnerships, if applicable: Please describe the collaboration involved in the project, and the role of any cost-share or other types of partners. If there were any additional entities that provided support (financial or otherwise) please list them.

In addition to USBR, EMWD partnered with SoCal Gas and MWD to complete this project. SoCal Gas administered the program, EMWD, MWD, and USBR provided funding. EMWD and SoCal Gas coordinated on advertising the program, identifying customers and encouraging participation. EMWD also verified the EMWD retail customers with washers installed and complete reporting and invoice requirements for MWD and USBR.

With Funding from USBR and MWD, EMWD was able to help SoCal Gas install 1,700 washers in the homes of low income households that were customers of both EMWD and SoCal Gas. Each of the partners saw a benefit from the program, either from water savings or energy savings.

As a result of this program, EMWD is planning to continue to offer funding to SoCal Gas for waster efficient devices install for EMWD retail customers. SoCal Gas has identified 1,300 additional accounts eligible for their low income within the zip codes EMWD serves. In fiscal year 2013/14 EMWD is proposing to offer supplemental program funding, not only for 500 washer to be installed, but showerhead and aerators as well. EMWD hopes to continue the partnership until all eligible EMWD retail accounts receive water saving retrofits. In addition EMWD plans to pass on funding from MWD to supplement the SoCal Gas installation of washers. MWD and SoCal Gas are also discussing providing MWD funding throughout the MWD service area if certain hurdle can be overcome.

9. Describe any other pertinent issues regarding the project:

The HECW Direct Install program was successful program that built partnership and resulted in saved water and energy. With the success of the program EMWD plans to continue offering supplement funding to SoCal Gas for future water use efficiency devices installed.

10. Feedback to Reclamation regarding the WaterSMART Program: Please let us know if there is anything we can do to improve the WaterSMART program in general, including the process for applying for or completing a WaterSMART project. Your feedback is important to us.

EMWD appreciates the opportunity to participate in the WaterSMART Program. WaterSMART is an important and beneficial program for sustaining water supplies. As water resources are stretched and limited, WaterSMART is a broad based funding program that would benefit from additional funding. Lack of funding has eliminated two vital WaterSMART funding programs in the past. Both the System Optimization Review Grants and the Advanced Water Treatment and Pilot and Demonstration Project Grants are program that EMWD could benefit from as we continue to improve efficiency and develop water supplies.

The application and reporting requirements for the WaterSMART program are reasonable and not burdensome. EMWD is especially appreciative of USBR staff who are helpful when

completing an application and throughout the implementation and reporting period.

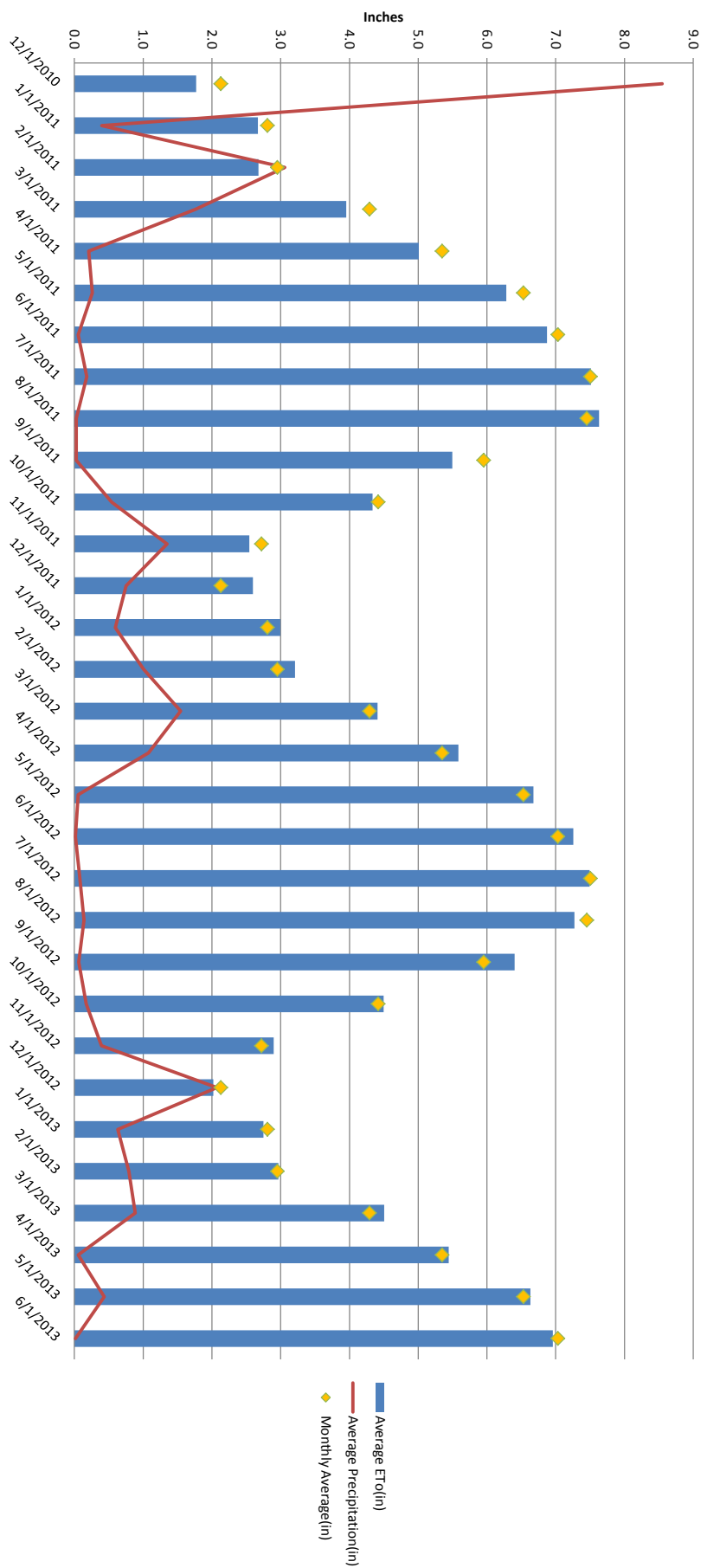
11. Attachments: Please attach the following

- ☐ Any available data or information relied on in responding to paragraph 7, above;
- ☐ A map or illustration showing the location of the recipient's facilities (see Attachment C);
- ☐ Maps, sketches, and/or drawings of the features of the completed project, as appropriate (see Attachment D);
- ☐ Representative before and after photographs, if available;
- ☐ A table showing the total expenditures for the completed project (see Attachment E)

- Attachment A** – Monthly ETo and Precipitation
- Attachment B** – Summary of Customer Information
- Attachment C** – Recipient's Facilities
- Attachment D** – HECW Install Locations
- Attachment E** – Budget Item Description

Attachment A
Monthly ETo and Precipitation

Average ETo and Precipitation During Washer Install



Attachment B
Summary of Customer Information

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
51132	1	12/30/2010	0.325988	0.204315	37%
8039	1	12/30/2010	0.555555	0.461433	17%
34553	1	12/30/2010	0.668046	0.546375	18%
56503	1	12/30/2010	0.534895	0.514234	4%
157434	1	12/30/2010	0.700185	0.443068	37%
58355	1	12/30/2010	0.617539	0.555555	10%
49340	1	12/30/2010	0.544077	0.530302	3%
8028	1	12/30/2010	0.62213	0.534896	14%
75336	1	12/30/2010	0.612948	0.456842	25%
167581	1	12/30/2010	0.686411	0.580807	15%
42796	1	12/30/2010	0.259412	0.224976	13%
76263	1	12/30/2010	0.466026	0.493571	-6%
77946	1	1/26/2011	0.518825	0.493573	5%
84248	1	1/12/2011	0.406336	0.507347	-25%
76742	1	2/24/2011	0.470614	0.35124	25%
165178	1	2/9/2011	0.330577	0.238751	28%
37877	1	2/16/2011	0.417815	0.390265	7%
33427	1	2/24/2011	0.670341	0.477503	29%
155451	1	2/9/2011	0.48439	0.305328	37%
10446	1	2/16/2011	0.162992	0.236455	-45%
17062	1	2/16/2011	0.300735	0.179062	40%
81280	1	2/9/2011	0.505053	0.355832	30%
64855	1	2/24/2011	0.365013	0.312213	14%
62693	1	2/9/2011	0.482094	0.415518	14%
82150	1	2/24/2011	0.385676	0.447658	-16%
89894	1	2/9/2011	0.188243	0.307622	-63%
37304	1	2/24/2011	0.213499	0.229569	-8%
47014	1	3/2/2011	0.410928	0.486686	-18%
26898	1	3/23/2011	1.117999	0.842516	25%
61819	1	3/26/2011	0.417813	0.291551	30%
65768	1	3/30/2011	0.534895	0.49587	7%
47794	1	3/30/2011	0.475206	0.509642	-7%
68055	1	3/16/2011	0.243342	0.15381	37%
148085	1	3/23/2011	0.557851	0.410927	26%
73190	1	3/2/2011	0.495869	0.459139	7%
30044	1	3/5/2011	0.335169	0.241047	28%
29215	1	3/16/2011	0.502755	0.383379	24%
79190	1	3/5/2011	0.456841	0.468321	-3%
176700	1	3/12/2011	0.454546	0.355831	22%
89525	1	3/23/2011	0.27089	0.153809	43%
170732	1	3/12/2011	0.378789	0.309917	18%
56455	1	3/16/2011	0.422404	0.371901	12%
79531	1	3/12/2011	0.236454	0.369605	-56%
196237	1	3/26/2011	0.291552	0.296142	-2%
160922	1	3/5/2011	0.14233	0.117079	18%
36226	1	3/12/2011	0.461433	0.323692	30%
31591	1	3/5/2011	0.443067	0.401746	9%
46245	1	3/12/2011	0.43159	0.38338	11%
65354	1	3/23/2011	0.328284	0.321394	2%
33078	1	3/26/2011	0.475208	0.259413	45%
29742	1	3/26/2011	0.468319	0.381086	19%
157107	1	3/16/2011	0.824152	1.074381	-30%
61478	1	3/16/2011	0.277779	0.114783	59%
53755	1	3/30/2011	0.355831	0.261709	26%
61440	1	3/12/2011	0.459135	0.286962	37%
79487	1	3/26/2011	0.629017	0.580808	8%
36282	1	3/30/2011	0.286962	0.325988	-14%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
94194	1	3/26/2011	0.257116	0.208907	19%
166386	1	3/23/2011	0.629018	0.45225	28%
84875	1	3/2/2011	0.392562	0.307622	22%
176710	1	3/5/2011	0.601471	0.544076	10%
153773	1	3/23/2011	0.337465	0.303029	10%
179269	1	3/26/2011	0.401744	0.332873	17%
72860	1	3/5/2011	0.440774	0.433882	2%
93025	1	3/23/2011	0.23416	0.268596	-15%
77174	1	3/5/2011	0.452251	0.397153	12%
43907	1	3/12/2011	0.883838	0.711662	19%
84864	1	3/5/2011	0.413225	0.374195	9%
30741	1	3/23/2011	0.794308	0.764464	4%
197851	1	3/26/2011	0.624427	0.580808	7%
194932	1	3/2/2011	0.968778	0.932046	4%
180789	1	4/20/2011	0.417814	0.344354	18%
167375	1	4/20/2011	0.546373	0.498164	9%
81024	1	3/30/2011	0.748392	0.599173	20%
76669	1	4/22/2011	0.498162	0.466024	6%
161552	1	4/20/2011	0.358126	0.344353	4%
46543	1	4/20/2011	0.307624	0.21809	29%
50113	1	4/20/2011	0.280073	0.369605	-32%
37483	1	7/14/2011	0.429293	0.236454	45%
32853	1	7/18/2011	0.459138	0.392561	15%
64345	1	7/14/2011	0.555556	0.509643	8%
27279	1	7/14/2011	0.328281	0.381084	-16%
66140	1	7/14/2011	0.35124	0.208908	41%
4793	1	7/17/2011	0.307621	0.229569	25%
65662	1	7/15/2011	0.335171	0.268596	20%
45322	1	7/14/2011	0.606062	0.486686	20%
49831	1	7/14/2011	0.128558	0.325987	-154%
27351	1	7/14/2011	0.447659	0.280073	37%
34195	1	7/14/2011	0.447659	0.360423	19%
51084	1	7/14/2011	0.557851	0.608357	-9%
53191	1	7/14/2011	0.505052	0.4798	5%
86915	1	7/17/2011	0.626722	0.500459	20%
55701	1	7/17/2011	0.339761	0.25482	25%
47866	1	7/17/2011	0.339762	0.33517	1%
143032	1	7/17/2011	0.337465	0.376493	-12%
91160	1	7/5/2011	0.156104	0.19054	-22%
16443	1	7/15/2011	0.534894	0.443067	17%
76642	1	7/18/2011	0.638199	0.730027	-14%
65294	1	7/15/2011	0.468319	0.452249	3%
37390	1	7/15/2011	0.571625	0.697889	-22%
64633	1	7/15/2011	0.778238	0.649678	17%
50193	1	7/14/2011	0.296143	0.259411	12%
68063	1	7/15/2011	0.413224	0.385676	7%
66270	1	7/5/2011	0.417813	0.383381	8%
64109	1	7/15/2011	0.316807	0.28237	11%
160771	1	7/17/2011	0.603764	0.477503	21%
160816	1	7/17/2011	0.348945	0.296143	15%
36297	1	7/22/2011	0.332875	0.284665	14%
44808	1	7/14/2011	0.277776	0.199722	28%
58962	1	7/17/2011	0.367311	0.35583	3%
95936	1	7/17/2011	0.103305	0.094122	9%
92363	1	7/15/2011	0.44766	0.243343	46%
27821	1	7/17/2011	0.296142	0.348944	-18%
39721	1	7/22/2011	0.431588	0.417816	3%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
21581	1	7/14/2011	0.399449	0.335171	16%
199380	1	7/17/2011	0.773647	0.691	11%
51882	1	7/14/2011	0.328284	0.383378	-17%
179069	1	7/14/2011	0.550965	0.514233	7%
50255	1	7/14/2011	0.250227	0.275482	-10%
41364	1	7/14/2011	0.325987	0.360421	-11%
58588	1	7/17/2011	0.394857	0.358127	9%
26050	1	7/15/2011	0.72314	0.679521	6%
83983	1	7/15/2011	0.172177	0.195133	-13%
85263	1	7/14/2011	0.463728	0.410929	11%
48917	1	7/14/2011	0.436179	0.387971	11%
38491	1	7/17/2011	0.208906	0.206611	1%
53605	1	7/14/2011	0.381083	0.475207	-25%
37345	1	7/14/2011	0.530304	0.629017	-19%
56845	1	7/14/2011	0.502754	0.500459	0%
168395	1	7/15/2011	0.404041	0.397155	2%
89573	1	7/15/2011	0.245637	0.245638	0%
8791	1	7/17/2011	0.330579	0.192836	42%
92353	1	7/15/2011	0.339761	0.309921	9%
76603	1	7/14/2011	0.277777	0.30303	-9%
56357	1	7/15/2011	0.289255	0.365014	-26%
17044	1	7/15/2011	0.351241	0.367311	-5%
57104	1	7/14/2011	0.346647	0.505051	-46%
62236	1	7/14/2011	0.413223	0.461432	-12%
85247	1	7/17/2011	0.277778	0.234157	16%
56356	1	7/18/2011	0.408635	0.360424	12%
64471	1	7/14/2011	0.615243	0.54867	11%
76393	1	7/14/2011	0.507347	0.502754	1%
86813	1	7/17/2011	0.610653	0.725436	-19%
66239	1	7/17/2011	0.449956	0.401744	11%
80624	1	7/22/2011	0.700184	0.679519	3%
56874	1	7/17/2011	0.339763	0.254821	25%
59031	1	7/14/2011	0.165288	0.167582	-1%
79750	1	7/15/2011	0.25482	0.165286	35%
77417	1	7/22/2011	0.41552	0.39945	4%
37271	1	7/17/2011	0.14922	0.236455	-58%
94359	1	7/15/2011	0.247933	0.275482	-11%
60219	1	7/17/2011	0.259413	0.30303	-17%
36334	1	7/15/2011	0.144625	0.119375	17%
80267	1	7/14/2011	0.560147	0.484388	14%
65360	1	7/15/2011	0.592286	0.61754	-4%
17061	1	7/15/2011	0.13774	0.275481	-100%
175182	1	7/15/2011	0.734619	0.732321	0%
33598	1	7/14/2011	0.507347	0.362717	29%
211290	1	7/5/2011	0.440771	0.925162	-110%
5348	1	7/17/2011	0.309918	0.376493	-21%
3752	1	7/14/2011	0.374199	0.56933	-52%
92373	1	7/15/2011	0.160696	0.231865	-44%
6943	1	7/17/2011	0.245639	0.544077	-121%
187032	1	7/22/2011	0.337466	0.371901	-10%
169248	1	7/15/2011	0.674931	0.709368	-5%
167009	1	7/17/2011	0.730027	0.635904	13%
102484	1	7/17/2011	0.284665	0.305327	-7%
65301	1	7/15/2011	0.482094	0.440771	9%
23722	1	7/14/2011	0.39945	0.195133	51%
29490	1	8/28/2011	0.397154	0.156104	61%
73883	1	8/31/2011	0.17447	0.571625	-228%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
56896	1	8/12/2011	0.376491	0.208906	45%
184580	1	8/14/2011	0.470615	0.298439	37%
69252	1	8/10/2011	0.351242	0.280072	20%
52775	1	8/10/2011	0.456844	0.447657	2%
35403	1	8/24/2011	0.493572	0.385675	22%
53735	1	8/14/2011	0.647383	0.62672	3%
58533	1	8/12/2011	0.482093	0.479799	0%
61696	1	8/14/2011	0.381083	0.500459	-31%
28568	1	8/12/2011	0.488981	0.339761	31%
54251	1	8/16/2011	0.443066	0.266301	40%
37695	1	8/17/2011	0.381086	0.332875	13%
56300	1	8/12/2011	0.39486	0.38797	2%
95934	1	8/24/2011	0.381083	0.466025	-22%
189764	1	8/28/2011	0.362718	0.383378	-6%
59912	1	8/17/2011	0.45225	0.374196	17%
32497	1	8/28/2011	0.344353	0.381084	-11%
60002	1	8/12/2011	0.482093	0.498163	-3%
170907	1	8/10/2011	0.663454	0.560148	16%
80076	1	8/14/2011	0.40404	0.339763	16%
73691	1	8/16/2011	0.11708	0.204317	-75%
69005	1	8/14/2011	0.764463	0.635904	17%
36107	1	8/12/2011	0.303031	0.231861	23%
59032	1	8/10/2011	0.229567	0.222681	3%
173339	1	8/12/2011	0.968778	0.72773	25%
81618	1	8/13/2011	0.415521	0.337466	19%
157164	1	8/12/2011	0.491276	0.408633	17%
57322	1	8/12/2011	0.546372	0.436181	20%
54787	1	8/19/2011	0.273187	0.247935	9%
177450	1	8/24/2011	0.234158	0.183655	22%
170914	1	8/10/2011	0.477502	0.461434	3%
30957	1	8/10/2011	0.270891	0.298439	-10%
55391	1	8/12/2011	0.502754	0.358126	29%
46632	1	8/12/2011	0.378792	0.371903	2%
68259	1	8/12/2011	0.720844	0.608356	16%
13334	1	8/12/2011	0.390266	0.323692	17%
57072	1	8/12/2011	0.433885	0.436179	-1%
53216	1	8/17/2011	0.330578	0.273187	17%
82353	1	8/28/2011	0.502755	0.415521	17%
60220	1	8/10/2011	0.243342	0.130851	46%
12669	1	8/12/2011	0.443067	0.48439	-9%
189364	1	8/31/2011	0.449953	0.491276	-9%
43012	1	8/10/2011	0.550963	0.615244	-12%
83557	1	8/13/2011	0.757575	0.578513	24%
201708	1	8/28/2011	0.293847	0.376491	-28%
64535	1	8/13/2011	0.466023	0.445364	4%
72746	1	8/12/2011	0.440772	0.346649	21%
81418	1	8/12/2011	0.158402	0.146924	7%
79543	1	8/16/2011	0.440772	0.367311	17%
168091	1	8/10/2011	0.426997	0.390266	9%
76361	1	8/19/2011	0.33976	0.342057	-1%
25947	1	8/28/2011	0.355831	0.355833	0%
71576	1	8/10/2011	0.463729	0.567036	-22%
196034	1	8/10/2011	0.392561	0.408633	-4%
52722	1	8/12/2011	0.213497	0.211201	1%
53078	1	8/19/2011	0.585398	0.651974	-11%
53773	1	8/16/2011	0.408632	0.339762	17%
57253	1	8/10/2011	0.410929	0.369606	10%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
29975	1	8/12/2011	0.268595	0.199723	26%
78432	1	8/14/2011	0.507347	0.583103	-15%
77043	1	8/14/2011	0.603764	0.592288	2%
29060	1	8/17/2011	0.264005	0.220383	17%
59929	1	8/31/2011	0.493574	0.495868	0%
36773	1	8/14/2011	0.358127	0.20202	44%
59025	1	8/10/2011	0.222679	0.202019	9%
51305	1	8/10/2011	0.518825	0.592286	-14%
102650	1	8/19/2011	0.344353	0.323693	6%
196697	1	8/10/2011	0.578513	0.502754	13%
38999	1	8/19/2011	0.174469	0.241046	-38%
199044	1	8/12/2011	0.268597	0.264004	2%
98404	1	8/6/2011	0.433885	0.610652	-41%
59080	1	8/12/2011	0.369605	0.424701	-15%
91541	1	8/14/2011	0.2663	0.307622	-16%
40049	1	8/5/2011	0.647382	0.782828	-21%
36753	1	8/19/2011	0.275481	0.417815	-52%
29344	1	8/12/2011	0.433887	0.280074	35%
48894	1	8/12/2011	0.360422	0.440771	-22%
194215	1	8/28/2011	0.674932	0.727731	-8%
193039	1	8/12/2011	0.429295	0.449954	-5%
69265	1	8/14/2011	0.378789	0.369607	2%
53392	1	8/12/2011	0.57392	0.523415	9%
201381	1	8/10/2011	0.355831	0.426999	-20%
64426	1	8/5/2011	0.268595	0.280071	-4%
6979	1	8/28/2011	0.37879	0.401746	-6%
54554	1	8/6/2011	0.656565	0.686409	-5%
60728	1	8/12/2011	0.445363	0.436181	2%
58514	1	8/10/2011	0.521119	0.612947	-18%
43917	1	8/12/2011	0.649679	0.725437	-12%
185361	1	8/14/2011	0.390266	0.39256	-1%
68478	1	8/13/2011	0.50964	0.75528	-48%
45471	1	8/12/2011	0.291551	0.273186	6%
180737	1	8/5/2011	0.399449	0.426997	-7%
38263	1	8/16/2011	0.45225	0.583103	-29%
76420	1	8/5/2011	0.312214	0.381085	-22%
50207	1	8/10/2011	0.36731	0.282369	23%
48569	1	8/19/2011	0.52112	0.681817	-31%
196637	1	8/10/2011	0.454546	0.35583	22%
55096	1	8/6/2011	0.107896	0.144628	-34%
29065	1	8/12/2011	0.413223	0.344352	17%
79393	1	8/12/2011	0.231863	0.266299	-15%
35842	1	8/17/2011	0.592287	0.516528	13%
27348	1	8/10/2011	0.268594	0.339762	-26%
34792	1	8/28/2011	0.142332	0.296145	-108%
59013	1	8/12/2011	0.509643	0.466023	9%
48101	1	8/10/2011	0.603766	0.571625	5%
61493	1	8/19/2011	0.337467	0.222682	34%
48697	1	8/13/2011	0.45684	0.438477	4%
41655	1	8/5/2011	0.208905	0.156103	25%
67879	1	8/14/2011	0.853994	0.681818	20%
200471	1	8/24/2011	0.358129	0.378786	-6%
43616	1	8/12/2011	0.348944	0.564739	-62%
48138	1	8/12/2011	0.523417	0.394859	25%
82361	1	8/28/2011	0.342058	0.406334	-19%
45468	1	8/19/2011	0.323691	0.28696	11%
57078	1	8/14/2011	0.52112	0.840219	-61%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
57092	1	8/14/2011	0.85629	0.778238	9%
105991	1	8/12/2011	0.488981	0.509642	-4%
66197	1	8/12/2011	0.704776	0.587696	17%
213610	1	9/2/2011	0.500457	0.615244	-23%
190062	1	9/16/2011	0.500459	0.369608	26%
31583	1	9/2/2011	0.417816	0.466024	-12%
31715	1	9/6/2011	0.20661	0.153808	26%
34124	1	9/16/2011	0.342057	0.312214	9%
31595	1	9/2/2011	0.268595	0.236455	12%
34554	1	9/16/2011	0.612948	0.640497	-4%
31571	1	9/16/2011	0.18595	0.188246	-1%
94467	1	9/16/2011	0.511938	0.518826	-1%
31590	1	9/2/2011	0.238752	0.247931	-4%
29499	1	9/16/2011	0.289257	0.316807	-10%
162035	1	9/16/2011	0.674931	0.725435	-7%
16983	1	9/2/2011	0.401744	0.385675	4%
76646	1	3/9/2012	0.179062	0.146922	18%
25587	1	3/14/2012	0.195132	0.121671	38%
79226	1	3/12/2012	0.307623	0.231865	25%
27009	1	3/14/2012	0.353536	0.20661	42%
82893	1	3/20/2012	0.429292	0.387969	10%
69269	1	3/20/2012	0.479798	0.413224	14%
39032	1	3/10/2012	0.808083	0.362718	55%
84888	1	3/21/2012	0.231864	0.22268	4%
76901	1	3/10/2012	0.371901	0.404039	-9%
59570	1	3/10/2012	0.603766	0.576217	5%
18803	1	3/15/2012	0.192835	0.121671	37%
27121	1	3/13/2012	0.397155	0.397154	0%
42692	1	3/21/2012	0.321395	0.158401	51%
40774	1	3/12/2012	0.80349	0.433883	46%
49486	1	3/14/2012	0.353535	0.33058	6%
86073	1	3/24/2012	0.48439	0.335168	31%
44738	1	3/24/2012	0.231863	0.197426	15%
58990	1	3/10/2012	0.174472	0.231862	-33%
85235	1	3/10/2012	0.596881	0.376492	37%
43618	1	3/12/2012	0.507346	0.413222	19%
60473	1	3/31/2012	0.325989	0.254819	22%
43051	1	3/21/2012	0.511939	0.204315	60%
41976	1	3/9/2012	0.479799	0.521121	-9%
46240	1	3/22/2012	0.325989	0.257117	21%
51888	1	3/9/2012	0.681818	0.443069	35%
38787	1	3/10/2012	0.488981	0.564739	-15%
36237	1	3/30/2012	0.376493	0.33058	12%
197759	1	3/9/2012	0.413223	0.426997	-3%
55246	1	3/15/2012	0.280072	0.224976	20%
76743	1	3/10/2012	0.541783	0.42011	22%
60948	1	3/12/2012	0.344352	0.358125	-4%
185805	1	3/20/2012	0.406335	0.261708	36%
10156	1	3/12/2012	0.4247	0.424702	0%
35953	1	3/28/2012	0.346647	0.268596	23%
29767	1	3/28/2012	0.38338	0.293847	23%
33923	1	3/13/2012	0.39945	0.293847	26%
46050	1	3/20/2012	0.213499	0.229569	-8%
74559	1	3/28/2012	0.445365	0.445363	0%
55336	1	3/15/2012	0.53719	0.422406	21%
161769	1	3/24/2012	0.149218	0.130854	12%
30904	1	3/14/2012	0.35124	0.477501	-36%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
41836	1	3/14/2012	0.502753	0.303032	40%
49365	1	3/20/2012	0.610651	0.495866	19%
36549	1	3/20/2012	0.525713	0.495868	6%
47217	1	3/14/2012	0.475207	0.488981	-3%
66237	1	3/28/2012	0.429292	0.264003	39%
160521	1	3/9/2012	0.525712	0.346649	34%
34088	1	3/30/2012	0.741505	0.615244	17%
71568	1	3/24/2012	0.289256	0.390266	-35%
98187	1	3/9/2012	0.842515	1.200643	-43%
24353	1	3/10/2012	0.236456	0.236455	0%
36683	1	3/10/2012	0.376491	0.466023	-24%
179074	1	3/13/2012	0.936638	0.79201	15%
34825	1	3/31/2012	0.541781	0.534895	1%
20369	1	3/22/2012	0.599173	0.385677	36%
44805	1	3/12/2012	0.22268	0.137739	38%
51903	1	3/15/2012	0.493573	0.35124	29%
49376	1	3/29/2012	0.293848	0.241047	18%
28234	1	3/23/2012	0.227271	0.337465	-48%
52651	1	3/15/2012	0.665748	0.562443	16%
40755	1	3/13/2012	0.277778	0.369606	-33%
52328	1	3/9/2012	0.702479	0.633609	10%
42986	1	3/12/2012	0.245639	0.29155	-19%
77948	1	3/9/2012	0.486684	0.537189	-10%
44802	1	3/24/2012	0.365015	0.293846	19%
54906	1	3/9/2012	0.647383	0.523418	19%
54948	1	3/15/2012	0.261708	0.408631	-56%
47981	1	3/12/2012	0.328285	0.28237	14%
52305	1	3/10/2012	0.665747	0.548667	18%
78662	1	3/10/2012	0.762166	0.771349	-1%
41881	1	3/16/2012	0.780534	0.736913	6%
51103	1	3/9/2012	0.330578	0.413224	-25%
38683	1	3/12/2012	0.259413	0.257117	1%
165355	1	3/28/2012	0.381083	0.270891	29%
78963	1	3/19/2012	0.482095	0.360423	25%
59043	1	3/9/2012	0.413222	0.367312	11%
45482	1	3/21/2012	0.224977	0.206611	8%
26382	1	3/10/2012	0.686409	0.612947	11%
180088	1	3/10/2012	0.293849	0.303032	-3%
46046	1	3/24/2012	0.440772	0.399449	9%
34097	1	3/9/2012	0.328284	0.525711	-60%
47006	1	3/9/2012	0.456842	0.410926	10%
35967	1	3/22/2012	0.456841	0.332875	27%
36349	1	3/31/2012	0.330581	0.273188	17%
18912	1	3/20/2012	0.569328	0.472912	17%
40028	1	3/24/2012	1.574839	1.386594	12%
35781	1	3/13/2012	0.433885	0.371901	14%
43105	1	3/14/2012	0.466024	0.408632	12%
8045	1	3/9/2012	0.711663	0.638201	10%
47748	1	3/12/2012	0.144626	0.298439	-106%
28834	1	3/9/2012	0.454546	0.532599	-17%
155445	1	3/14/2012	0.43618	0.342057	22%
45231	1	3/21/2012	0.208907	0.15381	26%
84934	1	3/28/2012	0.160698	0.218087	-36%
37994	1	3/30/2012	0.775942	0.686409	12%
55920	1	3/14/2012	0.461433	0.406339	12%
53145	1	3/14/2012	0.355833	0.314509	12%
79359	1	3/15/2012	0.509642	0.397153	22%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
206363	1	3/9/2012	0.736914	0.606062	18%
171656	1	3/10/2012	0.270891	0.270891	0%
36740	1	3/10/2012	0.374196	0.381082	-2%
39228	1	3/14/2012	0.28237	0.280074	1%
46629	1	3/15/2012	0.314509	0.353533	-12%
30821	1	3/14/2012	0.732322	0.50505	31%
53477	1	3/15/2012	0.523416	0.404041	23%
30421	1	3/12/2012	0.619835	0.528007	15%
153870	1	3/20/2012	0.486685	0.479797	1%
30431	1	3/12/2012	0.417815	0.573922	-37%
28668	1	3/22/2012	0.33058	0.28237	15%
35504	1	3/14/2012	0.459137	0.410927	11%
41162	1	3/14/2012	0.486686	0.385674	21%
46244	1	3/23/2012	0.509642	0.43618	14%
71366	1	3/24/2012	0.622129	0.578511	7%
55509	1	3/10/2012	0.507348	0.495868	2%
99291	1	3/29/2012	0.229568	0.231863	-1%
42422	1	3/29/2012	0.332875	0.337464	-1%
170580	1	3/14/2012	0.43159	0.445365	-3%
57972	1	3/24/2012	0.808081	0.702479	13%
38135	1	3/31/2012	0.746097	0.798898	-7%
47953	1	3/20/2012	0.41093	0.369607	10%
38152	1	3/10/2012	0.410928	0.312214	24%
52548	1	3/10/2012	0.679523	0.645086	5%
79351	1	3/10/2012	0.247935	0.252524	-2%
55211	1	3/22/2012	0.277777	0.206609	26%
29634	1	3/14/2012	0.192839	0.438474	-127%
44823	1	3/10/2012	0.231865	0.218088	6%
77936	1	3/10/2012	0.52112	0.342055	34%
46048	1	3/31/2012	0.505051	0.534896	-6%
28550	1	3/10/2012	0.493573	0.477502	3%
17898	1	3/19/2012	2.433425	2.194674	10%
155368	1	3/14/2012	0.342057	0.355833	-4%
79362	1	3/28/2012	0.778236	0.661159	15%
18703	1	3/10/2012	0.518824	0.592285	-14%
66259	1	3/20/2012	0.649678	0.746097	-15%
40115	1	3/20/2012	0.211201	0.275483	-30%
42761	1	3/10/2012	0.309917	0.179061	42%
60707	1	3/9/2012	1.035352	1.115704	-8%
49228	1	3/23/2012	0.406337	0.360421	11%
56146	1	3/22/2012	0.392561	0.309918	21%
168094	1	3/15/2012	0.629017	0.691	-10%
34180	1	3/10/2012	0.348945	0.335171	4%
8096	1	3/29/2012	0.599173	0.589992	2%
86185	1	3/29/2012	0.895316	0.817263	9%
56484	1	3/10/2012	0.743801	0.560147	25%
36304	1	3/20/2012	0.348946	0.316804	9%
10593	1	3/20/2012	0.293848	0.314508	-7%
31324	1	3/12/2012	0.658862	0.521122	21%
29867	1	3/10/2012	1.07438	0.773646	28%
51480	1	3/15/2012	0.45684	0.406335	11%
54239	1	3/29/2012	0.587696	0.530303	10%
44407	1	3/12/2012	0.362721	0.404043	-11%
55252	1	3/31/2012	0.179064	0.140035	22%
46778	1	3/16/2012	0.211204	0.365014	-73%
38967	1	3/12/2012	0.328283	0.289257	12%
53704	1	3/22/2012	0.443066	0.571625	-29%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
57277	1	3/10/2012	0.298441	0.305327	-2%
82996	1	3/20/2012	0.571626	0.507346	11%
44728	1	3/10/2012	0.215792	0.303031	-40%
47740	1	3/23/2012	0.718549	0.759871	-6%
74959	1	3/9/2012	0.695593	0.658862	5%
26602	1	3/10/2012	0.514234	0.528007	-3%
184320	1	3/27/2012	0.66575	0.594582	11%
36974	1	3/12/2012	0.243341	0.289256	-19%
66605	1	3/16/2012	0.5326	0.431589	19%
28678	1	3/20/2012	0.121671	0.101008	17%
205814	1	3/12/2012	0.546372	0.482094	12%
44183	1	3/9/2012	0.470614	0.404041	14%
34883	1	3/31/2012	0.856291	0.805785	6%
40867	1	3/22/2012	0.546373	0.484391	11%
170952	1	3/30/2012	0.424702	0.424701	0%
31323	1	3/20/2012	0.665749	0.645088	3%
32894	1	3/10/2012	1.00092	0.977962	2%
34568	1	3/31/2012	0.656564	0.619834	6%
52688	1	3/15/2012	0.43618	0.417814	4%
80731	1	3/9/2012	0.553258	0.475206	14%
38523	1	3/12/2012	0.44766	0.445363	1%
18782	1	3/29/2012	0.440772	0.445363	-1%
154922	1	3/22/2012	0.67493	0.697888	-3%
58014	1	3/13/2012	0.608357	0.665748	-9%
56287	1	3/30/2012	0.385676	0.307623	20%
47956	1	3/12/2012	0.390267	0.296144	24%
206340	1	3/9/2012	0.353537	0.280075	21%
36340	1	3/10/2012	0.509642	0.475207	7%
40667	1	3/24/2012	0.677226	0.573921	15%
82864	1	3/20/2012	0.208907	0.250231	-20%
62399	1	3/20/2012	0.486686	0.38797	20%
60908	1	3/15/2012	0.803489	0.752985	6%
79424	1	3/13/2012	0.436181	0.573921	-32%
9942	1	3/27/2012	0.385677	0.335172	13%
76583	1	3/10/2012	0.585399	0.51194	13%
79524	1	3/10/2012	0.482093	0.498163	-3%
87644	1	3/22/2012	0.309918	0.30762	1%
79246	1	3/10/2012	0.392562	0.312211	20%
66289	1	3/21/2012	0.264004	0.259412	2%
197836	1	3/22/2012	0.3719	0.381083	-2%
53867	1	3/22/2012	0.390268	0.498163	-28%
44863	1	3/16/2012	0.275484	0.222681	19%
34440	1	3/9/2012	0.280073	0.486685	-74%
178821	1	3/28/2012	0.424701	0.516529	-22%
78585	1	3/12/2012	0.282369	0.277779	2%
56003	1	3/23/2012	0.383379	0.378788	1%
41791	1	3/14/2012	0.541781	0.511938	6%
24358	1	3/20/2012	0.286962	0.335168	-17%
58004	1	3/13/2012	0.431589	0.612946	-42%
150463	1	3/20/2012	0.730028	0.826448	-13%
40366	1	3/9/2012	0.629017	0.617538	2%
76211	1	3/30/2012	0.408632	0.257117	37%
78455	1	3/12/2012	0.732323	0.523418	29%
44527	1	3/16/2012	0.638201	0.516528	19%
46531	1	3/12/2012	0.264003	0.307624	-17%
38944	1	3/15/2012	0.344352	0.323691	6%
97858	1	3/28/2012	0.580807	0.456844	21%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
79251	1	3/9/2012	0.461433	0.491275	-6%
55302	1	3/12/2012	0.525713	0.576217	-10%
16187	1	4/6/2012	0.410928	0.488981	-19%
168306	1	4/18/2012	0.39945	0.215794	46%
24878	1	4/3/2012	0.218091	0.241046	-11%
53265	1	4/19/2012	0.174471	0.32369	-86%
9877	1	4/27/2012	0.25482	0.332873	-31%
152893	1	4/3/2012	0.417814	0.417815	0%
10059	1	4/20/2012	0.220385	0.165288	25%
39011	1	4/7/2012	0.420111	0.293846	30%
46064	1	4/21/2012	0.344354	0.40404	-17%
77617	1	4/6/2012	0.305325	0.335169	-10%
56197	1	4/13/2012	0.296142	0.257117	13%
169130	1	4/18/2012	0.293847	0.337465	-15%
21639	1	4/20/2012	0.227272	0.094122	59%
32701	1	4/19/2012	0.980257	0.502756	49%
57533	1	4/11/2012	0.48439	0.284667	41%
56137	1	4/13/2012	0.25941	0.385674	-49%
168313	1	4/18/2012	0.245637	0.183655	25%
58429	1	4/13/2012	0.33517	0.270891	19%
2501	1	4/19/2012	0.204316	0.27089	-33%
82994	1	4/19/2012	0.608357	0.482094	21%
58716	1	4/4/2012	0.328281	0.342056	-4%
81789	1	4/6/2012	0.557851	0.422407	24%
34649	1	4/12/2012	0.656566	0.780533	-19%
178175	1	4/7/2012	0.325987	0.406335	-25%
80667	1	4/17/2012	0.509643	0.369604	27%
85603	1	4/6/2012	0.390264	0.344352	12%
85944	1	4/21/2012	0.066574	0.094122	-41%
78578	1	4/4/2012	0.365013	0.284665	22%
96056	1	4/24/2012	0.358127	0.275483	23%
59489	1	4/19/2012	0.286961	0.169878	41%
16751	1	4/18/2012	0.355832	0.362717	-2%
66455	1	4/17/2012	0.612948	0.445363	27%
78821	1	4/13/2012	0.622131	0.58999	5%
41897	1	4/5/2012	0.594582	0.58999	1%
11221	1	4/17/2012	0.330578	0.280073	15%
53928	1	4/17/2012	0.867769	0.88843	-2%
36111	1	4/5/2012	0.502756	0.369605	26%
79692	1	4/17/2012	0.224975	0.20202	10%
200547	1	4/27/2012	0.33976	0.305326	10%
52872	1	4/20/2012	0.592286	0.569329	4%
10107	1	4/17/2012	0.312214	0.261708	16%
77832	1	4/12/2012	0.282367	0.422404	-50%
15727	1	4/12/2012	0.523416	0.25482	51%
75727	1	4/18/2012	0.498161	0.31451	37%
6303	1	4/27/2012	0.695592	0.362719	48%
58700	1	4/3/2012	0.576217	0.557852	3%
45474	1	4/5/2012	0.589989	0.495867	16%
163607	1	4/20/2012	0.624426	0.57392	8%
51527	1	4/3/2012	0.420109	0.443068	-5%
41138	1	4/20/2012	0.557851	0.603766	-8%
16502	1	4/19/2012	0.162993	0.123967	24%
82857	1	4/20/2012	0.337465	0.29844	12%
31047	1	4/5/2012	0.360423	0.323693	10%
44817	1	4/21/2012	0.298441	0.257116	14%
169242	1	4/7/2012	0.346648	0.404039	-17%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
26954	1	4/3/2012	0.387971	0.415518	-7%
192328	1	4/20/2012	0.831036	0.688707	17%
80586	1	4/7/2012	0.500459	0.500459	0%
195905	1	4/4/2012	0.376493	0.397155	-5%
83982	1	4/20/2012	0.619834	0.399449	36%
94870	1	4/12/2012	0.236456	0.27089	-15%
88200	1	4/17/2012	0.484388	0.300733	38%
39679	1	4/12/2012	0.369607	0.261707	29%
204995	1	4/20/2012	0.656566	0.562442	14%
39577	1	4/18/2012	0.342058	0.323693	5%
54609	1	4/19/2012	0.307621	0.273184	11%
164040	1	4/27/2012	0.640495	0.608356	5%
31285	1	4/24/2012	0.472913	0.378787	20%
3327	1	4/25/2012	0.381084	0.459135	-20%
158817	1	4/10/2012	0.470617	0.484389	-3%
43505	1	4/21/2012	0.385675	0.342057	11%
13344	1	4/5/2012	0.247935	0.165288	33%
194229	1	4/20/2012	0.849402	0.635903	25%
68269	1	4/21/2012	0.410927	0.330578	20%
75558	1	4/21/2012	0.376493	0.571626	-52%
16543	1	4/6/2012	0.35583	0.229567	35%
76653	1	4/3/2012	0.42011	0.422408	-1%
182676	1	4/4/2012	0.466024	0.369605	21%
28698	1	4/3/2012	0.252524	0.220385	13%
63538	1	4/7/2012	0.321397	0.346649	-8%
106630	1	4/3/2012	0.500461	0.557851	-11%
179605	1	4/19/2012	0.293846	0.303032	-3%
220191	1	4/19/2012	0.29844	0.275482	8%
189623	1	4/18/2012	0.371901	0.415521	-12%
23493	1	4/5/2012	0.466024	0.433885	7%
46832	1	4/3/2012	0.55326	0.493573	11%
31207	1	4/19/2012	0.649678	0.436179	33%
154975	1	4/10/2012	0.385676	0.445362	-15%
15310	1	4/6/2012	0.250228	0.293849	-17%
76894	1	4/12/2012	0.339761	0.376493	-11%
39006	1	4/7/2012	0.355832	0.351241	1%
57151	1	4/26/2012	0.344353	0.321397	7%
183401	1	4/27/2012	0.62213	0.475209	24%
3112	1	4/17/2012	0.410929	0.367311	11%
143044	1	4/17/2012	0.544078	0.550963	-1%
77754	1	4/5/2012	0.438477	0.507344	-16%
24771	1	4/20/2012	0.332875	0.282367	15%
83062	1	4/4/2012	0.725436	0.674931	7%
11040	1	4/7/2012	0.293848	0.257117	13%
40217	1	4/17/2012	0.305328	0.305328	0%
44221	1	4/13/2012	0.550963	0.518825	6%
84492	1	4/7/2012	0.654271	0.482095	26%
40456	1	4/10/2012	0.580808	0.270892	53%
153800	1	4/19/2012	0.5326	0.468319	12%
43944	1	4/26/2012	0.626723	0.596877	5%
34015	1	4/5/2012	0.316804	0.312213	1%
68299	1	4/4/2012	0.902202	0.610653	32%
181687	1	4/25/2012	0.436181	0.415518	5%
97000	1	4/6/2012	0.475208	0.479798	-1%
57382	1	4/10/2012	0.38338	0.298439	22%
75374	1	4/26/2012	0.771349	0.769054	0%
2390	1	4/18/2012	0.557852	0.337468	40%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
68769	1	4/25/2012	0.599173	0.668045	-11%
40319	1	4/13/2012	0.335171	0.385674	-15%
98912	1	4/27/2012	0.571626	0.626721	-10%
52914	1	4/12/2012	0.33058	0.351238	-6%
30678	1	4/18/2012	1.818183	1.124886	38%
81845	1	4/3/2012	0.344352	0.319103	7%
93814	1	4/17/2012	0.757575	0.658863	13%
166402	1	4/24/2012	0.429291	0.537191	-25%
30695	1	4/3/2012	0.346648	0.204315	41%
29011	1	4/3/2012	0.429296	0.472909	-10%
91807	1	4/18/2012	0.245637	0.257116	-5%
216354	1	4/21/2012	0.183653	0.342056	-86%
42339	1	4/18/2012	0.661156	0.259411	61%
48710	1	4/12/2012	0.438475	0.548668	-25%
59482	1	4/19/2012	0.28696	0.261708	9%
193507	1	4/20/2012	0.275481	0.261707	5%
201763	1	4/18/2012	0.61754	0.631313	-2%
75820	1	4/13/2012	0.518824	0.452249	13%
53068	1	4/17/2012	0.213498	0.264003	-24%
200258	1	4/18/2012	0.10101	0.342057	-239%
29173	1	4/10/2012	0.679522	0.5854	14%
52235	1	4/13/2012	0.227272	0.243342	-7%
83952	1	4/6/2012	0.424702	0.470616	-11%
49143	1	4/4/2012	0.571624	0.550963	4%
164638	1	4/19/2012	0.369606	0.277777	25%
16152	1	4/4/2012	0.374196	0.406336	-9%
58389	1	4/13/2012	0.339762	0.546373	-61%
85635	1	4/6/2012	0.578512	0.663453	-15%
161498	1	4/18/2012	0.502755	0.438474	13%
71584	1	4/12/2012	0.45225	0.408634	10%
94413	1	4/19/2012	0.369605	0.236454	36%
197688	1	4/6/2012	0.633612	0.445363	30%
63147	1	4/25/2012	0.550963	0.514233	7%
58354	1	4/11/2012	0.34206	0.394859	-15%
46845	1	4/5/2012	0.413224	0.374197	9%
34044	1	4/19/2012	0.550964	0.810375	-47%
8585	1	4/3/2012	0.426997	0.27089	37%
82146	1	4/6/2012	0.392563	0.307622	22%
9547	1	4/20/2012	0.179061	0.195133	-9%
42009	1	4/6/2012	0.780532	0.927456	-19%
26362	1	4/7/2012	0.328283	0.75528	-130%
92815	1	4/18/2012	0.55326	0.516529	7%
40782	1	5/16/2012	0.408634	0.397152	3%
28423	1	5/23/2012	0.679523	0.346647	49%
98167	1	5/15/2012	0.169878	0.126261	26%
56824	1	5/23/2012	0.247934	0.270891	-9%
40205	1	5/15/2012	0.385676	0.355833	8%
47896	1	5/24/2012	0.539487	0.505051	6%
90951	1	5/22/2012	0.461433	0.371899	19%
27758	1	5/15/2012	0.158401	0.208908	-32%
48688	1	5/19/2012	0.702481	0.459135	35%
83132	1	5/24/2012	0.213498	0.227271	-6%
224768	1	5/9/2012	0.268593	0.213498	21%
22966	1	5/4/2012	0.282369	0.247934	12%
44037	1	5/15/2012	0.587696	0.445364	24%
97609	1	5/16/2012	0.330579	0.316804	4%
35488	1	5/15/2012	0.484391	0.328283	32%

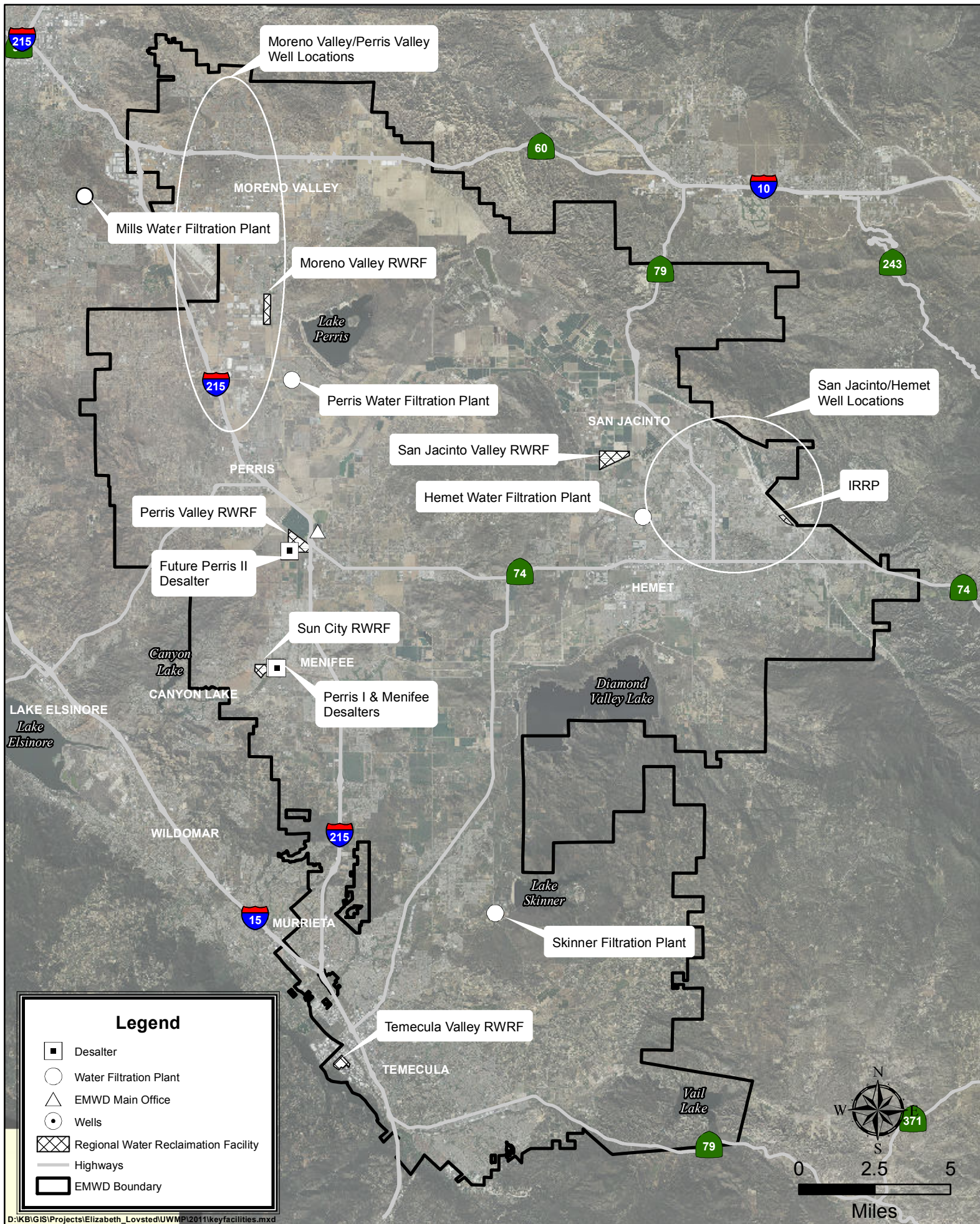
SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
60280	1	5/5/2012	0.445363	0.153809	65%
30853	1	5/26/2012	0.183656	0.204316	-11%
34096	1	5/10/2012	0.886133	0.771349	13%
149608	1	5/8/2012	0.491276	0.514233	-5%
88412	1	5/31/2012	0.50505	0.415519	18%
46638	1	5/19/2012	0.305326	0.408631	-34%
30965	1	5/25/2012	0.420112	0.392563	7%
58672	1	5/26/2012	0.447661	0.362719	19%
83855	1	5/31/2012	0.472908	0.463728	2%
75611	1	5/5/2012	0.468319	0.495867	-6%
56782	1	5/3/2012	0.46832	0.459136	2%
39815	1	5/31/2012	0.523416	0.50046	4%
220204	1	5/1/2012	0.353535	0.443068	-25%
83274	1	5/11/2012	0.192837	0.156107	19%
149227	1	5/30/2012	0.727732	0.684114	6%
68993	1	5/8/2012	0.555556	0.413225	26%
27346	1	5/4/2012	0.369607	0.252526	32%
22880	1	5/3/2012	0.312213	0.312213	0%
210188	1	5/19/2012	0.449956	0.49357	-10%
66321	1	5/23/2012	0.399451	0.337467	16%
7521	1	5/1/2012	0.424703	0.202021	52%
81324	1	5/25/2012	0.810378	0.567035	30%
34012	1	5/3/2012	0.456842	0.367313	20%
102171	1	5/17/2012	0.213499	0.215794	-1%
18445	1	5/26/2012	0.339761	0.213498	37%
59055	1	5/25/2012	0.498163	0.456841	8%
29350	1	5/23/2012	0.397153	0.365013	8%
58367	1	5/5/2012	0.348944	0.241048	31%
54717	1	5/30/2012	0.362721	0.332875	8%
22463	1	5/1/2012	0.390266	0.381085	2%
220033	1	5/19/2012	0.284666	0.300735	-6%
175125	1	5/26/2012	0.31451	0.257115	18%
60595	1	5/5/2012	0.707069	0.647384	8%
28430	1	5/24/2012	0.2135	0.273188	-28%
50261	1	5/10/2012	0.468321	0.502757	-7%
77298	1	5/8/2012	0.603766	0.51194	15%
47580	1	5/19/2012	0.284664	0.280074	2%
69963	1	5/1/2012	0.897612	0.757574	16%
38843	1	5/19/2012	0.289258	0.23416	19%
73911	1	5/8/2012	0.114782	0.119375	-4%
195207	1	5/23/2012	0.833333	0.748392	10%
58099	1	5/4/2012	0.472911	0.378788	20%
94906	1	5/11/2012	0.399449	0.360422	10%
57521	1	5/10/2012	0.426999	0.316802	26%
69036	1	5/10/2012	0.443067	0.360421	19%
7865	1	5/5/2012	0.362717	0.222682	39%
15319	1	5/19/2012	0.261708	0.220385	16%
77843	1	5/3/2012	0.587695	0.486684	17%
77323	1	5/17/2012	0.55326	0.42011	24%
177598	1	5/24/2012	0.417815	0.401746	4%
56681	1	5/31/2012	0.587696	0.470617	20%
38199	1	5/3/2012	0.273185	0.208906	24%
1911	1	5/31/2012	0.321398	0.280073	13%
59954	1	5/8/2012	0.420112	0.491277	-17%
216257	1	5/26/2012	0.438477	0.401744	8%
35386	1	5/8/2012	0.40404	0.286962	29%
61722	1	5/26/2012	0.282369	0.277779	2%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
68315	1	5/3/2012	0.413223	0.241047	42%
46137	1	5/24/2012	0.596879	0.633608	-6%
86019	1	5/1/2012	0.50505	0.523416	-4%
47658	1	5/11/2012	0.635904	0.626722	1%
46140	1	5/24/2012	0.567034	0.277777	51%
56710	1	5/22/2012	0.596879	0.436181	27%
186181	1	5/19/2012	0.25482	0.264002	-4%
83963	1	5/30/2012	0.608355	0.665748	-9%
50258	1	5/3/2012	0.078053	0.121671	-56%
26534	1	5/25/2012	0.342058	0.360424	-5%
57572	1	5/1/2012	0.39945	0.339763	15%
66195	1	5/3/2012	0.360423	0.463727	-29%
68219	1	5/9/2012	0.518824	0.427	18%
33272	1	5/3/2012	0.773646	0.803491	-4%
74795	1	5/23/2012	0.514234	0.383379	25%
92526	1	5/19/2012	0.73462	0.684113	7%
166949	1	5/19/2012	0.420111	0.374197	11%
96994	1	5/31/2012	0.431589	0.401744	7%
200667	1	5/9/2012	0.700183	0.642791	8%
51140	1	5/19/2012	0.691002	0.752983	-9%
60246	1	5/24/2012	0.247933	0.270891	-9%
54632	1	5/3/2012	0.606061	0.672637	-11%
167120	1	5/30/2012	0.792011	0.844812	-7%
68314	1	5/3/2012	0.459137	0.392561	15%
54713	1	5/1/2012	0.20202	0.202017	0%
33953	1	5/29/2012	0.410927	0.576218	-40%
68122	1	5/5/2012	0.626722	0.663453	-6%
90554	1	5/25/2012	0.222681	0.185948	16%
199198	1	5/8/2012	0.371901	0.321394	14%
197912	1	5/10/2012	0.635904	0.679522	-7%
168700	1	5/22/2012	0.773646	0.739211	4%
7058	1	5/3/2012	1.205234	1.666669	-38%
34808	1	5/11/2012	0.544076	0.571626	-5%
189419	1	5/25/2012	0.401745	0.479799	-19%
71600	1	5/8/2012	0.658861	0.651975	1%
165543	1	5/1/2012	0.741506	0.550965	26%
81784	1	5/10/2012	0.332875	0.360424	-8%
16794	1	5/24/2012	1.898531	2.187787	-15%
6929	1	5/26/2012	0.484389	0.635905	-31%
73727	1	5/9/2012	0.392564	0.410928	-5%
177403	1	5/26/2012	0.337466	0.264003	22%
11859	1	5/30/2012	0.668045	0.596878	11%
44693	1	5/26/2012	0.312212	0.300735	4%
26642	1	5/9/2012	0.79201	1.131772	-43%
60159	1	5/9/2012	0.404038	0.415519	-3%
155518	1	5/24/2012	0.289258	0.224975	22%
38118	1	5/8/2012	0.523416	0.546374	-4%
23891	1	5/8/2012	0.192836	0.321397	-67%
199845	1	5/10/2012	0.273186	0.309917	-13%
44555	1	5/15/2012	0.241045	0.392563	-63%
157430	1	6/13/2012	0.176766	0.119374	32%
58896	1	6/7/2012	0.192837	0.130852	32%
196296	1	6/14/2012	0.270891	0.261709	3%
26531	1	6/21/2012	0.555554	0.378788	32%
10509	1	6/15/2012	0.649679	0.684113	-5%
43140	1	6/22/2012	0.624425	0.493572	21%
59292	1	6/13/2012	1.147843	0.996327	13%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
41986	1	6/26/2012	0.252527	0.179062	29%
29398	1	6/22/2012	0.500458	0.491276	2%
20380	1	6/26/2012	0.234159	0.142332	39%
70124	1	6/7/2012	0.206609	0.204316	1%
197122	1	6/23/2012	0.44077	0.371901	16%
128660	1	6/22/2012	0.204315	0.241047	-18%
13324	1	6/6/2012	0.342057	0.229569	33%
88765	1	6/9/2012	0.477501	0.314509	34%
84885	1	6/13/2012	0.39945	0.344353	14%
4747	1	6/23/2012	0.55326	0.328283	41%
97037	1	6/15/2012	0.665749	0.45684	31%
97023	1	6/15/2012	0.417815	0.502753	-20%
10962	1	6/22/2012	0.346649	0.266299	23%
23417	1	6/22/2012	0.557849	0.332875	40%
41884	1	6/23/2012	0.293846	0.215796	27%
187259	1	6/22/2012	0.335169	0.32369	3%
38924	1	6/22/2012	0.360424	0.243344	32%
46546	1	6/12/2012	0.874655	0.617538	29%
76780	1	6/13/2012	0.30762	0.28237	8%
64453	1	6/8/2012	0.67034	0.647386	3%
47819	1	6/8/2012	0.404042	0.387971	4%
80243	1	6/27/2012	0.7989	0.479799	40%
97039	1	6/15/2012	0.863178	0.764465	11%
64350	1	6/14/2012	0.321396	0.307622	4%
83310	1	6/2/2012	0.337465	0.461433	-37%
57196	1	6/12/2012	0.344353	0.323693	6%
53080	1	6/9/2012	0.325986	0.252524	23%
33872	1	6/1/2012	0.351239	0.523417	-49%
186150	1	6/22/2012	0.443068	0.321397	27%
186204	1	6/13/2012	0.500459	0.344352	31%
157499	1	6/8/2012	0.38797	0.289256	25%
199855	1	6/15/2012	0.392565	0.348946	11%
77245	1	6/21/2012	0.305326	0.307622	-1%
35093	1	6/14/2012	0.291552	0.259412	11%
27001	1	6/22/2012	0.358126	0.339762	5%
173425	1	6/8/2012	0.539488	0.585398	-9%
95570	1	6/22/2012	0.530302	0.534894	-1%
168283	1	6/23/2012	0.452252	0.43159	5%
97067	1	6/15/2012	0.367309	0.420112	-14%
36893	1	6/8/2012	0.183656	0.312214	-70%
28417	1	6/8/2012	0.470615	0.179064	62%
46883	1	6/2/2012	0.748394	0.60606	19%
44724	1	6/21/2012	0.406336	0.362718	11%
8695	1	6/6/2012	0.826446	1.196052	-45%
78323	1	6/7/2012	0.606062	0.502755	17%
62421	1	6/22/2012	0.466025	0.438477	6%
22636	1	6/13/2012	0.119375	0.137739	-15%
77396	1	6/19/2012	0.208907	0.169879	19%
58015	1	6/27/2012	1.1708	1.058309	10%
55362	1	6/22/2012	0.424702	0.259414	39%
102680	1	6/22/2012	0.589993	0.49357	16%
183523	1	6/12/2012	0.426999	0.34665	19%
20326	1	6/22/2012	0.5326	0.461431	13%
38860	1	6/22/2012	0.38338	0.392562	-2%
199790	1	6/19/2012	0.507346	0.62213	-23%
41316	1	6/8/2012	0.390267	0.30303	22%
42467	1	6/12/2012	0.298441	0.259413	13%

SO_NUM	INSTALL_QTY	INSTALL_DATE	12MonthsPrior	12MonthsAfter	12MonthDIFFERENCE
41413	1	6/7/2012	0.140038	0.146923	-5%
36318	1	6/1/2012	0.433886	0.378789	13%
41420	1	6/8/2012	0.371903	0.385676	-4%
78995	1	6/7/2012	0.275482	0.33517	-22%
78936	1	6/7/2012	0.314508	0.335169	-7%
78984	1	6/22/2012	0.718548	0.819559	-14%
			0.45	0.42	0.03

Attachment C
Recipient's Facilities

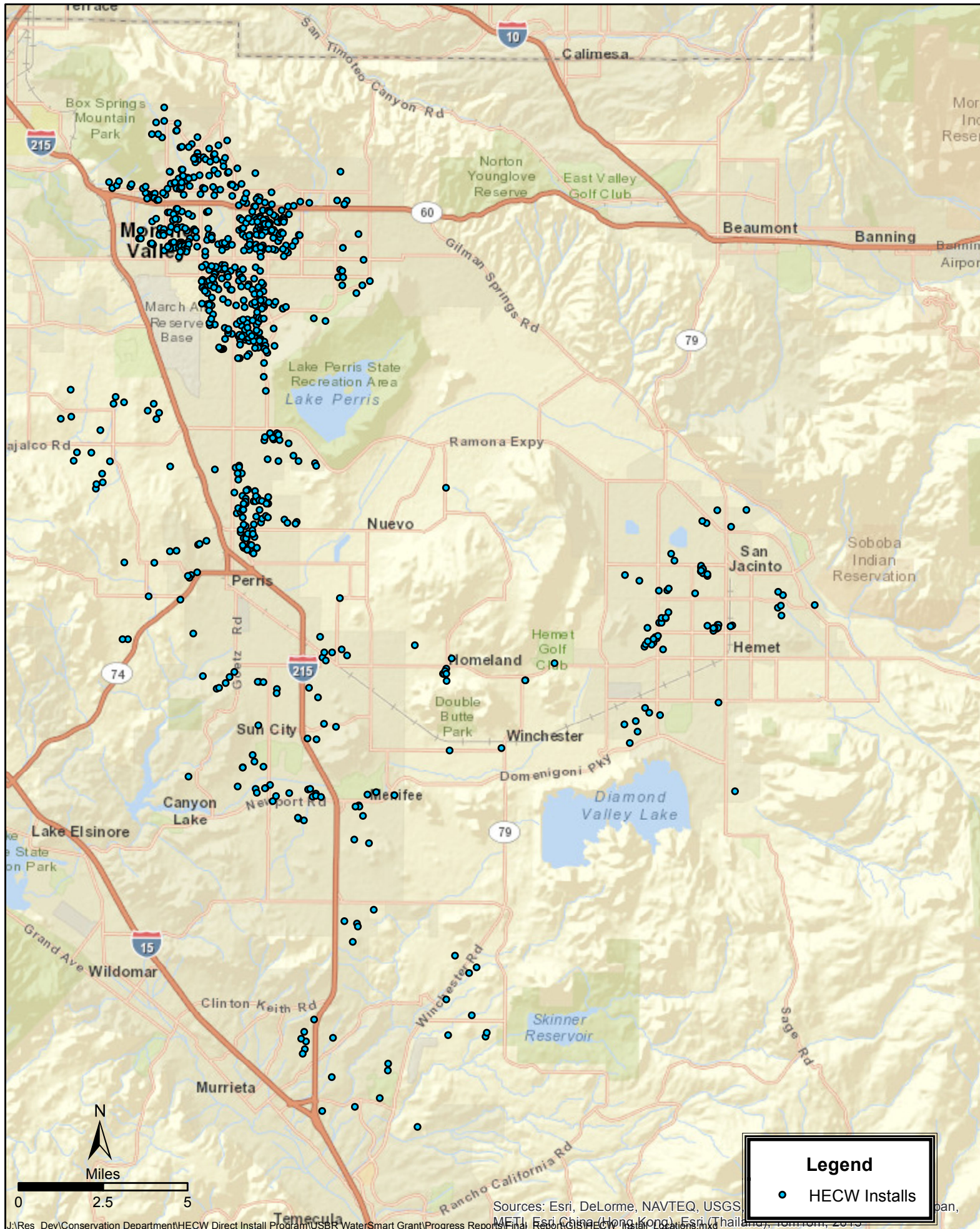


D:\KB\GIS\Projects\Elizabeth_Lovsted\UWMP\2011\keyfacilities.mxd



Attachment D
HECW Install Locations

HECW Install Locations



Sources: Esri, DeLorme, NAVTEQ, USGS

METI, Esri China (Hong Kong), Esri (Thailand)

ports:Final_Report:GIS:HEC-VF-Install-Equations:fxd

Attachment E
Budget Item Description

Budget Item Description

BUDGET ITEM DESCRIPTION	COMPUTATION			EMWD Funding	SoCalGas Funding	USBR Funding	Total Cost
	\$/Unit	Unit	Quantity	26%	50%	24%	
SALARIES AND WAGES							
Senior Civil Engineer	\$72	hr	8	\$578	\$0	\$0	\$578
Conservation Analyst	\$38	hr	6	\$227	\$0	\$0	\$227
Conservation Specialist	\$36	hr	28	\$977	\$0	\$0	\$977
Conservation Assistant	\$27	hr	9	\$246	\$0	\$0	\$246
GIS Technician	\$37	hr	6	\$202	\$0	\$0	\$202
FRINGE BENEFITS							
Senior Civil Engineer	\$31	hr	8	\$251	\$0	\$0	\$251
Conservation Analyst	\$16	hr	6	\$99	\$0	\$0	\$99
Conservation Specialist	\$15	hr	28	\$425	\$0	\$0	\$425
Conservation Assistant	\$12	hr	9	\$107	\$0	\$0	\$107
GIS Technician	\$16	hr	6	\$88	\$0	\$0	\$88
CONTRACTUAL / DEVICES							
High Efficiency Clothes Washers	\$725	ea	1700	\$316,750	\$616,250	\$299,500	\$1,232,500
TOTAL DIRECT COSTS				\$319,950	\$616,250	\$299,500	\$1,235,700
INDIRECT COSTS - 25%							
Senior Civil Engineer	\$18	hr	8	\$144	\$0	\$0	\$144
Conservation Analyst	\$9	hr	6	\$57	\$0	\$0	\$57
Conservation Specialist	\$9	hr	28	\$244	\$0	\$0	\$244
Conservation Assistant	\$7	hr	9	\$61	\$0	\$0	\$61
GIS Technician	\$9	hr	6	\$51	\$0	\$0	\$51
TOTAL PROJECT COSTS				\$320,507	\$616,250	\$299,500	\$1,236,257