
West County Costa Integrated Waste Management Authority



Household Hazardous Waste Program Metrics Analysis



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RecycleMore Household Hazardous Waste Program Metrics Report

Objective

The West Contra Costa Integrated Waste Management Authority (WCCIWMA) and its contractor, West County Resource Recovery (WCRR) a division of Republic Services, operate one of the most robust Household Hazardous Waste (HHW) programs in California. The West County HHW program continues to provide increased household hazardous waste services to service area residents.

RecycleMore requested this update of the West County Household Hazardous Waste (HHW) Program. The previous update was in July 2018 with the previous update in October 2017 shortly after the opening of the El Cerrito Satellite Household Hazardous Waste Facility (6/20/17) and the addition of the Richmond Facility's opening on Wednesday (8/2/17). The El Cerrito Facility has now been open over four years. There were also three one-day HHW events held annually since 2017 in Hercules, El Sobrante, and Richmond. In addition, a Door-to-Door program has been serving elderly and disabled residents since January 2009.

The West County Household Hazardous Waste program has continued to provide service with some impacts due to COVID-19 including some temporary decrease in participation and a pause in the Door-to-Door program.

This review will focus on the following metrics for the program:

- Review the participation per program.
- Review pounds of HHW collected.
- Compare Richmond and El Cerrito Facility usage.
- Review participation by jurisdiction.
- Present Reuse Program quantities and cost savings.
- Present savings from the Architectural Paint Stewardship Program participation.
- Analyze time of day of HHW Delivery.

Participation Analysis

The HHW program participation from January 2012 through October 2021 is presented in the chart and table below. The tables indicate the number of participants per month with the first table indicating all participants and the second table is without the one-day HHW events participation. The graph below indicates HHW program participation for January 1, 2019 through October 31, 2021. Participation dropped during 2012 to 2014 then increased subsequent years even when not including the participation at the one-day events. Seasonal fluctuations are also obvious (slow in winter). In addition, COVID-19 reduced overall participation in 2020.

RecycleMore Household Hazardous Waste Program Metrics Report

Participation Totals Facilities with Events

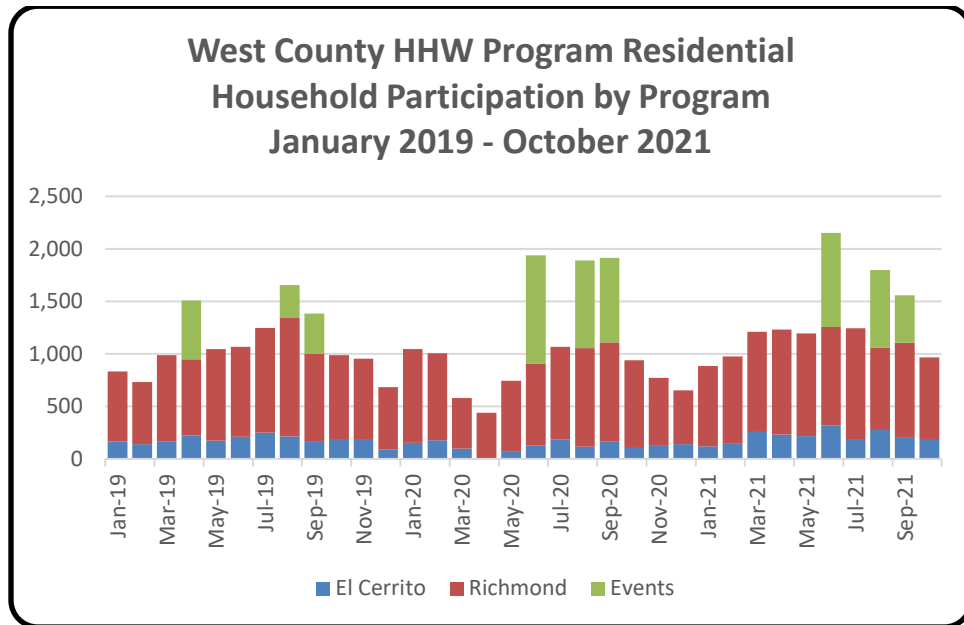
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2012	719	723	798	661	808	779	791	908	758	673	680	577	8,875
2013	706	670	739	634	828	734	656	925	632	712	625	492	8,353
2014	730	517	620	642	764	747	819	846	689	773	507	367	8,021
2015	826	653	757	834	804	682	891	883	729	937	705	517	9,218
2016	639	694	633	1,009	791	905	982	900	873	661	597	729	9,413
2017	572	605	871	763	784	1,040	1,436	1,608	1,376	931	837	910	11,733
2018	777	789	759	822	1,376	909	982	1,614	1,128	921	723	668	11,468
2019	831	733	987	1,507	1,043	1,068	1,245	1,654	1,383	987	954	683	13,075
2020	1,046	1,007	580	439	745	1,939	1,068	1,888	1,908	938	771	654	12,983
2021	884	975	1,210	1,232	1,195	2,152	1,244	1,797	1,557	966	0	0	13,212

Participation Totals Permanent Facilities Only

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2012	719	723	798	661	808	779	791	908	758	673	680	577	8,875
2013	706	670	739	634	828	734	656	925	632	712	625	492	8,353
2014	730	517	620	642	764	747	819	846	689	773	507	367	8,021
2015	826	653	757	834	804	682	891	883	729	937	705	517	9,218
2016	639	694	633	1,009	791	905	982	900	873	661	597	729	9,413
2017	572	605	871	763	784	1,040	984	1,028	1,106	931	837	910	10,431
2018	777	789	759	822	920	909	982	1,048	878	921	723	668	10,196
2019	831	733	987	948	1,043	1,068	1,245	1,348	1,004	987	954	683	11,831
2020	1,046	1,007	580	439	745	907	1,068	1,056	1,102	938	771	654	10,313
2021	884	975	1,210	1,232	1,195	1,256	1,244	1,060	1,105	966	0	0	11,127

- Richmond opens every Saturday 3/14/15
- El Cerrito Satellite HHW Opens 6/20/17
- Richmond HHW Facility opens Wednesdays 8/2/17
- Temporary HHW Events

The graph below depicts the participation for the period January 1, 2019 through October 31, 2021.



Participation at the HHW programs has fluctuated throughout the years with the change compared to previous years indicated in the table below.

Period	Change with Events	Change without Events
2012-2013	-6%	-6%
2013-2014	-4%	-4%
2014-2015	15%	15%
2015-2016	2%	2%
2016-2017	25%	11%
2017-2018	-3%	-3%
2019-2020	14%	17%

Jurisdiction Participation

Each jurisdiction's participation at both permanent facilities, from 2012 through 2021 Year to Date (YTD as of 10/31/21) are indicated in the table below and indicates an increasing trend of usage.

Annual West County Permanent HHW Facility Participation (Richmond and El Cerrito)										
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 YTD
El Cerrito	1,077	898	845	962	961	1,503	1,771	1,804	1,650	2,008
El Sobrante	908	831	830	1,004	1,008	1,042	921	1,126	632	566
Hercules	624	670	629	713	822	945	840	974	848	784
Pinole	848	831	828	1,032	981	992	931	1,094	1,008	1,065
Pt. Richmond	229	100	161	1	102	191	189	169	17	0
Richmond	3,324	3,272	3,007	3,544	3,493	3,634	3,504	4,139	4,055	4,597
San Pablo	1,304	1,269	1,215	1,377	1,396	1,504	1,378	1,789	1,557	1,548
Crockett	138	145	127	128	148	146	141	170	98	127
Kensington	157	138	185	193	189	202	233	249	179	201
Port Costa	14	6	10	5	6	5	7	14	10	6
Rodeo	252	191	177	248	243	280	244	262	251	241
Tormey	0	0	0	0	0	0	0	0	1	0
Other Residential	0	2	7	11	12	24	37	41	7	0
TOTAL	8,875	8,353	8,021	9,218	9,361	10,468	10,196	11,831	10,313	11,143

Participation at the Richmond and El Cerrito HHW Facilities for the period of January 2020 through October 2021 is indicated in the table below.

2020			
Facility	El Cerrito	Richmond	Total
El Cerrito	813	837	1,650
El Sobrante	38	594	632
Hercules	29	819	848
Pinole	45	963	1,008
Pt. Richmond	2	15	17
Richmond	488	3,567	4,055
San Pablo	41	1,516	1,557
Crockett	0	98	98
Kensington	3	176	179
Port Costa	0	10	10
Rodeo	1	250	251
Tormey	0	1	1
Other Residential	3	4	7
TOTAL	1,463	8,850	10,313

2021 - January through October		
El Cerrito	Richmond	Total
1,254	754	2,008
87	479	566
34	750	784
50	1,015	1,065
0	0	0
671	3,926	4,597
49	1,499	1,548
2	125	127
5	196	201
0	6	6
4	237	241
0	0	0
0	0	0
2,156	8,987	11,143

Weekly Participation

The Permanent HHW facilities continued regular operations during COVID-19 except for when the El Cerrito facility closed from March 17, 2020 through May 12, 2020 when the El Cerrito Recycling & Environmental Resource Center was also closed. Participation by day of the week is reflected in the table below. Participation rebounded and remained mostly consistent with fairly even participation on all operating days. Note that Tuesday HHW Operations occur at El Cerrito and Wednesday through Saturday operations occur at Richmond.

Month	Tue	Wed	Thu	Fri	Sat	Total
2020	1,463	2,219	2,090	2,260	2,281	10,313
Jan	154	173	242	280	197	1,046
Feb	177	174	181	191	284	1,007
Mar	99	147	112	124	98	580
Apr	0	164	109	89	77	439
May	69	172	135	178	191	745
Jun	128	225	192	195	167	907
Jul	183	263	263	199	160	1,068
Aug	116	225	201	218	296	1,056
Sep	162	233	220	227	260	1,102
Oct	103	158	205	233	239	938
Nov	131	134	126	210	170	771
Dec	141	151	104	116	142	654

2021	2,156	2,295	2,202	2,176	2,314	11,143
Jan	119	136	192	163	274	884
Feb	143	225	199	173	235	975
Mar	258	316	218	216	202	1,210
Apr	232	235	294	253	218	1,232
May	216	233	222	241	283	1,195
Jun	319	287	193	218	239	1,256
Jul	189	248	258	302	247	1,244
Aug	291	188	214	201	182	1,076
Sep	208	237	244	196	220	1,105
Oct	181	190	168	213	214	966

Pounds and Waste Types Collected

The pounds of HHW collected starting in FY 2012 are indicated in the table below.

Period	Richmond	El Cerrito	Events	Door-to-Door	Other	Total
2012-2013	826,380			6,967		833,347
2013-2014	710,151			8,675	6,016	724,842
2014-2015	746,062			42,132		788,194
2015-2016	721,528			82,833	13	804,374
2016-2017	722,007		22,454	23,497	345	768,303
2017-2018	579,841	185,592	185,592	31,213		982,238
2018-2019	504,482	166,582	102,812	14,907	0	788,783
2019-2020	496,726	135,230	126,964	13,265	1,370	773,555
2020-2021	635,753	167,996	169,392	3,346	115	976,602

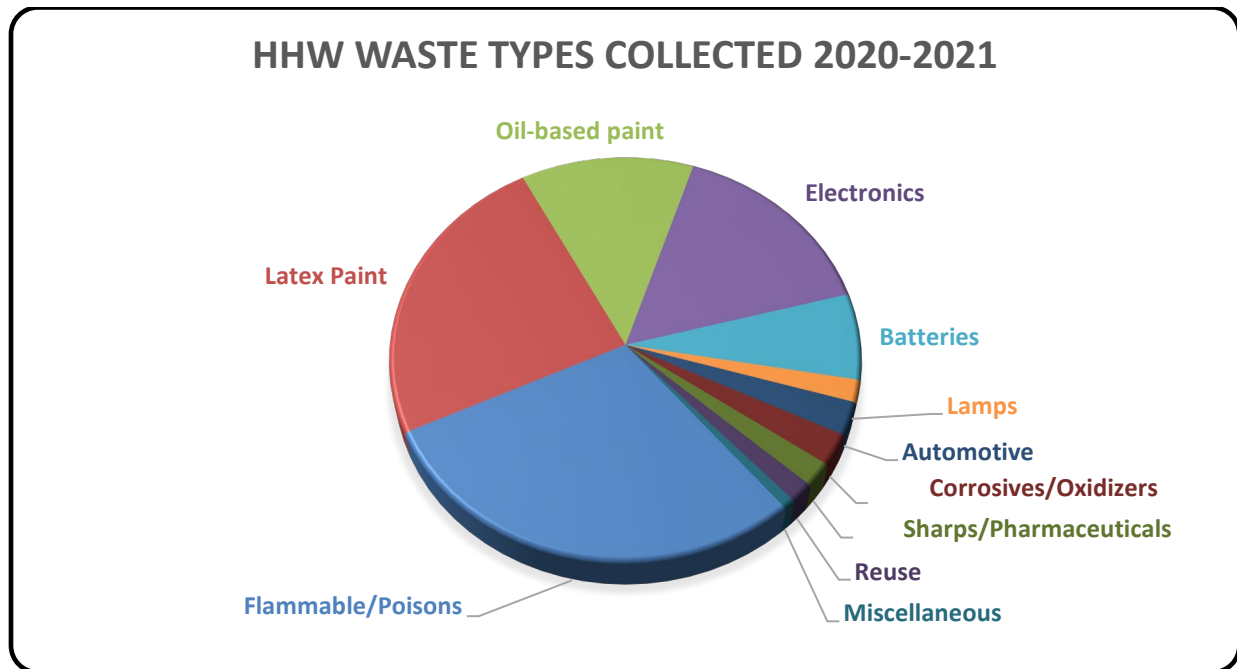
The amount of HHW collected increased between 2016 and 2017, mostly due to the amount of HHW collected at the one-day events and opening of the El Cerrito Facility. Door-to-Door collection was temporarily suspended in 2020-2021 due to Covid precautions, which explains the low volume of HHW collected during that time.

The types and amounts of HHW collected during FY 2020-2021 are indicated in the chart below:

Waste Classification	Richmond	El Cerrito	Events	Door-to-Door	Retail	Total
Common HHW (pounds)						
Flammable/Poisons	175,297	51,888	57,731	40		284,956
Latex Paint	152,275	20,563	63,537	170		236,545
Oil-based paint	84,382	28,152	11,592	70		124,196
Corrosives/Oxidizers	11,926	7,556	4,720	0		24,202
Miscellaneous	3,653	35	1,260	0		4,948
El Cerrito Recycle-Only						
Batteries	17,091	44,570	5,435	0	115	67,211
Lamps	8,024	7,618	1,580	0		17,222
Sharps	7,543	3,012	0	1,406		11,961
Pharmaceuticals	635	4,602	0	1,525		6,762
Richmond Only						
Asbestos	2,625	0	110	0		2,735
Electronics	136,686	0	18,152	100		154,938
Automotive	20,410	0	5,275	35		25,720
Reuse	15,206	0	0	0		15,206
TOTAL	635,753	167,996	169,392	3,346	115	976,602

The sharps and pharmaceuticals collected under the Door-to-Door program are almost entirely collected from the kiosks located around the service area. The miscellaneous wastes include contaminated absorbent, fire extinguishers, mercury-containing equipment, smoke alarms, and PCB wastes.

The types of HHW collected during FY 2020-2021 are indicated in the graph below:



Waste Type Comparison between Richmond and El Cerrito HHW Facilities

The “El Cerrito Recycle-Only” HHW indicates HHW accepted at the El Cerrito Recycling & Environmental Resource Center during all center operating days but processed through the West County HHW program on Tuesdays. The “Richmond Only” are HHW only accepted or managed at the Richmond Permanent HHW Facility.

The Richmond permanent HHW Facility is open four days per week (Wednesday through Saturday) for collecting from households. The El Cerrito permanent Facility accepts HHW on Tuesdays but the City of El Cerrito Recycling & Environmental Resource Center accepts, during all center operating days, certain HHW such as batteries, lamps, sharps, and pharmaceuticals that are included in the RecycleMore sponsored HHW program. Used oil and filters are funded by the El Cerrito used oil funds administered by RecycleMore. El Cerrito handles its own electronics wastes.

Comparing the amount of HHW collected between Richmond and El Cerrito permanent facilities is best achieved by adjusting amounts to a daily acceptance amount. The Richmond numbers are divided by four operating days. The quantity of wastes accepted at El Cerrito all days are divided by six days per week. This comparison is shown in the table below:

Comparison between Richmond and El Cerrito HHW Facilities (pounds) FY2020-2021			
Waste Classification	Richmond/Day	El Cerrito	El Cerrito/Day
Common HHW			
Flammable/Poisons	43,824	51,888	51,888
Latex Paint	38,069	20,563	20,563
Oil-based paint	21,096	28,152	28,152
Corrosives/Oxidizers	2,982	7,556	7,556
Miscellaneous	913	35	35
El Cerrito Recycle-Only			
Batteries	4,273	44,570	7,428
Lamps	2,006	7,618	1,270
Sharps	1,886	3,012	502
Pharmaceuticals	159	4,602	767
Total Without Richmond Only	115,207	167,996	118,161
Asbestos	656	0	0
Electronics	34,172	0	0
Automotive	5,103	0	0
Reuse	3,802	0	0
TOTAL ALL WASTES	158,282	167,996	118,161

On average, the El Cerrito HHW facility daily processes about the same amount of HHW but significantly more batteries and pharmaceuticals than Richmond. Richmond daily processes more lamps and sharps than El Cerrito on average. Preparing the batteries collected at El Cerrito require most of one HHW contractor staff person’s time.

Temporary HHW Events

Starting in 2017, there have been three temporary hazardous waste events conducted annually. Jurisdiction participation for the 2020 and 2021 events are indicated in the table below:

Participation for Temporary Events						
Period	6/27/2020	8/29/2020	9/19/2020	6/26/2021	8/28/2021	9/18/2021
Location	Hercules	El Sobrante	Richmond	Hercules	El Sobrante	Richmond
El Cerrito	1	4	18	2	24	11
El Sobrante	5	284	26	5	217	13
Hercules	589	10	11	570	7	9
Pinole	223	15	8	171	111	3
Pt. Richmond						
Richmond	12	366	715	3	267	380
San Pablo		145	27		104	36
Crockett	53	4		44		
Kensington						
Port Costa	6			3		
Rodeo	138		1	96	3	
Tormey	2			1		
Other Residential	3	4		1	4	
TOTAL	1,032	832	806	896	737	452

Reuse Program Amounts and Cost Savings

Certain household hazardous waste received at the Richmond Facility are in good condition and are set aside for the public to take for use as intended rather than sent for disposal. This program is very popular with the public and material set aside is quickly removed. Not all collected HHW is eligible for reuse (e.g., batteries, e-waste, lamps, sharps, used oil).

About 2% of the incoming HHW was set aside for reuse during 2020 with an additional 14,992 pounds of latex and oil-based paint sent for reuse and was reimbursed under the PaintCare Stewardship program. The table below shows the pounds of reuse set aside by year. Some 2020 reuse data was extrapolated due to unavailable records. There was a decrease in 2020 from the previous year high likely due to COVID-19 impacts.

Year	2016	2017	2018	2019	2020	2021 YTD
Pounds	17,303	30,024	19,778	31,097	19,130	14,973

The contracted facility staff have been instructed to increase efforts to direct eligible materials to the reuse program. The reuse program is only offered at the Richmond Facility at this time. Using an estimate of \$0.80 per pound for disposal, the reuse program saves significant costs.

Architectural Paint Stewardship Program Savings

The West County HHW program has been participating in the Architectural Paint Stewardship program which funds the management of architectural paint. In addition, there are two PaintCare sponsored drop-off locations in the RecycleMore service area – Kelly-Moore in San Pablo and Westlake Hardware in Pinole. Home Depot in Hercules has been approached several times with requests to participate in accepting paint under the Paint Stewardship Program and has declined. The table below presents the amount of architectural latex and oil-based paint collected by the HHW program and the estimated cost if this amount of paint collected was not eligible under the stewardship program. PaintCare does not release data on quantities or costs for the retail collection sites.

Pounds Collected	2016/17	2017/18	2018/19	2019/20	2020/21
Richmond, Latex Paint	120,299	119,928	65,713	65,765	136,280
El Cerrito, Latex Paint	NA	27,611	37,931	24,282	20,563
Temporary Events, Latex	7,677	46,909	42,052	19,297	63,537
Total Latex Paint	127,976	194,448	145,696	109,344	220,380
Richmond, Oil-based Paint	76,112	41,894	53,220	110,000	77,357
El Cerrito, Oil-based Paint		11,010	17,603	11,670	28,152
Temporary Events, Oil-Based	2,353	7,551	6,606	9,280	11,592
Total Oil-Based Paint	78,465	60,455	77,429	130,950	117,101
PaintCare Savings					
Latex Paint	\$63,988	\$97,224	\$72,848	\$54,672	\$110,190
Oil-based Paint	\$44,464	\$34,258	\$43,876	\$74,205	\$66,357
Total Savings	\$108,452	\$131,482	\$116,724	\$128,877	\$176,547

Analyze time of day of HHW Delivery

In June 2017, a computer tracking system was implemented at both the Richmond and El Cerrito Facilities that tracks the date and time of delivery as well as the residents address and city. The delivery times were reviewed and indicate a fairly even spread of arrival times throughout the day with a small dip around the lunch time. The spread for the period of January 1, 2021 through October 2021 is provided in the table below and is similar to previous years.

Facility	El Cerrito	Richmond	Richmond	Richmond	Richmond	
Time Period Starting	Tue	Wed	Thu	Fri	Sat	Average
9:00 AM	13%	17%	14%	13%	16%	15%
10:00 AM	14%	16%	16%	15%	16%	15%
11:00 AM	15%	19%	16%	17%	18%	17%
12:00 PM	12%	10%	10%	11%	11%	11%
1:00 PM	12%	13%	16%	17%	15%	15%
2:00 PM	15%	14%	15%	15%	12%	14%
3:00 PM	19%	11%	12%	13%	12%	13%
Total	100%	100%	100%	100%	100%	100%

HHW Program Metrics Comparisons

Comparing the two facilities and the temporary events will assist with program evaluation and future program changes. This comparison is for FY 2020-2021.

FY20/21	Richmond HHWCF	El Cerrito HHWCF	Events	Total
Cost	\$513,345.17	\$216,559.71	\$335,319.90	\$1,065,224.78
Pounds	643,367	160,382	169,392	973,141
Participants	10,218	2,123	2,534	14,875
Operating Days	204	52	3	259
Cost/Participant	\$50.24	\$102.01	\$132.33	\$1.09
Cost/Pound	\$0.80	\$1.35	\$1.98	\$1.09
Pounds/Person	63.0	75.5	66.8	65.4
Pounds/day	3,154	3,084	56,464	3,757

Aspects of the El Cerrito permanent facility that lend to the significant difference with the Richmond facility include:

- All HHW is accepted only on Tuesday, but batteries, lamps, sharps, and pharmaceuticals are accepted six days a week through the Recycle-Only HHW facility operated by El Cerrito and then transferred to the Tuesday HHW facility.
- There are more pounds per person delivered to El Cerrito than Richmond.
- Significantly more batteries are accepted in El Cerrito during six days per week (44,570 pounds) than Richmond's four days per week (17,091 pounds)
- More pharmaceuticals are collected in El Cerrito and due to space limitations, there are also more frequent collections with a service charge per trip.

Architectural paint is a large amount of the collected HHW and there is no charge due to the product stewardship program. El Cerrito accepts electronics separate from the Tuesday HHW facility. Removing the large quantities of paint and e-waste from the analysis narrows the cost per pound between Richmond and El Cerrito but not the Cost per participant as indicated in the analysis table below.

Analysis without Architectural Paint (free disposal and supplies)

FY20/21	Richmond HHWCF	El Cerrito HHWCF	Events	Total
PaintCare Pounds	236,657	48,715	75,129	360,501
Pounds, no paint	406,710	111,667	94,263	612,640
Cost/Pound	\$1.26	\$1.94	\$3.56	\$1.74

Analysis without electronics and paint

FY20/21	Richmond HHWCF	El Cerrito HHWCF	Events
E-waste cost	\$12,296.35	\$0.00	\$0.00
Cost, no e-waste	\$501,048.82	\$216,559.71	\$335,319.90
Pounds, e-waste	136,686	0	18,152
Pounds, no e-waste, paint	270,024	111,667	94,263
Cost/Pound	\$1.86	\$1.94	\$3.56
Cost/Participant	\$49.04	\$102.01	\$132.33

The one-day events are the costliest option due to several factors including:

- Coordination with the site owners and documentation require staff time.
- Events require 30-40 staff for the day plus significant time spent preparing the site. The facilities operate with an average of three staff.
- Preparations for the event require public notification through postcard mailings and electronic notifications to the area.
- Local permit fees and the cost for off-duty officers adds some cost.
- The entire operating area needs to be covered with plastic as required by regulations. The cost of materials and labor is a significant cost.

Items for Future Review

This analysis indicates some potential trends on HHW program participation that is worthy of future review including:

- Review the level of repeat customers
- Evaluate the storage capacity of the El Cerrito Satellite HHW Facility.
- Review usage of home-generated sharps and pharmaceuticals collection for impacts from the pending implementation of the Pharmaceutical and Sharps Waste Stewardship Program (SB212)
- Review usage of the Door-to-Door program.
- Review small business and non-profit program.

Summary

The increase in program options, El Cerrito Satellite Facility on Tuesday, Wednesday Richmond Facility availability, and one-day events, have significantly increased participation and the amount of HHW collected. Specific changes identified in this review include:

- The El Cerrito Facility has significantly increased the participation of El Cerrito Residents as well as neighboring Richmond residents.
- El Cerrito residents and other service area residents prefer to use the local HHW Facility which is only open one day per week rather than the Richmond Facility open four days per week but further away.
- The one-day events are popular especially with Hercules and El Sobrante residents.
- Participation in the Architectural Paint Stewardship Program continues to provide significant cost savings.
- The reuse program is increasing in usage saving significant disposal costs.
- Participants report that they have significantly used the facility previously.
- Residents deliver HHW to the facility fairly consistently throughout the day.