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# West County Costa Integrated Waste Management Authority



## Household Hazardous Waste Program Metrics Analysis



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## RecycleMore Household Hazardous Waste Program Metrics Report

### Executive Summary

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 in October 2017 was 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 one year. There were also three one-day HHW events held in 2017 in Hercules, El Sobrante, and Richmond.

The West County Household Hazardous Waste program has undergone a number of changes in the last few years.

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

- Review the participation per day per program.
- Review pounds of HHW collected.
- Review participation by jurisdiction.
- Analyze participation at the El Cerrito Satellite HHW Facility and impact on the Richmond Facility usage.
- Impact of adding Wednesday service to the Richmond HHW Facility.
- Review collected waste categories and quantities
- Present Reuse Program quantities and cost savings
- Present savings from the Architectural Paint Stewardship Program participation.
- Report on Repeat Customer Usage
- Analyze time of day of HHW Delivery.

### Participation Analysis

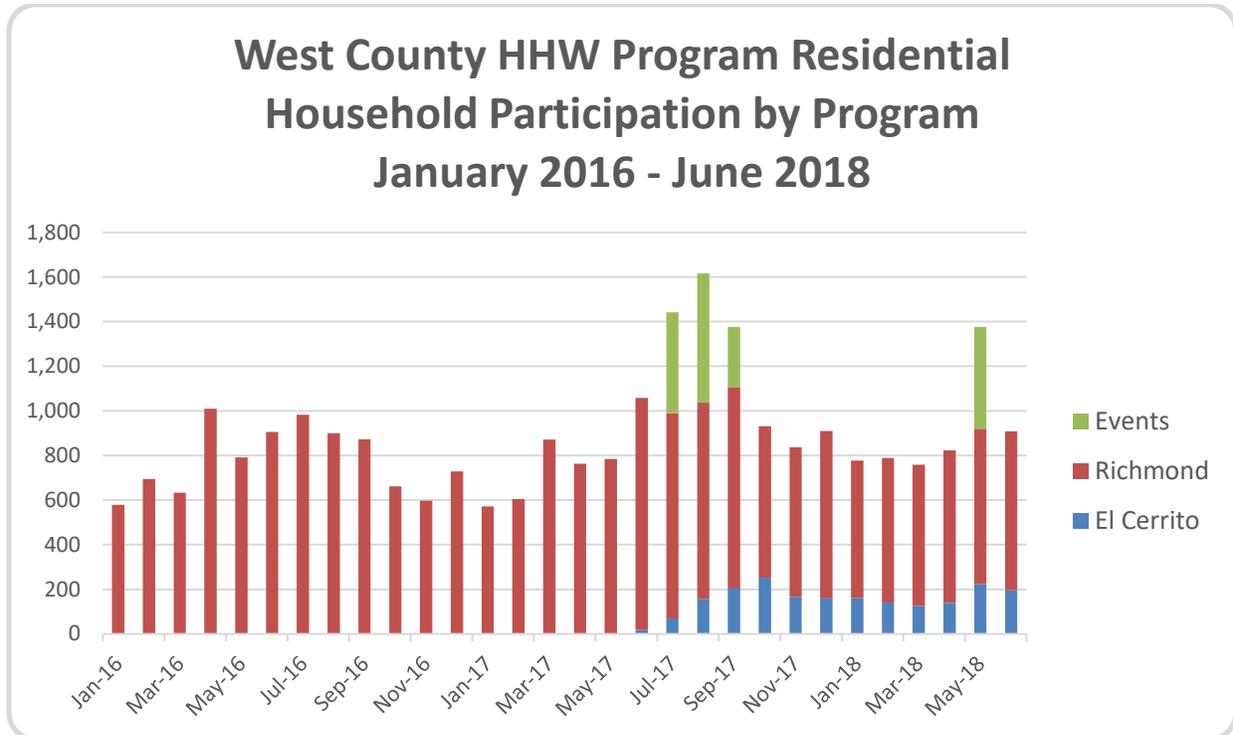
Participation at the HHW programs has fluctuated throughout the years with significant increases in recent years as indicated in the table below.

Overall Participation Change

Period	Total	Without Events
2012-2013	-6%	NA
2013-2014	-4%	NA
2014-2015	15%	NA
2015-2016	2%	NA
2016-2017	26%	12%

The HHW program participation since January 2016 through June 2018 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 2016 through June 2018. The table below shows participation since 2012. 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).



**Participation Total**

Month	Jan	Feb	Mar	Apr	May	June	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	707	694	633	1,011	791	908	939	902	874	662	510	730	9,361
2017	572	606	872	763	784	1,061	1,442	1,616	1,376	931	837	910	11,770
2018	777	789	759	822	1,376	909							

**Total Participation Without Events**

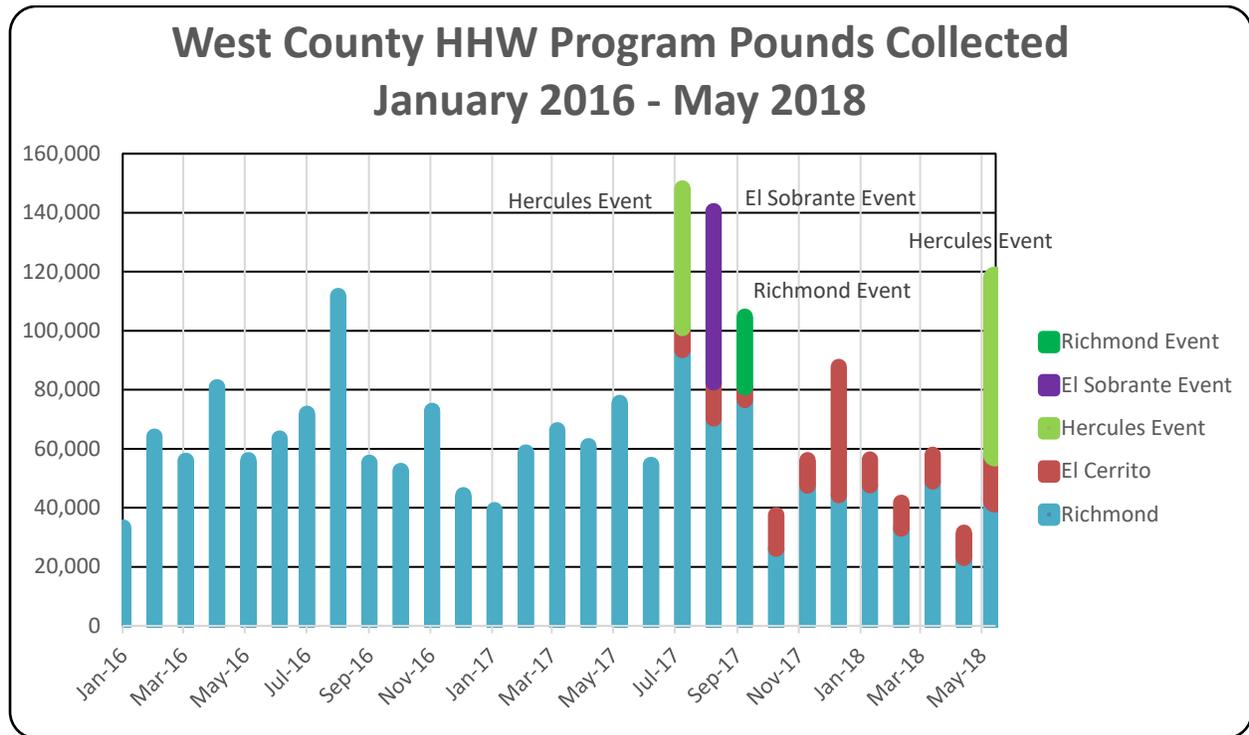
Month	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Total
2012	719	723	798	661	808	779	791	908	758	673	680	577	8,875
2013	706	670	739	634	828	734	656	925	632	712	625	492	8,353
2014	730	517	620	642	764	747	819	846	689	773	507	367	8,021
2015	826	653	757	834	804	682	891	883	729	937	705	517	9,218
2016	707	694	633	1,011	791	908	939	902	874	662	510	730	9,361
2017	572	606	872	763	784	1,061	990	1,036	1,106	931	837	910	10,468
2018	777	789	759	822	920	909							

- 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

- Hercules Event 2017 – 452 participants
- El Sobrante Event 2017 - 580 participants
- Richmond Event 2017 - 270 participants
- Hercules Event 2018 - 456 participants

## Pounds Collected

The pounds of HHW collected since 2016 are indicated in the graph and table below.



**Pounds of HHW Collected, Total all programs**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Change
2016	33,370	64,128	55,927	80,904	56,194	63,546	71,939	111,814	55,380	52,503	72,934	44,308	<b>762,947</b>	
2017	39,283	58,807	66,348	60,981	75,638	54,627	148,264	140,574	104,898	37,567	56,212	87,758	<b>930,922</b>	22%
2018	56,394	41,706	57,978	31,585	117,724								<b>305,387</b>	

**Pounds of HHW Collected at Richmond and El Cerrito Facilities only, without Events**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Change
2016	33,370	64,128	55,927	80,904	56,194	63,546	71,939	111,814	55,380	52,503	72,934	44,308	<b>762,947</b>	
2017	39,283	58,807	66,348	60,981	75,638	54,627	100,853	82,443	80,744	37,567	56,212	87,758	<b>801,261</b>	5%
2018	56,394	41,706	57,978	31,585	58,043								<b>245,706</b>	

- 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
- Hercules Event 2017 - 47,411 pounds
  - El Sobrante Event 2017 – 58,131 pounds
  - Richmond Event 2017 – 24,119 pounds
  - Hercules Event 2017 – 59,681 pounds

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.

## Jurisdiction Participation

Each jurisdiction's participation, from 2012 through 2018 are indicated in the table below and indicates significant increases for each jurisdiction's residents especially for El Cerrito, Hercules, El Sobrante, and Point Richmond residents. These increases are likely due to the El Cerrito Satellite Facility and the one-day events and increased operating days at the Richmond Facility.

### Total Annual Participation per Jurisdiction at Richmond and El Cerrito HHW Facilities

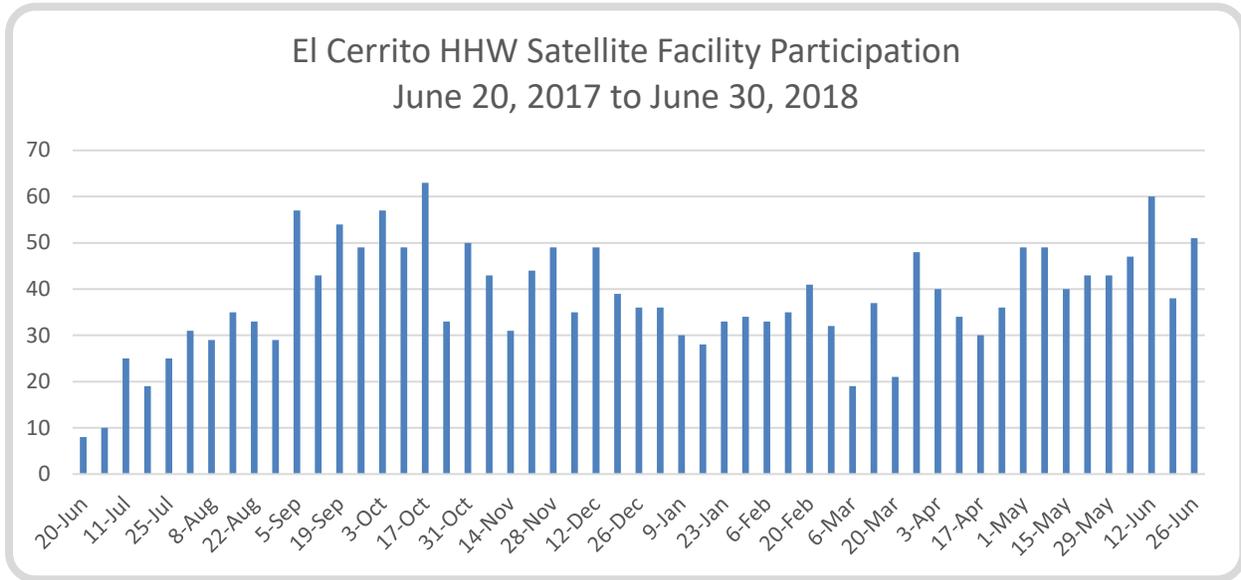
Year	2012	2013	2014	2015	2016	2017	2018 YTD	Change 2016/2017
El Cerrito	1,077	898	845	962	961	1,503	847	56%
El Sobrante	908	831	830	1,004	1,008	1,042	450	3%
Hercules	624	670	629	713	822	945	441	15%
Pinole	848	831	828	1,032	981	992	437	1%
Pt. Richmond	229	100	161	1	102	191	103	87%
Richmond	3,324	3,272	3,007	3,544	3,493	3,634	1,747	4%
San Pablo	1,304	1,269	1,215	1,377	1,396	1,504	640	8%
Crockett	138	145	127	128	148	146	70	-1%
Kensington	157	138	185	193	189	202	113	7%
Port Costa	14	6	10	5	6	5	0	-17%
Rodeo	252	191	177	248	243	280	109	15%
Other Residential	0	2	7	11	12	24	19	100%
<b>TOTAL</b>	<b>8,875</b>	<b>8,353</b>	<b>8,021</b>	<b>9,218</b>	<b>9,361</b>	<b>10,468</b>	<b>4,976</b>	12%

Participation at the Richmond and El Cerrito HHW Facilities for the period of January 2017 through June 2018 is indicated in the table below.

Period	2017			2018, Jan to Jun		
	Richmond	El Cerrito	Total	Richmond	El Cerrito	Total
El Cerrito	758	745	1,503	213	634	847
El Sobrante	1,027	15	1,042	424	26	450
Hercules	933	12	945	425	16	1,297
Pinole	974	18	992	420	17	437
Pt. Richmond	188	3	191	93	10	103
Richmond	3,429	205	3,634	1,485	262	540
San Pablo	1,481	23	1,504	621	19	640
Crockett	146	0	146	70	0	70
Kensington	200	2	202	113	0	710
Port Costa	5	0	5	0	0	0
Rodeo	279	1	280	108	1	109
Other Residential	23	1	24	17	2	109
<b>Total</b>	<b>9,443</b>	<b>1,025</b>	<b>10,468</b>	<b>3,989</b>	<b>987</b>	<b>4,976</b>

The El Cerrito Satellite HHW Facility opened on June 20, 2017 and is only open one day per week (Tuesday) and is limited on storage capacity for collected HHW. In order to get this new facility off to a

smooth start, the facility started with minimal advertising. Participation increased significantly in September and October 2017 and has leveled out a bit.



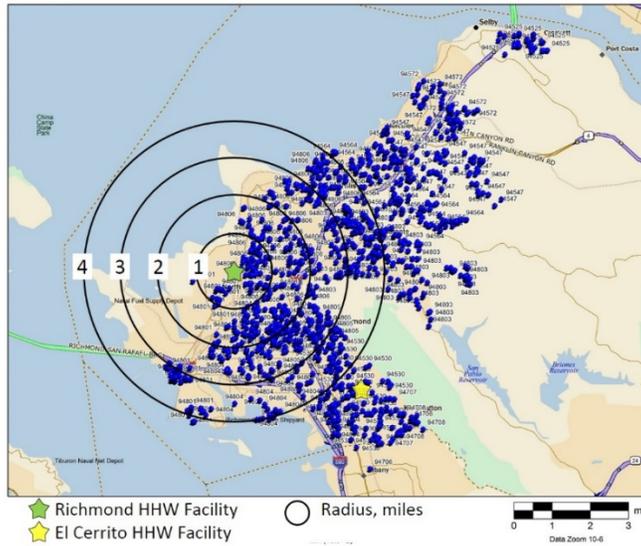
The El Cerrito Satellite Facility participation by Jurisdiction is indicated in the table below.

Year	2017												2018		Total	Percent
Month	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total	Percent	
El Cerrito	13	53	105	157	184	126	107	108	99	78	79	150	120	1,379	68%	
El Sobrante		2	4	3	2	2	2	2	2	4	7	5	6	41	2%	
Hercules		1	1		2	4	4	1	1	1	2	5	6	28	1%	
Kensington			1	1										2	0%	
Pinole		1	3	5	3	4	2	2	2	3	2	3	5	35	2%	
Pt. Richmond			2			1		2	2	1	2	3		13	1%	
Richmond	5	10	40	34	52	25	39	41	30	36	44	55	56	467	23%	
Rodeo		1									1			2	0%	
San Pablo		1	1	3	8	5	5	4	4	2	3	3	3	42	2%	
Other	3	1	0	0	0	0	1	0	0	2	1	1	0	9	0%	
<b>Total</b>	<b>21</b>	<b>70</b>	<b>157</b>	<b>203</b>	<b>251</b>	<b>167</b>	<b>160</b>	<b>160</b>	<b>140</b>	<b>127</b>	<b>141</b>	<b>225</b>	<b>196</b>	<b>2,018</b>	<b>100%</b>	

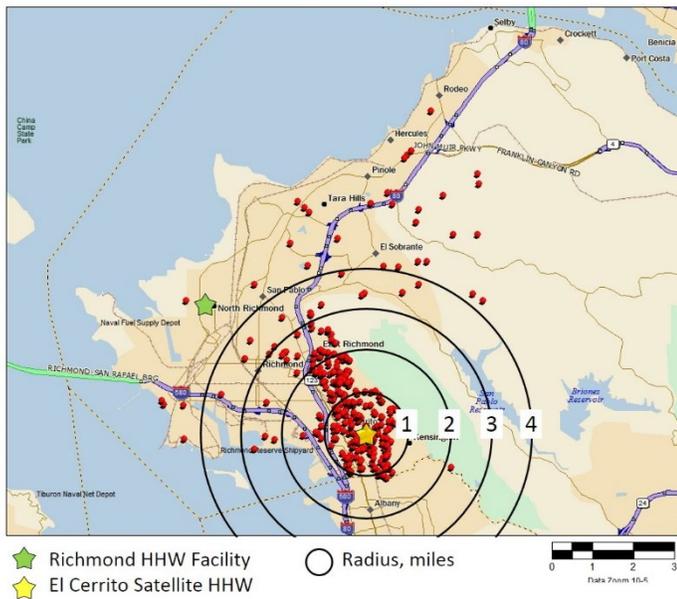
### Impact of El Cerrito Satellite Facility

In order to evaluate the impact on participation at the main Richmond HHW Facility from additional operating days at El Cerrito and Richmond, a period prior to establishing the El Cerrito Facility is needed for comparison. The East Bay Local Conservation Corps compiled the participation data for the period 10/14/16 to 12/30/16. Participants addresses were mapped for this period by indicating one dot per participant. The implementation of the driver’s license scanning allows for ongoing and future determination of the participants residence. A visual comparison of participation for the tabulated period in 2016 and a similar period in 2017 allows for a visual comparison of El Cerrito and Richmond participation are depicted in the participation maps included below.

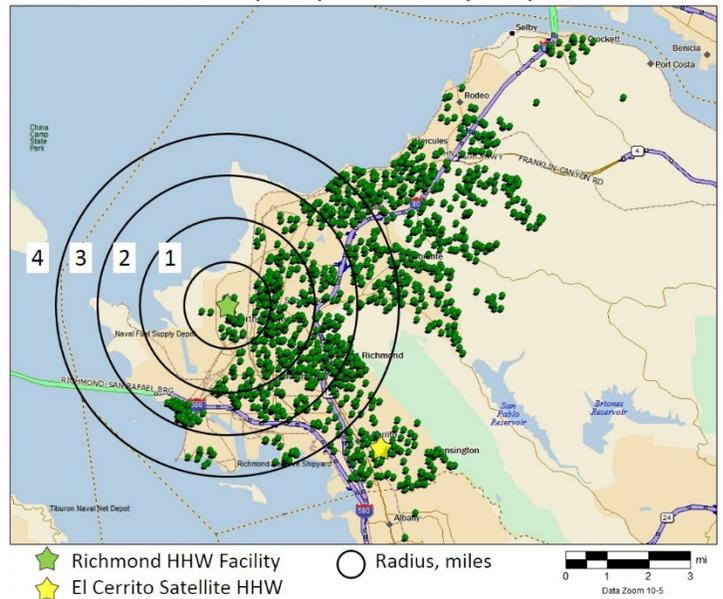
### Richmond HHW Facility Participation 10/15/16 – 12/30/16 (31 operating days)



### El Cerrito Satellite HHW Participation 10/17/17 – 12/26/17



### Richmond HHW Facility Participation 10/14/17 – 12/29/17



The El Cerrito Satellite HHW Facility is conveniently located for El Cerrito residents and southern Richmond residents. This analysis indicates that El Cerrito and some Richmond residents are utilizing the El Cerrito Satellite HHW Facility resulting in a decrease in usage at the Richmond HHW Facility by these area residents. Kensington residents are not authorized to use the El Cerrito Facility at this time. A number of Alameda County residents and Kensington residents have expressed high irritation at not being able to use the facility. Although the maps are for a similar limited two-month period one year apart, there does seem to be a noticeable decrease at the Richmond HHW Facility from around the El Cerrito Satellite facility area. The table below does indicate a shift of El Cerrito and some Richmond residents to the El Cerrito Facility even though it is only open one day per week. The overall

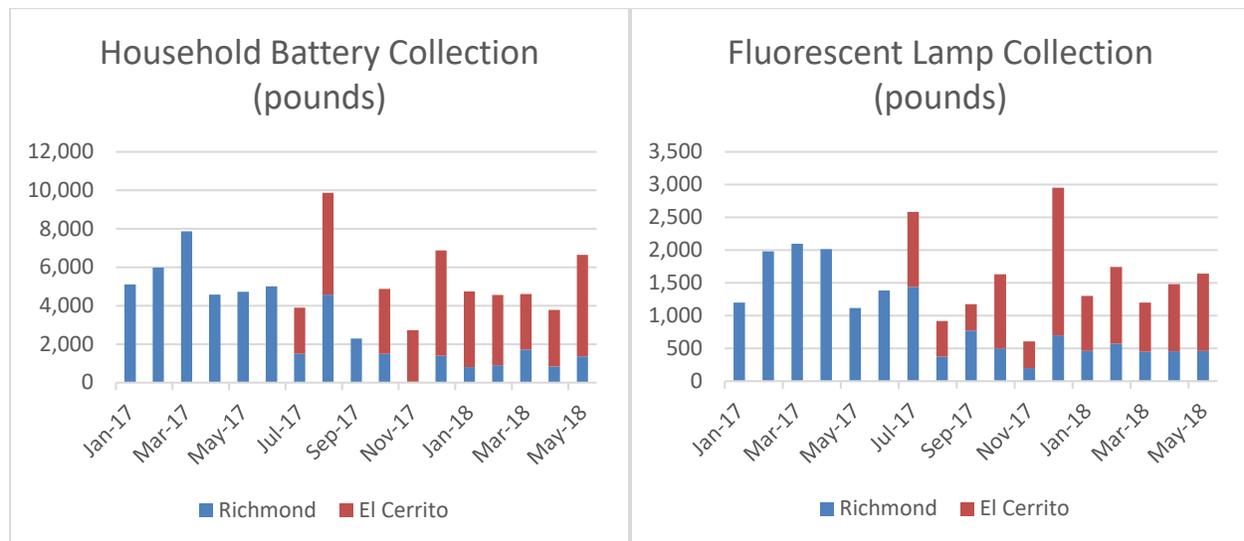
## RecycleMore Household Hazardous Waste Program Metrics Report

participation of El Cerrito residents increased with less El Cerrito participants using the Richmond Facility. The participation table below indicates the percent participation of total users from each jurisdiction.

### Percent Total Users by Jurisdiction

Jurisdiction	2016	6/27/17 - 4/30/18		
	Total	Total	Richmond	El Cerrito
Crockett	2%	1%	1%	0.0%
El Cerrito	10%	<b>18%</b>	<b>5%</b>	<b>12%</b>
El Sobrante	11%	9%	9%	0.3%
Hercules	9%	9%	9%	0.2%
Kensington	2%	2%	2%	0.0%
Pinole	11%	9%	9%	0.3%
Port Costa	0.1%	1%	0.8%	0.0%
Pt Richmond	1%	2%	2%	0.1%
Richmond	37%	<b>33%</b>	<b>29%</b>	<b>4%</b>
Rodeo	3%	2%	2%	0.0%
San Pablo	15%	13%	13%	0.4%
Outside area/unknown	0.1%	0%	0.4%	0.0%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>83%</b>	<b>17%</b>
<b>Participants</b>	<b>9,479</b>	<b>9125</b>	<b>7,533</b>	<b>1,592</b>

Another interesting impact of the El Cerrito Facility is regarding that the amount of household batteries and lamps collected. Prior to the El Cerrito Permanent Facility opening, these wastes were previously collected at El Cerrito's Recycle-only facility and transported to the Richmond Facility. These wastes are now directly transported for off-site management rather than the Richmond Facility. This trend indicates that the majority of household batteries and lamps are collected in El Cerrito. These wastes are also collected seven days per week at El Cerrito and likely includes out of service area wastes.



## **Impact of Adding Wednesday Service to the Richmond HHW Facility**

Adding Wednesday service to the existing Thursday, Friday and Saturday service has resulted in slowly increased total participation. Dividing the monthly participation by the number of operating days each month indicates a slight decreasing average daily participation per month. Since the overall participation has increased, the decrease in average daily participation likely indicates participation is spreading out the additional days of operation. This decrease may have been impacted by limited advertising of the additional open day.

### **Richmond HHW Facility Participants Only**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2014	730	517	620	642	764	747	824	846	689	773	507	367	8,026
2015	826	653	757	834	804	682	891	883	729	937	705	517	9,218
2016	707	694	633	1,011	791	908	939	902	874	662	510	730	9,361
2017	572	606	872	763	784	1,043	921	879	903	679	670	751	9,443
2018	616	648	634	682	696	713							3,989

### **Richmond HHW Facility Participation per operating Day**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
2014	73	57	69	71	76	75	92	85	77	70	63	46	72
2015	83	73	63	64	57	57	64	55	61	62	54	43	61
2016	59	58	49	72	66	70	67	75	62	55	46	56	62
2017	48	51	62	64	65	87	77	49	50	42	39	42	55
2018	36	41	33	43	39	40							

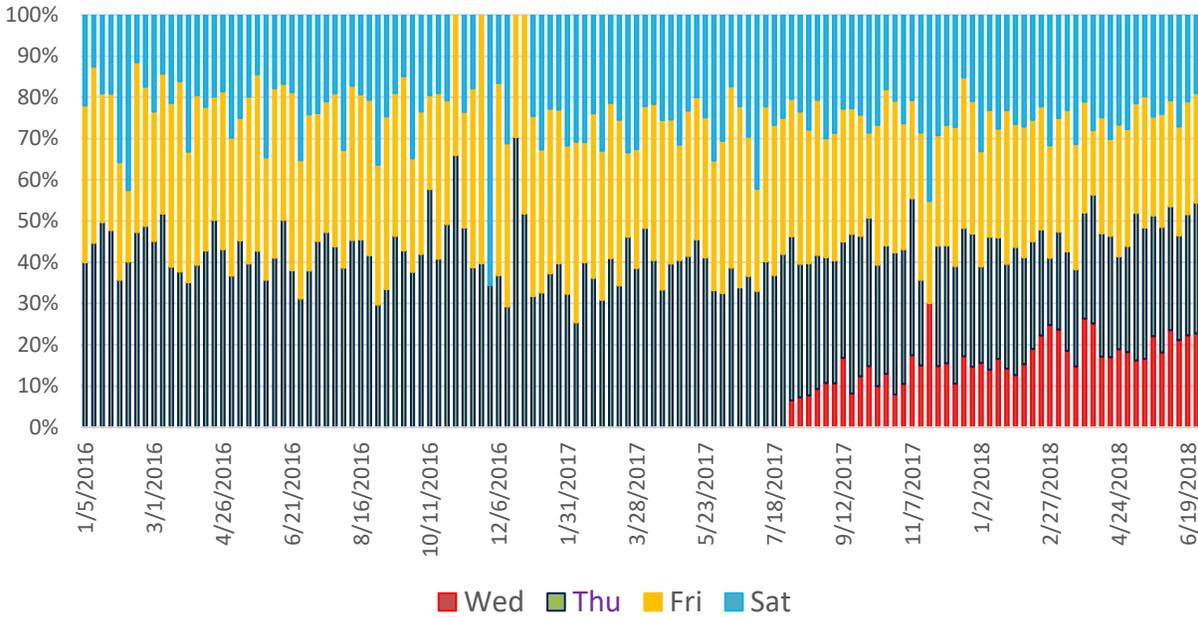
	Richmond opens every Saturday 3/14/15
	El Cerrito Satellite HHW Opens 6/20/17
	Richmond HHW Facility opens Wednesdays 8/2/17

The apparent trend seems to be that overall participation is increasing but the average participation per day is decreasing.

Equalizing the weekly participation provides a way of comparing percent participation related to each of the operating days and indicates an interesting trend in that as participation for Wednesday increases, the participation on Thursday decreases as indicated in the graph below. On average, the combined Wednesday and Thursday participation is slightly more than the Thursday participation prior to adding Wednesday operation.

If the trend continues, Wednesday participation could exceed Thursday participation. This trend is similar to the one experienced by the HHW Facility at the Central Contra Costa Sanitary Household Hazardous Facility in Martinez when additional days were added. The first day the facility is open tends to attract an increasing number of participants until the first open day participation exceeds the previous first open day. It is also interesting that Saturday participation is not the most popular day. This participation trend will be monitored in future reports.

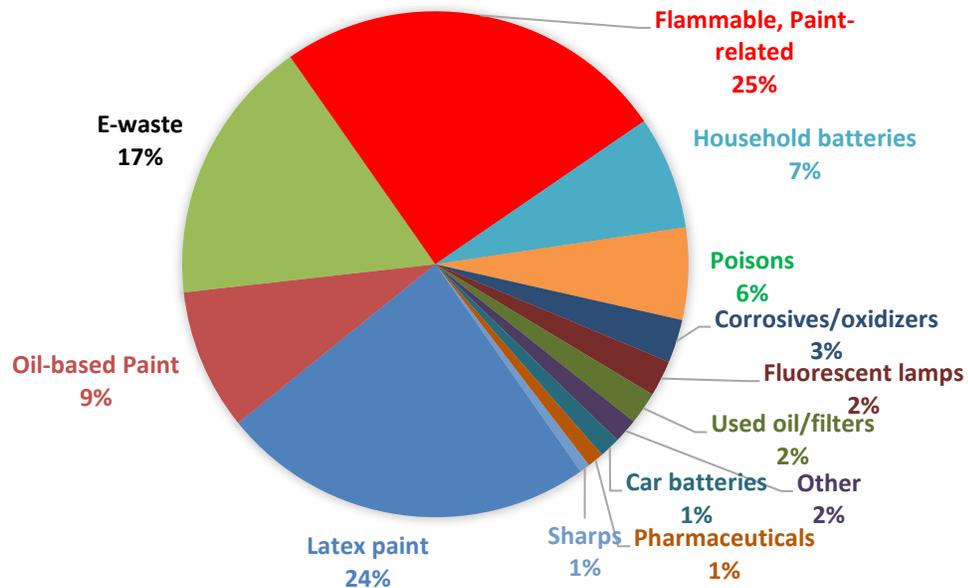
## Richmond HHW Facility Participation Equalized Trend January 2016 through June 2018



### **Collected Waste Categories Review**

The categories of HHW collected by each of the programs are indicated in the graph and table below. Paint and e-waste continue to be over half the waste collected. Fortunately, the disposal cost of most paint is covered by the Architectural Paint Stewardship Program. Costs for the management of e-waste fluctuates with the scrap metal market which has significantly decreased over time. Currently, e-waste management costs fluctuate between a small amount of income or a cost item for disposal. The large amount of e-waste collected that is not part of the current payment program likely accounts for the negative value. Efforts are underway at the state level to increase the electronics payment program to other items than CRTs and flat screen monitors.

### CATEGORIES OF HHW COLLECTED ALL PROGRAMS JULY 2017 THROUGH MAY 2018 (PERCENT POUNDS)



Collected waste (pounds) July 2017 through May 2018  
(Hercules 2018 Event not included in above pie chart)

Facility	Richmond Facility	El Cerrito Facility	Hercules Event 2017	El Sobrante Event 2017	Richmond Event 2017	Hercules Event 2018
Latex paint	139,556	27,611	13,909	22,649	10,351	17,118
Oil-based Paint	51,204	13,565	4,156	3,395	0	4,013
Flammable, Paint-related	141,401	30,626	13,915	14,430	8,615	10,025
E-waste	119,126	0	2,800	10,555	1,451	19,800
Household batteries	16,972	37,906	800	890	380	950
Car batteries	9,805	0	520	1,100	150	1,500
Fluorescent lamps	6,391	10,836	431	497	102	1,400
Sharps	3,075	1,865	0	0	0	0
Pharmaceuticals	4,477	3,824	0	0	0	0
Poisons	33,395	7,000	4,200	2,500	1,600	3,000
Used oil/filters	6,643	0	3,575	25	0	50
Corrosives/oxidizers	12,662	5,460	2,345	2,080	1,270	1,825
Other	7,783	100	760	10	200	0
<b>TOTAL</b>	<b>552,490</b>	<b>138,793</b>	<b>47,411</b>	<b>58,131</b>	<b>24,119</b>	<b>59,681</b>

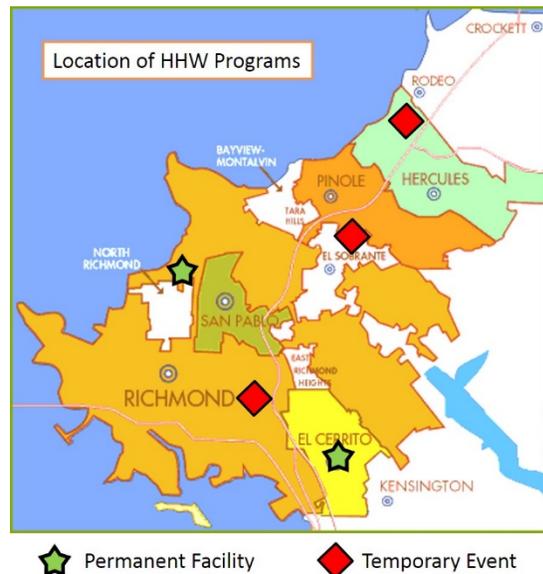
The disposal costs for paint are covered by the Paint Stewardship Program. Some E-waste is compensated due to scrap value and the Covered Electronic Waste program and other E-waste disposal is paid. On average, the net E-waste cost is a small income to the program. E-waste is also collected during Richmond Sanitary's bulky item collection but that amount is not included in this report

The City of El Cerrito continues to manage E-waste and car batteries on their own. Used oil and filters collected in El Cerrito are managed by RecycleMore under the Used Oil Payment Program. These waste quantities are not included in the above quantities.

### Temporary HHW Events

Starting in 2017, there have been three temporary hazardous waste events conducted in 2017 and one in 2018 with two more events to be held in 2018. Participation for the events compare to the 2017 permanent facilities and a map with the locations is presented below.

Participation for Temporary Events Compared to Permanent Facilities						
Period	7/8/2017	8/26/2017	9/30/2017	5/19/2018	2017	2017
Location	Hercules	El Sobrante	Richmond	Hercules	Richmond	El Cerrito
Month	Jul	Aug	Sep	May	Jan-Dec	Jun-Dec
El Cerrito		14	3		758	745
El Sobrante		273	4		1027	15
Hercules	282	1		265	933	12
Pinole	104	17	1	92	974	18
Pt. Richmond					188	3
Richmond	1	222	260		3429	205
San Pablo		51	2	2	1481	23
Crockett	16			27	146	0
Kensington		1			200	2
Port Costa				4	5	0
Rodeo	49	1		66	279	1
Other Residential					23	1
<b>TOTAL</b>	<b>452</b>	<b>580</b>	<b>270</b>	<b>456</b>	<b>9,443</b>	<b>1,025</b>
Mileage to Richmond	7.6	6.3	4.1	7.6	NA	7.1



### HHW Program Metrics Comparisons

Comparing the two facilities and the temporary events will assist with program evaluation and future program changes. The averages for each program are listed below. TIME PERIOD -2017??

**Program Metrics, Average per Month**

Metric	Costs	Pounds	Participation	Operating Days
Richmond	\$37,296	53,422	748	15
El Cerrito	\$13,860	13,129	173	4
Temporary	\$35,732	43,220	434	(3 events)

Using these averages, a number of measurements can be calculated to allow for a somewhat equitable comparison between programs.

**HHW Program Metrics Averages including all waste types.**

Metric	Richmond	El Cerrito	Temporary		
Range	Average	Average	Average	Min	Max
Cost/person	\$49.85	\$80.16	\$82.33	\$67.51	\$95.04
Cost/day	\$2,448	\$3,223	\$8,310	\$6,270	\$14,320
Cost/pound	\$0.70	\$1.06	\$0.83	\$0.67	\$1.04
Pound/Person	71	76	100	89	105
Pounds/Day	3,506	3,053	43,220	24,119	58,131

The more established Richmond Facility provides the lowest cost per person, per pound, and per day. El Cerrito Facility costs are higher than the Richmond Facility and the costs per pound for El Cerrito were higher than the temporary events. Over time, the El Cerrito Facility average costs are expected to lower.

The temporary events had significantly more waste per person which is likely due to the Hercules and El Sobrante residents participating in the events had been storing their wastes for some time and also indicated that they tend not to travel to Richmond and preferred the local events.

A more comparable comparison between programs is to adjust the quantities of collected waste types to those accepted at both facilities on the same schedule. The Richmond Facility accepts e-waste, used oil and filters and El Cerrito accepts these wastes but are not included in the West County HHW program. El Cerrito accepts batteries, lamps, sharps, and pharmaceuticals seven days per week but the HHW Facility is open only one day per week. Removing these wastes provided a more equitable comparison between programs.

**HHW Program Metrics Averages**

Metric	Richmond	El Cerrito	Temporary		
Range	Average	Average	Average	Min	Max
Cost/person	\$24.88	\$24.86	\$77.90	\$66.20	\$91.65
Cost/Day	\$1,222	\$999	\$7,862	\$6,187	\$12,761
Cost/pound	\$0.52	\$0.53	\$0.95	\$0.85	\$1.12
Pound/Person	48	47	82	78	87
Pounds/Day	2,339	1,884	35,462	22,036	45,064

Some observations from this analysis include:

- The Richmond Facility has been established for many years and has the lowest cost metrics.
- The El Cerrito Facility has only been operating for one year but cost per person and cost per day are in between the Richmond Facility and the temporary events.
- The El Cerrito Facility cost per pound is high but could be the result of higher disposal costs
- The metrics for the El Cerrito Facility will likely normalize after a few years of operation.
- The temporary events fluctuate significantly in these metrics and are unpredictable in participation which influences the calculations.
- The metrics for the temporary events are higher than for the Richmond Facility especially cost per person and cost per day.
- The average cost for each of the three 2017 temporary events is slightly less than the cost of for one month of the Richmond Facility operation (15 days) which serves about 172% more residents per month.

One caution in comparing data is that the disposal cost and pounds collected is for waste that had been collected in previous weeks or months and does not directly relate to the participation for that same month. Costs for the Door-to-Door HHW Program are not included in this analysis since the disposal amounts and costs are incorporated into the Richmond Facility numbers.

### **Door-to-Door Program Review**

The Door-to-Door HHW program provides collection of HHW directly from the homes of senior and disabled residents. Residents call for an appointment and are usually served within the week by a hazardous waste registered truck. Residents provide an estimated inventory and are provided with safe packaging instructions and placement of the wastes. Small businesses are not eligible for this program per state law. In addition to residential collection, the Door-to-Door vehicle also collects home-generated sharps and household medicines from the various collection kiosks. The number of appointments in 2017 by jurisdiction are listed below along with the number of sharps and medicine kiosk collections.

2017 Door-to-Door Pickup Appointments and Sharps/Med Bin Collections													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
El Cerrito	4	3	6	9	3	3	3	1	4	3		1	40
El Sobrante	1	2	2	3	3	5	4	8	3	1	1	2	35
Hercules	2	1	4	3	2	6	2	4	1	1	1		27
Pinole	7	3	4	7	6	4	8	11	3	3	3	1	60
Pt. Richmond			1								1		2
Richmond	8	7	13	8	8	12	5	14	10	10	4	8	107
San Pablo	1	1	2	2	1	2		5	3	2	3	1	23
Total Residents	23	17	32	32	23	32	22	43	24	20	13	13	294

Stops Sharps/Meds	14	14	15	12	13	15	13	17	13	13	18	13	170
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The pounds collected by the Door-to-Door program for 2017 and January through June of 2018 are listed below.

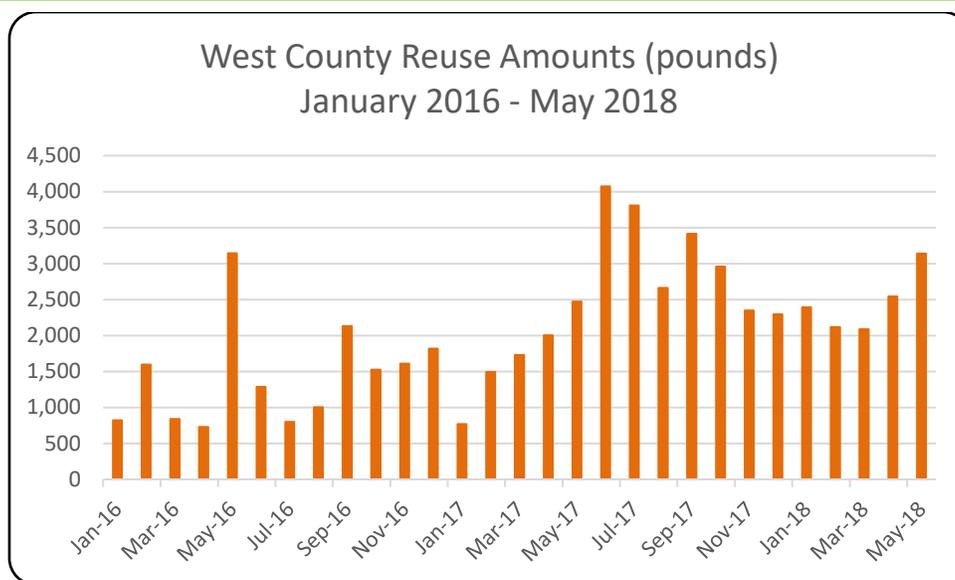
**Door-to-Door Program, Pounds collected**

<b>Waste Type</b>	<b>2017</b>	<b>2018 Jan-Jun</b>
Latex paint	13,289	2,519
Oil-based Paint	3,155	431
Flammable, Paint-related	4,037	675
E-waste	6,033	1,509
Household batteries	1,538	542
Car batteries	126	95
Fluorescent lamps	636	12
Sharps	1,515	744
Pharmaceuticals	1,717	846
Poisons	1,243	167
Used oil/filters	1,302	395
Corrosives/oxidizers	297	132
Other	397	418
<b>Total</b>	<b>35,285</b>	<b>8,484</b>

Comparing the pounds collected by the Door-to-Door program to the pounds collected by the facility and the events is not equitable since the Door-to-Door program measures the weight of individual containers collected and the other programs weight includes the weight of the container and absorbent. In addition, the Door-to-Door weights are included in the Richmond Facility total weights shipped.

**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. The contracted facility staff have been instructed to increase efforts to direct eligible materials to the reuse program. This effort has resulted in a significant increase in the amount of reuse as indicated in the graph and table below. Using an estimate of \$1 per pound for disposal, the reuse program saved about \$30,000 in 2017 and over \$6,500 for January through March 2018. The reuse program is only offered at the Richmond Facility at this time.



Pounds of Reuse Set Aside for the Public													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2016	822	1,596	839	730	3,145	1,286	800	1,002	2,133	1,524	1,611	1,815	17,303
2017	768	1,494	1,727	2,002	2,473	4,074	3,806	2,661	3,416	2,960	2,349	2,294	30,024
2018	2,392	2,118	2,086	2,543	3,138								12,277

The amount of HHW was disposed of from the Richmond Facility in 2017 is 713,517 but not all of this collected HHW is eligible for reuse (e.g. batteries, e-waste, lamps, sharps, used oil). Subtracting these ineligible wastes results in a total of 463,771 pounds. There was 30,024 pounds of collected materials diverted for reuse which is 6.5% of eligible wastes is reused for a cost savings of \$16,798

If a reuse program is implemented with eligible materials collected in El Cerrito, about 6,000 pounds could be reused for an estimated cost savings of \$5,400.

### **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 Orchard Supply Hardware in Pinole. 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 and costs for the retail collection sites.

Pounds Collected	2016	2017	2018 Jan-May
Richmond, Latex Paint	133,401	138,769	56,387
El Cerrito, Latex Paint		27,611	5,580
Temporary Events, Latex		46,909	17,118
<b>Total Latex Paint</b>	<b>133,401</b>	<b>213,289</b>	<b>79,085</b>

<b>Richmond, Oil-based Paint</b>	77,868	67,199	19,932
<b>El Cerrito, Oil-based Paint</b>		7,985	5,580
<b>Temporary Events, Oil-Based</b>		7,551	4,013
<b>Total Oil-Based Paint</b>	77,868	82,735	29,525

<b>PaintCare Savings</b>			
<b>Latex Paint</b>	\$70,575	\$146,400	\$29,550
<b>Oil-based Paint</b>	\$50,690	\$43,740	\$15,372
<b>Total Savings</b>	\$121,265	\$190,140	\$44,922

In addition, architectural paint set aside in the reuse program at the facility is also eligible for payment under PaintCare and the reuse program provided a reimbursement of \$5,960 in 2017.

### **Repeat Customers**

The survey collected by the driver data collection indicates that a significant number of participants indicated that they have used the facility previously.

Used Facility Before	Richmond	El Cerrito (a)
Yes	87%	31%
No	13%	69%

(a) Not certain if response indicates usage at El Cerrito or any HHW program

It is not clear that the El Cerrito responses are related to the use of the El Cerrito Facility or the Richmond Facility or both. Once additional years of data collection occurs, that prior usage can be verified by the data collection system.

### **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 June through March 30, 2018 is indicated in the table below and is similar to the graph of June through September 27, 2017 presented in October 2017.

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

## **Items for Future Review**

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

- Monitoring impact of Wednesday participation on other operating days at the Richmond HHW Facility.
- Continue reviewing impact of El Cerrito Satellite HHW Facility on overall program participation.
- Continue monitoring temporary events to determine if waste amounts decrease due to cleaning out stored wastes.
- Evaluate the storage capacity of the El Cerrito Satellite HHW Facility.
- Once more scanned participation data is available, examine the level of repeat customers.
- Review usage of home-generated sharps and pharmaceuticals collection
- Review usage of the Door-to-Door program.
- Review small business and non-profit program.
- Utilize data capture tracking to verify repeat customers rather than rely on survey responses.
- Consider implementing a reuse program for HHW collected at El Cerrito.

## **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:

- Wednesday participation at the Richmond Facility is increasing and will possibly exceed Thursday and Friday service which is a similar trend experienced by other jurisdictions.
- The El Cerrito Facility has significantly increased the participation of El Cerrito Residents as well as neighboring Richmond residents.
- El Cerrito 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.
- 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 considerable disposal costs of about 6.5% or \$16,798
- Participants report that they have significantly used the facility previously.
- Residents deliver HHW to the facility fairly consistently throughout the day.