

Chapter 5: Moderate Risk Waste Management



The term “moderate risk waste” (MRW) was created by revisions to Washington State’s 1986 Hazardous Waste Management Act (RCW 70.105). MRW is a combination of household hazardous waste (HHW) and conditionally exempt small quantity generator (CESQG) waste. HHW is waste created in the home, while CESQG is small quantities of business or non-household waste. Both HHW and CESQG waste are exempt from state hazardous waste regulations.

- Total MRW collected in 2011 was about 23.8 million pounds.
- The average amount of HHW disposed of per participant was 53.4 pounds, and per capita was 1.62 pounds.
- More than 3.3 percent of Washington residents used a fixed facility or collection event to remove hazardous waste from their households, about 7.8 percent of all households.
- Counties that publicly collected the most CESQG waste per capita were Lewis, Yakima, Skagit, Whatcom and Kitsap.
- Counties that collected the most used oil per capita were Garfield, Stevens, Skamania, Columbia, Lincoln and Wahkiakum.
- Approximately 81 percent of all MRW collected was recycled, reused or used for energy recovery.

MRW collections started in the early 1980s primarily as HHW-only events, also known as “roundups” or collection events. These events usually happened once or twice a year.

In the late 1980s, permanent collection facilities now known as fixed facilities began to replace collection events to fulfill the need for year-round collection. In addition, collection facilities have further developed with mobile units and satellite facilities. These efforts resulted in a larger number of customers served, decreased costs and increased reuse and recycling of MRW.

Please note the data in this chapter is only a portion of the MRW waste stream. The MRW data

presented here is reported through local governments, with a few private companies also reporting because they have a solid waste permit issued by the appropriate local authority. Chapter 4 includes additional statewide data.

Funding

RCW 70.105.235 authorizes Ecology to provide financial assistance through grants to locals for preparing, updating and implementing local Hazardous Waste Plans, which detail local MRW programs. Ecology uses the Coordinated Prevention Grants program (CPG) to provide pass-through funding to local governments for these purposes. CPG is historically funded by the Local Toxics Control Account (LTCA).¹ However, the 2009-11 funding comes from the State Building and Construction Account (SBCA). LTCA funds were transferred to the General Fund to help balance the state budget. SBCA is funded through bonds that are sold by the state treasurer.

All local governments in the state of Washington have completed Hazardous Waste (HW) Plans. See Chapter 2 for the status of plans in each county. Every local HW plan must address:

- ✓ HHW collection.
- ✓ Household and public education.
- ✓ Small business technical assistance.
- ✓ Small business collection assistance.
- ✓ Enforcement.
- ✓ Used oil collection and education.

Accuracy of Data Collection

Ecology created and circulates a standard reporting form to all MRW programs. However, the reported data can vary depending on a program's collection process, and how data is reported and interpreted. All programs must provide individual MRW reports.

2011 Data

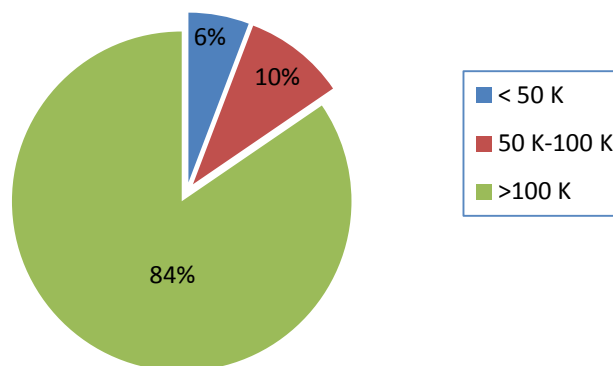
Chapter 173-350 WAC, *Solid Waste Handling Standards*, requires local programs to submit MRW report forms annually. Annual reports are required to be submitted by April 1 for the previous calendar year collections. Information received from local programs through MRW annual reports provides Ecology with data on MRW infrastructure, collection trends, costs, waste types received at collection events and fixed facilities, and disposition of wastes collected. Ecology translates this data into the information contained in this chapter and designs it to be specifically useful to those who operate or work in MRW programs in Washington State.

¹ Authorized by RCW 82.21.030 (Chapter 82.21 RCW, Hazardous substance tax -- Model toxics control act).

This year's report focuses on 2011 data with some comparisons to data published in previous years' reports. In an effort to provide useful information for individual programs, data is provided in categories by county size.

In 2011, Douglas and Mason Counties did not report any HHW or used oil collections. Private collectors provided the numbers shown in this report for Douglas and Mason Counties. Due to budget constraints some counties have decided to reduce hours of operations at their fixed facilities or have discontinued or reduced collection events. Figure 5.1 shows the percentage of the state population that resides in counties of less than 50,000, 50,000 to 100,000, and more than 100,000.

Figure 5.1
Percent of State Population by County Size



Permanent fixed facilities now service most of the state. In 2011, Benton, Chelan, Douglas, Ferry, Garfield, San Juan, Skamania and Wahkiakum counties did not have fixed facilities. Garfield residents can use the facility in Asotin County and Cowlitz County conducts a mobile event in Wahkiakum County. Benton, Chelan, Douglas, Ferry, San Juan and Skamania counties conduct collection events.

In past reports, Ferry County was shown to have a fixed facility, but the facility is more properly categorized as a limited MRW Facility. Benton County had a permanent fixed facility until about mid-2010 when the facility was destroyed by a fire.

Collection services for CESQGs have leveled off statewide. In 2011, 17 fixed facilities serviced CESQGs, and 4 different counties provided collection events for CESQGs.

Table 5.1 shows the estimated population (based on data provided by the Office of Financial Management) by size of individual counties. In Washington State there are 42 programs that manage MRW. These programs include all 39 counties.

**Table 5.1
Individual County Population by Size (2011)**

< 50 K		50 K – 100 K		> 100 K	
Garfield	2,250	Walla Walla	58,800	Cowlitz	102,700
Wahkiakum	4,000	Mason	61,100	Skagit	117,400
Columbia	4,100	Clallam	71,600	Benton	177,900
Ferry	7,600	Chelan	72,700	Whatcom	202,100
Lincoln	10,600	Grays Harbor	72,900	Yakima	244,700
Skamania	11,150	Lewis	76,000	Kitsap	253,900
Pend Oreille	13,000	Island	78,800	Thurston	254,100
San Juan	15,900	Franklin	80,500	Clark	428,000
Adams	18,950	Grant	90,100	Spokane	472,650
Klickitat	20,500	50 K – 100 K Total	662,500	Snohomish	717,000
Pacific	20,900			Pierce	802,150
Asotin	21,650			King	1,942,600
Jefferson	30,050			> 100K Total	5,715,200
Douglas	38,650				
Okanogan	41,200				
Kittitas	41,300				
Stevens	43,600				
Whitman	44,800				
< 50K Total	390,200			State Total	6,767,900

Table 5.2
Total Pounds per Waste Category 2000-11

Collection Year	HHW lbs (no UO)	Used Oil lbs	CESQG lbs	Total MRW lbs
2000	10.5M	8.3M	1.1M	19.8M
2001	15.6M	11.3M	1.0M	27.9M
2002	13.5M	9.2M	1.4M	24.1M
2003	16.0M	11.7M	1.3M	29.0M
2004	15.3M	12.4M	2.4M	30.1M
2005	14.7M	11.3M	6.3M	32.3M
2006	15.2M	10.0M	7.1M	32.3M
2007	14.9M	9.7M	7.6M	32.2M
2008	14,163,842	8,606,794	8,336,030	31,106,666
2009	12,257,316	8,916,633	4,867,334	26,041,283
2010	11,572,466	9,218,395	5,387,903	26,178,764
2011	10,965,429	7,857,614	4,977,625	23,800,668

Collection by Waste Category and Type

As shown in Table 5.3, the most dominant waste types of MRW collected in 2011 were non-contaminated used oil, antifreeze, latex paint, oil-based paint, paint related materials, and flammable liquids. These totals include used oil and antifreeze collected at all collection sites. These six specific waste types accounted for approximately 70 percent of the estimated 23.8 million pounds of MRW collected in 2011.

Table 5.3
Six Most Dominant MRW Waste Types Collected in 2011

Waste Type	Total Lbs.
Non-Contaminated Used Oil	7,822,541
Antifreeze	2,501,624
Latex Paint	2,198,653
Oil-based Paint	1,672,954
Paint Related Materials	1,418,887
Flammable Liquids	1,010,074
Total	16,624,733

Table 5.4 provides summary information on total pounds of MRW collected from HHW and CESQG (publicly and privately collected) categories by waste types. Some waste type categories were changed and a few new ones added to the annual report form beginning in 2007.

Table 5.4
Total Pounds of MRW Collected by Waste Category in 2011

Waste Type	HHW	CESQG	Total
Acids	146,220	37,348	183,568
Acids (Aerosol Cans)	514	373	887
Aerosols (Consumer Commodities)	150,816	33,241	184,057
Antifreeze	662,695	1,838,929	2,501,624
Bases	205,851	28,862	234,713
Bases, Aerosols	107	3	110
Batteries (Auto Lead Acid)	816,183	52,929	869,112
Batteries (Small Lead Acid)	19,975	7,219	27,194
Batteries (Dry Cell)	320,862	22,003	342,865
Batteries (Nicad/NIMH/Lithium)	32,573	15,533	48,106
CFCs	3,497	350	3,847
Chlorinated Solvents	942	4,147	5,089
Compressed Gas Cylinders	291	653	944
CRT's	616,786	12,774	629,560
Cyanide Solutions	72	69	141
Dioxins	0	5,500	5,500
Electronics	587,414	30,176	617,590
Fire Extinguishers	10,335	1,445	11,780
Flammable Solids	5,766	25,494	31,260
Flammable Liquids	704,341	305,733	1,010,074
Flammable Liquids, Aerosols	0	0	0
Flammable Liquids Poison	116,160	13,746	129,906
Flammable Liquid Poison, Aerosols	26,801	114	26,915
Flammable Gas (Butane/Propane)	107,981	2,710	110,691
Flammable Gas Poison	1,287	0	1,287
Flammable Gas Poison, Aerosols	70,088	1,509	71,597
Latex Paint	2,075,971	122,682	2,198,653
Latex Paint, Contaminated	279,180	49,309	328,489
Mercury Compounds (Dental Amalgam)	30	8,038	8,068

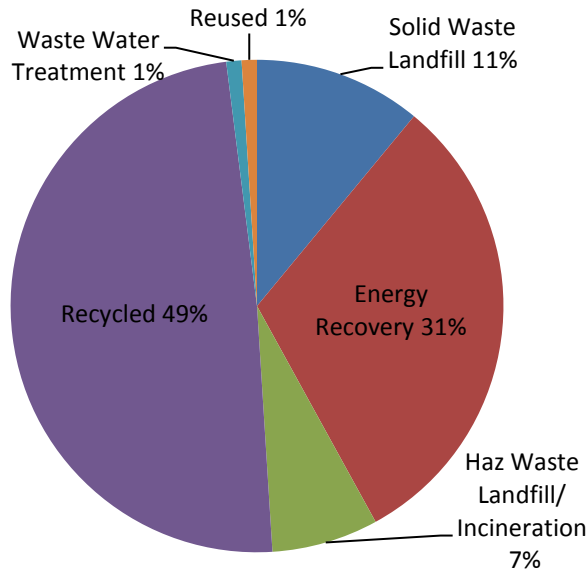
Waste Type	HHW	CESQG	Total
Mercury Containing Batteries (Button, etc)	90	3	93
Mercury Devices (Monometers, Barometers, etc.)	654	36	690
Mercury (Fluorescent Lamps & CFLs)	253,737	178,751	432,488
Mercury (Pure Elemental)	380	199	579
Mercury (Switches & Relays)	35	18	53
Mercury (Thermostats/Thermometers)	1,525	658	2,183
Nitrate Fertilizer	4,920	40	4,960
Non-PCB Containing Light Ballasts	2,382	10,159	12,541
Non-Regulated Liquids	49,024	276,932	325,956
Non-Regulated Solids	122,851	282,762	405,613
Oil-Based Paint	1,479,170	193,784	1,672,954
Oil-Based Paint, Contaminated	41,620	84,574	126,194
Oil Contaminated (oily H2O, oil w/PCB's, etc.)	14,171	336,525	350,696
Oil Filters	196,517	10,677	207,194
Oil Filters Crushed	12,462	600	13,062
Oil Non-Contaminated	7,611,321	211,220	7,822,541
Oil Stained Rags, Absorbent Pads, etc.	3,793	14,186	17,979
Organic Peroxides	1,850	673	2,523
Other Dangerous Waste	10,758	671,548	682,306
Oxidizers	42,493	4,971	47,464
Paint Related Materials	1,171,529	247,358	1,418,887
PCB Containing Light Ballasts	28,061	16,935	44,996
Pesticide/Poison Liquid	312,999	18,640	331,639
Pesticide/Poison Solid	181,350	15,335	196,685
Photo/Silver Fixer	324	17,799	18,123
Reactives	18,277	2,264	20,541
Tar and/or Adhesives	14,528	3,757	18,285
Used Cooking Oil	39,816	0	39,816
MRW TOTAL	18,579,375	5,221,293	23,800,668

* These totals do not match the HHW and CESQG totals in Table 5.2 because these contain used oil, which was separated out in Table 5.2. Also, in past reports most of the used oil was included with the CESQG totals. It is impossible to know if used oil collected at facilities such as Jiffy Lube is HHW or CESQG. However, it seems more reasonable that most of it is HHW rather than CESQG. Therefore, since 2008 it is now included with the HHW total in Table 5.4 instead of the CESQG total as in the past. Note: In 2011 MRW facilities recycled 292,229 pounds of materials such as propane tanks, cardboard, paint cans, etc. This number is not included in any of the data in the above table or elsewhere in this Chapter. It is noted here because it is a waste stream that MRW facilities must deal with. The majority of MRW facilities manage these recyclables appropriately.

Disposition of MRW Waste

The disposition of MRW collected is generally well managed. Most MRW is recycled or used for energy recovery. Very little of the MRW collected is safe for solid waste disposal. Seven percent of all MRW is disposed at a hazardous waste landfill or incinerator. Figure 5.2 shows final disposition of MRW between recycled, reused, energy recovery, hazardous waste landfill or incineration, solid waste landfill, and disposal through a wastewater treatment plant.

Figure 5.2
2011 MRW Final Disposition



MRW Data

Table 5.5 shows various data by county. HHW data is based on fixed facility and collection event information, but does not include HHW collected at used oil sites as participation numbers are not tracked at these sites. This last column of this table represents all MRW collected in that county, including privately collected CESGQ wastes. The included private collection data was first presented this way in 2008, with previous reports including this data for Pierce and King Counties only. This information can be used to evaluate efficiencies within each county by comparing percentage of participants per housing units and costs, and HHW pounds per participant.

Housing units are the number of households in each county. This data is used instead of per capita because participants typically represent a household.

Table 5.5
Various HHW Data by County

County	Housing Units	HHW Participants	% Participant / Housing Units	HHW Cost / Participant	HHW lbs / Participant	HHW Total lbs	HHW, SQG, & Used Oil From Limited Sites Total lbs
Adams [^]	6,277	0	0%	\$0	0.00	858	4,803
Asotin	9,901	2,000	20.2%	\$64.74	78.08	156,159	191,609
Benton ^{^^}	69,615	0	0%	\$0	0.00	4,234	104,909
Chelan	35,534	730	2.1%	\$123.38	197.30	144,029	280,243
Clallam	35,767	658	1.8%	\$119.12	152.42	100,295	295,304
Clark	168,414	13,006	7.7%	\$52.82	157.80	2,052,345	3,242,735
Columbia [^]	2,147	0	0%	\$0	0.00	960	15,822
Cowlitz	43,584	1,638	3.8%	\$81.70	281.23	460,658	757,921
Douglas*	16,098	0	0%	\$0	0.00	0	7,064
Ferry	4,419	22	.5%	\$78.39	17.63	388	2,956
Franklin	25,017	308	1.2%	\$27.78	11.86	3,652	18,849
Garfield	1,231	Inc. w/ Asotin	Inc. w/ Asotin	Inc. w/ Asotin	Inc. w/ Asotin	Inc. w/ Asotin	18,267
Grant	35,399	253	.7%	\$200.55	104.00	26,309	75,643
Grays Harbor	35,261	1,715	4.9%	\$169.69	63.38	108,690	262,356
Island	40,420	2,513	6.2%	\$92.27	198.15	497,943	710,634
Jefferson	17,883	1,035	5.8%	\$63.07	42.47	43,953	105,589
King	857,359	67,271	7.9%	\$49.78	44.31	2,980,584	6,340,255
Kitsap	107,357	8,406	7.8%	\$95.04	86.24	724,915	1,225,795
Kittitas	22,096	581	2.6%	\$132.55	118.74	68,987	175,436
Klickitat	9,888	8,400	85%	\$2.94	9.19	77,220	199,567
Lewis	34,300	961	2.8%	\$113.62	251.01	241,221	492,515
Lincoln	5,811	308	5.3%	\$30.38	166.48	51,276	93,406
Mason*	32,687	0	0%	\$0	0.00	0	2,968
Okanogan	22,257	399	1.8%	\$139.73	28.32	11,300	39,592
Pacific	15,551	192	1.2%	\$100.91	85.94	16,500	52,692
Pend Oreille	7,939	7,910	99.6%	\$5.69	12.00	94,928	117,761
Pierce	327,308	9,575	2.9%	\$56.55	40.44	387,205	1,565,283
San Juan	13,403	217	1.6%	\$165.59	165.76	35,970	61,589
Skagit	51,725	4,721	9.1%	\$69.03	42.66	201,400	443,447
Skamania	5,662	169	3%	\$105.81	135.50	22,899	90,037
Snohomish	288,439	9,972	3.5%	\$70.78	80.70	804,739	2,248,793
Spokane	202,445	34,000	16.8%	\$8.92	17.04	579,320	1,719,458
Stevens ^{^^}	21,238	0	0%	\$0	0.00	3,259	188,864
Thurston	109,197	14,491	13.3%	\$30.00	29.20	423,025	756,090

County	Housing Units	HHW Participants	% Participant / Housing Units	HHW Cost / Participant	HHW lbs / Participant	HHW Total lbs	HHW, SQG, & Used Oil From Limited Sites Total lbs
Wahkiakum	2,080	Inc. w/ Cowlitz	Inc. w/ Cowlitz	Inc. w/ Cowlitz	Inc. w/ Cowlitz	Inc. w/ Cowlitz	16,597
Walla Walla	23,530	1,858	7.9%	\$86.38	36.86	68,487	138,685
Whatcom	91,219	7,046	7.7%	\$43.50	28.04	197,559	519,417
Whitman	19,367	894	4.6%	\$51.08	32.64	29,184	51,946
Yakima	85,911	4,012	4.7%	\$76.98	86.00	344,978	1,165,771
STATEWIDE	2,903,736	205,261	7.1%	\$56.39	53.42	10,965,429	23,800,668

* These counties did not report in 2011 and total pounds shown represents the amount private companies collected from CESQG's in those jurisdictions.

^^ These counties scaled back operations in 2011 and HHW pounds reported represent those collected at limited MRW sites and CESQG amounts reported are from private companies.

^ These counties did not report participation or cost information numbers in 2011

Household Hazardous Waste (HHW)

Participants per Housing Unit

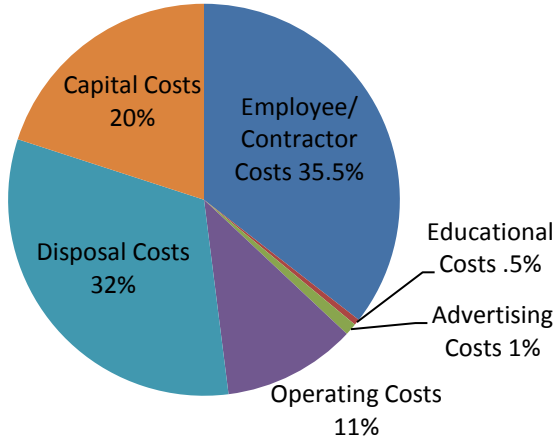
Counties that exhibit ten percent or higher of participants per housing unit provide excellent public education to encourage use of facilities or events, have very convenient locations for their collection facilities, or both. The participation number and rate for Klickitat and Pend Oreille counties seem high, but were verified before this report was completed.

Cost per Participant and Overall HHW Cost Breakdown

This statistic is hard to compare, because of the many variables in program costs. Some programs record every cost, whether direct or indirect; others record only the disposal and basic operation costs.

Larger counties have the advantage of efficiency in scale, both in quantities received and in disposition options. Also, there are differences in service levels of the basic program, accounting differences, and errors. However, this data does provide an idea of what is possible and an incentive to contact those counties that seem to operate efficiently. According to annual reports submitted to Ecology, HHW programs spent just more than \$11.5 million in 2011 statewide (does not include CESQG costs). In 2010, HHW programs spent approximately \$8.5 million. The increase in HHW costs by approximately \$3 million is mostly due to the construction of a new facility. Figure 5.3 shows the overall breakdown of HHW costs as reported to Ecology.

**Figure 5.3
2011 HHW Costs**



HHW Pounds per Participant and per Capita

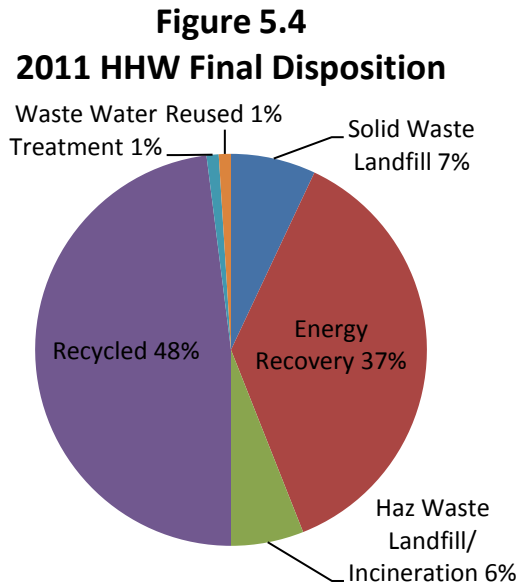
The average pounds collected statewide per participant for HHW was 53.42. Table 5.6 shows the top five counties with the highest collections of HHW in pounds per capita (not participant) for 2009-2011. Statewide, HHW pounds per capita collected was 1.62 pounds.

**Table 5.6
High Collections of HHW (No Used Oil Sites)
Pounds per Capita by County in 2009-11**

HHW 2009			HHW 2010			HHW 2011		
County	Size	Lbs	County	Size	Lbs	County	Size	Lbs
Pend Oreille	<50K	6.28	Thurston	>100K	7.68	Pend Oreille	<50K	7.30
San Juan	<50K	5.80	Cowlitz	>100K	6.65	Asotin	<50K	7.21
Thurston	>100K	5.41	Clark	>100K	5.15	Island	50-100K	6.32
Snohomish	>100K	4.61	Lincoln	<50K	4.67	Lincoln	<50K	4.84
Klickitat	<50K	4.27	Klickitat	<50K	4.25	Clark	>100K	4.80

HHW Disposition

Figure 5.4 shows the final disposition of all HHW collected throughout Washington State in 2011.



Conditionally Exempt Small Quantity Generator (CESQG)

Twenty local MRW programs collected CESQG wastes in 2011. The City of Tacoma offers CESQG's collection assistance for fluorescent lights only. Counties that sponsored CESQG waste collections are:

Asotin	Jefferson	Pacific	Whatcom
Chelan	King	Pierce	Yakima
Cowlitz	Kitsap	San Juan	
Grant	Kittitas	Skagit	
Grays Harbor	Lewis	Snohomish	
Island	Okanogan	Thurston	

The top five counties that publicly collected the most CESQG waste per capita in 2011 were:

- Lewis
- Yakima
- Skagit
- Whatcom
- Kitsap

Table 5.7 shows the total amount of CESQG waste collected publicly and privately in each county. When we take into account both public and private collection numbers, the top five counties for CESQG collections per capita in 2011 were:

- Klickitat
- Clark
- Skamania
- Spokane
- Yakima

Table 5.7
2011 Washington State Public and Private CESQG Collections
in Pounds by County

County	Publicly Collected CESQG Waste	Public CESQG Waste Collected/Capita	Privately Collected CESQG Waste	Total CESQG Waste Collected	Total CESQG Waste Collected/Capita
Adams	0	0	3,682	3,682	.19
Asotin	1,095	.05	1,573	2,668	.12
Benton	0	0	28,791	28,791	.16
Chelan	8,502	.12	17,270	25,772	.35
Clallam	0	0	26,717	26,717	.37
Clark	0	0	1,110,753	1,110,753	2.60
Columbia	0	0	792	792	.19
Cowlitz	11,122	.11	7,344	18,466	.18
Douglas	0	0	7,064	7,064	.18
Ferry	0	0	0	0	0
Franklin	0	0	15,197	15,197	.19
Garfield	0	0	267	267	.12
Grant	1,238	.01	13,790	15,028	.17
Grays Harbor	12,761	.18	8,596	21,357	.29
Island	25,139	.32	5,873	31,012	.39
Jefferson	6,272	.21	4,059	10,331	.34
King	172,727	.09	1,210,263	1,382,990	.71
Kitsap	104,052	.41	25,970	130,022	.51
Kittitas	1,264	.03	8,430	9,694	.24
Klickitat	0	0	86,013	86,013	4.20
Lewis	66,194	.87	9,505	75,699	.99
Lincoln	0	0	7,130	7,130	.67
Mason	0	0	2,968	2,968	.05
Okanogan	0	0	3,879	3,879	.09
Pacific	3,854	.18	1,073	4,927	.24
Pend Oreille	0	0	260	260	.02
Pierce*	4,568	.01	695,855	700,423	.87
San Juan^	?	?	0	?	?
Skagit	71,628	.61	24,694	96,322	.82
Skamania	0	0	22,098	22,098	1.98
Snohomish	103,623	.15	120,301	223,924	.31
Spokane	0	0	621,298	621,298	1.31
Stevens	0	0	3,763	3,763	.09
Thurston	25,010	.10	46,308	71,318	.28
Wahkiakum	0	0	3,772	3,772	.94
Walla Walla	0	0	21,114	21,114	.36
Whatcom	93,522	.46	83,308	176,830	.88
Whitman	0	0	8,332	8,332	.19
Yakima	207,064	.85	43556	250,620	1.02
Statewide Totals	919,635	.14	4,301,658	5,221,293	.77

* City of Tacoma's CESQG program collects fluorescent lighting only.

^ San Juan's CESQG totals were included in the HHW numbers and cannot be pulled out

Table 5.8 shows the total amount of CESQG waste collected publicly and privately by waste type. Excluding the “Other DW” category, the top five CESQG waste types collected in 2010 were:

- Antifreeze
- Used Oil – Contaminated (oily water, etc)
- Flammable Liquids
- Oil-Base Paint
- Paint Related Materials

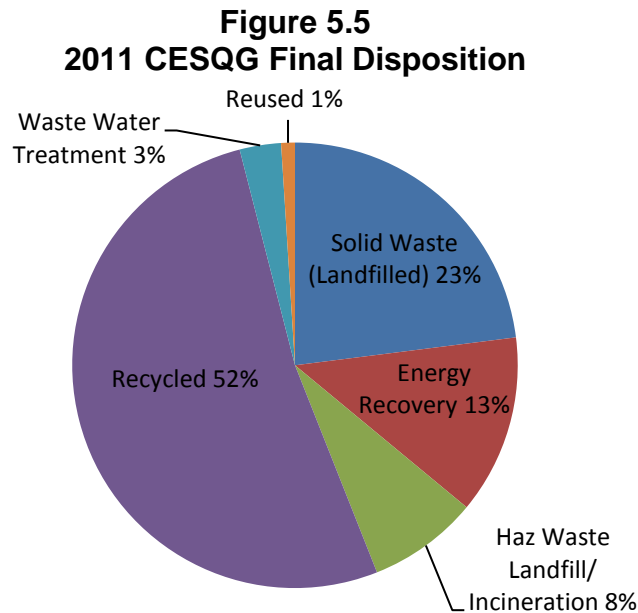
**Table 5.8
Washington State Public and Private CESQG Collections
for 2011 by Waste Type**

Waste Type	Public Collections	Private Collections	Totals
Antifreeze	17,146	1,821,783	1,838,929
Other DW	7,356	664,192	671,548
Used Oil-Cont. (oily water, etc)	20,349	316,176	336,525
Flammable Liquids	119,727	186,006	305,733
Paint - Oil Base	161,871	31,913	193,784
Paint Related Materials	46,564	200,794	247,358
Non-Regulated Solids	4,006	278,756	282,762
Non-Regulated Liquids	38,018	238,914	276,932
Mercury Collections	131,368	56,335	187,703
Used Oil - Non-Contaminated	43,768	167,452	211,220
Paint – Latex	115,471	7,211	122,682
Paint - Oil Base –Contaminated	6,358	78,216	84,574
Batteries – Auto Lead Acid	50,127	2,802	52,929
Paint - Latex Contaminated	14,397	34,912	49,309
Acids	23,134	14,214	37,348
Aerosols - Consumer Commodities	6,643	26,598	33,241
Electronics	3,272	26,904	30,176
Bases	17,768	11,094	28,862
Flammable Solids	3,254	22,240	25,494
Batteries - Alkaline/Carbon	8,381	13,622	22,003
Pesticides - Poison/Liquid	6,137	12,503	18,640
Photo/Silver Fixer	6,915	10,884	17,799
PCB Containing Light Ballasts	10,127	6,808	16,935
Batteries-Nicad/Lithium	5,077	10,456	15,533
Pesticides - Poison/Solids	12,111	3,224	15,335
Oil Stained Rags, Absorbent Pads, etc.	2,982	11,204	14,186
Flammable Liquid Poison	13,746	0	13,746
CRT's	0	12,774	12,774
Oil Filters	3,991	7,286	11,277
Non-PCB Containing Light Ballasts	8,893	1,266	10,159
Batteries - Small Lead Acid	2,468	4,751	7,219
Dioxins	0	5,500	5,500
Oxidizers	2,602	2,369	4,971
Chlorinated Solvents	194	3,953	4,147
Tar/Adhesives	2,122	1,635	3,757
Flammable Butane/Propane	111	2,599	2,710
Reactives	40	2,224	2,264
Flammable Gas Poison – Aerosols	1,509	0	1,509
Fire Extinguishers	422	1,023	1,445
Organic Peroxides	476	197	673
Compressed Gas Cylinders	49	604	653
Acids – Aerosols	376	0	376
CFC's	50	300	350
Flammable Liquid Poison – Aerosols	114	0	114
Cyanide Solutions	4	65	69
Nitrate Fertilizer	40	0	40
Totals	919,635	4,301,658	5,221,293

CESQG Disposition

Sixty-five percent of all CESQG waste collected in 2011 was either recycled or used for energy recovery. See Figure 5.5 for the complete disposition of CESQG wastes in 2011. There are several differences between final disposition of HHW and CESQG wastes worth noting:

- 37 percent of HHW was sent for energy recovery versus 13 percent of CESQG wastes.
- Less HHW waste gets landfilled (13%) compared to CESQG waste (31%).



Collection/Mobile Events

Table 5.9 represents the number of mobile and collection events held statewide from 2009-11. The number of events decreased from for the first time since we began tracking this number over the last two years (141 events in 2009 to the 120 events in 2011).

The amount of waste collected through these types of events was approximately 2 million pounds in 2011, which is approximately 8 percent of all MRW collected in 2011. The Waste Mobile in King County conducted 45 mobile events that collected a little more than 1 million pounds of MRW in 2011.

Table 5.9
2009-11 Collection/Mobile Event Collection Amounts

Type of Event	Number of Events			Pounds Collected		
	2009	2010	2011	2009	2010	2011
Mobile	99	79	73	1,574,873	1,606,286	1,130,122
Collection	42	46	47	507,311	439,572	876,410
Totals:	141	125	120	2,082,184	2,045,858	2,006,532

Used Oil Sites

In 2011, facilities and collection sites reported collecting a total of 7,857,614 pounds of used oil. Used oil collection peaked statewide (12.4 million pounds) in 2004 and has mostly steadily declined over the years. Used oil collections need to be continually monitored. There are more cars on the road than ever, so one would expect this category to keep increasing. The recent trend to change oil every 5,000 miles compared to 3,000 miles and less do-it-yourself oil changers may be impacting this category. Table 5.10 shows the six counties with the highest collections in pounds per capita by county size for 2009-11.

Table 5.10
Used Oil High Collection Counties - Pounds per Capita by County Size Collected at Facilities and Used Oil Collection Sites 2009-11

Used Oil Sites - 2009			Used Oil Sites - 2010			Used Oil Sites - 2011		
County	Size	Lbs	County	Size	Lbs	County	Size	Lbs
Garfield	<50K	8.0	Garfield	<50K	7.8	Garfield	<50K	8.0
Stevens	<50K	4.3	Skamania	<50K	4.1	Stevens	<50K	4.2
Skamania	<50K	3.8	Stevens	<50K	4.0	Skamania	<50K	4.0
Pend Oreille	<50K	3.8	Lincoln	<50K	3.8	Columbia	<50K	3.4
Wahkiakum	<50K	2.9	Wahkiakum	<50K	3.5	Lincoln	<50K	3.3
Cowlitz	50-100K	3.2	Cowlitz	50-100K	2.9	Wahkiakum	<50K	3.1

Statewide Level of Service

The Washington State Office of Financial Management reported that as of 2011, Washington State had an estimated 2,903,736 housing units². MRW Annual Reports revealed there were 205,261 participants who used the services of either an MRW collection event or MRW fixed

²This information was downloaded from Web site <http://www.ofm.wa.gov/>

facility. The actual number of households served is larger, because most used oil sites do not record or report numbers of participants. The actual number of households served is also larger, because some participants counted at events or by facilities bring HHW from multiple households.

One way to estimate the approximate number of households served is to add ten percent to the participant values. This method gives an estimate of 225,787 participants served in 2011. This number represents 7.8 percent of all households in Washington State. Table 5.11 shows the percent of participants served statewide since 2001.

**Table 5.11
Percent of Participants Served Statewide**

Year	Percent Participants Served	Year	Percent Participants Served
2001	6.1	2007	9.1
2002	6.8	2008	8.7
2003	8.9	2009	8.3
2004	8.9	2010	7.9
2005	9.0	2011	7.8
2006	8.6		

Trends in Collection

The majority of counties in Washington State have at least one fixed facility. While the number of collection events held in 2011 declined, collection events can be a useful strategy to reach residents inconveniently located from fixed facilities.

Overall, MRW collections leveled off between 2005 and 2007. 2008-11 has seen a significant reduction in the amount of MRW collected with the biggest drops in 2009 and 2011. This is most likely due to local policies of no longer collecting latex paint, a decrease in CESQG antifreeze collections by private companies, and the overall state of the economy.

Also, as product stewardship programs become more prevalent in the future, collection numbers may go down or up depending on how MRW programs are utilized by stewardship programs. The Electronics Recycling Program started collecting covered electronic products in 2009. As expected, MRW programs collected approximately 1.3 million pounds less in 2009 than 2008. MRW programs collected close to two million pounds of electronics and CRTs in 2008 compared to a little more than 700,000 pounds in 2009, a little more than 1 million pounds in 2010, and a little more than 1.2 million pounds in 2011. For more information about the E-Cycle Washington Program, see Chapter 2.

Product Stewardship

Some other methods of managing MRW are gaining wider acceptance in Washington State and across the country.

Product stewardship efforts have resulted in the statewide electronics recycling program. In 2010, the Washington State Legislature passed a product stewardship bill for mercury-containing lighting products. Paint and rechargeable batteries legislation was introduced in the 2012 legislative session and brought back again in the 2013 legislative session.

This is a positive shift in MRW management as some manufacturers are beginning to accept responsibility for the end-of-life management costs of their products versus externalizing those costs onto public agencies.

It remains to be seen what role MRW facilities will play in the future as product stewardship becomes more widespread. Will MRW facilities continue to collect products, but be reimbursed by industry for management of their products, or will MRW facilities choose to let industry find alternative locations and personnel to manage their programs?

Product stewardship principles have also guided establishment of the Take-it-Back Network in King County, Snohomish County, Pierce County, Yakima County, and the city of Tacoma.

The Take-it-Back Network was set up by local governments and consists of *“a group of retailers, repair shops, nonprofit organizations, waste haulers and recyclers that offer convenient options for recycling certain products that should not be disposed in the trash.”* Because the Take-it-Back Network is a voluntary program for businesses, it can be difficult to get data on the total amount of materials brought back to them.

