



State of Oregon  
 Department of  
 Environmental  
 Quality

# Background Paper: Plastic Recovery Assessment Project

## Overview of Plastic Recycling and Disposal Information

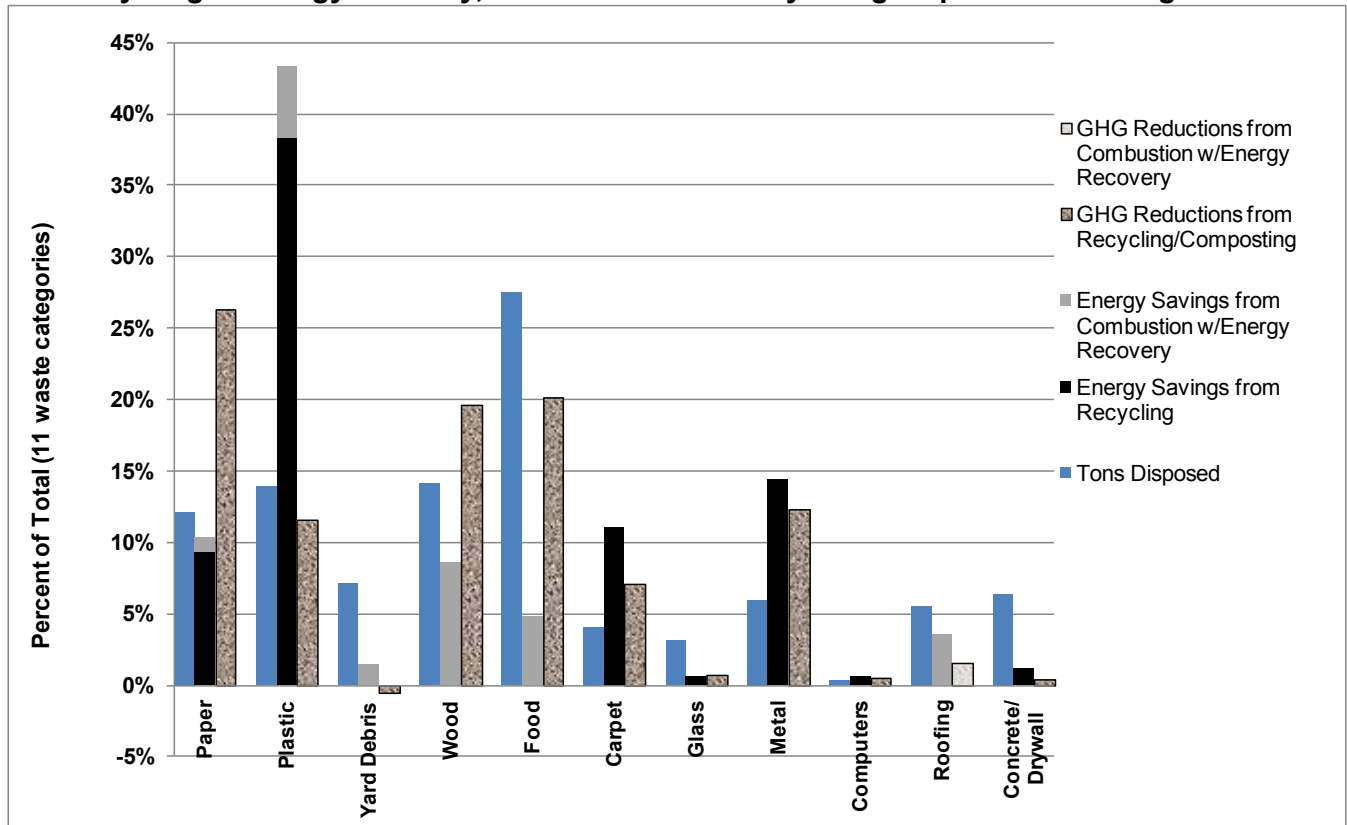
### Oregon Department of Environmental Quality and Metro

May 2013

As part of developing Oregon's Materials Management 2050 Vision and Framework for Action, the Oregon Department of Environmental Quality conducted an analysis of materials currently disposed of or underutilized in terms of potential energy and greenhouse gas savings<sup>1</sup>. Of all waste materials analyzed, plastics as a whole showed the greatest potential for energy savings and also was a significant material in terms of potential for greenhouse gas reduction through recovery. This paper provides basic background information on plastics disposal and recovery as part of a project to help Oregon and the region address the handling of plastics in a more environmentally beneficial manner.

Figure 1 below shows 11 categories of material disposed of in Oregon in terms of tonnage, potential energy savings by recycling or energy recovery, and potential greenhouse gas savings from increased recovery. Based on these findings, DEQ and Metro decided to analyze waste and recycling streams and to determine how more plastic can be recovered from the waste stream, and how that plastic can be recovered in such a way that it can be used to its highest extent. This will be a joint project with other states, recyclers, plastics manufacturers, equipment manufacturers, collectors, pyrolysis operators and others.

**Figure 1. Summary of tonnage composition and potential energy and greenhouse gas benefits from recycling or energy recovery, for materials currently being disposed from Oregon**



The purpose of this paper is to provide an initial summary of available data on quantifying current disposal and recovery of plastics in Oregon, neighboring states and nationwide, and how those plastics are utilized or could be utilized.

## Plastics covered in this report

Plastics are synthetic materials made by combining small molecules (monomers) into very large uniform molecules (polymers). Common plastics include polyethylene, polystyrene, polyvinyl chloride, polyesters, nylon, polyurethane, and many others. Certain polymers such as rubbers are not included in this background paper. Some products such as textiles and carpet may contain substantial amounts of plastics, but are only covered to a limited extent here. Pre-consumer plastic recycling is not included in this report.

## Plastics Disposal

The most direct information on disposal of plastics in Oregon comes from waste composition studies conducted by Oregon DEQ. Table 1 below shows the estimated disposal of plastic in 2009, based on DEQ's 2009-10 waste composition study. Numbers are expressed both as a percentage of total municipal and construction waste stream, and total tons of plastic.

**Table 1: Plastics in Oregon's disposed waste, 2009**

	Percent corrected	90% confidence	Tons	90% confidence	Percent uncorrected
<b>TOTAL PLASTIC</b>	<b>9.83%</b>	<b>(9.31 - 10.39%)</b>	<b>255,237</b>	<b>(241,745 - 269,837)</b>	<b>11.57%</b>
<b>Plastic Packaging</b>	<b>4.50%</b>	<b>(4.24 - 4.78%)</b>	<b>116,904</b>	<b>(110,191 - 124,207)</b>	<b>5.84%</b>
<b>Rigid Plastic Containers (RPCs)</b>	<b>1.47%</b>	<b>(1.36 - 1.58%)</b>	<b>38,100</b>	<b>(35,363 - 40,974)</b>	<b>1.86%</b>
Deposit plastic bottles	0.05%	(0.04 - 0.06%)	1,255	(1,066 - 1,473)	0.06%
Plastic deposit water	0.06%	(0.06 - 0.07%)	1,642	(1,451 - 1,853)	0.08%
No-deposit plastic beverage bots.	0.23%	(0.19 - 0.27%)	5,905	(5,042 - 6,945)	0.29%
Other plastic bottles	0.37%	(0.34 - 0.41%)	9,728	(8,850 - 10,709)	0.47%
Plastic tubs, curb-OK 8oz to 5gal	0.34%	(0.28 - 0.39%)	8,709	(7,320 - 10,235)	0.42%
Other RPCs - tubs, trays, etc.	0.42%	(0.38 - 0.46%)	10,862	(9,894 - 11,916)	0.53%
<b>Other plastic packaging</b>	<b>3.04%</b>	<b>(2.82 - 3.27%)</b>	<b>78,804</b>	<b>(73,284 - 85,010)</b>	<b>3.98%</b>
<b>Other rigid plastic packaging</b>	<b>0.80%</b>	<b>(0.71 - 0.92%)</b>	<b>20,852</b>	<b>(18,365 - 23,764)</b>	<b>0.84%</b>
Plastic film packaging - estimated	2.23%	(2.06 - 2.42%)	57,952	(53,464 - 62,891)	3.14%
<b>Plastic Products</b>	<b>5.33%</b>	<b>(4.91 - 5.77%)</b>	<b>138,334</b>	<b>(127,606 - 149,928)</b>	<b>5.73%</b>
<b>Rigid plastic products</b>	<b>4.13%</b>	<b>(3.73 - 4.56%)</b>	<b>107,102</b>	<b>(96,781 - 118,322)</b>	<b>4.04%</b>
Other rigid plastic products	3.24%	(2.86 - 3.64%)	84,182	(74,367 - 94,534)	3.24%
Mixed plastic / materials	0.88%	(0.74 - 1.04%)	22,920	(19,292 - 27,052)	0.79%
Plastic film products - estimated	1.20%	(1.11 - 1.31%)	31,231	(28,808 - 33,895)	1.69%
<i>Plastic film - combined</i>	<i>3.43%</i>	<i>(3.17 - 3.73%)</i>	<i>89,183</i>	<i>(82,272 - 96,784)</i>	<i>4.83%</i>
<i>Plastic film - "recyclable"</i>	<i>1.05%</i>	<i>(0.84 - 1.28%)</i>	<i>27,307</i>	<i>(21,786 - 33,148)</i>	<i>1.12%</i>
<i>Plastic film - "non-recyclable"</i>	<i>2.38%</i>	<i>(2.20 - 2.61%)</i>	<i>61,877</i>	<i>(57,108 - 67,824)</i>	<i>3.70%</i>
<i>All "recyclable" plastic</i>	<i>2.13%</i>	<i>(1.90 - 2.38%)</i>	<i>55,325</i>	<i>(49,316 - 61,785)</i>	<i>2.50%</i>
<i>All curbside plastic bottles</i>	<i>0.72%</i>	<i>(0.66 - 0.78%)</i>	<i>18,630</i>	<i>(17,070 - 20,282)</i>	<i>0.91%</i>
<i>All curbside plastic tubs</i>	<i>0.36%</i>	<i>(0.31 - 0.42%)</i>	<i>9,389</i>	<i>(8,016 - 10,938)</i>	<i>0.47%</i>
<i>Plastic acceptable at the curb</i>	<i>1.08%</i>	<i>(0.99 - 1.17%)</i>	<i>28,018</i>	<i>(25,819 - 30,486)</i>	<i>1.38%</i>
<b>Other products that may contain plastic:</b>					
Carpet / rugs	2.60%	(2.00 - 3.23%)	67,551	(51,969 - 83,891)	2.63%
Textiles (excluding mixed textile/material)	2.00%	(1.72 - 2.28%)	51,854	(44,615 - 59,325)	2.27%

Oregon's waste composition study reports two percentages for each material: the field weight percentage (uncorrected) and a corrected percentage based on removing the contamination in the field-sorted material. Materials in garbage are often smeared with food waste or other contaminants, or have attached lids or other materials as residue in containers. The Oregon study washed, dried, re-sorted and re-weighed some of the sorted field samples to develop correction factors that can be used to estimate the clean, dry weight of materials disposed. The contamination-corrected percentages are reported in the second column of Table 1, while the uncorrected field percentages are in the last column. Tonnages are based on the corrected "clean, dry" percentages. The differences can be substantial, especially for thin, light-weight material such as film plastic. When comparing Oregon's numbers to composition numbers from other composition studies, though, it is best to use the uncorrected field-sort numbers, since most composition studies do not include corrections for contamination in the field-sorted material.

Oregon's study generally did not break out plastics by resin, except for rigid plastic containers. For roughly 25 percent of Oregon's samples, rigid plastic containers (rigid bottles and tubs between eight ounces and five gallons) were further sorted by resin and by whether they were bottles or tubs. Table 2 shows these results, using the contamination-corrected numbers.

**Table 2: Rigid Plastic Containers in Oregon's disposed waste, 2009**

Plastic resin	As % of solid waste			Tons		
	Bottle	Tub	Total	Bottle	Tub	Total
1 PET	0.367%	0.116%	0.483%	9,533	3,016	12,549
2 HDPE	0.418%	0.166%	0.584%	10,857	4,300	15,157
3 PVC	0.004%	0.001%	0.005%	104	21	124
4 LDPE	0.002%		0.002%	55		55
5 PP	0.009%	0.137%	0.146%	235	3,567	3,802
6 PS (solid)		0.121%	0.121%		3,138	3,138
6 PS (foam)		0.076%	0.076%		1,962	1,962
7 Other	0.022%	0.010%	0.032%	583	254	837
U Unknown	0.001%	0.017%	0.018%	33	442	475
Total	0.824%	0.643%	1.467%	21,400	16,701	38,100

Washington also conducted a waste composition study in 2009. Results for plastic categories are in Table 3 below. The study was conducted using categories and methodology slightly different from Oregon's study. Table 3 gives the results for plastics categories for the Washington study. Taking into account the differences in study methodology and also some differences in programs between the two states, the results of the Washington study partly resemble the results for the Oregon field results (uncorrected for contamination), but also differ in certain materials. Table 4 compares Washington and Oregon results for film plastic vs. rigid and mixed plastics, and also plastic packaging vs. products.

Part of the difference between plastics packaging vs. product between the two states is explainable because Oregon's study put all mixed plastic/material in the "products" group, while Washington had one-third of its mixed plastic/material in the "packaging" group, but that alone does not explain all of the difference between the state results.

**Table 3: Plastics in Washington's disposed waste: 2009**

Material	Percent	+ / -	Tons
<b>Total Plastic</b>	<b>11.41%</b>		<b>568,145</b>
<b>Plastic Packaging</b>	<b>6.93%</b>		<b>345,235</b>
#1 PETE Plastic Bottles	0.67%	0.08%	33,344
#1 PETE Plastic Non-bottles	0.29%	0.05%	14,563
#2 HDPE Plastic Natural Bottles	0.25%	0.04%	12,547
#2 HDPE Plastic Colored Bottles	0.34%	0.04%	17,017
#2 HDPE Plastic Jars & Tubs	0.40%	0.36%	20,020
#3 PVC Plastic Packaging	0.01%	0.01%	710
#4 LDPE Plastic Packaging	0.01%	0.00%	329
#5 PP Plastic Packaging	0.34%	0.05%	16,732
#6 PS Plastic Packaging	0.45%	0.08%	22,579
#7 Other Plastic Packaging	0.53%	0.07%	26,282
PLA Packaging	0.01%	0.00%	312
Plastic Merchandise Bags	0.48%	0.07%	24,139
Non-industrial Packaging Film Plastic	2.03%	0.31%	101,092
Industrial Packaging Film Plastic	0.44%	0.17%	21,911
R/C Plastic Packaging	0.68%	0.77%	33,657
<b>Plastic Products</b>	<b>4.48%</b>		<b>222,910</b>
#1 PETE Plastic Products	0.00%	0.00%	172
#2 HDPE Plastic Products	0.04%	0.03%	1,883
#3 PVC Plastic Products	0.02%	0.02%	1,109
#4 LDPE Plastic Products	0.00%	0.00%	116
#5 PP Plastic Products	0.07%	0.05%	3,574
#6 PS Plastic Products	0.12%	0.05%	6,068
#7 Other Plastic Products	1.28%	0.29%	63,916
PLA Products	0.00%	0.00%	53
Plastic Garbage Bags	1.30%	0.21%	64,784
Plastic Film Products	0.27%	0.10%	13,465
R/C Plastic Products	1.36%	0.57%	67,771
Total film plastic	4.53%		225,391

**Table 4: Comparing Washington and Oregon disposed plastics: 2009**

Material	Washington	Oregon uncorrected	Oregon conf. interval
Total Plastic	11.41%	11.57%	(11.03 - 12.11%)
Film Plastic	4.53%	4.83%	(4.55 - 5.21%)
Rigid and Mixed Plastic	6.88%	6.74%	
All Plastic Packaging	6.93%	5.84%	(5.57 - 6.11%)
All Plastic Products	4.48%	5.73%	(5.31 - 6.17%)

## National Data on Plastics Generation, Recycling, and Disposal

The U.S. Environmental Protection Agency estimates plastic generation, disposal and recovery in an entirely different manner than Oregon and Washington. Instead of looking directly at disposed waste, EPA obtains data on the production of different types of durable goods, non-durable goods and packaging, and uses that to estimate the total generation of each type of plastic. It then obtains information from national organizations on the recovery of each type of material, and then subtracts recovery from generation in order to estimate disposal. For durable goods, the EPA report makes an estimate of how long the items are kept in service before being discarded. Table 5 on this and the following page shows EPA's estimates:

**Table 5: National Estimate of Plastic Generation, Disposal and Recovery in 2010.**

	Discards 1,000 tons	Recovered 1,000 tons	Generated 1,000 tons	% Plastic Generated	Percent Recovery
<b>Durable Goods</b>					
PET			160	0.52%	
HDPE			1,170	3.77%	
PVC			240	0.77%	
LDPE/LLDPE			2,000	6.44%	
PP			4,070	13.11%	
PS			580	1.87%	
Other resins			2,740	8.83%	
<b>Total durable goods</b>	<b>10,260</b>	<b>700</b>	<b>10,960</b>	<b>35.31%</b>	<b>6.4%</b>
<b>Non-durable goods</b>					
Plastic plates, cups*					
LDPE/LLDPE			20	0.06%	
PLA			10	0.03%	
PP			140	0.45%	
PS			720	2.32%	
<b>Subtotal plates, cups</b>	<b>890</b>	<b>-</b>	<b>890</b>	<b>2.87%</b>	<b>-</b>
<b>Trash bags</b>					
HDPE			230	0.74%	
LDPE/LLDPE			750	2.42%	
<b>Subtotal trash bags</b>	<b>980</b>	<b>-</b>	<b>980</b>	<b>3.16%</b>	<b>-</b>
<b>All other nondurables</b>					
PET			440	1.42%	
HDPE			510	1.64%	
PVC			270	0.87%	
LDPE/LLDPE			1,180	3.80%	
PLA			30	0.10%	
PP			1,290	4.16%	
PS			210	0.68%	
Other resins			600	1.93%	
<b>Subtotal other nondurables</b>	<b>4,530</b>	<b>-</b>	<b>4,530</b>	<b>14.59%</b>	<b>-</b>
<b>Total nondurable goods</b>					
PET			440	1.42%	
HDPE			740	2.38%	
PVC			270	0.87%	
LDPE/LLDPE			1,950	6.28%	
PLA			40	0.13%	
PP			1,430	4.61%	
PS			930	3.00%	
Other resins			600	1.93%	
<b>Subtotal: All nondurable goods</b>	<b>6,400</b>	<b>-</b>	<b>6,400</b>	<b>20.62%</b>	<b>-</b>

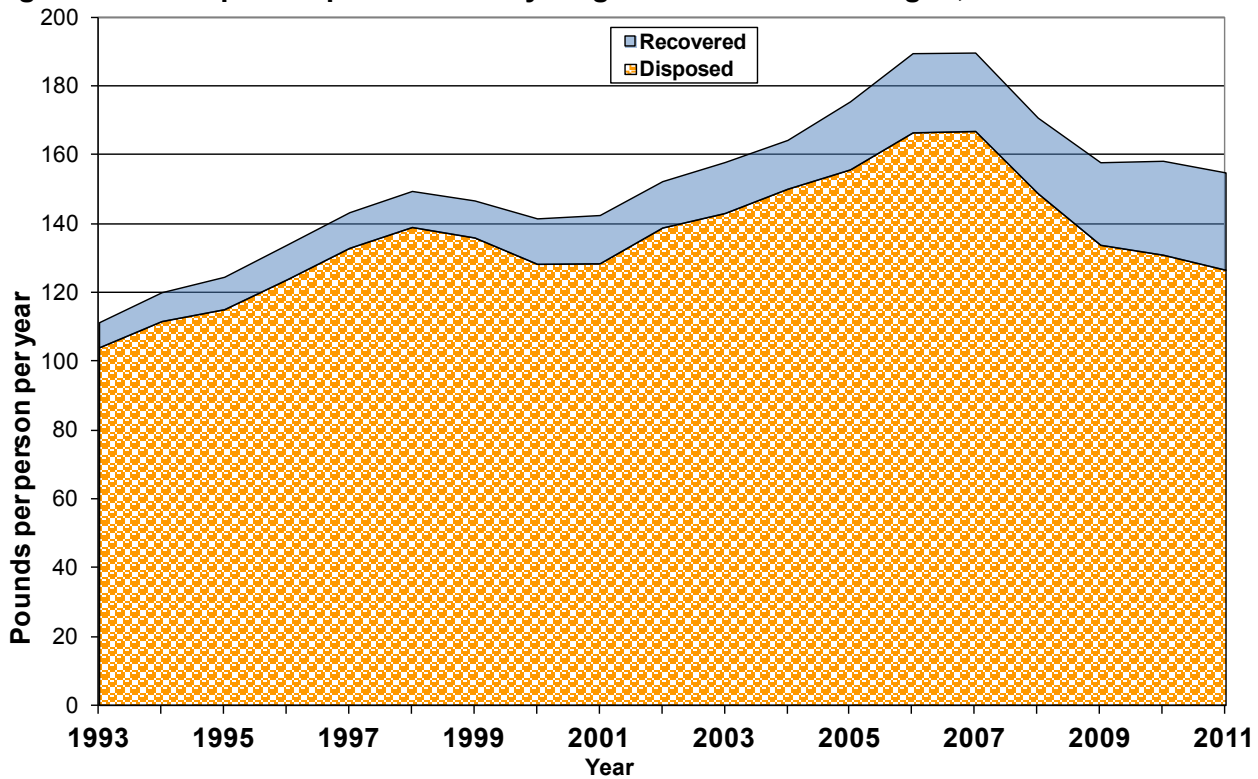
Table 5 continued

	Discards 1,000 tons	Recovered 1,000 tons	Generated 1,000 tons	Percent of Plastic Generated	Percent Recovery
<b>Plastic Containers and Packaging</b>					
<b>Bottles and Jars</b>					
PET	1,890	780	2,670	8.60%	29.2%
HDPE natural bottles	580	220	800	2.58%	27.5%
HDPE other containers	1,170	280	1,450	4.67%	19.3%
PVC	30	-	30	0.10%	-
LDPE/LLDPE	30	-	30	0.10%	-
PP	220	20	240	0.77%	8.3%
PS	80	-	80	0.26%	-
<b>subtotal bottle and containers</b>	<b>4,000</b>	<b>1,300</b>	<b>5,300</b>	<b>17.07%</b>	<b>24.5%</b>
<b>Bags, sacks &amp; wraps</b>					
HDPE	660	30	690	2.22%	4.3%
PVC	50	-	50	0.16%	-
LDPE/LLDPE	1,960	420	2,380	7.67%	17.6%
PP	680	-	680	2.19%	-
PS	130	-	130	0.42%	-
<b>subtotal bags, sacks &amp; wraps</b>	<b>3,480</b>	<b>450</b>	<b>3,930</b>	<b>12.66%</b>	<b>11.5%</b>
<b>Other plastic packaging</b>					
PET	710	-	710	2.29%	-
HDPE	560	40	600	1.93%	6.7%
PVC	320	-	320	1.03%	-
LDPE/LLDPE	1,070	-	1,070	3.45%	-
PLA	10	-	10	0.03%	-
PP	1,090	20	1,110	3.58%	1.8%
PS	320	20	340	1.10%	5.9%
Other resins	270	20	290	0.93%	6.9%
<b>subtotal other packaging</b>	<b>4,350</b>	<b>100</b>	<b>4,450</b>	<b>14.34%</b>	<b>2.2%</b>
<b>Total containers and packaging</b>					
PET	2,600	780	3,380	10.89%	23.1%
HDPE	2,970	570	3,540	11.40%	16.1%
PVC	400	-	400	1.29%	-
LDPE/LLDPE	3,060	420	3,480	11.21%	12.1%
PLA	10	-	10	0.03%	-
PP	1,990	40	2,030	6.54%	2.0%
PS	530	20	550	1.77%	3.6%
Other resins	270	20	290	0.93%	6.9%
<b>Subtotal containers &amp; packaging</b>	<b>11,830</b>	<b>1,850</b>	<b>13,680</b>	<b>44.07%</b>	<b>13.5%</b>
<b>All plastics</b>					
PET	3,200	780	3,980	12.82%	19.6%
HDPE	4,880	570	5,450	17.56%	10.5%
PVC	910	-	910	2.93%	-
LDPE/LLDPE	7,010	420	7,430	23.94%	5.7%
PLA	50	-	50	0.16%	-
PP	7,490	40	7,530	24.26%	0.5%
PS	2,040	20	2,060	6.64%	1.0%
Other resins	2,910	720	3,630	11.69%	19.8%
<b>Total all plastics</b>	<b>28,490</b>	<b>2,550</b>	<b>31,040</b>	<b>100.00%</b>	<b>8.2%</b>

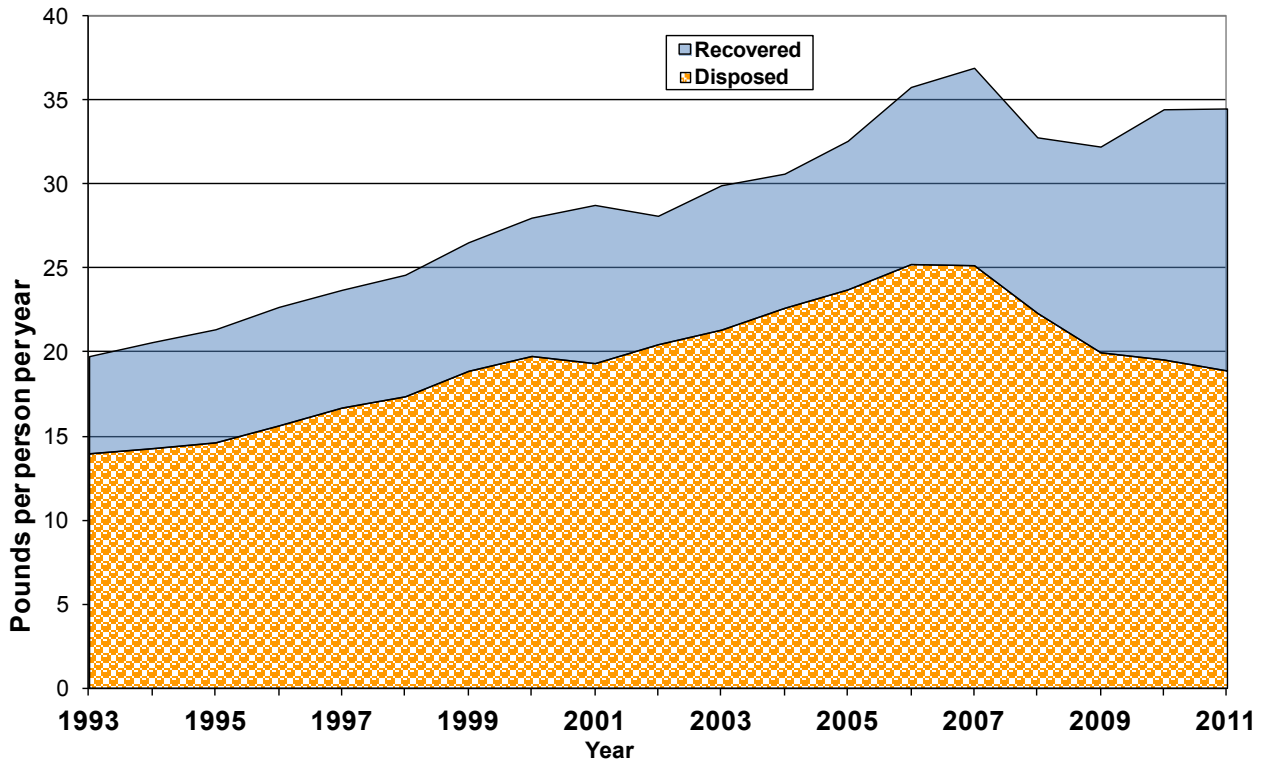
## Changes in recycling and disposal over time

The following four figures show estimates of per-capita recycling and disposal of plastics in Oregon since 1993. Figure 2 is for all plastics combined, while figures 3 through 5 separately break out rigid plastic containers, film plastic and other plastic. "Film plastic" includes bags, wraps and plastic tarps and sheets. The estimates are based on combined data from Oregon's waste composition studies, disposal tonnage reporting, and the annual Oregon material recovery survey. These numbers show that plastics rose fairly regularly in the waste stream until the 2008 recession, when they fell. Surprisingly, though, film plastic only showed small increases during the period prior to 2008, on a weigh basis.

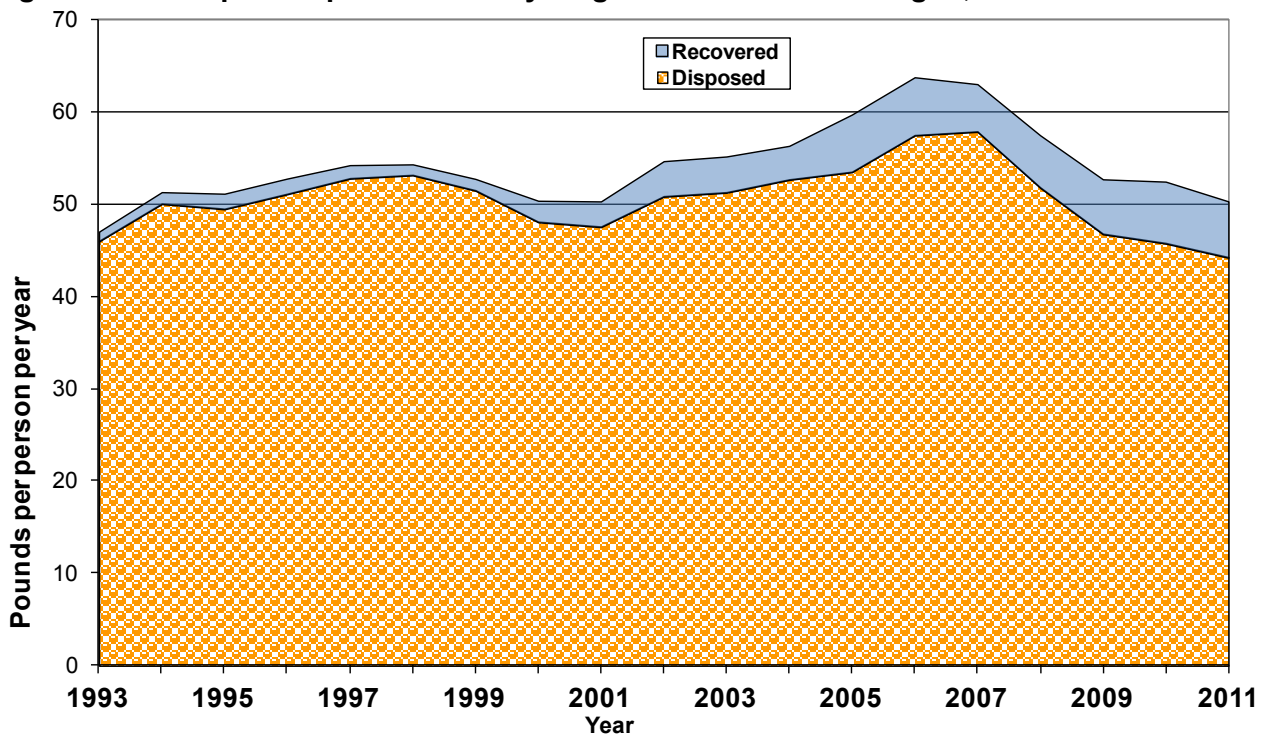
**Figure 2. Per-capita Disposal and Recycling of All Plastics in Oregon, 1993-2011**



**Figure 3. Per-capita Disposal and Recycling of Rigid Plastic Containers in Oregon, 1993-2011**

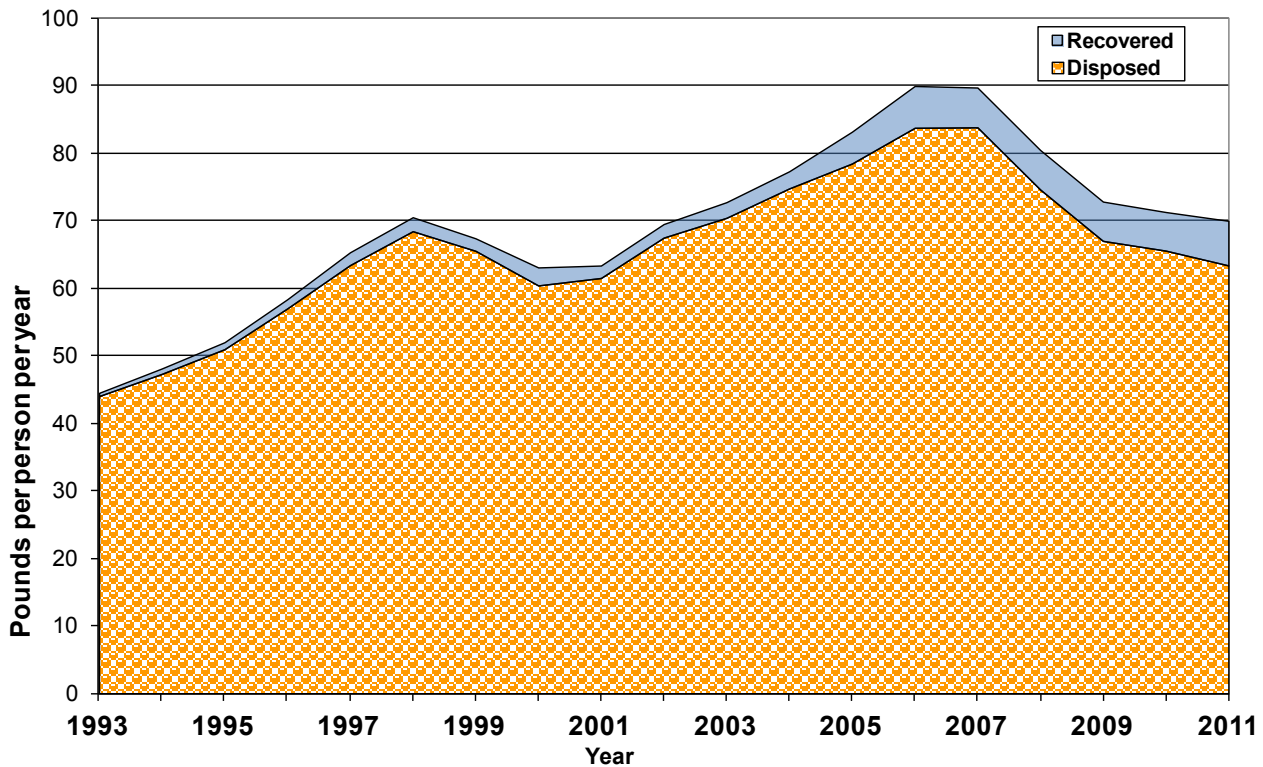


**Figure 4. Per-capita Disposal and Recycling of Film Plastic in Oregon, 1993-2011**





**Figure 5. Per-capita Disposal and Recycling of Other Plastic in Oregon, 1993-2011**  
(excludes rigid plastic containers and film plastic)



## Oregon Plastic Collection and Recycling Programs

Oregon’s first curbside plastics collection programs began in the early 1980s, collecting mainly milk jugs. Plastic soft drink bottles were also first sold in early 1980s, were collected under the Oregon Bottle Bill and recycled right from the beginning. The 1991 Oregon Recycling Act gave major impetus to plastics recycling, through requirements that rigid plastic containers sold in Oregon must either be made from at least 25 percent post-consumer recycled content, be made from plastic that was being recycled at a rate of at least 25 percent, or be made to be refillable. Many curbside recycling programs were initially reluctant to expand their collection to include all bottles or all plastic containers due to fear of not being able to market the mixed plastic. To provide end-market assurance, the American Plastics Council stepped in and installed a \$1 million plastic bottle sorting facility at Garten Foundation in Salem in 1995, and also provided an assured floor price for the plastic recycled at that facility. With this assurance, mixed bottle collection quickly spread to almost all Oregon curbside programs, and many of these programs found their own markets for selling the collected material.

In the 1990s, recyclables were collected separately curbside in small bins or in containers provided by customers, and were stored in separate containers on the recycling trucks. From 2000 through 2008, many programs switched to large roll carts to collect materials commingled together, and also began adding tubs and pails to collection lists in addition to mixed plastic bottles. Experience proved that these new collection programs collected substantially more plastic than was true for separate collection. Portland was the last major jurisdiction in Oregon to complete the shift to using roll carts instead of bins to collect plastic, implementing this citywide in 2008.

One other change in plastic collection came when water bottles were added to the bottle bill, effective on Jan. 1, 2009. Water bottles had a relatively poor recycling rate under curbside programs, but PET recycling was 80 percent higher under the bottle bill in 2009 as compared to 2008, before water bottles were added. In spite of moving water bottles into the bottle bill and thus partly out of curbside collection, the plastic collected curbside in 2009 was also substantially higher than 2008, probably in part due to the full implementation of commingled collection of materials in roll carts by 2009.

Table 6 below shows the total amount of all post-consumer plastics combined that were collected for recycling in Oregon since 1992, by collection method. The first three columns after the "year" column represent collections by solid waste collection service providers and disposal site operators, providing services generally mandated under Oregon's Recycling Opportunity Act. The next two columns generally represent private companies not in the waste collection business, providing recycling collection either under the bottle bill (beverage distributors) or as private recycling firms. However, because the source of materials is not always clear, some of the tons reported in the "All other and unallocated" column probably are from one of the other columns. What can be seen in Table 6 is a substantial rise in recycling collection over time, particularly for curbside programs. Also, a substantial amount of plastic is recycled directly by private recyclers such as Agri-Plas, International Paper, Trex, Clayton Ward, Denton Plastics and some of the facilities that also process commingled recycling from curbside programs.

**Table 6. Collection of all plastics (combined) by collection method in Oregon**

	Curbside & multifamily	Commercial collection by haulers	Depots/ disposal sites	Beverage Distributors	All other and unallocated	Total plastic
1992	946	1,829	587	in "other"	6,183	9,544
1993	1,346	138	561	in "other"	9,109	11,153
1994	1,379	207	497	in "other"	12,468	14,552
1995	1,811	217	343	in "other"	11,729	14,099
1996	1,166	181	327	in "other"	13,587	15,261
1997	1,601	506	465	in "other"	12,854	15,425
1998	2,261	1,405	408	in "other"	11,494	15,569
1999	3,857	2,243	664	in "other"	10,101	16,865
2000	4,607	1,977	1,251	in "other"	13,937	21,772
2001	4,528	2,538	898	in "other"	15,321	23,285
2002	4,480	2,018	885	4,725	10,817	22,925
2003	5,410	2,184	1,121	4,833	11,955	25,503
2004	5,448	2,360	1,011	3,986	12,359	25,165
2005	6,629	2,403	1,184	4,273	21,048	35,537
2006	6,579	2,610	1,780	3,669	25,821	40,459
2007	10,310	3,988	1,571	3,470	21,777	41,116
2008	8,588	3,680	2,075	3,218	22,270	39,831
2009	10,777	3,894	2,068	5,799	21,466	44,004
2010	12,917	4,671	3,045	6,691	23,133	50,456
2011	11,691	4,509	2,519	6,510	26,784	52,014

Tables 7 through 9 show separately the collection of rigid plastic containers, film plastic and other plastic separately reported by collection method. From these tables, it can be seen that rigid plastic containers are predominately collected through curbside and other commingled collection programs and also through the Oregon Bottle Bill. On the other hand, film plastic and other plastic are collected predominantly through private recycling collection. Most Oregon commingled recycling programs collect only rigid plastic containers and do not collect film plastic or other plastic.

**Table 7. Rigid plastic containers recycled - by collection method**

	Curbside & multifamily	Commercial collection	Depots/ disposal sites	Beverage Distributors	All other and unallocated	Total rigid plastic containers
2000	4,544	1,316	1,223	in "other"	7,048	14,130
2001	4,411	1,932	827	in "other"	9,182	16,352
2002	4,408	1,244	873	4,410	2,461	13,396
2003	5,336	1,603	999	4,447	2,826	15,211
2004	5,274	1,628	837	3,748	2,811	14,297
2005	6,123	1,529	1,033	3,912	3,450	16,047
2006	6,138	1,864	1,192	3,648	6,598	19,439
2007	9,181	2,854	1,326	3,451	5,178	21,990
2008	6,783	2,452	1,665	3,218	5,673	19,790
2009	8,399	2,707	1,513	5,799	4,959	23,377
2010	11,677	3,741	2,141	6,691	4,349	28,599
2011	10,312	3,066	1,590	6,510	8,622	30,100

**Table 8. Plastic film recycled - by collection method**

	Curbside & multifamily	Commercial collection	Depots/ disposal sites	Beverage Distributors	All other and unallocated	Total film plastic
2000	64	587	28	0	3,245	3,924
2001	115	606	2	0	4,102	4,825
2002	72	705	11	315	5,622	6,724
2003	21	515	29	386	5,975	6,927
2004	171	731	50	238	5,390	6,581
2005	498	299	25	361	10,115	11,297
2006	257	557	67	21	10,691	11,594
2007	545	605	90	19	8,366	9,625
2008	616	630	128	0	9,365	10,739
2009	938	707	250	0	9,432	11,327
2010	1,236	817	269	0	10,518	12,839
2011	963	839	326	0	9,618	11,747

**Table 9 - "Other plastic" recycled - by collection method**

	Curbside & multifamily	Commercial collection	Depots/ disposal sites	Beverage Distributors	All other and unallocated	Total "other plastic"
2000	0	74	0	0	3,644	3,718
2001	1	0	69	0	1,935	2,005
2002	0	69	1	1	2,734	2,804
2003	52	66	93	0	3,154	3,365
2004	3	1	125	0	4,158	4,287
2005	8	574	126	0	7,484	8,193
2006	185	189	520	0	8,532	9,426
2007	584	528	155	0	8,233	9,500
2008	1,189	597	283	0	7,233	9,302
2009	1,440	480	305	0	7,075	9,299
2010	4	113	635	0	8,267	9,019
2011	416	604	603	0	8,544	10,167

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<sup>1</sup> <http://www.deq.state.or.us/lq/pubs/docs/sw/2050vision/BriefingPaperMaterialRecovery.pdf>

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