



2002 Oregon Solid Waste Characterization and Composition



Oregon Solid Waste Characterization and Composition

2002

prepared by:

Department of Environmental Quality

co-sponsors:

**Metro
City of Eugene
Marion County**

Contractor: Sky Valley Associates



Final release date: April 20, 2004
Edition 1.2

Table of Contents

Page	Contents
1	Quantity of Waste Disposed
3	Methodology
6	Composition Results
8	Paper
10	Plastic
12	Construction/Demolition Materials
15	Yard Debris
18	Food Waste and Other Compostables
19	Computers and Electronics
21	Beverage Containers
24	Tires
25	Recovery Rate Summary
27	Acknowledgements

Appendix A: Main Data Tables

Table A1	Tons Disposed by Substream: 2002
Table A2	Oregon Statewide Waste Composition 2002 (field and contamination-corrected)
Table A3	Tons of Material Disposed Statewide (with contamination correction)
Table A4	Disposal and Recovery of Selected Materials
Table A5	Metro and Rest of Oregon Composition 2002 (field data only)
Table A6	Statewide Waste Composition by Vehicle Source (field data only)
Table A7	Confidence Intervals for Vehicle Sources Statewide 2002 (field data only)
Table A8	Statewide Changes in Waste Composition (field data only)
Table A9	Metro Changes in Waste Composition (field data only)
Table A10	Rest of Oregon Changes in Waste Composition (field data only)
Table A11	Metro Waste Composition by Vehicle Source 2002 (field data only)
Table A12	Confidence Intervals for Metro Vehicle Sources 2002 (field data only)
Table A13	Metro Waste Composition 2002 (field data and contamination correction)
Table A14	Metro 2002 Toms of Material Disposed (with contamination correction)
Table A15	Rest of Oregon Waste Composition by Vehicle Source 2002 (field data only)
Table A16	Confidence Intervals for Rest of Oregon Vehicle Sources 2002 (field data only)
Table A17	Beverage Containers per Ton Disposed - 2002, 2000, and 1998
Table A18	Beverage Containers Disposed (Millions) - 2002, 2000, and 1998

Appendix B: Methodology - Disposal Site Waste Composition (Field Data)

Appendix C: Methodology for Contamination Analysis

Appendix D: Material Categories for the 2002 Waste Composition Study

Cover: Sky Valley Associates weighs out nearly 100 pounds of food waste from Sample 874, collected from a residential rear-load garbage truck from Portland on December 3, 2002.

Oregon Solid Waste Characterization and Composition

2002

More than 2,700,000 tons of municipal solid waste were generated in Oregon and then disposed in landfills or solid waste burning facilities in 2002. Most of these wastes were disposed in Oregon, with only about 19,000 tons being exported to other states for disposal. Additionally, another 970,000 tons of industrial waste, rubble, contaminated soils, and other special wastes were generated and disposed in Oregon. Oregon also imported about 1,300,000 tons of municipal solid waste and 170,000 tons of industrial and other waste from other states, giving an overall total of more than 5 million tons of waste buried in landfills or burned.

This report provides information on the quantity and composition of the solid waste generated in Oregon, concentrating on municipal solid wastes. It is based primarily on a waste composition study jointly funded by the Oregon Department of Environmental Quality (DEQ), Metro, Marion County, and the City of Eugene, along with disposal quantification information reported to the study sponsors by disposal sites throughout the state. Sky Valley Associates of Monroe, Washington, and Oregon City, Oregon, carried out the fieldwork using methodology jointly developed by DEQ, Sky Valley Associates, and previous contractors. Disposal site operators and solid waste collection companies also provided extensive information and assistance for the study. DEQ carried out the analysis of waste composition and quantification data and produced the final report.

This report includes the following:

- The tons of solid waste disposed in Oregon or generated in Oregon and disposed out-of-state, by source and by type of disposal facility.
- The composition of municipal solid waste disposed, based on a traditional field waste composition study that involved collecting and sorting 844 samples of solid waste collected from 55 disposal sites in 25 counties throughout calendar year 2002. This composition is referred to as "field" composition or "dirty, wet" composition, as materials sorted in the field are often wet or contaminated with other materials that are impractical to separate under field sorting conditions.
- The results of contamination analysis of selected samples taken from the field composition work, designed to remove the effects of contamination and absorption of water from wet waste or external water into dry wastes. This was done to better estimate the "clean, dry" weight of each type of waste as generated in Oregon. This analysis was referred to in past studies as "detailed sample analysis."
- Comparisons of the results of this study to four previous studies conducted by DEQ since 1992, and by Metro in the greater Portland area in 1993/94, each conducted using similar methodology to the field composition portion of this study.
- Comparisons of the composition of municipal wastes disposed to the composition of materials recovered in Oregon for recycling, composting, or energy recovery, based on the 2002 Oregon Material Recovery Survey conducted and published by DEQ:
(<http://www.deq.state.or.us/wmc/solwaste/documents/2002MRSReport.pdf>) .

Quantity of Waste Disposed

The tonnages reported in Table 1 are based on reports to DEQ by disposal sites and waste exporters in Oregon. They include waste disposed of in permitted landfills as well as Oregon's only waste-to-energy facility and a waste incinerator. A limited amount of septage sludge spread on land under DEQ solid waste

permits is included, but agricultural wastes, treated sewage sludge, and paper mill sludge applied to land for beneficial purposes are not included.

Table 1. Tons of Solid Waste Disposed in Oregon or Exported from Oregon in 2002

	Municipal Solid Waste Landfills	Municipal Burners/ Incinerators	Industrial Solid Waste Landfills	Thermal Treatment Plants	Sludge Lagoon/ Spreading Sites	Solid Waste Exported Out-of-state	Total
Oregon-generated wastes							
Municipal waste****	2,514,524	201,301	12,326			19,324	2,747,475
Alternative daily cover**	94,071						94,071
Asbestos	5,895		25,000			2	30,897
Contaminated soils**	222,368			45,494		9,927	277,789
Inerts - other soil	16,399		37,592			4,676	58,667
Septage sludge	5,589				19,610		25,198
Industrial & other wastes	316,320	6,065	174,851			17,286	514,522
Total Oregon waste	3,175,165	207,367	249,769	45,494	19,610	51,215	3,748,620
Out-of-state generated wastes							
Municipal & unspecified wastes	1,423,270	140	17,703				1,441,113
Alternative daily cover**	42,579						42,579
Asbestos	1,789						1,789
Contaminated soils**	246,704						246,704
Total out-of-state	1,714,342	140	17,703	-	-	-	1,732,185
Total generated and/or disposed in Oregon	4,889,507	207,507	267,472	45,494	19,610	51,215	5,480,804
Total disposed in Oregon	4,889,507	207,507	267,472	45,494	19,610		5,429,590

* Tires disposed at the Crook County tire landfill.

** Petroleum-contaminated soil is included under "contaminated soils" even when used as daily cover.

*** Includes 466 tons of exported waste not reported to DEQ but reported to Washington Department of Ecology, plus 189.5 tons of tires that were inadvertently left off the 2002 Oregon Material Recovery Survey report

**** The 2002 Oregon material recovery survey reported 2,723,365 tons of municipal waste disposed. The numbers published here differ due to the following:

- 24,227 tons of waste that were burned in the Marion County Energy Recovery Facility were counted as recovered material under ORS459A.010 in the material recovery survey, but counted as disposed here.
- 976 tons of industrial sand inadvertently counted as municipal waste in the material recovery survey, but as inert material here.
- 343 tons of industrial waste that Lane County double- reported both as municipal and industrial waste at Glenwood and Short Mountain. This has been corrected here.
- 189.5 tons of tires shipped to the Roosevelt landfill that were inadvertently omitted from the material recovery survey
- 466 tons of exported MSW not reported to DEQ but reported received by landfill in other states.

Composition: Field Sampling at Municipal Solid Waste Disposal Sites

Current Study in Relationship to Previous Studies:

DEQ has conducted three earlier composition studies using the same general methodology as the current study. These studies were conducted in 1992/93, in 1994/95, 1998, and in 2000. The first two covered all areas of Oregon outside the three Portland Metro-area counties. Metro conducted a similar study in 1993/94 using the same methodology as DEQ, and joined with DEQ in conducting all studies starting in 1998. There have been minor changes in categories used over the years, mostly involving splitting a single category into two or more subcategories. Also, contamination analysis (detailed sample analysis) was not done in the DEQ 1992/93 study or the Metro 1993/94 study. Metro also did two previous studies, in 1986/87 and 1989/90. However, the material categories used in these earlier studies do not match closely with the later studies, making comparisons difficult.

This study is the second half of a combined 2000/2002 waste composition study. As with all sampling studies, the precision of the results depends on the number of samples collected. DEQ normally aims for a level of precision such that for common materials like newspaper or plastic containers, we can estimate the tonnage being disposed to within plus or minus ten percent (at the 90% confidence level). Based on data from past studies, it takes roughly 600 samples to achieve this level of precision. However, doing a 600-sample study every two years is fairly expensive. To conserve money, DEQ and Metro decided to divide the study into two 2-year periods, and collect roughly half the samples during each period. A 300-sample "half-study" should achieve a precision level of roughly plus or minus 14% for disposal tonnage of some common materials, while the combined 2000/2002 results, based on 600 samples, should achieve a plus or minus 10% precision. For the 2002 part of the study, DEQ collected 300 disposal site samples statewide, of which 74 were from the Metro tri-county area. Metro funded an additional 225 Metro-area samples, bringing the Metro total up to 300 samples. In addition, DEQ funded 50 samples of residual waste from mixed solid waste processing facilities, and Metro funded an additional 16 samples from these facilities. Marion County and the City of Eugene also joined in the 2002 study, paying for sufficient numbers of field samples to achieve at least 150 samples within each of their jurisdictions. These extra samples also helped increase the precision of the statewide composition estimates developed in this study.

Methodology:

Field sampling at disposal sites involves selecting unbiased, representative loads of waste, pulling a sample weighing about 200 pounds (100 kg) from each load, and sorting the sample into different material categories. Each material category is then weighed and disposed or recycled.

A brief outline of the methodology is included below. Appendices B and C give the details of the methodology used in this study, and Appendix D gives definitions for the 84 material categories used.

Geographic Areas and Waste Substreams Sampled

In each of the 4 targeted areas for waste composition (Metro, Marion County, Eugene, and "rest of Oregon"), samples were collected from a large number of disposal sites in a manner that was representative of the overall waste disposed in each area. Results for Marion County and the City of Eugene have been analyzed separately and published as supplements to the overall 2002 study, but in this report their results are combined with results from other parts of Oregon outside the Metro area, and are not reported separately.

Within each geographic area, waste samples were selected from eight "waste substreams":

- Residential route garbage trucks. At least 90% of the waste on the truck is from single-family or multifamily residences.
- Commercial route garbage trucks. At least 90% of the waste on the truck is from businesses.
- Mixed route garbage trucks. Contains a mixture of residential and commercial wastes. Frequently the residential waste is mainly from apartments or other multifamily residences, since apartments often have large garbage containers that are serviced by the commercial route trucks.
- Compacting drop boxes. Commonly used by individual grocery stores, malls, or other retail operations.
- Loose drop boxes. Commonly used for construction and demolition and for "yard-cleaning" activities.
- Self-haul. Any wastes hauled directly to the transfer station or landfill by the person or business that generated the waste.
- Mixed Solid Waste Processing Facility (MSWPF) residual wastes. These are the wastes left over for disposal after recoverable materials have been removed at the facility.
- Special Purpose Landfills, as described below.

Most of the samples were collected either at general-purpose landfills or at transfer stations that ship all their waste to general purpose landfills. However, in the Metro area and the Willamette Valley, significant amounts of waste are taken to limited-purpose landfills. These landfills are prohibited from accepting food and other putrescible wastes, and thus should differ significantly in waste composition from samples taken from waste bound to a general-purpose landfill. In the Metro region, wastes arriving at limited purpose landfills were divided into two waste substreams:

- Hauler loads (mainly loose drop boxes) going to special-purpose landfills, and
- Self-haul loads going to special purpose landfills.

In the rest of the state, very few mixed-waste hauler loads are taken to special purpose landfills, so a single waste substream was designated for all (mainly self-haul) loads.

With the exception of the MSWPF samples and samples from Marion County transfer stations that collect only self-haul waste, loads arriving in transfer trailers were not sampled. In areas where significant amounts of waste pass through transfer stations on their way to final disposal, sampling was done directly at the transfer stations rather than from the transfer trailers arriving at the landfill. This was done to distinguish individual wastes from the individual substreams listed above. For MSWPFs however, it seemed more appropriate to sample the residual waste going to disposal after recoverable materials had been removed, rather than the waste arriving at the facility. For the Marion County transfer stations, some "high-recoverable" waste is first taken to a processing facility where recoverable materials are removed, so sampling had to be done instead at the point where the waste was transferred to the Marion County Energy Recovery Facility in order to accurately represent the waste being disposed.

Table 2 shows the total number of samples collected and sorted for each geographic area and for each waste substream.

Table 2 Number of Composition Samples Collected in 2002, by Waste Substream.

Waste substream	Metro	Marion County	City of Eugene	Rest of Oregon	Total
Residential Routes	52	28	38	24	142
Commercial Routes	33	16	18	20	87
Mixed Routes	43	22	16	20	101
Compacting Drop Boxes	30	16	4	11	61
Loose Drop Boxes	43	21	4	30	98
Self-Haul	49	38	63	71	221
MSWPF residue	50	8	8	0	66
Hauler: Limited Purpose LF	22	0	0	0	22
Self-Haul: Limited Purpose LF	27	9	10	0	46
Total	349	158	161	176	844

Within each geographic area, the number of samples collected from each waste substream depended on two factors:

- The absolute quantity of waste disposed from each substream, and
- The expected variability of waste in the substream, based on past composition studies.

Some waste streams such as residential garbage truck wastes are fairly homogeneous from load to load. In contrast, loose drop box loads and self-haul loads can be highly variable. Frequently, drop box and self haul loads might consist mainly of just a few materials. Whole loads of just roofing, gypsum wallboard, and yard debris are fairly common, while other loads might contain just residential garbage (from people without garbage collection service) or a variety of materials from cleaning out a storage room, a back yard, or an office space. To obtain a more precise estimate of overall waste composition, these highly variable waste substreams must be "oversampled" relative to their total proportion of the waste disposed.

Analysis by Waste Substream

To determine the overall composition of waste statewide and in the different geographic areas, the following method was used to combine data from the samples taken in different areas, from different waste substreams, in different seasons:

Step 1. The tonnage of waste disposed during 2002 was determined for each geographic area, waste substream, and season. Data on waste by geographic area and by season were directly available based on reports by disposal sites to DEQ. In many cases, waste quantities by substream were available from disposal transaction data at larger landfills, but in other cases estimates had to be made based on information from disposal sites and garbage collection companies.

Step 2. The absolute tonnage for each area/waste substream/season was divided by the total tonnage disposed, giving the percentage of waste disposed in each of the above categories. The tonnages are given in Appendix A table A1.

Step 3. The average composition for each area/waste substream/quarter was calculated by averaging the composition of samples taken from that area/waste substream/quarter.

Step 4. The overall composition of sampled waste was determined by taking a weighted average of the compositions calculated in step 3 above, using the percentages determined in step 2 above as the weighting factors.

Four material-specific waste streams were not included in sampling in this study, since the composition of these specific streams is already known. Largest of these is 27,379 tons of shredded and oversized tires landfilled at a number of sites in and out of Oregon during 2002. Second-largest is 3,847 tons of gypsum wallboard delivered in 2002 to the Browns Island Landfill in Marion County. The other two material-specific waste streams were medical waste and dead animals. Generally, the composition results presented in tables in this report do not include these material-specific waste streams, unless specified in the table.

Contamination Analysis

Materials that are relatively clean and dry when first thrown into a garbage can may not end up that way by the time they reach the disposal site. Compacting garbage trucks compress the different wastes together, causing wet food waste to become absorbed in or smeared onto other types of waste, making it difficult to separate and identify individual wastes. In addition, external moisture such as rain water can get into the waste, making the absorbent materials heavier than they were when first disposed.

The purpose of contamination analysis is to better estimate the "clean, as generated" weight of materials being disposed, as opposed to the "dirty, wet" weight of materials as weighed in the field waste composition sorting. Forty field samples were randomly selected for contamination analysis. After these samples were sorted at the disposal sites, the individual sorted materials were bagged and brought back to a facility where each bag of material was carefully re-sorted to remove and weigh contaminants, further cleaned and air-dried, and re-weighed. This allowed us to estimate, for each separate "target" material sorted in the field:

- The amount of water that had been absorbed into the material,
- The amount of other material contaminating each "target" material, and
- The amount of each "target" material that ends up as a contaminant in other sorted material categories due either to adherence of the materials or sorting error.

For rigid plastic containers, an additional 108 samples were selected for contamination analysis, resulting in about one-quarter of all field samples having contamination analysis done for plastic containers. Special attention was given to these containers for two reasons:

- We wanted more precise information on rigid plastic containers for better estimating the recycling rate for these types of plastics as specified under Oregon Revised Statutes 459A.657.
- Detailed samples of rigid plastic containers were further sorted by resin type and by container type (bottle versus tub/pail) - a level of detail that is difficult to accurately determine in field sorting.

A complete description of the methodology used for contamination analysis is given in Appendix C. This appendix includes a description of how the sorting and processing of samples was done, how the data were analyzed, a discussion of the precision of the results, and an analysis of the optimal amount of effort to be devoted to field sorting of samples versus contamination analysis in order to maximize the overall precision of the results.

To our knowledge, no other disposal site waste composition study has undertaken and published similar contamination analysis. Results from the three most recent Oregon studies show just how important such contamination analysis can be in determining the overall amount of materials disposed. For example, based on field data alone for rigid plastic containers in the current study, the estimated amount of plastic containers disposed from Oregon sources in 2002 was 45,945 tons, with a 90% confidence interval ranging from 43,200 tons to 49,000 tons. Contamination analysis showed that more than 20% of those tons were contaminants such as lids, product residue in the container, and water. After removing these contaminants, the estimated amount of plastic containers being disposed drops to 35,808 tons, with a 90% confidence interval of 33,600 tons to 38,300 tons. The result is that significantly fewer rigid plastic containers are being disposed in Oregon each year than the amount that would have been estimated if the Oregon studies only involved the field-sorting of waste at disposal sites

Beverage Container / Oil Filter / Fluorescent Light Counts

In addition to weighing materials, we also counted beverage containers by beverage type and by container material type (glass, plastic, aluminum, and steel). Only bottles and cans were counted. Open cups and paper cartons (including aseptic containers and milk cartons) were not counted. We used these data to determine the average number of containers of each type disposed per ton of waste. Multiplying the total tons of waste disposed from Oregon by the containers per ton gives an estimate of the absolute number of Oregon beverage containers and other counted items that end up in landfills and other disposal sites.

Discarded oil filters, fluorescent light bulbs, and compact fluorescent lights were also counted in the same manner, so the number of these items being disposed could also be estimated.

Results: 2002 Composition Study

This report presents three main types of results:

1) Field sorting results. The field data results are best used for comparing Oregon results with results in other jurisdictions. In addition, field data are the easiest to use for statistically comparing results of the current composition study to early studies conducted by DEQ and Metro. There were not enough contamination analysis samples collected to allow for separate contamination correction factors to be calculated for different waste substreams, geographic areas, or seasons. Thus, comparisons between these groups can only be done using the field data results.

2) Contamination-analysis-corrected results. These are the best results to use for determining the amount of material that might have been recycled had it been kept clean and in recyclable condition.

3) Absolute tonnage of materials disposed. These results are produced by multiplying the contamination-analysis-corrected results (expressed as a percentage) by the total tonnage of mixed wastes

disposed from Oregon. Single-material wastes disposed, such as tires and gypsum wallboard, are then added to the results. In addition, some transfer stations report pulling a small amount of recyclable materials such as cardboard from mixed waste received. Since our waste samples were collected for sorting before any such separating of recyclable materials occurred at these transfer stations, the tonnage pulled for recycling was subtracted from the total estimated tonnage disposed.

The results are presented in a series of large tables in Appendix A of this report. The tables in Appendix A include the following:

Table A1. Tonnage of waste disposed in 2002 by substream, geography, and season.

Table A2. Oregon 2002 waste composition statewide results: field results, contamination correction factors, and contamination-corrected results.

Table A3. Tonnage of each material disposed statewide from Oregon in 2002 (contamination-corrected tons by extrapolation, single-material disposal/recovery, and total tons disposed).

Table A4. Disposal and recovery of selected material from Oregon in 2002.

Table A5. Comparing 2002 composition for Metro and for the rest of Oregon (field data).

Table A6. 2002 Composition of waste substreams (field data).

Table A7. Confidence intervals for composition of waste substreams (field data).

Table A8. Changes in Oregon statewide field data composition since 1994.

Table A9. Changes in Metro waste composition since 1993/94 (field data).

Table A10. Changes in waste composition outside the Metro area since 1992/93 (field data).

Table A11. Metro 2002 composition of waste substreams (field data).

Table A12. Metro 2002 confidence intervals of waste substreams (field data).

Table A13. Metro 2002 field and contamination-corrected composition results.

Table A14. Metro 2002 tonnage of each material disposed (contamination-corrected tons by extrapolation, single-material material disposal/recovery, and total tons disposed).

Table A15. Rest of Oregon 2002 composition of waste substreams (field data).

Table A16. Rest of Oregon 2002 confidence intervals for waste substreams (field data).

Table A17. Beverage container counts: Oregon 1998, 2000, and 2002.

Table A18. Beverage Containers Disposed in Millions: Oregon 1998, 2000, and 2002.

Presentation and Discussion of Results - by Material Category

Paper

One of the more encouraging findings of this study is the continued drop in paper disposal over the last decade - particularly for some of the grades of paper that are easily recycled. Figure 1 shows paper disposal and recovery per person for 1993 through 2002. Paper recovery numbers are from the annual Oregon Material Recovery Survey, while disposal is based on all Oregon waste composition studies to date. For years when no waste composition study was done, an average composition was calculated based on the most recent studies before and after that year, adjusted by the total weight disposed in that year. As can be seen, total paper generation has been fairly constant since 1993, but recovery has steadily risen and disposal has steadily fallen on a per-capita basis.

Figure 1. Paper Recovery and Disposal Per Capita

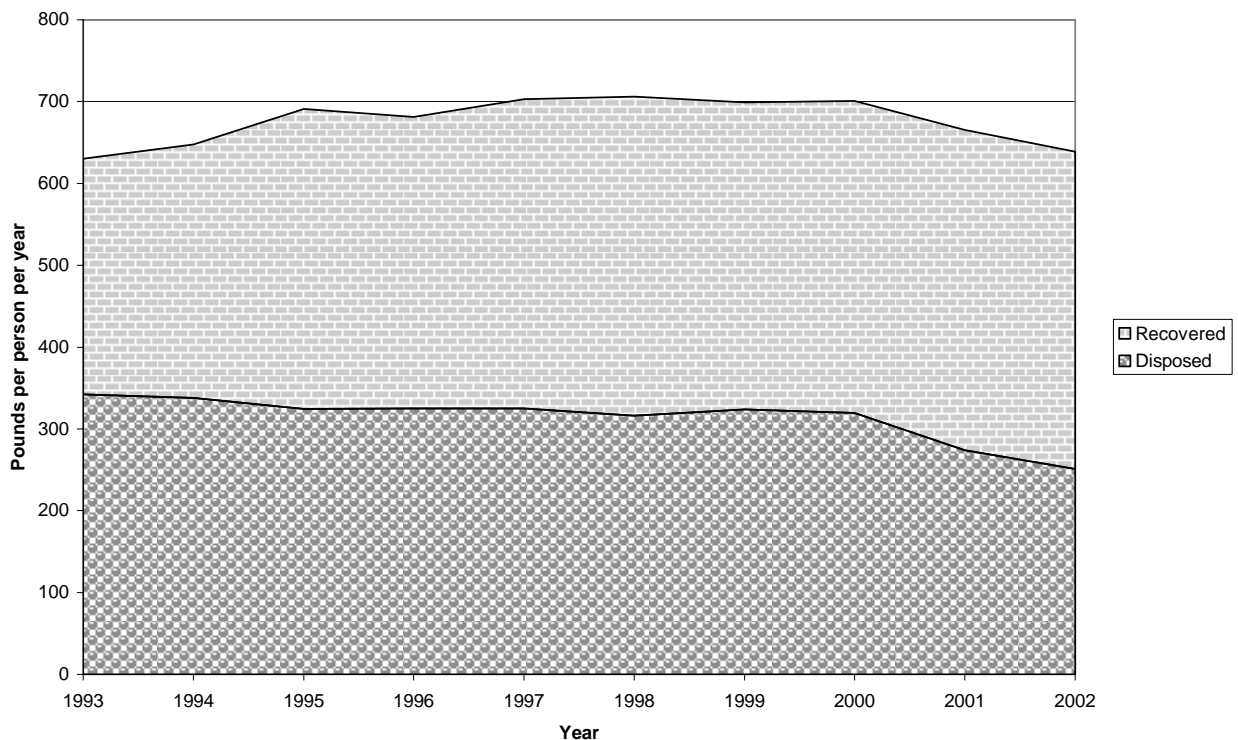


Table 3 shows the results of field sort results over time for all statewide studies, with the 1993/95 results combining DEQ's 1994-95 study with Metro's 1993-94 study. In both the Metro area and the rest of the state, corrugated cardboard and recyclable paper in general make up a significantly smaller portion of the waste stream in 2002 than they did in earlier studies. The decline in disposal has been matched by an increase in recycling of the material, as demonstrated by the annual Oregon Material Recovery Survey conducted by DEQ. Table 4 gives recovery survey results for various paper grades since 1992, as published in the 2002 Oregon Material Recovery Survey Report.

Table 3. Recent Waste Composition Results for Paper (field sort data)

	Percent 1993/95	Percent 1998	Percent 2000	Percent 2002
TOTAL PAPER	27.35	24.35	23.10	20.62
Paper Packaging	12.79	11.98	9.57	9.09
Cardboard/Brown Bags	6.49	5.45	3.69	3.23
Low Grade Packaging Paper	2.86	2.85	2.25	2.10
Bleached Polycoated Boxboard	0.39	0.42	0.54	0.43
Non-Recyclable Pkg. Paper	1.80	1.54	1.37	1.42
Mixed Paper / Materials	1.26	1.73	1.73	1.91
Other Paper	14.56	12.37	13.53	11.53
Newspaper	2.77	2.16	2.79	2.17
Magazines	1.55	1.36	1.47	1.27
Hi Grade Paper	1.89	1.60	1.83	1.75
Hardcover Books	0.24	0.16	0.28	0.11
Other Low-Grade Paper	4.11	3.74	2.85	2.35
Other Non-recyclable Paper	4.01	3.33	4.30	3.88
<i>Low-grade Recyc. Paper combined</i>	<i>7.60</i>	<i>7.18</i>	<i>5.92</i>	<i>4.99</i>
<i>Nonrecyclable Paper combined</i>	<i>7.06</i>	<i>6.59</i>	<i>7.40</i>	<i>7.21</i>

Table 4. Recovery of Paper Grades in Oregon 1992-2002. Data are from the 2002 Oregon Material Recovery Survey Report.

Material Type	1992 Tons	1994 Tons	1996 Tons	1998 Tons	2000 Tons	2001 Tons	2002 Tons
Cardboard/Kraft Paper	204,729	251,559	304,093	321,501	310,776	332,876	381,027
High-Grade Paper	67,077	35,401	49,298	69,449	54,358	62,185	41,659
Newspaper & Magazines	141,427	155,822	158,662	180,356	195,483	203,021	211,082
Mixed Scrap Paper	24,012	40,570	66,108	81,230	94,440	81,418	46,203
Total Papers	437,245	483,352	578,161	652,536	655,057	679,499	679,971

Because of increased commingling of papers in recycling collection, it is no longer possible to separate out the tonnage of different paper grades as accurately as was done in the past. Thus, grades such as newspaper and magazines have had to be combined in Table 4, since the two materials are often collected, marketed, and utilized combined together, giving no separate source of information for quantifying the amount of newspaper separately from the amount of magazines. Also, it is possible that some of the material being marketed now as either cardboard or newspaper was marketed a few years ago as either high-grade paper or mixed scrap paper.

Although corrugated cardboard disposal was significantly reduced, it still remains a large component of the waste stream. More than 70,000 tons of clean, dry corrugated cardboard are disposed each year as of 2002.

Newspaper disposal in 2002 fell back to 1998 levels as a percentage of the waste stream, significantly below disposal levels in early years. Disposal in 2000 had been higher than either 1998 or 2002, for unknown reasons.

No single substream stands out as having much greater quantities of corrugated cardboard disposed than others. Compacting drop boxes showed the largest percentages of cardboard (6%) followed by commercial and mixed routes each at about 4%, but residential routes, self haul, loose drop boxes and even MSWPF residual wastes still contained about 2-3% cardboard each.

Table 5. Paper in Different Waste Substreams - 2002 Statewide (field sort data - in percent)

	Garbage Route Trucks			Drop Boxes		Self-haul	MSWPF
	RES	COM	MIX	Compacting	Loose		
TOTAL PAPER	25.23	30.95	26.49	29.27	15.93	8.73	10.82
Paper Packaging	8.80	12.49	11.12	17.29	8.77	4.65	5.36
Cardboard/Brown Bags	2.30	4.40	3.85	6.02	3.38	2.40	1.85
Low Grade Packaging	2.69	3.00	2.46	3.12	1.59	0.83	1.75
Bleached Polycoats	0.56	0.83	0.66	0.36	0.35	0.07	0.09
Nonrecyc. Packaging	1.08	2.20	2.04	5.04	1.16	0.20	0.29
Mixed Paper / Materials	2.15	2.05	2.11	2.76	2.30	1.17	1.37
Other Paper	16.44	18.47	15.36	11.98	7.16	4.08	5.46
Newspaper	3.19	3.28	3.36	2.08	0.92	0.84	0.69
Magazines	2.45	1.63	1.49	0.85	0.19	0.68	0.57
Hi Grade Paper	1.79	3.53	2.22	1.54	1.50	0.62	1.33
Hardcover Books	0.11	0.06	0.19	0.10	0.05	0.12	0.11
Low Grade Paper	3.49	3.46	2.56	1.82	2.51	0.95	1.04
Other Nonrecyc. Paper	5.40	6.51	5.54	5.58	1.99	0.86	1.72
Low-grade Recyc. Paper combined	6.86	7.35	5.87	5.40	4.50	1.97	2.99
Nonrecyclable Paper combined	8.64	10.76	9.68	13.37	5.44	2.22	3.39

Plastic

Following a slight decline in 2000, plastics disposal and total generation resumed increasing as it had in earlier studies. Figure 2 shows total disposal and recovery per person since 1993.

Figure 2. Plastic Recovery and Disposal Per Capita

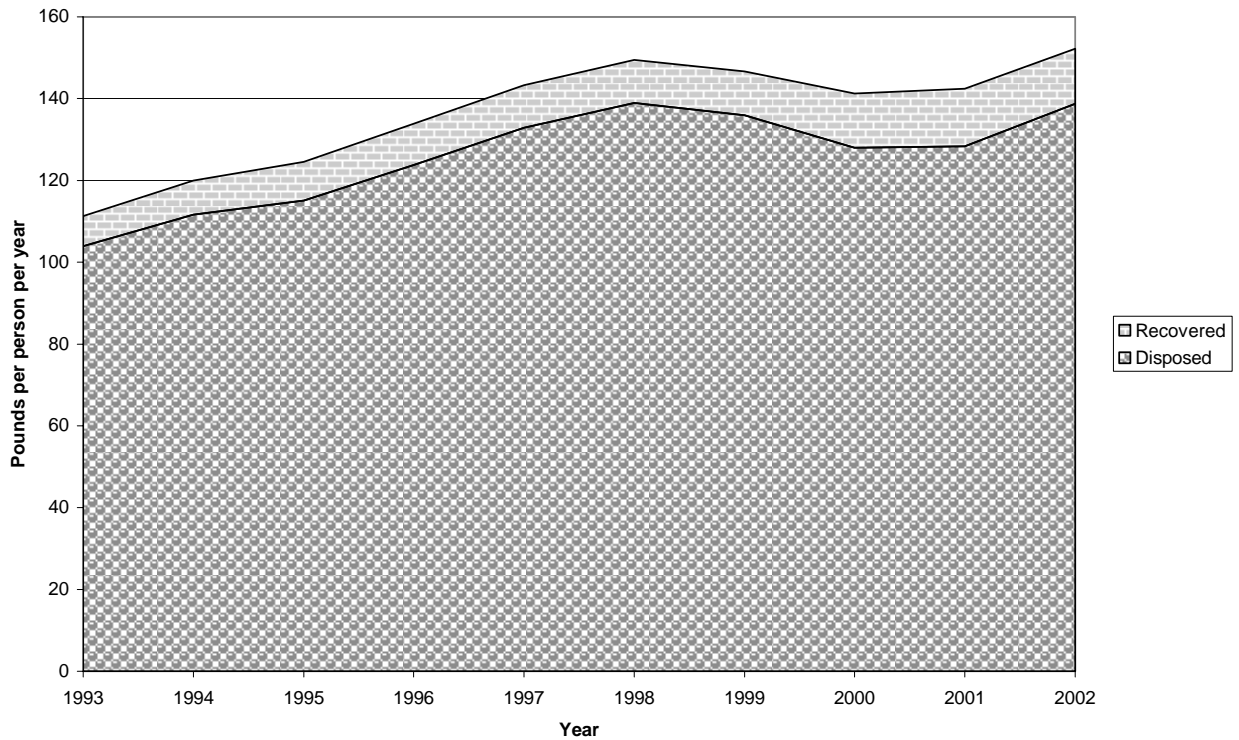


Table 6: Recent Waste Composition Results for Plastics (field sort data - in percent)

	Percent 1993/95	Percent 1998	Percent 2000	Percent 2002
TOTAL PLASTICS	8.84	10.45	9.70	10.95
Plastic Packaging	3.71	5.33	5.23	5.65
Rigid Plastic Containers	1.11	1.34	1.51	1.67
Other Plastic Packaging	2.60	3.99	3.71	3.98
Plastic Products	5.13	5.12	4.47	5.29
Film plastic combined	4.29	4.55	4.32	4.87

Table 7. Recovery of Plastics in Oregon 1992-2002. Data are from the 2002 Oregon Material Recovery Survey Report.

Material Type	1992 Tons	1994 Tons	1996 Tons	1998 Tons	2000 Tons	2001 Tons	2002 Tons
Total plastic recovered	9,520	15,048	16,338	17,933	24,222	24,380	23,647

Table 8. Composition of Plastics 2002 Statewide by Waste Substream (field sort data - in percent)

	Garbage Route Trucks			Drop Boxes		Self-haul	MSWPF
	RES	COM	MIX	Compacting	Loose		
TOTAL PLASTICS	11.99	12.96	12.45	17.88	9.80	6.76	9.41
Plastic Packaging	7.62	7.71	7.11	9.00	4.35	2.00	3.30
Rigid Plastic Containers	2.65	2.13	2.15	2.37	1.06	0.63	0.46
Other Plastic Packaging	4.97	5.57	4.95	6.63	3.30	1.37	2.84
Plastic Products	4.37	5.26	5.35	8.88	5.45	4.76	6.11
Film plastic combined	5.98	7.15	6.04	7.80	3.86	1.70	3.80

The only large difference in plastics composition between waste substreams is that plastic packaging was much lower in self-haul wastes than in all other wastes substreams, particularly for film plastic and for other rigid plastic packaging. Also, rigid plastic containers were highest in waste from residential route garbage trucks, and lowest in loose drop boxes and self-haul wastes. As in the past, film plastics were particularly high in compacting drop boxes, often used by retail stores, but were nearly as high in 2002 in both residential and commercial route garbage trucks.

Rigid plastic containers were not sorted by resin type in the field, but one-fourth of the waste samples that contained rigid plastic containers were brought back to a facility for detailed analysis as part of contamination estimation. These samples were sorted both by resin type and by whether they were bottles (blow-molded) or tubs/pails (usually injection-molded). Table 9 gives the percentage of rigid plastic containers that were each resin/container type, both as a percentage of the total solid waste and as a percentage of all rigid plastic containers.

Table 9. Rigid Plastic Containers by Resin and Container Type Statewide 2002 (Clean, Dry Weights from Detailed Sample Analysis - in percent)

	As % of solid waste			As % of rigid plastic containers		
	Bottle	Tub	Total	Bottle	Tub	Total
1 PET	0.3800	0.1011	0.4811	29.12	7.74	36.86
1 HDPE	0.3121	0.0758	0.3879	23.91	5.81	29.72
3 PVC	0.0188	0.0091	0.0279	1.44	0.70	2.14
4 LDPE	0.0012		0.0012	0.09		0.09
5 PP	0.0096	0.0711	0.0807	0.74	5.44	6.18
6 PS (not foam)	0.0007	0.1089	0.1096	0.05	8.34	8.39
6 PS (PS foam)		0.0827	0.0827		6.34	6.34
7 Other	0.0107	0.0056	0.0164	0.82	0.43	1.25
U Unknown	0.0028	0.1149	0.1177	0.21	8.80	9.02
Total	0.7360	0.5691	1.3052	56.39	43.61	100.00

Construction/Demolition/Remodel

Of the 120 loose drop box loads sorted as part of the 2002 study, 25, or 21%, were identified as coming from construction or demolition (C&D) sites or projects. Similarly, of the 229 "self-haul" loads directly sampled in this study (excluding 38 Marion County samples that were collected from transfer trailers), 88, or 38%, were identified as being from C&D sites or projects. Table 10 shows the average composition of these loads, including only selected materials often associated with these types of activities.

Table 10. Composition of Wastes from Construction/Demolition Loads (2002 Field Sort Data - Statewide - in percent, with 2000 results shown for comparison)

Material	Loose Drop Boxes	Self Haul Loads	Combined 2002	Combined 2000
Cardboard/Brown Bags	4.76	1.36	2.11	4.00
Rigid Plastic Products	1.39	1.10	1.16	1.51
Untreated Lumber	8.77	7.97	8.15	13.96
Clean "Hog Fuel" Lumber	4.23	7.91	7.09	4.06
Painted Lumber	4.72	2.88	3.29	2.63
Chemically-treated Lumber	0.04	1.90	1.49	1.96
Wood Pallets / Crates	10.23	1.17	3.17	3.36
Mixed Wood / Materials	2.72	3.37	3.23	1.96
Carpet	1.30	1.70	1.61	1.84
Roofing / Tarpaper	9.05	21.97	19.11	18.42
Flat Window Glass	0.10	0.08	0.08	0.19
Other Ferrous Metal	4.64	2.46	2.94	4.68
Rock / Concrete / Brick	4.67	8.14	7.37	3.88
Gypsum Wallboard OLD	8.40	4.31	5.21	6.42
Gypsum Wallboard NEW	13.44	13.33	13.36	10.94
Fiberglass Insulation	0.34	2.17	1.76	1.53
Other Inorganics	6.18	4.25	4.68	2.61
Total: Above Selected Materials	84.98	86.06	85.82	83.95

Some materials such as cardboard and rigid plastic products are generated by many activities in addition to construction and demolition, but other materials like gypsum wallboard, asphalt roofing, and insulation come almost solely from C&D activities.

Table 11 shows the overall composition of the different waste substreams for selected C&D materials. Although small amounts of C&D wastes may be collected by regular route garbage trucks, the large majority of these materials are brought to disposal sites by garbage haulers using loose drop boxes, or by construction firms as "self-haul" loads using a variety of trucks. Mixed solid waste processing facilities (MSWPFs) also receive substantial amounts of construction debris. Significant amounts of wood, scrap metal, and cardboard are pulled from the construction debris at MSWPFs, and the residual is sent off for disposal.

Table 11. C&D Materials in Different Waste Substreams: 2002 Statewide (field sort data in percent)

Material	Garbage Route Trucks			Drop Boxes		Self-haul	MSWPF
	RES	COM	MIX	Compacting	Loose		
Cardboard/Brown Bags	2.30	4.40	3.85	6.02	3.38	2.40	1.85
Rigid Plastic Products	1.38	1.82	2.04	3.23	2.93	2.37	2.41
Wood (all types combined)	1.76	3.67	3.87	3.66	20.17	15.91	12.50
Untreated Lumber	0.46	1.13	0.90	0.45	4.17	3.90	2.79
Clean "Hog Fuel" Lumber	0.27	0.35	0.51	0.04	2.34	3.57	1.59
Painted Lumber	0.35	0.30	0.23	0.13	2.13	2.77	1.00
Chem. Treated Lumber	0.21	0.11	0.05	0.00	0.08	1.32	0.00
Wood Pallets / Crates	0.14	0.24	0.73	1.16	6.18	0.65	0.72
Mixed Wood / Materials	0.17	1.16	1.16	1.64	4.30	2.63	5.84
Carpet	0.63	0.32	1.92	0.60	2.46	2.68	8.82
Roofing / Tarpaper	0.07	0.41	0.08	0.00	4.15	11.18	9.25
Flat Window Glass	0.13	0.02	0.10	0.08	0.08	0.85	0.10
Other Ferrous Metal	0.55	1.82	1.28	1.97	4.19	1.74	1.83
Rock / Concrete / Brick	1.34	0.89	0.45	0.13	3.62	5.56	5.28
Gypsum wallboard (total)	0.09	0.49	0.33	0.11	6.42	13.05	10.15
Gypsum Wallboard OLD	0.09	0.34	0.12	0.09	2.88	5.29	8.33
Gypsum Wallboard NEW	0.00	0.15	0.21	0.02	3.54	7.76	1.82
Fiberglass Insulation	0.00	0.08	0.03	0.00	0.26	2.17	0.55
Other Inorganics	0.75	1.19	0.82	0.58	3.90	3.29	8.47
Total of C&D Materials	8.84	14.72	14.49	16.13	50.59	60.11	60.66

Table 12. C&D Materials in Recent Oregon Waste Composition Studies (field sort data - in percent)

	1993-95*	1998 Statewide		2000 Statewide		2002 Statewide	
	Percent	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)
Cardboard/Brown Bags	6.49	5.45	(5.15 - 5.77)	3.69	(3.38 - 4.02)	3.23	(2.93 - 3.55)
Rigid Plastic Products	1.88	2.26	(2.03 - 2.49)	1.74	(1.48 - 2.00)	2.16	(1.83 - 2.49)
Wood - all types combined	9.09	11.18	(10.37 - 12.05)	8.81	(7.78 - 9.89)	8.72	(7.75 - 9.73)
Clean lumber & hog fuel	5.33	4.74	(4.26 - 5.22)	4.57	(3.84 - 5.34)	3.45	(2.87 - 4.04)
Painted & Treated lumber	1.19	2.63	(2.29 - 3.00)	1.54	(1.20 - 1.90)	1.53	(1.10 - 2.04)
Wood Pallets / Crates	0.86	1.40	(1.15 - 1.66)	1.23	(0.92 - 1.61)	1.19	(0.86 - 1.51)
Mixed Wood / Materials	0.50	1.24	(0.96 - 1.60)	0.54	(0.38 - 0.73)	1.98	(1.57 - 2.46)
Carpet	1.23	2.84	(2.45 - 3.30)	1.46	(1.19 - 1.74)	1.97	(1.48 - 2.58)
Roofing / Tarpaper	3.44	2.85	(2.34 - 3.39)	2.94	(2.23 - 3.75)	3.81	(2.84 - 4.80)
Flat Window Glass	0.31	0.51	(0.34 - 0.71)	0.13	(0.09 - 0.18)	0.27	(0.08 - 0.60)
Other Ferrous Metal	2.69	2.23	(2.01 - 2.46)	2.43	(2.07 - 2.87)	1.74	(1.45 - 2.05)
Rock / Concrete / Brick	1.93	1.74	(1.36 - 2.10)	3.02	(2.34 - 3.82)	2.57	(1.89 - 3.27)
Gypsum wallboard	2.70	3.46	(2.96 - 3.97)	3.83	(3.09 - 4.66)	4.65	(3.64 - 5.69)
Fiberglass Insulation	0.55	0.29	(0.22 - 0.36)	0.49	(0.26 - 0.73)	0.60	(0.17 - 1.08)
Other Inorganics	2.01	1.89	(1.54 - 2.26)	1.73	(1.31 - 2.15)	2.25	(1.80 - 2.80)
Total of C&D materials	31.16	33.64		29.44		31.41	
Oregon Housing Starts**	22,500	26,700		19,800		21,900	

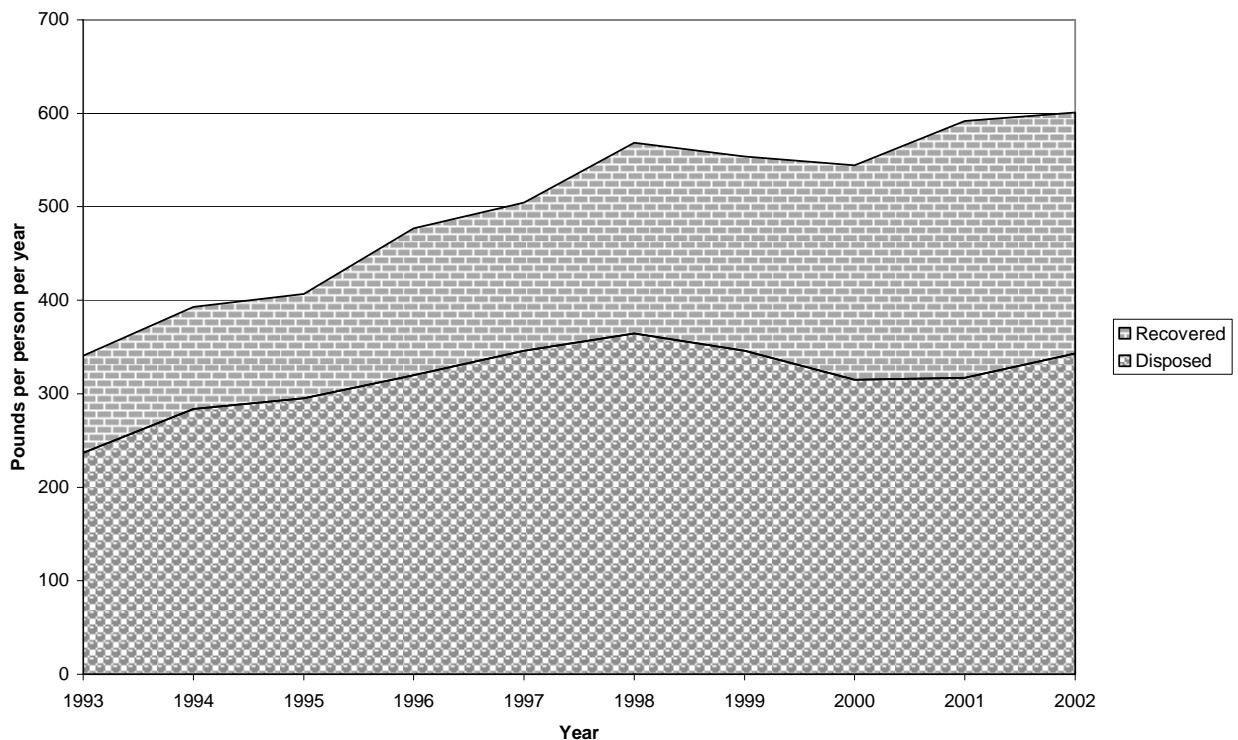
*Combines DEQ 1994/95 study with Metro 1993/94 study

**Source: <http://www.oea.das.state.or.us/DAS/OEA/docs/economic/other-annual.xls> (1993-95 value is the average for the three years)

There has been a very close correlation between construction activities, as measured by housing starts in Oregon, and the total percentage of construction and demolition materials in the waste stream. Oregon experienced a recession in 2000, and housing starts were lower in 2000 than they had been since 1993. 2000 was also a year that had the lowest levels of construction waste in the waste stream, and also was a year in which the tons of waste disposed actually declined from the previous year. The drop in construction waste was probably a major factor in the overall decline in disposal. However, waste tonnage continued to decline sharply through 2001 although housing starts started increasing again that year. Both housing starts and total disposal increased again in 2002.

Figure 3 shows combined recovery and disposal for the combined total of most of the materials shown in Tables 10 - 12. Figure 3 does not include scrap metal, as the Oregon Material Recovery Survey does not include scrap metal that is generated in most construction and demolition activities, as directed by Oregon state law. Figure 3 also does not include cardboard, as the vast majority of recovered cardboard comes from activities unrelated to construction.

Figure 3. Selected Construction Materials Recovery and Disposal Per Capita



Yard Debris

"Yard debris" was defined in this study to include natural vegetative material such as grass, leaves, flowers, weeds, branches, and stumps.

In the Metro area, nearly all cities and counties have instituted strong yard debris collection, composting, and reduction programs. Many of the Metro programs started in the early 90s before the Metro 1993/94 composition study was completed. Portland, the largest jurisdiction in the Metro area, began a monthly curbside yard debris collection program in 1992 and expanded it to a bi-weekly program in 1993/94. A number of other jurisdictions began weekly yard debris collection in the early 1990s also.

Yard debris results for 2002 seem to present a puzzle. It appears that the amount of yard debris in the waste stream has been holding steady or even increasing in recent years, in spite of greater collection programs.

In the past, yard debris decreased regularly - particularly in the Portland Metro area (see Table 13). Studies done for Metro in 1985/86 and 1989/90 showed yard debris as making up 10% or more of solid waste. Studies done since 1993 show yard debris as dropping to under 5 percent. There was a slight increase in yard debris in 2000 and 2002 as compared to 1998 in the Metro area, but this increase is not statistically significant, meaning that the difference could be due just to the randomness of sampling. Overall, the 2002 yard debris disposal is still significantly less than the disposal rate from 1990 and before. The decline in yard debris disposal appears closely linked to the implementation of collection and home composting programs discussed above.

Although some cities and counties in other parts of Oregon have good programs, many jurisdictions have not taken significant steps in this regard. Yard debris outside the Portland Metro area is significantly higher than yard debris in the Metro area. However, new programs are being implemented in the rest of the state. Significant amounts of yard debris have been collected in curbside programs in Marion and Polk counties starting in 1998. By 2002, curbside programs started in parts of Lane, Yamhill, and Jackson Counties. Parts of Benton and Linn Counties have had programs operating for many years. Very little yard debris collection occurred outside the Metro area in 1992, so the decline in yard debris in the 1994/95 study and the 1998 study outside the Metro area seems consistent with implementation of the new collection programs. While collections programs have strongly increased in recent years, yard debris disposal has also risen, to the point where the 2002 yard debris disposal percentage outside the Metro area is no longer significantly less than the 1992/93 disposal percentage.

Table 15 demonstrates the increase in yard debris collection statewide as determined by DEQ's annual material survey. In addition, many jurisdictions have been promoting home composting, "grasscycling" (allowing grass clippings to remain on the lawn), and other waste prevention methods. These programs do not add to the numbers in the material recovery survey, but should result in further reductions in disposal.

Table 13. Changes in Yard Debris in the Portland Metro Region: (field sort data - in percent)

Material	Metro 1986/87	Metro 1989/90	Metro 1993/94	Metro 1998	Metro 2000	Metro 2002
Yard Debris	10.50	11.31	5.10	3.76	4.49	4.46
Leaves & Grass			3.46	2.83	2.95	3.40
Small Prunings under 2"			1.31	0.68	0.94	0.93
Limbs (>2"), trunks, stumps			0.33	0.17	0.61	0.17

Table 14. Changes in Yard Debris outside the Portland Metro Region (field sort data - in percent)

Material	Oregon Outside of Metro 1992/93	Oregon Outside of Metro 1994/95	Oregon Outside of Metro 1998	Oregon Outside of Metro 2000	Oregon Outside of Metro 2002
Yard Debris	9.42	5.80	5.86	7.05	8.19
Leaves & Grass	6.58	4.81	4.40	5.47	7.02
Small Prunings under 2"	2.46	0.90	1.14	0.92	0.75
Limbs (>2"), Trunks, Stumps	0.38	0.10	0.23	0.65	0.42

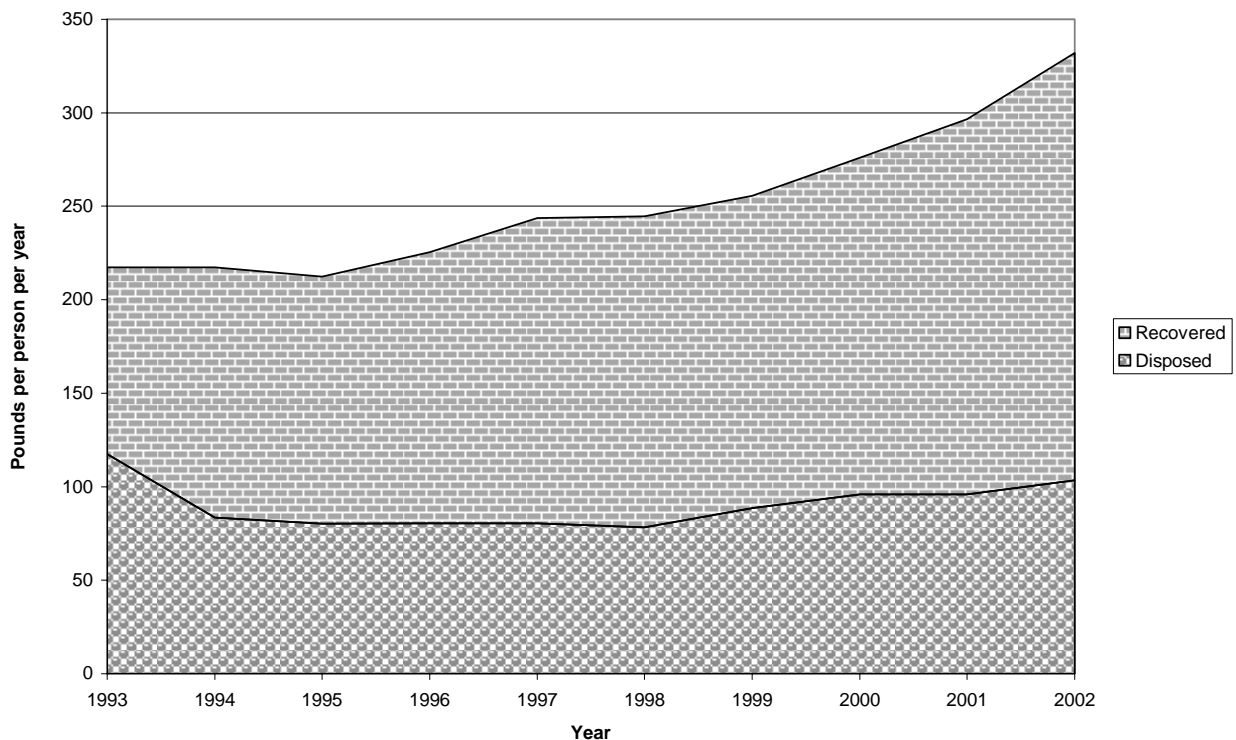
Table 15. Recovery of Yard Debris in Oregon 1993-2002. Data are from the 2002 Oregon Material Recovery Survey Report.

Material Type	1993 Tons	1994 Tons	1995 Tons	1996 Tons	1997 Tons	1998 Tons	1999 Tons	2000 Tons	2001 Tons	2002 Tons
Yard Debris	152,589	208,722	210,240	235,562	269,620	278,750	283,440	309,407	348,472	400,174

Figure 3 shows the overall yard debris collected for disposal and recycling (composting or energy recovery) since 1993. Note that total generation has increased steadily since the mid-90s. The new yard debris collection and composting programs have almost certainly contributed to the apparent increase in generation. When new yard debris services are offered, some of the yard debris collected is material that used to be disposed as garbage, but other collected materials includes yard debris that used to be burned in burn piles, or that previously was left to decompose in place. Materials that are burned in backyards or left to decompose in place are not measured, but the material then becomes measured when it is diverted into a collection program.

Different types of yard debris are generated in different manners. Grass, leaves, and weeds are generated in relatively small volumes through roughly weekly grass mowing or yard cleanup activities. Leaves and grass can be easily set out regularly either in the garbage can for disposal or in a special container for collection and composting. In contrast, larger prunings, such as limbs and trunks, are generated on a much more sporadic basis, such as annual hedge shearings, removal of whole trees, or cleanup of limbs following major storms. These large limbs are usually generated in quantities too large to allow them to be easily put out for disposal or composting collection.

Figure 4. Yard Debris Recovery and Disposal Per Capita



Because of this difference in how types of yard debris are generated, they are often disposed of differently. Grass and leaves that are not home-composted or collected as part of a yard debris collection program commonly end up in garbage cans and are collected by residential route garbage trucks. Limbs, on the other hand, are too bulky to fit in a garbage can and are not easily prepared for yard debris collection. Thus, piles of limbs and branches are much more likely to be disposed of by being taken directly to a landfill or transfer station as part of a self-haul load, or put into a large drop box which is then taken off for disposal. Large quantities of leaves and grass may also be taken to disposal sites either by self-haul or in a drop box. Large limbs, on the other hand, rarely appear in garbage route trucks, although on some occasions a pile of yard debris including limbs may be set out next to a garbage can to be collected for disposal.

In previous years, as demonstrated by the data from 1998 and 2000 in Table 16 below, the trends described above were clearly evident in the waste composition results. In 2002, two loads sampled from residential route trucks had significant amounts of large limbs in the randomly-selected material. Of the 142 residential route trucks loads sorted in 2002, only 5 had any large limbs present, and in 3 of those the limbs made up less than 1 percent of the load weight. However, 2 route trucks from the lower Willamette Valley had heavy limbs in their samples, making up 16% and 12% of the weight of each sample. Also, for unknown reasons, self haul and loose drop box loads contained fewer large limbs than in previous years, and also higher amounts of leaves and grass.

Table 16. Yard Debris in Different Waste Substreams Statewide 2002 (field sort data - in percent)

Material	Garbage Route Trucks			Drop Boxes		Self-haul	MSWPF
	RES	COM	MIX	Compacting	Loose		
2002 Yard Debris	9.17	5.57	6.78	4.09	4.57	7.34	3.18
2002 Leaves / Grass	7.82	4.18	5.46	3.79	4.02	5.96	2.90
2002 Small Prunings under 2"	0.84	1.18	1.20	0.30	0.29	0.93	0.27
2002 Large Prunings over 2"	0.50	0.22	0.12	0.00	0.25	0.24	0.01
2002 Stumps	0.02	0.00	0.00	0.00	0.00	0.20	0.00
2000 Yard Debris	11.18	4.76	4.92	1.54	5.08	4.58	3.76
2000 Leaves / Grass	10.37	2.82	4.09	1.51	1.95	2.45	2.62
2000 Small Prunings under 2"	0.71	1.09	0.81	0.03	1.43	1.24	0.26
2000 Large Prunings over 2"	0.10	0.86	0.02	0.00	0.76	0.38	0.87
2000 Stumps	0.00	0.00	0.00	0.00	0.95	0.51	0.00
1998 Yard Debris	7.50	3.66	4.19	1.41	3.91	6.35	2.03
1998 Leaves / Grass	6.16	2.74	3.48	1.26	2.88	4.24	0.83
1998 Small Prunings under 2"	1.30	0.72	0.63	0.15	0.64	1.42	0.77
1998 Large Prunings over 2"	0.04	0.17	0.08	0.00	0.35	0.45	0.16
1998 Stumps	0.01	0.04	0.00	0.00	0.03	0.25	0.27

Food Waste and Other Compostables

At 15.60% in 2002, food waste is again the largest single component of Oregon's municipal solid waste stream. This section looks at food waste in conjunction with other potentially compostable wastes, to provide information that may be useful for combined compostables collection.

"Compostables" include any of the organic materials that could be composted, such as food waste, paper, wood (excluding treated wood), disposable diapers, pet litter, and other miscellaneous organics. However, many of these materials would not be good in a composting program, either because they are much more valuable when recycled, or because they commonly contain significant contaminants that would lower the

value of the compost produced. "Compost - target" as used in the following tables, includes only those materials most likely to be included in an organics collection program, including some non-recyclable paper (mainly paper tissue/towels), food waste, yard debris, clean wood (untreated) and a few other organic materials. Appendix D includes a complete list of materials designated as "compostable" or "compost-target".

The amount of food being disposed has remained fairly consistently at about 16%, and there has been no general difference between food disposal from the Metro area as compared to the rest of the state. Disposal of target compostables has declined slightly since 1993, mainly due to reduction in yard debris being disposed. Total compostables has shown an even greater decline, due to the reduction in disposal of paper since 1993.

Table 17. Food Waste and Other Compostables in Recent Oregon Waste Composition Studies (field sort data - in percent)

Material	Percent 1993/95	Percent 1998	Percent 2000	Percent 2002
Food Waste	16.62	14.30	16.22	15.60
All Compostables	59.96	55.13	56.94	52.94
Compostables - target	33.96	30.73	32.73	31.04

Food waste is much more common in residential and other garbage route trucks than it is in self-haul loads, loose drop boxes, or residuals wastes from MSWPFs (which generally will not accept food-contaminated waste). Food also makes up a large component of the waste in compacting drop boxes, since these are often used by the retail grocery industry (see Table 18). Other compostables also are more common in garbage route trucks than in loose drop boxes or self-haul waste, since paper tends to be more common in these same waste substreams. However, there is significant wood and yard debris in loose drop boxes and self-haul waste, which constitute most of the compostable material in those waste streams.

Table 18. Food Wastes and Other Compostables in Different Waste Substreams Statewide 2002 (field sort data - in percent)

Material	Garbage Route Trucks			Drop Boxes		Self-haul	MSWPF
	RES	COM	MIX	Compacting	Loose		
Food Waste	24.56	22.70	22.48	23.90	6.63	4.28	2.04
All Compostables	70.46	65.36	65.66	60.66	42.52	32.03	22.95
Compostables - target	41.28	37.95	38.54	36.05	25.06	19.16	11.93

Computers and Electronics

Prior to 1998, computers and most electronic devices were lumped together into a single category called "small appliances." Beginning in 1998, this category was split into three groups:

- Computers, printers, monitors, and their component parts.
- Other "brown goods." Small appliances with significant electronic components, such as TVs, radios, telephones, microwaves, and stereos.
- Non-electronic small appliances, including fans, hair blowers, can openers, kitchen blenders. Note - these may contain small electronic components such as digital readouts and controls, and often will have electric motors, but do not have significant amounts of circuit-board electronics.

Because of concern about the amount of lead in cathode ray tube type computer monitors and televisions, the first two categories were further split in 2002. Computer monitors of the cathode ray tube type were separated from other computer and printer equipment, including flat-screen monitors. Similarly, "Other Brown Goods" was split with televisions and other equipment with cathode ray tubes separated from radios, microwaves, stereos, and non-cathode-ray-tube electronic equipment.

The 2000 Waste Composition Study noted a large increase in the disposal of computers and other electronic devices in that year, but also cautioned that the magnitude of the increase might not be as large as it at first appears, because of the low precision of the estimates as demonstrated by the large confidence interval associated with each estimate. Unlike common regularly-disposed materials such as most papers and plastics, computers and electronics are highly variable items in the waste stream. Many samples have no computers or electronics at all, while a small minority of samples have substantial weights of computers or electronics. For example, in 2000 only 38 of 591 samples had any pieces of computer equipment. Only 8 samples contributed more than half the weight of computers making up the 2000 results. Considering the random nature of sample selection, the results could have been quite different if any of those eight samples had not been selected, or conversely, if a few more samples high in computers had been randomly selected.

Results from 2002 back up that caution. The best estimate of the amount of electronics being disposed in 2002 still exceeded the levels disposed in 1998, but the difference was not as large. The 2002 numbers were lower than 2000 numbers, but the difference was not statistically significant. Both the 2000 and 2002 disposal percentages were significantly higher than the 1998 disposal percentage for computers (just barely in the case of the 2002 number), but the 2002 disposal percentage for brown goods was not significantly higher than the 1998 percentage.

A number of studies have documented that many times computers, televisions, and other major electronic items are not immediately disposed when they become broken or obsolete. Instead, these items are often stored temporarily in attics, closets, and basements. This is especially true for computers, where the original computer system might have cost a couple thousand dollars and still be operational, even though it is slow and obsolete by current standards. The low disposal of electronics in 1998 and before might in large part be due to this stockpiling. Evidently 2000 was a year in which many computers moved out of the storage areas and into disposal.

Table 19. Computers and Electronic Appliances (Statewide - field data)

	1998		2000		2002	
	Percent	(90% conf int.)	Percent	(90% conf int.)	Percent	(90% conf int.)
Computers	0.25%	(0.13 - 0.37%)	0.68%	(0.43 - 0.99%)	0.56%	(0.34 - 0.82%)
Computers excluding CRT* Monitors					0.32%	(0.18 - 0.49%)
CRT-type Monitors					0.24%	(0.11 - 0.39%)
Brown Goods	0.44%	(0.30 - 0.62%)	0.98%	(0.66 - 1.34%)	0.71%	(0.47 - 0.96%)
TVs and other CRTs					0.43%	(0.22 - 0.64%)
Other Brown Goods excluding CRTs					0.28%	(0.18 - 0.40%)
Small Appliances-non electronic	0.46%	(0.37 - 0.54%)	0.56%	(0.39 - 0.74%)	0.64%	(0.48 - 0.83%)

*CRT = Cathode Ray Tube

Table 20 presents the same information as Table 19, except that the results of contamination analysis are used instead of the field data, and results are extrapolated to statewide tonnage. For big, distinct, non-absorbent items like computers and brown goods, contamination levels in sorting are very low, and so contamination correction factors are usually zero or close to zero.

The year 2000 was the first year in which the Oregon Material Recovery Survey had any electronics recycling reported. Since 2000, the tonnage of electronics recycled has grown, but the total collected for recycling is still just a small percentage of the total tonnage of electronics being generated as waste. The recovery tonnage is shown in table 22. However, the numbers reported in table 22 underestimate the total

electronics recovered as some components of electronics recycling are reported as scrap metal or other materials.

Table 20. Computers and Electronic Appliances (Statewide tonnage, with contamination analysis adjustments)

	1998		2000		2002	
	Percent	(90% conf int.)	Percent	(90% conf int.)	Tons	(90% conf int.)
Computers	6,615	(3,400 - 9,800)	18,803	(11,907 - 27,532)	15,341	(9,293 - 22,497)
Computers excluding CRT* Monitors					8,841	(4,908 - 13,575)
CRT-type Monitors					6,501	(3,128 - 10,808)
Brown Goods	11,748	(8,000 - 16,400)	26,933	(17,782 - 36,906)	19,473	(12,968 - 26,474)
TVs and other CRTs					11,689	(5,958 - 17,461)
Other Brown Goods excluding CRTs					7,784	(4,990 - 10,964)
Small Appliances-non electronic	12,097	(9,800 - 14,300)	15,441	(11,100 - 19,992)	17,561	(13,051 - 22,638)

*CRT = Cathode Ray Tube

Table 21. Recovery of Electronics 2000-2002. Data are from the 2002 Oregon Material Recovery Survey Report. No electronics recovery was reported to DEQ prior to 2000.

Material Type	2000 Tons	2001 Tons	2002 Tons
Electronics (Computers & Brown Goods)	617	1,640	2,216

Beverage Containers

As in past DEQ and Metro studies, beverage containers were both counted and weighed. Separate counts were made by beverage type (beer, soft drink, juice, wine, wine cooler, liquor, water, other) and by container material type (plastic, glass, aluminum, steel). For beer and soft drink, deposit containers were recorded separately from no-deposit (out-of-state) containers. "Soft drink" as used here includes sparkling water and other non-alcoholic carbonated beverages in containers that have deposits under Oregon law. "Beer" includes malt coolers that also have deposits.

Results of counts were analyzed in much the same way as results of weights, but the results for counts are reported as containers per average ton of waste rather than as a percentage. This allows a simple extrapolation of the total number of beverage containers disposed statewide by multiplying the containers per ton figure by the total tons of waste disposed in 2002 (2,743,561 tons, excluding single-material waste streams that were not sampled as part of this study - see Table A1 in Appendix A).

Table 22 shows the number of beverage containers disposed per ton of Oregon waste disposed in both 2000 and 2002. Table 23 uses the extrapolation described above to estimate the total number of containers from Oregon that were disposed in 2000 and 2002, reported in millions of containers. Tables A17 and A18 in Appendix A give the same results as Tables 22 and 23, but also show statistical confidence intervals.

Table 22 Beverage Containers Disposed per Ton of Solid Waste - 2000 and 2002 Oregon Statewide

Year	Beverage*	Plastic	Glass	Aluminum	Steel (tin)	Total
2002	Beer & Malt Cooler: Deposit	0.07	10.81	15.23		26.11
2002	Beer & Malt Cooler: No deposit		0.12	0.08		0.20
2002	Soft Drink: Deposit	16.77	1.51	44.19		62.46
2002	Soft Drink: No deposit	0.07	0.13	0.09		0.29
2002	Milk	17.81	0.01			17.82
2002	Juice/Sports/Tea/Other	22.61	9.67	10.80	4.91	47.99
2002	Water	28.16	0.15			28.32
2002	Liquor	1.09	2.55			3.64
2002	Wine & Wine Cooler		4.07			4.07
2002	Subtotal: Deposit	16.84	12.31	59.41	0.00	88.56
2002	Subtotal: No deposit	69.74	16.70	10.97	4.91	102.33
2002	Total	86.58	29.02	70.38	4.91	190.89
2000	Beer & Malt Cooler: Deposit	0.38	8.14	15.97		24.49
2000	Beer & Malt Cooler: No deposit	0.73	0.02	0.04		0.78
2000	Soft Drink: Deposit	14.63	1.46	41.90		57.99
2000	Soft Drink: No deposit	0.13	0.11	0.07		0.31
2000	Milk	18.36	0.18			18.54
2000	Juice/Sports/Tea/Other	19.46	13.54	9.60	5.34	47.93
2000	Water	16.86	0.14			17.00
2000	Liquor	0.94	2.26			3.20
2000	Wine & Wine Cooler		4.90			4.90
2000	Subtotal: Deposit	15.01	9.60	57.87	0.00	82.49
2000	Subtotal: No deposit	56.48	21.15	9.70	5.34	92.67
2000	Total	71.49	30.75	67.58	5.34	175.16

* A very small percentage of aluminum cans were not recorded by beverage type in the 2000 study. In tables 22 and 23, these unidentified cans were allocated into beverage categories in proportion to known aluminum cans. Appendix tables A17 and A18 from the 2000 study show the numbers for unidentified aluminum cans.

As can be seen in Table 23, an estimated 243 million deposit beverage containers ended up being disposed in 2002. DEQ has independently estimated that about 1.4 billion beer and soft drink containers were sold in Oregon in 2002. Thus, the containers disposed represent about 17% of the total deposit containers sold in 2002. This disposal rate is substantially less than the disposal rate for beverage containers in states that do not have deposit legislation. According to the "Multi-Stakeholder Recovery Project" report by Business and Environmentalists Allied for Recycling (BEAR), the disposal rate for beverage containers in non-deposit states is about 72%. The BEAR report is available at the following web site: <http://www.globalgreen.org/BEAR/Projects/FinalReport.pdf>. DEQ does not have good sales figures for the other beverages listed in Tables 22 and 23, but based on national sales numbers the number of other beverage containers sold is substantially less than the number of beer and soft drink (deposit) containers.

Table 23. Beverage Containers Disposed from Oregon in 2000 and 2002 (in millions of containers)

Year	Beverage*	Plastic	Glass	Aluminum	Steel (tin)	Total
2002	Beer & Malt Cooler: Deposit	0.2	29.7	41.8		71.6
2002	Beer & Malt Cooler: No deposit		0.3	0.2		0.5
2002	Soft Drink: Deposit	46.0	4.1	121.2		171.4
2002	Soft Drink: No deposit	0.2	0.4	0.2		0.8
2002	Milk	48.9	0.0			48.9
2002	Juice/Sports/Tea/Other	62.0	26.5	29.6	13.5	131.7
2002	Water	77.3	0.4			77.7
2002	Liquor	3.0	7.0			10.0
2002	Wine & Wine Cooler		11.2			11.2
2002	Subtotal: Deposit	46.2	33.8	163.0	0.0	243.0
2002	Subtotal: No deposit	191.3	45.8	30.1	13.5	280.7
2002	Total	237.5	79.6	193.1	13.5	523.7
2000	Beer & Malt Cooler: Deposit	1.0	22.5	44.1		67.7
2000	Beer & Malt Cooler: No deposit	2.0	0.1	0.1		2.2
2000	Soft Drink: Deposit	40.4	4.0	115.8		160.2
2000	Soft Drink: No deposit	0.4	0.3	0.2		0.9
2000	Milk	50.7	0.5			51.2
2000	Juice/Sports/Tea/Other	53.8	37.4	26.5	14.8	132.5
2000	Water	46.6	0.4			47.0
2000	Liquor	2.6	6.2			8.8
2000	Wine & Wine Cooler		13.5			13.5
2000	Subtotal: Deposit	41.5	26.5	159.9	0.0	227.9
2000	Subtotal: No deposit	156.1	58.4	26.8	14.8	256.1
2000	Total	197.6	85.0	186.7	14.8	484.0

* See note for Table 22.

Changes in beverage container disposal.

Tables A17 and A18 in Appendix A give full comparisons of beverage container counts for the current study compared to 1998. Table 24 below show weight data for categories that contain beverage containers. Note however that many rigid plastic containers and most tinned food cans are not beverage containers.

Table 24. Percent Composition by Weight: Categories Containing Beverage Containers. Oregon Statewide (field sort data not including contamination corrections).

	Percent 1993-95	Percent 1998	90% confidence interval	Percent 2000	90% confidence interval	Percent 2002	90% confidence interval
Rigid Plastic Containers	1.11	1.34	(1.28 - 1.41)	1.51	(1.40 - 1.64)	1.67	(1.58 - 1.78)
Deposit Beverage Bottles	0.14	0.23	(0.20 - 0.27)	0.28	(0.24 - 0.33)	0.37	(0.30 - 0.44)
Other Clear Glass Bottles	0.85	0.50	(0.46 - 0.54)	0.55	(0.48 - 0.62)	0.44	(0.38 - 0.49)
Other Colored Glass Bottles	0.43	0.30	(0.26 - 0.33)	0.28	(0.22 - 0.34)	0.28	(0.23 - 0.33)
Aluminum Beverage Cans	0.13*	0.11	(0.10 - 0.12)	0.13	(0.12 - 0.15)	0.13	(0.12 - 0.15)
Tin Food Cans	1.15	0.90	(0.84 - 0.96)	0.91	(0.83 - 0.99)	0.79	(0.72 - 0.86)

*Excludes one sample with extremely high aluminum can counts that originated out-of-state. Confidence intervals are not available for the combined 1993-95 studies.

These results show that deposit glass bottles and aluminum cans are relatively scarce in Oregon's garbage, but there has been an increase in disposal of these containers over the past few years. The 17% disposal rate for beer and soft drink containers in 2002 compares to 16% in 2000 and 12.5% in 1998 and less than 10% in previous studies. There has also been a decline in other glass bottle disposal over the last decade, but this is probably due in large part to a conversion from glass to plastic for many types of bottles.

Tires

Except for bicycle tires and tires from vehicles not driven on roadways such as large tractor tires, most whole tires are banned from landfilling in Oregon by state law. In order to be landfilled, the tires must first be cut into pieces as specified by Oregon Administrative Rule 340-064-0052. Since 1997, two Oregon landfills have been accepting and chipping tires for disposal. In addition, other processors chip and dispose of whole tires or substantial portions of the tires. The tires or chips arriving at the landfills come in whole loads of tires only, and were not sampled as part of the waste composition study.

Because disposal of whole tires is banned, very few tires come to landfills and transfer stations in mixed loads. We did not record whether the tires being disposed were whole tires, or were other unregulated tire material such as bicycle tires or innertubes. However, based on weight, 8 samples (of the 844 collected in the study) had enough tire rubber present to possibly contain whole tires. These samples contain between 20 and 54 pounds of tire rubber, and thus probably consisted of one or two passenger tires each. Another 10 samples had small amounts of tire rubber - between 1 and 18 pounds. These were most likely bicycle or other small non-road tires, innertubes, or pieces of tire tread. The remaining 826 samples had no measurable tire rubber.

For consistency, this report analyzed tires in the same manner as other materials. Based on that analysis, tires made up 0.12% of the waste stream sampled, but because of the high variability between samples, the 90% confidence interval was very broad - between 0.06% to 0.19%. This works out to between 1,700 and 5,200 tons of tires being disposed excluding the single-material disposal of tires. In fact though, it is highly likely that many of these tires are pulled out of the waste before being disposed at the landfill. The tires would then be sent to a processor and probably chipped and disposed as a single-stream disposal of tires. If this is the case, adding the estimate of tire disposal based on sampling to the reported single-stream disposal of tires probably will double-count most of the tire tonnage estimated by sampling.

Landfills generally report to DEQ the total tons of tires or tire chips they accept for disposal, plus DEQ surveys tire and other recyclers as part of conducting the Oregon Material Recovery Survey each year. Table 25 gives the results of the disposal reporting and the recovery survey.

The disposal numbers in Table 25 do not include any of the tonnage estimates based on the waste composition study. Based on the above discussion, DEQ believes that less than 1000 tons per year of tires, including bicycle and other small tires, are being disposed each year mixed with other solid waste. Including this tonnage would slightly reduce the recovery rate reported in Table 25.

Two major sets of adjustments have been made to the disposal totals. First, the two landfills with tire chippers originally had reported almost all of their tires received as coming from Oregon. Closer examination showed that in fact most of the tires were coming from tire stores outside of Oregon. DEQ obtained information from the tire store chain on how many tires came from Oregon versus other states, and used this to adjust the Oregon tire disposal numbers at those landfills. Second, in earlier years the residue from tire processing operations was considered to be an industrial waste, and was not counted toward the total municipal waste disposed. This residue consisted of the belts and other parts of the tire that were not considered easily recyclable, often with substantial amounts of tire rubber attached. However, by 1998 it became obvious that tire processors were grinding whole tires for disposal, and much

more than just non-recyclable residue was being disposed. Since that time DEQ has classified all tire chips and residue as being a counting municipal waste when disposed. For the purpose of calculating recovery rates, both processing waste and chipping of whole tires are counted in the total disposed tonnage.

Table 25: Tire Disposal and Recycling as a Single Material Stream
(results based on reporting with adjustments, not sampling)

Year	Disposed total	Recovered Total	Generated Total	Recovery Rate	Original Disposal Reported	Original Disposal Excluded as Residue
1992	N.A.	23,370	N.A.		N.A.	4,497
1993	6,375	31,553	37,928	83%	1,152	5,223
1994	8,704	25,406	34,110	74%	710	7,994
1995	9,382	31,262*	40,644	77%	943	8,439
1996	12,598	24,360**	36,958	66%	448	12,150
1997	38,136	21,477	59,613	36%	33,825	4,311
1998	51,378	20,782	72,160	29%	49,971	1,407
1999	47,281	22,804	70,085	33%	47,281	0
2000	35,241	16,419	51,660	32%	35,241	0
2001	33,386	17,251	50,636	34%	33,386	0
2002	27,190	23,423	50,613	46%	27,190	0

* Originally reported as 45,185 tons in the 1995 Oregon Material Recovery Survey report. DEQ now believes that 13,923 tons of this was a mistaken double-count.

** May be low by a few thousand tons due to the failure of a tire end-user to report.

In Table 25, tires are counted as disposed or recycled in the year when they are actually processed. In many cases, the tires might have been sitting in a tire storage site for years before finally being processed. The high disposal and generation rates for 1997-1999 reflect the cleanup and processing of tires from one huge tire storage site in Eastern Oregon that had millions of tires.

Overall, the trend showed by Table 25 for tire recovery has been negative. Both tire disposal and generation have been increasing, while tire recovery has been steadily decreasing over the last decade. Part of this was probably due to markets being overwhelmed with tires from a major pile cleanup from 1997 to 1999 and the loss of a major tire-derived fuel market in 1997. However, there has been a slight reversal recently, with recovery increasing and disposal decreasing in 2001 and 2002.

Recovery Rate Summary

Table 26 summarizes Oregon recovery rates for selected materials by comparing the results of the Oregon waste composition studies to results from the annual Oregon Material Recovery Surveys. Because the waste composition study looks at material categories in more detail than are reported in the material recovery survey, it is not possible to match the categories in each report on a one-to-one basis. In addition, the increase in collection and recycling of commingled materials has made it more difficult to match categories. For example, in earlier years, newspaper and magazines were generally recycled as separate grades. Now, many of the newspaper grades include magazines, and often substantial amounts of office paper is also included in with newspaper grades and mixed scrap paper grades. The decline in high-grade paper recycling rates since 1998 is probably more associated with high-grade papers being included in other paper categories, particularly newsprint, than with any real decrease in recycling.

Table 26: Recovery Rates for Selected Materials Statewide 1994-2002.

	2002 Tons Disposed	2002 Tons Recovered	2002 Total Tons Generated	2002 Oregon recovery percent	2000 Oregon recovery percent	1998 Oregon recovery percent	1994 Oregon recovery percent
Paper (Total)	440,077	679,971	1,120,048	60.7%	54.4%	55.3%	47.7%
Cardboard/Kraft	71,252	381,027	452,279	84.2%	78.1%	72.9%	66.5%
Newspaper& Magazines	77,854	211,082	288,936	69.9%	69.9%	68.8%	62.4%
High Grade Paper	45,261	41,659	86,920	47.9%	53.2%	63.1%	40.5%
Low Grade Paper	115,885	46,203	162,089	28.5%	39.8%	35.2%	21.7%
Non-recyclable paper	129,825	-	129,825	0.0%	0.0%	0.0%	0.0%
All Plastic (total)	243,047	23,647	266,694	8.9%	9.9%	7.1%	7.9%
Rigid Plastic Containers	35,808	13,396	49,204	27.2%	29.4%	29.4%	30.7%
Film Plastic	88,951	6,724	95,675	7.0%	4.6%	2.2%	2.5%
All Other Plastic	118,288	3,527	121,815	2.9%	4.2%	2.9%	1.7%
Food & Grease	450,846	45,144	495,990	9.1%	5.9%	6.6%	6.1%
Yard Debris	181,443	398,822	580,266	68.7%	65.3%	68.0%	61.5%
Wood	221,441	386,053	607,494	63.5%	62.4%	53.5%	42.7%
Container Glass	41,890	90,475	132,366	68.4%	64.8%	63.8%	56.6%
All Other Glass	21,318	4,621	25,939	17.8%	9.4%	2.6%	6.5%
Electronics	34,814	2,216	37,030	6.0%	1.3%	0.0%	0.0%
Scrap Metal (excl. electronics)*	155,404	262,390	417,794	62.8%	51.7%	44.8%	25.9%
Carpet	52,817	540	53,357	1.0%	2.7%	0.4%	0.0%
Textiles	44,337	4,527	48,864	9.3%	7.6%	7.3%	0.0%
Asphalt Roofing	104,601	13,459	118,061	11.4%	23.7%	7.3%	0.0%
Gypsum	130,989	3,781	134,770	2.8%	4.5%	7.8%	9.6%
Vehicle Tires**	27,190	23,327	50,516	46.2%	31.8%	28.8%	74.5%
All Other	596,607	85,423	682,030	12.5%	7.7%	7.5%	11.6%
Total	2,746,821	2,024,398	4,771,219	42.4%	38.9%	37.3%	32.6%

* Based on an exemption in state law, much commercial scrap metal recycling is not reported to DEQ. Low recovery of scrap metal in 1994 compared to later years is probably related more to how scrap metal dealers chose to report tonnages, rather than real changes in recovery rates.

** Includes only vehicle tires collected and disposed as a separate material. Bicycle and other small tires and any vehicle tires that may be illegally disposed as mixed solid waste are included in the "all other materials" category.

Most materials have either held steady or shown increases in recycling rates since 1994. Increases in recovery in even long-time recycled materials such as the paper categories is reflective of increased promotion of recycling by the recyclers, garbage collectors, governments, and businesses in Oregon. The only exceptions to the trend are vehicle tires, rigid plastic containers, and gypsum wallboard. Vehicle tire recovery declined sharply in the mid-90s due to the discontinuation of a major market for tire derived fuel and an increase in generation due to a major tire cleanup, but has begun to increase again since 1998. Rigid plastic container recovery has showed a slow decline since 1995 as documented in the 2002/2004 rigid plastic container recycling rate report (<http://www.deq.state.or.us/wmc/solwaste/rpc2004.html>), Gypsum wallboard recycling has dwindled with closure of facilities, most recently in 2001. Asphalt roofing recycling began in Oregon after 1994 but declined sharply in 2002 with the closure of a major facility in Portland.

Acknowledgements

This study, as well as the studies that have preceded it, would not be possible were it not for the considerable support and assistance provided by disposal site operators and garbage haulers throughout the state. In many cases landfill and transfer station operators provided the sort crew with space to conduct the study, assistance in obtaining samples from loads, disposal records and other information used to select the route trucks samples as part of the study and to determine the optimum number of samples to collect for each waste substream at each site. Many garbage haulers also assisted by providing data, checking on their trucks to confirm arrival times of selected trucks, and assisting in other ways.

With 55 disposal sites and about 100 garbage haulers providing assistance, there are far too many people to list all who helped. However, we would particularly like to thank Metro and Browning-Ferris Incorporated (BFI - a division of Allied Waste), Lane County, and Marion County for allowing us to sort at their facilities, and bring in loads from other facilities. They also provided great assistance in locating the trucks selected for sampling and providing equipment and staff assistance in pulling samples from disposed waste. Mentioning these in particular in no way diminishes the great assistance received at almost every site that we visited for sampling and from almost every garbage hauler who provided information and assistance in obtaining the samples.

The current study was financed by Metro, the City of Eugene, Marion County and by the Department of Environmental Quality. Earlier studies referenced here were also partially funded by the City of Portland. Sky Valley Associates conducted all of the field work in the current study, and the analysis of data and preparation of the final report was conducted by the Department of Environmental Quality.

Appendix A

Table A1. Tons of Oregon Domestic Waste Disposed Statewide by Substream: 2002

Portland Metro Tri-county Area	January - March	April - June	July - Septem.	October - December	Total 2002
Residential Garbage Route Trucks	57,926	59,306	59,066	62,500	238,798
Commercial Garbage Route Trucks	45,191	47,745	49,032	48,031	189,999
Mixed Garbage Route Trucks	46,653	50,775	51,256	46,253	194,938
Compacting Drop Boxes	26,230	26,953	29,824	29,319	112,326
Loose Drop Box - Regular Landfill or T.S.	23,023	27,074	28,688	23,648	102,433
Self-Haul - Regular Landfill or T.S.	29,568	33,239	34,884	28,205	125,896
Special Purpose LF- Hauler	11,738	13,565	14,923	11,673	51,899
Special Purpose LF - Self-Haul	14,888	18,024	23,515	16,556	72,983
Residuals: Mixed Solid Waste Processing Fac.	20,749	24,442	26,303	22,781	94,275
<i>Tires (single material disposed)</i>	1,443	2,266	2,265	1,739	7,713
<i>Medical (single material disposed)</i>	133	104	95	97	430
<i>Transfer Station Recovery from Mixed Waste</i>	-6,135	-7,185	-7,174	-6,410	-26,903
<i>Non-counting industrial sand</i>	216	218	267	274	975
Total	271,623	296,527	312,947	284,666	1,165,762
Total sampled as part of study	275,966	301,124	317,493	288,965	1,183,547

Marion County (Excluding out-of-county self-haul)	January - March	April - June	July - Septem.	October - December	Total 2002
Residential Garbage Route Trucks	12,612	12,647	13,480	12,453	51,192
Commercial Garbage Route Trucks	4,276	4,869	5,686	5,827	20,659
Mixed Garbage Route Trucks	10,164	11,257	10,925	11,288	43,633
Compacting Drop Boxes	3,768	3,609	4,155	4,155	15,687
Loose Drop Box - Regular Landfill or T.S.	3,372	3,781	3,812	4,033	14,998
Self-Haul - Regular Landfill or T.S.	4,930	5,323	4,886	5,101	20,240
Special Purpose LF	1,406	2,461	2,770	1,508	8,145
Residuals: Mixed Solid Waste Processing Fac.	5,675	7,276	9,581	6,860	29,392
<i>Tires (single material disposed)</i>	155	299	357	281	1,094
<i>Medical (single material disposed)</i>	85	83	84	85	337
<i>Gypsum Wallboard (single material disposed)</i>	796	1,063	1,079	910	3,847
Total	46,444	51,606	55,736	51,591	205,377
Total sampled as part of study	46,203	51,224	55,295	51,225	203,946

City of Eugene (Excluding mixed waste processing facilities)	January - March	April - June	July - Septem.	October - December	Total 2002
Residential Garbage Route Trucks	7,768	8,263	7,938	8,096	32,064
Commercial Garbage Route Trucks	4,022	4,278	4,110	4,192	16,602
Mixed Garbage Route Trucks	3,366	3,580	3,440	3,508	13,894
Compacting Drop Boxes	1,491	1,557	1,626	1,608	6,281
Loose Drop Box - Regular Landfill or T.S.	1,034	1,264	1,272	1,189	4,760
Self-Haul - Regular Landfill or T.S.	5,662	6,540	6,663	5,460	24,325
Special Purpose LF	1,110	2,132	2,977	1,420	7,639
Residuals: Mixed Solid Waste Processing Fac.	Included in "Rest of Oregon"				
<i>Tires (single material disposed)</i>	Included in "Rest of Oregon"				
<i>Medical (single material disposed)</i>	Included in "Rest of Oregon"				
Total	24,452	27,614	28,026	25,472	105,565
Total sampled as part of study	24,452	27,614	28,026	25,472	105,565

Continued Table A1. Tons Disposed by Substream: 2002

Rest of Oregon	January - March	April - June	July - Septem.	October - December	Total 2002
Residential Garbage Route Trucks	58,540	66,077	65,903	64,204	254,724
Commercial Garbage Route Trucks	34,732	41,660	50,319	39,804	166,515
Mixed Garbage Route Trucks	46,344	49,251	42,287	43,003	180,885
Compacting Drop Boxes	13,739	15,206	16,197	14,424	59,566
Loose Drop Boxes - Regular Landfill or T.S.	30,159	37,423	46,254	36,359	150,195
Self-Haul - Regular Landfill or T.S.	78,972	103,941	113,319	94,921	391,153
Special Purpose LF*	1,758	2,972	3,599	3,239	11,569
Residuals: Mixed Solid Waste Processing Fac.	8,682	9,174	9,249	8,790	35,895
<i>Tires (single material disposed)</i>	<i>3,198</i>	<i>4,645</i>	<i>5,665</i>	<i>4,875</i>	<i>18,383</i>
<i>Medical (single material disposed)</i>	<i>19</i>	<i>15</i>	<i>14</i>	<i>14</i>	<i>61</i>
<i>Animal Waste & Grease</i>	<i>9</i>	<i>10</i>	<i>9</i>	<i>31</i>	<i>60</i>
<i>Transfer Station Recovery from Mixed Waste</i>	<i>-379</i>	<i>-480</i>	<i>-520</i>	<i>-382</i>	<i>-1,762</i>
Total	275,772	329,896	352,294	309,282	1,267,244
Total sampled as part of study	272,925	325,706	347,127	304,744	1,250,502

* For sampling and analysis, special purpose landfill waste was combined with regular self-haul waste for "rest of Oregon"

Statewide Total by Waste Substream	January - March	April - June	July - Septem.	October - December	Total 2002
Residential Garbage Route Trucks	136,846	146,294	146,386	147,252	576,779
Commercial Garbage Route Trucks	88,220	98,553	109,148	97,854	393,775
Mixed Garbage Route Trucks	106,527	114,864	107,909	104,052	433,351
Compacting Drop Boxes	45,227	47,326	51,802	49,505	193,860
Loose Drop Boxes - Regular Landfill or T.S.	57,588	69,543	80,025	65,230	272,386
Self-Haul - Regular Landfill or T.S.	119,132	149,043	159,752	133,687	561,614
Special Purpose LF (Hauler & self-haul)	30,900	39,153	47,785	34,396	152,235
Residuals: Mixed Solid Waste Processing Fac.	35,106	40,892	45,133	38,430	159,562
<i>Tires (single material disposed)</i>	<i>4,796</i>	<i>7,210</i>	<i>8,287</i>	<i>6,896</i>	<i>27,190</i>
<i>Gypsum direct haul (single material)</i>	<i>796</i>	<i>1,063</i>	<i>1,079</i>	<i>910</i>	<i>3,847</i>
<i>Medical (Single material)</i>	<i>238</i>	<i>202</i>	<i>193</i>	<i>196</i>	<i>828</i>
<i>Animal Waste (single material)</i>	<i>9</i>	<i>10</i>	<i>9</i>	<i>31</i>	<i>60</i>
<i>Transfer Station Recovery from Mixed Waste</i>	<i>-6,514</i>	<i>-7,665</i>	<i>-7,694</i>	<i>-6,792</i>	<i>-28,665</i>
<i>Industrial Sand (single non-counting material)</i>	<i>216</i>	<i>218</i>	<i>267</i>	<i>274</i>	<i>975</i>
Total	619,087	706,706	750,082	671,921	2,747,796
Total sampled as part of study	619,547	705,668	747,941	670,406	2,743,561

Items in italics were not sampled as part of the composition study

Table A2. Oregon Statewide Waste Composition 2002

Field Data and Contamination Correction (page 1 of 2)

Material	Field Data 2002		With Contamination Correction		Contamination Correction Factor	
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Factor	(90% Conf. Int.)
TOTAL PAPER	20.62%	(19.78 - 21.56%)	16.20%	(15.29 - 17.25%)	-21.44%	(-24.56 to -18.03%)
Paper Packaging	9.09%	(8.60 - 9.62%)	7.02%	(6.51 - 7.56%)	-22.81%	(-26.57 to -19.00%)
Cardboard/Brown Bags	3.23%	(2.93 - 3.55%)	2.69%	(2.37 - 3.03%)	-16.82%	(-23.92 to -10.34%)
Low Grade Packaging	2.10%	(1.89 - 2.33%)	1.78%	(1.59 - 1.99%)	-15.24%	(-19.34 to -11.56%)
Bleached Polycoats	0.43%	(0.35 - 0.52%)	0.37%	(0.30 - 0.44%)	-15.24%	(-19.34 to -11.56%)
Nonrecyc. Packaging Paper	1.42%	(1.27 - 1.59%)	0.93%	(0.82 - 1.06%)	-34.39%	(-37.81 to -30.56%)
Mixed Paper / Materials	1.91%	(1.70 - 2.13%)	1.25%	(1.10 - 1.42%)	-34.39%	(-37.81 to -30.56%)
Other Paper	11.53%	(10.95 - 12.13%)	9.18%	(8.55 - 9.91%)	-20.35%	(-24.08 to -16.35%)
Newspaper	2.17%	(2.00 - 2.36%)	1.63%	(1.31 - 2.01%)	-25.02%	(-39.25 to -10.35%)
Magazines	1.27%	(1.11 - 1.45%)	1.23%	(1.07 - 1.41%)	-2.50%	(-6.02 to 0.46%)
Hi Grade Paper	1.75%	(1.57 - 1.94%)	1.67%	(1.49 - 1.87%)	-4.47%	(-8.25 to -1.18%)
Hardcover Books	0.11%	(0.07 - 0.16%)	0.11%	(0.07 - 0.16%)	0.26%	(-0.95 to 0.43%)
Low Grade Paper	2.35%	(2.09 - 2.63%)	1.99%	(1.74 - 2.24%)	-15.24%	(-19.34 to -11.56%)
Other Nonrecyclable Paper	3.88%	(3.65 - 4.13%)	2.55%	(2.35 - 2.76%)	-34.39%	(-37.81 to -30.56%)
<i>Low-grade Recyc. Paper comb.</i>	<i>4.99%</i>	<i>(4.63 - 5.35%)</i>	<i>4.24%</i>	<i>(3.88 - 4.62%)</i>	<i>-14.90%</i>	<i>(-18.91 to -11.27%)</i>
<i>Nonrecyclable Paper combined</i>	<i>7.21%</i>	<i>(6.81 - 7.62%)</i>	<i>4.73%</i>	<i>(4.37 - 5.11%)</i>	<i>-34.39%</i>	<i>(-37.81 to -30.56%)</i>
TOTAL PLASTICS	10.95%	(10.39 - 11.58%)	8.86%	(8.30 - 9.46%)	-19.07%	(-21.64 to -17.09%)
Plastic Packaging	5.65%	(5.39 - 5.95%)	4.20%	(3.96 - 4.48%)	-25.75%	(-27.76 to -23.76%)
Rigid Plastic Containers	1.67%	(1.58 - 1.78%)	1.31%	(1.23 - 1.40%)	-22.06%	(-23.79 to -20.42%)
Other Plastic Packaging	3.98%	(3.76 - 4.22%)	2.89%	(2.68 - 3.14%)	-27.30%	(-30.06 to -24.62%)
Other Rigid Packaging	0.82%	(0.73 - 0.93%)	0.79%	(0.70 - 0.89%)	-3.33%	(-7.37 to -0.95%)
Plastic Film Pkg (estimate)	3.16%	(2.97 - 3.37%)	2.11%	(1.93 - 2.30%)	-33.48%	(-36.37 to -30.27%)
Plastic Products	5.29%	(4.86 - 5.77%)	4.66%	(4.20 - 5.11%)	-11.94%	(-15.53 to -9.68%)
Rigid Plastic Products	2.16%	(1.83 - 2.49%)	2.09%	(1.76 - 2.40%)	-3.33%	(-7.37 to -0.95%)
Plastic Film Prod. (estimate)	1.71%	(1.60 - 1.82%)	1.14%	(1.04 - 1.24%)	-33.48%	(-36.37 to -30.27%)
Mixed Plastic / Materials	1.42%	(1.17 - 1.73%)	1.44%	(1.16 - 1.74%)	0.85%	(-5.32 to 3.65%)
<i>(Film plastic combined)</i>	<i>4.87%</i>	<i>(4.57 - 5.19%)</i>	<i>3.24%</i>	<i>(2.98 - 3.55%)</i>	<i>-33.48%</i>	<i>(-36.37 to -30.27%)</i>
Plastic Film Recyclable	1.02%	(0.83 - 1.25%)	1.01%	(0.81 - 1.23%)	-0.80%	(-6.13 to 4.82%)
Plastic Film Nonrecyclable	3.85%	(3.65 - 4.08%)	2.23%	(2.06 - 2.43%)	-42.14%	(-45.32 to -38.46%)
OTHER ORGANICS	45.13%	(43.50 - 46.72%)	45.78%	(44.09 - 47.29%)	1.45%	(0.76 to 1.85%)
Yard Debris	6.58%	(5.37 - 7.82%)	6.61%	(5.40 - 7.85%)	0.46%	(0.36 to 0.68%)
Leaves / Grass	5.46%	(4.37 - 6.63%)	5.49%	(4.39 - 6.67%)	0.56%	(0.43 to 0.83%)
Small Prunings under 2"	0.83%	(0.51 - 1.19%)	0.83%	(0.51 - 1.19%)	0.01%	(0.00 to 0.03%)
Large Prunings over 2"	0.24%	(0.12 - 0.39%)	0.24%	(0.12 - 0.39%)	0.00%	(0.00 to 0.00%)
Stumps	0.05%	(0.00 - 0.15%)	0.05%	(0.00 - 0.15%)	0.00%	(0.00 to 0.00%)
Wood	8.72%	(7.75 - 9.73%)	8.59%	(7.60 - 9.57%)	-1.45%	(-2.78 to -0.74%)
Clean lumber & hog fuel	3.45%	(2.87 - 4.04%)	3.33%	(2.74 - 3.91%)	-3.51%	(-7.31 to -1.25%)
Untreated Lumber	2.03%	(1.62 - 2.46%)	1.91%	(1.52 - 2.30%)	-5.91%	(-10.57 to -1.85%)
Clean HogFuel Lumber	1.42%	(1.01 - 1.87%)	1.42%	(1.00 - 1.87%)	-0.09%	(-5.21 to 1.28%)
Painted & Treated lumber	1.53%	(1.10 - 2.04%)	1.57%	(1.12 - 2.08%)	2.08%	(-1.83 to 7.13%)
Painted Lumber	1.14%	(0.79 - 1.55%)	1.17%	(0.80 - 1.60%)	2.44%	(-2.78 to 9.19%)
Chemically-treated Lumber	0.39%	(0.14 - 0.71%)	0.40%	(0.14 - 0.72%)	1.06%	(-0.09 to 3.34%)
Wood Pallets / Crates	1.19%	(0.86 - 1.51%)	1.19%	(0.86 - 1.51%)	0.04%	(0.00 to 0.09%)
Wood Furniture	0.45%	(0.30 - 0.63%)	0.41%	(0.27 - 0.57%)	-8.57%	(-8.57 to -8.57%)
Other Wood Products	0.11%	(0.09 - 0.13%)	0.11%	(0.09 - 0.14%)	2.67%	(-6.89 to 9.96%)
Mixed Wood / Materials	1.98%	(1.57 - 2.46%)	1.98%	(1.56 - 2.46%)	-0.08%	(-0.71 to 0.64%)
Food	15.60%	(14.72 - 16.53%)	16.43%	(15.51 - 17.45%)	5.36%	(4.43 to 6.50%)
Tires	0.12%	(0.06 - 0.19%)	0.12%	(0.06 - 0.19%)	0.00%	(0.00 to 0.00%)
Rubber Products	0.64%	(0.48 - 0.84%)	0.63%	(0.46 - 0.82%)	-1.47%	(-9.07 to 0.69%)
Disposable Diapers	2.08%	(1.76 - 2.43%)	2.09%	(1.77 - 2.44%)	0.42%	(0.09 to 0.85%)
Carpet	1.97%	(1.48 - 2.58%)	1.93%	(1.39 - 2.50%)	-2.46%	(-10.52 to -0.47%)
Textiles + mixed	3.03%	(2.68 - 3.44%)	2.91%	(2.53 - 3.29%)	-4.02%	(-9.47 to -1.68%)
Textiles	1.73%	(1.48 - 2.02%)	1.62%	(1.35 - 1.88%)	-6.64%	(-14.33 to -3.07%)
Mixed Textile / Material	1.30%	(1.10 - 1.52%)	1.29%	(1.09 - 1.52%)	-0.52%	(-3.57 to 0.70%)
Roofing / Tarpaper	3.81%	(2.84 - 4.80%)	3.81%	(2.84 - 4.78%)	0.05%	(-1.81 to 0.14%)
Furniture	1.27%	(0.91 - 1.64%)	1.27%	(0.91 - 1.64%)	0.00%	(0.00 to 0.00%)
Other Organics	1.30%	(1.07 - 1.59%)	1.39%	(1.13 - 1.69%)	6.37%	(4.31 to 8.90%)

Continued Table A2. Oregon Statewide Waste Composition 2002 (page 2 of 2)

Material	Field Data 2002		With Contamination Correction		Contamination Correction Factor	
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Factor	(90% Conf. Int.)
GLASS	2.32%	(2.04 - 2.66%)	2.31%	(2.03 - 2.65%)	-0.55%	(-2.24 to 0.76%)
Deposit Beverage Glass	0.37%	(0.30 - 0.44%)	0.37%	(0.30 - 0.44%)	-0.65%	(-1.70 to 0.22%)
Other Container Glass	1.18%	(1.09 - 1.29%)	1.16%	(1.06 - 1.27%)	-2.10%	(-5.28 to 0.87%)
Other Clear Bottles	0.44%	(0.38 - 0.49%)	0.43%	(0.38 - 0.48%)	-1.21%	(-3.10 to 0.78%)
Other Colored Bottles	0.28%	(0.23 - 0.33%)	0.27%	(0.23 - 0.32%)	-2.30%	(-4.08 to -0.97%)
Clear Container Glass	0.43%	(0.37 - 0.48%)	0.41%	(0.35 - 0.48%)	-3.11%	(-11.18 to 4.91%)
Colored Container Glass	0.04%	(0.03 - 0.06%)	0.04%	(0.03 - 0.06%)	0.00%	(0.00 to 0.00%)
Window+Other Glass	0.76%	(0.51 - 1.09%)	0.78%	(0.52 - 1.10%)	1.90%	(-3.11 to 6.87%)
Flat Window Glass	0.27%	(0.08 - 0.60%)	0.27%	(0.08 - 0.59%)	-0.61%	(-9.16 to 4.52%)
Fluorescent Tubes	0.01%	(0.00 - 0.02%)	0.01%	(0.00 - 0.02%)	0.00%	(0.00 to 0.00%)
Compact Fluorescent Lights	0.01%	(0.00 - 0.01%)	0.01%	(0.00 - 0.01%)	0.14%	(0.00 to 0.43%)
Other Glass	0.47%	(0.36 - 0.59%)	0.49%	(0.37 - 0.62%)	3.41%	(-3.45 to 10.05%)
METALS	7.45%	(6.75 - 8.13%)	7.28%	(6.58 - 7.97%)	-2.23%	(-2.83 to -1.65%)
Alum. Beverage Cans	0.13%	(0.12 - 0.15%)	0.12%	(0.11 - 0.14%)	-10.75%	(-12.65 to -9.06%)
Alum. Foil / Food Trays	0.17%	(0.15 - 0.19%)	0.10%	(0.08 - 0.11%)	-43.31%	(-47.63 to -39.53%)
Other Aluminum	0.07%	(0.03 - 0.12%)	0.07%	(0.03 - 0.12%)	0.60%	(0.09 to 1.49%)
Tinned Cans	0.88%	(0.81 - 0.96%)	0.81%	(0.74 - 0.88%)	-8.53%	(-11.18 to -5.83%)
Tin Food Cans	0.79%	(0.72 - 0.86%)	0.73%	(0.66 - 0.80%)	-8.05%	(-10.92 to -5.34%)
Other Tin Cans	0.09%	(0.07 - 0.12%)	0.08%	(0.06 - 0.10%)	-12.64%	(-18.49 to -1.80%)
Other Metal	6.19%	(5.50 - 6.85%)	6.19%	(5.49 - 6.86%)	-0.06%	(-0.44 to 0.27%)
Other Nonferrous Metal	0.06%	(0.04 - 0.08%)	0.06%	(0.04 - 0.09%)	4.32%	(-0.59 to 14.20%)
Other Ferrous Metal	1.74%	(1.45 - 2.05%)	1.75%	(1.46 - 2.07%)	0.67%	(0.20 to 1.25%)
White Goods	0.05%	(0.00 - 0.11%)	0.05%	(0.00 - 0.11%)	0.00%	(0.00 to 0.00%)
Computer, Brown, Sm. Applianc	1.91%	(1.51 - 2.34%)	1.91%	(1.51 - 2.34%)	-0.02%	(-0.07 to 0.00%)
Computers	0.56%	(0.34 - 0.82%)	0.56%	(0.34 - 0.82%)	0.00%	(0.00 to 0.00%)
Computers excl. monitors	0.32%	(0.18 - 0.49%)	0.32%	(0.18 - 0.49%)	0.00%	(0.00 to 0.00%)
Comp. Monitor CRTs	0.24%	(0.11 - 0.39%)	0.24%	(0.11 - 0.39%)	0.00%	(0.00 to 0.00%)
TVs, CRTs, & Brown Goods	0.71%	(0.47 - 0.96%)	0.71%	(0.47 - 0.96%)	-0.01%	(-0.07 to 0.00%)
TVs / Other CRTs	0.43%	(0.22 - 0.64%)	0.43%	(0.22 - 0.64%)	0.00%	(0.00 to 0.00%)
Other Brown Goods	0.28%	(0.18 - 0.40%)	0.28%	(0.18 - 0.40%)	-0.04%	(-0.17 to 0.00%)
Small Appliances-non elec	0.64%	(0.48 - 0.83%)	0.64%	(0.48 - 0.83%)	-0.05%	(-0.13 to 0.00%)
Empty Aerosol Cans	0.11%	(0.10 - 0.13%)	0.11%	(0.10 - 0.12%)	-2.35%	(-4.73 to -0.89%)
Mixed Metal / Material	2.32%	(1.94 - 2.72%)	2.30%	(1.93 - 2.71%)	-0.63%	(-1.62 to 0.13%)
OTHER INORGANICS	12.78%	(11.40 - 14.19%)	12.92%	(11.41 - 14.26%)	1.11%	(-2.53 to 2.01%)
Rock / Concrete / Brick	2.57%	(1.89 - 3.27%)	2.58%	(1.90 - 3.28%)	0.32%	(0.10 to 0.94%)
Soil / Sand / Dirt	1.05%	(0.74 - 1.37%)	1.10%	(0.79 - 1.45%)	5.11%	(3.35 to 8.33%)
Pet Litter / Animal Feces	1.67%	(1.38 - 1.97%)	1.69%	(1.40 - 1.99%)	1.39%	(0.63 to 2.39%)
Gypsum Wallboard	4.65%	(3.64 - 5.69%)	4.64%	(3.55 - 5.62%)	-0.22%	(-4.71 to 0.25%)
Gypsum Wallboard OLD	2.19%	(1.52 - 2.92%)	2.18%	(1.46 - 2.86%)	-0.70%	(-9.73 to 0.17%)
Gypsum Wallboard NEW	2.45%	(1.68 - 3.33%)	2.46%	(1.68 - 3.33%)	0.20%	(0.00 to 0.58%)
Fiberglass Insulation	0.60%	(0.17 - 1.08%)	0.59%	(0.15 - 1.00%)	-2.58%	(-50.79 to -1.29%)
Other Inorganics	2.25%	(1.80 - 2.80%)	2.33%	(1.86 - 2.91%)	3.68%	(-1.86 to 8.60%)
"MEDICAL WASTES"	0.09%	(0.04 - 0.15%)	0.09%	(0.04 - 0.15%)	0.63%	(0.00 to 2.04%)
OTHER HAZARDOUS MATLS	0.67%	(0.50 - 0.84%)	0.71%	(0.54 - 0.90%)	6.10%	(2.70 to 11.45%)
Latex Paint	0.09%	(0.05 - 0.14%)	0.11%	(0.05 - 0.18%)	20.45%	(2.65 to 51.26%)
Oil Paints / Thinners	0.06%	(0.02 - 0.11%)	0.06%	(0.02 - 0.11%)	4.52%	(0.47 to 10.97%)
Pesticides / Herbicides	0.02%	(0.00 - 0.04%)	0.02%	(0.00 - 0.04%)	1.58%	(0.00 to 4.84%)
Motor Oil	0.02%	(0.01 - 0.03%)	0.03%	(0.01 - 0.05%)	39.42%	(23.17 to 60.51%)
Used Oil Filters	0.04%	(0.03 - 0.06%)	0.04%	(0.03 - 0.06%)	0.00%	(0.00 to 0.00%)
Fuels (gas/kerodiesel)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 to 0.00%)
Adhesives / Sealants	0.05%	(0.02 - 0.12%)	0.06%	(0.02 - 0.12%)	3.22%	(0.92 to 8.32%)
Caustic Cleaners	0.02%	(0.01 - 0.03%)	0.02%	(0.01 - 0.03%)	6.47%	(3.20 to 10.63%)
Lead-Acid Batteries	0.07%	(0.00 - 0.15%)	0.07%	(0.00 - 0.15%)	0.00%	(0.00 to 0.00%)
Dry-cell Batteries	0.08%	(0.07 - 0.10%)	0.08%	(0.07 - 0.10%)	0.43%	(-0.01 to 1.25%)
Asbestos	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 to 0.00%)
Other Hazardous Chemicals	0.22%	(0.10 - 0.36%)	0.22%	(0.11 - 0.38%)	3.87%	(0.22 to 9.38%)
TOTAL PACKAGING	18.79%	(18.06 - 19.60%)	15.07%	(14.29 - 15.83%)	-19.81%	(-22.00 to -17.53%)
TOTAL PRODUCTS	52.44%	(50.93 - 53.97%)	49.28%	(47.44 - 50.79%)	-6.03%	(-7.62 to -5.17%)
TOTAL NON-MANUFACTURED	28.77%	(27.17 - 30.29%)	29.80%	(28.20 - 31.38%)	3.60%	(3.14 to 4.25%)
Total Organic	77.24%	(75.73 - 78.64%)	71.43%	(69.69 - 73.02%)	-7.53%	(-8.78 to -6.47%)
Total non-organic	22.76%	(21.36 - 24.27%)	22.72%	(21.19 - 24.10%)	-0.16%	(-2.17 to 0.35%)
compostable	52.94%	(51.39 - 54.43%)	49.34%	(47.75 - 51.04%)	-6.80%	(-8.11 to -5.35%)
compost-target	31.04%	(29.64 - 32.45%)	30.49%	(29.14 - 31.93%)	-1.75%	(-2.40 to -0.97%)
Water & Residue (Detailed)	0.00%	(0.00 - 0.00%)	5.85%	(5.07 - 6.89%)	0.00%	(0.00 to 0.00%)

Table A3. Tons of Material Disposed Statewide: 2002**(with contamination correction) (page 1 of 2)**

Material	Tons of Sampled Waste (with contamination correction)		Single Material Disposal/ Recovery*	Total Tons: All Waste (with contamination correction)	
	Tons	(90% Conf. Int.)		Tons	(90% Conf. Int.)
TOTAL PAPER	444,397	(419,562 - 473,280)	-4,320	440,077	(415,243 - 468,960)
Paper Packaging	192,522	(178,533 - 207,509)	-2,627	189,895	(175,906 - 204,882)
Cardboard/Brown Bags	73,823	(65,123 - 83,163)	-2,571	71,252	(62,552 - 80,592)
Low Grade Packaging	48,731	(43,677 - 54,591)	-56	48,674	(43,621 - 54,535)
Bleached Polycoats	10,022	(8,158 - 12,129)	0	10,022	(8,158 - 12,129)
Nonrecyc. Packaging	25,594	(22,566 - 29,089)	0	25,594	(22,566 - 29,089)
Mixed Paper / Materials	34,353	(30,249 - 38,841)	0	34,353	(30,249 - 38,841)
Other Paper	251,875	(234,675 - 272,022)	-1,692	250,182	(232,983 - 270,329)
Newspaper	44,690	(35,958 - 55,072)	-545	44,145	(35,413 - 54,527)
Magazines	33,878	(29,417 - 38,782)	-169	33,709	(29,248 - 38,613)
Hi Grade Paper	45,769	(40,869 - 51,279)	-508	45,261	(40,362 - 50,772)
Hardcover Books	3,052	(1,901 - 4,432)	0	3,052	(1,901 - 4,432)
Low Grade Paper	54,608	(47,855 - 61,569)	-470	54,138	(47,385 - 61,099)
Other Nonrecyc. Paper	69,878	(64,548 - 75,752)	0	69,878	(64,548 - 75,752)
Low-grade Recyc. Paper comb.	116,412	(106,476 - 126,764)	-527	115,885	(105,949 - 126,237)
Nonrecyclable Paper combined	129,825	(120,014 - 140,129)	0	129,825	(120,014 - 140,129)
TOTAL PLASTICS	243,095	(227,783 - 259,472)	-48	243,047	(227,735 - 259,425)
Plastic Packaging	115,191	(108,698 - 122,986)	0	115,191	(108,698 - 122,986)
Rigid Plastic Containers	35,808	(33,617 - 38,298)	0	35,808	(33,617 - 38,298)
Other Plastic Packaging	79,383	(73,526 - 86,032)	0	79,383	(73,526 - 86,032)
Other Rigid Packaging	21,621	(19,155 - 24,514)	0	21,621	(19,155 - 24,514)
Plastic Film Pkg (estimate)	57,762	(53,017 - 63,184)	0	57,762	(53,017 - 63,184)
Plastic Products	127,904	(115,094 - 140,154)	-48	127,856	(115,046 - 140,106)
Rigid Plastic Products	57,306	(48,347 - 65,867)	-48	57,258	(48,299 - 65,819)
Plastic Film Prod. (estimate)	31,189	(28,627 - 34,117)	0	31,189	(28,627 - 34,117)
Mixed Plastic / Materials	39,408	(31,856 - 47,618)	0	39,408	(31,856 - 47,618)
<i>(Film plastic combined)</i>	<i>88,951</i>	<i>(81,644 - 97,301)</i>	<i>0</i>	<i>88,951</i>	<i>(81,644 - 97,301)</i>
Plastic Film Recyclable	27,781	(22,289 - 33,775)	0	27,781	(22,289 - 33,775)
Plastic Film Nonrecyclable	61,170	(56,652 - 66,623)	0	61,170	(56,652 - 66,623)
OTHER ORGANICS	1,256,027	(1,209,605 - 1,297,337)	12,822	1,268,849	(1,222,426 - 1,310,159)
Yard Debris	181,443	(148,232 - 215,441)	0	181,443	(148,232 - 215,441)
Leaves / Grass	150,577	(120,458 - 183,031)	0	150,577	(120,458 - 183,031)
Small Prunings under 2"	22,782	(14,080 - 32,609)	0	22,782	(14,080 - 32,609)
Large Prunings over 2"	6,639	(3,331 - 10,577)	0	6,639	(3,331 - 10,577)
Stumps	1,445	(0 - 4,149)	0	1,445	(0 - 4,149)
Wood	235,684	(208,481 - 262,473)	-14,244	221,441	(194,238 - 248,230)
Clean lumber & hog fuel	91,347	(75,169 - 107,206)	-9,401	81,946	(65,768 - 97,805)
Untreated Lumber	52,420	(41,576 - 63,138)	-5,555	46,865	(36,021 - 57,583)
Clean HogFuel Lumber	38,926	(27,330 - 51,187)	-3,846	35,080	(23,484 - 47,342)
Painted & Treated lumber	42,940	(30,711 - 57,062)	-997	41,943	(29,714 - 56,065)
Painted Lumber	32,008	(22,011 - 43,802)	-997	31,011	(21,014 - 42,805)
Chemically-treated Lumber	10,932	(3,900 - 19,735)	0	10,932	(3,900 - 19,735)
Wood Pallets / Crates	32,656	(23,505 - 41,510)	-3,276	29,380	(20,229 - 38,234)
Wood Furniture	11,323	(7,514 - 15,714)	0	11,323	(7,514 - 15,714)
Other Wood Products	3,068	(2,403 - 3,761)	0	3,068	(2,403 - 3,761)
Mixed Wood / Materials	54,350	(42,913 - 67,395)	-570	53,781	(42,343 - 66,825)
Food	450,846	(425,502 - 478,767)	0	450,846	(425,502 - 478,767)
Tires	3,211	(1,658 - 5,183)	27,131	30,342	(28,789 - 32,314)
Rubber Products	17,371	(12,626 - 22,460)	0	17,371	(12,626 - 22,460)
Disposable Diapers	57,289	(48,452 - 66,952)	0	57,289	(48,452 - 66,952)
Carpet	52,817	(38,168 - 68,530)	0	52,817	(38,168 - 68,530)
Textiles + mixed	79,786	(69,315 - 90,364)	0	79,786	(69,315 - 90,364)
Textiles	44,337	(37,151 - 51,583)	0	44,337	(37,151 - 51,583)
Mixed Textile / Material	35,449	(29,806 - 41,621)	0	35,449	(29,806 - 41,621)
Roofing / Tarpaper	104,601	(77,923 - 131,145)	0	104,601	(77,923 - 131,145)
Furniture	34,916	(24,968 - 45,125)	-125	34,791	(24,842 - 45,000)
Other Organics	38,063	(30,983 - 46,326)	60	38,123	(31,043 - 46,386)

* For "Single material disposal/recovery", positive amounts represent single materials such as shredded tires being disposed, and negative amounts represent estimates of materials pulled from mixed solid waste at certain Metro-area transfer stations after the waste was received (and after any samples would have been taken for this study)

Continued Table A3. Tons Disposed Statewide: 2002 (page 2 of 2)

Material	Tons of Sampled Waste (with contamination correction)		Single Material Disposal/ Recovery*	Total Tons: All Waste (with contamination correction)	
	Tons	(90% Conf. Int.)		Tons	(90% Conf. Int.)
GLASS	63,259	(55,740 - 72,639)	-51	63,208	(55,689 - 72,588)
Deposit Beverage Glass	10,063	(8,234 - 12,012)	0	10,063	(8,234 - 12,012)
Other Container Glass	31,827	(29,015 - 34,757)	0	31,827	(29,015 - 34,757)
Other Clear Bottles	11,821	(10,333 - 13,281)	0	11,821	(10,333 - 13,281)
Other Colored Bottles	7,480	(6,209 - 8,743)	0	7,480	(6,209 - 8,743)
Clear Container Glass	11,334	(9,693 - 13,196)	0	11,334	(9,693 - 13,196)
Colored Container Glass	1,192	(799 - 1,670)	0	1,192	(799 - 1,670)
Window+Other Glass	21,369	(14,326 - 30,111)	-51	21,318	(14,275 - 30,060)
Flat Window Glass	7,390	(2,140 - 16,289)	-51	7,339	(2,090 - 16,238)
Fluorescent Tubes	340	(98 - 625)	0	340	(98 - 625)
Compact Fluorescent Lights	200	(66 - 367)	0	200	(66 - 367)
Other Glass	13,440	(10,169 - 17,015)	0	13,440	(10,169 - 17,015)
METALS	199,829	(180,542 - 218,584)	-9,610	190,219	(170,931 - 208,974)
Alum. Beverage Cans	3,300	(2,924 - 3,722)	0	3,300	(2,924 - 3,722)
Alum. Foil / Food Trays	2,628	(2,327 - 2,965)	0	2,628	(2,327 - 2,965)
Other Aluminum	2,021	(938 - 3,363)	-61	1,960	(877 - 3,302)
Tinned Cans	22,151	(20,301 - 24,131)	0	22,151	(20,301 - 24,131)
Tin Food Cans	19,936	(18,143 - 21,859)	0	19,936	(18,143 - 21,859)
Other Tin Cans	2,215	(1,715 - 2,815)	0	2,215	(1,715 - 2,815)
Other Metal	169,729	(150,676 - 188,161)	-9,550	160,179	(141,126 - 178,611)
Other Nonferrous Metal	1,682	(1,064 - 2,371)	0	1,682	(1,064 - 2,371)
Other Ferrous Metal	48,006	(40,070 - 56,660)	-9,515	38,491	(30,555 - 47,145)
White Goods	1,456	(105 - 3,139)	-35	1,421	(70 - 3,104)
Computer,Brown,Sm. Applianc	52,375	(41,313 - 64,224)	0	52,375	(41,313 - 64,224)
Computers & Monitors	15,341	(9,293 - 22,497)	0	15,341	(9,293 - 22,497)
Computers excl. monitors	8,841	(4,908 - 13,575)	0	8,841	(4,908 - 13,575)
Comp. Monitor CRTs	6,501	(3,128 - 10,808)	0	6,501	(3,128 - 10,808)
TVs, CRTs, & Brown Goods	19,473	(12,968 - 26,474)	0	19,473	(12,968 - 26,474)
TVs / Other CRTs	11,689	(5,958 - 17,461)	0	11,689	(5,958 - 17,461)
Other Brown Goods	7,784	(4,990 - 10,964)	0	7,784	(4,990 - 10,964)
Small Appliances-non elec	17,561	(13,051 - 22,638)	0	17,561	(13,051 - 22,638)
Empty Aerosol Cans	3,044	(2,679 - 3,408)	0	3,044	(2,679 - 3,408)
Mixed Metal / Material	63,167	(52,923 - 74,267)	0	63,167	(52,923 - 74,267)
OTHER INORGANICS	354,558	(313,139 - 391,143)	3,645	358,202	(316,784 - 394,788)
Rock / Concrete / Brick	70,663	(52,119 - 89,999)	-172	70,491	(51,947 - 89,826)
Soil / Sand / Dirt	30,258	(21,554 - 39,770)	0	30,258	(21,554 - 39,770)
Pet Litter / Animal Feces	46,386	(38,456 - 54,667)	0	46,386	(38,456 - 54,667)
Gypsum Wallboard	127,172	(97,531 - 154,220)	3,817	130,989	(101,349 - 158,037)
Gypsum Wallboard OLD	59,790	(40,024 - 78,603)	3,078	62,868	(43,102 - 81,681)
Gypsum Wallboard NEW	67,382	(46,122 - 91,474)	739	68,121	(46,862 - 92,213)
Fiberglass Insulation	16,127	(4,002 - 27,313)	0	16,127	(4,002 - 27,313)
Other Inorganics	63,952	(50,930 - 79,763)	0	63,952	(50,930 - 79,763)
"MEDICAL WASTES"	2,457	(1,056 - 4,171)	828	3,285	(1,884 - 4,999)
OTHER HAZARDOUS MATLS	19,465	(14,769 - 24,690)	-6	19,459	(14,763 - 24,684)
Latex Paint	2,998	(1,501 - 4,921)	0	2,998	(1,501 - 4,921)
Oil Paints / Thinners	1,729	(684 - 3,028)	0	1,729	(684 - 3,028)
Pesticides / Herbicides	476	(121 - 1,077)	0	476	(121 - 1,077)
Motor Oil	739	(275 - 1,289)	0	739	(275 - 1,289)
Used Oil Filters	1,104	(702 - 1,524)	0	1,104	(702 - 1,524)
Fuels (gas/kero/diesel)	47	(17 - 84)	0	47	(17 - 84)
Adhesives / Sealants	1,552	(459 - 3,413)	0	1,552	(459 - 3,413)
Caustic Cleaners	502	(320 - 735)	0	502	(320 - 735)
Lead-Acid Batteries	1,879	(0 - 4,236)	-6	1,873	(-6 - 4,230)
Dry-cell Batteries	2,275	(1,907 - 2,717)	0	2,275	(1,907 - 2,717)
Asbestos	0	(0 - 0)	0	0	(0 - 0)
Other Hazardous Chemicals	6,163	(2,899 - 10,306)	0	6,163	(2,899 - 10,306)
TOTAL PACKAGING	413,382	(392,154 - 434,397)	-5,903	407,478.72	(386,250 - 428,494)
TOTAL PRODUCTS	1,352,045	(1,301,632 - 1,393,403)	9,276	1,361,320.	(1,310,908 - 1,402,678)
TOTAL NON-MANUFACTURED	817,659	(773,699 - 861,043)	-113	817,546.78	(773,587 - 860,930)
Total Organic	1,959,680	(1,911,908 - 2,003,419)	9,282	1,968,963	(1,921,191 - 2,012,701)
Total non-organic	623,406	(581,228 - 661,290)	-6,022	617,384	(575,206 - 655,267)
compostable	1,353,750	(1,310,041 - 1,400,222)	-16,937	1,336,813	(1,293,104 - 1,383,285)
compost-target	836,630	(799,519 - 875,899)	-8,771	827,859	(790,748 - 867,128)
Water & Residue (Detailed)	160,475	(139,134 - 189,081)	0	160,474.80	(139,134 - 189,081)

Table A4. Oregon 2002 Disposal and Recovery of Selected Materials

(Disposed tons corrected for contamination)

Material	Tons Disposed	Tons Recovered	Tons Generated	Percent Recovery
TOTAL PAPER	440,077	679,971	1,120,048	60.7%
Total recyclable paper	310,252	679,971	990,223	68.7%
Cardboard/Brown Bags	71,252	381,027	452,279	84.2%
Newspaper & magazines	77,854	211,082	288,936	73.1%
Hi Grade Paper	45,261	41,659	86,920	47.9%
Low-grade Recyc. Paper combined	115,885	46,203	162,089	28.5%
Nonrecyclable Paper combined	129,825	0	129,825	0.0%
TOTAL PLASTICS	243,047	23,647	266,694	8.9%
Rigid Plastic Containers	35,808	13,396	49,204	27.2%
Film plastic combined (incl. X-ray)	88,951	6,724	95,675	7.0%
Plastic Film Recyclable	27,781	6,724	34,505	19.5%
All Other Plastic	118,288	3,527	121,815	2.9%
OTHER ORGANICS	1,268,849	871,872	2,140,721	40.7%
Yard Debris, Wood, Food	853,730	830,019	1,683,749	49.3%
Yard Debris	181,443	398,822	580,266	68.7%
Wood	221,441	386,053	607,494	63.5%
Food (includes animal waste & grease)	450,846	45,144	495,990	9.1%
Tires	30,342	23,327	53,668	43.5%
Carpet	52,817	540	53,357	1.0%
Textiles	44,337	4,527	48,864	9.3%
Roofing / Tarpaper	104,601	13,459	118,061	11.4%
All other organics	183,023	0	183,023	0.0%
GLASS	63,208	95,096	158,305	60.1%
Total Container Glass	41,890	90,475	132,366	68.4%
Fluorescent Lights & Tubes	539	263	803	32.8%
Window & Other Glass	20,779	4,358	25,136	17.3%
METALS excluding electronics	155,404	262,390	417,794	62.8%
Electronics (computers, brown goods)	34,814	2,216	37,030	6.0%
OTHER INORGANICS	358,202	24,385	382,587	6.4%
Rock / Concrete / Brick	70,491	19,910*	(partial)	
Gypsum Wallboard	130,989	3,781	134,770	2.8%
All Other Inorganics	156,723	694	157,416	0.4%
"MEDICAL WASTES"	3,285	0	3,285	0.0%
OTHER HAZARDOUS MATERIALS	19,459	64,820	84,278	76.9%
Total Paint	4,728	1,473	6,201	23.8%
Motor Oil	739	48,161	48,899	98.5%
Lead-Acid Batteries	1,873	12,614	14,487	87.1%
Dry-cell Batteries	2,275	58	2,333	2.5%
Other Hazardous Chemicals	6,163	2,514	8,677	29.0%
Non-recyclable hazardous	2,531	0	2,531	0.0%
Water & residue (from contamination analysis)	160,475	0	160,475	0.00%
Total	2,746,821	2,024,398	4,771,219	42.4%

*Rock and concrete are not counted in the Oregon Material Recovery Survey when recycled. The 19,910 tons reported here is brick recovered and mostly made into aggregate at one facility.

Table A5. Metro and Rest of Oregon Composition 2002
Field Data Only (page 1 of 2)

Material	Metro Area 2002		Present/ Samples	Rest of Oregon 2002		Present/ Samples	Statewide Percent
	Percent	(90% Conf. Int.)		Percent	(90% Conf. Int.)		
TOTAL PAPER	21.67%	(20.53 - 22.83%)	305/ 349	19.82%	(18.55 - 21.14%)	433/ 495	20.62%
Paper Packaging	9.90%	(9.16 - 10.70%)	304/ 349	8.48%	(7.82 - 9.20%)	427/ 495	9.09%
Cardboard/Brown Bags	3.70%	(3.27 - 4.13%)	295/ 349	2.88%	(2.50 - 3.30%)	414/ 495	3.23%
Low Grade Packaging	2.16%	(1.85 - 2.59%)	265/ 349	2.05%	(1.82 - 2.30%)	399/ 495	2.10%
Bleached Polycoats	0.34%	(0.30 - 0.39%)	192/ 349	0.50%	(0.36 - 0.65%)	318/ 495	0.43%
Nonrecyc. Packaging Paper	1.59%	(1.33 - 1.89%)	235/ 349	1.29%	(1.12 - 1.47%)	366/ 495	1.42%
Mixed Paper / Materials	2.10%	(1.78 - 2.50%)	262/ 349	1.76%	(1.50 - 2.05%)	383/ 495	1.91%
Other Paper	11.78%	(10.98 - 12.58%)	275/ 349	11.33%	(10.52 - 12.26%)	400/ 495	11.53%
Newspaper	2.27%	(2.03 - 2.53%)	233/ 349	2.10%	(1.85 - 2.36%)	363/ 495	2.17%
Magazines	1.09%	(0.95 - 1.24%)	198/ 349	1.40%	(1.15 - 1.69%)	310/ 495	1.27%
Hi Grade Paper	1.73%	(1.49 - 1.96%)	249/ 349	1.76%	(1.50 - 2.04%)	368/ 495	1.75%
Hardcover Books	0.12%	(0.04 - 0.22%)	19/ 349	0.10%	(0.07 - 0.15%)	50/ 495	0.11%
Low Grade Paper	2.11%	(1.78 - 2.52%)	247/ 349	2.53%	(2.15 - 2.96%)	375/ 495	2.35%
Other Nonrecyclable Paper	4.47%	(4.07 - 4.89%)	248/ 349	3.44%	(3.16 - 3.72%)	374/ 495	3.88%
Low-grade Recyc. Paper comb.	4.72%	(4.22 - 5.31%)	276/ 349	5.18%	(4.68 - 5.71%)	410/ 495	4.99%
Nonrecyclable Paper combined	8.17%	(7.52 - 8.86%)	276/ 349	6.49%	(6.01 - 6.98%)	399/ 495	7.21%
TOTAL PLASTICS	11.71%	(10.91 - 12.57%)	315/ 349	10.37%	(9.65 - 11.25%)	448/ 495	10.95%
Plastic Packaging	5.99%	(5.62 - 6.45%)	299/ 349	5.40%	(5.03 - 5.81%)	431/ 495	5.65%
Rigid Plastic Containers	1.65%	(1.53 - 1.77%)	253/ 349	1.70%	(1.55 - 1.87%)	389/ 495	1.67%
Other Plastic Packaging	4.35%	(4.01 - 4.76%)	295/ 349	3.70%	(3.40 - 4.03%)	421/ 495	3.98%
Other Rigid Packaging	0.98%	(0.79 - 1.23%)	265/ 349	0.69%	(0.62 - 0.77%)	372/ 495	0.82%
Plastic Film Pkg (estimate)	3.36%	(3.12 - 3.64%)	285/ 349	3.01%	(2.74 - 3.33%)	416/ 495	3.16%
Plastic Products	5.72%	(5.10 - 6.35%)	311/ 349	4.97%	(4.40 - 5.64%)	440/ 495	5.29%
Rigid Plastic Products	2.27%	(1.88 - 2.69%)	280/ 349	2.08%	(1.63 - 2.57%)	401/ 495	2.16%
Plastic Film Prod. (estimate)	1.82%	(1.69 - 1.97%)	285/ 349	1.63%	(1.48 - 1.80%)	416/ 495	1.71%
Mixed Plastic / Materials	1.63%	(1.22 - 2.13%)	257/ 349	1.27%	(0.97 - 1.63%)	371/ 495	1.42%
<i>(Film plastic combined)</i>	5.18%	(4.81 - 5.61%)	285/ 349	4.64%	(4.22 - 5.12%)	416/ 495	4.87%
Plastic Film Recyclable	1.21%	(0.92 - 1.54%)	234/ 349	0.87%	(0.63 - 1.18%)	338/ 495	1.02%
Plastic Film Nonrecyclable	3.97%	(3.70 - 4.24%)	264/ 349	3.77%	(3.45 - 4.10%)	399/ 495	3.85%
OTHER ORGANICS	43.30%	(41.37 - 45.22%)	337/ 349	46.51%	(43.91 - 49.12%)	479/ 495	45.13%
Yard Debris	4.46%	(3.55 - 5.32%)	197/ 349	8.19%	(6.21 - 10.24%)	299/ 495	6.58%
Leaves / Grass	3.40%	(2.72 - 4.11%)	167/ 349	7.02%	(5.21 - 9.00%)	259/ 495	5.46%
Small Prunings under 2"	0.93%	(0.54 - 1.36%)	76/ 349	0.75%	(0.32 - 1.28%)	108/ 495	0.83%
Large Prunings over 2"	0.13%	(0.05 - 0.22%)	14/ 349	0.33%	(0.13 - 0.56%)	23/ 495	0.24%
Stumps	0.00%	(0.00 - 0.00%)	0/ 349	0.09%	(0.00 - 0.27%)	2/ 495	0.05%
Wood	8.95%	(7.78 - 10.24%)	305/ 349	8.54%	(7.17 - 9.97%)	424/ 495	8.72%
Clean lumber & hog fuel	3.18%	(2.51 - 3.90%)	204/ 349	3.66%	(2.82 - 4.55%)	288/ 495	3.45%
Untreated Lumber	2.20%	(1.66 - 2.81%)	184/ 349	1.90%	(1.39 - 2.44%)	246/ 495	2.03%
Clean HogFuel Lumber	0.98%	(0.66 - 1.33%)	93/ 349	1.76%	(1.07 - 2.54%)	138/ 495	1.42%
Painted & Treated lumber	1.62%	(1.08 - 2.25%)	119/ 349	1.47%	(0.81 - 2.22%)	173/ 495	1.53%
Painted Lumber	1.51%	(0.99 - 2.14%)	114/ 349	0.85%	(0.43 - 1.45%)	158/ 495	1.14%
Chemically-treated Lumber	0.10%	(0.04 - 0.17%)	14/ 349	0.62%	(0.17 - 1.17%)	33/ 495	0.39%
Wood Pallets / Crates	1.74%	(1.16 - 2.39%)	45/ 349	0.77%	(0.46 - 1.11%)	47/ 495	1.19%
Wood Furniture	0.57%	(0.33 - 0.83%)	23/ 349	0.36%	(0.17 - 0.62%)	37/ 495	0.45%
Other Wood Products	0.15%	(0.11 - 0.19%)	156/ 349	0.08%	(0.06 - 0.10%)	237/ 495	0.11%
Mixed Wood / Materials	1.69%	(1.23 - 2.15%)	143/ 349	2.20%	(1.60 - 2.95%)	181/ 495	1.98%
Food	15.28%	(14.16 - 16.48%)	232/ 349	15.84%	(14.55 - 17.21%)	368/ 495	15.60%
Tires	0.12%	(0.04 - 0.21%)	7/ 349	0.12%	(0.04 - 0.22%)	11/ 495	0.12%
Rubber Products	0.84%	(0.59 - 1.13%)	199/ 349	0.49%	(0.29 - 0.77%)	282/ 495	0.64%
Disposable Diapers	2.11%	(1.81 - 2.42%)	134/ 349	2.06%	(1.57 - 2.64%)	215/ 495	2.08%
Carpet	2.65%	(1.93 - 3.42%)	92/ 349	1.46%	(0.79 - 2.33%)	104/ 495	1.97%
Textiles + mixed	3.41%	(2.87 - 4.04%)	259/ 349	2.74%	(2.28 - 3.29%)	375/ 495	3.03%
Textiles	2.00%	(1.58 - 2.49%)	226/ 349	1.53%	(1.23 - 1.85%)	342/ 495	1.73%
Mixed Textile / Material	1.41%	(1.14 - 1.71%)	220/ 349	1.22%	(0.95 - 1.51%)	320/ 495	1.30%
Roofing / Tarpaper	2.86%	(1.98 - 3.83%)	69/ 349	4.53%	(3.02 - 6.09%)	108/ 495	3.81%
Furniture	1.39%	(0.89 - 1.93%)	29/ 349	1.18%	(0.71 - 1.72%)	43/ 495	1.27%
Other Organics	1.24%	(0.93 - 1.57%)	181/ 349	1.36%	(1.00 - 1.80%)	311/ 495	1.30%

Continued Table A5. Metro and Rest of Oregon 2002 (page 2 of 2)

	Metro Area 2002		Present/ Samples	Rest of Oregon 2002		Present/ Samples	Statewide Percent
	Percent	(90% Conf. Int.)		Percent	(90% Conf. Int.)		
GLASS	2.10%	(1.83 - 2.40%)	230/ 349	2.48%	(2.03 - 3.04%)	355/ 495	2.32%
Deposit Beverage Glass	0.40%	(0.31 - 0.52%)	115/ 349	0.34%	(0.25 - 0.43%)	157/ 495	0.37%
Other Container Glass	1.12%	(1.00 - 1.26%)	196/ 349	1.23%	(1.08 - 1.39%)	309/ 495	1.18%
Other Clear Bottles	0.45%	(0.38 - 0.52%)	148/ 349	0.42%	(0.35 - 0.51%)	217/ 495	0.44%
Other Colored Bottles	0.26%	(0.20 - 0.32%)	72/ 349	0.30%	(0.23 - 0.36%)	115/ 495	0.28%
Clear Container Glass	0.39%	(0.33 - 0.45%)	142/ 349	0.46%	(0.38 - 0.54%)	219/ 495	0.43%
Colored Container Glass	0.03%	(0.01 - 0.04%)	29/ 349	0.06%	(0.03 - 0.08%)	48/ 495	0.04%
Window+Other Glass	0.58%	(0.38 - 0.81%)	159/ 349	0.91%	(0.52 - 1.48%)	264/ 495	0.76%
Flat Window Glass	0.11%	(0.05 - 0.19%)	26/ 349	0.39%	(0.06 - 0.96%)	50/ 495	0.27%
Fluorescent Tubes	0.01%	(0.00 - 0.04%)	6/ 349	0.01%	(0.00 - 0.02%)	19/ 495	0.01%
Compact Fluorescent Lights	0.00%	(0.00 - 0.01%)	5/ 349	0.01%	(0.00 - 0.02%)	11/ 495	0.01%
Other Glass	0.45%	(0.26 - 0.67%)	146/ 349	0.50%	(0.36 - 0.65%)	245/ 495	0.47%
METALS	8.32%	(7.42 - 9.25%)	318/ 349	6.79%	(5.79 - 7.84%)	436/ 495	7.45%
Alum. Beverage Cans	0.13%	(0.11 - 0.15%)	218/ 349	0.14%	(0.11 - 0.17%)	312/ 495	0.13%
Alum. Foil / Food Trays	0.16%	(0.14 - 0.18%)	186/ 349	0.18%	(0.15 - 0.21%)	301/ 495	0.17%
Other Aluminum	0.05%	(0.03 - 0.07%)	45/ 349	0.09%	(0.02 - 0.17%)	60/ 495	0.07%
Tinned Cans	0.78%	(0.70 - 0.86%)	211/ 349	0.96%	(0.85 - 1.08%)	350/ 495	0.88%
Tin Food Cans	0.67%	(0.60 - 0.76%)	197/ 349	0.88%	(0.77 - 0.99%)	334/ 495	0.79%
Other Tin Cans	0.10%	(0.07 - 0.14%)	58/ 349	0.08%	(0.06 - 0.11%)	90/ 495	0.09%
Other Metal	7.21%	(6.31 - 8.16%)	300/ 349	5.42%	(4.41 - 6.43%)	412/ 495	6.19%
Other Nonferrous Metal	0.05%	(0.03 - 0.09%)	60/ 349	0.06%	(0.03 - 0.10%)	80/ 495	0.06%
Other Ferrous Metal	2.36%	(1.91 - 2.86%)	256/ 349	1.26%	(0.89 - 1.70%)	317/ 495	1.74%
White Goods	0.05%	(0.00 - 0.13%)	2/ 349	0.06%	(0.00 - 0.15%)	2/ 495	0.05%
Computer, Brown, Sm. Appliance	2.03%	(1.46 - 2.66%)	101/ 349	1.82%	(1.30 - 2.43%)	137/ 495	1.91%
Computers & Monitors	0.39%	(0.20 - 0.63%)	22/ 349	0.69%	(0.34 - 1.10%)	33/ 495	0.56%
Computers excl. monitors	0.21%	(0.11 - 0.35%)	18/ 349	0.40%	(0.17 - 0.70%)	27/ 495	0.32%
Comp. Monitor CRTs	0.18%	(0.02 - 0.38%)	4/ 349	0.28%	(0.11 - 0.50%)	9/ 495	0.24%
TVs, CRTs, & Brown Goods	0.90%	(0.49 - 1.37%)	37/ 349	0.56%	(0.28 - 0.88%)	52/ 495	0.71%
TVs / Other CRTs	0.42%	(0.12 - 0.74%)	7/ 349	0.43%	(0.17 - 0.74%)	12/ 495	0.43%
Other Brown Goods	0.49%	(0.27 - 0.75%)	32/ 349	0.13%	(0.07 - 0.20%)	41/ 495	0.28%
Small Appliances-non elec	0.73%	(0.52 - 0.95%)	61/ 349	0.57%	(0.34 - 0.86%)	83/ 495	0.64%
Empty Aerosol Cans	0.12%	(0.10 - 0.13%)	121/ 349	0.11%	(0.09 - 0.13%)	207/ 495	0.11%
Mixed Metal / Material	2.60%	(2.18 - 3.08%)	231/ 349	2.10%	(1.52 - 2.69%)	307/ 495	2.32%
OTHER INORGANICS	12.09%	(10.58 - 13.57%)	264/ 349	13.31%	(11.29 - 15.46%)	364/ 495	12.78%
Rock / Concrete / Brick	2.14%	(1.50 - 2.78%)	73/ 349	2.89%	(1.84 - 4.05%)	94/ 495	2.57%
Soil / Sand / Dirt	0.93%	(0.63 - 1.21%)	71/ 349	1.14%	(0.67 - 1.71%)	84/ 495	1.05%
Pet Litter / Animal Feces	1.55%	(1.24 - 1.86%)	88/ 349	1.76%	(1.29 - 2.23%)	132/ 495	1.67%
Gypsum Wallboard	4.36%	(3.28 - 5.52%)	89/ 349	4.86%	(3.34 - 6.55%)	108/ 495	4.65%
Gypsum Wallboard OLD	1.72%	(1.17 - 2.31%)	58/ 349	2.55%	(1.49 - 3.75%)	82/ 495	2.19%
Gypsum Wallboard NEW	2.64%	(1.72 - 3.60%)	31/ 349	2.31%	(1.22 - 3.63%)	30/ 495	2.45%
Fiberglass Insulation	0.35%	(0.13 - 0.67%)	43/ 349	0.80%	(0.07 - 1.55%)	47/ 495	0.60%
Other Inorganics	2.76%	(2.05 - 3.53%)	165/ 349	1.86%	(1.29 - 2.65%)	230/ 495	2.25%
"MEDICAL WASTES"	0.06%	(0.02 - 0.11%)	23/ 349	0.11%	(0.03 - 0.21%)	34/ 495	0.09%
OTHER HAZARDOUS MATLS	0.74%	(0.44 - 1.08%)	160/ 349	0.61%	(0.44 - 0.82%)	247/ 495	0.67%
Latex Paint	0.11%	(0.03 - 0.21%)	19/ 349	0.08%	(0.03 - 0.14%)	29/ 495	0.09%
Oil Paints / Thinners	0.05%	(0.01 - 0.11%)	19/ 349	0.06%	(0.02 - 0.14%)	33/ 495	0.06%
Pesticides / Herbicides	0.01%	(0.00 - 0.02%)	8/ 349	0.02%	(0.00 - 0.06%)	14/ 495	0.02%
Motor Oil	0.03%	(0.00 - 0.07%)	8/ 349	0.01%	(0.00 - 0.02%)	14/ 495	0.02%
Used Oil Filters	0.05%	(0.02 - 0.08%)	15/ 349	0.03%	(0.02 - 0.05%)	23/ 495	0.04%
Fuels (gas/kero/diesel)	0.00%	(0.00 - 0.00%)	3/ 349	0.00%	(0.00 - 0.00%)	3/ 495	0.00%
Adhesives / Sealants	0.02%	(0.01 - 0.03%)	31/ 349	0.08%	(0.01 - 0.20%)	40/ 495	0.05%
Caustic Cleaners	0.02%	(0.01 - 0.03%)	12/ 349	0.01%	(0.01 - 0.02%)	21/ 495	0.02%
Lead-Acid Batteries	0.00%	(0.00 - 0.00%)	0/ 349	0.12%	(0.00 - 0.27%)	3/ 495	0.07%
Dry-cell Batteries	0.08%	(0.06 - 0.09%)	115/ 349	0.09%	(0.07 - 0.11%)	184/ 495	0.08%
Asbestos	0.00%	(0.00 - 0.00%)	0/ 349	0.00%	(0.00 - 0.00%)	0/ 495	0.00%
Other Hazardous Chemicals	0.37%	(0.12 - 0.67%)	28/ 349	0.10%	(0.04 - 0.17%)	38/ 495	0.22%
TOTAL PACKAGING	20.34%	(19.29 - 21.50%)	318/ 349	17.62%	(16.51 - 18.72%)	447/ 495	18.79%
TOTAL PRODUCTS	54.07%	(52.38 - 55.74%)	349/ 349	51.21%	(48.99 - 53.45%)	487/ 495	52.44%
TOTAL NON-MANUFACTURED	25.60%	(24.01 - 27.09%)	290/ 349	31.17%	(28.83 - 33.39%)	427/ 495	28.77%
Total Organic	77.34%	(75.77 - 78.98%)	343/ 349	77.17%	(74.77 - 79.40%)	484/ 495	77.24%
Total non-organic	22.66%	(21.02 - 24.23%)	334/ 349	22.83%	(20.60 - 25.23%)	463/ 495	22.76%
compostable	51.80%	(50.03 - 53.39%)	333/ 349	53.81%	(51.55 - 56.09%)	467/ 495	52.94%
compost-target	29.96%	(28.29 - 31.47%)	313/ 349	31.86%	(29.81 - 34.08%)	447/ 495	31.04%

Table A6. Statewide Waste Composition by Vehicle Source**2002 Field Data Only** (page 1 of 2)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
TOTAL PAPER	25.23%	30.95%	26.49%	29.27%	15.93%	8.73%	10.82%
Paper Packaging	8.80%	12.49%	11.12%	17.29%	8.77%	4.65%	5.36%
Cardboard/Brown Bags	2.30%	4.40%	3.85%	6.02%	3.38%	2.40%	1.85%
Low Grade Packaging	2.69%	3.00%	2.46%	3.12%	1.59%	0.83%	1.75%
Bleached Polycoats	0.56%	0.83%	0.66%	0.36%	0.35%	0.07%	0.09%
Nonrecyc. Packaging Paper	1.08%	2.20%	2.04%	5.04%	1.16%	0.20%	0.29%
Mixed Paper / Materials	2.15%	2.05%	2.11%	2.76%	2.30%	1.17%	1.37%
Other Paper	16.44%	18.47%	15.36%	11.98%	7.16%	4.08%	5.46%
Newspaper	3.19%	3.28%	3.36%	2.08%	0.92%	0.84%	0.69%
Magazines	2.45%	1.63%	1.49%	0.85%	0.19%	0.68%	0.57%
Hi Grade Paper	1.79%	3.53%	2.22%	1.54%	1.50%	0.62%	1.33%
Hardcover Books	0.11%	0.06%	0.19%	0.10%	0.05%	0.12%	0.11%
Low Grade Paper	3.49%	3.46%	2.56%	1.82%	2.51%	0.95%	1.04%
Other Nonrecyclable Paper	5.40%	6.51%	5.54%	5.58%	1.99%	0.86%	1.72%
Low-grade Recyc. Paper comb.	6.86%	7.35%	5.87%	5.40%	4.50%	1.97%	2.99%
Nonrecyclable Paper combined	8.64%	10.76%	9.68%	13.37%	5.44%	2.22%	3.39%
TOTAL PLASTICS	11.99%	12.96%	12.45%	17.88%	9.80%	6.76%	9.41%
Plastic Packaging	7.62%	7.71%	7.11%	9.00%	4.35%	2.00%	3.30%
Rigid Plastic Containers	2.65%	2.13%	2.15%	2.37%	1.06%	0.63%	0.46%
Other Plastic Packaging	4.97%	5.57%	4.95%	6.63%	3.30%	1.37%	2.84%
Other Rigid Packaging	1.08%	0.93%	1.03%	1.57%	0.79%	0.27%	0.37%
Plastic Film Pkg (estimate)	3.88%	4.64%	3.92%	5.06%	2.51%	1.10%	2.47%
Plastic Products	4.37%	5.26%	5.35%	8.88%	5.45%	4.76%	6.11%
Rigid Plastic Products	1.38%	1.82%	2.04%	3.23%	2.93%	2.37%	2.41%
Plastic Film Prod. (estimate)	2.10%	2.51%	2.12%	2.73%	1.36%	0.59%	1.33%
Mixed Plastic / Materials	0.90%	0.93%	1.19%	2.92%	1.16%	1.80%	2.36%
<i>(Film plastic combined)</i>	<i>5.98%</i>	<i>7.15%</i>	<i>6.04%</i>	<i>7.80%</i>	<i>3.86%</i>	<i>1.70%</i>	<i>3.80%</i>
Plastic Film Recyclable	0.78%	1.14%	0.84%	1.81%	1.68%	0.63%	1.40%
Plastic Film Nonrecyclable	5.20%	6.01%	5.20%	5.98%	2.19%	1.06%	2.40%
OTHER ORGANICS	46.75%	40.34%	46.51%	38.74%	44.93%	47.62%	45.11%
Yard Debris	9.17%	5.57%	6.78%	4.09%	4.57%	7.34%	3.18%
Leaves / Grass	7.82%	4.18%	5.46%	3.79%	4.02%	5.96%	2.90%
Small Prunings under 2"	0.84%	1.18%	1.20%	0.30%	0.29%	0.93%	0.27%
Large Prunings over 2"	0.50%	0.22%	0.12%	0.00%	0.25%	0.24%	0.01%
Stumps	0.02%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%
Wood	1.76%	3.67%	3.87%	3.66%	20.17%	15.91%	12.50%
Clean lumber & hog fuel	0.73%	1.48%	1.42%	0.49%	6.51%	7.47%	4.39%
Untreated Lumber	0.46%	1.13%	0.90%	0.45%	4.17%	3.90%	2.79%
Clean HogFuel Lumber	0.27%	0.35%	0.51%	0.04%	2.34%	3.57%	1.59%
Painted & Treated lumber	0.56%	0.41%	0.28%	0.13%	2.21%	4.08%	1.01%
Painted Lumber	0.35%	0.30%	0.23%	0.13%	2.13%	2.77%	1.00%
Chemically-treated Lumber	0.21%	0.11%	0.05%	0.00%	0.08%	1.32%	0.00%
Wood Pallets / Crates	0.14%	0.24%	0.73%	1.16%	6.18%	0.65%	0.72%
Wood Furniture	0.05%	0.27%	0.16%	0.12%	0.89%	0.98%	0.42%
Other Wood Products	0.11%	0.11%	0.12%	0.12%	0.08%	0.10%	0.12%
Mixed Wood / Materials	0.17%	1.16%	1.16%	1.64%	4.30%	2.63%	5.84%
Food	24.56%	22.70%	22.48%	23.90%	6.63%	4.28%	2.04%
Tires	0.09%	0.05%	0.26%	0.00%	0.12%	0.15%	0.00%
Rubber Products	0.24%	0.62%	0.53%	1.03%	1.19%	0.47%	1.60%
Disposable Diapers	5.13%	1.76%	3.86%	0.67%	0.37%	0.18%	0.07%
Carpet	0.63%	0.32%	1.92%	0.60%	2.46%	2.68%	8.82%
Textiles + mixed	3.17%	3.04%	4.00%	2.68%	3.33%	2.27%	2.83%
Textiles	1.83%	1.49%	2.48%	0.72%	2.07%	1.42%	1.78%
Mixed Textile / Material	1.35%	1.55%	1.52%	1.95%	1.25%	0.85%	1.05%
Roofing / Tarpaper	0.07%	0.41%	0.08%	0.00%	4.15%	11.18%	9.25%
Furniture	0.43%	0.67%	0.79%	1.36%	1.32%	2.03%	3.78%
Other Organics	1.50%	1.53%	1.94%	0.75%	0.62%	1.14%	1.05%

Continued Table A6. Statewide Waste Composition by Vehicle Source: (page 2 of 2)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
GLASS	3.21%	3.04%	2.72%	1.56%	1.30%	1.92%	0.87%
Deposit Beverage Glass	0.56%	0.54%	0.61%	0.38%	0.22%	0.09%	0.10%
Other Container Glass	2.06%	1.75%	1.64%	0.80%	0.59%	0.39%	0.39%
Other Clear Bottles	0.54%	0.81%	0.67%	0.32%	0.37%	0.11%	0.16%
Other Colored Bottles	0.56%	0.36%	0.41%	0.18%	0.10%	0.04%	0.17%
Clear Container Glass	0.84%	0.56%	0.51%	0.27%	0.11%	0.22%	0.06%
Colored Container Glass	0.11%	0.02%	0.05%	0.03%	0.01%	0.02%	0.00%
Window+Other Glass	0.60%	0.74%	0.47%	0.37%	0.50%	1.45%	0.38%
Flat Window Glass	0.13%	0.02%	0.10%	0.08%	0.08%	0.85%	0.10%
Fluorescent Tubes	0.00%	0.00%	0.03%	0.08%	0.00%	0.00%	0.00%
Compact Fluorescent Lights	0.03%	0.00%	0.00%	0.02%	0.00%	0.00%	0.00%
Other Glass	0.44%	0.72%	0.35%	0.19%	0.42%	0.59%	0.28%
METALS	5.66%	8.27%	6.95%	8.40%	11.08%	6.98%	6.66%
Alum. Beverage Cans	0.16%	0.21%	0.22%	0.18%	0.11%	0.03%	0.05%
Alum. Foil / Food Trays	0.35%	0.18%	0.22%	0.15%	0.10%	0.04%	0.03%
Other Aluminum	0.02%	0.06%	0.02%	0.05%	0.07%	0.18%	0.03%
Tinned Cans	1.68%	1.24%	1.14%	0.72%	0.22%	0.32%	0.29%
Tin Food Cans	1.58%	1.13%	1.02%	0.58%	0.20%	0.25%	0.14%
Other Tin Cans	0.10%	0.11%	0.11%	0.13%	0.02%	0.07%	0.16%
Other Metal	3.45%	6.57%	5.36%	7.31%	10.58%	6.40%	6.25%
Other Nonferrous Metal	0.07%	0.03%	0.07%	0.03%	0.06%	0.08%	0.04%
Other Ferrous Metal	0.55%	1.82%	1.28%	1.97%	4.19%	1.74%	1.83%
White Goods	0.00%	0.00%	0.02%	0.00%	0.00%	0.21%	0.00%
Computer,Brown,Sm. Applianc	1.41%	2.51%	2.01%	2.29%	2.35%	1.50%	2.31%
Computers & Monitors	0.54%	1.25%	0.50%	0.17%	0.48%	0.38%	0.47%
Computers excl. monitors	0.26%	0.78%	0.47%	0.17%	0.23%	0.14%	0.15%
Comp. Monitor CRTs	0.29%	0.46%	0.03%	0.00%	0.25%	0.24%	0.32%
TVs, CRTs, & Brown Goods	0.22%	0.78%	0.88%	1.29%	1.16%	0.37%	1.65%
TVs / Other CRTs	0.02%	0.68%	0.46%	1.02%	0.53%	0.20%	1.22%
Other Brown Goods	0.20%	0.10%	0.42%	0.28%	0.63%	0.17%	0.43%
Small Appliances-non elec	0.64%	0.48%	0.63%	0.83%	0.71%	0.75%	0.19%
Empty Aerosol Cans	0.21%	0.09%	0.20%	0.10%	0.05%	0.04%	0.04%
Mixed Metal / Material	1.21%	2.13%	1.78%	2.92%	3.94%	2.84%	2.03%
OTHER INORGANICS	6.58%	3.84%	4.35%	2.44%	15.67%	27.49%	25.83%
Rock / Concrete / Brick	1.34%	0.89%	0.45%	0.13%	3.62%	5.56%	5.28%
Soil / Sand / Dirt	0.45%	0.34%	0.91%	1.41%	0.66%	2.15%	1.12%
Pet Litter / Animal Feces	3.95%	0.85%	1.80%	0.21%	0.81%	1.26%	0.26%
Gypsum Wallboard	0.09%	0.49%	0.33%	0.11%	6.42%	13.05%	10.15%
Gypsum Wallboard OLD	0.09%	0.34%	0.12%	0.09%	2.88%	5.29%	8.33%
Gypsum Wallboard NEW	0.00%	0.15%	0.21%	0.02%	3.54%	7.76%	1.82%
Fiberglass Insulation	0.00%	0.08%	0.03%	0.00%	0.26%	2.17%	0.55%
Other Inorganics	0.75%	1.19%	0.82%	0.58%	3.90%	3.29%	8.47%
"MEDICAL WASTES"	0.07%	0.09%	0.10%	0.52%	0.02%	0.02%	0.00%
OTHER HAZARDOUS MATLs	0.50%	0.50%	0.43%	1.19%	1.26%	0.47%	1.30%
Latex Paint	0.10%	0.10%	0.00%	0.04%	0.04%	0.14%	0.21%
Oil Paints / Thinners	0.03%	0.03%	0.02%	0.00%	0.22%	0.02%	0.24%
Pesticides / Herbicides	0.00%	0.01%	0.01%	0.00%	0.09%	0.01%	0.00%
Motor Oil	0.00%	0.07%	0.03%	0.01%	0.02%	0.01%	0.00%
Used Oil Filters	0.02%	0.02%	0.13%	0.00%	0.01%	0.01%	0.14%
Fuels (gas/kero/diesel)	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%
Adhesives / Sealants	0.02%	0.02%	0.01%	0.01%	0.31%	0.02%	0.03%
Caustic Cleaners	0.01%	0.01%	0.03%	0.00%	0.02%	0.03%	0.00%
Lead-Acid Batteries	0.00%	0.03%	0.00%	0.00%	0.39%	0.07%	0.00%
Dry-cell Batteries	0.14%	0.11%	0.09%	0.04%	0.02%	0.06%	0.04%
Asbestos	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other Hazardous Chemicals	0.16%	0.10%	0.10%	1.09%	0.14%	0.09%	0.63%
TOTAL PACKAGING	21.57%	24.45%	22.99%	29.78%	20.60%	8.20%	10.29%
TOTAL PRODUCTS	37.47%	43.66%	42.65%	39.73%	62.49%	70.06%	76.78%
TOTAL NON-MANUFACTURED	40.97%	31.88%	34.36%	30.49%	16.92%	21.74%	12.93%
Total Organic	84.37%	84.68%	85.72%	87.56%	71.52%	63.44%	66.46%
Total non-organic	15.63%	15.32%	14.28%	12.44%	28.48%	36.56%	33.54%
compostable	70.46%	65.36%	65.66%	60.66%	42.52%	32.03%	22.95%
compost-target	41.28%	37.95%	38.54%	36.05%	25.06%	19.16%	11.93%

Table A7. Confidence Intervals for Vehicle Sources Statewide 2002
Field Data Only (page 1 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
TOTAL PAPER	(23.74 - 26.64%)	(28.42 - 33.58%)	(24.51 - 28.58%)	(25.78 - 32.89%)	(13.04 - 19.06%)	(6.86 - 10.70%)	(8.91 - 12.97%)
Paper Packaging	(8.21 - 9.38%)	(11.27 - 13.79%)	(9.88 - 12.53%)	(14.64 - 20.34%)	(7.07 - 10.63%)	(3.51 - 5.83%)	(4.53 - 6.33%)
Cardboard/Brown Bags	(1.98 - 2.67%)	(3.60 - 5.16%)	(3.20 - 4.51%)	(4.57 - 7.55%)	(2.59 - 4.32%)	(1.64 - 3.26%)	(1.54 - 2.20%)
Low Grade Packaging	(2.46 - 2.92%)	(2.22 - 4.26%)	(2.08 - 2.93%)	(2.50 - 3.77%)	(0.96 - 2.43%)	(0.58 - 1.11%)	(1.13 - 2.49%)
Bleached Polycoats	(0.51 - 0.62%)	(0.47 - 1.35%)	(0.47 - 0.93%)	(0.26 - 0.47%)	(0.09 - 0.78%)	(0.04 - 0.10%)	(0.06 - 0.13%)
Nonrecyc. Packaging	(0.97 - 1.20%)	(1.92 - 2.50%)	(1.63 - 2.52%)	(3.63 - 6.70%)	(0.66 - 1.73%)	(0.12 - 0.28%)	(0.21 - 0.38%)
Mixed Paper / Materials	(1.85 - 2.50%)	(1.71 - 2.42%)	(1.67 - 2.64%)	(1.78 - 3.90%)	(1.43 - 3.30%)	(0.73 - 1.67%)	(0.87 - 2.08%)
Other Paper	(15.29 - 17.48%)	(16.50 - 20.49%)	(14.12 - 16.64%)	(9.92 - 14.38%)	(5.04 - 9.51%)	(3.08 - 5.32%)	(3.94 - 7.18%)
Newspaper	(2.77 - 3.61%)	(2.59 - 4.00%)	(2.85 - 3.87%)	(1.39 - 2.88%)	(0.58 - 1.33%)	(0.54 - 1.21%)	(0.48 - 0.91%)
Magazines	(2.06 - 2.88%)	(1.18 - 2.11%)	(1.20 - 1.83%)	(0.53 - 1.24%)	(0.13 - 0.27%)	(0.32 - 1.19%)	(0.32 - 0.84%)
Hi Grade Paper	(1.45 - 2.15%)	(2.89 - 4.22%)	(1.81 - 2.69%)	(1.10 - 2.06%)	(0.84 - 2.31%)	(0.37 - 0.91%)	(0.83 - 1.87%)
Hardcover Books	(0.05 - 0.19%)	(0.01 - 0.11%)	(0.03 - 0.45%)	(0.00 - 0.21%)	(0.01 - 0.11%)	(0.04 - 0.22%)	(0.03 - 0.20%)
Low Grade Paper	(3.08 - 3.93%)	(2.76 - 4.14%)	(2.14 - 3.00%)	(1.37 - 2.38%)	(0.85 - 4.51%)	(0.67 - 1.27%)	(0.68 - 1.45%)
Other Nonrecyc. Paper	(5.07 - 5.75%)	(5.59 - 7.46%)	(4.93 - 6.17%)	(4.29 - 7.12%)	(1.43 - 2.61%)	(0.50 - 1.29%)	(1.12 - 2.42%)
<i>Low-grade Recyc. Paper combined</i>	<i>(6.32 - 7.40%)</i>	<i>(6.03 - 8.87%)</i>	<i>(5.20 - 6.58%)</i>	<i>(4.41 - 6.48%)</i>	<i>(2.70 - 6.64%)</i>	<i>(1.50 - 2.46%)</i>	<i>(2.27 - 3.79%)</i>
<i>Nonrecyclable Paper combined</i>	<i>(8.15 - 9.13%)</i>	<i>(9.64 - 11.90%)</i>	<i>(8.77 - 10.73%)</i>	<i>(11.06 - 15.91%)</i>	<i>(4.08 - 6.99%)</i>	<i>(1.53 - 3.08%)</i>	<i>(2.53 - 4.44%)</i>
TOTAL PLASTICS	(11.27 - 12.76%)	(11.86 - 14.22%)	(11.51 - 13.38%)	(15.18 - 21.13%)	(7.35 - 12.57%)	(5.34 - 8.15%)	(6.93 - 12.37%)
Plastic Packaging	(7.14 - 8.13%)	(7.03 - 8.47%)	(6.50 - 7.74%)	(7.90 - 10.21%)	(3.17 - 5.77%)	(1.55 - 2.49%)	(2.42 - 4.29%)
Rigid Plastic Containers	(2.42 - 2.88%)	(1.90 - 2.39%)	(1.98 - 2.34%)	(1.97 - 2.80%)	(0.62 - 1.66%)	(0.46 - 0.83%)	(0.36 - 0.58%)
Other Plastic Packaging	(4.60 - 5.40%)	(5.04 - 6.18%)	(4.40 - 5.50%)	(5.67 - 7.82%)	(2.32 - 4.56%)	(1.03 - 1.73%)	(1.97 - 3.83%)
Other Rigid Packaging	(0.98 - 1.18%)	(0.83 - 1.03%)	(0.85 - 1.28%)	(0.83 - 2.59%)	(0.37 - 1.41%)	(0.20 - 0.35%)	(0.28 - 0.48%)
Plastic Film Pkg (estimate)	(3.52 - 4.34%)	(4.15 - 5.22%)	(3.48 - 4.34%)	(4.38 - 5.85%)	(1.79 - 3.36%)	(0.80 - 1.43%)	(1.64 - 3.46%)
Plastic Products	(4.00 - 4.78%)	(4.62 - 5.92%)	(4.75 - 6.02%)	(6.56 - 11.43%)	(3.63 - 7.50%)	(3.53 - 6.05%)	(4.38 - 8.06%)
Rigid Plastic Products	(1.12 - 1.71%)	(1.34 - 2.31%)	(1.55 - 2.65%)	(1.69 - 5.06%)	(1.37 - 4.92%)	(1.62 - 3.15%)	(1.65 - 3.27%)
Plastic Film Prod. (estimate)	(1.90 - 2.34%)	(2.24 - 2.82%)	(1.88 - 2.34%)	(2.36 - 3.16%)	(0.97 - 1.82%)	(0.43 - 0.77%)	(0.89 - 1.87%)
Mixed Plastic / Materials	(0.77 - 1.02%)	(0.71 - 1.16%)	(0.99 - 1.43%)	(1.17 - 5.11%)	(0.69 - 1.74%)	(0.97 - 2.81%)	(1.34 - 3.66%)
<i>(Film plastic combined)</i>	<i>(5.42 - 6.68%)</i>	<i>(6.39 - 8.04%)</i>	<i>(5.36 - 6.68%)</i>	<i>(6.74 - 9.01%)</i>	<i>(2.76 - 5.18%)</i>	<i>(1.23 - 2.20%)</i>	<i>(2.52 - 5.34%)</i>
Plastic Film Recyclable	(0.37 - 1.52%)	(0.74 - 1.61%)	(0.55 - 1.18%)	(1.18 - 2.53%)	(0.90 - 2.66%)	(0.34 - 0.96%)	(0.74 - 2.08%)
Plastic Film Nonrecyclable	(4.91 - 5.49%)	(5.28 - 6.80%)	(4.64 - 5.71%)	(5.16 - 6.86%)	(1.51 - 3.06%)	(0.74 - 1.44%)	(1.64 - 3.34%)

Continued Table A7. Confidence Intervals for Vehicle Sources Statewide 2002
Field Data Only (page 2 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
OTHER ORGANICS	(44.80 - 48.81%)	(36.95 - 43.92%)	(43.75 - 49.32%)	(33.30 - 43.86%)	(39.85 - 50.23%)	(42.65 - 52.35%)	(39.81 - 49.95%)
Yard Debris	(6.51 - 12.43%)	(3.01 - 8.54%)	(4.82 - 8.76%)	(0.67 - 8.73%)	(2.01 - 7.65%)	(4.31 - 10.41%)	(1.99 - 4.42%)
Leaves / Grass	(5.28 - 10.77%)	(2.05 - 6.80%)	(3.76 - 7.28%)	(0.61 - 8.47%)	(1.51 - 7.09%)	(3.24 - 9.00%)	(1.74 - 4.12%)
Small Prunings under 2"	(0.20 - 1.85%)	(0.12 - 2.96%)	(0.66 - 1.76%)	(0.00 - 0.89%)	(0.13 - 0.46%)	(0.29 - 1.62%)	(0.06 - 0.54%)
Large Prunings over 2"	(0.00 - 1.07%)	(0.02 - 0.51%)	(0.02 - 0.25%)	(0.00 - 0.00%)	(0.04 - 0.52%)	(0.05 - 0.44%)	(0.00 - 0.02%)
Stumps	(0.00 - 0.05%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.61%)	(0.00 - 0.00%)
Wood	(1.01 - 2.69%)	(2.57 - 4.86%)	(2.71 - 5.30%)	(1.89 - 5.91%)	(15.84 - 24.54%)	(13.21 - 18.97%)	(10.25 - 14.63%)
Clean lumber & hog fuel	(0.36 - 1.19%)	(0.84 - 2.19%)	(0.81 - 2.11%)	(0.19 - 0.86%)	(4.12 - 8.83%)	(5.54 - 9.57%)	(3.35 - 5.32%)
Untreated Lumber	(0.22 - 0.75%)	(0.65 - 1.74%)	(0.51 - 1.40%)	(0.15 - 0.81%)	(2.30 - 6.20%)	(2.76 - 5.19%)	(2.13 - 3.41%)
Clean HogFuel Lumber	(0.05 - 0.61%)	(0.04 - 0.77%)	(0.17 - 1.01%)	(0.01 - 0.07%)	(1.15 - 3.65%)	(2.01 - 5.43%)	(1.15 - 2.04%)
Painted & Treated lumber	(0.17 - 1.06%)	(0.23 - 0.61%)	(0.14 - 0.47%)	(0.03 - 0.25%)	(1.15 - 3.55%)	(2.42 - 5.95%)	(0.64 - 1.43%)
Painted Lumber	(0.08 - 0.79%)	(0.16 - 0.48%)	(0.11 - 0.40%)	(0.03 - 0.25%)	(1.04 - 3.51%)	(1.50 - 4.28%)	(0.64 - 1.43%)
Chemically-treated Lumber	(0.02 - 0.46%)	(0.02 - 0.22%)	(0.01 - 0.12%)	(0.00 - 0.00%)	(0.01 - 0.19%)	(0.28 - 2.59%)	(0.00 - 0.00%)
Wood Pallets / Crates	(0.01 - 0.29%)	(0.08 - 0.45%)	(0.21 - 1.45%)	(0.58 - 1.84%)	(3.72 - 8.63%)	(0.28 - 1.08%)	(0.09 - 1.56%)
Wood Furniture	(0.01 - 0.11%)	(0.04 - 0.59%)	(0.02 - 0.39%)	(0.01 - 0.26%)	(0.36 - 1.46%)	(0.49 - 1.63%)	(0.03 - 1.05%)
Other Wood Products	(0.09 - 0.14%)	(0.07 - 0.16%)	(0.08 - 0.17%)	(0.05 - 0.20%)	(0.02 - 0.16%)	(0.05 - 0.17%)	(0.01 - 0.27%)
Mixed Wood / Materials	(0.06 - 0.32%)	(0.53 - 1.84%)	(0.40 - 2.33%)	(0.24 - 4.04%)	(2.67 - 6.11%)	(1.54 - 3.94%)	(4.68 - 6.95%)
Food	(22.33 - 26.65%)	(20.04 - 25.95%)	(20.15 - 24.66%)	(19.66 - 28.37%)	(4.88 - 8.67%)	(2.90 - 6.09%)	(1.30 - 3.07%)
Tires	(0.00 - 0.24%)	(0.00 - 0.12%)	(0.08 - 0.47%)	(0.00 - 0.00%)	(0.00 - 0.31%)	(0.02 - 0.35%)	(0.00 - 0.00%)
Rubber Products	(0.17 - 0.33%)	(0.40 - 0.88%)	(0.34 - 0.74%)	(0.35 - 1.85%)	(0.25 - 2.52%)	(0.24 - 0.75%)	(0.74 - 2.74%)
Disposable Diapers	(4.44 - 5.87%)	(1.14 - 2.56%)	(2.31 - 5.72%)	(0.38 - 0.99%)	(0.13 - 0.66%)	(0.08 - 0.29%)	(0.03 - 0.12%)
Carpet	(0.35 - 0.94%)	(0.16 - 0.51%)	(0.37 - 4.63%)	(0.04 - 1.59%)	(0.80 - 4.44%)	(1.55 - 4.05%)	(5.54 - 12.33%)
Textiles + mixed	(2.79 - 3.57%)	(2.02 - 4.04%)	(3.22 - 4.77%)	(1.50 - 4.08%)	(1.54 - 5.79%)	(1.59 - 3.08%)	(1.92 - 3.79%)
Textiles	(1.58 - 2.09%)	(0.93 - 2.06%)	(1.93 - 3.12%)	(0.40 - 1.13%)	(0.82 - 3.70%)	(0.85 - 2.14%)	(0.94 - 2.70%)
Mixed Textile / Material	(1.11 - 1.62%)	(0.78 - 2.35%)	(1.04 - 2.05%)	(0.91 - 3.23%)	(0.57 - 2.25%)	(0.62 - 1.10%)	(0.74 - 1.39%)
Roofing / Tarpaper	(0.02 - 0.13%)	(0.00 - 1.19%)	(0.02 - 0.16%)	(0.00 - 0.00%)	(1.83 - 6.60%)	(7.62 - 15.20%)	(5.83 - 12.85%)
Furniture	(0.02 - 1.19%)	(0.21 - 1.29%)	(0.11 - 1.93%)	(0.44 - 2.47%)	(0.60 - 2.13%)	(1.11 - 3.11%)	(1.53 - 6.12%)
Other Organics	(1.29 - 1.74%)	(0.86 - 2.29%)	(1.18 - 2.84%)	(0.43 - 1.10%)	(0.14 - 1.50%)	(0.49 - 1.96%)	(0.38 - 1.89%)

Continued Table A7. Confidence Intervals for Vehicle Sources Statewide 2002
Field Data Only (page 3 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
GLASS	(2.85 - 3.61%)	(2.40 - 3.76%)	(2.29 - 3.18%)	(1.15 - 1.98%)	(0.87 - 1.81%)	(0.97 - 3.23%)	(0.53 - 1.30%)
Deposit Beverage Glass	(0.38 - 0.76%)	(0.37 - 0.72%)	(0.37 - 0.91%)	(0.19 - 0.59%)	(0.13 - 0.31%)	(0.05 - 0.13%)	(0.02 - 0.19%)
Other Container Glass	(1.79 - 2.33%)	(1.42 - 2.10%)	(1.37 - 1.92%)	(0.58 - 1.07%)	(0.33 - 0.92%)	(0.25 - 0.53%)	(0.15 - 0.71%)
Other Clear Bottles	(0.44 - 0.64%)	(0.63 - 0.98%)	(0.51 - 0.83%)	(0.23 - 0.41%)	(0.15 - 0.68%)	(0.06 - 0.16%)	(0.09 - 0.23%)
Other Colored Bottles	(0.42 - 0.72%)	(0.23 - 0.50%)	(0.27 - 0.57%)	(0.08 - 0.29%)	(0.04 - 0.17%)	(0.02 - 0.06%)	(0.00 - 0.45%)
Clear Container Glass	(0.72 - 0.98%)	(0.38 - 0.80%)	(0.40 - 0.61%)	(0.11 - 0.51%)	(0.07 - 0.16%)	(0.12 - 0.33%)	(0.03 - 0.09%)
Colored Container Glass	(0.06 - 0.18%)	(0.00 - 0.05%)	(0.02 - 0.10%)	(0.01 - 0.06%)	(0.00 - 0.03%)	(0.01 - 0.04%)	(0.00 - 0.00%)
Window+Other Glass	(0.48 - 0.73%)	(0.25 - 1.41%)	(0.34 - 0.63%)	(0.17 - 0.63%)	(0.21 - 0.90%)	(0.53 - 2.77%)	(0.24 - 0.55%)
Flat Window Glass	(0.04 - 0.24%)	(0.00 - 0.04%)	(0.02 - 0.20%)	(0.00 - 0.23%)	(0.02 - 0.14%)	(0.07 - 2.19%)	(0.06 - 0.15%)
Fluorescent Tubes	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.06%)	(0.00 - 0.24%)	(0.00 - 0.01%)	(0.00 - 0.01%)	(0.00 - 0.00%)
Compact Fluorescent Lights	(0.01 - 0.06%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.03%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Other Glass	(0.36 - 0.53%)	(0.22 - 1.37%)	(0.24 - 0.47%)	(0.12 - 0.28%)	(0.13 - 0.80%)	(0.32 - 0.88%)	(0.15 - 0.44%)
METALS	(4.80 - 6.65%)	(6.20 - 10.79%)	(5.63 - 8.56%)	(5.78 - 11.21%)	(8.38 - 13.70%)	(5.56 - 8.56%)	(4.77 - 8.91%)
Alum. Beverage Cans	(0.13 - 0.20%)	(0.17 - 0.25%)	(0.15 - 0.29%)	(0.14 - 0.23%)	(0.07 - 0.15%)	(0.02 - 0.05%)	(0.03 - 0.08%)
Alum. Foil / Food Trays	(0.31 - 0.40%)	(0.14 - 0.23%)	(0.17 - 0.27%)	(0.11 - 0.19%)	(0.04 - 0.18%)	(0.02 - 0.06%)	(0.02 - 0.05%)
Other Aluminum	(0.01 - 0.04%)	(0.02 - 0.11%)	(0.01 - 0.03%)	(0.01 - 0.11%)	(0.02 - 0.14%)	(0.03 - 0.37%)	(0.01 - 0.06%)
Tinned Cans	(1.48 - 1.93%)	(1.00 - 1.49%)	(0.97 - 1.29%)	(0.45 - 1.04%)	(0.16 - 0.30%)	(0.23 - 0.43%)	(0.20 - 0.40%)
Tin Food Cans	(1.39 - 1.82%)	(0.89 - 1.36%)	(0.87 - 1.17%)	(0.36 - 0.89%)	(0.14 - 0.27%)	(0.16 - 0.36%)	(0.09 - 0.19%)
Other Tin Cans	(0.06 - 0.14%)	(0.05 - 0.19%)	(0.05 - 0.19%)	(0.03 - 0.27%)	(0.01 - 0.04%)	(0.04 - 0.11%)	(0.09 - 0.24%)
Other Metal	(2.62 - 4.40%)	(4.47 - 9.17%)	(4.04 - 6.93%)	(4.76 - 10.21%)	(7.89 - 13.26%)	(5.00 - 7.89%)	(4.36 - 8.45%)
Other Nonferrous Metal	(0.02 - 0.13%)	(0.02 - 0.04%)	(0.02 - 0.13%)	(0.01 - 0.05%)	(0.01 - 0.15%)	(0.03 - 0.13%)	(0.00 - 0.09%)
Other Ferrous Metal	(0.33 - 0.80%)	(0.92 - 3.08%)	(0.75 - 1.91%)	(1.00 - 3.06%)	(2.46 - 6.04%)	(1.33 - 2.20%)	(1.32 - 2.36%)
White Goods	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.06%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.46%)	(0.00 - 0.00%)
Computer, Brown, Sm. Applianc	(0.75 - 2.29%)	(1.30 - 3.87%)	(0.92 - 3.36%)	(0.88 - 4.03%)	(1.30 - 3.55%)	(0.84 - 2.28%)	(0.95 - 3.76%)
Computers & Monitors	(0.04 - 1.43%)	(0.38 - 2.41%)	(0.13 - 0.99%)	(0.00 - 0.51%)	(0.08 - 1.00%)	(0.12 - 0.74%)	(0.15 - 0.81%)
Computers excl. monitors	(0.03 - 0.63%)	(0.13 - 1.72%)	(0.10 - 0.96%)	(0.00 - 0.51%)	(0.05 - 0.48%)	(0.04 - 0.27%)	(0.01 - 0.37%)
Comp. Monitor CRTs	(0.00 - 0.80%)	(0.00 - 1.03%)	(0.00 - 0.09%)	(0.00 - 0.00%)	(0.00 - 0.74%)	(0.04 - 0.51%)	(0.00 - 0.58%)
TVs, CRTs, & Brown Goods	(0.06 - 0.42%)	(0.07 - 1.70%)	(0.20 - 1.91%)	(0.19 - 2.91%)	(0.44 - 2.07%)	(0.13 - 0.71%)	(0.47 - 2.98%)
TVs / Other CRTs	(0.00 - 0.05%)	(0.00 - 1.69%)	(0.00 - 1.24%)	(0.00 - 2.71%)	(0.10 - 1.03%)	(0.01 - 0.52%)	(0.16 - 2.47%)
Other Brown Goods	(0.05 - 0.40%)	(0.00 - 0.25%)	(0.17 - 0.74%)	(0.00 - 0.68%)	(0.11 - 1.53%)	(0.06 - 0.29%)	(0.12 - 0.83%)
Small Appliances-non electronic	(0.35 - 1.01%)	(0.17 - 0.86%)	(0.34 - 0.97%)	(0.27 - 1.43%)	(0.18 - 1.54%)	(0.34 - 1.30%)	(0.06 - 0.35%)
Empty Aerosol Cans	(0.18 - 0.24%)	(0.06 - 0.12%)	(0.15 - 0.26%)	(0.05 - 0.15%)	(0.02 - 0.10%)	(0.02 - 0.05%)	(0.02 - 0.07%)
Mixed Metal / Material	(0.91 - 1.53%)	(1.38 - 2.96%)	(1.32 - 2.26%)	(1.34 - 4.72%)	(2.46 - 5.71%)	(1.87 - 3.98%)	(1.07 - 3.11%)

Continued Table A7. Confidence Intervals for Vehicle Sources Statewide 2002
Field Data Only (page 4 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
OTHER INORGANICS	(5.54 - 7.64%)	(2.69 - 5.14%)	(3.41 - 5.26%)	(0.85 - 4.46%)	(11.54 - 20.00%)	(22.65 - 32.37%)	(21.67 - 30.19%)
Rock / Concrete / Brick	(0.65 - 2.15%)	(0.47 - 1.39%)	(0.12 - 0.97%)	(0.02 - 0.28%)	(1.64 - 5.86%)	(3.18 - 8.12%)	(3.45 - 7.19%)
Soil / Sand / Dirt	(0.26 - 0.66%)	(0.13 - 0.61%)	(0.48 - 1.39%)	(0.05 - 3.69%)	(0.34 - 0.99%)	(1.09 - 3.34%)	(0.46 - 1.84%)
Pet Litter / Animal Feces	(3.17 - 4.78%)	(0.39 - 1.37%)	(1.25 - 2.46%)	(0.04 - 0.40%)	(0.12 - 1.84%)	(0.53 - 2.09%)	(0.03 - 0.58%)
Gypsum Wallboard	(0.03 - 0.18%)	(0.14 - 0.92%)	(0.05 - 0.69%)	(0.00 - 0.22%)	(3.74 - 9.55%)	(9.32 - 16.96%)	(8.00 - 12.43%)
Gypsum Wallboard OLD	(0.03 - 0.18%)	(0.06 - 0.74%)	(0.03 - 0.23%)	(0.00 - 0.21%)	(1.16 - 4.85%)	(2.74 - 8.15%)	(6.33 - 10.31%)
Gypsum Wallboard NEW	(0.00 - 0.00%)	(0.00 - 0.34%)	(0.00 - 0.63%)	(0.00 - 0.05%)	(1.31 - 6.19%)	(4.91 - 11.09%)	(0.52 - 3.37%)
Fiberglass Insulation	(0.00 - 0.00%)	(0.00 - 0.17%)	(0.00 - 0.09%)	(0.00 - 0.00%)	(0.08 - 0.48%)	(0.41 - 4.14%)	(0.22 - 0.91%)
Other Inorganics	(0.58 - 0.96%)	(0.48 - 2.16%)	(0.55 - 1.14%)	(0.20 - 1.03%)	(2.29 - 5.89%)	(1.87 - 5.13%)	(5.94 - 11.35%)
"MEDICAL WASTES"	(0.02 - 0.15%)	(0.03 - 0.18%)	(0.03 - 0.20%)	(0.01 - 1.44%)	(0.00 - 0.06%)	(0.00 - 0.07%)	(0.00 - 0.00%)
OTHER HAZARDOUS MATLS.	(0.34 - 0.71%)	(0.33 - 0.69%)	(0.29 - 0.57%)	(0.07 - 3.31%)	(0.48 - 2.13%)	(0.28 - 0.71%)	(0.48 - 2.27%)
Latex Paint	(0.01 - 0.25%)	(0.02 - 0.20%)	(0.00 - 0.01%)	(0.00 - 0.12%)	(0.00 - 0.10%)	(0.03 - 0.33%)	(0.05 - 0.42%)
Oil Paints / Thinners	(0.01 - 0.07%)	(0.00 - 0.06%)	(0.01 - 0.04%)	(0.00 - 0.00%)	(0.00 - 0.59%)	(0.01 - 0.04%)	(0.00 - 0.70%)
Pesticides / Herbicides	(0.00 - 0.01%)	(0.00 - 0.02%)	(0.00 - 0.02%)	(0.00 - 0.00%)	(0.00 - 0.28%)	(0.00 - 0.02%)	(0.00 - 0.00%)
Motor Oil	(0.00 - 0.01%)	(0.00 - 0.15%)	(0.00 - 0.08%)	(0.00 - 0.02%)	(0.00 - 0.04%)	(0.00 - 0.01%)	(0.00 - 0.01%)
Used Oil Filters	(0.01 - 0.04%)	(0.01 - 0.04%)	(0.06 - 0.21%)	(0.00 - 0.00%)	(0.00 - 0.02%)	(0.00 - 0.03%)	(0.03 - 0.27%)
Fuels (gas/kero/diesel)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.01%)	(0.00 - 0.01%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Adhesives / Sealants	(0.01 - 0.04%)	(0.01 - 0.05%)	(0.00 - 0.02%)	(0.00 - 0.01%)	(0.00 - 0.88%)	(0.01 - 0.03%)	(0.02 - 0.05%)
Caustic Cleaners	(0.00 - 0.01%)	(0.00 - 0.02%)	(0.01 - 0.05%)	(0.00 - 0.01%)	(0.00 - 0.03%)	(0.01 - 0.06%)	(0.00 - 0.00%)
Lead-Acid Batteries	(0.00 - 0.00%)	(0.00 - 0.10%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 1.17%)	(0.00 - 0.22%)	(0.00 - 0.00%)
Dry-cell Batteries	(0.11 - 0.17%)	(0.06 - 0.18%)	(0.07 - 0.12%)	(0.02 - 0.07%)	(0.01 - 0.03%)	(0.03 - 0.10%)	(0.01 - 0.08%)
Asbestos	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Other Hazardous Chemicals	(0.06 - 0.32%)	(0.02 - 0.19%)	(0.01 - 0.21%)	(0.01 - 3.24%)	(0.01 - 0.39%)	(0.02 - 0.18%)	(0.02 - 1.43%)
TOTAL PACKAGING	(20.41 - 22.69%)	(22.77 - 26.21%)	(21.15 - 24.76%)	(26.36 - 33.39%)	(17.22 - 24.12%)	(6.71 - 9.82%)	(8.67 - 12.03%)
TOTAL PRODUCTS	(35.49 - 39.39%)	(40.44 - 46.75%)	(40.05 - 45.61%)	(33.91 - 45.75%)	(57.52 - 67.16%)	(65.99 - 74.73%)	(73.38 - 80.01%)
TOTAL NON-MANUFACTURED	(38.77 - 43.47%)	(28.56 - 35.56%)	(31.49 - 37.31%)	(24.52 - 36.91%)	(13.11 - 21.31%)	(17.47 - 25.59%)	(10.38 - 15.50%)
Total Organic	(83.13 - 85.71%)	(81.78 - 87.13%)	(84.01 - 87.27%)	(83.42 - 91.16%)	(66.22 - 76.66%)	(58.58 - 68.01%)	(62.27 - 70.47%)
Total non-organic	(14.29 - 16.87%)	(12.87 - 18.22%)	(12.73 - 15.99%)	(8.84 - 16.58%)	(23.34 - 33.78%)	(31.99 - 41.42%)	(29.53 - 37.73%)
compostable	(68.64 - 72.18%)	(62.19 - 68.56%)	(62.32 - 68.43%)	(54.55 - 66.15%)	(37.41 - 47.63%)	(28.00 - 36.26%)	(19.56 - 26.42%)
compost-target	(39.10 - 43.72%)	(34.68 - 41.55%)	(35.65 - 41.37%)	(30.49 - 41.61%)	(20.96 - 29.28%)	(15.65 - 22.67%)	(9.66 - 14.34%)

Table A8. Statewide Changes in Waste Composition

Field Data Only (page 1 of 2)

Material	Statewide 2002		Statewide 2000		Statewide 1998		1993-95*
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent
TOTAL PAPER	20.62%	(19.78 - 21.56%)	23.10%	(22.22 - 23.93%)	24.35%	(23.69 - 25.01%)	27.35%
Paper Packaging	9.09%	(8.60 - 9.62%)	9.57%	(9.09 - 10.08%)	11.98%	(11.53 - 12.47%)	12.79%
Cardboard/Brown Bags	3.23%	(2.93 - 3.55%)	3.69%	(3.38 - 4.02%)	5.45%	(5.15 - 5.77%)	6.49%
Low Grade Packaging	2.10%	(1.89 - 2.33%)	2.25%	(2.11 - 2.39%)	2.85%	(2.73 - 3.00%)	2.86%
Bleached Polycoats	0.43%	(0.35 - 0.52%)	0.54%	(0.43 - 0.68%)	0.42%	(0.39 - 0.44%)	0.39%
Nonrecyc. Packaging Paper	1.42%	(1.27 - 1.59%)	1.37%	(1.10 - 1.70%)	1.54%	(1.32 - 1.78%)	1.80%
Mixed Paper / Materials	1.91%	(1.70 - 2.13%)	1.73%	(1.51 - 2.02%)	1.73%	(1.57 - 1.91%)	1.26%
Other Paper	11.53%	(10.95 - 12.13%)	13.53%	(12.83 - 14.18%)	12.37%	(11.92 - 12.80%)	14.56%
Newspaper	2.17%	(2.00 - 2.36%)	2.79%	(2.50 - 3.07%)	2.16%	(2.04 - 2.30%)	2.77%
Magazines	1.27%	(1.11 - 1.45%)	1.47%	(1.32 - 1.60%)	1.36%	(1.24 - 1.48%)	1.55%
Hi Grade Paper	1.75%	(1.57 - 1.94%)	1.83%	(1.63 - 2.05%)	1.60%	(1.46 - 1.75%)	1.89%
Hardcover Books	0.11%	(0.07 - 0.16%)	0.28%	(0.12 - 0.48%)	0.16%	(0.13 - 0.20%)	0.24%
Low Grade Paper	2.35%	(2.09 - 2.63%)	2.85%	(2.61 - 3.07%)	3.74%	(3.57 - 3.92%)	4.11%
Other Nonrecyclable Paper	3.88%	(3.65 - 4.13%)	4.30%	(3.97 - 4.65%)	3.33%	(3.17 - 3.49%)	4.01%
Low-grade Recyc. Paper comb.	4.99%	(4.63 - 5.35%)	5.92%	(5.55 - 6.32%)	7.18%	(6.93 - 7.42%)	7.60%
Nonrecyclable Paper combined	7.21%	(6.81 - 7.62%)	7.40%	(6.94 - 7.92%)	6.59%	(6.25 - 6.91%)	7.06%
TOTAL PLASTICS	10.95%	(10.39 - 11.58%)	9.70%	(9.26 - 10.15%)	10.45%	(10.03 - 10.94%)	8.84%
Plastic Packaging	5.65%	(5.39 - 5.95%)	5.23%	(4.99 - 5.48%)	5.33%	(5.14 - 5.55%)	3.71%
Rigid Plastic Containers	1.67%	(1.58 - 1.78%)	1.51%	(1.40 - 1.64%)	1.34%	(1.28 - 1.41%)	1.11%
Other Plastic Packaging	3.98%	(3.76 - 4.22%)	3.71%	(3.52 - 3.93%)	3.99%	(3.82 - 4.19%)	2.60%
Other Rigid Packaging	0.82%	(0.73 - 0.93%)	0.91%	(0.83 - 1.00%)	1.04%		0.73%
Plastic Film Pkg (estimate)	3.16%	(2.97 - 3.37%)	2.80%	(2.65 - 2.99%)	2.95%	(2.80 - 3.12%)	1.88%
Plastic Products	5.29%	(4.86 - 5.77%)	4.47%	(4.14 - 4.81%)	5.12%	(4.77 - 5.49%)	5.13%
Rigid Plastic Products	2.16%	(1.83 - 2.49%)	1.74%	(1.48 - 2.00%)	2.26%	(2.03 - 2.49%)	1.88%
Plastic Film Prod. (estimate)	1.71%	(1.60 - 1.82%)	1.51%	(1.43 - 1.61%)	1.59%	(1.49 - 1.71%)	2.41%
Mixed Plastic / Materials	1.42%	(1.17 - 1.73%)	1.21%	(1.06 - 1.40%)	1.26%	(1.04 - 1.51%)	0.84%
<i>(Film plastic combined)</i>	<i>4.87%</i>	<i>(4.57 - 5.19%)</i>	<i>4.32%</i>	<i>(4.08 - 4.60%)</i>	<i>4.55%</i>	<i>(4.36 - 4.77%)</i>	<i>4.29%</i>
Plastic Film Recyclable	1.02%	(0.83 - 1.25%)	0.91%	(0.76 - 1.09%)			
Plastic Film Nonrecyclable	3.85%	(3.65 - 4.08%)	3.40%	(3.20 - 3.61%)			
OTHER ORGANICS	45.13%	(43.50 - 46.72%)	43.48%	(42.09 - 44.93%)	43.99%	(42.98 - 45.11%)	43.24%
Yard Debris	6.58%	(5.37 - 7.82%)	5.92%	(4.91 - 6.91%)	4.92%	(4.36 - 5.47%)	5.51%
Leaves / Grass	5.46%	(4.37 - 6.63%)	4.36%	(3.58 - 5.16%)	3.70%	(3.17 - 4.21%)	4.24%
Small Prunings under 2"	0.83%	(0.51 - 1.19%)	0.93%	(0.64 - 1.27%)	0.93%	(0.74 - 1.14%)	1.07%
Large Prunings over 2"	0.24%	(0.12 - 0.39%)	0.39%	(0.22 - 0.59%)	0.20%	(0.13 - 0.28%)	0.20%
Stumps	0.05%	(0.00 - 0.15%)	0.25%	(0.05 - 0.51%)	0.08%	(0.03 - 0.15%)	0.00%
Wood	8.72%	(7.75 - 9.73%)	8.81%	(7.78 - 9.89%)	11.18%	(10.37 - 12.05%)	9.09%
Clean lumber & hog fuel	3.45%	(2.87 - 4.04%)	4.57%	(3.84 - 5.34%)	4.74%	(4.26 - 5.22%)	5.33%
Untreated Lumber	2.03%	(1.62 - 2.46%)	3.12%	(2.57 - 3.74%)			
Clean HogFuel Lumber	1.42%	(1.01 - 1.87%)	1.45%	(1.05 - 1.87%)			
Painted & Treated lumber	1.53%	(1.10 - 2.04%)	1.54%	(1.20 - 1.90%)	2.63%	(2.29 - 3.00%)	1.19%
Painted Lumber	1.14%	(0.79 - 1.55%)	1.07%	(0.79 - 1.38%)			
Chemically-treated Lumber	0.39%	(0.14 - 0.71%)	0.47%	(0.29 - 0.69%)			
Wood Pallets / Crates	1.19%	(0.86 - 1.51%)	1.23%	(0.92 - 1.61%)	1.40%	(1.15 - 1.66%)	0.86%
Wood Furniture	0.45%	(0.30 - 0.63%)	0.69%	(0.45 - 0.99%)	0.92%	(0.70 - 1.16%)	0.61%
Other Wood Products	0.11%	(0.09 - 0.13%)	0.24%	(0.18 - 0.30%)	0.25%	(0.21 - 0.30%)	0.60%
Mixed Wood / Materials	1.98%	(1.57 - 2.46%)	0.54%	(0.38 - 0.73%)	1.24%	(0.96 - 1.60%)	0.50%
Food	15.60%	(14.72 - 16.53%)	16.22%	(15.19 - 17.28%)	14.30%	(13.65 - 14.95%)	16.62%
Tires	0.12%	(0.06 - 0.19%)	0.17%	(0.03 - 0.34%)	0.10%	(0.06 - 0.15%)	0.11%
Rubber Products	0.64%	(0.48 - 0.84%)	0.89%	(0.62 - 1.20%)	0.68%	(0.54 - 0.83%)	0.64%
Disposable Diapers	2.08%	(1.76 - 2.43%)	2.31%	(2.01 - 2.63%)	1.73%	(1.59 - 1.87%)	1.79%
Carpet	1.97%	(1.48 - 2.58%)	1.46%	(1.19 - 1.74%)	2.84%	(2.45 - 3.30%)	1.23%
Textiles + mixed	3.03%	(2.68 - 3.44%)	2.92%	(2.56 - 3.28%)	3.08%	(2.77 - 3.37%)	2.69%
Textiles	1.73%	(1.48 - 2.02%)	2.00%	(1.71 - 2.32%)	1.80%	(1.62 - 1.99%)	1.24%
Mixed Textile / Material	1.30%	(1.10 - 1.52%)	0.91%	(0.77 - 1.07%)	1.27%	(1.07 - 1.49%)	0.52%
Roofing / Tarpaper	3.81%	(2.84 - 4.80%)	2.94%	(2.23 - 3.75%)	2.85%	(2.34 - 3.39%)	3.44%
Furniture	1.27%	(0.91 - 1.64%)	0.61%	(0.39 - 0.89%)	1.12%	(0.88 - 1.35%)	1.11%
Other Organics	1.30%	(1.07 - 1.59%)	1.24%	(0.92 - 1.63%)	1.20%		1.02%

*Combines Metro 1993-94 results with DEQ 1994-95 results for the rest of Oregon

Continued Table A8. Statewide Changes in Waste Composition (page 2 of 2)

Material	Statewide 2002		Statewide 2000		Statewide 1998		1993-95
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent
GLASS	2.32%	(2.04 - 2.66%)	2.29%	(2.09 - 2.49%)	2.77%	(2.50 - 3.02%)	2.81%
Deposit Beverage Glass	0.37%	(0.30 - 0.44%)	0.28%	(0.24 - 0.33%)	0.23%	(0.20 - 0.27%)	0.14%
Other Container Glass	1.18%	(1.09 - 1.29%)	1.45%	(1.32 - 1.58%)	1.39%	(1.31 - 1.48%)	1.93%
Other Clear Bottles	0.44%	(0.38 - 0.49%)	0.55%	(0.48 - 0.62%)	0.50%	(0.46 - 0.54%)	0.85%
Other Colored Bottles	0.28%	(0.23 - 0.33%)	0.28%	(0.22 - 0.34%)	0.30%	(0.26 - 0.33%)	0.43%
Clear Container Glass	0.43%	(0.37 - 0.48%)	0.59%	(0.52 - 0.65%)	0.55%	(0.50 - 0.59%)	0.59%
Colored Container Glass	0.04%	(0.03 - 0.06%)	0.03%	(0.02 - 0.04%)	0.05%	(0.04 - 0.06%)	0.06%
Window+Other Glass	0.76%	(0.51 - 1.09%)	0.56%	(0.44 - 0.69%)	1.14%	(0.90 - 1.38%)	0.74%
Flat Window Glass	0.27%	(0.08 - 0.60%)	0.13%	(0.09 - 0.18%)	0.51%	(0.34 - 0.71%)	0.31%
Fluorescent Tubes	0.01%	(0.00 - 0.02%)					
Compact Fluorescent Lights	0.01%	(0.00 - 0.01%)					
Other Glass	0.47%	(0.36 - 0.59%)	0.43%	(0.32 - 0.55%)	0.63%	(0.47 - 0.79%)	0.43%
METALS	7.45%	(6.75 - 8.13%)	8.78%	(8.00 - 9.52%)	7.31%	(6.85 - 7.80%)	7.42%
Alum. Beverage Cans	0.13%	(0.12 - 0.15%)	0.13%	(0.12 - 0.15%)	0.11%	(0.10 - 0.12%)	0.13%
Alum. Foil / Food Trays	0.17%	(0.15 - 0.19%)	0.16%	(0.15 - 0.18%)	0.13%	(0.12 - 0.14%)	0.11%
Other Aluminum	0.07%	(0.03 - 0.12%)	0.09%	(0.06 - 0.12%)	0.15%	(0.12 - 0.20%)	0.15%
Tinned Cans	0.88%	(0.81 - 0.96%)	1.07%	(0.98 - 1.17%)	1.15%	(1.05 - 1.26%)	0.95%
Tin Food Cans	0.79%	(0.72 - 0.86%)	0.91%	(0.83 - 0.99%)	0.90%	(0.84 - 0.96%)	1.15%
Other Tin Cans	0.09%	(0.07 - 0.12%)	0.16%	(0.10 - 0.22%)	0.25%	(0.18 - 0.34%)	0.12%
Other Metal	6.19%	(5.50 - 6.85%)	7.33%	(6.59 - 8.11%)	5.78%	(5.33 - 6.25%)	5.75%
Other Nonferrous Metal	0.06%	(0.04 - 0.08%)	0.21%	(0.08 - 0.43%)	0.08%	(0.05 - 0.11%)	0.16%
Other Ferrous Metal	1.74%	(1.45 - 2.05%)	2.43%	(2.07 - 2.87%)	2.23%	(2.01 - 2.46%)	2.69%
White Goods	0.05%	(0.00 - 0.11%)	0.16%	(0.05 - 0.28%)	0.27%	(0.10 - 0.47%)	0.08%
Computer,Brown,Sm. Applianc	1.91%	(1.51 - 2.34%)	2.22%	(1.75 - 2.74%)	1.15%		0.68%
Computers & Monitors	0.56%	(0.34 - 0.82%)	0.68%	(0.43 - 0.99%)	0.25%	(0.13 - 0.37%)	
Computers excl. monitors	0.32%	(0.18 - 0.49%)					
Comp. Monitor CRTs	0.24%	(0.11 - 0.39%)					
TVs, CRTs, & Brown Goods	0.71%	(0.47 - 0.96%)	0.98%	(0.66 - 1.34%)	0.44%	(0.30 - 0.62%)	
TVs / Other CRTs	0.43%	(0.22 - 0.64%)					
Other Brown Goods	0.28%	(0.18 - 0.40%)					
Small Appliances-non elec	0.64%	(0.48 - 0.83%)	0.56%	(0.39 - 0.74%)	0.46%	(0.37 - 0.54%)	
Empty Aerosol Cans	0.11%	(0.10 - 0.13%)	0.13%	(0.12 - 0.15%)	0.13%	(0.12 - 0.14%)	0.16%
Mixed Metal / Material	2.32%	(1.94 - 2.72%)	2.18%	(1.87 - 2.50%)	1.91%	(1.67 - 2.17%)	1.99%
OTHER INORGANICS	12.78%	(11.40 - 14.19%)	11.79%	(10.67 - 13.04%)	10.32%	(9.51 - 11.04%)	9.64%
Rock / Concrete / Brick	2.57%	(1.89 - 3.27%)	3.02%	(2.34 - 3.82%)	1.74%	(1.36 - 2.10%)	1.93%
Soil / Sand / Dirt	1.05%	(0.74 - 1.37%)	1.07%	(0.69 - 1.48%)	1.29%	(1.02 - 1.58%)	1.21%
Pet Litter / Animal Feces	1.67%	(1.38 - 1.97%)	1.65%	(1.38 - 1.94%)	1.65%	(1.42 - 1.88%)	0.86%
Gypsum Wallboard	4.65%	(3.64 - 5.69%)	3.83%	(3.09 - 4.66%)	3.46%	(2.96 - 3.97%)	2.70%
Gypsum Wallboard OLD	2.19%	(1.52 - 2.92%)	1.77%	(1.29 - 2.32%)	1.57%	(1.24 - 1.91%)	
Gypsum Wallboard NEW	2.45%	(1.68 - 3.33%)	2.06%	(1.46 - 2.76%)	1.89%	(1.50 - 2.33%)	
Fiberglass Insulation	0.60%	(0.17 - 1.08%)	0.49%	(0.26 - 0.73%)	0.29%	(0.22 - 0.36%)	0.55%
Other Inorganics	2.25%	(1.80 - 2.80%)	1.73%	(1.31 - 2.15%)	1.89%	(1.54 - 2.26%)	2.01%
"MEDICAL WASTES"	0.09%	(0.04 - 0.15%)	0.35%	(0.16 - 0.58%)	0.16%	(0.09 - 0.23%)	0.15%
OTHER HAZARDOUS MATLs	0.67%	(0.50 - 0.84%)	0.51%	(0.39 - 0.63%)	0.65%	(0.53 - 0.79%)	0.55%
Latex Paint	0.09%	(0.05 - 0.14%)	0.03%	(0.01 - 0.04%)	0.12%	(0.07 - 0.17%)	0.10%
Oil Paints / Thinners	0.06%	(0.02 - 0.11%)	0.06%	(0.02 - 0.12%)	0.06%	(0.03 - 0.09%)	0.05%
Pesticides / Herbicides	0.02%	(0.00 - 0.04%)	0.02%	(0.01 - 0.04%)	0.03%	(0.01 - 0.05%)	0.01%
Motor Oil	0.02%	(0.01 - 0.03%)	0.04%	(0.02 - 0.07%)	0.02%	(0.01 - 0.04%)	0.04%
Used Oil Filters	0.04%	(0.03 - 0.06%)	0.10%	(0.05 - 0.16%)	0.10%	(0.07 - 0.14%)	
Fuels (gas/kero/diesel)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.01%)	0.01%	(0.00 - 0.01%)	0.01%
Adhesives / Sealants	0.05%	(0.02 - 0.12%)	0.10%	(0.05 - 0.15%)	0.11%	(0.07 - 0.17%)	0.05%
Caustic Cleaners	0.02%	(0.01 - 0.03%)	0.02%	(0.01 - 0.03%)	0.01%	(0.01 - 0.02%)	0.03%
Lead-Acid Batteries	0.07%	(0.00 - 0.15%)	0.04%	(0.00 - 0.10%)	0.04%	(0.01 - 0.09%)	0.05%
Dry-cell Batteries	0.08%	(0.07 - 0.10%)	0.08%	(0.06 - 0.09%)	0.05%	(0.04 - 0.06%)	0.05%
Asbestos	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%
Other Hazardous Chemicals	0.22%	(0.10 - 0.36%)	0.03%	(0.01 - 0.04%)	0.10%	(0.07 - 0.15%)	0.18%
TOTAL PACKAGING	18.79%	(18.06 - 19.60%)	19.25%	(18.57 - 20.05%)	21.86%	(21.23 - 22.50%)	21.11%
TOTAL PRODUCTS	52.44%	(50.93 - 53.97%)	51.62%	(50.18 - 53.20%)	51.23%	(50.22 - 52.26%)	49.40%
TOTAL NON-MANUFACTURED	28.77%	(27.17 - 30.29%)	29.13%	(27.67 - 30.51%)	26.91%	(26.02 - 27.79%)	29.49%
Total Organic	77.24%	(75.73 - 78.64%)	76.91%	(75.63 - 78.21%)	79.40%	(78.57 - 80.31%)	
Total non-organic	22.76%	(21.36 - 24.27%)	23.09%	(21.79 - 24.37%)	20.60%	(19.69 - 21.43%)	
compostable	52.94%	(51.39 - 54.43%)	56.94%	(55.59 - 58.29%)	55.13%	(54.19 - 56.07%)	
compost-target	31.04%	(29.64 - 32.45%)	32.73%	(31.40 - 34.03%)	30.73%	(29.79 - 31.63%)	

*Combines Metro 1993-94 results with DEQ 1994-95 results for the rest of Oregon

Table A9. Metro Changes in Waste Composition
Field Data Only (page 1 of 2)

Material	Metro 2002		Metro 2000		Metro 1998		1993-94
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	
TOTAL PAPER	21.67%	(20.53 - 22.83%)	23.40%	(22.27 - 24.55%)	24.47%	(23.52 - 25.39%)	25.18%
Paper Packaging	9.90%	(9.16 - 10.70%)	11.14%	(10.33 - 12.06%)	11.80%	(11.17 - 12.54%)	11.85%
Cardboard/Brown Bags	3.70%	(3.27 - 4.13%)	4.56%	(4.09 - 5.09%)	5.22%	(4.86 - 5.61%)	6.14%
Low Grade Packaging	2.16%	(1.85 - 2.59%)	2.14%	(1.94 - 2.37%)	2.72%	(2.54 - 2.92%)	2.38%
Bleached Polycoats	0.34%	(0.30 - 0.39%)	0.52%	(0.39 - 0.66%)	0.39%	(0.37 - 0.42%)	0.31%
Nonrecyc. Packaging Paper	1.59%	(1.33 - 1.89%)	1.82%	(1.26 - 2.59%)	1.73%	(1.33 - 2.24%)	1.65%
Mixed Paper / Materials	2.10%	(1.78 - 2.50%)	2.10%	(1.65 - 2.68%)	1.73%	(1.56 - 1.94%)	1.37%
Other Paper	11.78%	(10.98 - 12.58%)	12.27%	(11.35 - 13.18%)	12.67%	(12.01 - 13.33%)	13.33%
Newspaper	2.27%	(2.03 - 2.53%)	2.70%	(2.30 - 3.10%)	2.18%	(1.97 - 2.41%)	2.53%
Magazines	1.09%	(0.95 - 1.24%)	1.20%	(1.02 - 1.38%)	1.27%	(1.12 - 1.43%)	1.91%
Hi Grade Paper	1.73%	(1.49 - 1.96%)	1.65%	(1.43 - 1.88%)	1.73%	(1.51 - 1.95%)	2.19%
Hardcover Books	0.12%	(0.04 - 0.22%)	0.10%	(0.06 - 0.14%)	0.19%	(0.12 - 0.27%)	0.12%
Low Grade Paper	2.11%	(1.78 - 2.52%)	2.48%	(2.17 - 2.77%)	3.55%	(3.30 - 3.80%)	3.48%
Other Nonrecyclable Paper	4.47%	(4.07 - 4.89%)	4.15%	(3.66 - 4.69%)	3.74%	(3.49 - 4.01%)	3.10%
Low-grade Recyc. Paper comb.	4.72%	(4.22 - 5.31%)	5.23%	(4.79 - 5.65%)	6.85%	(6.50 - 7.20%)	6.29%
Nonrecyclable Paper combined	8.17%	(7.52 - 8.86%)	8.07%	(7.27 - 9.04%)	7.20%	(6.67 - 7.78%)	6.12%
TOTAL PLASTICS	11.71%	(10.91 - 12.57%)	11.16%	(10.53 - 11.85%)	10.48%	(9.94 - 11.00%)	9.21%
Plastic Packaging	5.99%	(5.62 - 6.45%)	5.81%	(5.44 - 6.21%)	5.34%	(5.10 - 5.59%)	2.85%
Rigid Plastic Containers	1.65%	(1.53 - 1.77%)	1.61%	(1.39 - 1.87%)	1.29%	(1.21 - 1.38%)	0.86%
Other Plastic Packaging	4.35%	(4.01 - 4.76%)	4.20%	(3.91 - 4.52%)	4.05%	(3.83 - 4.28%)	1.99%
Other Rigid Packaging	0.98%	(0.79 - 1.23%)	1.10%	(0.94 - 1.29%)	1.02%		0.79%
Plastic Film Pkg (estimate)	3.36%	(3.12 - 3.64%)	3.11%	(2.90 - 3.32%)	3.03%	(2.84 - 3.23%)	1.20%
Plastic Products	5.72%	(5.10 - 6.35%)	5.35%	(4.91 - 5.85%)	5.14%	(4.68 - 5.61%)	6.36%
Rigid Plastic Products	2.27%	(1.88 - 2.69%)	2.14%	(1.76 - 2.57%)	2.68%	(2.27 - 3.12%)	2.37%
Plastic Film Prod. (estimate)	1.82%	(1.69 - 1.97%)	1.68%	(1.57 - 1.79%)	1.48%	(1.36 - 1.62%)	3.36%
Mixed Plastic / Materials	1.63%	(1.22 - 2.13%)	1.54%	(1.30 - 1.82%)	0.97%	(0.86 - 1.10%)	0.64%
<i>(Film plastic combined)</i>	5.18%	(4.81 - 5.61%)	4.78%	(4.47 - 5.12%)	4.52%	(4.26 - 4.76%)	4.56%
Plastic Film Recyclable	1.21%	(0.92 - 1.54%)	1.16%	(0.93 - 1.45%)	not measured		
Plastic Film Nonrecyclable	3.97%	(3.70 - 4.24%)	3.62%	(3.36 - 3.88%)	not measured		
OTHER ORGANICS	43.30%	(41.37 - 45.22%)	42.29%	(40.59 - 44.13%)	43.56%	(42.22 - 45.01%)	47.01%
Yard Debris	4.46%	(3.55 - 5.32%)	4.49%	(3.58 - 5.44%)	3.76%	(3.10 - 4.52%)	5.10%
Leaves / Grass	3.40%	(2.72 - 4.11%)	2.95%	(2.30 - 3.66%)	2.83%	(2.24 - 3.52%)	3.46%
Small Prunings under 2"	0.93%	(0.54 - 1.36%)	0.94%	(0.54 - 1.43%)	0.68%	(0.51 - 0.87%)	1.31%
Large Prunings over 2"	0.13%	(0.05 - 0.22%)	0.43%	(0.20 - 0.69%)	0.17%	(0.10 - 0.26%)	0.26%
Stumps	0.00%	(0.00 - 0.00%)	0.18%	(0.00 - 0.42%)	0.09%	(0.02 - 0.17%)	0.07%
Wood	8.95%	(7.78 - 10.24%)	9.57%	(8.40 - 10.77%)	10.92%	(10.08 - 11.77%)	9.80%
Clean lumber & hog fuel	3.18%	(2.51 - 3.90%)	4.54%	(3.71 - 5.36%)	4.49%	(4.00 - 5.04%)	7.28%
Untreated Lumber	2.20%	(1.66 - 2.81%)	3.36%	(2.68 - 4.03%)	not separated		
Clean HogFuel Lumber	0.98%	(0.66 - 1.33%)	1.19%	(0.77 - 1.66%)	not separated		
Painted & Treated lumber	1.62%	(1.08 - 2.25%)	1.30%	(0.95 - 1.64%)	3.03%	(2.56 - 3.48%)	
Painted Lumber	1.51%	(0.99 - 2.14%)	0.89%	(0.64 - 1.14%)	not separated		
Chemically-treated Lumber	0.10%	(0.04 - 0.17%)	0.41%	(0.21 - 0.64%)	not separated		
Wood Pallets / Crates	1.74%	(1.16 - 2.39%)	2.05%	(1.47 - 2.71%)	1.62%	(1.26 - 1.99%)	0.77%
Wood Furniture	0.57%	(0.33 - 0.83%)	0.84%	(0.49 - 1.24%)	0.62%	(0.44 - 0.85%)	0.69%
Other Wood Products	0.15%	(0.11 - 0.19%)	0.18%	(0.12 - 0.24%)	0.29%	(0.22 - 0.35%)	0.43%
Mixed Wood / Materials	1.69%	(1.23 - 2.15%)	0.66%	(0.42 - 0.94%)	0.87%	(0.67 - 1.11%)	0.28%
Food	15.28%	(14.16 - 16.48%)	15.16%	(13.97 - 16.36%)	13.92%	(13.13 - 14.71%)	19.32%
Tires	0.12%	(0.04 - 0.21%)	0.20%	(0.03 - 0.42%)	0.14%	(0.06 - 0.23%)	0.20%
Rubber Products	0.84%	(0.59 - 1.13%)	1.00%	(0.68 - 1.43%)	0.82%	(0.62 - 1.08%)	0.89%
Disposable Diapers	2.11%	(1.81 - 2.42%)	2.19%	(1.86 - 2.53%)	1.80%	(1.63 - 2.00%)	1.69%
Carpet	2.65%	(1.93 - 3.42%)	2.05%	(1.60 - 2.57%)	2.94%	(2.48 - 3.44%)	1.34%
Textiles + mixed	3.41%	(2.87 - 4.04%)	3.20%	(2.63 - 3.80%)	3.13%	(2.73 - 3.56%)	
Textiles	2.00%	(1.58 - 2.49%)	2.16%	(1.68 - 2.63%)	1.87%	(1.63 - 2.11%)	2.20%
Mixed Textile / Material	1.41%	(1.14 - 1.71%)	1.04%	(0.80 - 1.30%)	1.26%	(0.95 - 1.62%)	
Roofing / Tarpaper	2.86%	(1.98 - 3.83%)	2.52%	(1.73 - 3.43%)	3.70%	(2.89 - 4.56%)	5.22%
Furniture	1.39%	(0.89 - 1.93%)	0.95%	(0.57 - 1.39%)	1.15%	(0.84 - 1.47%)	0.58%
Other Organics	1.24%	(0.93 - 1.57%)	0.95%	(0.71 - 1.20%)	1.26%		0.67%

Continued Table A9. Metro Changes in Waste Composition

Field Data Only (page 2 of 2)

Material	Statewide 2002		Statewide 2000		Statewide 1998		1993-95
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent
GLASS	2.10%	(1.83 - 2.40%)	2.13%	(1.84 - 2.43%)	2.56%	(2.25 - 2.92%)	2.77%
Deposit Beverage Glass	0.40%	(0.31 - 0.52%)	0.24%	(0.19 - 0.30%)	0.19%	(0.16 - 0.23%)	0.14%
Other Container Glass	1.12%	(1.00 - 1.26%)	1.19%	(1.06 - 1.31%)	1.22%	(1.14 - 1.31%)	1.92%
Other Clear Bottles	0.45%	(0.38 - 0.52%)	0.48%	(0.42 - 0.55%)	0.46%	(0.42 - 0.51%)	0.90%
Other Colored Bottles	0.26%	(0.20 - 0.32%)	0.26%	(0.20 - 0.32%)	0.30%	(0.25 - 0.35%)	0.50%
Clear Container Glass	0.39%	(0.33 - 0.45%)	0.43%	(0.36 - 0.50%)	0.43%	(0.39 - 0.47%)	0.47%
Colored Container Glass	0.03%	(0.01 - 0.04%)	0.02%	(0.01 - 0.03%)	0.03%	(0.03 - 0.04%)	0.05%
Window+Other Glass	0.58%	(0.38 - 0.81%)	0.70%	(0.44 - 0.97%)	1.14%	(0.84 - 1.48%)	0.71%
Flat Window Glass	0.11%	(0.05 - 0.19%)	0.14%	(0.07 - 0.22%)	0.56%	(0.30 - 0.89%)	0.26%
Fluorescent Tubes	0.01%	(0.00 - 0.04%)	In "other glass"				
Compact Fluorescent Lights	0.00%	(0.00 - 0.01%)	In "other glass"				
Other Glass	0.45%	(0.26 - 0.67%)	0.56%	(0.32 - 0.82%)	0.58%	(0.44 - 0.72%)	0.45%
METALS	8.32%	(7.42 - 9.25%)	9.69%	(8.63 - 10.75%)	6.90%	(6.38 - 7.42%)	6.43%
Alum. Beverage Cans	0.13%	(0.11 - 0.15%)	0.14%	(0.11 - 0.16%)	0.10%	(0.09 - 0.10%)	0.12%
Alum. Foil / Food Trays	0.16%	(0.14 - 0.18%)	0.14%	(0.13 - 0.16%)	0.14%	(0.12 - 0.16%)	0.07%
Other Aluminum	0.05%	(0.03 - 0.07%)	0.15%	(0.09 - 0.22%)	0.17%	(0.11 - 0.25%)	0.22%
Tinned Cans	0.78%	(0.70 - 0.86%)	0.88%	(0.76 - 1.03%)	0.91%	(0.83 - 0.99%)	
Tin Food Cans	0.67%	(0.60 - 0.76%)	0.65%	(0.59 - 0.72%)	0.69%	(0.63 - 0.75%)	0.75%
Other Tin Cans	0.10%	(0.07 - 0.14%)	0.23%	(0.13 - 0.36%)	0.22%	(0.17 - 0.28%)	
Other Metal	7.21%	(6.31 - 8.16%)	8.37%	(7.29 - 9.41%)	5.58%	(5.08 - 6.08%)	5.27%
Other Nonferrous Metal	0.05%	(0.03 - 0.09%)	0.15%	(0.09 - 0.22%)	0.06%	(0.04 - 0.08%)	0.20%
Other Ferrous Metal	2.36%	(1.91 - 2.86%)	2.98%	(2.40 - 3.61%)	2.33%	(2.06 - 2.62%)	2.71%
White Goods	0.05%	(0.00 - 0.13%)	0.25%	(0.08 - 0.47%)	0.05%	(0.01 - 0.10%)	0.14%
Computer,Brown,Sm. Applianc	2.03%	(1.46 - 2.66%)	1.88%	(1.37 - 2.45%)	0.87%		
Computers & Monitors	0.39%	(0.20 - 0.63%)	0.62%	(0.35 - 0.92%)	0.15%	(0.07 - 0.25%)	
Computers excl. monitors	0.21%	(0.11 - 0.35%)	not separated				
Comp. Monitor CRTs	0.18%	(0.02 - 0.38%)	not separated				
TVs, CRTs, & Brown Goods	0.90%	(0.49 - 1.37%)	0.79%	(0.44 - 1.21%)	0.34%	(0.22 - 0.48%)	
TVs / Other CRTs	0.42%	(0.12 - 0.74%)	not separated				
Other Brown Goods	0.49%	(0.27 - 0.75%)	not separated				
Small Appliances-non elec	0.73%	(0.52 - 0.95%)	0.47%	(0.26 - 0.71%)	0.37%	(0.29 - 0.46%)	0.43%
Empty Aerosol Cans	0.12%	(0.10 - 0.13%)	0.14%	(0.11 - 0.18%)	0.12%	(0.11 - 0.14%)	0.11%
Mixed Metal / Material	2.60%	(2.18 - 3.08%)	2.97%	(2.39 - 3.53%)	2.14%	(1.79 - 2.53%)	1.68%
OTHER INORGANICS	12.09%	(10.58 - 13.57%)	10.72%	(9.49 - 11.99%)	11.38%	(10.31 - 12.37%)	8.74%
Rock / Concrete / Brick	2.14%	(1.50 - 2.78%)	2.48%	(1.81 - 3.24%)	1.94%	(1.43 - 2.50%)	1.00%
Soil / Sand / Dirt	0.93%	(0.63 - 1.21%)	0.74%	(0.48 - 1.06%)	1.29%	(1.00 - 1.58%)	0.92%
Pet Litter / Animal Feces	1.55%	(1.24 - 1.86%)	1.24%	(0.98 - 1.53%)	1.56%	(1.28 - 1.85%)	
Gypsum Wallboard	4.36%	(3.28 - 5.52%)	3.73%	(2.81 - 4.70%)	4.27%	(3.58 - 5.03%)	2.75%
Gypsum Wallboard OLD	1.72%	(1.17 - 2.31%)	1.79%	(1.27 - 2.39%)	1.68%	(1.26 - 2.14%)	
Gypsum Wallboard NEW	2.64%	(1.72 - 3.60%)	1.93%	(1.17 - 2.73%)	2.58%	(1.99 - 3.22%)	
Fiberglass Insulation	0.35%	(0.13 - 0.67%)	0.67%	(0.29 - 1.08%)	0.39%	(0.27 - 0.53%)	0.43%
Other Inorganics	2.76%	(2.05 - 3.53%)	1.86%	(1.29 - 2.48%)	1.92%	(1.47 - 2.40%)	3.64%
"MEDICAL WASTES"	0.06%	(0.02 - 0.11%)	0.20%	(0.10 - 0.32%)	0.15%	(0.07 - 0.25%)	0.10%
OTHER HAZARDOUS MATLs	0.74%	(0.44 - 1.08%)	0.41%	(0.28 - 0.56%)	0.51%	(0.39 - 0.61%)	0.55%
Latex Paint	0.11%	(0.03 - 0.21%)	0.02%	(0.01 - 0.04%)	0.12%	(0.07 - 0.19%)	0.11%
Oil Paints / Thinners	0.05%	(0.01 - 0.11%)	0.03%	(0.01 - 0.05%)	0.04%	(0.02 - 0.05%)	0.05%
Pesticides / Herbicides	0.01%	(0.00 - 0.02%)	0.03%	(0.00 - 0.07%)	0.02%	(0.00 - 0.04%)	0.01%
Motor Oil	0.03%	(0.00 - 0.07%)	0.03%	(0.01 - 0.05%)	0.01%	(0.00 - 0.01%)	0.05%
Used Oil Filters	0.05%	(0.02 - 0.08%)	0.10%	(0.03 - 0.18%)	0.03%	(0.02 - 0.04%)	0.10%
Fuels (gas/kero/diesel)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.01%)	0.00%	(0.00 - 0.00%)	0.01%
Adhesives / Sealants	0.02%	(0.01 - 0.03%)	0.06%	(0.02 - 0.13%)	0.13%	(0.07 - 0.21%)	
Caustic Cleaners	0.02%	(0.01 - 0.03%)	0.03%	(0.00 - 0.06%)	0.01%	(0.01 - 0.02%)	0.01%
Lead-Acid Batteries	0.00%	(0.00 - 0.00%)	0.02%	(0.00 - 0.06%)	0.03%	(0.00 - 0.07%)	0.06%
Dry-cell Batteries	0.08%	(0.06 - 0.09%)	0.07%	(0.05 - 0.10%)	0.05%	(0.04 - 0.06%)	0.02%
Asbestos	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%
Other Hazardous Chemicals	0.37%	(0.12 - 0.67%)	0.02%	(0.01 - 0.03%)	0.06%	(0.04 - 0.08%)	0.13%
TOTAL PACKAGING	20.34%	(19.29 - 21.50%)	21.73%	(20.69 - 22.97%)	21.45%	(20.65 - 22.31%)	21.11%
TOTAL PRODUCTS	54.07%	(52.38 - 55.74%)	53.20%	(51.20 - 55.00%)	52.96%	(51.72 - 54.36%)	49.40%
TOTAL NON-MANUFACTURED	25.60%	(24.01 - 27.09%)	25.06%	(23.52 - 26.78%)	25.59%	(24.44 - 26.77%)	29.49%
Total Organic	77.34%	(75.77 - 78.98%)	77.24%	(75.68 - 78.86%)	79.03%	(77.91 - 80.23%)	
Total non-organic	22.66%	(21.02 - 24.23%)	22.76%	(21.14 - 24.32%)	20.97%	(19.77 - 22.09%)	
compostable	51.80%	(50.03 - 53.39%)	54.87%	(53.26 - 56.60%)	53.44%	(52.22 - 54.69%)	
compost-target	29.96%	(28.29 - 31.47%)	31.00%	(29.53 - 32.53%)	29.35%	(28.24 - 30.48%)	

Table A10. Rest of Oregon Changes in Waste Composition

Field Data Only (page 1 of 4)

Material	2002 Rest of Oregon		2000 Rest of Oregon		1998 Rest of Oregon		1994-95 Rest of Oregon		1992-93 Rest of Oregon	
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)
TOTAL PAPER	19.82%	(18.55 - 21.14%)	22.86%	(21.58 - 24.14%)	24.25%	(23.32 - 25.21%)	28.95%	(27.58-30.32%)	29.51%	(28.231-30.780)
Paper Packaging	8.48%	(7.82 - 9.20%)	8.34%	(7.77 - 8.95%)	12.13%	(11.48 - 12.83%)	13.49%	(12.57-14.40%)	12.01%	(11.297-12.727)
Cardboard/Brown Bags	2.88%	(2.50 - 3.30%)	3.00%	(2.63 - 3.39%)	5.64%	(5.17 - 6.14%)	6.75%	(6.09- 7.41%)	6.18%	(5.741- 6.608)
Low Grade Packaging	2.05%	(1.82 - 2.30%)	2.33%	(2.15 - 2.53%)	2.96%	(2.77 - 3.16%)	3.21%	(2.91- 3.52%)	3.35%	(2.898- 3.806)
Bleached Polycoats	0.50%	(0.36 - 0.65%)	0.56%	(0.39 - 0.79%)	0.43%	(0.40 - 0.47%)	0.44%	(0.40- 0.49%)	0.49%	(0.434- 0.549)
Nonrecyc. Packaging Paper	1.29%	(1.12 - 1.47%)	1.01%	(0.85 - 1.18%)	1.38%	(1.21 - 1.57%)	1.90%	(1.53- 2.28%)	1.19%	(1.003- 1.380)
Mixed Paper / Materials	1.76%	(1.50 - 2.05%)	1.44%	(1.24 - 1.66%)	1.72%	(1.47 - 2.01%)	1.18%	(1.00- 1.37%)	0.80%	(0.665- 0.940)
Other Paper	11.33%	(10.52 - 12.26%)	14.52%	(13.47 - 15.49%)	12.12%	(11.55 - 12.73%)	15.46%	(14.48-16.44%)	17.49%	(16.549-18.438)
Newspaper	2.10%	(1.85 - 2.36%)	2.86%	(2.44 - 3.25%)	2.15%	(1.99 - 2.30%)	2.94%	(2.60- 3.28%)	3.24%	(2.987- 3.495)
Magazines	1.40%	(1.15 - 1.69%)	1.69%	(1.48 - 1.87%)	1.43%	(1.26 - 1.61%)	1.28%	(1.11- 1.45%)	2.16%	(1.943- 2.380)
Hi Grade Paper	1.76%	(1.50 - 2.04%)	1.98%	(1.66 - 2.31%)	1.50%	(1.32 - 1.71%)	1.66%	(1.37- 1.96%)	2.82%	(2.466- 3.170)
Hardcover Books	0.10%	(0.07 - 0.15%)	0.43%	(0.14 - 0.79%)	0.14%	(0.10 - 0.19%)	0.33%	(0.13- 0.53%)	0.12%	(0.070- 0.170)
Low Grade Paper	2.53%	(2.15 - 2.96%)	3.15%	(2.82 - 3.48%)	3.91%	(3.65 - 4.16%)	4.58%	(4.06- 5.09%)	2.76%	(2.437- 3.085)
Other Nonrecyclable Paper	3.44%	(3.16 - 3.72%)	4.42%	(3.97 - 4.89%)	2.99%	(2.79 - 3.20%)	4.67%	(4.32- 5.02%)	6.39%	(6.024- 6.759)
Low-grade Recyc. Paper comb.	5.18%	(4.68 - 5.71%)	6.47%	(5.89 - 7.09%)	7.44%	(7.08 - 7.78%)	8.56%	(7.88- 9.24%)	6.73%	(6.099- 7.351)
Nonrecyclable Paper combined	6.49%	(6.01 - 6.98%)	6.87%	(6.36 - 7.45%)	6.09%	(5.71 - 6.51%)	7.76%	(7.18- 8.33%)	8.39%	(7.932- 8.838)
TOTAL PLASTICS	10.37%	(9.65 - 11.25%)	8.54%	(7.87 - 9.22%)	10.43%	(9.77 - 11.19%)	8.57%	(7.94- 9.20%)	8.16%	(7.626- 8.694)
Plastic Packaging	5.40%	(5.03 - 5.81%)	4.76%	(4.44 - 5.10%)	5.33%	(5.03 - 5.68%)	4.35%	(3.96- 4.74%)	4.45%	(4.152- 4.742)
Rigid Plastic Containers	1.70%	(1.55 - 1.87%)	1.44%	(1.33 - 1.55%)	1.38%	(1.29 - 1.47%)	1.30%	(1.23- 1.37%)	1.32%	(1.254- 1.391)
Other Plastic Packaging	3.70%	(3.40 - 4.03%)	3.32%	(3.06 - 3.61%)	3.95%	(3.67 - 4.27%)	3.05%	(2.68- 3.42%)	3.12%	(2.849- 3.400)
Other Rigid Packaging	0.69%	(0.62 - 0.77%)	0.76%	(0.69 - 0.83%)	1.06%		0.68%		0.59%	
Plastic Film Pkg (estimate)	3.01%	(2.74 - 3.33%)	2.57%	(2.34 - 2.82%)	2.89%	(2.66 - 3.16%)	2.37%	(2.02- 2.71%)	2.53%	(2.280- 2.787)
Plastic Products	4.97%	(4.40 - 5.64%)	3.78%	(3.35 - 4.24%)	5.10%	(4.59 - 5.66%)	4.22%	(3.74- 4.71%)	3.71%	(3.188- 4.238)
Rigid Plastic Products	2.08%	(1.63 - 2.57%)	1.43%	(1.12 - 1.79%)	1.93%	(1.68 - 2.17%)	1.51%	(1.28- 1.75%)	1.93%	(1.606- 2.244)
Plastic Film Prod. (estimate)	1.63%	(1.48 - 1.80%)	1.39%	(1.26 - 1.53%)	1.68%	(1.52 - 1.86%)	1.72%	(1.34- 2.10%)	1.10%	(0.940- 1.256)
Mixed Plastic / Materials	1.27%	(0.97 - 1.63%)	0.96%	(0.77 - 1.19%)	1.49%	(1.10 - 1.92%)	0.99%	(0.80- 1.17%)	0.69%	(0.331- 1.048)
<i>(Film plastic combined)</i>	<i>4.64%</i>	<i>(4.22 - 5.12%)</i>	<i>3.95%</i>	<i>(3.60 - 4.35%)</i>	<i>4.57%</i>	<i>(4.30 - 4.89%)</i>	<i>4.09%</i>		<i>3.63%</i>	
Plastic Film Recyclable	0.87%	(0.63 - 1.18%)	0.72%	(0.52 - 0.96%)		not measured				
Plastic Film Nonrecyclable	3.77%	(3.45 - 4.10%)	3.23%	(2.95 - 3.56%)		not measured				

Continued Table A10. Rest of Oregon Changes in Waste Composition
Field Data Only (page 2 of 4)

Material	2002 Rest of Oregon		2000 Rest of Oregon		1998 Rest of Oregon		1994-95 Rest of Oregon		1992-93 Rest of Oregon	
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)
OTHER ORGANICS	46.51%	(43.91 - 49.12%)	44.43%	(42.34 - 46.62%)	44.34%	(42.85 - 45.96%)	39.43%	(37.79-41.06%)	43.14%	(41.402-44.879)
Yard Debris	8.19%	(6.21 - 10.24%)	7.05%	(5.49 - 8.60%)	5.86%	(5.02 - 6.74%)	5.80%	(4.83- 6.78%)	9.42%	(8.404-10.442)
Leaves / Grass	7.02%	(5.21 - 9.00%)	5.47%	(4.13 - 6.79%)	4.40%	(3.60 - 5.21%)	4.81%	(3.99- 5.63%)	6.58%	(5.802- 7.360)
Small Prunings under 2"	0.75%	(0.32 - 1.28%)	0.92%	(0.52 - 1.38%)	1.14%	(0.83 - 1.49%)	0.90%	(0.44- 1.36%)	2.46%	(1.942- 2.979)
Large Prunings over 2"	0.33%	(0.13 - 0.56%)	0.35%	(0.08 - 0.67%)	0.23%	(0.12 - 0.36%)	0.10%	(0.03- 0.16%)	0.38%	(0.212- 0.551)
Stumps	0.09%	(0.00 - 0.27%)	0.30%	(0.02 - 0.78%)	0.08%	(0.01 - 0.17%)		with limbs		
Wood	8.54%	(7.17 - 9.97%)	8.20%	(6.66 - 9.86%)	11.40%	(10.18 - 12.78%)	8.57%	(7.41- 9.73)	7.05%	(5.737- 8.352)
Clean lumber & hog fuel	3.66%	(2.82 - 4.55%)	4.59%	(3.51 - 5.83%)	4.94%	(4.17 - 5.72%)	3.91%	(3.18- 4.64)	3.76%	(2.650- 4.867)
Untreated Lumber	1.90%	(1.39 - 2.44%)	2.93%	(2.11 - 3.91%)		not separated				
Clean HogFuel Lumber	1.76%	(1.07 - 2.54%)	1.66%	(1.01 - 2.35%)		not separated				
Painted & Treated lumber	1.47%	(0.81 - 2.22%)	1.73%	(1.21 - 2.31%)	2.31%	(1.83 - 2.87%)	1.80%	(1.36- 2.24%)	1.01%	(0.733- 1.295)
Painted Lumber	0.85%	(0.43 - 1.45%)	1.20%	(0.76 - 1.70%)		not separated				
Chemically-treated Lumber	0.62%	(0.17 - 1.17%)	0.53%	(0.25 - 0.88%)		not separated				
Wood Pallets / Crates	0.77%	(0.46 - 1.11%)	0.59%	(0.26 - 1.02%)	1.22%	(0.88 - 1.61%)	0.92%	(0.60- 1.23%)	0.65%	(0.290- 1.018)
Wood Furniture	0.36%	(0.17 - 0.62%)	0.56%	(0.24 - 0.99%)	1.16%	(0.81 - 1.60%)	0.56%	(0.333- 0.776)	0.20%	(0.022- 0.385)
Other Wood Products	0.08%	(0.06 - 0.10%)	0.28%	(0.19 - 0.39%)	0.23%	(0.17 - 0.29%)	0.72%	(0.401- 1.043)	0.68%	(0.404- 0.964)
Mixed Wood / Materials	2.20%	(1.60 - 2.95%)	0.44%	(0.24 - 0.71%)	1.54%	(1.07 - 2.15%)	0.66%	(0.474- 0.849)	0.73%	(0.351- 1.111)
Food	15.84%	(14.55 - 17.21%)	17.06%	(15.56 - 18.58%)	14.61%	(13.62 - 15.62%)	14.65%	(13.480-15.818)	17.55%	(16.187-18.920)
Tires	0.12%	(0.04 - 0.22%)	0.15%	(0.00 - 0.43%)	0.06%	(0.02 - 0.11%)	0.04%	(0.007- 0.068)	0.08%	(0.038- 0.124)
Rubber Products	0.49%	(0.29 - 0.77%)	0.80%	(0.42 - 1.27%)	0.55%	(0.38 - 0.76%)	0.46%	(0.378- 0.547)	0.46%	(0.354- 0.569)
Disposable Diapers	2.06%	(1.57 - 2.64%)	2.41%	(1.95 - 2.96%)	1.67%	(1.47 - 1.87%)	1.87%	(1.647- 2.087)	1.72%	estimate
Carpet	1.46%	(0.79 - 2.33%)	0.99%	(0.66 - 1.35%)	2.76%	(2.17 - 3.47%)	1.15%	(0.776- 1.516)	1.08%	(0.677- 1.482)
Textiles + mixed	2.74%	(2.28 - 3.29%)	2.69%	(2.22 - 3.19%)	3.03%	(2.63 - 3.47%)	3.05%	(2.604- 3.487)	2.46%	(2.175- 2.748)
Textiles	1.53%	(1.23 - 1.85%)	1.88%	(1.51 - 2.29%)	1.75%	(1.49 - 2.05%)	2.15%	(1.823- 2.467)		not separated
Mixed Textile / Material	1.22%	(0.95 - 1.51%)	0.81%	(0.64 - 1.00%)	1.28%	(1.04 - 1.54%)	0.90%	(0.724- 1.077)		not separated
Roofing / Tarpaper	4.53%	(3.02 - 6.09%)	3.26%	(2.13 - 4.55%)	2.16%	(1.56 - 2.84%)	2.13%	(1.445- 2.816)	1.14%	(0.623- 1.656)
Furniture	1.18%	(0.71 - 1.72%)	0.35%	(0.08 - 0.71%)	1.08%	(0.76 - 1.43%)	1.51%	(0.970- 2.044)	1.01%	(0.646- 1.375)
Other Organics	1.36%	(1.00 - 1.80%)	1.46%	(0.92 - 2.16%)	1.15%		1.28%		1.16%	

Continued Table A10. Rest of Oregon Changes in Waste Composition
Field Data Only (page 3 of 4)

Material	2002 Rest of Oregon		2000 Rest of Oregon		1998 Rest of Oregon		1994-95 Rest of Oregon		1992-93 Rest of Oregon	
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)
GLASS	2.48%	(2.03 - 3.04%)	2.41%	(2.16 - 2.67%)	2.94%	(2.53 - 3.32%)	2.83%	(2.549- 3.117)	4.00%	(3.557- 4.436)
Deposit Beverage Glass	0.34%	(0.25 - 0.43%)	0.32%	(0.24 - 0.39%)	0.26%	(0.21 - 0.32%)	0.15%	(0.111- 0.185)	0.16%	(0.120- 0.193)
Other Container Glass	1.23%	(1.08 - 1.39%)	1.65%	(1.45 - 1.86%)	1.54%	(1.40 - 1.68%)	1.93%	(1.772- 2.086)	2.47%	(2.294- 2.640)
Other Clear Bottles	0.42%	(0.35 - 0.51%)	0.61%	(0.50 - 0.71%)	0.53%	(0.47 - 0.59%)	0.81%	(0.716- 0.909)	1.25%	(1.147- 1.359)
Other Colored Bottles	0.30%	(0.23 - 0.36%)	0.29%	(0.20 - 0.39%)	0.29%	(0.25 - 0.34%)	0.39%	(0.317- 0.452)	0.50%	(0.411- 0.597)
Clear Container Glass	0.46%	(0.38 - 0.54%)	0.71%	(0.60 - 0.83%)	0.64%	(0.57 - 0.73%)	0.67%	(0.607- 0.736)	0.61%	(0.540- 0.687)
Colored Container Glass	0.06%	(0.03 - 0.08%)	0.04%	(0.03 - 0.05%)	0.07%	(0.05 - 0.08%)	0.06%	(0.048- 0.073)	0.10%	(0.070- 0.122)
Window+Other Glass	0.91%	(0.52 - 1.48%)	0.45%	(0.36 - 0.56%)	1.14%	(0.79 - 1.49%)	0.76%	(0.522- 0.989)	1.37%	(0.970- 1.776)
Flat Window Glass	0.39%	(0.06 - 0.96%)	0.12%	(0.07 - 0.18%)	0.47%	(0.26 - 0.73%)	0.34%	(0.120- 0.560)	0.29%	(0.178- 0.408)
Fluorescent Tubes	0.01%	(0.00 - 0.02%)								
Compact Fluorescent Lights	0.01%	(0.00 - 0.02%)								
Other Glass	0.50%	(0.36 - 0.65%)	0.33%	(0.26 - 0.41%)	0.67%	(0.42 - 0.93%)	0.42%	(0.321- 0.509)	1.08%	(0.698- 1.462)
METALS	6.79%	(5.79 - 7.84%)	8.06%	(7.01 - 9.16%)	7.65%	(6.97 - 8.41%)	8.07%	(7.438- 8.692)	7.44%	(6.793- 8.081)
Alum. Beverage Cans	0.14%	(0.11 - 0.17%)	0.13%	(0.11 - 0.15%)	0.11%	(0.10 - 0.13%)	0.14%	(0.097- 0.192)	0.12%	(0.099- 0.135)
Alum. Foil / Food Trays	0.18%	(0.15 - 0.21%)	0.18%	(0.15 - 0.20%)	0.12%	(0.11 - 0.14%)	0.14%	(0.129- 0.160)	0.14%	(0.122- 0.154)
Other Aluminum	0.09%	(0.02 - 0.17%)	0.03%	(0.02 - 0.05%)	0.14%	(0.09 - 0.20%)	0.09%	(0.066- 0.118)	0.10%	(0.032- 0.173)
Tinned Cans	0.96%	(0.85 - 1.08%)	1.21%	(1.07 - 1.36%)	1.34%	(1.18 - 1.53%)	1.65%	(1.529- 1.779)	1.55%	(1.446- 1.662)
Tin Food Cans	0.88%	(0.77 - 0.99%)	1.11%	(0.97 - 1.25%)	1.07%	(0.97 - 1.17%)	1.44%	(1.324- 1.556)	1.26%	(1.178- 1.331)
Other Tin Cans	0.08%	(0.06 - 0.11%)	0.10%	(0.05 - 0.15%)	0.27%	(0.15 - 0.45%)	0.21%	(0.157- 0.271)	0.30%	(0.225- 0.374)
Other Metal	5.42%	(4.41 - 6.43%)	6.51%	(5.47 - 7.63%)	5.93%	(5.26 - 6.69%)	6.03%	(5.410- 6.652)	5.53%	(4.907- 6.144)
Other Nonferrous Metal	0.06%	(0.03 - 0.10%)	0.26%	(0.05 - 0.65%)	0.10%	(0.05 - 0.14%)	0.13%	(0.073- 0.181)	0.05%	(0.021- 0.079)
Other Ferrous Metal	1.26%	(0.89 - 1.70%)	2.00%	(1.52 - 2.59%)	2.15%	(1.84 - 2.50%)	2.68%	(2.261- 3.103)	2.65%	(2.267- 3.033)
White Goods	0.06%	(0.00 - 0.15%)	0.08%	(0.00 - 0.25%)	0.44%	(0.13 - 0.82%)	0.04%	(-0.000- 0.094)	0.00%	(0.000- 0.000)
Computer,Brown,Sm. Applianc	1.82%	(1.30 - 2.43%)	2.49%	(1.72 - 3.32%)	1.38%		0.86%	(0.602- 1.112)	0.39%	(0.259- 0.525)
Computers & Monitors	0.69%	(0.34 - 1.10%)	0.73%	(0.33 - 1.22%)	0.33%	(0.13 - 0.54%)		not separated		not separated
Computers excl. monitors	0.40%	(0.17 - 0.70%)		not separated						
Comp. Monitor CRTs	0.28%	(0.11 - 0.50%)		not separated						
TVs, CRTs, & Brown Goods	0.56%	(0.28 - 0.88%)	1.13%	(0.64 - 1.68%)	0.53%	(0.29 - 0.82%)		not separated		not separated
TVs / Other CRTs	0.43%	(0.17 - 0.74%)		not separated						
Other Brown Goods	0.13%	(0.07 - 0.20%)		not separated						
Small Appliances-non elec	0.57%	(0.34 - 0.86%)	0.63%	(0.39 - 0.89%)	0.53%	(0.39 - 0.67%)		not separated		not separated
Empty Aerosol Cans	0.11%	(0.09 - 0.13%)	0.13%	(0.11 - 0.15%)	0.14%	(0.12 - 0.15%)	0.19%	(0.169- 0.214)	0.16%	(0.141- 0.178)
Mixed Metal / Material	2.10%	(1.52 - 2.69%)	1.56%	(1.23 - 1.90%)	1.73%	(1.41 - 2.06%)	2.14%	(1.834- 2.442)	2.27%	(1.909- 2.638)

Continued Table A10. Rest of Oregon Changes in Waste Composition
Field Data Only (page 4 of 4)

Material	2002 Rest of Oregon		2000 Rest of Oregon		1998 Rest of Oregon		1994-95 Rest of Oregon		1992-93 Rest of Oregon	
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)
OTHER INORGANICS	13.31%	(11.29 - 15.46%)	12.64%	(10.92 - 14.50%)	9.45%	(8.24 - 10.59%)	10.29%	(8.789-11.789)	7.00%	(5.997- 7.994)
Rock / Concrete / Brick	2.89%	(1.84 - 4.05%)	3.46%	(2.35 - 4.70%)	1.57%	(1.05 - 2.08%)	2.60%	(1.531- 3.675)	1.23%	(0.783- 1.679)
Soil / Sand / Dirt	1.14%	(0.67 - 1.71%)	1.32%	(0.72 - 2.05%)	1.29%	(0.91 - 1.71%)	2.09%	(1.531- 2.655)	1.41%	estimate
Pet Litter / Animal Feces	1.76%	(1.29 - 2.23%)	1.98%	(1.51 - 2.49%)	1.71%	(1.35 - 2.05%)	1.49%	(1.206- 1.765)	1.33%	estimate
Gypsum wallboard	4.86%	(3.34 - 6.55%)	3.92%	(2.75 - 5.20%)	2.81%	(2.05 - 3.57%)	2.65%	(1.929- 3.378)	1.58%	(1.032- 2.127)
Gypsum Wallboard OLD	2.55%	(1.49 - 3.75%)	1.75%	(1.02 - 2.65%)	1.48%	(0.98 - 1.95%)		not separated		not separated
Gypsum Wallboard NEW	2.31%	(1.22 - 3.63%)	2.17%	(1.18 - 3.20%)	1.33%	(0.79 - 1.96%)		not separated		not separated
Fiberglass Insulation	0.80%	(0.07 - 1.55%)	0.35%	(0.11 - 0.71%)	0.20%	(0.12 - 0.30%)	0.64%	(0.128- 1.160)	0.29%	(-0.000- 0.584)
Other Inorganics	1.86%	(1.29 - 2.65%)	1.62%	(1.02 - 2.28%)	1.87%	(1.32 - 2.43%)	0.81%	(0.587- 1.035)	1.15%	(0.736- 1.570)
"MEDICAL WASTES"	0.11%	(0.03 - 0.21%)	0.47%	(0.14 - 0.85%)	0.16%	(0.07 - 0.28%)	0.19%	(-0.000- 0.405)	0.33%	(0.202- 0.459)
OTHER HAZARDOUS MATLs	0.61%	(0.44 - 0.82%)	0.59%	(0.41 - 0.79%)	0.77%	(0.59 - 1.00%)	0.62%	(0.496- 0.746)	0.44%	(0.338- 0.531)
Latex Paint	0.08%	(0.03 - 0.14%)	0.03%	(0.00 - 0.06%)	0.11%	(0.04 - 0.20%)	0.09%	(0.041- 0.141)	0.12%	(0.062- 0.180)
Oil Paints / Thinners	0.06%	(0.02 - 0.14%)	0.09%	(0.01 - 0.20%)	0.07%	(0.03 - 0.13%)	0.04%	(0.016- 0.070)	0.06%	(0.017- 0.099)
Pesticides / Herbicides	0.02%	(0.00 - 0.06%)	0.02%	(0.00 - 0.03%)	0.03%	(0.00 - 0.08%)	0.00%	(0.000- 0.004)	0.02%	(-0.000- 0.031)
Motor Oil	0.01%	(0.00 - 0.02%)	0.05%	(0.02 - 0.10%)	0.03%	(0.01 - 0.06%)	0.04%	(0.013- 0.064)	0.02%	(0.003- 0.030)
Used Oil Filters	0.03%	(0.02 - 0.05%)	0.10%	(0.02 - 0.19%)	0.16%	(0.10 - 0.23%)		in "Mixed Metals"		in "Mixed Metals"
Fuels (gas/kero/diesel)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.01%)	0.01%	(0.00 - 0.02%)	0.00%	(-0.000- 0.006)	0.02%	(0.006- 0.025)
Adhesives / Sealants	0.08%	(0.01 - 0.20%)	0.13%	(0.05 - 0.22%)	0.10%	(0.04 - 0.18%)	0.08%	(0.048- 0.115)	0.01%	(0.002- 0.026)
Caustic Cleaners	0.01%	(0.01 - 0.02%)	0.01%	(0.00 - 0.02%)	0.01%	(0.01 - 0.02%)	0.04%	(0.019- 0.066)	0.02%	(0.004- 0.028)
Lead-Acid Batteries	0.12%	(0.00 - 0.27%)	0.05%	(0.00 - 0.16%)	0.05%	(0.00 - 0.13%)	0.04%	(0.001- 0.070)	0.05%	(0.006- 0.103)
Dry-cell Batteries	0.09%	(0.07 - 0.11%)	0.08%	(0.06 - 0.10%)	0.05%	(0.04 - 0.06%)	0.07%	(0.058- 0.085)	0.05%	(0.042- 0.062)
Asbestos	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(-0.000- 0.011)	0.00%	(-0.000- 0.003)
Other Hazardous Chemicals	0.10%	(0.04 - 0.17%)	0.03%	(0.01 - 0.05%)	0.14%	(0.08 - 0.22%)	0.21%	(0.127- 0.290)	0.07%	(0.040- 0.099)
TOTAL PACKAGING	17.62%	(16.51 - 18.72%)	17.29%	(16.35 - 18.34%)	22.19%	(21.27 - 23.10%)	22.97%	(21.716-24.216)	21.55%	(20.551-22.539)
TOTAL PRODUCTS	51.21%	(48.99 - 53.45%)	50.37%	(48.36 - 52.63%)	49.82%	(48.40 - 51.45%)	48.40%	(46.480-50.311)	45.26%	(43.180-47.341)
TOTAL NON-MANUFACTURED	31.17%	(28.83 - 33.39%)	32.33%	(30.09 - 34.37%)	27.98%	(26.59 - 29.30%)	28.64%	(26.823-30.455)	33.20%	(31.403-34.987)
Total Organic	77.17%	(74.77 - 79.40%)	76.65%	(74.63 - 78.64%)	79.69%	(78.37 - 81.12%)	78.66%	(76.876-80.444)	81.45%	(79.901-82.992)
Total non-organic	22.83%	(20.60 - 25.23%)	23.35%	(21.36 - 25.37%)	20.31%	(18.88 - 21.63%)	21.34%	(19.795-22.886)	18.55%	(17.266-19.841)
compostable	53.81%	(51.55 - 56.09%)	58.57%	(56.55 - 60.58%)	56.50%	(55.05 - 57.94%)	58.14%		64.35%	
compost-target	31.86%	(29.81 - 34.08%)	34.09%	(32.18 - 36.03%)	31.85%	(30.43 - 33.30%)	30.51%		37.99%	

Table A11. Metro Waste Composition by Vehicle Source
2002 Field Data Only (page 1 of 2)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
TOTAL PAPER	23.80%	31.68%	26.30%	33.31%	15.96%	8.30%	10.27%
Paper Packaging	8.57%	13.48%	10.29%	19.88%	9.77%	5.07%	3.71%
Cardboard/Brown Bags	2.53%	5.07%	3.22%	7.41%	4.76%	2.50%	1.23%
Low Grade Packaqing	2.28%	3.81%	2.27%	4.07%	1.46%	0.51%	0.65%
Bleached Polycoats	0.60%	0.41%	0.54%	0.41%	0.10%	0.02%	0.10%
Nonrecyc. Packaging Paper	1.27%	2.26%	1.82%	5.45%	0.79%	0.21%	0.25%
Mixed Paper / Materials	1.88%	1.94%	2.43%	2.53%	2.66%	1.84%	1.47%
Other Paper	15.23%	18.20%	16.02%	13.43%	6.19%	3.23%	6.56%
Newspaper	3.33%	3.56%	3.24%	2.40%	1.02%	0.46%	0.70%
Magazines	1.72%	1.35%	1.62%	1.23%	0.18%	0.36%	0.73%
Hi Grade Paper	1.20%	3.69%	2.02%	1.80%	1.25%	0.53%	1.74%
Hardcover Books	0.01%	0.03%	0.32%	0.16%	0.05%	0.15%	0.14%
Low Grade Paper	2.71%	3.02%	2.53%	1.99%	2.08%	0.66%	1.09%
Other Nonrecyclable Paper	6.26%	6.56%	6.29%	5.85%	1.62%	1.06%	2.16%
Low-grade Recyc. Paper comb.	5.61%	7.26%	5.67%	6.64%	3.68%	1.34%	1.99%
Nonrecyclable Paper combined	9.41%	10.76%	10.54%	13.83%	5.07%	3.10%	3.88%
TOTAL PLASTICS	12.45%	12.94%	12.12%	19.65%	9.39%	8.56%	7.51%
Plastic Packaging	7.73%	7.73%	6.80%	10.06%	4.70%	1.96%	2.23%
Rigid Plastic Containers	2.52%	2.04%	2.01%	2.77%	0.73%	0.50%	0.50%
Other Plastic Packaging	5.21%	5.69%	4.78%	7.29%	3.97%	1.46%	1.73%
Other Rigid Packaging	1.19%	0.96%	1.29%	1.67%	1.06%	0.28%	0.35%
Plastic Film Pkg (estimate)	4.02%	4.72%	3.49%	5.62%	2.91%	1.17%	1.38%
Plastic Products	4.72%	5.21%	5.32%	9.59%	4.69%	6.60%	5.29%
Rigid Plastic Products	1.58%	1.73%	2.01%	2.35%	2.25%	3.68%	2.57%
Plastic Film Prod. (estimate)	2.17%	2.55%	1.89%	3.04%	1.57%	0.63%	0.74%
Mixed Plastic / Materials	0.97%	0.92%	1.42%	4.21%	0.87%	2.29%	1.97%
(Film plastic combined)	6.19%	7.28%	5.38%	8.66%	4.48%	1.81%	2.12%
Plastic Film Recyclable	0.49%	1.10%	0.83%	1.85%	2.88%	1.24%	0.51%
Plastic Film Nonrecyclable	5.69%	6.17%	4.55%	6.81%	1.60%	0.57%	1.61%
OTHER ORGANICS	46.19%	39.44%	43.56%	33.86%	46.47%	45.95%	43.66%
Yard Debris	5.59%	3.89%	7.56%	2.02%	3.25%	3.13%	4.04%
Leaves / Grass	5.30%	3.61%	5.63%	1.50%	2.15%	0.65%	3.63%
Small Prunings under 2"	0.29%	0.15%	1.93%	0.52%	0.58%	2.25%	0.39%
Large Prunings over 2"	0.01%	0.13%	0.00%	0.00%	0.53%	0.23%	0.01%
Stumps	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Wood	1.38%	5.23%	3.98%	2.27%	22.30%	21.24%	6.05%
Clean lumber & hog fuel	0.66%	2.23%	1.42%	0.56%	6.08%	8.91%	1.35%
Untreated Lumber	0.49%	2.07%	1.09%	0.52%	3.24%	6.18%	1.00%
Clean HogFuel Lumber	0.17%	0.17%	0.33%	0.04%	2.84%	2.73%	0.36%
Painted & Treated lumber	0.18%	0.59%	0.38%	0.10%	3.94%	4.85%	1.08%
Painted Lumber	0.18%	0.44%	0.26%	0.10%	3.79%	4.61%	1.07%
Chemically-treated Lumber	0.00%	0.16%	0.11%	0.00%	0.14%	0.24%	0.00%
Wood Pallets / Crates	0.11%	0.33%	1.41%	1.01%	7.58%	1.59%	1.02%
Wood Furniture	0.00%	0.16%	0.28%	0.09%	1.72%	1.53%	0.14%
Other Wood Products	0.10%	0.13%	0.18%	0.19%	0.14%	0.15%	0.20%
Mixed Wood / Materials	0.33%	1.79%	0.31%	0.31%	2.85%	4.20%	2.27%
Food	26.34%	21.65%	20.65%	21.78%	4.66%	1.17%	2.70%
Tires	0.18%	0.02%	0.21%	0.00%	0.19%	0.09%	0.00%
Rubber Products	0.19%	0.70%	0.77%	1.48%	0.72%	0.95%	2.16%
Disposable Diapers	6.54%	1.44%	2.79%	0.60%	0.27%	0.01%	0.01%
Carpet	0.75%	0.21%	0.66%	0.92%	2.99%	6.21%	10.48%
Textiles + mixed	3.43%	3.32%	4.09%	3.19%	3.33%	3.12%	3.08%
Textiles	2.00%	1.91%	2.47%	0.83%	2.09%	2.03%	2.40%
Mixed Textile / Material	1.43%	1.41%	1.62%	2.36%	1.24%	1.09%	0.68%
Roofing / Tarpaper	0.14%	0.00%	0.07%	0.00%	5.65%	6.84%	11.75%
Furniture	0.00%	1.01%	1.27%	0.86%	2.02%	2.79%	2.63%
Other Organics	1.63%	1.98%	1.51%	0.75%	1.10%	0.39%	0.77%

Continued Table A11. Metro Waste Composition by Vehicle Source: 2002

Field Data Only (page 2 of 2)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
GLASS	2.82%	3.23%	2.93%	2.10%	0.84%	0.82%	1.05%
Deposit Beverage Glass	0.37%	0.58%	0.78%	0.60%	0.16%	0.11%	0.15%
Other Container Glass	2.01%	1.39%	1.67%	0.98%	0.42%	0.16%	0.56%
Other Clear Bottles	0.63%	0.74%	0.74%	0.34%	0.23%	0.05%	0.18%
Other Colored Bottles	0.45%	0.29%	0.31%	0.23%	0.11%	0.05%	0.29%
Clear Container Glass	0.88%	0.35%	0.55%	0.38%	0.07%	0.05%	0.09%
Colored Container Glass	0.04%	0.01%	0.08%	0.03%	0.00%	0.00%	0.00%
Window+Other Glass	0.44%	1.26%	0.49%	0.53%	0.26%	0.55%	0.35%
Flat Window Glass	0.10%	0.02%	0.12%	0.13%	0.14%	0.23%	0.04%
Fluorescent Tubes	0.00%	0.00%	0.01%	0.14%	0.00%	0.00%	0.00%
Compact Fluorescent Lights	0.00%	0.00%	0.00%	0.02%	0.00%	0.00%	0.00%
Other Glass	0.34%	1.24%	0.36%	0.24%	0.13%	0.32%	0.30%
METALS	5.95%	7.66%	8.94%	7.20%	13.36%	9.05%	5.91%
Alum. Beverage Cans	0.13%	0.21%	0.17%	0.22%	0.09%	0.02%	0.06%
Alum. Foil / Food Trays	0.40%	0.17%	0.17%	0.13%	0.03%	0.01%	0.03%
Other Aluminum	0.04%	0.12%	0.02%	0.09%	0.05%	0.04%	0.00%
Tinned Cans	1.52%	0.95%	1.00%	0.80%	0.18%	0.18%	0.29%
Tin Food Cans	1.40%	0.87%	0.80%	0.73%	0.16%	0.08%	0.17%
Other Tin Cans	0.11%	0.07%	0.20%	0.08%	0.03%	0.10%	0.12%
Other Metal	3.87%	6.22%	7.58%	5.96%	13.01%	8.80%	5.53%
Other Nonferrous Metal	0.02%	0.03%	0.04%	0.01%	0.12%	0.11%	0.06%
Other Ferrous Metal	0.78%	1.57%	2.04%	2.17%	5.70%	3.17%	1.72%
White Goods	0.00%	0.00%	0.05%	0.00%	0.00%	0.25%	0.00%
Computer,Brown,Sm. Applianc	1.04%	2.19%	2.72%	1.62%	2.88%	1.94%	2.00%
Computers & Monitors	0.06%	1.22%	0.41%	0.00%	0.26%	0.36%	0.26%
Computers excl. monitors	0.06%	0.26%	0.41%	0.00%	0.26%	0.23%	0.26%
Comp. Monitor CRTs	0.00%	0.96%	0.00%	0.00%	0.00%	0.14%	0.00%
TVs, CRTs, & Brown Goods	0.19%	0.15%	1.52%	0.47%	2.11%	0.86%	1.57%
TVs / Other CRTs	0.00%	0.00%	0.87%	0.00%	0.89%	0.53%	0.85%
Other Brown Goods	0.19%	0.15%	0.65%	0.47%	1.21%	0.33%	0.72%
Small Appliances-non elec	0.80%	0.81%	0.79%	1.15%	0.51%	0.71%	0.16%
Empty Aerosol Cans	0.22%	0.10%	0.23%	0.05%	0.04%	0.02%	0.03%
Mixed Metal / Material	1.80%	2.33%	2.51%	2.10%	4.27%	3.31%	1.72%
OTHER INORGANICS	8.04%	4.56%	5.58%	1.87%	13.83%	26.70%	29.47%
Rock / Concrete / Brick	1.34%	0.90%	0.87%	0.22%	2.60%	4.12%	6.64%
Soil / Sand / Dirt	0.79%	0.66%	1.08%	0.33%	1.02%	1.44%	1.01%
Pet Litter / Animal Feces	4.59%	0.76%	2.46%	0.35%	0.18%	0.04%	0.45%
Gypsum Wallboard	0.16%	0.26%	0.16%	0.09%	5.53%	15.49%	11.60%
Gypsum Wallboard OLD	0.16%	0.16%	0.16%	0.06%	1.97%	4.15%	8.51%
Gypsum Wallboard NEW	0.00%	0.10%	0.00%	0.03%	3.56%	11.35%	3.09%
Fiberglass Insulation	0.00%	0.00%	0.08%	0.00%	0.31%	1.48%	0.56%
Other Inorganics	1.16%	1.98%	0.94%	0.88%	4.18%	4.11%	9.22%
"MEDICAL WASTES"	0.12%	0.03%	0.15%	0.06%	0.00%	0.00%	0.00%
OTHER HAZARDOUS MATLS	0.63%	0.45%	0.42%	1.95%	0.14%	0.61%	2.11%
Latex Paint	0.04%	0.02%	0.00%	0.00%	0.08%	0.35%	0.36%
Oil Paints / Thinners	0.05%	0.04%	0.03%	0.00%	0.00%	0.01%	0.40%
Pesticides / Herbicides	0.00%	0.01%	0.01%	0.00%	0.00%	0.03%	0.00%
Motor Oil	0.00%	0.10%	0.07%	0.00%	0.01%	0.00%	0.01%
Used Oil Filters	0.02%	0.01%	0.15%	0.00%	0.00%	0.03%	0.17%
Fuels (gas/kerodiesel)	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%
Adhesives / Sealants	0.03%	0.03%	0.02%	0.01%	0.00%	0.02%	0.04%
Caustic Cleaners	0.00%	0.01%	0.06%	0.01%	0.02%	0.05%	0.00%
Lead-Acid Batteries	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Dry-cell Batteries	0.15%	0.12%	0.08%	0.04%	0.01%	0.02%	0.06%
Asbestos	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other Hazardous Chemicals	0.32%	0.11%	0.00%	1.89%	0.03%	0.10%	1.07%
TOTAL PACKAGING	21.06%	24.94%	22.51%	33.73%	22.98%	9.14%	8.07%
TOTAL PRODUCTS	38.65%	45.23%	43.37%	40.82%	64.21%	80.56%	76.33%
TOTAL NON-MANUFACTURED	40.28%	29.83%	34.12%	25.45%	12.82%	10.30%	15.59%
Total Organic	83.01%	84.40%	82.26%	88.77%	71.94%	63.33%	63.33%
Total non-organic	16.99%	15.60%	17.74%	11.23%	28.06%	36.67%	36.67%
compostable	69.27%	64.11%	64.37%	60.47%	40.79%	25.09%	20.74%
compost-target	40.43%	36.63%	38.77%	32.02%	23.17%	15.06%	11.81%

Table A12. Confidence Intervals for Metro Vehicle Sources 2002
Field Data Only (page 1 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
TOTAL PAPER	(22.49 - 25.17%)	(28.00 - 34.91%)	(24.08 - 28.52%)	(28.05 - 38.57%)	(12.10 - 20.17%)	(5.69 - 11.34%)	(7.59 - 13.15%)
Paper Packaging	(7.93 - 9.28%)	(11.48 - 15.80%)	(8.95 - 11.63%)	(15.96 - 24.36%)	(7.10 - 12.85%)	(3.39 - 7.03%)	(2.78 - 4.90%)
Cardboard/Brown Bags	(1.93 - 3.21%)	(3.95 - 6.15%)	(2.69 - 3.79%)	(5.08 - 9.83%)	(3.18 - 6.67%)	(1.49 - 3.65%)	(0.85 - 1.66%)
Low Grade Packaging	(2.08 - 2.48%)	(2.28 - 6.44%)	(2.01 - 2.54%)	(3.08 - 5.15%)	(0.80 - 2.38%)	(0.31 - 0.75%)	(0.47 - 0.86%)
Bleached Polyoats	(0.53 - 0.68%)	(0.26 - 0.59%)	(0.39 - 0.75%)	(0.26 - 0.60%)	(0.04 - 0.16%)	(0.00 - 0.03%)	(0.06 - 0.15%)
Nonrecyc. Packaging	(1.13 - 1.43%)	(1.80 - 2.78%)	(1.26 - 2.53%)	(3.19 - 8.18%)	(0.41 - 1.27%)	(0.06 - 0.37%)	(0.17 - 0.35%)
Mixed Paper / Materials	(1.69 - 2.11%)	(1.55 - 2.30%)	(1.68 - 3.39%)	(1.67 - 3.53%)	(1.31 - 4.19%)	(0.87 - 3.25%)	(0.66 - 2.60%)
Other Paper	(14.06 - 16.49%)	(15.44 - 20.69%)	(14.30 - 17.86%)	(9.92 - 17.05%)	(3.73 - 8.99%)	(2.01 - 4.63%)	(4.22 - 9.05%)
Newspaper	(2.72 - 4.03%)	(2.67 - 4.47%)	(2.50 - 3.97%)	(1.42 - 3.51%)	(0.51 - 1.71%)	(0.21 - 0.80%)	(0.43 - 1.00%)
Magazines	(1.34 - 2.15%)	(0.97 - 1.72%)	(1.20 - 2.12%)	(0.70 - 1.91%)	(0.10 - 0.28%)	(0.14 - 0.68%)	(0.34 - 1.14%)
Hi Grade Paper	(1.04 - 1.38%)	(2.80 - 4.55%)	(1.61 - 2.53%)	(1.09 - 2.60%)	(0.48 - 2.11%)	(0.15 - 1.05%)	(0.95 - 2.62%)
Hardcover Books	(0.00 - 0.04%)	(0.00 - 0.08%)	(0.00 - 0.93%)	(0.00 - 0.35%)	(0.00 - 0.11%)	(0.00 - 0.43%)	(0.02 - 0.29%)
Low Grade Paper	(2.38 - 3.04%)	(2.25 - 3.89%)	(1.89 - 3.30%)	(1.28 - 2.87%)	(0.51 - 4.65%)	(0.41 - 0.98%)	(0.64 - 1.63%)
Other Nonrecyc. Paper	(5.81 - 6.78%)	(5.30 - 7.84%)	(5.21 - 7.50%)	(3.77 - 8.20%)	(0.92 - 2.54%)	(0.21 - 2.20%)	(1.27 - 3.16%)
<i>Low-grade Recyc. Paper combined</i>	<i>(5.16 - 6.08%)</i>	<i>(5.31 - 10.10%)</i>	<i>(4.82 - 6.56%)</i>	<i>(5.03 - 8.36%)</i>	<i>(1.80 - 6.08%)</i>	<i>(0.87 - 1.91%)</i>	<i>(1.35 - 2.78%)</i>
<i>Nonrecyclable Paper combined</i>	<i>(8.85 - 10.03%)</i>	<i>(9.21 - 12.22%)</i>	<i>(9.01 - 12.25%)</i>	<i>(10.64 - 17.35%)</i>	<i>(3.23 - 7.17%)</i>	<i>(1.47 - 5.58%)</i>	<i>(2.66 - 5.41%)</i>
TOTAL PLASTICS	(11.77 - 13.19%)	(11.47 - 14.47%)	(10.94 - 13.45%)	(15.85 - 24.37%)	(6.32 - 13.00%)	(6.04 - 11.46%)	(5.92 - 9.42%)
Plastic Packaging	(7.37 - 8.07%)	(6.84 - 8.66%)	(6.03 - 7.68%)	(8.29 - 11.96%)	(2.96 - 7.02%)	(1.27 - 2.78%)	(1.77 - 2.80%)
Rigid Plastic Containers	(2.35 - 2.70%)	(1.72 - 2.35%)	(1.80 - 2.25%)	(2.09 - 3.46%)	(0.42 - 1.04%)	(0.24 - 0.84%)	(0.37 - 0.66%)
Other Plastic Packaging	(4.93 - 5.47%)	(5.00 - 6.53%)	(4.13 - 5.59%)	(5.74 - 9.06%)	(2.30 - 6.23%)	(0.90 - 2.14%)	(1.34 - 2.24%)
Other Rigid Packaging	(1.07 - 1.31%)	(0.80 - 1.12%)	(0.93 - 1.81%)	(0.62 - 3.55%)	(0.33 - 2.31%)	(0.17 - 0.40%)	(0.23 - 0.52%)
Plastic Film Pkg (estimate)	(3.79 - 4.25%)	(4.06 - 5.52%)	(3.10 - 3.87%)	(4.73 - 6.69%)	(1.80 - 4.20%)	(0.65 - 1.83%)	(1.06 - 1.80%)
Plastic Products	(4.16 - 5.40%)	(4.50 - 5.95%)	(4.52 - 6.26%)	(6.45 - 13.30%)	(3.05 - 6.65%)	(4.26 - 9.30%)	(3.91 - 6.85%)
Rigid Plastic Products	(1.07 - 2.28%)	(1.29 - 2.23%)	(1.48 - 2.61%)	(1.22 - 3.79%)	(1.01 - 3.97%)	(2.27 - 5.33%)	(1.53 - 3.88%)
Plastic Film Prod. (estimate)	(2.05 - 2.30%)	(2.19 - 2.98%)	(1.68 - 2.09%)	(2.55 - 3.61%)	(0.97 - 2.27%)	(0.35 - 0.99%)	(0.57 - 0.97%)
Mixed Plastic / Materials	(0.82 - 1.13%)	(0.66 - 1.23%)	(1.10 - 1.82%)	(1.23 - 7.80%)	(0.54 - 1.25%)	(0.83 - 4.67%)	(1.25 - 2.74%)
<i>(Film plastic combined)</i>	<i>(5.84 - 6.55%)</i>	<i>(6.25 - 8.49%)</i>	<i>(4.78 - 5.96%)</i>	<i>(7.28 - 10.30%)</i>	<i>(2.78 - 6.46%)</i>	<i>(1.00 - 2.82%)</i>	<i>(1.63 - 2.78%)</i>
Plastic Film Recyclable	(0.40 - 0.61%)	(0.73 - 1.58%)	(0.49 - 1.26%)	(1.14 - 2.69%)	(1.29 - 4.93%)	(0.49 - 2.15%)	(0.29 - 0.75%)
Plastic Film Nonrecyclable	(5.35 - 6.04%)	(5.10 - 7.39%)	(4.09 - 5.01%)	(5.46 - 8.11%)	(1.01 - 2.25%)	(0.35 - 0.81%)	(1.19 - 2.13%)

Continued Table A12. Confidence Intervals for Metro Vehicle Sources 2002
Field Data Only (page 2 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
OTHER ORGANICS	(43.95 - 48.21%)	(35.28 - 43.72%)	(39.76 - 47.44%)	(28.03 - 39.77%)	(40.06 - 53.32%)	(39.76 - 52.33%)	(37.44 - 49.58%)
Yard Debris	(3.57 - 7.76%)	(1.96 - 6.09%)	(4.79 - 10.54%)	(0.26 - 3.86%)	(1.70 - 4.83%)	(0.82 - 5.64%)	(2.19 - 5.91%)
Leaves / Grass	(3.24 - 7.48%)	(1.64 - 5.80%)	(3.49 - 7.93%)	(0.25 - 3.02%)	(0.88 - 3.56%)	(0.24 - 1.14%)	(1.81 - 5.46%)
Small Prunings under 2"	(0.09 - 0.51%)	(0.03 - 0.30%)	(0.91 - 3.13%)	(0.00 - 1.53%)	(0.24 - 0.94%)	(0.22 - 4.31%)	(0.03 - 0.84%)
Large Prunings over 2"	(0.00 - 0.02%)	(0.00 - 0.29%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.08 - 1.08%)	(0.01 - 0.59%)	(0.00 - 0.03%)
Stumps	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Wood	(0.88 - 1.86%)	(3.25 - 7.32%)	(2.51 - 5.87%)	(1.30 - 3.37%)	(16.51 - 28.21%)	(16.66 - 26.42%)	(4.27 - 8.15%)
Clean lumber & hog fuel	(0.36 - 0.96%)	(1.15 - 3.54%)	(0.73 - 2.27%)	(0.16 - 1.11%)	(3.64 - 8.71%)	(5.74 - 12.34%)	(0.93 - 1.79%)
Untreated Lumber	(0.25 - 0.78%)	(1.07 - 3.31%)	(0.46 - 1.86%)	(0.11 - 1.06%)	(1.64 - 5.34%)	(3.60 - 8.96%)	(0.68 - 1.34%)
Clean HogFuel Lumber	(0.04 - 0.32%)	(0.01 - 0.46%)	(0.11 - 0.58%)	(0.00 - 0.09%)	(1.33 - 4.74%)	(1.34 - 4.41%)	(0.22 - 0.52%)
Painted & Treated lumber	(0.03 - 0.36%)	(0.27 - 0.97%)	(0.11 - 0.74%)	(0.00 - 0.24%)	(1.68 - 6.83%)	(2.29 - 7.89%)	(0.50 - 1.78%)
Painted Lumber	(0.03 - 0.36%)	(0.18 - 0.78%)	(0.06 - 0.60%)	(0.00 - 0.24%)	(1.52 - 6.70%)	(2.11 - 7.66%)	(0.50 - 1.78%)
Chemically-treated Lumber	(0.00 - 0.00%)	(0.00 - 0.38%)	(0.01 - 0.27%)	(0.00 - 0.00%)	(0.00 - 0.38%)	(0.00 - 0.64%)	(0.00 - 0.00%)
Wood Pallets / Crates	(0.00 - 0.34%)	(0.05 - 0.71%)	(0.23 - 2.96%)	(0.37 - 1.78%)	(3.68 - 11.64%)	(0.57 - 2.90%)	(0.01 - 2.53%)
Wood Furniture	(0.00 - 0.00%)	(0.00 - 0.48%)	(0.00 - 0.78%)	(0.00 - 0.25%)	(0.69 - 2.90%)	(0.57 - 2.58%)	(0.00 - 0.31%)
Other Wood Products	(0.07 - 0.13%)	(0.07 - 0.21%)	(0.11 - 0.29%)	(0.07 - 0.33%)	(0.01 - 0.30%)	(0.02 - 0.29%)	(0.01 - 0.44%)
Mixed Wood / Materials	(0.07 - 0.69%)	(0.67 - 3.16%)	(0.07 - 0.65%)	(0.10 - 0.56%)	(1.41 - 4.36%)	(2.31 - 6.33%)	(1.10 - 3.76%)
Food	(24.52 - 28.21%)	(17.24 - 26.17%)	(17.61 - 23.79%)	(16.22 - 27.71%)	(2.56 - 7.12%)	(0.56 - 1.92%)	(1.46 - 4.30%)
Tires	(0.00 - 0.55%)	(0.00 - 0.05%)	(0.00 - 0.54%)	(0.00 - 0.00%)	(0.00 - 0.58%)	(0.00 - 0.19%)	(0.00 - 0.00%)
Rubber Products	(0.13 - 0.26%)	(0.31 - 1.16%)	(0.41 - 1.20%)	(0.30 - 2.85%)	(0.18 - 1.52%)	(0.30 - 1.86%)	(0.75 - 4.14%)
Disposable Diapers	(5.50 - 7.66%)	(0.86 - 2.07%)	(1.68 - 4.18%)	(0.24 - 1.03%)	(0.03 - 0.63%)	(0.00 - 0.02%)	(0.00 - 0.03%)
Carpet	(0.35 - 1.18%)	(0.03 - 0.45%)	(0.21 - 1.25%)	(0.01 - 2.63%)	(0.50 - 6.23%)	(3.23 - 9.73%)	(5.95 - 15.66%)
Textiles + mixed	(2.81 - 4.04%)	(2.00 - 4.94%)	(3.11 - 5.24%)	(1.33 - 5.49%)	(1.48 - 6.01%)	(1.45 - 5.29%)	(1.63 - 4.55%)
Textiles	(1.58 - 2.43%)	(0.87 - 3.04%)	(1.71 - 3.34%)	(0.33 - 1.54%)	(0.57 - 4.60%)	(0.71 - 3.95%)	(1.02 - 3.92%)
Mixed Textile / Material	(1.10 - 1.78%)	(0.65 - 2.54%)	(0.97 - 2.39%)	(0.80 - 4.41%)	(0.71 - 1.88%)	(0.59 - 1.76%)	(0.34 - 1.11%)
Roofing / Tarpaper	(0.02 - 0.30%)	(0.00 - 0.01%)	(0.01 - 0.14%)	(0.00 - 0.00%)	(2.17 - 9.72%)	(3.24 - 10.91%)	(6.19 - 17.78%)
Furniture	(0.00 - 0.00%)	(0.13 - 2.13%)	(0.00 - 3.82%)	(0.23 - 1.62%)	(0.81 - 3.55%)	(1.21 - 4.53%)	(0.60 - 5.02%)
Other Organics	(1.31 - 2.02%)	(0.80 - 3.28%)	(0.88 - 2.27%)	(0.34 - 1.22%)	(0.11 - 2.92%)	(0.16 - 0.65%)	(0.29 - 1.35%)

Continued Table A12. Confidence Intervals for Metro Vehicle Sources 2002
Field Data Only (page 3 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
GLASS	(2.45 - 3.28%)	(2.20 - 4.56%)	(2.22 - 3.79%)	(1.39 - 2.82%)	(0.55 - 1.15%)	(0.39 - 1.33%)	(0.48 - 1.76%)
Deposit Beverage Glass	(0.26 - 0.49%)	(0.39 - 0.82%)	(0.37 - 1.43%)	(0.27 - 0.95%)	(0.09 - 0.23%)	(0.02 - 0.24%)	(0.02 - 0.30%)
Other Container Glass	(1.72 - 2.34%)	(1.06 - 1.77%)	(1.28 - 2.13%)	(0.58 - 1.41%)	(0.24 - 0.63%)	(0.08 - 0.25%)	(0.16 - 1.10%)
Other Clear Bottles	(0.49 - 0.79%)	(0.56 - 0.91%)	(0.47 - 1.04%)	(0.20 - 0.49%)	(0.12 - 0.35%)	(0.02 - 0.10%)	(0.08 - 0.31%)
Other Colored Bottles	(0.31 - 0.60%)	(0.14 - 0.46%)	(0.16 - 0.48%)	(0.06 - 0.41%)	(0.03 - 0.22%)	(0.00 - 0.11%)	(0.01 - 0.76%)
Clear Container Glass	(0.70 - 1.10%)	(0.24 - 0.49%)	(0.41 - 0.70%)	(0.12 - 0.81%)	(0.03 - 0.13%)	(0.02 - 0.08%)	(0.04 - 0.14%)
Colored Container Glass	(0.02 - 0.07%)	(0.00 - 0.02%)	(0.01 - 0.17%)	(0.00 - 0.06%)	(0.00 - 0.01%)	(0.00 - 0.01%)	(0.00 - 0.00%)
Window+Other Glass	(0.30 - 0.61%)	(0.23 - 2.59%)	(0.29 - 0.74%)	(0.17 - 0.97%)	(0.13 - 0.43%)	(0.12 - 1.05%)	(0.19 - 0.54%)
Flat Window Glass	(0.01 - 0.25%)	(0.00 - 0.03%)	(0.00 - 0.35%)	(0.00 - 0.39%)	(0.03 - 0.27%)	(0.02 - 0.58%)	(0.01 - 0.09%)
Fluorescent Tubes	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.01%)	(0.00 - 0.41%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Compact Fluorescent Lights	(0.00 - 0.01%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.05%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Other Glass	(0.26 - 0.43%)	(0.21 - 2.57%)	(0.25 - 0.50%)	(0.12 - 0.38%)	(0.05 - 0.23%)	(0.06 - 0.77%)	(0.16 - 0.48%)
METALS	(4.87 - 7.26%)	(6.01 - 9.87%)	(6.25 - 12.13%)	(4.34 - 10.47%)	(9.60 - 16.94%)	(6.88 - 11.54%)	(4.14 - 7.84%)
Alum. Beverage Cans	(0.10 - 0.16%)	(0.16 - 0.26%)	(0.14 - 0.21%)	(0.16 - 0.30%)	(0.05 - 0.14%)	(0.01 - 0.04%)	(0.03 - 0.10%)
Alum. Foil / Food Trays	(0.35 - 0.47%)	(0.11 - 0.23%)	(0.14 - 0.21%)	(0.08 - 0.18%)	(0.01 - 0.04%)	(0.00 - 0.02%)	(0.01 - 0.05%)
Other Aluminum	(0.00 - 0.09%)	(0.03 - 0.21%)	(0.01 - 0.03%)	(0.01 - 0.18%)	(0.02 - 0.08%)	(0.01 - 0.07%)	(0.00 - 0.01%)
Tinned Cans	(1.35 - 1.69%)	(0.69 - 1.23%)	(0.83 - 1.18%)	(0.40 - 1.31%)	(0.11 - 0.27%)	(0.10 - 0.29%)	(0.16 - 0.44%)
Tin Food Cans	(1.25 - 1.57%)	(0.61 - 1.15%)	(0.67 - 0.95%)	(0.33 - 1.24%)	(0.09 - 0.24%)	(0.03 - 0.14%)	(0.10 - 0.26%)
Other Tin Cans	(0.04 - 0.19%)	(0.03 - 0.12%)	(0.07 - 0.35%)	(0.02 - 0.16%)	(0.00 - 0.05%)	(0.03 - 0.20%)	(0.04 - 0.21%)
Other Metal	(2.74 - 5.23%)	(4.44 - 8.51%)	(4.87 - 10.79%)	(3.00 - 9.30%)	(9.29 - 16.60%)	(6.64 - 11.30%)	(3.77 - 7.43%)
Other Nonferrous Metal	(0.01 - 0.03%)	(0.01 - 0.04%)	(0.01 - 0.07%)	(0.00 - 0.03%)	(0.01 - 0.31%)	(0.01 - 0.24%)	(0.00 - 0.15%)
Other Ferrous Metal	(0.37 - 1.36%)	(0.99 - 2.24%)	(0.95 - 3.40%)	(1.12 - 3.37%)	(3.27 - 8.55%)	(2.08 - 4.43%)	(1.17 - 2.33%)
White Goods	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.14%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.76%)	(0.00 - 0.00%)
Computer,Brown,Sm. Appliance	(0.54 - 1.66%)	(1.02 - 3.68%)	(0.79 - 5.68%)	(0.43 - 2.97%)	(1.35 - 4.75%)	(0.90 - 3.32%)	(0.80 - 3.54%)
Computers & Monitors	(0.00 - 0.16%)	(0.27 - 2.55%)	(0.08 - 0.85%)	(0.00 - 0.00%)	(0.00 - 0.59%)	(0.10 - 0.68%)	(0.02 - 0.63%)
Computers excl. monitors	(0.00 - 0.16%)	(0.00 - 0.78%)	(0.08 - 0.85%)	(0.00 - 0.00%)	(0.00 - 0.59%)	(0.02 - 0.46%)	(0.02 - 0.63%)
Comp. Monitor CRTs	(0.00 - 0.00%)	(0.00 - 2.14%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.41%)	(0.00 - 0.00%)
TVs, CRTs, & Brown Goods	(0.01 - 0.50%)	(0.00 - 0.46%)	(0.14 - 3.92%)	(0.00 - 1.17%)	(0.59 - 3.96%)	(0.16 - 1.93%)	(0.39 - 3.12%)
TVs / Other CRTs	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 2.62%)	(0.00 - 0.00%)	(0.11 - 1.89%)	(0.00 - 1.59%)	(0.00 - 2.01%)
Other Brown Goods	(0.01 - 0.50%)	(0.00 - 0.46%)	(0.14 - 1.33%)	(0.00 - 1.17%)	(0.16 - 3.10%)	(0.01 - 0.67%)	(0.20 - 1.40%)
Small Appliances-non electronic	(0.34 - 1.37%)	(0.22 - 1.59%)	(0.26 - 1.49%)	(0.17 - 2.13%)	(0.22 - 0.88%)	(0.29 - 1.20%)	(0.03 - 0.30%)
Empty Aerosol Cans	(0.18 - 0.26%)	(0.06 - 0.15%)	(0.15 - 0.31%)	(0.02 - 0.11%)	(0.02 - 0.07%)	(0.00 - 0.05%)	(0.01 - 0.05%)
Mixed Metal / Material	(1.15 - 2.55%)	(1.46 - 3.35%)	(1.62 - 3.47%)	(0.78 - 3.85%)	(2.65 - 6.04%)	(1.97 - 4.83%)	(0.73 - 3.25%)

Continued Table A12. Confidence Intervals for Metro Vehicle Sources 2002
Field Data Only (page 4 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
OTHER INORGANICS	(6.51 - 9.63%)	(2.61 - 6.92%)	(4.04 - 7.04%)	(1.00 - 2.84%)	(8.75 - 18.86%)	(20.22 - 33.03%)	(23.49 - 35.65%)
Rock / Concrete / Brick	(0.41 - 2.47%)	(0.38 - 1.47%)	(0.13 - 2.04%)	(0.03 - 0.48%)	(0.83 - 4.52%)	(1.38 - 7.35%)	(3.73 - 9.73%)
Soil / Sand / Dirt	(0.35 - 1.30%)	(0.21 - 1.22%)	(0.29 - 1.96%)	(0.03 - 0.76%)	(0.42 - 1.62%)	(0.37 - 2.78%)	(0.37 - 1.65%)
Pet Litter / Animal Feces	(3.42 - 5.79%)	(0.22 - 1.39%)	(1.58 - 3.44%)	(0.07 - 0.70%)	(0.01 - 0.42%)	(0.00 - 0.11%)	(0.05 - 0.99%)
Gypsum Wallboard	(0.02 - 0.38%)	(0.02 - 0.52%)	(0.01 - 0.42%)	(0.00 - 0.20%)	(2.18 - 9.01%)	(9.79 - 21.24%)	(8.49 - 14.85%)
Gypsum Wallboard OLD	(0.02 - 0.38%)	(0.00 - 0.36%)	(0.01 - 0.42%)	(0.00 - 0.17%)	(0.10 - 4.24%)	(1.74 - 6.97%)	(5.76 - 11.26%)
Gypsum Wallboard NEW	(0.00 - 0.00%)	(0.00 - 0.28%)	(0.00 - 0.00%)	(0.00 - 0.08%)	(0.97 - 6.78%)	(6.33 - 16.69%)	(0.88 - 5.71%)
Fiberglass Insulation	(0.00 - 0.01%)	(0.00 - 0.01%)	(0.00 - 0.19%)	(0.00 - 0.00%)	(0.03 - 0.63%)	(0.24 - 3.27%)	(0.26 - 0.95%)
Other Inorganics	(0.80 - 1.62%)	(0.54 - 3.98%)	(0.44 - 1.51%)	(0.24 - 1.65%)	(1.70 - 7.13%)	(1.43 - 7.06%)	(5.53 - 13.33%)
"MEDICAL WASTES"	(0.01 - 0.31%)	(0.01 - 0.07%)	(0.01 - 0.36%)	(0.00 - 0.18%)	(0.00 - 0.01%)	(0.00 - 0.00%)	(0.00 - 0.00%)
OTHER HAZARDOUS MATLs	(0.36 - 1.01%)	(0.22 - 0.72%)	(0.25 - 0.60%)	(0.06 - 5.63%)	(0.05 - 0.26%)	(0.18 - 1.22%)	(0.75 - 3.77%)
Latex Paint	(0.00 - 0.12%)	(0.00 - 0.04%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.20%)	(0.01 - 0.98%)	(0.08 - 0.71%)
Oil Paints / Thinners	(0.01 - 0.12%)	(0.00 - 0.11%)	(0.00 - 0.06%)	(0.00 - 0.00%)	(0.00 - 0.01%)	(0.00 - 0.02%)	(0.00 - 1.18%)
Pesticides / Herbicides	(0.00 - 0.00%)	(0.00 - 0.03%)	(0.00 - 0.04%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.07%)	(0.00 - 0.00%)
Motor Oil	(0.00 - 0.00%)	(0.00 - 0.31%)	(0.00 - 0.18%)	(0.00 - 0.00%)	(0.00 - 0.03%)	(0.00 - 0.01%)	(0.00 - 0.02%)
Used Oil Filters	(0.00 - 0.05%)	(0.00 - 0.02%)	(0.04 - 0.29%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.10%)	(0.02 - 0.39%)
Fuels (gas/kero/diesel)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.02%)	(0.00 - 0.01%)	(0.00 - 0.00%)	(0.00 - 0.01%)	(0.00 - 0.00%)
Adhesives / Sealants	(0.01 - 0.05%)	(0.00 - 0.07%)	(0.00 - 0.04%)	(0.00 - 0.02%)	(0.00 - 0.00%)	(0.01 - 0.04%)	(0.02 - 0.07%)
Caustic Cleaners	(0.00 - 0.00%)	(0.00 - 0.04%)	(0.01 - 0.11%)	(0.00 - 0.02%)	(0.00 - 0.05%)	(0.00 - 0.10%)	(0.00 - 0.00%)
Lead-Acid Batteries	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Dry-cell Batteries	(0.11 - 0.20%)	(0.07 - 0.19%)	(0.05 - 0.11%)	(0.01 - 0.08%)	(0.00 - 0.01%)	(0.01 - 0.03%)	(0.02 - 0.12%)
Asbestos	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Other Hazardous Chemicals	(0.08 - 0.70%)	(0.00 - 0.24%)	(0.00 - 0.01%)	(0.01 - 5.58%)	(0.00 - 0.05%)	(0.00 - 0.24%)	(0.04 - 2.42%)
TOTAL PACKAGING	(20.22 - 21.91%)	(22.70 - 27.24%)	(20.01 - 25.09%)	(29.10 - 38.69%)	(18.45 - 28.08%)	(6.69 - 11.83%)	(6.17 - 10.45%)
TOTAL PRODUCTS	(36.59 - 40.95%)	(40.97 - 49.46%)	(39.08 - 47.99%)	(33.25 - 48.38%)	(58.37 - 70.09%)	(75.91 - 85.18%)	(72.02 - 80.37%)
TOTAL NON-MANUFACTURED	(38.03 - 42.53%)	(25.26 - 34.55%)	(30.21 - 38.17%)	(19.58 - 32.10%)	(9.07 - 16.60%)	(6.49 - 14.24%)	(11.80 - 19.19%)
Total Organic	(81.04 - 84.78%)	(81.19 - 87.14%)	(79.10 - 85.07%)	(84.59 - 92.43%)	(66.42 - 77.57%)	(57.15 - 69.53%)	(57.48 - 69.12%)
Total non-organic	(15.22 - 18.96%)	(12.86 - 18.81%)	(14.93 - 20.90%)	(7.57 - 15.41%)	(22.43 - 33.58%)	(30.47 - 42.85%)	(30.88 - 42.52%)
compostable	(67.08 - 71.39%)	(60.18 - 67.63%)	(59.83 - 68.43%)	(53.49 - 67.09%)	(34.88 - 46.67%)	(20.47 - 29.94%)	(16.46 - 25.27%)
compost-target	(38.15 - 42.73%)	(32.06 - 41.15%)	(34.84 - 42.60%)	(25.86 - 38.79%)	(18.11 - 28.41%)	(11.17 - 19.08%)	(8.90 - 14.76%)

Table A13. Metro Waste Composition 2002

Field Data and Contamination Correction (page 1 of 2)

Material	Field Data 2002		With Contamination Correction		Contamination Correction Factor	
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Factor	(90% Conf. Int.)
TOTAL PAPER	21.67%	(20.53 - 22.83%)	16.86%	(15.83 - 18.09%)	-22.23%	(-25.16 to -18.63%)
Paper Packaging	9.90%	(9.16 - 10.70%)	7.61%	(6.96 - 8.32%)	-23.08%	(-26.53 to -19.08%)
Cardboard/Brown Bags	3.70%	(3.27 - 4.13%)	3.07%	(2.67 - 3.52%)	-16.93%	(-23.44 to -10.26%)
Low Grade Packaging	2.16%	(1.85 - 2.59%)	1.84%	(1.57 - 2.20%)	-14.97%	(-18.82 to -11.21%)
Bleached Polycoats	0.34%	(0.30 - 0.39%)	0.29%	(0.25 - 0.33%)	-14.97%	(-18.82 to -11.21%)
Nonrecyc. Packaging Paper	1.59%	(1.33 - 1.89%)	1.04%	(0.86 - 1.24%)	-34.70%	(-37.94 to -30.83%)
Mixed Paper / Materials	2.10%	(1.78 - 2.50%)	1.37%	(1.15 - 1.64%)	-34.70%	(-37.94 to -30.83%)
Other Paper	11.78%	(10.98 - 12.58%)	9.25%	(8.52 - 10.04%)	-21.51%	(-25.04 to -17.38%)
Newspaper	2.27%	(2.03 - 2.53%)	1.70%	(1.33 - 2.14%)	-25.14%	(-38.54 to -10.74%)
Magazines	1.09%	(0.95 - 1.24%)	1.07%	(0.92 - 1.22%)	-2.09%	(-5.91 to 0.81%)
Hi Grade Paper	1.73%	(1.49 - 1.96%)	1.65%	(1.43 - 1.88%)	-4.30%	(-7.95 to -1.29%)
Hardcover Books	0.12%	(0.04 - 0.22%)	0.12%	(0.04 - 0.22%)	0.26%	(-0.96 to 0.43%)
Low Grade Paper	2.11%	(1.78 - 2.52%)	1.79%	(1.51 - 2.14%)	-14.97%	(-18.82 to -11.21%)
Other Nonrecyclable Paper	4.47%	(4.07 - 4.89%)	2.92%	(2.62 - 3.25%)	-34.70%	(-37.94 to -30.83%)
Low-grade Recyc. Paper comb.	4.72%	(4.22 - 5.31%)	4.03%	(3.59 - 4.58%)	-14.59%	(-18.30 to -10.93%)
Nonrecyclable Paper combined	8.17%	(7.52 - 8.86%)	5.33%	(4.83 - 5.88%)	-34.70%	(-37.94 to -30.83%)
TOTAL PLASTICS	11.71%	(10.91 - 12.57%)	9.55%	(8.73 - 10.39%)	-18.48%	(-21.12 to -16.24%)
Plastic Packaging	5.99%	(5.62 - 6.45%)	4.50%	(4.16 - 4.91%)	-24.95%	(-27.21 to -22.72%)
Rigid Plastic Containers	1.65%	(1.53 - 1.77%)	1.29%	(1.19 - 1.39%)	-21.97%	(-23.60 to -20.26%)
Other Plastic Packaging	4.35%	(4.01 - 4.76%)	3.21%	(2.89 - 3.61%)	-26.08%	(-29.16 to -23.05%)
Other Rigid Packaging	0.98%	(0.79 - 1.23%)	0.95%	(0.76 - 1.18%)	-3.61%	(-7.09 to -1.19%)
Plastic Film Pkg (estimate)	3.36%	(3.12 - 3.64%)	2.27%	(2.05 - 2.51%)	-32.63%	(-35.81 to -29.34%)
Plastic Products	5.72%	(5.10 - 6.35%)	5.05%	(4.40 - 5.69%)	-11.70%	(-15.16 to -9.24%)
Rigid Plastic Products	2.27%	(1.88 - 2.69%)	2.19%	(1.80 - 2.58%)	-3.61%	(-7.09 to -1.19%)
Plastic Film Prod. (estimate)	1.82%	(1.69 - 1.97%)	1.22%	(1.10 - 1.36%)	-32.63%	(-35.81 to -29.34%)
Mixed Plastic / Materials	1.63%	(1.22 - 2.13%)	1.64%	(1.22 - 2.14%)	0.36%	(-5.09 to 3.27%)
<i>(Film plastic combined)</i>	<i>5.18%</i>	<i>(4.81 - 5.61%)</i>	<i>3.49%</i>	<i>(3.15 - 3.87%)</i>	<i>-32.63%</i>	<i>(-35.81 to -29.34%)</i>
Plastic Film Recyclable	1.21%	(0.92 - 1.54%)	1.19%	(0.91 - 1.53%)	-1.73%	(-6.84 to 2.99%)
Plastic Film Nonrecyclable	3.97%	(3.70 - 4.24%)	2.30%	(2.12 - 2.52%)	-42.08%	(-45.50 to -38.46%)
OTHER ORGANICS	43.30%	(41.37 - 45.22%)	43.97%	(41.95 - 45.89%)	1.55%	(0.67 to 1.99%)
Yard Debris	4.46%	(3.55 - 5.32%)	4.49%	(3.58 - 5.35%)	0.71%	(0.54 to 1.02%)
Leaves / Grass	3.40%	(2.72 - 4.11%)	3.43%	(2.75 - 4.15%)	0.93%	(0.71 to 1.31%)
Small Prunings under 2"	0.93%	(0.54 - 1.36%)	0.93%	(0.54 - 1.36%)	0.01%	(0.00 to 0.02%)
Large Prunings over 2"	0.13%	(0.05 - 0.22%)	0.13%	(0.05 - 0.22%)	0.00%	(0.00 to 0.00%)
Stumps	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 to 0.00%)
Wood	8.95%	(7.78 - 10.24%)	8.80%	(7.63 - 10.07%)	-1.59%	(-2.85 to -0.89%)
Clean lumber & hog fuel	3.18%	(2.51 - 3.90%)	3.05%	(2.42 - 3.76%)	-3.98%	(-7.91 to -1.21%)
Untreated Lumber	2.20%	(1.66 - 2.81%)	2.07%	(1.57 - 2.68%)	-5.91%	(-10.52 to -1.77%)
Clean HogFuel Lumber	0.98%	(0.66 - 1.33%)	0.98%	(0.66 - 1.35%)	0.39%	(-4.86 to 2.20%)
Painted & Treated lumber	1.62%	(1.08 - 2.25%)	1.65%	(1.10 - 2.29%)	1.99%	(-2.54 to 1.72%)
Painted Lumber	1.51%	(0.99 - 2.14%)	1.54%	(1.00 - 2.19%)	1.82%	(-3.11 to 7.53%)
Chemically-treated Lumber	0.10%	(0.04 - 0.17%)	0.11%	(0.04 - 0.18%)	4.45%	(-0.09 to 12.94%)
Wood Pallets / Crates	1.74%	(1.16 - 2.39%)	1.74%	(1.16 - 2.39%)	0.03%	(0.00 to 0.07%)
Wood Furniture	0.57%	(0.33 - 0.83%)	0.52%	(0.31 - 0.76%)	-8.57%	(-8.57 to -8.57%)
Other Wood Products	0.15%	(0.11 - 0.19%)	0.15%	(0.11 - 0.20%)	1.22%	(-7.41 to 9.33%)
Mixed Wood / Materials	1.69%	(1.23 - 2.15%)	1.69%	(1.22 - 2.16%)	-0.09%	(-0.66 to 0.61%)
Food	15.28%	(14.16 - 16.48%)	16.18%	(14.96 - 17.48%)	5.92%	(4.86 to 7.06%)
Tires	0.12%	(0.04 - 0.21%)	0.12%	(0.04 - 0.21%)	0.00%	(0.00 to 0.00%)
Rubber Products	0.84%	(0.59 - 1.13%)	0.83%	(0.57 - 1.10%)	-1.77%	(-9.44 to 0.22%)
Disposable Diapers	2.11%	(1.81 - 2.42%)	2.12%	(1.81 - 2.43%)	0.47%	(0.11 to 0.97%)
Carpet	2.65%	(1.93 - 3.42%)	2.58%	(1.82 - 3.32%)	-2.47%	(-10.82 to -0.49%)
Textiles + mixed	3.41%	(2.87 - 4.04%)	3.26%	(2.72 - 3.84%)	-4.17%	(-9.63 to -1.79%)
Textiles	2.00%	(1.58 - 2.49%)	1.87%	(1.44 - 2.31%)	-6.66%	(-14.72 to -3.13%)
Mixed Textile / Material	1.41%	(1.14 - 1.71%)	1.40%	(1.13 - 1.69%)	-0.61%	(-3.49 to 0.58%)
Roofing / Tarpaper	2.86%	(1.98 - 3.83%)	2.86%	(1.98 - 3.81%)	0.07%	(-1.82 to 0.19%)
Furniture	1.39%	(0.89 - 1.93%)	1.39%	(0.89 - 1.93%)	0.00%	(0.00 to 0.00%)
Other Organics	1.24%	(0.93 - 1.57%)	1.32%	(1.00 - 1.68%)	7.10%	(4.99 to 10.29%)

Continued Table A13. Metro Waste Composition 2002 (page 2 of 2)

Material	Field Data 2002		With Contamination Correction		Contamination Correction Factor	
	Percent	(90% Conf. Int.)	Percent	(90% Conf. Int.)	Factor	(90% Conf. Int.)
GLASS	2.10%	(1.83 - 2.40%)	2.09%	(1.81 - 2.39%)	-0.39%	(-1.90 to 1.10%)
Deposit Beverage Glass	0.40%	(0.31 - 0.52%)	0.40%	(0.30 - 0.51%)	-0.69%	(-1.79 to 0.22%)
Other Container Glass	1.12%	(1.00 - 1.26%)	1.10%	(0.98 - 1.24%)	-1.88%	(-5.03 to 0.95%)
Other Clear Bottles	0.45%	(0.38 - 0.52%)	0.45%	(0.38 - 0.51%)	-1.38%	(-3.12 to 0.43%)
Other Colored Bottles	0.26%	(0.20 - 0.32%)	0.25%	(0.19 - 0.31%)	-2.28%	(-4.06 to -0.95%)
Clear Container Glass	0.39%	(0.33 - 0.45%)	0.38%	(0.31 - 0.45%)	-2.32%	(-11.08 to 5.70%)
Colored Container Glass	0.03%	(0.01 - 0.04%)	0.03%	(0.01 - 0.04%)	0.00%	(0.00 to 0.00%)
Window+Other Glass	0.58%	(0.38 - 0.81%)	0.59%	(0.38 - 0.83%)	2.73%	(-1.61 to 8.90%)
Flat Window Glass	0.11%	(0.05 - 0.19%)	0.11%	(0.05 - 0.20%)	0.53%	(-6.51 to 11.82%)
Fluorescent Tubes	0.01%	(0.00 - 0.04%)	0.01%	(0.00 - 0.04%)	0.00%	(0.00 to 0.00%)
Compact Fluorescent Lights	0.00%	(0.00 - 0.01%)	0.00%	(0.00 - 0.01%)	0.42%	(0.00 to 1.23%)
Other Glass	0.45%	(0.26 - 0.67%)	0.46%	(0.27 - 0.69%)	3.40%	(-2.48 to 9.85%)
METALS	8.32%	(7.42 - 9.25%)	8.17%	(7.28 - 9.12%)	-1.79%	(-2.34 to -1.27%)
Alum. Beverage Cans	0.13%	(0.11 - 0.15%)	0.12%	(0.10 - 0.13%)	-10.71%	(-12.63 to -8.96%)
Alum. Foil / Food Trays	0.16%	(0.14 - 0.18%)	0.09%	(0.08 - 0.10%)	-42.65%	(-46.58 to -38.47%)
Other Aluminum	0.05%	(0.03 - 0.07%)	0.05%	(0.03 - 0.07%)	0.98%	(0.17 to 2.39%)
Tinned Cans	0.78%	(0.70 - 0.86%)	0.71%	(0.64 - 0.80%)	-8.17%	(-10.68 to -5.25%)
Tin Food Cans	0.67%	(0.60 - 0.76%)	0.62%	(0.55 - 0.71%)	-7.40%	(-10.18 to -4.36%)
Other Tin Cans	0.10%	(0.07 - 0.14%)	0.09%	(0.06 - 0.12%)	-13.16%	(-18.87 to -3.89%)
Other Metal	7.21%	(6.31 - 8.16%)	7.20%	(6.30 - 8.17%)	-0.07%	(-0.47 to 0.26%)
Other Nonferrous Metal	0.05%	(0.03 - 0.09%)	0.06%	(0.03 - 0.09%)	6.22%	(-0.45 to 22.97%)
Other Ferrous Metal	2.36%	(1.91 - 2.86%)	2.37%	(1.92 - 2.87%)	0.50%	(0.01 to 1.05%)
White Goods	0.05%	(0.00 - 0.13%)	0.05%	(0.00 - 0.13%)	0.00%	(0.00 to 0.00%)
Computer,Brown,Sm. Applianc	2.03%	(1.46 - 2.66%)	2.02%	(1.46 - 2.66%)	-0.03%	(-0.08 to 0.00%)
Computers & Monitors	0.39%	(0.20 - 0.63%)	0.39%	(0.20 - 0.63%)	0.00%	(0.00 to 0.00%)
Computers excl. monitors	0.21%	(0.11 - 0.35%)	0.21%	(0.11 - 0.35%)	0.00%	(0.00 to 0.00%)
Comp. Monitor CRTs	0.18%	(0.02 - 0.38%)	0.18%	(0.02 - 0.38%)	0.00%	(0.00 to 0.00%)
TVs, CRTs, & Brown Goods	0.90%	(0.49 - 1.37%)	0.90%	(0.49 - 1.37%)	-0.02%	(-0.09 to 0.00%)
TVs / Other CRTs	0.42%	(0.12 - 0.74%)	0.42%	(0.12 - 0.74%)	0.00%	(0.00 to 0.00%)
Other Brown Goods	0.49%	(0.27 - 0.75%)	0.49%	(0.27 - 0.75%)	-0.04%	(-0.16 to 0.00%)
Small Appliances-non electron	0.73%	(0.52 - 0.95%)	0.73%	(0.52 - 0.95%)	-0.05%	(-0.13 to 0.00%)
Empty Aerosol Cans	0.12%	(0.10 - 0.13%)	0.11%	(0.10 - 0.13%)	-2.35%	(-4.88 to -0.90%)
Mixed Metal / Material	2.60%	(2.18 - 3.08%)	2.58%	(2.16 - 3.05%)	-0.66%	(-1.74 to 0.13%)
OTHER INORGANICS	12.09%	(10.58 - 13.57%)	12.25%	(10.63 - 13.72%)	1.33%	(-1.55 to 2.34%)
Rock / Concrete / Brick	2.14%	(1.50 - 2.78%)	2.15%	(1.50 - 2.80%)	0.39%	(0.12 to 0.93%)
Soil / Sand / Dirt	0.93%	(0.63 - 1.21%)	0.99%	(0.67 - 1.29%)	6.18%	(4.08 to 10.08%)
Pet Litter / Animal Feces	1.55%	(1.24 - 1.86%)	1.58%	(1.27 - 1.90%)	1.57%	(0.80 to 2.79%)
Gypsum Wallboard	4.36%	(3.28 - 5.52%)	4.35%	(3.21 - 5.50%)	-0.15%	(-4.09 to 0.28%)
Gypsum Wallboard OLD	1.72%	(1.17 - 2.31%)	1.71%	(1.08 - 2.28%)	-0.71%	(-10.23 to 0.22%)
Gypsum Wallboard NEW	2.64%	(1.72 - 3.60%)	2.64%	(1.72 - 3.61%)	0.21%	(0.00 to 0.63%)
Fiberglass Insulation	0.35%	(0.13 - 0.67%)	0.34%	(0.10 - 0.62%)	-2.51%	(-50.77 to -0.47%)
Other Inorganics	2.76%	(2.05 - 3.53%)	2.85%	(2.08 - 3.64%)	3.09%	(-2.57 to 7.78%)
"MEDICAL WASTES"	0.06%	(0.02 - 0.11%)	0.06%	(0.02 - 0.11%)	0.98%	(0.00 to 3.05%)
OTHER HAZARDOUS MATLs	0.74%	(0.44 - 1.08%)	0.79%	(0.48 - 1.13%)	5.85%	(2.40 to 12.16%)
Latex Paint	0.11%	(0.03 - 0.21%)	0.13%	(0.04 - 0.26%)	19.14%	(2.88 to 47.00%)
Oil Paints / Thinners	0.05%	(0.01 - 0.11%)	0.06%	(0.01 - 0.12%)	5.31%	(0.70 to 13.04%)
Pesticides / Herbicides	0.01%	(0.00 - 0.02%)	0.01%	(0.00 - 0.02%)	2.82%	(0.00 to 8.23%)
Motor Oil	0.03%	(0.00 - 0.07%)	0.04%	(0.01 - 0.08%)	24.53%	(13.73 to 36.29%)
Used Oil Filters	0.05%	(0.02 - 0.08%)	0.05%	(0.02 - 0.08%)	0.00%	(0.00 to 0.00%)
Fuels (gas/kero/diesel)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 to 0.00%)
Adhesives / Sealants	0.02%	(0.01 - 0.03%)	0.02%	(0.01 - 0.03%)	9.09%	(2.07 to 21.63%)
Caustic Cleaners	0.02%	(0.01 - 0.03%)	0.02%	(0.01 - 0.04%)	5.13%	(2.57 to 8.46%)
Lead-Acid Batteries	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 to 0.00%)
Dry-cell Batteries	0.08%	(0.06 - 0.09%)	0.08%	(0.06 - 0.09%)	0.45%	(-0.02 to 1.28%)
Asbestos	0.00%	(0.00 - 0.00%)	0.00%	(0.00 - 0.00%)	0.00%	(0.00 to 0.00%)
Other Hazardous Chemicals	0.37%	(0.12 - 0.67%)	0.38%	(0.12 - 0.69%)	2.28%	(0.13 to 5.78%)
TOTAL PACKAGING	20.34%	(19.29 - 21.50%)	16.39%	(15.40 - 17.47%)	-19.42%	(-21.53 to -17.06%)
TOTAL PRODUCTS	54.07%	(52.38 - 55.74%)	50.64%	(48.59 - 52.38%)	-6.34%	(-7.94 to -5.31%)
TOTAL NON-MANUFACTURED	25.60%	(24.01 - 27.09%)	26.71%	(25.09 - 28.25%)	4.35%	(3.82 to 5.12%)
Total Organic	77.34%	(75.77 - 78.98%)	71.07%	(69.31 - 72.95%)	-8.11%	(-9.46 to -6.87%)
Total non-organic	22.66%	(21.02 - 24.23%)	22.67%	(20.89 - 24.20%)	0.02%	(-1.49 to 0.60%)
compostable	51.80%	(50.03 - 53.39%)	47.86%	(46.17 - 49.58%)	-7.60%	(-9.00 to -6.00%)
compost-target	29.96%	(28.29 - 31.47%)	29.25%	(27.57 - 30.79%)	-2.36%	(-3.24 to -1.45%)
Water & Residue (Detailed)	0.00%	(0.00 - 0.00%)	6.26%	(5.39 - 7.36%)		

Table A14. Metro 2002: Tons of Material Disposed

(with contamination correction) (page 1 of 2)

Material	Tons of Sampled Waste (with contamination correction)		Single Material Disposal/ Recovery*	Total Tons: All Waste (with contamination correction)	
	Tons	(90% Conf. Int.)	Tons	Tons	(90% Conf. Int.)
TOTAL PAPER	199,516	(187,339 - 214,083)	-4,320	195,196	(183,019 - 209,763)
Paper Packaging	90,087	(82,349 - 98,469)	-2,627	87,460	(79,722 - 95,841)
Cardboard/Brown Bags	36,357	(31,564 - 41,708)	-2,571	33,786	(28,993 - 39,137)
Low Grade Packaging	21,743	(18,524 - 26,034)	-56	21,686	(18,468 - 25,978)
Bleached Polycoats	3,412	(2,972 - 3,939)	0	3,412	(2,972 - 3,939)
Nonrecyc. Packaging	12,314	(10,190 - 14,646)	0	12,314	(10,190 - 14,646)
Mixed Paper / Materials	16,262	(13,559 - 19,405)	0	16,262	(13,559 - 19,405)
Other Paper	109,428	(100,847 - 118,878)	-1,692	107,736	(99,155 - 117,185)
Newspaper	20,121	(15,774 - 25,355)	-545	19,575	(15,229 - 24,809)
Magazines	12,616	(10,871 - 14,435)	-169	12,447	(10,702 - 14,266)
Hi Grade Paper	19,561	(16,890 - 22,206)	-508	19,053	(16,382 - 21,698)
Hardcover Books	1,414	(486 - 2,615)	0	1,414	(486 - 2,615)
Low Grade Paper	21,186	(17,829 - 25,358)	-470	20,716	(17,359 - 24,888)
Other Nonrecyc. Paper	34,531	(31,062 - 38,508)	0	34,531	(31,062 - 38,508)
Low-grade Recyc. Paper comb.	47,754	(42,456 - 54,173)	-527	47,227	(41,930 - 53,646)
Nonrecyclable Paper combined	63,107	(57,211 - 69,626)	0	63,107	(57,211 - 69,626)
TOTAL PLASTICS	112,994	(103,276 - 123,009)	-48	112,946	(103,228 - 122,962)
Plastic Packaging	53,236	(49,204 - 58,110)	0	53,236	(49,204 - 58,110)
Rigid Plastic Containers	15,217	(14,096 - 16,398)	0	15,217	(14,096 - 16,398)
Other Plastic Packaging	38,019	(34,262 - 42,755)	0	38,019	(34,262 - 42,755)
Other Rigid Packaging	11,191	(8,981 - 13,970)	0	11,191	(8,981 - 13,970)
Plastic Film Pkg (estimate)	26,828	(24,208 - 29,765)	0	26,828	(24,208 - 29,765)
Plastic Products	59,758	(52,098 - 67,297)	-48	59,710	(52,050 - 67,249)
Rigid Plastic Products	25,879	(21,266 - 30,552)	-48	25,832	(21,218 - 30,505)
Plastic Film Prod. (estimate)	14,486	(13,072 - 16,072)	0	14,486	(13,072 - 16,072)
Mixed Plastic / Materials	19,392	(14,397 - 25,342)	0	19,392	(14,397 - 25,342)
<i>(Film plastic combined)</i>	<i>41,314</i>	<i>(37,279 - 45,837)</i>	<i>0</i>	<i>41,314</i>	<i>(37,279 - 45,837)</i>
Plastic Film Recyclable	14,111	(10,714 - 18,051)	0	14,111	(10,714 - 18,051)
Plastic Film Nonrecyclable	27,203	(25,070 - 29,869)	0	27,203	(25,070 - 29,869)
OTHER ORGANICS	520,371	(496,524 - 543,079)	-6,589	513,782	(489,935 - 536,489)
Yard Debris	53,175	(42,324 - 63,366)	0	53,175	(42,324 - 63,366)
Leaves / Grass	40,573	(32,520 - 49,087)	0	40,573	(32,520 - 49,087)
Small Prunings under 2"	11,045	(6,420 - 16,058)	0	11,045	(6,420 - 16,058)
Large Prunings over 2"	1,557	(541 - 2,616)	0	1,557	(541 - 2,616)
Stumps	0	(0 - 0)	0	0	(0 - 0)
Wood	104,203	(90,353 - 119,191)	-14,244	89,959	(76,110 - 104,947)
Clean lumber & hog fuel	36,086	(28,597 - 44,506)	-9,401	26,685	(19,196 - 35,105)
Untreated Lumber	24,488	(18,564 - 31,720)	-5,555	18,933	(13,009 - 26,165)
Clean HogFuel Lumber	11,598	(7,777 - 15,938)	-3,846	7,752	(3,931 - 12,092)
Painted & Treated lumber	19,519	(13,008 - 27,155)	-997	18,522	(12,011 - 26,158)
Painted Lumber	18,245	(11,783 - 25,866)	-997	17,248	(10,786 - 24,869)
Chemically-treated Lumber	1,273	(463 - 2,161)	0	1,273	(463 - 2,161)
Wood Pallets / Crates	20,612	(13,684 - 28,322)	-3,276	17,336	(10,408 - 25,046)
Wood Furniture	6,210	(3,619 - 9,002)	0	6,210	(3,619 - 9,002)
Other Wood Products	1,768	(1,276 - 2,325)	0	1,768	(1,276 - 2,325)
Mixed Wood / Materials	20,009	(14,488 - 25,515)	-570	19,440	(13,918 - 24,945)
Food	191,502	(177,055 - 206,907)	0	191,502	(177,055 - 206,907)
Tires	1,372	(451 - 2,510)	7,654	9,026	(8,105 - 10,164)
Rubber Products	9,812	(6,697 - 13,034)	0	9,812	(6,697 - 13,034)
Disposable Diapers	25,037	(21,441 - 28,814)	0	25,037	(21,441 - 28,814)
Carpet	30,566	(21,493 - 39,333)	0	30,566	(21,493 - 39,333)
Textiles + mixed	38,641	(32,221 - 45,493)	0	38,641	(32,221 - 45,493)
Textiles	22,099	(16,988 - 27,367)	0	22,099	(16,988 - 27,367)
Mixed Textile / Material	16,541	(13,417 - 20,060)	0	16,541	(13,417 - 20,060)
Roofing / Tarpaper	33,903	(23,433 - 45,112)	0	33,903	(23,433 - 45,112)
Furniture	16,499	(10,559 - 22,835)	0	16,499	(10,559 - 22,835)
Other Organics	15,661	(11,878 - 19,924)	0	15,661	(11,878 - 19,924)

* For "Single material disposal/recovery", positive amounts represent single materials such as shredded tires being disposed, and negative amounts represent estimates of materials pulled from mixed solid waste at certain Metro-area transfer stations after the waste was received (and after any samples would have been taken for this study)

Continued Table A14. Metro 2002: Tons Disposed (page 2 of 2)

Material	Tons of Sampled Waste (with contamination correction)		Single Material Disposal/ Recovery*	Total Tons: All Waste (with contamination correction)	
	Tons	(90% Conf. Int.)		Tons	(90% Conf. Int.)
GLASS	24,795	(21,461 - 28,344)	-51	24,744	(21,410 - 28,293)
Deposit Beverage Glass	4,759	(3,593 - 6,088)	0	4,759	(3,593 - 6,088)
Other Container Glass	13,040	(11,556 - 14,677)	0	13,040	(11,556 - 14,677)
Other Clear Bottles	5,291	(4,445 - 6,043)	0	5,291	(4,445 - 6,043)
Other Colored Bottles	2,981	(2,300 - 3,721)	0	2,981	(2,300 - 3,721)
Clear Container Glass	4,452	(3,711 - 5,384)	0	4,452	(3,711 - 5,384)
Colored Container Glass	316	(170 - 519)	0	316	(170 - 519)
Window+Other Glass	6,995	(4,453 - 9,840)	-51	6,944	(4,402 - 9,789)
Flat Window Glass	1,346	(639 - 2,321)	-51	1,295	(588 - 2,270)
Fluorescent Tubes	171	(5 - 475)	0	171	(5 - 475)
Compact Fluorescent Lights	32	(7 - 65)	0	32	(7 - 65)
Other Glass	5,447	(3,196 - 8,223)	0	5,447	(3,196 - 8,223)
METALS	96,728	(86,145 - 107,892)	-7,974	88,754	(78,171 - 99,918)
Alum. Beverage Cans	1,372	(1,207 - 1,549)	0	1,372	(1,207 - 1,549)
Alum. Foil / Food Trays	1,065	(936 - 1,222)	0	1,065	(936 - 1,222)
Other Aluminum	605	(387 - 864)	-61	544	(326 - 803)
Tinned Cans	8,435	(7,610 - 9,484)	0	8,435	(7,610 - 9,484)
Tin Food Cans	7,366	(6,549 - 8,362)	0	7,366	(6,549 - 8,362)
Other Tin Cans	1,068	(736 - 1,463)	0	1,068	(736 - 1,463)
Other Metal	85,251	(74,620 - 96,730)	-7,913	77,338	(66,707 - 88,817)
Other Nonferrous Metal	667	(320 - 1,104)	0	667	(320 - 1,104)
Other Ferrous Metal	28,109	(22,764 - 34,016)	-7,878	20,230	(14,885 - 26,138)
White Goods	593	(0 - 1,597)	-35	558	(-35 - 1,562)
Computer,Brown,Sm. Applianc	23,964	(17,314 - 31,484)	0	23,964	(17,314 - 31,484)
Computers & Monitors	4,626	(2,396 - 7,445)	0	4,626	(2,396 - 7,445)
Computers excl. monitors	2,531	(1,302 - 4,094)	0	2,531	(1,302 - 4,094)
Comp. Monitor CRTs	2,095	(276 - 4,486)	0	2,095	(276 - 4,486)
TVs, CRTs, & Brown Goods	10,706	(5,796 - 16,258)	0	10,706	(5,796 - 16,258)
TVs / Other CRTs	4,942	(1,453 - 8,760)	0	4,942	(1,453 - 8,760)
Other Brown Goods	5,763	(3,141 - 8,914)	0	5,763	(3,141 - 8,914)
Small Appliances-non elec	8,633	(6,111 - 11,267)	0	8,633	(6,111 - 11,267)
Empty Aerosol Cans	1,341	(1,125 - 1,546)	0	1,341	(1,125 - 1,546)
Mixed Metal / Material	30,577	(25,586 - 36,118)	0	30,577	(25,586 - 36,118)
OTHER INORGANICS	144,974	(125,763 - 162,370)	-203	144,771	(125,560 - 162,168)
Rock / Concrete / Brick	25,441	(17,806 - 33,083)	-172	25,269	(17,634 - 32,911)
Soil / Sand / Dirt	11,681	(7,968 - 15,260)	0	11,681	(7,968 - 15,260)
Pet Litter / Animal Feces	18,655	(14,980 - 22,478)	0	18,655	(14,980 - 22,478)
Gypsum Wallboard	51,501	(37,957 - 65,123)	-30	51,471	(37,927 - 65,093)
Gypsum Wallboard OLD	20,237	(12,768 - 26,994)	0	20,237	(12,768 - 26,994)
Gypsum Wallboard NEW	31,264	(20,349 - 42,750)	-30	31,234	(20,319 - 42,720)
Fiberglass Insulation	4,014	(1,128 - 7,299)	0	4,014	(1,128 - 7,299)
Other Inorganics	33,680	(24,644 - 43,028)	0	33,680	(24,644 - 43,028)
"MEDICAL WASTES"	739	(234 - 1,336)	430	1,169	(664 - 1,766)
OTHER HAZARDOUS MATLs	9,293	(5,624 - 13,335)	-6	9,287	(5,618 - 13,329)
Latex Paint	1,546	(484 - 3,113)	0	1,546	(484 - 3,113)
Oil Paints / Thinners	676	(163 - 1,388)	0	676	(163 - 1,388)
Pesticides / Herbicides	115	(37 - 207)	0	115	(37 - 207)
Motor Oil	450	(60 - 964)	0	450	(60 - 964)
Used Oil Filters	586	(289 - 913)	0	586	(289 - 913)
Fuels (gas/kero/diesel)	26	(5 - 55)	0	26	(5 - 55)
Adhesives / Sealants	276	(171 - 410)	0	276	(171 - 410)
Caustic Cleaners	268	(132 - 429)	0	268	(132 - 429)
Lead-Acid Batteries	0	(0 - 0)	-6	-6	(-6 - -6)
Dry-cell Batteries	909	(740 - 1,090)	0	909	(740 - 1,090)
Asbestos	0	(0 - 0)	0	0	(0 - 0)
Other Hazardous Chemicals	4,442	(1,409 - 8,115)	0	4,442	(1,409 - 8,115)
TOTAL PACKAGING	193,948	(182,243 - 206,779)	-5,903	188,045	(176,340 - 200,876)
TOTAL PRODUCTS	599,345	(575,027 - 619,930)	-12,684	586,660	(562,342 - 607,246)
TOTAL NON-MANUFACTURED	316,116	(296,972 - 334,373)	-172	315,943	(296,799 - 334,200)
Total Organic	841,150	(820,307 - 863,450)	-10,527	830,624	(809,780 - 852,923)
Total non-organic	268,259	(247,226 - 286,385)	-8,233	260,025	(238,993 - 278,151)
compostable	566,454	(546,496 - 586,851)	-16,996	549,457	(529,499 - 569,854)
compost-target	346,178	(326,344 - 364,374)	-8,831	337,347	(317,513 - 355,543)
Water & Residue (Detailed)	74,138	(63,737 - 87,123)	0	74,138	(63,737 - 87,123)

Table A15. Rest of Oregon Waste Composition by Vehicle Source
2002 Field Data Only (page 1 of 2)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
TOTAL PAPER	26.25%	30.27%	26.64%	23.70%	15.90%	8.92%	11.61%
Paper Packaging	8.96%	11.56%	11.81%	13.73%	7.87%	4.47%	7.73%
Cardboard/Brown Bags	2.14%	3.77%	4.37%	4.10%	2.13%	2.35%	2.74%
Low Grade Packaging	2.99%	2.24%	2.61%	1.80%	1.71%	0.96%	3.33%
Bleached Polycoats	0.54%	1.23%	0.76%	0.28%	0.57%	0.09%	0.08%
Nonrecyc. Packaging Paper	0.95%	2.14%	2.22%	4.47%	1.50%	0.19%	0.35%
Mixed Paper / Materials	2.35%	2.16%	1.84%	3.08%	1.96%	0.88%	1.23%
Other Paper	17.29%	18.71%	14.83%	9.98%	8.03%	4.44%	3.88%
Newspaper	3.10%	3.02%	3.47%	1.65%	0.82%	1.01%	0.67%
Magazines	2.97%	1.90%	1.39%	0.34%	0.20%	0.82%	0.35%
Hi Grade Paper	2.20%	3.39%	2.38%	1.18%	1.73%	0.66%	0.75%
Hardcover Books	0.18%	0.09%	0.09%	0.01%	0.06%	0.10%	0.05%
Low Grade Paper	4.04%	3.86%	2.58%	1.60%	2.90%	1.08%	0.98%
Other Nonrecyclable Paper	4.80%	6.45%	4.93%	5.20%	2.32%	0.77%	1.09%
Low-grade Recyc. Paper comb.	7.75%	7.43%	6.05%	3.69%	5.24%	2.23%	4.44%
Nonrecyclable Paper combined	8.09%	10.76%	8.99%	12.75%	5.78%	1.85%	2.67%
TOTAL PLASTICS	11.66%	12.99%	12.73%	15.45%	10.18%	5.99%	12.15%
Plastic Packaging	7.54%	7.69%	7.36%	7.55%	4.04%	2.02%	4.85%
Rigid Plastic Containers	2.74%	2.22%	2.27%	1.83%	1.36%	0.68%	0.41%
Other Plastic Packaging	4.79%	5.46%	5.09%	5.72%	2.68%	1.34%	4.44%
Other Rigid Packaging	1.01%	0.90%	0.82%	1.42%	0.54%	0.27%	0.40%
Plastic Film Pkg (estimate)	3.79%	4.56%	4.27%	4.29%	2.14%	1.07%	4.04%
Plastic Products	4.13%	5.30%	5.37%	7.90%	6.13%	3.97%	7.30%
Rigid Plastic Products	1.24%	1.90%	2.07%	4.43%	3.56%	1.81%	2.18%
Plastic Film Prod. (estimate)	2.04%	2.46%	2.31%	2.32%	1.16%	0.58%	2.18%
Mixed Plastic / Materials	0.85%	0.94%	0.99%	1.15%	1.42%	1.59%	2.94%
(Film plastic combined)	5.83%	7.03%	6.57%	6.61%	3.30%	1.65%	6.22%
Plastic Film Recyclable	0.98%	1.17%	0.85%	1.76%	0.59%	0.37%	2.68%
Plastic Film Nonrecyclable	4.85%	5.85%	5.72%	4.85%	2.72%	1.28%	3.54%
OTHER ORGANICS	47.15%	41.19%	48.92%	45.46%	43.54%	48.34%	47.19%
Yard Debris	11.70%	7.14%	6.14%	6.94%	5.76%	9.14%	1.95%
Leaves / Grass	9.60%	4.71%	5.33%	6.94%	5.73%	8.25%	1.85%
Small Prunings under 2"	1.23%	2.13%	0.60%	0.00%	0.04%	0.36%	0.10%
Large Prunings over 2"	0.84%	0.30%	0.22%	0.00%	0.00%	0.24%	0.00%
Stumps	0.03%	0.00%	0.00%	0.00%	0.00%	0.29%	0.00%
Wood	2.04%	2.21%	3.78%	5.59%	18.24%	13.62%	21.80%
Clean lumber & hog fuel	0.78%	0.78%	1.41%	0.40%	6.91%	6.85%	8.77%
Untreated Lumber	0.43%	0.26%	0.75%	0.36%	5.02%	2.92%	5.39%
Clean HogFuel Lumber	0.34%	0.52%	0.66%	0.04%	1.89%	3.92%	3.38%
Painted & Treated lumber	0.82%	0.23%	0.20%	0.18%	0.64%	3.75%	0.90%
Painted Lumber	0.47%	0.17%	0.20%	0.18%	0.61%	1.97%	0.90%
Chemically-treated Lumber	0.36%	0.06%	0.00%	0.00%	0.02%	1.78%	0.00%
Wood Pallets / Crates	0.15%	0.16%	0.18%	1.35%	4.92%	0.24%	0.29%
Wood Furniture	0.09%	0.38%	0.06%	0.16%	0.13%	0.74%	0.83%
Other Wood Products	0.13%	0.09%	0.07%	0.03%	0.03%	0.08%	0.02%
Mixed Wood / Materials	0.06%	0.57%	1.85%	3.46%	5.61%	1.95%	10.99%
Food	23.29%	23.69%	23.98%	26.81%	8.43%	5.62%	1.10%
Tires	0.02%	0.07%	0.30%	0.00%	0.06%	0.17%	0.00%
Rubber Products	0.28%	0.55%	0.34%	0.41%	1.61%	0.26%	0.78%
Disposable Diapers	4.13%	2.07%	4.73%	0.77%	0.46%	0.25%	0.15%
Carpet	0.54%	0.43%	2.95%	0.16%	1.97%	1.17%	6.41%
Textiles + mixed	2.99%	2.78%	3.92%	1.97%	3.33%	1.90%	2.47%
Textiles	1.70%	1.10%	2.48%	0.58%	2.06%	1.16%	0.87%
Mixed Textile / Material	1.29%	1.68%	1.44%	1.39%	1.27%	0.75%	1.60%
Roofing / Tarpaper	0.01%	0.79%	0.09%	0.00%	2.79%	13.04%	5.64%
Furniture	0.73%	0.36%	0.39%	2.05%	0.69%	1.71%	5.44%
Other Organics	1.41%	1.11%	2.29%	0.76%	0.19%	1.47%	1.45%

Continued Table A15. Rest of Oregon Composition by Vehicle Source: 2002

Field Data Only (page 2 of 2)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
GLASS	3.49%	2.85%	2.55%	0.80%	1.72%	2.39%	0.60%
Deposit Beverage Glass	0.69%	0.50%	0.47%	0.08%	0.27%	0.07%	0.03%
Other Container Glass	2.09%	2.09%	1.62%	0.56%	0.73%	0.48%	0.14%
Other Clear Bottles	0.47%	0.88%	0.61%	0.31%	0.49%	0.13%	0.12%
Other Colored Bottles	0.64%	0.43%	0.49%	0.11%	0.08%	0.03%	0.00%
Clear Container Glass	0.82%	0.75%	0.48%	0.11%	0.14%	0.29%	0.02%
Colored Container Glass	0.16%	0.03%	0.03%	0.03%	0.02%	0.03%	0.00%
Window+Other Glass	0.72%	0.26%	0.46%	0.16%	0.72%	1.83%	0.44%
Flat Window Glass	0.16%	0.03%	0.08%	0.01%	0.02%	1.11%	0.18%
Fluorescent Tubes	0.00%	0.00%	0.05%	0.01%	0.01%	0.01%	0.00%
Compact Fluorescent Lights	0.05%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%
Other Glass	0.51%	0.23%	0.33%	0.12%	0.69%	0.71%	0.25%
METALS	5.46%	8.83%	5.32%	10.06%	9.01%	6.09%	7.75%
Alum. Beverage Cans	0.18%	0.21%	0.25%	0.12%	0.12%	0.04%	0.04%
Alum. Foil / Food Trays	0.31%	0.19%	0.26%	0.17%	0.17%	0.06%	0.05%
Other Aluminum	0.01%	0.00%	0.02%	0.00%	0.08%	0.24%	0.07%
Tinned Cans	1.80%	1.52%	1.25%	0.60%	0.26%	0.38%	0.30%
Tin Food Cans	1.71%	1.37%	1.21%	0.39%	0.24%	0.32%	0.09%
Other Tin Cans	0.08%	0.15%	0.04%	0.21%	0.02%	0.06%	0.21%
Other Metal	3.15%	6.90%	3.54%	9.17%	8.38%	5.37%	7.30%
Other Nonferrous Metal	0.11%	0.03%	0.09%	0.05%	0.00%	0.06%	0.01%
Other Ferrous Metal	0.39%	2.05%	0.66%	1.69%	2.82%	1.12%	2.00%
White Goods	0.00%	0.00%	0.00%	0.00%	0.00%	0.19%	0.00%
Computer,Brown,Sm. Applianc	1.67%	2.80%	1.42%	3.22%	1.87%	1.32%	2.77%
Computers & Monitors	0.89%	1.27%	0.57%	0.40%	0.67%	0.39%	0.77%
Computers excl. monitors	0.40%	1.27%	0.52%	0.40%	0.20%	0.10%	0.00%
Comp. Monitor CRTs	0.49%	0.00%	0.05%	0.00%	0.47%	0.28%	0.77%
TVs, CRTs, & Brown Goods	0.24%	1.35%	0.35%	2.42%	0.30%	0.16%	1.77%
TVs / Other CRTs	0.03%	1.31%	0.11%	2.42%	0.19%	0.05%	1.77%
Other Brown Goods	0.22%	0.04%	0.23%	0.00%	0.11%	0.10%	0.00%
Small Appliances-non elec	0.54%	0.18%	0.50%	0.39%	0.90%	0.77%	0.23%
Empty Aerosol Cans	0.20%	0.08%	0.18%	0.15%	0.06%	0.04%	0.06%
Mixed Metal / Material	0.79%	1.94%	1.18%	4.07%	3.64%	2.64%	2.47%
OTHER INORGANICS	5.55%	3.18%	3.35%	3.22%	17.33%	27.83%	20.58%
Rock / Concrete / Brick	1.34%	0.87%	0.11%	0.00%	4.55%	6.18%	3.31%
Soil / Sand / Dirt	0.20%	0.05%	0.77%	2.91%	0.33%	2.46%	1.29%
Pet Litter / Animal Feces	3.50%	0.94%	1.27%	0.01%	1.38%	1.78%	0.00%
Gypsum Wallboard	0.04%	0.71%	0.46%	0.14%	7.22%	12.00%	8.07%
Gypsum Wallboard OLD	0.04%	0.52%	0.08%	0.14%	3.70%	5.79%	8.07%
Gypsum Wallboard NEW	0.00%	0.19%	0.38%	0.00%	3.52%	6.21%	0.00%
Fiberglass Insulation	0.00%	0.15%	0.00%	0.00%	0.22%	2.47%	0.54%
Other Inorganics	0.46%	0.46%	0.73%	0.16%	3.65%	2.94%	7.37%
"MEDICAL WASTES"	0.03%	0.14%	0.06%	1.15%	0.04%	0.03%	0.00%
OTHER HAZARDOUS MATLS	0.41%	0.55%	0.44%	0.15%	2.28%	0.41%	0.11%
Latex Paint	0.14%	0.18%	0.00%	0.09%	0.00%	0.05%	0.00%
Oil Paints / Thinners	0.02%	0.02%	0.02%	0.00%	0.43%	0.03%	0.00%
Pesticides / Herbicides	0.00%	0.01%	0.00%	0.00%	0.18%	0.00%	0.00%
Motor Oil	0.01%	0.03%	0.00%	0.02%	0.02%	0.01%	0.00%
Used Oil Filters	0.02%	0.04%	0.11%	0.00%	0.01%	0.00%	0.09%
Fuels (gas/kerodiesel)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Adhesives / Sealants	0.02%	0.02%	0.00%	0.00%	0.60%	0.02%	0.02%
Caustic Cleaners	0.01%	0.00%	0.01%	0.00%	0.02%	0.03%	0.00%
Lead-Acid Batteries	0.00%	0.07%	0.00%	0.00%	0.74%	0.10%	0.00%
Dry-cell Batteries	0.13%	0.10%	0.11%	0.04%	0.02%	0.08%	0.01%
Asbestos	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other Hazardous Chemicals	0.05%	0.08%	0.17%	0.00%	0.25%	0.09%	0.00%
TOTAL PACKAGING	21.92%	24.00%	23.37%	24.32%	18.44%	7.80%	13.48%
TOTAL PRODUCTS	36.63%	42.20%	42.06%	38.24%	60.92%	65.55%	77.42%
TOTAL NON-MANUFACTURED	41.45%	33.80%	34.57%	37.44%	20.64%	26.65%	9.10%
Total Organic	85.33%	84.93%	88.56%	85.88%	71.14%	63.48%	70.97%
Total non-organic	14.67%	15.07%	11.44%	14.12%	28.86%	36.52%	29.03%
compostable	71.31%	66.53%	66.71%	60.92%	44.09%	35.01%	26.15%
compost-target	41.88%	39.19%	38.34%	41.59%	26.78%	20.91%	12.10%

Table A16. Confidence Intervals for Rest of Oregon Vehicle Sources 2002
Field Data Only (page 1 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
TOTAL PAPER	(22.49 - 25.17%)	(28.00 - 34.91%)	(24.08 - 28.52%)	(28.05 - 38.57%)	(12.10 - 20.17%)	(5.69 - 11.34%)	(7.59 - 13.15%)
Paper Packaging	(7.93 - 9.28%)	(11.48 - 15.80%)	(8.95 - 11.63%)	(15.96 - 24.36%)	(7.10 - 12.85%)	(3.39 - 7.03%)	(2.78 - 4.90%)
Cardboard/Brown Bags	(1.93 - 3.21%)	(3.95 - 6.15%)	(2.69 - 3.79%)	(5.08 - 9.83%)	(3.18 - 6.67%)	(1.49 - 3.65%)	(0.85 - 1.66%)
Low Grade Packaging	(2.08 - 2.48%)	(2.28 - 6.44%)	(2.01 - 2.54%)	(3.08 - 5.15%)	(0.80 - 2.38%)	(0.31 - 0.75%)	(0.47 - 0.86%)
Bleached Polycots	(0.53 - 0.68%)	(0.26 - 0.59%)	(0.39 - 0.75%)	(0.26 - 0.60%)	(0.04 - 0.16%)	(0.00 - 0.03%)	(0.06 - 0.15%)
Nonrecyc. Packaging	(1.13 - 1.43%)	(1.80 - 2.78%)	(1.26 - 2.53%)	(3.19 - 8.18%)	(0.41 - 1.27%)	(0.06 - 0.37%)	(0.17 - 0.35%)
Mixed Paper / Materials	(1.69 - 2.11%)	(1.55 - 2.30%)	(1.68 - 3.39%)	(1.67 - 3.53%)	(1.31 - 4.19%)	(0.87 - 3.25%)	(0.66 - 2.60%)
Other Paper	(14.06 - 16.49%)	(15.44 - 20.69%)	(14.30 - 17.86%)	(9.92 - 17.05%)	(3.73 - 8.99%)	(2.01 - 4.63%)	(4.22 - 9.05%)
Newspaper	(2.72 - 4.03%)	(2.67 - 4.47%)	(2.50 - 3.97%)	(1.42 - 3.51%)	(0.51 - 1.71%)	(0.21 - 0.80%)	(0.43 - 1.00%)
Magazines	(1.34 - 2.15%)	(0.97 - 1.72%)	(1.20 - 2.12%)	(0.70 - 1.91%)	(0.10 - 0.28%)	(0.14 - 0.68%)	(0.34 - 1.14%)
Hi Grade Paper	(1.04 - 1.38%)	(2.80 - 4.55%)	(1.61 - 2.53%)	(1.09 - 2.60%)	(0.48 - 2.11%)	(0.15 - 1.05%)	(0.95 - 2.62%)
Hardcover Books	(0.00 - 0.04%)	(0.00 - 0.08%)	(0.00 - 0.93%)	(0.00 - 0.35%)	(0.00 - 0.11%)	(0.00 - 0.43%)	(0.02 - 0.29%)
Low Grade Paper	(2.38 - 3.04%)	(2.25 - 3.89%)	(1.89 - 3.30%)	(1.28 - 2.87%)	(0.51 - 4.65%)	(0.41 - 0.98%)	(0.64 - 1.63%)
Other Nonrecyc. Paper	(5.81 - 6.78%)	(5.30 - 7.84%)	(5.21 - 7.50%)	(3.77 - 8.20%)	(0.92 - 2.54%)	(0.21 - 2.20%)	(1.27 - 3.16%)
<i>Low-grade Recyc. Paper combined</i>	<i>(5.16 - 6.08%)</i>	<i>(5.31 - 10.10%)</i>	<i>(4.82 - 6.56%)</i>	<i>(5.03 - 8.36%)</i>	<i>(1.80 - 6.08%)</i>	<i>(0.87 - 1.91%)</i>	<i>(1.35 - 2.78%)</i>
<i>Nonrecyclable Paper combined</i>	<i>(8.85 - 10.03%)</i>	<i>(9.21 - 12.22%)</i>	<i>(9.01 - 12.25%)</i>	<i>(10.64 - 17.35%)</i>	<i>(3.23 - 7.17%)</i>	<i>(1.47 - 5.58%)</i>	<i>(2.66 - 5.41%)</i>
TOTAL PLASTICS	(11.77 - 13.19%)	(11.47 - 14.47%)	(10.94 - 13.45%)	(15.85 - 24.37%)	(6.32 - 13.00%)	(6.04 - 11.46%)	(5.92 - 9.42%)
Plastic Packaging	(7.37 - 8.07%)	(6.84 - 8.66%)	(6.03 - 7.68%)	(8.29 - 11.96%)	(2.96 - 7.02%)	(1.27 - 2.78%)	(1.77 - 2.80%)
Rigid Plastic Containers	(2.35 - 2.70%)	(1.72 - 2.35%)	(1.80 - 2.25%)	(2.09 - 3.46%)	(0.42 - 1.04%)	(0.24 - 0.84%)	(0.37 - 0.66%)
Other Plastic Packaging	(4.93 - 5.47%)	(5.00 - 6.53%)	(4.13 - 5.59%)	(5.74 - 9.06%)	(2.30 - 6.23%)	(0.90 - 2.14%)	(1.34 - 2.24%)
Other Rigid Packaging	(1.07 - 1.31%)	(0.80 - 1.12%)	(0.93 - 1.81%)	(0.62 - 3.55%)	(0.33 - 2.31%)	(0.17 - 0.40%)	(0.23 - 0.52%)
Plastic Film Pkg (estimate)	(3.79 - 4.25%)	(4.06 - 5.52%)	(3.10 - 3.87%)	(4.73 - 6.69%)	(1.80 - 4.20%)	(0.65 - 1.83%)	(1.06 - 1.80%)
Plastic Products	(4.16 - 5.40%)	(4.50 - 5.95%)	(4.52 - 6.26%)	(6.45 - 13.30%)	(3.05 - 6.65%)	(4.26 - 9.30%)	(3.91 - 6.85%)
Rigid Plastic Products	(1.07 - 2.28%)	(1.29 - 2.23%)	(1.48 - 2.61%)	(1.22 - 3.79%)	(1.01 - 3.97%)	(2.27 - 5.33%)	(1.53 - 3.88%)
Plastic Film Prod. (estimate)	(2.05 - 2.30%)	(2.19 - 2.98%)	(1.68 - 2.09%)	(2.55 - 3.61%)	(0.97 - 2.27%)	(0.35 - 0.99%)	(0.57 - 0.97%)
Mixed Plastic / Materials	(0.82 - 1.13%)	(0.66 - 1.23%)	(1.10 - 1.82%)	(1.23 - 7.80%)	(0.54 - 1.25%)	(0.83 - 4.67%)	(1.25 - 2.74%)
<i>(Film plastic combined)</i>	<i>(5.84 - 6.55%)</i>	<i>(6.25 - 8.49%)</i>	<i>(4.78 - 5.96%)</i>	<i>(7.28 - 10.30%)</i>	<i>(2.78 - 6.46%)</i>	<i>(1.00 - 2.82%)</i>	<i>(1.63 - 2.78%)</i>
Plastic Film Recyclable	(0.40 - 0.61%)	(0.73 - 1.58%)	(0.49 - 1.26%)	(1.14 - 2.69%)	(1.29 - 4.93%)	(0.49 - 2.15%)	(0.29 - 0.75%)
Plastic Film Nonrecyclable	(5.35 - 6.04%)	(5.10 - 7.39%)	(4.09 - 5.01%)	(5.46 - 8.11%)	(1.01 - 2.25%)	(0.35 - 0.81%)	(1.19 - 2.13%)

Continued Table A16. Confidence Intervals for Rest of Oregon Vehicle Sources 2002
Field Data Only (page 2 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
OTHER ORGANICS	(43.95 - 48.21%)	(35.28 - 43.72%)	(39.76 - 47.44%)	(28.03 - 39.77%)	(40.06 - 53.32%)	(39.76 - 52.33%)	(37.44 - 49.58%)
Yard Debris	(3.57 - 7.76%)	(1.96 - 6.09%)	(4.79 - 10.54%)	(0.26 - 3.86%)	(1.70 - 4.83%)	(0.82 - 5.64%)	(2.19 - 5.91%)
Leaves / Grass	(3.24 - 7.48%)	(1.64 - 5.80%)	(3.49 - 7.93%)	(0.25 - 3.02%)	(0.88 - 3.56%)	(0.24 - 1.14%)	(1.81 - 5.46%)
Small Prunings under 2"	(0.09 - 0.51%)	(0.03 - 0.30%)	(0.91 - 3.13%)	(0.00 - 1.53%)	(0.24 - 0.94%)	(0.22 - 4.31%)	(0.03 - 0.84%)
Large Prunings over 2"	(0.00 - 0.02%)	(0.00 - 0.29%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.08 - 1.08%)	(0.01 - 0.59%)	(0.00 - 0.03%)
Stumps	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Wood	(0.88 - 1.86%)	(3.25 - 7.32%)	(2.51 - 5.87%)	(1.30 - 3.37%)	(16.51 - 28.21%)	(16.66 - 26.42%)	(4.27 - 8.15%)
Clean lumber & hog fuel	(0.36 - 0.96%)	(1.15 - 3.54%)	(0.73 - 2.27%)	(0.16 - 1.11%)	(3.64 - 8.71%)	(5.74 - 12.34%)	(0.93 - 1.79%)
Untreated Lumber	(0.25 - 0.78%)	(1.07 - 3.31%)	(0.46 - 1.86%)	(0.11 - 1.06%)	(1.64 - 5.34%)	(3.60 - 8.96%)	(0.68 - 1.34%)
Clean HogFuel Lumber	(0.04 - 0.32%)	(0.01 - 0.46%)	(0.11 - 0.58%)	(0.00 - 0.09%)	(1.33 - 4.74%)	(1.34 - 4.41%)	(0.22 - 0.52%)
Painted & Treated lumber	(0.03 - 0.36%)	(0.27 - 0.97%)	(0.11 - 0.74%)	(0.00 - 0.24%)	(1.68 - 6.83%)	(2.29 - 7.89%)	(0.50 - 1.78%)
Painted Lumber	(0.03 - 0.36%)	(0.18 - 0.78%)	(0.06 - 0.60%)	(0.00 - 0.24%)	(1.52 - 6.70%)	(2.11 - 7.66%)	(0.50 - 1.78%)
Chemically-treated Lumber	(0.00 - 0.00%)	(0.00 - 0.38%)	(0.01 - 0.27%)	(0.00 - 0.00%)	(0.00 - 0.38%)	(0.00 - 0.64%)	(0.00 - 0.00%)
Wood Pallets / Crates	(0.00 - 0.34%)	(0.05 - 0.71%)	(0.23 - 2.96%)	(0.37 - 1.78%)	(3.68 - 11.64%)	(0.57 - 2.90%)	(0.01 - 2.53%)
Wood Furniture	(0.00 - 0.00%)	(0.00 - 0.48%)	(0.00 - 0.78%)	(0.00 - 0.25%)	(0.69 - 2.90%)	(0.57 - 2.58%)	(0.00 - 0.31%)
Other Wood Products	(0.07 - 0.13%)	(0.07 - 0.21%)	(0.11 - 0.29%)	(0.07 - 0.33%)	(0.01 - 0.30%)	(0.02 - 0.29%)	(0.01 - 0.44%)
Mixed Wood / Materials	(0.07 - 0.69%)	(0.67 - 3.16%)	(0.07 - 0.65%)	(0.10 - 0.56%)	(1.41 - 4.36%)	(2.31 - 6.33%)	(1.10 - 3.76%)
Food	(24.52 - 28.21%)	(17.24 - 26.17%)	(17.61 - 23.79%)	(16.22 - 27.71%)	(2.56 - 7.12%)	(0.56 - 1.92%)	(1.46 - 4.30%)
Tires	(0.00 - 0.55%)	(0.00 - 0.05%)	(0.00 - 0.54%)	(0.00 - 0.00%)	(0.00 - 0.58%)	(0.00 - 0.19%)	(0.00 - 0.00%)
Rubber Products	(0.13 - 0.26%)	(0.31 - 1.16%)	(0.41 - 1.20%)	(0.30 - 2.85%)	(0.18 - 1.52%)	(0.30 - 1.86%)	(0.75 - 4.14%)
Disposable Diapers	(5.50 - 7.66%)	(0.86 - 2.07%)	(1.68 - 4.18%)	(0.24 - 1.03%)	(0.03 - 0.63%)	(0.00 - 0.02%)	(0.00 - 0.03%)
Carpet	(0.35 - 1.18%)	(0.03 - 0.45%)	(0.21 - 1.25%)	(0.01 - 2.63%)	(0.50 - 6.23%)	(3.23 - 9.73%)	(5.95 - 15.66%)
Textiles + mixed	(2.81 - 4.04%)	(2.00 - 4.94%)	(3.11 - 5.24%)	(1.33 - 5.49%)	(1.48 - 6.01%)	(1.45 - 5.29%)	(1.63 - 4.55%)
Textiles	(1.58 - 2.43%)	(0.87 - 3.04%)	(1.71 - 3.34%)	(0.33 - 1.54%)	(0.57 - 4.60%)	(0.71 - 3.95%)	(1.02 - 3.92%)
Mixed Textile / Material	(1.10 - 1.78%)	(0.65 - 2.54%)	(0.97 - 2.39%)	(0.80 - 4.41%)	(0.71 - 1.88%)	(0.59 - 1.76%)	(0.34 - 1.11%)
Roofing / Tarpaper	(0.02 - 0.30%)	(0.00 - 0.01%)	(0.01 - 0.14%)	(0.00 - 0.00%)	(2.17 - 9.72%)	(3.24 - 10.91%)	(6.19 - 17.78%)
Furniture	(0.00 - 0.00%)	(0.13 - 2.13%)	(0.00 - 3.82%)	(0.23 - 1.62%)	(0.81 - 3.55%)	(1.21 - 4.53%)	(0.60 - 5.02%)
Other Organics	(1.31 - 2.02%)	(0.80 - 3.28%)	(0.88 - 2.27%)	(0.34 - 1.22%)	(0.11 - 2.92%)	(0.16 - 0.65%)	(0.29 - 1.35%)

Continued Table A16. Confidence Intervals for Rest of Oregon Vehicle Sources 2002
Field Data Only (page 3 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
GLASS	(2.45 - 3.28%)	(2.20 - 4.56%)	(2.22 - 3.79%)	(1.39 - 2.82%)	(0.55 - 1.15%)	(0.39 - 1.33%)	(0.48 - 1.76%)
Deposit Beverage Glass	(0.26 - 0.49%)	(0.39 - 0.82%)	(0.37 - 1.43%)	(0.27 - 0.95%)	(0.09 - 0.23%)	(0.02 - 0.24%)	(0.02 - 0.30%)
Other Container Glass	(1.72 - 2.34%)	(1.06 - 1.77%)	(1.28 - 2.13%)	(0.58 - 1.41%)	(0.24 - 0.63%)	(0.08 - 0.25%)	(0.16 - 1.10%)
Other Clear Bottles	(0.49 - 0.79%)	(0.56 - 0.91%)	(0.47 - 1.04%)	(0.20 - 0.49%)	(0.12 - 0.35%)	(0.02 - 0.10%)	(0.08 - 0.31%)
Other Colored Bottles	(0.31 - 0.60%)	(0.14 - 0.46%)	(0.16 - 0.48%)	(0.06 - 0.41%)	(0.03 - 0.22%)	(0.00 - 0.11%)	(0.01 - 0.76%)
Clear Container Glass	(0.70 - 1.10%)	(0.24 - 0.49%)	(0.41 - 0.70%)	(0.12 - 0.81%)	(0.03 - 0.13%)	(0.02 - 0.08%)	(0.04 - 0.14%)
Colored Container Glass	(0.02 - 0.07%)	(0.00 - 0.02%)	(0.01 - 0.17%)	(0.00 - 0.06%)	(0.00 - 0.01%)	(0.00 - 0.01%)	(0.00 - 0.00%)
Window+Other Glass	(0.30 - 0.61%)	(0.23 - 2.59%)	(0.29 - 0.74%)	(0.17 - 0.97%)	(0.13 - 0.43%)	(0.12 - 1.05%)	(0.19 - 0.54%)
Flat Window Glass	(0.01 - 0.25%)	(0.00 - 0.03%)	(0.00 - 0.35%)	(0.00 - 0.39%)	(0.03 - 0.27%)	(0.02 - 0.58%)	(0.01 - 0.09%)
Fluorescent Tubes	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.01%)	(0.00 - 0.41%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Compact Fluorescent Lights	(0.00 - 0.01%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.05%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Other Glass	(0.26 - 0.43%)	(0.21 - 2.57%)	(0.25 - 0.50%)	(0.12 - 0.38%)	(0.05 - 0.23%)	(0.06 - 0.77%)	(0.16 - 0.48%)
METALS	(4.87 - 7.26%)	(6.01 - 9.87%)	(6.25 - 12.13%)	(4.34 - 10.47%)	(9.60 - 16.94%)	(6.88 - 11.54%)	(4.14 - 7.84%)
Alum. Beverage Cans	(0.10 - 0.16%)	(0.16 - 0.26%)	(0.14 - 0.21%)	(0.16 - 0.30%)	(0.05 - 0.14%)	(0.01 - 0.04%)	(0.03 - 0.10%)
Alum. Foil / Food Trays	(0.35 - 0.47%)	(0.11 - 0.23%)	(0.14 - 0.21%)	(0.08 - 0.18%)	(0.01 - 0.04%)	(0.00 - 0.02%)	(0.01 - 0.05%)
Other Aluminum	(0.00 - 0.09%)	(0.03 - 0.21%)	(0.01 - 0.03%)	(0.01 - 0.18%)	(0.02 - 0.08%)	(0.01 - 0.07%)	(0.00 - 0.01%)
Tinned Cans	(1.35 - 1.69%)	(0.69 - 1.23%)	(0.83 - 1.18%)	(0.40 - 1.31%)	(0.11 - 0.27%)	(0.10 - 0.29%)	(0.16 - 0.44%)
Tin Food Cans	(1.25 - 1.57%)	(0.61 - 1.15%)	(0.67 - 0.95%)	(0.33 - 1.24%)	(0.09 - 0.24%)	(0.03 - 0.14%)	(0.10 - 0.26%)
Other Tin Cans	(0.04 - 0.19%)	(0.03 - 0.12%)	(0.07 - 0.35%)	(0.02 - 0.16%)	(0.00 - 0.05%)	(0.03 - 0.20%)	(0.04 - 0.21%)
Other Metal	(2.74 - 5.23%)	(4.44 - 8.51%)	(4.87 - 10.79%)	(3.00 - 9.30%)	(9.29 - 16.60%)	(6.64 - 11.30%)	(3.77 - 7.43%)
Other Nonferrous Metal	(0.01 - 0.03%)	(0.01 - 0.04%)	(0.01 - 0.07%)	(0.00 - 0.03%)	(0.01 - 0.31%)	(0.01 - 0.24%)	(0.00 - 0.15%)
Other Ferrous Metal	(0.37 - 1.36%)	(0.99 - 2.24%)	(0.95 - 3.40%)	(1.12 - 3.37%)	(3.27 - 8.55%)	(2.08 - 4.43%)	(1.17 - 2.33%)
White Goods	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.14%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.76%)	(0.00 - 0.00%)
Computer,Brown,Sm. Applianc	(0.54 - 1.66%)	(1.02 - 3.68%)	(0.79 - 5.68%)	(0.43 - 2.97%)	(1.35 - 4.75%)	(0.90 - 3.32%)	(0.80 - 3.54%)
Computers & Monitors	(0.00 - 0.16%)	(0.27 - 2.55%)	(0.08 - 0.85%)	(0.00 - 0.00%)	(0.00 - 0.59%)	(0.10 - 0.68%)	(0.02 - 0.63%)
Computers excl. monitors	(0.00 - 0.16%)	(0.00 - 0.78%)	(0.08 - 0.85%)	(0.00 - 0.00%)	(0.00 - 0.59%)	(0.02 - 0.46%)	(0.02 - 0.63%)
Comp. Monitor CRTs	(0.00 - 0.00%)	(0.00 - 2.14%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.41%)	(0.00 - 0.00%)
TVs, CRTs, & Brown Goods	(0.01 - 0.50%)	(0.00 - 0.46%)	(0.14 - 3.92%)	(0.00 - 1.17%)	(0.59 - 3.96%)	(0.16 - 1.93%)	(0.39 - 3.12%)
TVs / Other CRTs	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 2.62%)	(0.00 - 0.00%)	(0.11 - 1.89%)	(0.00 - 1.59%)	(0.00 - 2.01%)
Other Brown Goods	(0.01 - 0.50%)	(0.00 - 0.46%)	(0.14 - 1.33%)	(0.00 - 1.17%)	(0.16 - 3.10%)	(0.01 - 0.67%)	(0.20 - 1.40%)
Small Appliances non-electronic	(0.34 - 1.37%)	(0.22 - 1.59%)	(0.26 - 1.49%)	(0.17 - 2.13%)	(0.22 - 0.88%)	(0.29 - 1.20%)	(0.03 - 0.30%)
Empty Aerosol Cans	(0.18 - 0.26%)	(0.06 - 0.15%)	(0.15 - 0.31%)	(0.02 - 0.11%)	(0.02 - 0.07%)	(0.00 - 0.05%)	(0.01 - 0.05%)
Mixed Metal / Material	(1.15 - 2.55%)	(1.46 - 3.35%)	(1.62 - 3.47%)	(0.78 - 3.85%)	(2.65 - 6.04%)	(1.97 - 4.83%)	(0.73 - 3.25%)

Continued Table A16. Confidence Intervals for Rest of Oregon Vehicle Sources 2002
Field Data Only (page 4 of 4)

Material	Residential Route Trucks	Commercial Route Trucks	Mixed Route Trucks	Compacting Drop Boxes	Loose Drop boxes	Self Haul	Waste Processing Facilities
OTHER INORGANICS	(6.51 - 9.63%)	(2.61 - 6.92%)	(4.04 - 7.04%)	(1.00 - 2.84%)	(8.75 - 18.86%)	(20.22 - 33.03%)	(23.49 - 35.65%)
Rock / Concrete / Brick	(0.41 - 2.47%)	(0.38 - 1.47%)	(0.13 - 2.04%)	(0.03 - 0.48%)	(0.83 - 4.52%)	(1.38 - 7.35%)	(3.73 - 9.73%)
Soil / Sand / Dirt	(0.35 - 1.30%)	(0.21 - 1.22%)	(0.29 - 1.96%)	(0.03 - 0.76%)	(0.42 - 1.62%)	(0.37 - 2.78%)	(0.37 - 1.65%)
Pet Litter / Animal Feces	(3.42 - 5.79%)	(0.22 - 1.39%)	(1.58 - 3.44%)	(0.07 - 0.70%)	(0.01 - 0.42%)	(0.00 - 0.11%)	(0.05 - 0.99%)
Gypsum Wallboard	(0.02 - 0.38%)	(0.02 - 0.52%)	(0.01 - 0.42%)	(0.00 - 0.20%)	(2.18 - 9.01%)	(9.79 - 21.24%)	(8.49 - 14.85%)
Gypsum Wallboard OLD	(0.02 - 0.38%)	(0.00 - 0.36%)	(0.01 - 0.42%)	(0.00 - 0.17%)	(0.10 - 4.24%)	(1.74 - 6.97%)	(5.76 - 11.26%)
Gypsum Wallboard NEW	(0.00 - 0.00%)	(0.00 - 0.28%)	(0.00 - 0.00%)	(0.00 - 0.08%)	(0.97 - 6.78%)	(6.33 - 16.69%)	(0.88 - 5.71%)
Fiberglass Insulation	(0.00 - 0.01%)	(0.00 - 0.01%)	(0.00 - 0.19%)	(0.00 - 0.00%)	(0.03 - 0.63%)	(0.24 - 3.27%)	(0.26 - 0.95%)
Other Inorganics	(0.80 - 1.62%)	(0.54 - 3.98%)	(0.44 - 1.51%)	(0.24 - 1.65%)	(1.70 - 7.13%)	(1.43 - 7.06%)	(5.53 - 13.33%)
"MEDICAL WASTES"	(0.01 - 0.31%)	(0.01 - 0.07%)	(0.01 - 0.36%)	(0.00 - 0.18%)	(0.00 - 0.01%)	(0.00 - 0.00%)	(0.00 - 0.00%)
OTHER HAZARDOUS MATLS	(0.36 - 1.01%)	(0.22 - 0.72%)	(0.25 - 0.60%)	(0.06 - 5.63%)	(0.05 - 0.26%)	(0.18 - 1.22%)	(0.75 - 3.77%)
Latex Paint	(0.00 - 0.12%)	(0.00 - 0.04%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.20%)	(0.01 - 0.98%)	(0.08 - 0.71%)
Oil Paints / Thinners	(0.01 - 0.12%)	(0.00 - 0.11%)	(0.00 - 0.06%)	(0.00 - 0.00%)	(0.00 - 0.01%)	(0.00 - 0.02%)	(0.00 - 1.18%)
Pesticides / Herbicides	(0.00 - 0.00%)	(0.00 - 0.03%)	(0.00 - 0.04%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.07%)	(0.00 - 0.00%)
Motor Oil	(0.00 - 0.00%)	(0.00 - 0.31%)	(0.00 - 0.18%)	(0.00 - 0.00%)	(0.00 - 0.03%)	(0.00 - 0.01%)	(0.00 - 0.02%)
Used Oil Filters	(0.00 - 0.05%)	(0.00 - 0.02%)	(0.04 - 0.29%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.10%)	(0.02 - 0.39%)
Fuels (gas/kero/diesel)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.02%)	(0.00 - 0.01%)	(0.00 - 0.00%)	(0.00 - 0.01%)	(0.00 - 0.00%)
Adhesives / Sealants	(0.01 - 0.05%)	(0.00 - 0.07%)	(0.00 - 0.04%)	(0.00 - 0.02%)	(0.00 - 0.00%)	(0.01 - 0.04%)	(0.02 - 0.07%)
Caustic Cleaners	(0.00 - 0.00%)	(0.00 - 0.04%)	(0.01 - 0.11%)	(0.00 - 0.02%)	(0.00 - 0.05%)	(0.00 - 0.10%)	(0.00 - 0.00%)
Lead-Acid Batteries	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Dry-cell Batteries	(0.11 - 0.20%)	(0.07 - 0.19%)	(0.05 - 0.11%)	(0.01 - 0.08%)	(0.00 - 0.01%)	(0.01 - 0.03%)	(0.02 - 0.12%)
Asbestos	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)	(0.00 - 0.00%)
Other Hazardous Chemicals	(0.08 - 0.70%)	(0.00 - 0.24%)	(0.00 - 0.01%)	(0.01 - 5.58%)	(0.00 - 0.05%)	(0.00 - 0.24%)	(0.04 - 2.42%)
TOTAL PACKAGING	(20.22 - 21.91%)	(22.70 - 27.24%)	(20.01 - 25.09%)	(29.10 - 38.69%)	(18.45 - 28.08%)	(6.69 - 11.83%)	(6.17 - 10.45%)
TOTAL PRODUCTS	(36.59 - 40.95%)	(40.97 - 49.46%)	(39.08 - 47.99%)	(33.25 - 48.38%)	(58.37 - 70.09%)	(75.91 - 85.18%)	(72.02 - 80.37%)
TOTAL NON-MANUFACTURED	(38.03 - 42.53%)	(25.26 - 34.55%)	(30.21 - 38.17%)	(19.58 - 32.10%)	(9.07 - 16.60%)	(6.49 - 14.24%)	(11.80 - 19.19%)
Total Organic	(81.04 - 84.78%)	(81.19 - 87.14%)	(79.10 - 85.07%)	(84.59 - 92.43%)	(66.42 - 77.57%)	(57.15 - 69.53%)	(57.48 - 69.12%)
Total non-organic	(15.22 - 18.96%)	(12.86 - 18.81%)	(14.93 - 20.90%)	(7.57 - 15.41%)	(22.43 - 33.58%)	(30.47 - 42.85%)	(30.88 - 42.52%)
compostable	(67.08 - 71.39%)	(60.18 - 67.63%)	(59.83 - 68.43%)	(53.49 - 67.09%)	(34.88 - 46.67%)	(20.47 - 29.94%)	(16.46 - 25.27%)
compost-target	(38.15 - 42.73%)	(32.06 - 41.15%)	(34.84 - 42.60%)	(25.86 - 38.79%)	(18.11 - 28.41%)	(11.17 - 19.08%)	(8.90 - 14.76%)

Table A17: Beverage Containers Disposed per Ton - 2002, 2000 and 1998

Type	2002 # / ton	(90% Confidence Interval)	2000 # / ton	(90% Confidence Interval)	1998 # / ton	(90% Confidence Interval)
All Beverage Containers	190.89	(177.41 - 205.30)	175.18	(163.14 - 188.73)	145.98	(137.75 - 154.44)
All Deposit Containers	88.56	(79.92 - 97.27)	82.49	(74.42 - 90.61)	66.18	(61.39 - 71.48)
All No-deposit Containers	102.33	(94.28 - 111.14)	92.67	(86.20 - 100.07)	79.8	(74.58 - 84.81)
All Beer Containers	26.31	(22.17 - 30.88)	25.24	(20.81 - 30.27)	17.22	(15.16 - 19.50)
All Deposit Beer Containers	26.11	(21.95 - 30.68)	24.45	(20.05 - 29.11)	17.11	(15.08 - 19.41)
All No-deposit Beer Containers	0.20	(0.02 - 0.43)	0.78	(0.02 - 2.22)	0.11	(0.02 - 0.21)
All Soft Drink Containers	62.75	(56.68 - 68.85)	58.3	(52.59 - 64.07)	48.38	(44.50 - 52.20)
All Deposit Soft Drink Containers	62.46	(56.35 - 68.55)	57.99	(52.26 - 63.72)	48.23	(44.36 - 52.01)
All No-deposit Soft Drink Containers	0.29	(0.14 - 0.47)	0.31	(0.10 - 0.58)	0.16	(0.07 - 0.27)
All Milk Bottles	17.82	(14.15 - 23.54)	18.54	(15.66 - 21.89)	13.99	(12.88 - 15.15)
All Juice	38.70	(34.66 - 42.68)	40.43	(36.90 - 43.81)	39.23	(36.19 - 42.53)
All Water Bottles	28.32	(25.17 - 31.76)	17.01	(14.90 - 19.22)	11.9	(9.71 - 14.92)
All Liquor Bottles	3.64	(2.93 - 4.39)	3.2	(2.68 - 3.68)	3.92	(3.39 - 4.41)
All (Glass) Wine	4.04	(3.32 - 4.69)	4.83	(3.33 - 6.64)	4.21	(3.64 - 4.77)
All (Glass) Wine Cooler	0.04	(0.00 - 0.11)	0.07	(0.01 - 0.15)	0.71	(0.42 - 1.03)
All Tea/Other Beverage Containers	9.30	(7.97 - 10.70)	7.49	(6.19 - 9.26)	5.5	(4.29 - 6.90)
All Unknown Containers			0.03	(0.00 - 0.08)	0.92	(0.51 - 1.48)
All Plastic Bottles	86.58	(78.99 - 94.61)	71.49	(65.91 - 77.89)	55.7	(51.97 - 59.56)
Plastic Beer: Deposit	0.07	(0.00 - 0.21)	0.38	(0.12 - 0.65)	none	
Plastic Beer: No-deposit (all in 1 sample)			0.73	(0.00 - 2.18)	none	
Plastic Soft Drink: Deposit	16.77	(14.92 - 18.67)	14.63	(12.53 - 17.18)	12.24	(11.12 - 13.36)
Plastic Soft Drink: No-deposit	0.07	(0.00 - 0.17)	0.13	(0.00 - 0.38)	0.03	(0.00 - 0.06)
Plastic Milk Jug	17.81	(14.15 - 23.53)	18.36	(15.39 - 21.74)	13.93	(12.81 - 15.09)
Plastic Juice	22.18	(19.67 - 24.91)	19.01	(17.03 - 20.99)	16.31	(15.13 - 17.49)
Plastic Water	28.16	(24.96 - 31.59)	16.86	(14.74 - 19.09)	11.73	(9.56 - 14.72)
Plastic Liquor	1.09	(0.73 - 1.50)	0.94	(0.69 - 1.20)	1.21	(0.95 - 1.47)
Plastic Tea/Other Beverage	0.42	(0.27 - 0.59)	0.45	(0.23 - 0.71)	0.25	(0.13 - 0.42)
Plastic: All No-deposit	69.74	(63.37 - 77.11)	56.48	(51.66 - 61.73)	43.46	(40.07 - 47.09)
All Glass Bottles	29.02	(26.11 - 31.92)	30.75	(27.62 - 34.20)	29.38	(27.44 - 31.53)
Glass Beer: Deposit	10.81	(9.08 - 12.76)	8.14	(6.70 - 9.60)	6.63	(5.76 - 7.60)
Glass Beer: No-deposit	0.12	(0.01 - 0.32)	0.02	(0.00 - 0.06)	0	(0.00 - 0.01)
Glass Soft Drink: Deposit	1.51	(1.12 - 1.93)	1.46	(1.07 - 1.86)	1.36	(0.83 - 2.08)
Glass Soft Drink: No-deposit	0.13	(0.03 - 0.25)	0.11	(0.00 - 0.24)	0.02	(0.00 - 0.05)
Glass Milk	0.01	(0.00 - 0.02)	0.18	(0.05 - 0.34)	0.06	(0.02 - 0.10)
Glass Juice	7.34	(6.31 - 8.52)	11.53	(10.05 - 13.16)	11.75	(10.76 - 12.75)
Glass Water	0.15	(0.01 - 0.39)	0.14	(0.05 - 0.24)	0.17	(0.08 - 0.28)
Glass Liquor	2.55	(1.97 - 3.19)	2.26	(1.81 - 2.68)	2.71	(2.30 - 3.13)
Glass Wine	4.04	(3.32 - 4.69)	4.83	(3.33 - 6.64)	4.21	(3.64 - 4.77)
Glass Wine Cooler	0.04	(0.00 - 0.11)	0.07	(0.01 - 0.15)	0.71	(0.42 - 1.03)
Glass Tea/Other Beverage	2.33	(1.83 - 2.81)	2.01	(1.51 - 2.62)	1.52	(1.23 - 1.83)
Glass: Unknown Deposit Bev.			none		0.16	(0.01 - 0.40)
Glass: Unknown No-deposit Bev.			none		0.08	(0.01 - 0.19)
Glass: All deposit bottles	12.31	(10.45 - 14.30)	9.6	(8.00 - 11.21)	8.15	(7.01 - 9.39)
Glass: All No-deposit bottles	16.70	(14.90 - 18.57)	21.15	(18.90 - 23.75)	21.23	(19.78 - 22.80)
All Aluminum Cans	70.38	(62.91 - 78.23)	67.58	(60.54 - 75.11)	55.86	(51.29 - 60.64)
Aluminum Beer: Deposit	15.23	(11.87 - 18.92)	15.97	(12.09 - 20.52)	10.48	(8.81 - 12.16)
Aluminum Beer Can: No-deposit	0.08	(0.00 - 0.22)	0.04	(0.00 - 0.11)	0.11	(0.01 - 0.21)
Aluminum Soft Drink: Deposit	44.19	(39.29 - 49.27)	41.88	(37.50 - 46.26)	34.63	(31.63 - 37.82)
Aluminum Soft Drink Can: No-deposit	0.09	(0.00 - 0.17)	0.07	(0.01 - 0.13)	0.11	(0.03 - 0.22)
Aluminum Juice Can	7.79	(6.12 - 9.84)	8.02	(6.72 - 9.31)	8.59	(6.97 - 10.49)
Aluminum Tea/Other Beverage Can	3.01	(2.28 - 3.72)	1.57	(1.11 - 2.16)	1.28	(0.41 - 2.47)
Aluminum Unknown Beverage Can			0.03	(0.00 - 0.08)	0.68	(0.28 - 1.22)
Aluminum: All Deposit Cans	59.41	(52.49 - 66.43)	57.87	(51.43 - 64.86)	45.78	(42.01 - 50.09)
Aluminum: All No-deposit Beverage	10.97	(9.09 - 13.03)	9.71	(8.29 - 11.20)	10.08	(8.11 - 12.22)
All Steel Beverage Cans (No-deposit)	4.91	(3.89 - 5.98)	5.34	(4.36 - 6.61)	5.04	(4.06 - 6.25)
Steel (Tin) Juice Can	1.38	(0.91 - 1.92)	1.87	(1.38 - 2.38)	2.59	(1.89 - 3.48)
Steel (Tin) Tea/Other Beverage Can	3.53	(2.71 - 4.50)	3.47	(2.57 - 4.61)	2.45	(1.73 - 3.27)

Table A18: Beverage Containers Disposed (Millions) - 2002, 2000 and 1998

Type	2002 (millions)	(90% Confidence Interval)	2000 (millions)	(90% Confidence Interval)	1998 (millions)	(90% Confidence Interval)
All Beverage Containers	523.72	(486.75 - 563.24)	484.07	(450.79 - 521.52)	386.92	(365.12 - 409.35)
All Deposit Containers	242.98	(219.26 - 266.87)	227.92	(205.64 - 250.38)	175.41	(162.72 - 189.46)
All No-deposit Containers	280.74	(258.65 - 304.91)	256.07	(238.19 - 276.52)	211.52	(197.68 - 224.78)
All Beer Containers	72.17	(60.83 - 84.73)	69.74	(57.49 - 83.65)	45.64	(40.18 - 51.69)
All Deposit Beer Containers	71.63	(60.21 - 84.18)	67.57	(55.41 - 80.45)	45.35	(39.98 - 51.44)
All No-deposit Beer Containers	0.55	(0.07 - 1.19)	2.17	(0.05 - 6.13)	0.29	(0.05 - 0.56)
All Soft Drink Containers	172.16	(155.52 - 188.88)	161.1	(145.33 - 177.04)	128.24	(117.95 - 138.37)
All Deposit Soft Drink Containers	171.36	(154.60 - 188.06)	160.25	(144.41 - 176.08)	127.83	(117.58 - 137.85)
All No-deposit Soft Drink Containers	0.80	(0.38 - 1.29)	0.85	(0.27 - 1.60)	0.41	(0.18 - 0.71)
All Milk Bottles	48.88	(38.83 - 64.57)	51.24	(43.27 - 60.49)	37.07	(34.13 - 40.15)
All Juice	106.17	(95.08 - 117.09)	111.73	(101.97 - 121.07)	103.98	(95.92 - 112.73)
All Water Bottles	77.69	(69.07 - 87.14)	47	(41.18 - 53.11)	31.54	(25.73 - 39.54)
All Liquor Bottles	9.98	(8.04 - 12.06)	8.84	(7.40 - 10.17)	10.38	(9.00 - 11.70)
All (Glass) Wine	11.07	(9.10 - 12.87)	13.34	(9.19 - 18.35)	11.15	(9.65 - 12.64)
All (Glass) Wine Cooler	0.10	(0.00 - 0.30)	0.2	(0.03 - 0.42)	1.88	(1.11 - 2.72)
All Tea/Other Beverage Containers	25.50	(21.86 - 29.36)	20.71	(17.11 - 25.59)	14.59	(11.38 - 18.29)
All Unknown Containers	none		0.07	(0.00 - 0.22)	2.44	(1.36 - 3.92)
All Plastic Bottles	237.54	(216.71 - 259.56)	197.55	(182.12 - 215.23)	147.63	(137.74 - 157.87)
Plastic Beer: Deposit	0.19	(0.00 - 0.58)	1.04	(0.34 - 1.79)	none	
Plastic Beer: No-deposit (all in 1 sample)	none		2.01	(0.00 - 6.03)	none	
Plastic Soft Drink: Deposit	46.00	(40.93 - 51.22)	40.44	(34.63 - 47.47)	32.45	(29.47 - 35.42)
Plastic Soft Drink: No-deposit	0.20	(0.00 - 0.47)	0.37	(0.00 - 1.05)	0.07	(0.00 - 0.17)
Plastic Milk Jug	48.86	(38.83 - 64.57)	50.74	(42.54 - 60.08)	36.92	(33.96 - 40.00)
Plastic Juice	60.86	(53.96 - 68.35)	52.53	(47.06 - 58.00)	43.23	(40.10 - 46.36)
Plastic Water	77.27	(68.48 - 86.67)	46.58	(40.74 - 52.76)	31.1	(25.33 - 39.02)
Plastic Liquor	2.99	(2.01 - 4.13)	2.6	(1.89 - 3.32)	3.2	(2.51 - 3.89)
Plastic Tea/Other Beverage	1.17	(0.73 - 1.63)	1.24	(0.64 - 1.96)	0.67	(0.34 - 1.11)
Plastic: All No-deposit	191.35	(173.87 - 211.55)	156.07	(142.75 - 170.58)	115.19	(106.21 - 124.82)
All Glass Bottles	79.61	(71.62 - 87.56)	84.96	(76.33 - 94.51)	77.87	(72.73 - 83.56)
Glass Beer: Deposit	29.66	(24.90 - 35.01)	22.50	(18.51 - 26.53)	17.58	(15.26 - 20.15)
Glass Beer: No-deposit	0.34	(0.03 - 0.88)	0.05	(0.00 - 0.16)	0.01	(0.00 - 0.04)
Glass Soft Drink: Deposit	4.13	(3.07 - 5.30)	4.03	(2.96 - 5.14)	3.61	(2.20 - 5.52)
Glass Soft Drink: No-deposit	0.37	(0.09 - 0.68)	0.3	(0.00 - 0.66)	0.06	(0.00 - 0.14)
Glass Milk	0.02	(0.00 - 0.05)	0.5	(0.13 - 0.95)	0.15	(0.06 - 0.26)
Glass Juice	20.14	(17.31 - 23.37)	31.86	(27.78 - 36.36)	31.13	(28.51 - 33.79)
Glass Water	0.42	(0.03 - 1.07)	0.4	(0.14 - 0.66)	0.45	(0.22 - 0.75)
Glass Liquor	6.98	(5.40 - 8.75)	6.24	(5.01 - 7.41)	7.19	(6.10 - 8.30)
Glass Wine	11.07	(9.10 - 12.87)	13.34	(9.19 - 18.35)	11.15	(9.65 - 12.64)
Glass Wine Cooler	0.10	(0.00 - 0.30)	0.2	(0.03 - 0.42)	1.88	(1.11 - 2.72)
Glass Tea/Other Beverage	6.39	(5.01 - 7.71)	5.55	(4.16 - 7.24)	4.02	(3.25 - 4.86)
Glass- Unknown Deposit Bev.	none		none		0.43	(0.04 - 1.06)
Glass- Unknown No-deposit Bev.	none		none		0.21	(0.02 - 0.51)
Glass: All deposit bottles	33.78	(28.68 - 39.23)	26.53	(22.10 - 30.97)	21.61	(18.57 - 24.90)
Glass: All No-deposit bottles	45.83	(40.89 - 50.95)	58.43	(52.22 - 65.62)	56.26	(52.42 - 60.44)
All Aluminum Cans	193.09	(172.59 - 214.63)	186.75	(167.30 - 207.55)	148.06	(135.96 - 160.74)
Aluminum Beer: Deposit	41.78	(32.55 - 51.91)	44.12	(33.41 - 56.70)	27.77	(23.35 - 32.22)
Aluminum Beer Can: No-deposit	0.21	(0.00 - 0.60)	0.11	(0.00 - 0.29)	0.28	(0.03 - 0.55)
Aluminum Soft Drink: Deposit	121.23	(107.80 - 135.17)	115.73	(103.62 - 127.82)	91.78	(83.83 - 100.23)
Aluminum Soft Drink Can: No-deposit	0.24	(0.00 - 0.47)	0.19	(0.04 - 0.36)	0.28	(0.08 - 0.58)
Aluminum Juice Can	21.38	(16.79 - 27.01)	22.18	(18.58 - 25.73)	22.76	(18.49 - 27.81)
Aluminum Tea/Other Beverage Can	8.26	(6.25 - 10.21)	4.33	(3.08 - 5.97)	3.39	(1.09 - 6.53)
Aluminum Unknown Beverage Can	none		0.07	(0.00 - 0.22)	1.8	(0.75 - 3.24)
Aluminum: All Deposit Cans	163.00	(144.00 - 182.25)	159.92	(142.12 - 179.24)	121.35	(111.36 - 132.76)
Aluminum: All No-deposit Beverage	30.09	(24.93 - 35.76)	26.82	(22.92 - 30.94)	26.71	(21.50 - 32.38)
All Steel Beverage Cans (No-deposit)	13.48	(10.66 - 16.41)	14.76	(12.05 - 18.25)	13.36	(10.77 - 16.56)
Steel (Tin) Juice Can	3.79	(2.50 - 5.26)	5.17	(3.80 - 6.58)	6.86	(5.02 - 9.23)
Steel (Tin) Tea/Other Beverage Can	9.69	(7.44 - 12.35)	9.59	(7.09 - 12.75)	6.5	(4.59 - 8.66)

Appendix B: Methodology - Disposal Site Waste Composition (Field Data)

Field Sampling Methodology

The field portion of the 2002 Oregon Waste Composition Study was conducted by obtaining representative samples of waste being disposed at landfill, transfer stations, and other disposal facilities throughout Oregon, sorting the samples into 83 different material categories, and then recording the weight of each category.

The Oregon study was really a set of composition studies of 60 individual waste substreams. The factors used in this study to define the waste substreams included geography (Metro tri-county area, Marion County, City of Eugene, and the rest of Oregon), season (fall/winter vs. spring/summer)¹ and delivery source. There were nine different "delivery sources" defined for the Metro area in this study. Six of these are delivered to regular landfills, two are delivered to special-purpose landfills that do not accept putrescible wastes, and the last can be delivered to either.

To regular landfills and incinerators/energy recovery facilities:

1. Residential route trucks. At least 90% of the waste comes from single-family or multifamily dwellings.
2. Commercial route trucks. No more than 10% of the waste comes from single-family or multifamily dwellings. The rest comes from commercial, government, or other sources.
3. Mixed route trucks. More than 10% of the waste is residential, and more than 10% is commercial or from other non-residential sources.
4. Compacting drop boxes. These are often used by single retail stores.
5. Loose drop boxes. These are often used in construction and demolition.
6. Regular self-haul waste. This usually is waste brought to the disposal site by the household or business that generated the garbage, but also includes waste taken to the disposal site by anyone who is not a commercial garbage hauler.

To special-purpose landfills:

7. Hauler-hauled loads. Any waste brought to the disposal site by a commercial garbage hauler - usually in drop boxes.
8. Self-haul loads. Any waste brought to the disposal site by someone other than a commercial garbage hauler.

To either:

9. Mixed Waste Processing Facilities. The residue disposed after the facilities have removed material for recycling or other recovery from mixed solid waste.

Outside the Metro area, there is very little mixed solid waste taken by haulers to special purpose landfills. Thus, the two special purpose landfill delivery sources were combined in areas outside of Metro.

¹ We collected samples during all seasons, but grouped them into only two groupings, "warm" (April to September), and "cold" (October to March). With all the other groupings, by geography and by delivery source, there were too few samples collected in this study to also allow grouping the samples into individual seasons.

Appendix B. Disposal site waste composition methodology for 2002. Page B 2

Table B1 gives the number of samples collected in each of the 60 individual waste substream as defined above:

Table B1: Samples collected by substream

	Metro Warm/Cold*	Marion County Warm/Cold	Eugene Warm/Cold	Rest of Oregon Warm/Cold	Total
Residential route trucks	23 / 29	14 / 14	21 / 17	12 / 12	142
Commercial route trucks	17 / 16	8 / 8	7 / 11	13 / 7	87
Mixed route trucks	26 / 17	11 / 11	8 / 8	9 / 11	101
Compacting drop boxes	15 / 15	8 / 8	4**	6 / 5	61
Loose drop boxes - regular landfill	24 / 19	10 / 11	4**	16 / 14	98
Self-haul - regular landfill	25 / 24	22 / 16	36 / 27	40 / 31	221
Hauler drop boxes - special purpose LF	12 / 10	***	***	***	22
Self-haul - special purpose landfill	14 / 13	5 / 4	6 / 4	***	46
Mixed Waste Processing Facility residue	26 / 24	4 / 4	****	4 / 4	66
Total	182 / 167	82 / 76	78 / 67	100 / 84	844

* Warm season = 2nd & 3rd Quarters (April - September)

Cold season = 1st & 4th quarter (October - March)

** Because of the low amount of Eugene drop-box waste being disposed, few drop box samples were collected from Eugene, and so warm and cold season substreams were combined for analysis as there were too few samples to analyze separately

*** Outside the Metro region, there is little hauler waste going to special purpose landfills, so no separation was made of hauler versus self-haul waste. Except for Metro, Marion, and Lane Counties, there is so little waste going to special-purpose landfills that the other special purpose landfill waste was combined with self-haul waste for sampling.

**** Mixed waste processing facility residue in Lane County contain a mixture of Eugene and other Lane County wastes. Weighted results from these facilities were used in determining the composition of waste for both Eugene and the rest of the state

Data from the samples in each of the 60 substreams were combined by averaging to determine the composition of that substream. The overall Oregon composition could then be calculated by taking a weighed average of the 60 individual substream compositions, using the tons of garbage in each substream as a weighing factor. Table A1 in Appendix A gives the tons of garbage disposed in each substream in 2002.

Sample Selection

The intent of our sampling strategy is that within each substream, any pound of garbage would be equally likely to be selected for sampling as any other pound, and all samples would be independent of each other. Complete random and independent sampling would be impractical, however, as that would involve collecting individual samples around the whole state on all days of the year. Instead, we grouped sampling into 8 separate trips - 2 per quarter - spaced at roughly 6 week intervals. Samples were collected in the Metro area each period. For the rest of the state, samples were generally collected in one-half of the state during the first period each quarter, and in the other half during the second period.

Several factors determined the number of samples collected in each waste substream. First, Metro wanted to assure that at least 300 disposal site samples and 50 processing facility residual samples would be collected in the Metro tri-county area, and so paid for extra samples to be collected and analyzed in their region.

Second, past studies have shown that some substreams are more variable than others are, and thus require more sampling in order to achieve a specific level of precision. Loose drop boxes, self-haul loads, and loads received at special purpose landfills are highly variable. They might be made almost exclusively of one or two materials, such as roofing tear-offs, gypsum wallboard scraps and lumber from remodeling, or yard debris. On the other hand, they could be a whole assortment of materials from a basement clean-out or from someone who does not have garbage service and self-hauls all their household waste to the disposal site. Many samples must be taken from these self-haul and drop box loads in order to get a good characterization of what is in these waste streams. In contrast, garbage from route trucks tends to be fairly homogeneous, since wastes from many generators tend to get mixed together and may end up in the sample taken. Almost all route truck loads will have different grades of paper, rigid plastic containers, film plastic, glass bottles, and other common household and business items. The exact percentage of each material may vary from load to load, but not as many loads are needed to characterize route truck loads very well. Based on analysis of variability from past studies, the Oregon Department of Environmental Quality (ODEQ) determined that the self haul, loose drop box, and special purpose landfill loads should have increased sampling by a factor of two, and compacting drop boxes should be increased by a factor of 1.5.

The sites selected for sampling and the number of samples chosen at each were determined as follows. First, within each of the four regions (Metro, Marion County, Eugene, and "rest of Oregon"), a list was made of all the disposal sites and the amount of waste received directly at each. Waste received from transfer stations and from mixed waste processing facilities, and single-material waste streams such as whole loads of shredded tires were not counted in the amount of waste received directly at a site. The waste total for special purpose landfills were adjusted upward in proportion to their expected variability, as discussed above.

Next, the total number of samples to be collected in each region was divided among all the sites in proportion to the adjusted tons of waste directly received at each site. Some large sites such as the two Metro transfer stations had more than 80 samples designated for each, while small rural transfer stations and landfills might have only a fraction of a sample each. To make sampling more practical, however, samples at small rural sites were combined. If a site was designated for 3 or more samples, then these samples were designated for collection. Sites with fewer than 3 samples were usually combined into grouping of similar sites, and a single site was chose to provide all the samples within each group. For example, there are 24 small landfills and 50 small transfer stations in rural and intermediate Eastern Oregon counties, but all of these put together dispose of only enough waste to merit 32 waste composition samples. We fulfilled this by collecting 8 samples at the Klamath Falls landfill and between 2 and 6 samples at 6 other landfills and transfer station, but did not collect any samples at the other 67 landfills and transfer stations. To help insure different seasonal representation, 16 samples were collected in "cold seasons" (in December and February) and 17 in "warm seasons" (June and September).

Once the number of samples to be collected at each site was designated, then a sampling schedule was put together. Sites were grouped into eight "trips" for efficiency of sample collection. For example, the first trip, in early February, covered sites in south-central Oregon (Klamath and Lake Counties) and Lane County. The second trip, in late March, covered sites in the southern Willamette Valley and southwestern Oregon, as well as Marion and Clatsop Counties. The Metro tri-county area was covered in all trips, Lane County was covered in the first trip in each quarter, and Marion County was covered in the second trip in each quarter.

If a site had less than 8 samples designated for collection, then all of the samples were usually collected in the same trip. If more samples were designated though, they were usually split into trips in different seasons. Overall, the number of samples collected each season were proportional to the total waste disposed each season, and we tried to make sure that all geographic and demographic aspects of the state were appropriately represented. We also made sure to collect some samples on weekends in approximate proportion to the amount of waste brought to sites for disposal on weekends.

Sample selection at the sites.

Different methods were used for selecting route trucks, drop box loads, and self-haul loads for sampling.

Route Trucks

Route trucks were pre-selected for sampling based on information received from disposal sites just prior to our arrival for sampling. If we were visiting a site on a Monday, we would request a list of all trucks that unloaded, and the tonnage they dumped, for the most recent Monday for which data were available. We would then construct a running sum of route truck weights, and then chose a random number between 0 and the total sum of weight disposed on that day. That random number designated a specific pound of garbage dumped by one of the trucks, and we could then look at the running sum of truck weights to see what truck and route the garbage came from. We would then choose that route for sampling on sampling day. If we were looking for more than one route truck, we would use basically the same procedure, modified as follows. If we were looking for "n" samples, and if the total weight of all route trucks that dumped on the earlier Monday was "T", we would first select a random number "r" that was between 0 and T/n. The trucks/routes we would pick would then be the trucks carrying each of the following designated pounds of garbage:

$r, r+T/n, r+2T/n,$ and so on up to $r+(n-1)T/n$

We would identify each of these truck/routes on the running total of truck weights. This method assured that the same truck would not be picked twice for sampling. Also, if we had information on the type of garbage or the type of truck, we would group the trucks by this information before constructing the running sum and doing the random selection. This would help assure that we would not randomly choose all trucks of a single type or carrying a single type of garbage. If no information was available on truck type or type of garbage, we would at least group the trucks by company/franchise area, so as to get a better geographical spread of the vehicles using the disposal site. We would also randomly select one or two alternate trucks to sample in case for some reason we missed a designated truck at the disposal site.

After selecting the trucks, we would contact the disposal companies and let them know that we would be asking their driver for a sample of the garbage from their truck on sampling day. If a substitute truck was doing the route that day, we would get the sample from the substitute truck instead.

Self-haul Loads

Where data on the individual weights of self-haul loads were available at a site, we would use that information to obtain samples that had a weight distribution that represented the weight distribution of the incoming loads. We believed it likely that large self-haul loads probably came mainly from businesses and would have significantly different composition than smaller self-haul loads that probably came mainly from residents, and we wanted to make sure that our samples best represented the proportion of garbage from each group that is dumped at the site, not the proportion of vehicles dumping at the site.

For example, we might determine from past disposal records that 1/3 of the self-haul loads were small loads weighing less than 500 pounds, one-third were between 500 and 1200 pounds, and one-third were large loads of greater than 1200 pounds. If we wanted 3 self-haul samples, Sky Valley Associates, the data collection contractor for this study, would be instructed to randomly choose one vehicle in each of these weight classifications. The contractor would choose a

random method for selecting the individual vehicle, such as selecting the first small load to come to the site after, say, 10 am. The contractor would have to visually estimate the weight of incoming loads, since even sites with scales will not have the weight of loads available until after the vehicle has dumped and weighed out.

If no weight distribution information was available for a particular disposal site, we would use average weight distribution information from similar sites instead.

We believe that this methodology provides much more representative samples than would be provided by, say, just picking vehicles at random. Small loads of 500 pounds or less such as passenger cars and small pickup loads may represent as much as 50% of the self-haul loads received at the site, but only represent 15% of the weight. Large heavy commercial loads, such as loads brought in by a sheet-rocker or roofing company might be relatively uncommon when compared to passenger cars and small pickups, but still might represent one-third or more of the weight of self-haul garbage. Choosing vehicles at random would over-represent the types of garbage brought in by households and small vehicles, while under-representing the garbage in the large commercial loads.

Drop Box Loads

Drop box loads are not as variable in weight as are self-haul loads, but some of the same potential biases can still result from simply choosing random drop boxes for sampling. Unfortunately, we have not been able to figure out a practical way to make sure that we do not oversample small or light loads relative to their weight. Basically, we just select drop box loads at random by choosing the first box to arrive after a set time.

Mixed Solid Waste Processing Facility Residual Loads

These processing facilities accept mixed “dry” solid waste from construction firms or businesses, pull out materials such as cardboard, wood, and scrap metal for recovery, and then dispose of the residue. Since we wanted to determine the composition of waste being disposed, we obtained our samples from the pile of residue that was destined for disposal, rather than from incoming loads.

We chose samples from the pile using a random method, such as picking a starting point in the pile, measuring down the pile a length based on a random number, and then grabbing the sample at this point. Obtaining independent samples from a pile was difficult. Because of the way that garbage was mixed together during processing, waste from a single business might be scattered through the entire pile. To try to minimize this lack of independence, we would only collect two or three samples from processing facilities on a given day, and would return on a later day to collect any other samples needed. We would also select the samples from different sides of the pile to help minimize the chance of getting garbage from the same business in more than one sample.

Selecting Samples From Loads

For route trucks, drop boxes, and large self-haul loads, we obtained our samples in the following manner. First, we would ask the driver to dump the load in an elongated pile. Next, we would use a preassigned random number between one and 16 for each load to determine where in the load to select the sample. The random numbers corresponded to specific locations in the pile, with, for example 1 being the lower front left and 16 being the upper back right. This was done to make sure that unconscious factors did not bias where the sample was selected from, and also insure that we evenly collected samples from the top and bottom of piles. The latter is important because small, heavy items tend to work their way down to the bottom of piles, and large light items stay up higher.

For most sites, disposal site staff would use a small skid loader or other piece of equipment to help us obtain the sample. The contractor would point out the place in the pile to collect the sample, and the equipment operator would scoop out a load containing about 200 pounds or more of waste and drop it on a tarp for sorting. If the selected sample turned out to weigh much more than 200 pounds, the contractor would draw a line through the pile and push everything on one side of the line off the tarp, until 200 to 300 or so pounds remained. By pushing entire slices off the pile instead of just taking stuff off the top, we avoid the bias that could occur when small, heavy items settle to the bottom of the pile.

The load would be stored on the tarp until the crew could sort it. If it would be hours before the crew could get to the load, or if the garbage was exposed to rain, the load would be covered with another tarp.

On rare occasions, we would find out after the load had been sorted that it was a little light. Anything over 175 pounds was taken as a full load. If the amount sorted was less, a make-up amount was selected and sorted from a similar load. The composition weights from the make-up load were added to the original load composition weights, with the resulting combined load weighing at least 200 pounds.

For small self-haul loads, frequently the entire load was selected for sorting. As long as the entire load was taken and weighed more than 150 pounds, it was accepted as a full sample. If the load weighed less than 150 pounds though, the contractor would collect waste from a similar vehicle and add it to the first vehicle's weigh aiming again for at least 200 pounds. On rare occasions, a third vehicle might be sampled to obtain sufficient sample weight.

Remote Capture of Samples

For large sites such as the Metro transfer stations, we would capture and sort loads on site. For most sites though, there were too few samples collected to be worth bringing the whole crew and setting up. For these sites, the contractor would send a single person to the site to collect the samples and bring them back to a central location for sorting. The collector would obtain the samples needed at each site, wrap and tie them up in a large plastic tarp, and load the samples on to a trailer to be taken back to the Metro transfer stations or other central location for sorting. Because the collector visited a number of sites in different counties across the state, it might be 3 or 4 days until all the samples were collected and brought back to the central area for sorting. It is possible that evaporation and other factors might slightly affect the composition by weight of the garbage during the "holding" time, but we do not have information to estimate how much of an effect this might have.

Sorting the Samples

Before any samples were sorted in this study, the entire crew underwent training to identify the material categories and also to review health and safety procedures for sorting. Samples were sorted entirely by hand. Containers for different categories of waste were placed around the tarp containing the sample of waste to be sorted, and the crew members would pull out materials and place them in the appropriate container. Sometimes an item might contain more than one material category. If the materials are easily separable, such as dry items in an open bag, then they were placed in their separate containers. However, if not easily separable, such as food in a sealed glass jar, the combined item was placed in whichever material category was judged to contain the most weight.

The entire load was sorted in this manner until just a small amount of very small or very gloppy, hard-to-separate items remained on the tarp. This material, called "supermix", was placed in a

separate container and weighed, and then a visual estimate was made of the materials present and the proportion, by weight, of each material. The goal was to have less than 5 pounds (about 2% by weight) of supermix to be estimated visually per sample. The contractor managed to meet this goal for more than 90% of the samples. The largest amount of supermix in any sample was 37.2 pounds. Another mixed category called fines, was used occasionally when mixed very tiny items were encountered that were difficult to manually sort. The fines were also visually estimated. About 3% of the samples had more than 5 pounds of fines, but five samples had fines comprise between 10 and 20 percent of the sample weight. Residue from mixed waste processing facilities commonly had the largest amount of fines. Much of this residue consists of left-over material from sorting construction and demolition debris. Gypsum wallboard and other material often become broken up in processing, and is not practical to fully sort.

After the entire load was sorted, each container of material was weighed, the container tare weight was subtracted, and the net weight for each material was recorded in a computer database. Counts were also made of all beverage containers by container material type (glass, plastic, aluminum, or steel), by beverage type (beer, wine, etc.), and by whether or not the container was a deposit container under the Oregon bottle bill. Beverage cups, paper containers, and aseptic packages were not counted. Oil filters, fluorescent light tubes, and compact fluorescent light fixtures were also counted. After all the data were recorded in the computer database, a set of procedures was run to check for obvious errors or inconsistencies in data entry, such as counts but no weights for aluminum beverage cans. Any errors were corrected, and the crew would move on to the next sample.

Other Sample Data Recorded

Besides recording the weight of each material component, other basic information was recorded for each sample where available. These include:

- The weight of the entire truckload from which the sample was collected.
- The city or area where the waste come from, and whether it was urban or rural.
- For route trucks, and estimate from the route truck driver or company as to how much of the waste was single-family residential, multifamily residential, commercial, or industrial (note - whole loads of industrial process waste such as paper mill sludge or auto shredder waste were excluded from the study).
- For loads from individual generators (all except route trucks or processing facilities), the type of generator of the waste (household or type of business).
- Miscellaneous information such as rainfall, wind, or other factors that could have affected the sample, and comments on specific issues, if any, regarding the sample.

Data Analysis

Before data compilation took place, the data from each sample were put through a further set of computer error-checking to insure that the recorded results were reliable.

The first step in analysis was to convert the weights for each sample into sample percentages, including the components of each material that may have been present in "supermix" or "fines." Next, the composition of each of the 60 substreams were calculated by averaging together the samples from each substream, as described in pages B1 and B2 of this appendix, and the results from the different substreams were combined to give statewide and regions compositional results.

In addition to calculating the average composition results for each substream, an estimate was made for each of the 90% confidence intervals for each of these averages. Both traditional parametric statistical methods and "bootstrap" methods were used to estimate these confidence intervals. Bootstrap methods are described in detail in Appendix C of this report. Both methods of estimating confidence intervals produced almost identical results, except for rare but heavy items in the waste stream such as tires and car batteries. For these material categories,

Appendix B. Disposal site waste composition methodology for 2002. Page B 8

bootstrap estimates were clearly superior, as the lower confidence interval limit using standard parametric methods was sometimes negative. All confidence intervals published in this report were based on bootstrap estimating methods.

Appendix C: Methodology for Contamination Analysis - 2002 Waste Composition Study

Contamination Analysis

(formerly referred to as “Detailed Sample Analysis” in past Oregon studies)

Materials as measured in field sample data are often highly contaminated. Frequently, food waste and other wet or sticky materials adhere to or have become absorbed in other wastes, and rain water might also have soaked into the waste. Frequently, this cross-contamination of material takes place after the material has been discarded. As such, the field sample data may not give a good picture of how much material is being disposed of that, if kept clean and dry, could have been recycled.

The “contamination analysis” portion of the study was designed to determine the quantity of each material, excluding contaminants, that is being disposed of. A total of 40 randomly-selected field samples were chosen for contamination analysis for all materials, plus an additional 108 field sample were chosen for contamination analysis of rigid plastic containers only. The extra plastic container samples were analyzed in order to better determine the disposal/recycling rate of these containers under Oregon’s rigid plastic container law (Oregon Revised Statutes 459A.650 to 459A.665).

For each of the 40 field samples, the following methodology was used:

- 1) After the sample was sorted as normal in the field, each of the sorted materials was separately bagged and taken back to a workshop for further analysis, with the following exceptions:
 - a) Large items that were clearly uncontaminated were weighed and disposed on site.
 - b) Hazardous materials, medical waste, cat litter and feces and disposable diapers were weighed and disposed on site.
 - c) There were three sets of materials that were combined and analyzed together for contamination analysis. These were low-grade paper (including “low-grade packaging paper”, “low-grade printing and writing paper”, and “aseptic containers/plastic-coated bleached boxboard”), non-recyclable paper (“non-recyclable packaging”, “other non-recyclable paper”, and “mixed paper/materials”), and rigid plastic (“other rigid plastic packaging” and “rigid plastic products”). This was originally done to reduce the sorting time required and the cost of the study, but in fact it created significant difficulties in logistics and in tracking and analyzing the data.
- 2) Back at the workshop, the bags of each material were re-weighed, and the weights were compared to the original field weights to insure that none of the material was lost.
- 3) Later, the bags of each material were opened and carefully sorted to separate all the contaminants from the “primary material” (primary material refers to the material category as sorted in the field). Care was taken to open all containers, remove all contents if possible, and separate out or scrape off all material that was adhering to the primary material or that had originally been missorted. Each of the contaminants was separated by material and weighed. If the contaminant weighed more than 0.05 lb. and appeared to be damp or wet, then it was set aside to be air-dried and re-weighed. This detailed sort is supposed to take place within a week of when the sample was sorted in the field, but sometime the quantity of samples to be processed created a delay such that the detailed sort did not take place until the second week.
- 4) If the primary material was clean and dry after this detailed sort, it was then weighed and recycled or disposed. If it were at all wet or dirty though, it would be further processed in different ways depending on the type of material:
 - a) Plastic, glass, and metal items and similar durable materials might be washed if necessary to remove food, dirt, or other sticky materials. The cleaned primary material was then set aside to

air-dry until it appeared dry and reached a stable weight. It was then re-weighed and recycled or disposed.

- b) Paper and similar non-durable items were not washed, but contaminating materials were scraped off where possible. It was then set aside to air-dry. When dry, it was then re-weighed and recycled or disposed.
 - c) Food waste, yard debris, other organic materials, dirt, and similar materials that may be intrinsically wet were weighed and disposed without air-drying. These materials often contain significant moisture when generated normally as a waste.
- 5) For detailed sample analysis only, rigid plastic containers were further sorted by resin type, using the standard codes 1-7 developed by the Society of Plastic Industries, but also distinguishing foamed polystyrene from solid polystyrene. All resins were also separated into bottles (blow-mold), or tubs and pails (injection or other mold).
- 6) Also for detailed sample analysis only, food waste was separated into “vegetative” and “non-vegetative”, with the latter including oils, meat, bones, or other animal products (see Oregon Administrative Rules 340-93-030 for definitions of "vegetative," applied in this case just to food waste).

Table C1 shows the data recorded for a typical detailed sample - in this case the corrugated cardboard for a field sample from a residential route truck from Aloha, Oregon, in the Portland Metro region.

Table C1: Data recorded for Detailed Sample #13

Detailed Sample number: 13									
Field Sample number: 12. Residential route truck from Metro area near Aloha, Oregon									
Primary Material: code P: Corrugated cardboard									
Date sorted in field: 1/21/2002									
Field weight: 8.8 lbs.									
Lab sort date: 1/28/2002									
Lab weight: 8.77 lbs. (with bag)									
Material	Code	Wet gross	Wet tare	Wet net	Wet sort date	Dry gross	Dry Tare	Dry net	Dry sort date
Bag	0	0.07	0	0.07	1/28		0	0.07	
Corrugated Cardboard: basket 1	P	4.01	1.85	2.16	1/28	3.41	1.85	1.56	2/5
Corrugated Cardboard: basket 2	P	5.84	1.77	4.07	1/28	4.84	1.77	3.07	2/5
Corrugated Cardboard: basket 3	P	3.55	1.85	1.7	1/28	3.02	1.85	1.17	2/5
High-grade writing paper	H	0.001	0	0.001	1/28			0.001	
Non-recyclable non-pkg paper	J	0.02	0	0.02	1/28			0.02	
Low-grade packaging paper	Q	0.31	0.23	0.08	1/28	0.29	0.23	0.06	1/29
Non-recyclable packaging paper	S	0.001	0	0.001	1/28			0.001	
Mixed paper/materials	T	0.35	0.23	0.12	1/28	0.31	0.23	0.08	2/5
Other rigid plastic	AO	0.001	0	0.001	1/28			0.001	
Recyclable film plastic	AP	0.04	0	0.04	1/28			0.04	
Mixed Plastic / Materials	AT	0.001	0	0.001	1/28			0.001	
Leaves and grass	AW	0.001	0	0.001	1/28			0.001	
Food - vegetative	FV	0.29	0.04	0.25	1/28			0.25	
Food - non-vegetative	FN	0.02	0.01	0.01	1/28			0.01	
Misc. Organics	BG	0.001	0	0.001	1/28			0.001	
Disposable. Diapers	V	0.28	0.11	0.17	1/28			0.17	
Dirt, soil, sand	AB	0.02	0	0.02	1/28			0.02	
Total				8.72				6.53	

Table C2. Contamination Analysis Sample Results for Corrugated Cardboard Samples

Detailed sample #	Field sample #	Sum of wet weights including bag	Dry bag weight	Net sample wet weight	Clean, dry primary material	Wet contaminant weight	Water / residue loss from drying primary material and bag
		A	B	C	D	E	F
				C=A-B			F=C-(D+E)
13	12	8.716	0.07	8.646	5.8	0.716	2.13
43	19	10.185	0.15	10.035	9.58	0.155	0.3
114	63	5.153	0.07	5.083	4.43	0.223	0.43
140	90	7.981	0.01	7.971	7.97	0.001	0
159	123	2.9	0	2.9	2.9	0	0
181	129	5.254	0.07	5.184	4.33	0.274	0.58
217	147	13.336	0.29	13.046	12.43	0.016	0.6
253	159	3.713	0.07	3.643	3.23	0.003	0.41
289	186	13.922	0.15	13.772	11.14	0.182	2.45
293	227	4.89	0.06	4.83	4.36	0.31	0.16
324	229	3.795	0.06	3.735	3.07	0.115	0.55
341	248	6.398	0.07	6.328	4.67	0.218	1.44
382	289	3.202	0.04	3.162	2.11	0.032	1.02
424	341	1.03	0.07	0.96	0.59	0.03	0.34
465	370	8.477	0.15	8.327	7.07	0.137	1.12
505	394	5.632	0.07	5.562	3.4	0.262	1.9
559	454	18.834	0.07	18.764	18.26	0.194	0.31
598	455	6.381	0.07	6.311	5.81	0.321	0.18
633	482	6.974	0.07	6.904	6.44	0.064	0.4
673	490	2.9	0	2.9	2.9	0	0
685	501	12.846	0.14	12.706	9.58	0.266	2.86
761	512	1.931	0.04	1.891	1.28	0.171	0.44
770	582	28.851	0.15	28.701	14.2	0.181	14.32
808	677	10.8	0	10.8	10.8	0	0
829	665	10.374	0.06	10.314	7.93	0.424	1.96
852	668	10.09	0	10.09	10.05	0	0.04
885	703	18.724	0.15	18.574	18.32	0.034	0.22
930	713	16.781	0.15	16.631	10.12	0.821	5.69
953	738	7.584	0.19	7.394	6.11	0.074	1.21
988	761	15.544	0.07	15.474	15.19	0.174	0.11
1041	751	0.071	0.01	0.061	0.03	0.021	0.01
1054	755	3.241	0.07	3.171	2.84	0.151	0.18
1104	815	10.543	0.15	10.393	8.72	0.083	1.59
1126	863	5.082	0.15	4.932	3.88	0.142	0.91
1158	879	2.523	0.04	2.483	1.99	0.043	0.45
1195	885	1.567	0.07	1.497	1.05	0.097	0.35
1247	933	4.484	0.07	4.414	3.19	0.014	1.21
1277	963	6.231	0.04	6.191	3.49	0.311	2.39
Total		306.94	3.16	303.78	249.26	6.26	48.26
percent				100.00%	82.05%	2.06%	15.89%

Detailed sample 13 (in bold above) is the same sample shown in Table C1

Contamination Data Analysis

The overall goal of contamination analysis was to develop a “correction factor” for each material that could then be multiplied by the field data results in order to determine the amount of each material, excluding contaminants, that was being disposed of. There are three main components that are calculated in figuring out the correction factors:

- 1) the amount of primary material after drying and removing contaminants,
- 2) the amount of contaminants present, further broken out into:
 - a) the amount of contaminants weighed (wet weight), and
 - b) the water/residue loss on drying (and washing) for the primary material
- 3) The amount of each primary material that was missorted or adhered to some other material during field sorting, and that needs to be added back to the clean, dry weight of the primary material

The first two components are fairly straightforward to calculate based on the data gathered. The third component requires considerable algebraic manipulation though to determine correctly.

The methods used for contamination data analysis are best explained by example. The data for corrugated cardboard from the 2002 Oregon waste composition study are used as an example below.

Of the 40 field samples collected for detailed sample analysis, 38 had corrugated cardboard present. Table C2, on the previous page, shows a compilation of the data for each of these 38 samples. Table C2 shows that of the 303.78 pounds of cardboard samples brought back to the workshop for contamination analysis, 249.26 pounds (82.05%%) consisted of actual cardboard (clean and dry), 6.26 pound (2.06%) was contaminants, and 48.26 pounds (15.89%) was water from food, rain, or other sources that evaporated on air-drying the sample.

Table C3. Corrugated cardboard as a contaminant in detailed samples of other materials.

Material	clean, dry weight (pounds)	Total detailed sample weight of material (pounds)	Percent cardboard in detailed samples of material	Field sample percent: 2002 study	Amount of material in 10,000 units based on field data results	Amount of cardboard in column E
column =>	A	B	C	D	E	F
formula =>			A / B		D * 10,000	E * C
Cardboard (Primary material)	249.26	303.78	82.0528%	3.23469%	323.469	265.415
HiGrade printing	0.03	212.898	0.0141%	1.74632%	174.632	0.025
Low grade scrap	1.181	397.006	0.2975%	4.87490%	487.490	1.450
Other nonrecyclable paper	0.331	718.859	0.0460%	7.21184%	721.184	0.332
Newspaper	0.03	233.015	0.0129%	2.17259%	217.259	0.028
Rigid Plastic Containers	0.065	501.738	0.0130%	1.67465%	167.465	0.022
Other rigid packaging	0.005	326.926	0.0015%	2.97590%	297.590	0.005
Good Film Plastic	0.001	60.182	0.0017%	1.02073%	102.073	0.002
Bad Film Plastic	0.181	319.485	0.0567%	3.85313%	385.313	0.218
Food	0.36	1296.474	0.0278%	15.59658%	1559.658	0.433
untreated lumber	0.01	157.771	0.0063%	2.03069%	203.069	0.013
Textiles	0.02	181.511	0.0110%	1.73087%	173.087	0.019
Flat window glass	0.001	8.355	0.0120%	0.27100%	27.100	0.003
Tinned food cans	0.001	55.851	0.0018%	0.79024%	79.024	0.001
Mixed metals/materials	0.951	202.616	0.4694%	2.31690%	231.690	1.087
Old Gypsum wallboard	0.02	191.149	0.0105%	2.19472%	219.472	0.023
All other materials	0.00	4478.453	0.0000%	46.30426%	4,630.426	0.000
Subtotal excluding cardboard		9342.289		96.76531%	9,676.531	3.661
Total		9646.069		100.00000%	10,000.00	269.076
% Cardboard (with contamination correction)						2.6908%
Add-back percentage: 3.661/323.469						1.1318%
Contamination correction factor: 82.0528%+1.1318% - 100%						-16.82%

Some cardboard showed up as a contaminant in detailed samples of other materials. The clean dry weight of this contaminating cardboard needs to be added back to the clean dry weight of the “primary material” cardboard in order to calculate the total amount of cardboard, excluding contaminants, that appeared in the disposed waste. In the 2002 Oregon study, there were 16 materials that had at least some cardboard as a contaminated material, as seen in Table C3.

Column C of Table C3 shows the percentage by weight of cardboard that appeared as a contaminant in each of these 16 materials. If 10,000 units of solid waste were subject to detailed sorting, then based on the 2002 field data results, the amount of each material to be sorted is shown in column E. Applying the percentages in column C to the amount sorted in column E gives the total amount of clean, dry cardboard that would be present in each material, shown in column F of table C3. Summing column F gives a total of 269.076 units of clean, dry cardboard based on sorting 10,000 units of mixed solid waste, so the percentage of cardboard in the waste stream, after removing all contaminants, is $369.076/10,000$, or 2.69%. This is 16.82% less than the percentage of cardboard as determined from field data analysis, so the overall contamination correction factor for cardboard is -16.82%.

Of the total of 269.076 units of clean, dry cardboard from column F of Table C3, 265.415 units came from sorting the 323.469 units sorted as cardboard in the field (Column E entry for cardboard), and only 3.661 units came from all other materials combined. The components of the contamination correction factor are thus as follows:

Contaminants (before drying):	- 2.06% (source: Table C2 Column E)
Water loss on air-drying:	-15.89% (source: Table C2 Column F)
“Add-backs” from other materials:	+ 1.13% (source: Table C3 Column F)
Total contamination correction factor:	-16.82% (sum of above 3)

Based on columns E and F of table C3, for every 10,000 units of mixed solid waste sorted, there will be 323.469 units that are field-sorted as cardboard, and 9676.531 units sorted as other materials. These other materials will contain 3.661 units of clean, dry cardboard as a contaminant. Thus, the “add-back” component of the correction factor is calculated by dividing the 3.661 units by 323.469 units, giving 1.132%. This “add-back” component is very small, meaning that cardboard rarely appeared as a contaminant in other material categories. Other materials such as food had much larger add-back components.

Table C6, near the end of this appendix, gives results for the different components of the contamination correction factor similar to the above for all of the individual materials included in the 2002 composition study.

Effective Sample Size and Confidence Intervals

Although 40 field samples were designated for contamination analysis, the effective number of samples that contributed significantly to determining contamination correction factors was less, and was substantially less for some materials. This is because less-frequently disposed materials were absent from many of the field samples chosen for contamination analysis. In addition, some materials were present in significant quantities in some field samples, but were nearly absent in others. The samples with large quantities of a material contributed most to determining that material’s correction factor, while samples with little material had almost no effect.

Detailed samples can also be highly variable in their levels of contamination, based on such factors as the amount and types of other waste in the sample, degree to which the waste has been compacted, and exposure of the garbage to rain or other liquids. An extreme example is the results from contamination analysis of carpet in the 2000 Oregon waste composition study.

Table C4. Contamination Analysis Results for Carpet Samples (from 2000 study)

Detailed sample #	Field sample #	Net sample wet weight	Clean, dry primary material	Wet contaminant weight	Water / residue loss from drying primary material and bag
329	112	6.700	6.700	0.000	0.000
441	179	24.575	23.900	0.045	0.630
490	189	0.860	0.770	0.040	0.050
847	343	58.900	58.900	0.000	0.000
867	344	6.915	6.910	0.015	-0.010
993	670	0.005	0.005	0.000	0.000
1052	678	7.040	6.810	0.010	0.220
1183	751	0.450	0.440	0.010	0.000
1270	838	36.100	36.100	0.000	0.000
1347	854	91.430	50.250	0.450	40.730
Total		232.975	190.785	0.570	41.620
percent		100.00%	81.89%	0.24%	17.86%
Excluding last sample		141.545	140.535	0.120	0.890
percent		100.00%	99.29%	0.08%	0.63%

As can be seen in Table C4, only 10 of the 40 field samples selected for contamination analysis had any carpet. Almost all of these samples were virtually uncontaminated - often just worn but otherwise uncontaminated rolls of carpet brought to the disposal site in a pickup truck or a drop box. However, the last sample (2000 Detailed # 1347, in bold) was soaked with water, perhaps from being left outside before disposal. This sample lost 45% of its weight on air-drying. Without this sample, the calculated contamination correction factor for carpet would have been just -0.81%, but with this sample, a correction factor of -18.11% was calculated.

Determining Confidence Intervals of Correction Factors: Bootstrap Analysis

Because of the way that contamination correction factors are calculated here, traditional parametric statistical methods could not be used to estimate the confidence interval of the correction factors. Instead, bootstrap methods were used¹. "Bootstrapping" involves randomly sampling from the collected data set itself in order to estimate such things as variance, confidence intervals, or other statistical parameters. Bootstrap estimates for confidence intervals were made in the following way:

First, 40 field samples were randomly selected, with replacement, from the list of 40 field samples on which contamination analysis was conducted. Selecting these samples "with replacement" means that some samples are likely to be picked two or more times, while others samples will not be picked at all. The same thing was done for the 108 field samples on which contamination analysis was conducted for rigid plastic containers only. 108 of these were picked, with replacement, too.

Second, all of the detailed samples associated with each field sample were assembled. If a field sample was selected multiple times, then all of its associated contamination analysis samples were also selected the same multiple of times. If a field sample was not selected, then none of its associated detailed samples were selected. The net result is that a collection of detailed samples were assembled that was much like the original set of contamination analysis samples, but differs to a degree due to the random selection process.

Third, the new set of randomly-selected contamination analysis samples, assembled under the second step above, was used to determine new contamination correction factors using exactly the same calculation methodology as was done with the original contamination analysis samples. This resulted in a new contamination correction factor for each material.

¹ See Efron, B. and R. Tibshirani 1986. Statistical Science 1 (1) pp 54-77 for a discussion of bootstrap methods.

Next, steps 1, 2, and 3 above were repeated 1000 more times. This means that 40 and 108 field samples were randomly selected, with replacement, 1001 times, the associated contamination analysis samples were assembled 1001 times, and 1001 correction factors were calculated for most materials. The assumption made in bootstrap analysis is that the distribution of correction factors for these 1001 repetitions should mirror the distribution of correction factor that would be calculated if the entire study were repeated 1001 times.

Finally, for each material, the 1001 newly-calculated correction factors were sorted from smallest to largest. Both the smallest 5% and the largest 5% of the correction factors were then discarded. The remaining smallest and largest correction factor (the 5th and 95th percentile, respectively) became the bounds of the 90% confidence interval for the contamination analysis correction factor for each material.

Although bootstrap analysis has been well-studied and documented, the particular manner in which bootstrap confidence intervals were calculated in this case has not been peer-reviewed. The Oregon Department of Environmental Quality would be interested in any comments on the methods described here from anyone who is familiar with bootstrap statistical analysis or similar random or “Monte Carlo” methods.

Combined Confidence Intervals for Field and Contamination Analysis Samples

Field data analysis, as described in Appendix B, is fairly straightforward, and standard parametric statistical methods can be used for calculating confidence intervals. Both standard and bootstrap analysis were used. The results were almost always nearly identical. The only time they differed was for materials like tires or white goods that rarely show up in samples, but might be present in substantial amounts when present. Standard parametric analysis (using untransformed data) would sometimes result in confidence intervals that were negative at the low end - an impossible result stemming from parametric confidence intervals being symmetrical around the mean. Bootstrap confidence intervals are not necessarily symmetric. For rare materials like tires and white goods, the upper confidence interval was always further from the mean than the lower confidence interval.

To calculate combined field and contamination analysis confidence intervals, bootstrap results from field data runs were independently combined with contamination analysis data runs as follows. Results from the first field bootstrap run were fed into the first contamination analysis bootstrap run to determine a correction factor for each material. These correction factors were applied back to the first field bootstrap result to produce a new corrected percent composition for each material. Similarly, results from the second field bootstrap run were combined with the second contamination analysis run results, the third of each set of bootstrap results were combined, and the process was repeated until all 1001 field and contamination analysis bootstrap runs were combined. The combined field/contamination analysis confidence intervals were then calculated in the standard bootstrap way - the 1001 combined results for each material were sorted from smallest to largest, and the 5th and 95th percentile were taken as the lower and upper bound of the 90% confidence interval.

Effort Devoted to Field vs. Contamination Analysis Sampling

The following analysis was prepared for the 2000 waste composition study. Doing a similar analysis for 2002 would be more complicated, due to the larger number of participants funding the study and the fact that some of the participants contributed to purchasing contamination analysis samples, and others did not. The conclusions drawn from the 2000 study analysis should also hold true for 2002.

In the 2000 study, the Oregon Department of Environmental Quality obtained data from 591 field samples, but did contamination analysis for all materials on just 40 of those samples, plus contamination analysis on rigid plastic containers only for an additional 111 field samples. In all, about 63% of the funds (or level of effort) spent on the project went to collecting field sample data, and 37% was spent on the contamination analysis.

We wanted to see if the split in effort between field and contamination analysis sampling was reasonable, or if instead we were being inefficient by putting too much effort into either the field data gathering or the contamination analysis sample gathering. We looked at this by considering how much the estimated confidence intervals would be tightened if we were to invest a specific amount of funds in either gathering more field samples or selecting more samples for contamination analysis. Based on the relative cost of field versus detailed samples, a specific amount of money would buy either 42.6 additional field samples, or alternatively would buy 5.3 additional contamination analysis samples (for all materials). The size of confidence intervals is known to vary inversely with the square root of the number of samples, so that quadrupling the sample size will result in cutting the confidence interval in half. Based on this relationship, gathering 42.6 additional field samples would tighten the field data confidence interval by 3.4%:

$$3.4\% = 100\% - \sqrt{591 / (591 + 42.6)}$$

Similarly, analyzing an extra 5.3 contamination analysis samples would be expected to tighten the confidence interval of the contamination correction factors by 6 percent:

$$6.0\% = 100\% - \sqrt{40 / (40 + 5.3)}$$

The confidence interval of the overall "contamination-corrected" waste composition results depends in a complicated way on both the field data confidence interval and the contamination correction factor confidence interval. We did simulations for each material that compared the effect of reducing the field data confidence interval by 3.4% to the effect of reducing the contamination correction factor confidence interval by 6%, in order to see which had the greatest effect on reducing the combined confidence interval. The result was that for most of the heavy and non-absorbent (or naturally-wet) materials that were not much affected by contamination analysis and for rare materials, increasing the number of field samples had the most effect in tightening the overall confidence intervals. However, for common light weight and/or absorbent materials, increasing the number of detailed samples had a much greater effect than did increasing the number of field samples. Materials most affected by the number of detailed samples include some of the paper categories (especially non-recyclable paper such as paper towels), film plastics, and aluminum foil. Also, combined categories (such as "all paper") were much more affected by the number of contamination analysis samples than they were by the number of field samples. Results are shown in Table C5.. In table C5, for materials where the "field" number is greater than the "detailed", we would have obtained more precise results by gathering more field samples at the expense of the contamination analysis samples. However, for the paper, plastic, and other materials where the "detailed" number is higher, we would have obtained more precise results by spending less money on field sampling and more on contamination analysis sampling. Since we are interested in overall accuracy for all materials though, it appears that we came up with a reasonable mix of field and contamination analysis samples by spending close to two-thirds of our effort on field sampling, and a little over one-third of our effort on contamination analysis sampling.

Variability of Contamination Analysis Results Between Studies

Oregon has conducted contamination analysis in all 4 waste composition studies conducted in Oregon since the 1994-95 study. The 1994-95 and 1998 samples were gathered using different methodology than was used in the 2000 and 2002 studies, but much of the analysis was conducted in the same manner. Prior to 2000, contamination analysis was conducted just on the larger, more-ubiquitous material categories or categories that were most-expected to be affected by contamination, such as most of the paper, plastic, and glass categories. Categories that were rarer (such as many of the household hazardous wastes) or not expected to be much affected by contamination (such as small appliances and electronics) were not designated for contamination analysis. For 2000 and 2002, all materials in selected samples were subject to contamination analysis, except for specific materials such as diapers and materials that would be too hazardous to handle such as medical waste. Also, in 1998, if there was not a minimum of one pound of a material in the sorted sample, material from subsequent sorted samples was added until a minimum of 1 pound was reached, increasing the effective sample size of the contamination analysis samples. This was not done for 2000 and 2002, in order to allow the calculation of confidence intervals for combined field and contamination analysis results.

Table C7 shows the calculated contamination factors for each of these studies. Generally, there are some fairly consistent trends apparent between studies, such as the high degree of contamination for certain light materials such as film plastic and aluminum foil. There are also some large and statistically significant differences too. For example, paper in general, and a few of the individual paper categories, were significantly more contaminated in 2002 than in 2000.

Use of Oregon Contamination Analysis Results for Studies Conducted Elsewhere

As can be seen from Table A2 of Appendix A of the Oregon 2002 Waste Composition Study report, contamination analysis did result in some major changes in the estimated amount of material being disposed, particularly for paper, film plastic, and other light-weight or absorbent materials. Paper was reduced by about 21%, plastics were reduced by about 19%, and food waste went up at least 5%. However, contamination analysis is a fairly expensive component of the study. If the correction factors developed as a part of this study could be used by others conducting studies elsewhere, it could significantly reduce expenses or allow more effort in the other studies to be devoted to gathering more field samples..

However, we do not believe that the contamination correction factors developed here would necessarily be able to be applied in other studies. The contamination correction results are strongly influenced by factors specific to the Oregon study, such as the climactic conditions and the way that garbage is stored in Oregon that affect the wetness of the garbage, and the idiosyncrasies of the individual sorters regarding the care to which they separated materials in the field. If a study being conducted is a small study with a limited sample size, then it might make sense to only collect field samples. For large studies conducted elsewhere though, it would make sense to conduct a separate contamination analysis component. The correction factor determined in the Oregon 2002 study could be used to give an idea of what effect conducting a similar contamination analysis would give elsewhere, but there is no reason to expect that the specific correction factors determined in the Oregon study would be applicable elsewhere.

Table C5: Effect on overall confidence intervals of conducting a set amount of extra effort into either field or contamination analysis sampling, based on study results from the year 2000 study

Material	improvement: more field samples	improvement: more detailed samples	Material	improvement: more field samples	improvement: more detailed samples
TOTAL PAPER	1.46%	3.38%	GLASS	3.22%	0.35%
Paper Packaging	1.74%	2.90%	Deposit Beverage Glass	3.27%	0.26%
Cardboard/Brown Bags	2.54%	1.52%	Other Container Glass	3.04%	0.65%
Low Grade Packaging	2.40%	1.75%	Other Clear Bottles	3.36%	0.10%
Bleached Polycoats	3.31%	0.19%	Other Colored Bottles	3.38%	0.07%
Nonrecyc. Packaging	2.71%	1.24%	Clear Container Glass	2.35%	1.84%
Mixed Paper / Materials	2.16%	2.17%	Colored Container Glass	3.11%	0.55%
Other Paper	2.08%	2.30%	Window+Nonrecyc. Glass	3.38%	0.08%
Newspaper	2.99%	0.74%	Flat Window Glass	3.37%	0.10%
Magazines	3.13%	0.50%	Other Nonrecyc. Glass	3.38%	0.08%
Hi Grade Paper	3.09%	0.57%	METALS	3.40%	0.04%
Hardcover Books	3.42%	0.01%	Alum. Beverage Cans	2.17%	2.15%
Low Grade Paper	2.71%	1.22%	Foil & Other Aluminum	2.54%	1.51%
Other Nonrecyc. Paper	1.14%	3.97%	Alum. Foil / Food Trays	1.44%	3.44%
Low-grade Recyc. Paper combined	2.50%	1.57%	Other Aluminum	3.42%	0.00%
Nonrecyclable Paper combined	0.88%	4.43%	Tinned Cans	2.67%	1.29%
TOTAL PLASTICS	1.97%	2.50%	Tin Food Cans	2.59%	1.42%
Plastic Packaging	1.71%	2.95%	Other Tin Cans	3.18%	0.44%
Rigid Plastic Containers*	2.40%	1.75%	Other Metal	3.42%	0.01%
Other Plastic Packaging	1.48%	3.36%	Other Nonferrous Metal	3.42%	0.00%
Other Rigid Packaging	3.05%	0.63%	Other Ferrous Metal	3.42%	0.00%
Plastic Film Pkg Est. 2000	1.18%	3.89%	White Goods	3.42%	0.00%
Plastic Products	2.83%	1.00%	Computer,Brown,Sm. Applianc	3.42%	0.00%
Rigid Plastic Products	3.26%	0.28%	Computers	3.42%	0.00%
Plastic Film Prod. Est. 2000	1.18%	3.89%	Brown Goods	3.42%	0.01%
Mixed Plastic / Materials	3.30%	0.22%	Small Appliances-non elec	3.42%	0.00%
<i>(Film plastic combined)</i>	<i>1.18%</i>	<i>3.89%</i>	Empty Aerosol Cans	2.58%	1.45%
Plastic Film Recyclable	3.10%	0.55%	Used Oil Filters	3.41%	0.02%
Plastic Film Nonrecyclable	0.84%	4.50%	Mixed Metal / Material	3.42%	0.01%
OTHER ORGANICS	2.90%	0.89%	OTHER INORGANICS	3.38%	0.07%
Yard Debris	3.42%	0.00%	Rock / Concrete / Brick	3.41%	0.02%
Wood	3.22%	0.34%	Soil / Sand / Dirt	3.39%	0.06%
Clean lumber & hog fuel	3.02%	0.68%	Pet Litter / Animal Feces	3.34%	0.15%
Painted & Treated lumber	3.41%	0.02%	Gypsum wallboard	3.42%	0.00%
Wood Pallets / Crates	3.42%	0.00%	Fiberglass Insulation	3.38%	0.07%
Wood Furniture	3.42%	0.00%	Other Inorganics	3.37%	0.09%
Other Wood Products	3.32%	0.17%	"MEDICAL WASTES"	3.42%	0.01%
Mixed Wood / Materials	3.42%	0.00%	OTHER HAZARDOUS MATLS	3.31%	0.19%
Food	3.28%	0.25%	Latex Paint	2.70%	1.43%
Tires	3.42%	0.00%	Oil Paints / Thinners	3.41%	0.02%
Rubber Products	3.41%	0.03%	Pesticides / Herbicides	3.42%	0.00%
Disposable Diapers	3.42%	0.00%	Motor Oil	3.15%	0.53%
Carpet	1.55%	3.28%	Fuels (gas/kero/diesel)	3.42%	0.00%
Textiles	2.91%	0.87%	Adhesives / Sealants	3.29%	0.26%
Mixed Textile / Material	2.46%	1.66%	Caustic Cleaners	3.40%	0.05%
Roofing / Tarpaper	3.42%	0.00%	Lead-Acid Batteries	3.42%	0.00%
Furniture	3.42%	0.00%	Dry-cell Batteries	3.30%	0.22%
Other Organics	3.40%	0.05%	Other Hazardous Chemicals	3.25%	0.32%
			TOTAL PACKAGING	2.01%	2.43%
			TOTAL PRODUCTS	2.63%	1.35%
			TOTAL NON-MANUFACTURED	3.31%	0.19%
			Total Organic	1.98%	2.48%
			Total non-organic	3.37%	0.08%

*Variation for rigid plastic containers is adjusted to a sample size of 40, instead of the 151 samples collected.

Table C6. Components of the contamination correction factor for 2002 composition study.

Material***	# Detailed samples**	% Primary Matl clean/dry	% Wet Contam- inents.	% Water& Residue	% Dry Add-backs	Net percent change	Field % composition 2000	Corrected for contamin- ation
HiGrade printing paper	35	89.78%	4.03%	6.19%	5.75%	-4.47%	1.75%	1.67%
Low grade scrap paper	38	81.67%	5.89%	12.44%	3.09%	-15.24%	4.87%	4.13%
Other nonrecyclable paper	38	62.63%	9.27%	28.09%	2.98%	-34.39%	7.21%	4.73%
Newspaper	35	73.66%	1.69%	24.65%	1.31%	-25.02%	2.17%	1.63%
Magazines	29	94.50%	2.51%	2.99%	3.00%	-2.50%	1.27%	1.23%
Hardcover Books	6	100.26%	0.04%	-0.31%	0.00%	0.26%	0.11%	0.11%
Corr. Cardboard+Kraft	38	82.05%	2.06%	15.89%	1.13%	-16.82%	3.23%	2.69%
Rigid Plastic Containers	148	75.63%	15.98%	8.39%	2.31%	-22.06%	1.67%	1.31%
Other rigid packaging	39	92.93%	4.56%	2.51%	3.74%	-3.33%	2.98%	2.88%
Good Film Plastic	34	92.24%	4.86%	2.91%	6.96%	-0.80%	1.02%	1.01%
Bad Film Plastic	36	55.50%	18.00%	26.50%	2.37%	-42.14%	3.85%	2.23%
mixed plastics/materials	34	95.32%	3.37%	1.30%	5.53%	0.85%	1.42%	1.44%
Food (method 1)	34	97.81%	2.13%	0.05%	7.55%	5.36%	15.60%	16.43%
Food (method 2)	34	98.62%	1.38%	0.00%	7.55%	6.16%	15.60%	16.56%
Leaves & grass	23	100.00%	0.00%	0.00%	0.56%	0.56%	5.46%	5.49%
small prunings	8	100.00%	0.00%	0.00%	0.01%	0.01%	0.83%	0.83%
large prunings	1	100.00%	0.00%	0.00%	0.00%	0.00%	0.24%	0.24%
untreated lumber	23	94.02%	3.73%	2.25%	0.07%	-5.91%	2.03%	1.91%
Clean Hogfuel Lumber	9	99.09%	0.56%	0.35%	0.82%	-0.09%	1.42%	1.42%
Painted Lumber	12	99.10%	0.39%	0.50%	3.33%	2.44%	1.14%	1.17%
Chem. Treated lumber	2	99.98%	0.02%	0.00%	1.08%	1.06%	0.39%	0.40%
Other wood products	29	95.59%	1.81%	2.60%	7.09%	2.67%	0.11%	0.11%
pallets, crates	5	100.00%	0.00%	0.00%	0.04%	0.04%	1.19%	1.19%
wood furniture	1	91.43%	0.26%	8.31%	0.00%	-8.57%	0.45%	0.41%
Mixed wood/materials	16	99.84%	0.13%	0.03%	0.08%	-0.08%	1.98%	1.98%
Disp. Diapers	19	100.00%	0.00%	0.00%	0.42%	0.42%	2.08%	2.09%
Carpet	10	97.52%	0.18%	2.30%	0.01%	-2.46%	1.97%	1.93%
Textiles	33	93.00%	0.79%	6.20%	0.36%	-6.64%	1.73%	1.62%
Mixed Textiles/materials	30	98.22%	0.40%	1.38%	1.26%	-0.52%	1.30%	1.29%
Tires	1	100.00%	0.00%	0.00%	0.00%	0.00%	0.12%	0.12%
Other rubber products	30	96.98%	1.53%	1.49%	1.56%	-1.47%	0.64%	0.63%
Other organics	27	100.00%	0.00%	0.00%	6.37%	6.37%	1.30%	1.39%
Deposit Beverage glass	15	98.85%	0.92%	0.24%	0.51%	-0.65%	0.37%	0.37%
Other clear bottles	24	97.12%	2.25%	0.63%	1.67%	-1.21%	0.44%	0.43%
Other colored bottles	8	97.55%	1.61%	0.84%	0.15%	-2.30%	0.28%	0.27%
Clear container glass	23	87.87%	10.58%	1.55%	9.03%	-3.11%	0.43%	0.41%
Flat window glass	4	98.38%	1.50%	0.12%	1.01%	-0.61%	0.27%	0.27%
Compact fluorescents	2	100.00%	0.00%	0.00%	0.14%	0.14%	0.01%	0.01%
Other glass	22	98.97%	0.92%	0.12%	4.45%	3.41%	0.47%	0.49%

* For food, method 1 treats food like other materials. Method 2 assumes that the water and residue from the food waste contaminants is all food waste adhering to the contaminants, and so counts this water and residue as food.

** For materials with fewer than 10 detailed samples, there are probably too few samples to provide meaningful results. 90% confidence intervals for the contamination correction factor are shown in Table A2 of Appendix A.

Table C6 continued on next page

Table C6 continued

Material***	# Detailed samples**	% Primary Matl clean/dry	% Wet Contam-inents.	% Water& Residue	% Dry Add-backs	Net percent change	Field % composition 2000	Corrected for contamination
Alum. beverage cans	30	88.79%	5.12%	6.09%	0.46%	-10.75%	0.13%	0.12%
Alum foil/food trays	31	49.09%	25.88%	25.03%	7.60%	-43.31%	0.17%	0.10%
Other aluminum	5	100.00%	0.00%	0.00%	0.60%	0.60%	0.07%	0.07%
Tinned food cans	31	87.97%	7.16%	4.87%	3.98%	-8.05%	0.79%	0.73%
Other tinned cans	7	85.11%	10.91%	3.99%	2.25%	-12.64%	0.09%	0.08%
Other ferrous metals	31	99.84%	0.15%	0.00%	0.82%	0.67%	1.74%	1.75%
Nonferrous metals	11	98.93%	0.58%	0.49%	5.39%	4.32%	0.06%	0.06%
Mixed metals/materials	29	99.09%	0.61%	0.30%	0.28%	-0.63%	2.32%	2.30%
Empty Aerosol cans	17	97.65%	1.66%	0.70%	0.00%	-2.35%	0.11%	0.11%
Computers and parts	1	100.00%	0.00%	0.00%	0.00%	0.00%	0.32%	0.32%
Computer CRT Monitors	1	100.00%	0.00%	0.00%	0.00%	0.00%	0.24%	0.24%
TVs + Other CRTs	1	100.00%	0.00%	0.00%	0.00%	0.00%	0.43%	0.43%
Other electronics (radios, microwaves)	7	99.96%	0.04%	0.00%	0.00%	-0.04%	0.28%	0.28%
Non-electronic small appliances	9	99.95%	0.03%	0.02%	0.00%	-0.05%	0.64%	0.64%
White goods	1	100.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.05%
Animal litter/feces	14	100.00%	0.00%	0.00%	1.39%	1.39%	1.67%	1.69%
Soil, sand, dirt	4	100.00%	0.00%	0.00%	5.11%	5.11%	1.05%	1.10%
Rock, concrete bricks	13	100.00%	0.00%	0.00%	0.32%	0.32%	2.57%	2.58%
Old Gypsum wallboard	6	99.09%	0.36%	0.55%	0.21%	-0.70%	2.19%	2.18%
New Gypsum Wallboard	2	100.00%	0.00%	0.00%	0.20%	0.20%	2.45%	2.46%
Roofing/Tarpaper	6	100.00%	0.00%	0.00%	0.06%	0.05%	3.81%	3.81%
Fiberglass insulation	2	97.29%	1.12%	1.59%	0.13%	-2.58%	0.60%	0.59%
Furniture	4	100.00%	0.00%	0.00%	0.00%	0.00%	1.27%	1.27%
Other inorganics	26	98.65%	0.11%	1.24%	5.03%	3.68%	2.25%	2.33%
Medical wastes	4	100.00%	0.00%	0.00%	0.63%	0.63%	0.09%	0.09%
Latex paint	3	100.00%	0.00%	0.00%	20.45%	20.45%	0.09%	0.11%
Oil-based paint/thinner	1	100.00%	0.00%	0.00%	4.52%	4.52%	0.06%	0.06%
Pesticides/herbicides	2	100.00%	0.00%	0.00%	1.58%	1.58%	0.02%	0.02%
Motor oil	1	100.00%	0.00%	0.00%	39.42%	39.42%	0.02%	0.03%
Oil Filters	1	100.00%	0.00%	0.00%	0.00%	0.00%	0.04%	0.04%
Adhesives/sealants	3	100.00%	0.00%	0.00%	3.22%	3.22%	0.05%	0.06%
Caustic cleaners	1	100.00%	0.00%	0.00%	6.47%	6.47%	0.02%	0.02%
Dry-cell batteries	19	99.99%	0.01%	0.00%	0.44%	0.43%	0.08%	0.08%
Other chemicals	1	100.00%	0.00%	0.00%	3.87%	3.87%	0.22%	0.22%

** For materials with fewer than 10 detailed samples, there are probably too few samples to provide meaningful results. 90% confidence intervals for the contamination correction factor are shown in Table A2 of Appendix A.

Five material categories found in field sorting in 2002 did not appear in any contamination analysis samples. These include colored glass jars, stumps, fuels, lead-acid batteries, and fluorescent light tubes. In addition, one material category, asbestos, was not identified in any field or contamination analysis sample in 2002.

Appendix C: Contamination Analysis Methodology for 2002 Study. Page C13

draft date 3/29/04

Table C7. Contamination Correction Factors for Four Oregon Composition Studies

Material	2002	2002		2002		1998	1994-95
		90% Confidence Interval:	2000	90% Confidence Interval:	2000		
TOTAL PAPER	-21.44%	(-24.56 to -18.03%)	-13.42%	(-17.70 to -10.30%)	-17.88%	-18.43%	
Paper Packaging	-22.81%	(-26.57 to -19.00%)	-14.79%	(-19.76 to -11.13%)	-14.82%	-15.87%	
Cardboard/Brown Bags	-16.82%	(-23.92 to -10.34%)	-12.06%	(-17.21 to -8.24%)	-15.88%	-16.27%	
Low Grade Packaging	-15.24%	(-19.34 to -11.56%)	-12.79%	(-16.44 to -9.38%)	-19.50%	-17.66%	
Bleached Polycoats	-15.24%	(-19.34 to -11.56%)	-12.79%	(-16.44 to -9.38%)	-21.43%	-14.96%	
Nonrecyc. Packaging	-34.39%	(-37.81 to -30.56%)	-19.84%	(-30.67 to -12.75%)	-17.03%	-21.75%	
Mixed Paper / Materials	-34.39%	(-37.81 to -30.56%)	-19.84%	(-30.67 to -12.75%)	-0.18%	0.37%	
Other Paper	-20.35%	(-24.08 to -16.35%)	-12.46%	(-16.49 to -9.54%)	-20.85%	-20.67%	
Newspaper	-25.02%	(-39.25 to -10.35%)	-13.12%	(-16.61 to -10.09%)	-15.06%	-15.87%	
Magazines	-2.50%	(-6.02 to 0.46%)	-0.32%	(-2.74 to 2.85%)	-7.93%	9.68%	
Hi Grade Paper	-4.47%	(-8.25 to -1.18%)	-5.25%	(-8.95 to -2.11%)	-4.48%	18.08%	
Hardcover Books	0.26%	(-0.95 to 0.43%)	-0.08%	(-3.42 to 0.00%)	0.00%	0.99%	
Low Grade Paper	-15.24%	(-19.34 to -11.56%)	-12.79%	(-16.44 to -9.38%)	-19.23%	-18.66%	
Other Nonrecyc. Paper	-34.39%	(-37.81 to -30.56%)	-19.84%	(-30.67 to -12.75%)	-40.63%	-49.32%	
<i>Low-gr. Recyc. Paper combined</i>	<i>-14.90%</i>	<i>(-18.91 to -11.27%)</i>	<i>-12.18%</i>	<i>(-15.77 to -8.98%)</i>	<i>-19.02%</i>	<i>-17.34%</i>	
<i>Nonrecyc. Paper combined</i>	<i>-34.39%</i>	<i>(-37.81 to -30.56%)</i>	<i>-19.84%</i>	<i>(-30.67 to -12.75%)</i>	<i>-24.53%</i>	<i>-34.97%</i>	
TOTAL PLASTICS	-19.07%	(-21.64 to -17.09%)	-17.85%	(-21.04 to -14.62%)	-15.99%	-14.65%	
Plastic Packaging	-25.75%	(-27.76 to -23.76%)	-22.84%	(-26.33 to -19.09%)	-19.38%	-14.32%	
Rigid Plastic Containers	-22.06%	(-23.79 to -20.42%)	-18.99%	(-21.24 to -16.90%)	-18.20%	-12.88%	
Other Plastic Packaging	-27.30%	(-30.06 to -24.62%)	-24.41%	(-29.12 to -19.65%)	-19.78%	-14.93%	
Other Rigid Packaging	-3.33%	(-7.37 to -0.95%)	-4.24%	(-7.76 to -1.58%)	-3.29%	-9.91%	
Plastic Film Pkg Est. 2000	-33.48%	(-36.37 to -30.27%)	-30.94%	(-36.63 to -25.21%)	-24.26%	-16.37%	
Plastic Products	-11.94%	(-15.53 to -9.68%)	-12.02%	(-15.10 to -9.26%)	-12.46%	-15.00%	
Rigid Plastic Products	-3.33%	(-7.37 to -0.95%)	-4.24%	(-7.76 to -1.58%)	-2.69%	-7.02%	
Plastic Film Prod. Est. 2000	-33.48%	(-36.37 to -30.27%)	-30.94%	(-36.63 to -25.21%)	-29.81%	-32.91%	
Mixed Plastic / Materials	0.85%	(-5.32 to 3.65%)	0.39%	(-2.48 to 2.68%)	-8.05%	4.04%	
<i>(Film plastic combined)</i>	<i>-33.48%</i>	<i>(-36.37 to -30.27%)</i>	<i>-30.94%</i>	<i>(-36.63 to -25.21%)</i>	<i>-26.21%</i>	<i>-23.33%</i>	
Plastic Film Recyclable	-0.80%	(-6.13 to 4.82%)	-8.83%	(-14.75 to -4.41%)			
Plastic Film Nonrecyclable	-42.14%	(-45.32 to -38.46%)	-36.87%	(-43.24 to -30.14%)			
OTHER ORGANICS	1.45%	(0.76 to 1.85%)	-0.97%	(-2.19 to 0.51%)	-1.57%	1.29%	
Yard Debris	0.46%	(0.36 to 0.68%)	0.67%	(0.43 to 1.04%)	0.55%	1.73%	
Leaves / Grass	0.56%	(0.43 to 0.83%)	0.90%	(0.58 to 1.38%)	0.59%	2.33%	
Small Prunings under 2"	0.01%	(0.00 to 0.03%)	0.05%	(0.01 to 0.12%)	0.54%	-1.29%	
Large Prunings over 2"	0.00%	(0.00 to 0.00%)	0.00%	(0.00 to 0.00%)	0.00%	0.00%	
Stumps	0.00%	(0.00 to 0.00%)	0.00%	(0.00 to 0.00%)	0.00%	0.00%	
Wood	-1.45%	(-2.78 to -0.74%)	-4.74%	(-7.58 to -2.05%)	-1.23%	0.22%	
Clean lumber & hog fuel	-3.51%	(-7.31 to -1.25%)	-8.80%	(-14.26 to -3.60%)	-2.39%	0.06%	
Untreated Lumber	-5.91%	(-10.57 to -1.85%)	-8.09%	(-15.67 to -2.91%)			
Clean HogFuel Lumber	-0.09%	(-5.21 to 1.28%)	-10.31%	(-12.37 to -2.33%)			
Painted & Treated lumber	2.08%	(-1.83 to 7.13%)	-0.98%	(-2.45 to -0.17%)	-0.38%	0.01%	
Painted Lumber	2.44%	(-2.78 to 9.19%)	-1.42%	(-3.63 to -0.24%)			
Chemically-treated Lumber	1.06%	(-0.09 to 3.34%)	0.00%	(0.00 to 0.00%)			
Wood Pallets / Crates	0.04%	(0.00 to 0.09%)	0.01%	(0.00 to 0.03%)	-0.38%	0.00%	
Wood Furniture	-8.57%	(-8.57 to -8.57%)	0.00%	(0.00 to 0.00%)	-0.38%	0.00%	
Other Wood Products	2.67%	(-6.89 to 9.96%)	-1.12%	(-7.41 to 1.03%)	-0.38%	2.21%	
Mixed Wood / Materials	-0.08%	(-0.71 to 0.64%)	0.40%	(0.00 to 1.30%)	-0.38%	0.03%	
Food	5.36%	(4.43 to 6.50%)	3.34%	(2.10 to 4.81%)	-1.40%	2.75%	
Tires	0.00%	(0.00 to 0.00%)	0.00%	(0.00 to 0.00%)	0.00%	0.00%	
Rubber Products	-1.47%	(-9.07 to 0.69%)	-2.12%	(-4.45 to -0.33%)	0.00%	1.55%	
Disposable Diapers	0.42%	(0.09 to 0.85%)	0.00%	(0.00 to 0.00%)	0.00%	3.41%	
Carpet	-2.46%	(-10.52 to -0.47%)	-18.11%	(-34.16 to -0.19%)	-3.00%	-5.00%	
Textiles + mixed	-4.02%	(-9.47 to -1.68%)	-11.95%	(-18.37 to -7.18%)	-8.75%	-8.37%	
Textiles	-6.64%	(-14.33 to -3.07%)	-10.95%	(-17.14 to -6.06%)	-14.93%	-12.07%	
Mixed Textile / Material	-0.52%	(-3.57 to 0.70%)	-14.14%	(-24.11 to -6.43%)	0.00%	0.54%	
Roofing / Tarpaper	0.05%	(-1.81 to 0.14%)	0.00%	(0.00 to 0.00%)	-0.85%	0.17%	
Furniture	0.00%	(0.00 to 0.00%)	0.00%	(0.00 to 0.00%)	0.00%	0.00%	
Other Organics	6.37%	(4.31 to 8.90%)	3.75%	(1.16 to 6.12%)	0.00%	18.59%	

Appendix C: Contamination Analysis Methodology for 2002 Study. Page C14

draft date 3/29/04

Continued Table C7. Contamination Correction Factors for Four Oregon Composition Studies
(page 2 of 2)

Material	2002		2002		1998	1994-95
	2002	90% Confidence Interval:	2000	90% Confidence Interval:		
GLASS	-0.55%	(-2.24 to 0.76%)	-0.20%	(-2.18 to 2.01%)	1.88%	12.79%
Deposit Beverage Glass	-0.65%	(-1.70 to 0.22%)	0.76%	(-1.96 to 4.76%)	0.00%	2.90%
Other Container Glass	-2.10%	(-5.28 to 0.87%)	-0.43%	(-3.13 to 3.02%)	3.72%	17.72%
Other Clear Bottles	-1.21%	(-3.10 to 0.78%)	-2.72%	(-4.55 to -1.60%)	0.19%	1.31%
Other Colored Bottles	-2.30%	(-4.08 to -0.97%)	0.47%	(-1.16 to 3.20%)	-0.64%	-2.22%
Clear Container Glass	-3.11%	(-11.18 to 4.91%)	1.29%	(-5.42 to 10.01%)	10.11%	48.08%
Colored Container Glass	0.00%	(0.00 to 0.00%)	-0.48%	(-8.18 to 9.74%)	-4.74%	20.93%
Window+Other. Glass	1.90%	(-3.11 to 6.87%)	-0.09%	(-3.70 to 1.26%)	0.00%	2.43%
Flat Window Glass	-0.61%	(-9.16 to 4.52%)	-0.91%	(-6.87 to 1.53%)	0.00%	0.01%
Other Nonrecyc. Glass	3.41%	(-3.45 to 10.05%)	0.16%	(-4.06 to 1.71%)	0.00%	4.41%
METALS	-2.23%	(-2.83 to -1.65%)	-2.03%	(-2.71 to -1.46%)	-2.15%	-2.41%
Alum. Beverage Cans	-10.75%	(-12.65 to -9.06%)	-13.21%	(-19.13 to -5.65%)	-19.87%	-3.14%
Alum. Foil / Food Trays	-43.31%	(-47.63 to -39.53%)	-44.85%	(-50.60 to -37.85%)	-31.90%	-22.11%
Other Aluminum	0.60%	(0.09 to 1.49%)	0.05%	(0.00 to 0.17%)	-0.22%	1.72%
Tinned Cans	-8.53%	(-11.18 to -5.83%)	-8.79%	(-13.22 to -4.72%)	-7.23%	-11.43%
Tin Food Cans	-8.05%	(-10.92 to -5.34%)	-8.87%	(-13.48 to -4.45%)	-9.15%	-11.43%
Other Tin Cans	-12.64%	(-18.49 to -1.80%)	-8.34%	(-19.39 to -0.68%)	-0.22%	
Other Metal	-0.06%	(-0.44 to 0.27%)	0.08%	(-0.27 to 0.28%)	-0.20%	0.48%
Other Nonferrous Metal	4.32%	(-0.59 to 14.20%)	0.49%	(-0.41 to 0.80%)	-0.22%	1.58%
Other Ferrous Metal	0.67%	(0.20 to 1.25%)	0.35%	(0.12 to 0.61%)	-0.22%	0.43%
White Goods	0.00%	(0.00 to 0.00%)	0.00%	(0.00 to 0.00%)	-0.22%	0.00%
Computer,Brown,Sm. Applianc	-0.02%	(-0.07 to 0.00%)	-0.29%	(-1.02 to -0.04%)		
Computers & Monitors	0.00%	(0.00 to 0.00%)	-0.01%	(-0.03 to 0.00%)	0.00%	
TVs, CRTs& Brown Goods	-0.01%	(-0.07 to 0.00%)	-0.66%	(-2.35 to -0.08%)	0.00%	
Small Appliances-non elec	-0.05%	(-0.13 to 0.00%)	0.00%	(0.00 to 0.00%)	-0.22%	0.00%
Empty Aerosol Cans	-2.35%	(-4.73 to -0.89%)	-0.12%	(-8.44 to 7.53%)	-0.22%	0.08%
Mixed Metal / Material	-0.63%	(-1.62 to 0.13%)	0.12%	(-0.40 to 0.40%)	-0.22%	0.72%
OTHER INORGANICS	1.11%	(-2.53 to 2.01%)	1.82%	(0.54 to 2.65%)	0.76%	2.22%
Rock / Concrete / Brick	0.32%	(0.10 to 0.94%)	1.03%	(-0.21 to 2.48%)	0.90%	0.10%
Soil / Sand / Dirt	5.11%	(3.35 to 8.33%)	11.58%	(8.44 to 15.84%)	0.90%	6.65%
Pet Litter / Animal Feces	1.39%	(0.63 to 2.39%)	3.91%	(1.54 to 6.93%)	0.00%	2.64%
Gypsum wallboard	-0.22%	(-4.71 to 0.25%)	0.01%	(-0.17 to 0.05%)	0.90%	0.46%
Gypsum Wallboard OLD	-0.70%	(-9.73 to 0.17%)	0.01%	(-0.40 to 0.07%)	0.90%	
Gypsum Wallboard NEW	0.20%	(0.00 to 0.58%)	0.02%	(0.00 to 0.05%)	0.90%	
Fiberglass Insulation	-2.58%	(-50.79 to -1.29%)	0.07%	(-8.83 to 0.82%)	0.90%	0.19%
Other Inorganics	3.68%	(-1.86 to 8.60%)	-0.32%	(-5.34 to 0.47%)	0.90%	4.18%
"MEDICAL WASTES"	0.63%	(0.00 to 2.04%)	1.63%	(0.49 to 3.45%)	0.00%	1.48%
OTHER HAZARDOUS MATLs	6.10%	(2.70 to 11.45%)	6.52%	(2.71 to 11.76%)	-0.03%	18.09%
Used Oil Filters	0.00%	(0.00 to 0.00%)	-1.67%	(-5.06 to 0.00%)	-0.22%	
Latex Paint	20.45%	(2.65 to 51.26%)	30.40%	(-12.75 to 78.53%)	0.00%	3.72%
Oil Paints / Thinners	4.52%	(0.47 to 10.97%)	4.37%	(0.00 to 8.25%)	0.00%	121.08%
Pesticides / Herbicides	1.58%	(0.00 to 4.84%)	0.31%	(0.00 to 0.66%)	0.00%	0.00%
Motor Oil	39.42%	(23.17 to 60.51%)	26.87%	(10.62 to 54.19%)	0.00%	10.12%
Fuels (gas/kero/diesel)	0.00%	(0.00 to 0.00%)	0.00%	(0.00 to 0.00%)	0.00%	0.00%
Adhesives / Sealants	3.22%	(0.92 to 8.32%)	8.75%	(0.96 to 24.19%)	0.00%	1.44%
Caustic Cleaners	6.47%	(3.20 to 10.63%)	9.54%	(3.95 to 17.44%)	0.00%	0.00%
Lead-Acid Batteries	0.00%	(0.00 to 0.00%)	0.00%	(0.00 to 0.00%)	0.00%	0.00%
Dry-cell Batteries	0.43%	(-0.01 to 1.25%)	0.77%	(-1.09 to 6.79%)	0.00%	8.81%
Asbestos	0.00%	(0.00 to 0.00%)	0.00%	(0.00 to 0.00%)	0.00%	0.00%
Other Hazardous Chemicals	3.87%	(0.22 to 9.38%)	9.37%	(0.93 to 23.42%)	0.00%	22.10%
TOTAL PACKAGING	-19.81%	(-22.00 to -17.53%)	-14.53%	(-17.56 to -12.07%)	-13.31%	-11.52%
TOTAL PRODUCTS	-6.03%	(-7.62 to -5.17%)	-6.26%	(-7.84 to -4.88%)	-7.23%	-7.86%
TOTAL NON-MANUFACTURED	3.60%	(3.14 to 4.25%)	2.91%	(2.11 to 3.86%)	-0.48%	3.11%
Total Organic	-7.53%	(-8.78 to -6.47%)	-6.78%	(-8.19 to -5.55%)	-8.46%	-7.58%
Total non-organic	-0.16%	(-2.17 to 0.35%)	0.14%	(-0.60 to 0.66%)	-0.13%	1.89%
compostable	-6.80%	(-8.11 to -5.35%)	-4.93%	(-6.42 to -3.67%)	-8.43%	-7.68%
compost-target	-1.75%	(-2.40 to -0.97%)	-1.46%	(-2.83 to -0.36%)	-5.36%	-5.13%

Appendix D. Material Categories for the 2002 waste composition study

Field Sorting Categories

The individual material categories as sorted and weighed in the field are underlined, are preceded by numbers below, and are followed by descriptions. Groups of categories as used throughout this report are shown in bold, and are followed by numbers in parentheses that indicate the individual material categories included in the group category.

PAPER

Paper Packaging (1-5)

1. Corrugated cardboard and kraft paper (OCC). Kraft linerboard and containerboard cartons and shipping boxes with corrugated paper medium (unwaxed). This category also includes Kraft (brown) paper bags. Excludes waxed and plastic-coated cardboard, solid boxboard, multi-walled bags that are not pure unbleached kraft.
2. Low-grade packaging paper. Other low-grade recyclable papers used in packaging, includes chipboard and other solid boxboard (not poly-coated), bags (without poly liners and not pure unbleached kraft), clothing forms, egg cartons (molded pulp), boxes with small plastic windows.
3. Bleached boxboard. Milk, juice cartons & white freezer/ refrigerator boxes. Poly-coated bleached paperboard used for milk, ice cream, juice (including aseptic packaging), frozen TV dinners, and many other frozen food boxes. Boxes are printed or unprinted white fiber, but currently have limited markets due to polyethylene coating. Does not include uncoated paperboard (either bleached or unbleached), as uncoated boxboard is included in "other recyclable packaging" below. Does not include cups or non-food poly-coated packages.
4. Non-recyclable packaging paper. Paper for which no significant recycling opportunities currently exist in Oregon, including waxed cardboard, poly-lined chipboard, foil-lined papers, Christmas wrapping paper, and paper cups, plates, and other paper containers used for takeout food.
5. Mixed paper/other materials. Includes juice cans, oil cans, paper with thick foil laminates or large thick plastic windows.

Other Paper (6-11) (includes printing, writing, and other non-packaging paper)

6. Newspaper (ONP). Printed ground-wood newsprint (minimally bleached fiber); referred to as #1 news. This category also includes glossy paper typically used in newspaper insert advertisements, if believed to be distributed with newspapers.
7. Magazines. Includes glossy publications such as some catalogs, but excludes newspaper glossy inserts
8. Hi-Grade office/printing/writing paper (uncoated high-grades). Printing, writing and computer papers, including mainly thermo-chemical pulps. Both virgin pulp substitutes and high-grade de-ink fibers are included. This category is composed of high-grade paper, which includes white ledger, colored ledger, computer printouts, computer tab cards, bond, copy machine, and carbonless paper. Excludes glossy coated paper such as magazines and pure groundwood publications such as catalogs, and glue-bound publications.
9. Hard-covered books. Books with hard covers, and excluding paperbacks..
10. Other low-grade recyclable printing paper. Phone books, junk mail (including stray sheets of ledger-grade paper commonly included in junk mail), used envelopes other material with sticky labels, construction paper, blueprint and thermal copy & fax paper, bright-dyed paper (fiesta or neon colors), paperback books, uncoated (non-glossy) groundwood catalogues (glue bindings).
11. Other non-recyclable paper. Printing or other non-packaging paper not included above that is not easily recyclable in the United States. Includes paper towels and tissue, carbon paper, photographs, and paper normally soiled through use (paper plates and cups for home use).

PLASTICS (12-17)

12. "Recyclable" polyethylene film plastic. Plastic grocery bags, retail bags, newspaper bags, dry cleaner bags, pallet-wrap, shrink wrap, clear and black polyethylene plastic sheeting, hay sleeves and silage bags, fertilizer, peat, and feed bags from nurseries/agricultural operations, furniture and mattress wrap, bubble wrap, woven lumber wrap, roofing material wrap, insulation wrap, commercial bags and liners, commercial parts packaging, and building wrap. Excludes any plastic film that is not polyethylene or other polyolefin, any plastic film that is laminated to other materials (tape/labels are OK), any bag used as a garbage bag (can liners and tied-off garbage bags), bags that are contaminated with food and other sticky/contaminating materials on the inside, food and household product packaging such as frozen vegetable bags, diaper packaging, bread bags, ziplock and similar household use bags, saran wrap, and plastic sheeting used for ground cloths or paint masking, if contaminated with paint.
 13. Other film plastic. All other plastic bags and flexible plastic film including garbage bags, plastic strapping, shower curtains, and other flexible plastic items. Any plastic bag used as a garbage bag goes here.
 14. Rigid plastic containers. Plastic packages of finite shape with a capacity of from eight ounces to five gallons. Does not include lids, unless the lid is attached or is itself a rigid plastic container. Includes plastic cups used commercially to package food, but not plastic cups sold as a product for home or office use (usually unmarked - included in "rigid plastic products").
 15. Other rigid plastic packaging. Includes expanded polystyrene packaging and food trays (holding less than 8 oz), urethane foam packaging, containers larger than 5 gallons, plastic bottle and container lids and lids from glass, metal, or paper containers. Amended in 2000 to include "small rigid plastic containers" - plastic containers such as yogurt cups that are under 8 ounces in size.
 16. Rigid plastic products. Dishware and utensils, including expanded polystyrene cups and plates when originally sold for home use (non-packaging), plastic household items, rigid vinyl products, all-plastic furniture, and toys. Includes thermoset plastic products and "fiberglass" (mainly plastic) boat parts, corrugated roofing, and similar products. Also includes polyurethane foam products, including urethane foam carpet padding.
 17. Mixed plastics/materials. Items whose predominant material is plastic, but is combined with other material, such as kitchen ware, toys, plastic pens, and car parts, with metal and wood components, vinyl and similar floor tiles and coverings that have canvas, paper, or other types of backing material or significant non-plastic components, etc.
- (see note at end regarding film plastic packaging and film plastic products)

OTHER ORGANIC WASTES. "Organic" used in the "carbon-containing" (or burnable) sense.

Yard Debris. (18-21) Natural vegetative material including the following:

18. Leaves and grass. Naturally occurring vegetative material and other fine organic waste from park, lawn and garden maintenance. Typically leaves, grass clippings, and herbaceous weeds. Excludes woody material greater than 1/4-inch diameter. Material can be home-composted without chipping.
19. Small prunings less than 2" diameter. Naturally occurring woody material from trees, plants, and shrubs. Could be chipped with a small chipper for home composting.
20. Large prunings more than 2" in diameter. This category is composed of trees and large branches greater than 2" diameter and small stumps/roots less than 1' in diameter and less than 100 pounds. This material cannot easily be home-composted due to its size, weight and composition.
21. Stumps. Stumps too large to be ground by most commercial composters due to size, without use of special stump-splitting devices. (greater than 1' diameter or 100 pounds).

Wood. (22-29) Manufactured wooden lumber and other items (excluding sawdust) including the following:

22. Untreated lumber. Unfinished or unpainted dimensional lumber or wood, including plywood and unpainted oriented strandboard used for construction or resulting from building demolition. Excludes cedar shakes, shingles.
23. Clean "hogged fuel" wood. Includes particleboard, medium density fiberboard, any plywood with a fiber/resin overlay (such as is common for concrete forms) cedar shakes and shingles and other cedar lumber, compressed sawdust waferboard, masonite (high-density fiberboard).
24. Painted lumber. Includes any lumber that is painted or primed, excluding furniture and mixed wood/materials (split from chemically-treated lumber in 2000).

Appendix D: Material Categories for 2002 Waste Composition Study Page D3

25. Chemically treated lumber. Pressure-treated or creosoted lumber or wood.
26. Wood pallets and crates and similar packaging lumber. Dimension lumber material used in pallets and crates. Also includes wood/wire crates with thin slats, if not mixed with plastic and other materials.
27. Wood furniture. Includes desks, chairs, bureaus, and other furniture items made from wood.
28. Other wood products. Includes pencils, coat hangers, and other objects made of wood that are not used for packaging or construction or as furniture.
29. Mixed wood/materials. Mostly wood items combined with plastic, metal, or other materials. Excludes items that are better included in another category.
30. Food waste. Food trimmings, coffee grounds, bones, spoiled or otherwise discarded food.
31. Tires. Whole or partial rubber tires casings, including bicycle tires.
32. Other rubber. Includes toys, inner tubes, rubber mats, rubber carpet padding.
33. Disposable diapers. Disposable diapers, including fecal materials contained within. Cloth diapers are to be sorted under textiles.
34. Carpet and rugs. Includes fiber rug pads but does not include polyurethane foam carpet pad (rigid plastic product) or rubber padding (other rubber).
35. Other textiles. Fabric materials including natural and man-made textile materials such as cottons, wools, silks, woven nylon, rayon, polyesters, and other materials. This category includes clothing, rags, curtains, and other fabric materials.
36. Mixed textiles/materials. Include textiles that have significant amounts of non-textile components, plus shoes, belts, and similar clothing articles that may have insignificant amount of textile material.
37. Asphalt shingles and tar roofing paper. Includes all roofing that contains significant amounts of asphalt. Starting the second quarter of 2002, this category was split into two categories: recyclable asphalt roofing and non-recyclable asphalt roofing. "Recyclable" asphalt roofing includes tarpaper and regular 3-tab roofing architectural-grade composition shingles, and roll-roofing. "Nonrecyclable" asphalt roofing includes such things as built-up asphalt roofing commonly used on flat-roofed commercial buildings.
38. Furniture and furnishings (mixed materials). This includes reusable and non-reusable household items that are large such as chairs, tables, and mattresses. Excludes furniture made from single materials (all metal, all plastic, all wood)
39. Other organics. Carbon-containing wastes not otherwise categorized, including organic fines and other non-sortable combustibles, sawdust, cigarette butts, hair, wax, linoleum, dryer lint, vacuum bags, charcoal. Amended in 2000 to include "other disposable hygiene products" and "dead animals."

GLASS (40-46)

40. Deposit beverage glass (beer, soft drink, mineral water).

Other Container Glass (41-44)

41. Clear non-deposit beverage glass. All clear non-deposit beverage glass, including broken glass identified as non-deposit beverage glass. Included are wine bottles, wine cooler bottles, liquor bottles, juice bottles, and other non-deposit glass beverage containers.
42. Colored non-deposit beverage glass. Same as 41, except includes green, brown, and other colored glass.
43. Other clear container glass. Includes clear (unpigmented glass jars, ketchup/mustard bottles, baby food jars, pickle jars and mayonnaise jars, medicine and other non-beverage bottles, and other clear container glass that is not a beverage bottle.
44. Other colored container glass. Same as 43, but for green, brown, and other colored glass.

Window and Other Glass (45-48)

45. Flat window glass (not including mirrors).
46. Fluorescent light tubes. Includes just individual separate light tubes and not fluorescent light fixtures. This is a new category as of 2002. Formerly this material was included under "other glass".
47. Compact fluorescent lights. This includes small fluorescent fixtures that are sold as complete units, with both the ballast and tube attached. Does not include regular (full-sized) ballasts commonly used with full-sized fluorescent tubes.

Appendix D: Material Categories for 2002 Waste Composition Study Page D4

48. Other glass. This category includes products such as light bulbs, glass plates and cups, auto and cooking ware glass and mirrors, but excluding ceramics. This glass is not accepted by glass beverage container manufacturers for recycling, although some can be recycled into other uses. Fiberglass insulation is a separate category in the "other inorganics" group instead of here in the glass group.

METALS (and appliances)

49. Aluminum beverage cans. Used aluminum beverage cans (separate count of refundable vs no-deposit).
50. Other aluminum containers and foil. Aluminum pet food cans, foil-formed trays/containers, and foil
51. Other aluminum. All other aluminum materials including furniture, house siding, cookware, and scrap.

Tinned cans (52-53)

52. Tinned food cans. Predominantly steel cans (some with tin or enamel coatings) used to hold food items. Includes soup cans, vegetable cans, food tins etc.
53. Other "tinned" cans. Same as above, except originally made to hold non-food items such as paint thinner. Aerosol cans are listed separately below.

Other metal (54-63)

54. Other non-ferrous metals. Metals that are not materials derived from iron, including copper, brass, bronze, lead, pewter, zinc, "stainless steel", and other metals to which a magnet will not adhere. Metals that are significantly contaminated are not included.
55. Other ferrous metals. Ferrous and alloyed ferrous scrap materials derived from iron, including household, industrial and commercial products not containing significant contaminants. This category includes scrap iron and steel to which a magnet adheres. Includes all-steel furniture such as bed frames. Does not include appliances, food cans, or other ferrous metal items listed elsewhere. (separate estimate for percent recoverable post-collection).
56. White goods. This category is composed of discarded stoves, washer, dryers, refrigerators and other large household appliances.

Computers, Brown Goods, Other Small Appliances (55-61)

57. Computers CRT Monitors. The "Computers" category from 1998 and 2000 was split in 2002 into this and the following category. The category includes only cathode ray tube type computer monitors, and does not include liquid crystal or other flat monitors or computer laptops.
58. Other Computer equipment. Includes computers and their related components (hardware), such as printers, modems, scanners, flat monitors, laptop computers, and their parts. Excludes cathode ray tube type monitors
59. TVs and other cathode ray tube electronics. This and the following category was split in 2002 from the "Other brown goods" category used in the 1998 and 2000 waste composition study. Does not include computer monitors.
60. Other "brown goods". Other small appliances with significant electronic components, such as radios, microwaves, stereos, and telephones. Does not include computer equipment or any electronics consisting primarily of cathode ray tubes.
61. Non-electronic small appliances. Includes fans, hair blowers, can openers, kitchen blenders. These may contain small electronic components such as digital readouts and controls, and often will have electric motors, but do not have significant amounts of circuit-board electronics.
62. Empty or non-hazardous aerosol cans. Note - aerosol cans still containing hazardous materials such as paint are included in the "hazardous materials" categories.
63. Mixed metals/materials. Other composite metal products and metals combined with other materials, such as small gas engines, electrical motors, umbrellas, insulated wires.

OTHER INORGANICS

64. Rocks/concrete/bricks. Generally particle sizes of 1 cm and greater.
65. Soil, dirt, sod.
66. Pet litter, animal feces.

Gypsum wallboard (67,68)

67. New gypsum wallboard. Unpainted scrap and excess gypsum wallboard from new construction or remodeling.

Appendix D: Material Categories for 2002 Waste Composition Study Page D5

68. Old gypsum wallboard. Old painted or other demolition gypsum wallboard.
69. Fiberglass insulation.
70. Other inorganics, including plaster, ash, ceramics, china, and porcelain. Does not include items that contain significant amounts of carbon.

71. "MEDICAL WASTE". Includes syringes, tubing, gauze, blood-containing, and similar materials. Bags and containers with medical waste are not sorted further. Thus, other non-medical waste is weighed as medical waste if it is in a bag or container with other apparent medical waste.

HAZARDOUS MATERIALS

72. Latex paint.
73. Oil-based paints and oil thinner.
74. Pesticides/herbicides.
75. Used oil filters.
76. Motor oil
77. Fuels (diesel, gasoline, kerosene).
78. Adhesives/sealants.
79. Caustic cleaners.
80. Lead-acid batteries. Includes most car batteries as well as smaller lead-acid batteries sometimes used in camcorders and other electronic equipment.
81. Dry-cell batteries. Includes regular alkaline, nicad, lithium, and similar batteries excluding lead-acid batteries.
82. Asbestos.
83. Other hazardous chemicals. Includes only chemicals that show hazardous characteristics other than those specified above. Does not include non-hazardous chemicals such as detergents, vegetable oils, or non-hazardous inorganic salts.

Note - in tables in the body of the report and in Appendix A, we break out plastic film and plastics as a whole into "packaging" and "non-packaging" for consistency with our previous studies. However, we did not actually separate film plastic into "packaging" and "non-packaging" in the 2000 or 2002 studies. Instead, we estimated how much was packaging vs non-packaging by adding the two film plastic categories together and then by multiplying the sum by 0.649 for film plastic packaging and by 0.351 for film plastic products. These numbers are the ratio of film plastic packaging to film plastic products as determined statewide in the 1998 Oregon waste composition study. These estimates for film plastic packaging and products were then used in constructing the overall packaging vs. product composition results as well as the plastic packaging and product composition results.

Categories for Contamination Analysis

The same categories were used for contamination analysis as were used for field sort, with the following exceptions:

- 1) Three material categories were combined into "Low-grade paper". These include:
 - #2 Low-grade paper packaging
 - #3 Bleached boxboard
 - #10 Other low-grade paper

- 2) Three material categories were combined into "Nonrecyclable Paper". These include:
 - #4 Non-recyclable paper packaging
 - #11 Other non-recyclable paper
 - #5 Mixed paper/materials

- 3) Two categories were combined into "Other rigid plastic". These include:

Appendix D: Material Categories for 2002 Waste Composition Study Page D6

- #15 Other rigid plastic packaging
 - #16 Rigid plastic products
- 4) #30 Food waste was split into two subcategories:
- "Vegetative food waste" includes plant parts such as fruit and vegetable peelings or parts, grains, coffee grounds, and crop residue, but excludes the items listed below.
 - "Non-vegetative food waste" includes oils, greases, dairy products, other animal products
- 5) #14 Rigid plastic containers was split into numerous categories, but by resin and by molding type. The following resin types were identified:
- PET - polyethylene terephthalate (#1 plastic)
 - HDPE - high density polyethylene (#2 plastic)
 - PVC - polyvinyl chloride (#3 plastic)
 - LDPE - low-density polyethylene (#4 plastic, rarely used in rigid plastic containers)
 - PP - polypropylene (#5 plastic)
 - PS foam - polystyrene foam (#6 expanded plastic)
 - PS solid - solid polystyrene (#6 solid)
 - Other resin or combined resin plastic (#7 plastic code)
 - Unknown (containers that are not marked and are not recognizable as #1- #6 plastic)

In addition, all of these resins were further divided into two groups:

- blow-mold plastic (for bottles and anything with a neck that is wider than its mouth)
- injection or other molded plastic (for tubes, pails or other types of plastics)

This gives a potential for 18 categories of rigid plastic containers, although some combinations do not exist in the marketplace or were not encountered in our study (such as foamed polystyrene bottles).

6) Although beginning the second quarter of 2002, we separated "recyclable" asphalt roofing from "non-recyclable" asphalt roofing, these two categories were always combined in contamination analysis.

Changes in Material Categories in 2002 from the 2000 Study

The only difference in material categories between 2000 and 2002 are the following:

- 1) "Other Glass" was separated into 3 categories:
 - fluorescent light tubes,
 - compact fluorescent lights
 - all other glass
- 2) "Computers" was separated into 2 categories:
 - Computer CRT Monitors
 - Other Computer Equipment
- 3) "TVs and Other Brown Goods" was separated into two categories:
 - TVs and other cathode-ray tube equipment (excluding computer monitors)
 - Other Electronics (Brown Goods) excluding TVs, cathode ray tube equipment, and computer equipment

In addition, starting the second quarter of 2002, "Asphalt Roofing" was separated into two categories for field sorting only: recyclable asphalt roofing and nonrecyclable asphalt roofing. However, throughout the 2002 waste composition report, these two categories were generally combined for analysis.

Changes in Material Categories in 2000 (and 2002) from the 1998 Study

The 1998 and 2000 Oregon waste composition studies used the same categories for sorting wastes at disposal sites, with the following exceptions:

Appendix D: Material Categories for 2002 Waste Composition Study Page D7

- 1) The "small plastic containers" category used in the 1998 study was combined into #15 above - "other rigid plastic packaging"
- 2) The 1998 study had categories called "other disposable hygiene products" (mainly tampons) and "dead animals" as well as "other organics". These were all combined into #39 "Other organics" above.
- 3) "Treated lumber" from the 1998 study was split into two categories (but see the note under untreated lumber below):
 - #24 Painted lumber
 - #25 Chemically treated lumber
- 4) Untreated lumber from the 1998 study was split into two categories:
 - #22 Untreated lumber (excluding the below), and
 - #23 Clean "hogged fuel" wood

Note - a few of the coated/laminated products that are included in #23 Clean "hogged fuel" wood were categorized in the "treated lumber" category in 1998.
- 5) Film plastic was split into completely different categories in 1998 and 2000. In 1998, the two categories were "film plastic packaging" and "film plastic products". In 2000, the two categories were "Recyclable polyethylene plastic" and "Other film plastic".

Major Group Category Definitions

The summary tables in Appendix A divide up each of the materials into 3 sets of groups, including:

- Packaging/Product/Non-manufactured
- Organic/Non-organic
- Compostable

Table D1, on the next page, shows the individual material categories that were included in each of these category groups. In some cases, the individual material category did not fit entirely in one group or the other. For example, "Mixed Paper/Materials" could include both packaging (such as cigarette packs) and products (such as spiral notebooks with metal or plastic). In each of these cases with one exception, the entire individual material category was included in whichever group included the majority of the material weight.

The exception is film plastic. In studies from 1998 and earlier, film plastic was split into "packaging" and "non-packaging" film plastic. In 2000, film plastic was instead split into "recyclable film plastic" and "other film plastic" (categories 12 and 13 on page D2). Based on the results of the 1998 composition study, it was estimated that 64.94% of the film plastic was packaging, and 35.06% was product.

Appendix D: Material Categories for 2002 Waste Composition Study Page D8

Table D1: Materials included in each major group category

Material	Packaging	Product	Non-manufactured	Organic	Non-organic	Compostable	Compost Target
Cardboard/Brown Bags	x			x		x	
Low Grade Packaging	x			x		x	
Bleached Polycoats	x			x		x	
Nonrecyc. Packaging Paper	x			x		x	
Mixed Paper / Materials	x			x		x	
Newspaper		x		x		x	
Magazines		x		x		x	
Hi Grade Paper		x		x		x	
Hardcover Books		x		x		x	
Low Grade Paper		x		x		x	
Other Nonrecyclable Paper		x		x		x	x
Rigid Plastic Containers	x			x			
Other Rigid Packaging	x			x			
Plastic Film Pkg Est. 2000*	x			x			
Rigid Plastic Products		x		x			
Plastic Film Prod. Est. 2000*		x		x			
Mixed Plastic / Materials		x		x			
Leaves / Grass			x	x		x	x
Small Prunings under 2"			x	x		x	x
Large Prunings over 2"			x	x		x	x
Stumps			x	x		x	x
Untreated Lumber		x		x		x	x
Clean HogFuel Lumber		x		x		x	
Painted Lumber		x		x			
Chemically-treated Lumber		x		x			
Wood Pallets / Crates	x			x		x	x
Wood Furniture		x		x		x	x
Other Wood Products		x		x			
Mixed Wood / Materials		x		x			
Food			x	x		x	x
Tires		x		x			
Rubber Products		x		x			
Disposable Diapers		x		x		x	
Carpet		x		x			
Textiles		x		x			
Mixed Textile / Material		x		x			
Roofing / Tarpaper		x		x			
Furniture		x		x			
Other Organics		x		x		x	x

Material	Packaging	Product	Non-manufactured	Organic	Non-organic	Compostable	Compost Target
Deposit Beverage Glass	x				x		
Other Clear Bottles	x				x		
Other Colored Bottles	x				x		
Clear Container Glass	x				x		
Colored Container Glass	x				x		
Flat Window Glass		x			x		
Other Nonrecyc. Glass		x			x		
Alum. Beverage Cans	x				x		
Alum. Foil / Food Trays	x				x		
Other Aluminum		x			x		
Tin Food Cans	x				x		
Other Tin Cans	x				x		
Other Nonferrous Metal		x			x		
Other Ferrous Metal		x			x		
White Goods		x			x		
Computers		x			x		
Brown Goods		x			x		
Small Appliances-non elec		x			x		
Empty Aerosol Cans	x				x		
Used Oil Filters		x			x		
Mixed Metal / Material		x			x		
Rock / Concrete / Brick			x		x		
Soil / Sand / Dirt			x		x		
Pet Litter / Animal Feces			x		x	x	
Gypsum Wallboard OLD		x			x		
Gypsum Wallboard NEW		x			x		
Fiberglass Insulation		x			x		
Other Inorganics			x		x		
"MEDICAL WASTES"		x			x		
Latex Paint		x			x		
Oil Paints / Thinners		x			x		
Pesticides / Herbicides		x			x		
Motor Oil		x			x		
Fuels (gas/kero/diesel)		x			x		
Adhesives / Sealants		x			x		
Caustic Cleaners		x			x		
Lead-Acid Batteries		x			x		
Dry-cell Batteries		x			x		
Asbestos		x			x		
Other Hazardous Chemicals		x			x		

* Plastic film packaging and plastic film product were not separately measured in 2000 and 2002. Packaging and product were estimated using 1998 study results that 64.94% of all film plastic was packaging and 35.06% was product.