Contractor's Report to the Board

Targeted Statewide Waste Characterization Study:

Detailed Characterization of Commercial Self-Haul and Drop-Box Waste

June 2006

Produced under contract by:

Cascadia Consulting Group

CASCADIA
CONSULTING GROUP

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Executive Summary

Introduction

In 2004, the CIWMB commissioned this study, which quantifies and characterizes four specific waste streams:

1. Disposal and diversion from specific major waste generators in the commercial sector (Task 1);
2. Residuals from materials recovery facilities and municipal solid waste processing facilities (clean and dirty MRFs) (Task 2);
3. Disposal from the construction and demolition (C&D) waste stream (Task 3); and
4. Disposal from the commercial self-haul and loose drop-box waste stream (Task 4).

This report presents the results of the analysis of the commercial self-haul and drop-box waste stream (Task 4). The objectives of this portion of the study were to develop reliable estimates of the quantity and composition of California's non-C&D commercial self-haul and loose drop-box waste stream.

In contrast to recent statewide studies the CIWMB commissioned in 1999 and 2003, this portion of the current study included only two waste sectors: commercial self-haul and loose drop-box, rather than the commercial, residential, and self-haul waste streams. Additionally, the current study focused on waste from four metropolitan areas of the state instead of the entire state.

Study Methodology

This portion of the study included waste from two sectors: commercial self-haul and loose drop-box waste. C&D waste was excluded because it was the focus of Task 3. Disposal facilities throughout four metropolitan areas were eligible for participation in the study: the San Diego area, Southern California/Los Angeles Basin, the San Francisco Bay Area, and the Central Valley. Sampling events were divided between the four areas across two seasons (December 2004 and June 2005), so that two sampling days were held in each area in each season. An additional weekend day of sampling was conducted in the L.A. Basin in the summer season to obtain weekend data.

Waste from 321 samples was hand-sorted into 74 material types as described in Appendix B. Approximately equal numbers of waste samples belonging to each sector were characterized in each metropolitan area.

Concurrent with waste sampling, vehicle surveys were conducted at participating facilities. Data from the surveys was analyzed to estimate the portion of each metropolitan area's waste that corresponds to each waste sector.

Results

Sampling data was compiled to generate composition estimates while the survey data was used to generate tonnage estimates and to compile overall results for each sector. Composition results were presented according to ***divertibility***. Divertible material is defined as material for which technologies and markets exist in California to recover these materials from the waste stream, through recycling or composting. Material types were assigned to a divertibility class, based on available recycling technologies and markets (see Appendix B). The final report includes detailed findings for the following areas:

- Composition and tonnage by material and divertibility class for commercial self-haul waste and for drop-box waste for all four metropolitan areas combined.

- Composition and tonnage by material and divertibility class for commercial self-haul waste for each metropolitan area.
- Composition and tonnage by material and divertibility class drop-box waste for each metropolitan area.

The findings show that approximately 1,387,500 tons were disposed in 2004 for commercial self-haul waste in the four metropolitan areas compared to about 1,655,600 tons of drop-box waste (Table 1). For both waste sectors, most of the tons were disposed in the Bay Area. Slightly less, about 637,000 tons compared to 639,000 tons, were estimated to be disposed in the L.A. Basin for drop-box waste.

Table 1. Metropolitan Area Annual Tonnages by Sector

Sector	San Diego	San Francisco/ Bay Area	Southern California/ L.A. Basin	Central Valley	Total
Commercial Self-haul	306,266	713,660	313,276	54,317	**1,387,519**
Drop-box	310,948	639,424	636,526	68,736	**1,655,634**

As displayed in Figure A and Figure B, the majority of waste in the commercial self-haul and drop-box sectors is divertible, about 76 percent and 67 percent, respectively. Compostable material (28 percent) was the most prominent divertible material type for overall self-haul waste. For drop-box waste, the largest divertibility class was recyclable wood at about 19 percent, followed by other recyclables (18 percent) and compostable material (17 percent) (Figure B). The most prominent individual material for both sectors was lumber, accounting for about 14 percent in self-haul waste and nearly 20 percent of drop-box waste. The Top Ten disposed materials for each sector can be found in Table 2 and Table 3. Detailed composition data for each sector can be found in Table 8 and Table 18.

A note on data for the *construction and demolition* material class: although this study excluded loads coming from construction and demolition activities, these **material types** are still present in the self-haul and drop-box waste streams. For example, the *lumber* material type includes pallets and wood scraps that a business might dispose in a drop-box. These materials were not generated by construction and demolition **activities**, but they fall under the *lumber* material type in the *construction and demolition* material class.

Figure A. Overview of Waste Divertibility: Overall Self-haul, 2005

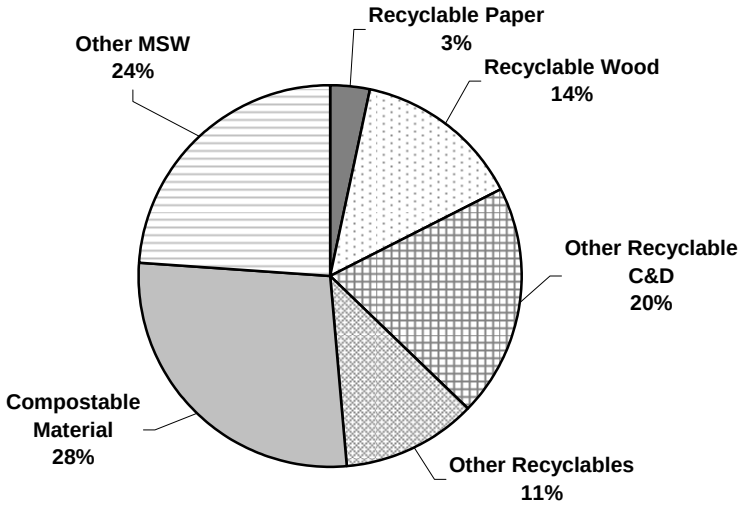


Figure B. Overview of Waste Divertibility: Overall Drop-box, 2005

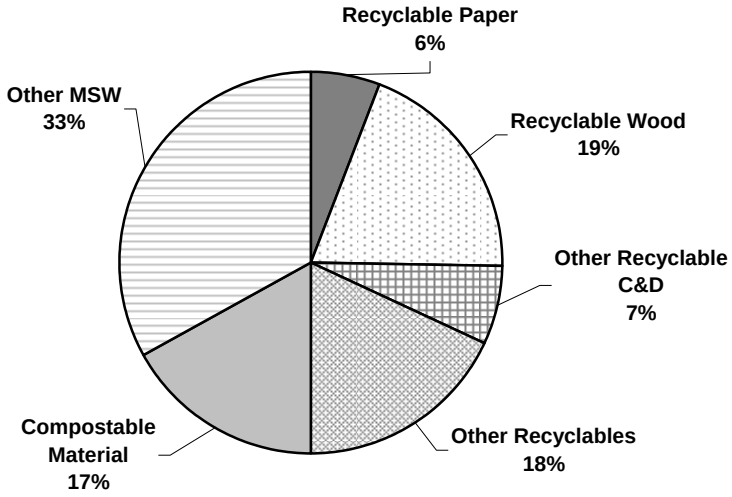


Table 2. Top Ten Disposed Materials: Overall Commercial Self-haul, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	14.1%	14.1%	195,066
Leaves & Grass	yes	12.0%	26.0%	166,218
Rock, Soil, Fines	yes	10.0%	36.0%	138,643
Bulky Items	no	9.6%	45.6%	133,039
Prunings & Trimmings	yes	8.8%	54.4%	121,629
Concrete	yes	7.5%	61.9%	104,339
Branches & Stumps	yes	6.4%	68.3%	89,239
Other Ferrous Metal	yes	6.4%	74.7%	88,972
Treated Wood Waste	no	4.1%	78.9%	56,934
Uncoated Corrugated Cardboard	yes	3.0%	81.8%	41,210
Total		**81.8%**		**1,135,289**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 3. Top Ten Disposed Materials: Overall Loose Drop-box, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	19.3%	19.3%	319,247
Bulky Items	no	8.3%	27.6%	136,938
Treated Wood Waste	no	5.7%	33.3%	94,686
Prunings & Trimmings	yes	5.3%	38.6%	87,569
Uncoated Corrugated Cardboard	yes	5.0%	43.5%	82,504
Leaves & Grass	yes	4.6%	48.2%	76,940
Food	yes	4.5%	52.7%	75,314
Other Ferrous Metal	yes	4.1%	56.9%	68,421
Remainder/Composite C&D	no	3.9%	60.8%	64,269
Rock, Soil, Fines	yes	3.8%	64.6%	63,045
Total		**64.6%**		**1,068,932**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Introduction and Overview

The California Integrated Waste Management Board (CIWMB) commissioned Statewide Waste Disposal Characterization Studies in 1999 and in 2003. Both studies were comprehensive in nature and characterized residential, commercial, and self-haul waste disposed throughout California. In 2004, the CIWMB commissioned the present study which quantifies and characterizes four specific waste streams:

1. Disposal and diversion from specific major waste generators in the commercial sector (Task 1);
2. Residuals from materials recovery facilities and municipal solid waste processing facilities (clean and dirty MRFs) (Task 2);
3. Disposal from the construction and demolition (C&D) waste stream (Task 3); and
4. Disposal from the commercial self-haul and loose drop-box waste stream (Task 4).

This report presents the results of this study's analysis of the commercial self-haul and drop-box waste stream.

Background and Objectives

The objectives of this portion of the study were to develop reliable estimates of the quantity and composition of California's non-C&D commercial self-haul and loose drop-box waste stream. Data gathered during this study provides estimates of the types and quantities of waste from these waste streams in California's urban areas. In commissioning this characterization study, the CIWMB intended to obtain a complete picture of the disposal and recovery potential for highly recyclable waste streams, and information about the sources and activities generating these wastes.

Contributing Consultants

This study was managed by Cascadia Consulting Group, Inc., an environmental consulting firm based in Seattle, Washington. It relied on data collection activities conducted by Sky Valley Associates. The distribution of responsibilities was as follows.

Cascadia Consulting Group, Inc.	Project management Study design Coordination of data collection Vehicle surveys and sample selection Data entry and analysis Reporting
Sky Valley Associates	Characterization of samples of disposed waste

Description and Development of Study Design

The study design for this task outlined a research plan including targeted waste sectors, vehicle selection and surveying methods, sampling and sorting methods, preliminary identification of sites, and general contingency measures. The plan outlined that 160 samples of self-haul and 160 samples of drop-box waste would be sampled over the course of the study. The samples were to be evenly divided between sixteen sites, four sites in each of the four metropolitan areas. Samples were to be sorted into 74 material types. The sorting method included a plan to maximize homogeneity of sorted material types and limit improperly classified materials. General contingency measures included a plan to make up samples at other sites in the same region should fewer samples be captured than planned, and to survey at the same

site on a different day should vehicle surveying not be possible on the scheduled day. Appendix A contains a detailed description of all aspects of the study methodology.

Urban Areas Included in Study

The purpose of the study was to obtain data on targeted waste sectors and focused on the four major metropolitan areas of the state: the San Diego area, Southern California/L.A. Basin, the San Francisco Bay Area, and the Central Valley. These areas represent common demographic and geographic characteristics of California.

While these areas represent a cross-section of the state, the disposal facilities in these areas also receive the majority of the waste disposed in the state. Facilities in these metropolitan areas, which were all eligible for sampling, receive about 71 percent of the total waste disposed in California.

Waste Sectors Examined in This Study

Waste from two sectors was included: commercial self-haul and loose drop-box waste. For both sectors, loads that were categorized as roofing or C&D were excluded from this task. These sectors are defined as follows:

- **Commercial Self-haul Waste** —Waste hauled by businesses or government agencies that haul their own garbage; includes waste delivered by anyone other than a resident or contracted or franchised hauler. For this study, only commercial self-haul waste was sampled. Residential self-haulers were surveyed, but excluded from sampling.
- **Loose Drop-box Waste** —Waste arriving at disposal facilities in loose or open top (as opposed to compacting) drop-boxes that is typically hauled by contracted or franchised haulers, or by an independent hauler.

Selection and Recruitment of Participating Sites

Disposal facilities throughout each metropolitan area were randomly selected for inclusion in the study from a comprehensive list of facilities within each area. Within each metropolitan area, sites were eliminated from the list if they did not meet the minimum criteria required for sampling sites. The minimum criteria were that (1) the facility received an average of at least 100 tons of directly-hauled non-C&D commercial self-haul and loose drop-box waste per operating day, (2) an adequate number of vehicles from both sectors were available daily to be sampled, and (3) management was willing to accommodate the expected waste sampling activities.

Sampling was conducted over two seasons: winter (wet) and summer (dry). Facilities were recruited prior to each sampling season. During each season, sampling was conducted over eight weekdays, two days in each metropolitan area. In the summer season, an additional Saturday sampling day was added in the L.A. Basin. The detailed schedule is shown in Table 4. Because most of the selected facilities also received an adequate amount of C&D waste, scheduling and sampling efforts were coordinated with Task 3 activities to allow sampling for both tasks to occur simultaneously.[*]

[*] Del Norte Transfer Station in Ventura county, visited for the study on Saturday, June 25, 2005, was selected to have a self-haul sampling event on a weekend day, even though it did not meet the criteria for Task 3.

Table 4. Schedule of Sampling Events

Site	Metropolitan Area	Date
Miramar Landfill	San Diego	12/7/2004
Miramar Landfill	San Diego	12/8/2004
Antelope Valley Landfill	L.A. Basin	12/9/2004
Colton Landfill	L.A. Basin	12/10/2004
Guadalupe Landfill	Bay Area	12/13/2004
Sonoma Disposal Site	Bay Area	12/14/2004
L & D Landfill	Central Valley	12/15/2004
Sacramento County Landfill	Central Valley	12/16/2004
Miramar Landfill	San Diego	6/21/2005
Otay Landfill	San Diego	6/22/2005
Chiquita Canyon Landfill	L.A. Basin	6/23/2005
Puente Hills Landfill	L.A. Basin	6/24/2005
Del Norte Transfer Station	L.A. Basin	6/25/2005
West Contra Costa Landfill	Bay Area	6/27/2005
Vasco Road	Bay Area	6/28/2005
L & D Landfill	Central Valley	6/29/2005
Western Regional Landfill	Central Valley	6/30/2005

Appendix A contains a thorough description of the site selection and recruitment procedures.

Capture and Characterization of Samples

Samples of disposed waste were obtained from the commercial self-haul and drop-box vehicles, and were sorted by hand. Samples were apportioned between disposal facilities and regions in a way that ensured representation of each area during each season of the study. Table 5 shows the number of samples that were collected for each sector by metropolitan area.

Table 5. Sample Count by Sector and Metropolitan Area

Metro Area	Self-haul	Drop-box
San Diego	36	45
L.A. Basin	40	46
Bay Area	39	42
Central Valley	45	28
Total	**160**	**161**

Vehicle Surveys

To quantify the portion of waste within the four urban areas that was self-haul and drop-box waste, surveys were conducted at the entrance of each participating facility. The surveys were administered to

the drivers of all commercial self-haul vehicles and loose drop-boxes bringing waste for disposal at the gate where the surveyor was posted. Information on weekend disposal patterns was gathered to supplement survey data for weekdays and adjust data to better reflect overall disposal at the facility. The surveys were conducted at each participating disposal facility on the same days that waste samples were obtained.

Results

Interpreting the Results

For each waste sector, the overall waste composition for all four areas combined, and each area individually, is presented in three ways:

- First, a summary of waste composition by divertibility class is presented in a pie chart.
- Next, the ten most prevalent material types, by weight, are shown in a table.
- Third, a detailed table lists the full composition and quantity results for the 74 material types.

A note on data for the *construction and demolition* material class: although this study excluded loads coming from construction and demolition activities, these **material types** are still present in the self-haul and drop-box waste streams. For example, the lumber material type includes pallets and wood scraps that a business might dispose in a drop-box. These materials were not generated by construction and demolition **activities**, but they fall under the lumber material type in the *construction and demolition* material class.

Means and Error Ranges

The data from the sorting process was treated with a statistical procedure that provided two kinds of information for each of the material types:

- the percent-by-weight estimated composition of waste represented by the samples examined in this study, and
- the degree of precision of the composition estimates.

All estimates of precision were calculated at the 90 percent confidence level. The equations used in these calculations appear in Appendix A.

The example below illustrates how the results can be interpreted. The example indicates that the best estimate of the amount of *leaves and grass* present in the universe of waste sampled is 5.2 percent. The figure 1.2% reflects the precision of the estimate. When calculations are performed at the 90 percent confidence level, we are 90 percent certain that the mean estimate for *leaves and grass* is between 5.2% + 1.2% and 5.2% - 1.2%. In other words, we are 90 percent certain that the mean lies between 6.4 percent and 4.0 percent.

Waste Material	Est. Pct.	+ / -
Leaves and grass	5.2%	1.2%

Rounding

When interpreting the results presented in the tables and figures in this report, it is important to consider the **effect of rounding**.

To keep the waste composition tables and figures readable, estimated tonnages are rounded to the nearest ton, and estimated percentages are rounded to the nearest tenth of a percent. Due to this rounding, the **tonnages** presented in the report, when added together, may not exactly match the subtotals and totals shown. Similarly, the **percentages**, when added together, may not exactly match the subtotals or totals shown. Also, percentages less than 0.05 percent are shown as 0.0 percent.

Determining Divertibility of Materials

Pie charts in this report are based on the divertibility of the material categories. The top ten material tables also list whether material types are considered divertible. All 74 material types were classified according to the following divertibility classes (please see Table 29 in Appendix B for more detail).

- Divertible material is defined as material for which technologies and markets exist in California to recover these materials from the waste stream, through recycling or composting. Divertible classes of material included **Recyclable Paper**, **Recyclable Wood**, **Other Recyclable C&D**, **Other Recyclables** (includes all other recyclable materials, such as recyclable plastic, glass, and metal), and **Compostable Material**.
- Non-divertible material is defined as material for which technologies and markets have not been adequately developed to permit recovery of these materials from the waste stream. The only class determined to be non-divertible is **Other MSW**.

Metropolitan Area Tonnages by Sector

Vehicle surveys were used at each facility to estimate the proportion of waste transported by self-haul and drop-box vehicles, excluding pure C&D loads. Vehicle surveys were conducted on all 18 sampling days.[†] The fractions of waste contributed by each of the targeted sectors were used to estimate the relative proportion of each sector on a regional basis, as described in Appendix A. Table 6 shows the estimated tonnage for each of the targeted sectors according to metropolitan area. The total tons for self-haul and for drop-box waste represent the total within the four metropolitan regions.

Table 6. Metropolitan Area Tonnages by Sector

Sector	San Diego	San Francisco/ Bay Area	Southern California/ L.A. Basin	Central Valley	Total
Commercial Self-haul	306,266	713,660	313,276	54,317	**1,387,519**
Drop-box	310,948	639,424	636,526	68,736	**1,655,634**

[†] An extra field day was added for the winter season at Puente Hills Landfill for the Task 3 study in March 2005. No self-haul or drop-box samples were characterized, but vehicle surveys were conducted for both Tasks 3 and 4.

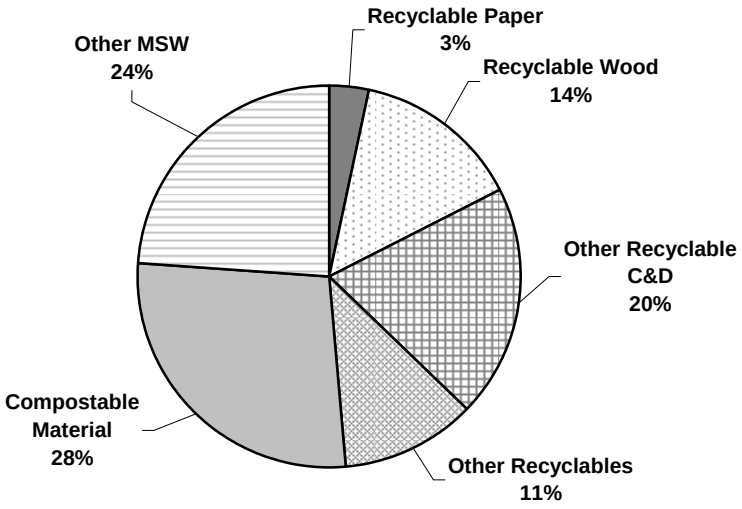
Commercial Self-haul

Overall Commercial Self-haul

The purpose of this portion of the study was to characterize the commercial self-haul sector for all four metropolitan areas. For this study, commercial self-haul waste does not include C&D waste. A total of 160 samples were sorted for this waste sector.

Figure C illustrates composition estimates by divertibility class for overall commercial self-haul. About 76 percent of self-haul waste was estimated to be recoverable. The largest recoverable class was compostable material, which made up about 28 percent. Other recyclable C&D, other recyclables, and recyclable wood each accounted for between 11 percent and 20 percent of the total, by weight.

Figure C. Overview of Waste Divertibility: Overall Commercial Self-haul, 2005



As shown in Table 7, eight of the ten most prevalent materials in the self-haul waste stream were considered divertible. The most common single material in this waste stream was lumber (14.1 percent). Leaves and grass; rock, soil, fines; bulky items; prunings and trimmings; concrete; branches and stumps; and other ferrous metal each made up more than 5 percent of the total. Table 8 lists the complete composition results for overall commercial self-haul waste.

Table 7. Top Ten Disposed Materials: Overall Commercial Self-haul, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	14.1%	14.1%	195,066
Leaves & Grass	yes	12.0%	26.0%	166,218
Rock, Soil, Fines	yes	10.0%	36.0%	138,643
Bulky Items	no	9.6%	45.6%	133,039
Prunings & Trimmings	yes	8.8%	54.4%	121,629
Concrete	yes	7.5%	61.9%	104,339
Branches & Stumps	yes	6.4%	68.3%	89,239
Other Ferrous Metal	yes	6.4%	74.7%	88,972
Treated Wood Waste	no	4.1%	78.9%	56,934
Uncoated Corrugated Cardboard	yes	3.0%	81.8%	41,210
Total		**81.8%**		**1,135,289**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 8. Detailed Waste Composition: Overall Commercial Self-haul, 2005

Material	Est. Percent	+ / -	Est. Tons
Paper	**5.8%**		**81,122**
Uncoated Corrugated Cardboard	3.0%	1.6%	41,210
Paper Bags/Kraft	0.2%	0.2%	2,113
Newspaper	0.1%	0.1%	1,020
White Ledger	0.0%	0.0%	228
Colored Ledger	0.0%	0.0%	30
Computer Paper	0.0%	0.0%	159
Other Office Paper	0.0%	0.0%	26
Magazines/Catalogs	0.1%	0.2%	2,081
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	1.3%	1.2%	17,704
Remainder/Composite Paper	1.2%	0.9%	16,551
Glass	**0.2%**		**2,565**
Clear Glass Bottles & Containers	0.0%	0.0%	39
Green Glass Bottles & Containers	0.0%	0.0%	53
Brown Glass Bottles & Containers	0.0%	0.0%	98
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0
Remainder/Composite Glass	0.2%	0.2%	2,375
Metal	**8.5%**		**117,771**
Tin/Steel Cans	0.1%	0.1%	1,029
Major Appliances	0.0%	0.1%	525
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	6.4%	3.1%	88,972
Aluminum Cans	0.0%	0.0%	65
Other Non-Ferrous	0.1%	0.1%	949
Remainder/Composite Metal	1.9%	1.1%	26,231
Electronics	**0.3%**		**4,198**
Brown Goods	0.0%	0.0%	345
Computer-related Electronics	0.3%	0.4%	3,789
Other Small Consumer Electronics	0.0%	0.0%	64
TV's & Other CRTs	0.0%	0.0%	0
Plastic	**4.1%**		**56,594**
PETE Bottles	0.0%	0.0%	56
Other PETE Containers	0.0%	0.0%	3
HDPE Natural Bottles	0.0%	0.0%	21
HDPE Colored Bottles	0.0%	0.0%	61
HDPE 5-gallon buckets - Food	0.1%	0.1%	931
HDPE 5-gallon buckets - Non-food	0.0%	0.0%	409
Other HDPE Containers	0.2%	0.2%	2,822
#3-#7 Bottles	0.1%	0.2%	1,790
#3-#7 Other Containers	0.3%	0.4%	3,549
Plastic Trash Bags	0.1%	0.1%	886
Grocery/Merch. Bags	0.1%	0.2%	1,691
Non-Bag Comm./Ind. Packaging Film	0.4%	0.3%	5,300
Film Products	0.0%	0.0%	113
Other Film	0.0%	0.0%	307
Durable Plastic Items	1.7%	0.9%	23,686
Remainder/Composite Plastic	1.1%	0.7%	14,968

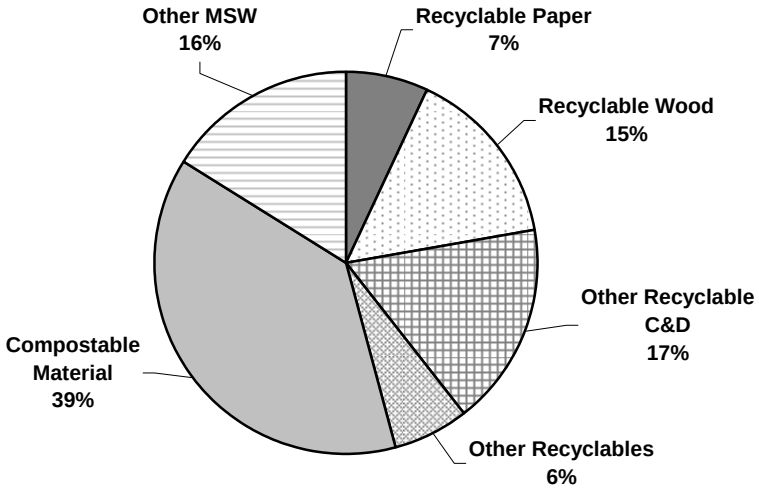
Material	Est. Percent	+ / -	Est. Tons
Organic	**30.6%**		**424,875**
Food	0.2%	0.2%	2,873
Leaves & Grass	12.0%	4.3%	166,218
Prunings & Trimmings	8.8%	2.5%	121,629
Branches & Stumps	6.4%	2.6%	89,239
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.6%	0.5%	8,755
Carpet	1.2%	0.8%	15,988
Remainder/Composite Organics	1.5%	1.2%	20,172
Construction & Demolition	**40.5%**		**561,837**
Concrete	7.5%	4.8%	104,339
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.6%	0.6%	7,999
Lumber	14.1%	4.2%	195,066
Treated Wood Waste	4.1%	2.2%	56,934
Gypsum Board	2.2%	1.6%	30,162
Rock, Soil, Fines	10.0%	3.7%	138,643
Remainder/Composite C&D	2.1%	0.8%	28,694
Household Hazardous Waste	**0.1%**		**1,208**
Paint	0.0%	0.0%	0
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.1%	0.1%	1,208
Special Waste	**9.9%**		**137,349**
Ash	0.0%	0.0%	0
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	9.6%	3.5%	133,039
Tires	0.3%	0.5%	4,310
Remainder/Composite Special Waste	0.0%	0.0%	0
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**1,387,519**
Sample count:	**160**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Self-haul Waste, San Diego Area

Thirty-six samples of self-haul waste were sorted in the San Diego Area. Figure D presents the overall composition results in terms of divertibility. Approximately 84 percent of this material was estimated to be divertible. The largest portion of the waste, compostable material, made up nearly 40 percent of the total, by weight. Recyclable wood and other recyclable C&D accounted for about 15 percent and 17 percent, respectively.

Figure D. Overview of Waste Divertibility: Self-haul Waste, San Diego Area, 2005



The ten most prevalent materials accounted for about 87 percent of San Diego area self-haul waste (Table 89). Eight of the 10 most common materials for this waste sector were divertible. Five of the materials each made up more than 10 percent of the waste: lumber; prunings and trimmings; rock, soil, fines; branches and stumps; and leaves and grass. Composition estimates for all 74 material types are listed in Table 10.

Table 9. Top Ten Disposed Materials: Self-haul Waste, San Diego Area, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	15.2%	15.2%	46,507
Prunings & Trimmings	yes	14.5%	29.7%	44,472
Rock, Soil, Fines	yes	13.3%	43.0%	40,709
Branches & Stumps	yes	12.7%	55.7%	38,883
Leaves & Grass	yes	10.8%	66.5%	33,071
Uncoated Corrugated Cardboard	yes	6.9%	73.4%	21,172
Other Ferrous Metal	yes	4.6%	78.0%	14,183
Concrete	yes	3.0%	81.0%	9,090
Bulky Items	no	2.9%	83.9%	8,989
Remainder/Composite Organics	no	2.8%	86.8%	8,715
Total		**86.8%**		**265,790**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 10. Detailed Waste Composition: Self-haul Waste, San Diego, 2005

Material	Est. Percent	+ / -	Est. Tons
Paper	**9.4%**		**28,859**
Uncoated Corrugated Cardboard	6.9%	6.2%	21,172
Paper Bags/Kraft	0.0%	0.0%	115
Newspaper	0.0%	0.0%	1
White Ledger	0.0%	0.0%	0
Colored Ledger	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	0
Other Office Paper	0.0%	0.0%	0
Magazines/Catalogs	0.0%	0.0%	0
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	0.4%	0.5%	1,277
Remainder/Composite Paper	2.1%	2.7%	6,294
Glass	**0.4%**		**1,176**
Clear Glass Bottles & Containers	0.0%	0.0%	0
Green Glass Bottles & Containers	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	63
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0
Remainder/Composite Glass	0.4%	0.6%	1,114
Metal	**5.6%**		**17,209**
Tin/Steel Cans	0.2%	0.3%	471
Major Appliances	0.0%	0.0%	0
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	4.6%	4.0%	14,183
Aluminum Cans	0.0%	0.0%	7
Other Non-Ferrous	0.2%	0.4%	723
Remainder/Composite Metal	0.6%	0.7%	1,826
Electronics	**0.0%**		**0**
Brown Goods	0.0%	0.0%	0
Computer-related Electronics	0.0%	0.0%	0
Other Small Consumer Electronics	0.0%	0.0%	0
TV's & Other CRTs	0.0%	0.0%	0
Plastic	**3.4%**		**10,278**
PETE Bottles	0.0%	0.0%	1
Other PETE Containers	0.0%	0.0%	0
HDPE Natural Bottles	0.0%	0.0%	0
HDPE Colored Bottles	0.0%	0.0%	0
HDPE 5-gallon buckets - Food	0.2%	0.3%	590
HDPE 5-gallon buckets - Non-food	0.0%	0.0%	0
Other HDPE Containers	0.0%	0.0%	0
#3-#7 Bottles	0.0%	0.0%	3
#3-#7 Other Containers	0.0%	0.0%	10
Plastic Trash Bags	0.0%	0.0%	17
Grocery/Merch. Bags	0.0%	0.0%	3
Non-Bag Comm./Ind. Packaging Film	0.4%	0.4%	1,134
Film Products	0.0%	0.0%	73
Other Film	0.0%	0.0%	1
Durable Plastic Items	2.3%	2.4%	6,905
Remainder/Composite Plastic	0.5%	0.7%	1,539

Material	Est. Percent	+ / -	Est. Tons
Organic	**41.3%**		**126,519**
Food	0.1%	0.2%	327
Leaves & Grass	10.8%	8.4%	33,071
Prunings & Trimmings	14.5%	6.9%	44,472
Branches & Stumps	12.7%	7.1%	38,883
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.2%	0.2%	681
Carpet	0.1%	0.2%	370
Remainder/Composite Organics	2.8%	4.6%	8,715
Construction & Demolition	**37.0%**		**113,236**
Concrete	3.0%	3.8%	9,090
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.5%	0.8%	1,501
Lumber	15.2%	8.8%	46,507
Treated Wood Waste	2.3%	3.6%	6,943
Gypsum Board	1.1%	1.8%	3,355
Rock, Soil, Fines	13.3%	10.1%	40,709
Remainder/Composite C&D	1.7%	1.3%	5,131
Household Hazardous Waste	**0.0%**		**0**
Paint	0.0%	0.0%	0
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.0%	0.0%	0
Special Waste	**2.9%**		**8,989**
Ash	0.0%	0.0%	0
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	2.9%	3.5%	8,989
Tires	0.0%	0.0%	0
Remainder/Composite Special Waste	0.0%	0.0%	0
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**306,266**
Sample count:	**36**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Self-haul Waste, Southern California/Los Angeles Basin

A total of 40 samples were sorted to characterize self-haul waste from the Southern California/Los Angeles Basin. Approximately three-quarters of this material were estimated to be divertible. The largest divertible portion, compostable material, accounted for about 44 percent of the total, by weight. Other recyclable C&D (14 percent) was the second largest divertible class.

Figure E. Overview of Waste Divertibility: Self-haul Waste, Southern California/Los Angeles Basin, 2005

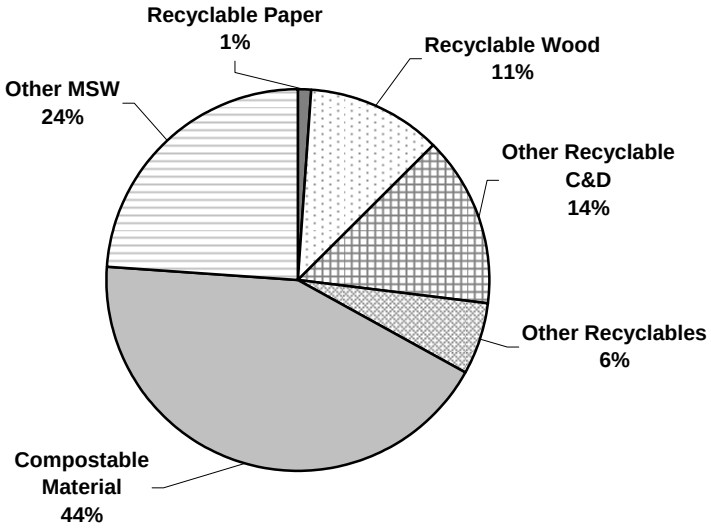


Table 11 lists the top ten material types for Southern California/Los Angeles Basin self-haul waste. Leaves and grass (18.4 percent) made up the largest percentage of this waste, followed by prunings and trimmings (15.6 percent). Bulky items and lumber each comprised approximately 12 percent of the total, by weight. Eight of the top ten materials and about 76 percent of the total waste for this sector are considered divertible. Table 12 lists the full composition results for this waste sector.

Table 11. Top Ten Disposed Materials: Self-haul Waste, Southern California/Los Angeles Basin, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Leaves & Grass	yes	18.4%	18.4%	57,488
Prunings & Trimmings	yes	15.6%	33.9%	48,729
Bulky Items	no	11.9%	45.9%	37,421
Lumber	yes	11.5%	57.3%	35,971
Branches & Stumps	yes	8.4%	65.7%	26,363
Rock, Soil, Fines	yes	7.0%	72.7%	21,788
Gypsum Board	yes	5.0%	77.7%	15,569
Treated Wood Waste	no	4.6%	82.2%	14,275
Other Ferrous Metal	yes	3.5%	85.7%	10,870
Concrete	yes	2.4%	88.1%	7,545
Total		**88.1%**		**276,021**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 12. Detailed Waste Composition: Self-haul Waste, Southern California/Los Angeles Basin, 2005

Material	Est. Percent	+ / -	Est. Tons
Paper	**1.7%**		**5,263**
Uncoated Corrugated Cardboard	0.5%	0.4%	1,644
Paper Bags/Kraft	0.0%	0.0%	5
Newspaper	0.0%	0.0%	54
White Ledger	0.0%	0.0%	16
Colored Ledger	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	0
Other Office Paper	0.0%	0.0%	0
Magazines/Catalogs	0.5%	0.8%	1,677
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	0.1%	0.1%	198
Remainder/Composite Paper	0.5%	0.6%	1,668
Glass	**0.0%**		**70**
Clear Glass Bottles & Containers	0.0%	0.0%	38
Green Glass Bottles & Containers	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	32
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0
Remainder/Composite Glass	0.0%	0.0%	0
Metal	**3.9%**		**12,152**
Tin/Steel Cans	0.0%	0.0%	80
Major Appliances	0.0%	0.0%	0
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	3.5%	2.6%	10,870
Aluminum Cans	0.0%	0.0%	1
Other Non-Ferrous	0.1%	0.1%	185
Remainder/Composite Metal	0.3%	0.3%	1,015
Electronics	**0.0%**		**0**
Brown Goods	0.0%	0.0%	0
Computer-related Electronics	0.0%	0.0%	0
Other Small Consumer Electronics	0.0%	0.0%	0
TV's & Other CRTs	0.0%	0.0%	0
Plastic	**3.2%**		**10,094**
PETE Bottles	0.0%	0.0%	44
Other PETE Containers	0.0%	0.0%	3
HDPE Natural Bottles	0.0%	0.0%	6
HDPE Colored Bottles	0.0%	0.0%	0
HDPE 5-gallon buckets - Food	0.1%	0.1%	262
HDPE 5-gallon buckets - Non-food	0.1%	0.1%	185
Other HDPE Containers	0.4%	0.5%	1,150
#3-#7 Bottles	0.0%	0.0%	0
#3-#7 Other Containers	0.0%	0.0%	33
Plastic Trash Bags	0.0%	0.0%	36
Grocery/Merch. Bags	0.0%	0.0%	32
Non-Bag Comm./Ind. Packaging Film	0.1%	0.1%	211
Film Products	0.0%	0.0%	0
Other Film	0.0%	0.1%	106
Durable Plastic Items	2.2%	1.8%	7,013
Remainder/Composite Plastic	0.3%	0.3%	1,013

Material	Est. Percent	+ / -	Est. Tons
Organic	**46.0%**		**144,083**
Food	0.6%	0.8%	1,907
Leaves & Grass	18.4%	8.5%	57,488
Prunings & Trimmings	15.6%	7.2%	48,729
Branches & Stumps	8.4%	6.7%	26,363
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.9%	0.9%	2,696
Carpet	1.1%	1.2%	3,501
Remainder/Composite Organics	1.1%	1.5%	3,399
Construction & Demolition	**33.3%**		**104,192**
Concrete	2.4%	2.5%	7,545
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.6%	0.9%	1,744
Lumber	11.5%	6.0%	35,971
Treated Wood Waste	4.6%	3.4%	14,275
Gypsum Board	5.0%	5.1%	15,569
Rock, Soil, Fines	7.0%	5.8%	21,788
Remainder/Composite C&D	2.3%	2.1%	7,299
Household Hazardous Waste	**0.0%**		**0**
Paint	0.0%	0.0%	0
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.0%	0.0%	0
Special Waste	**11.9%**		**37,421**
Ash	0.0%	0.0%	0
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	11.9%	6.8%	37,421
Tires	0.0%	0.0%	0
Remainder/Composite Special Waste	0.0%	0.0%	0
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**313,276**
Sample count:	**40**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Self-haul Waste, San Francisco Bay Area

To characterize self-haul waste in the San Francisco Bay Area, 39 samples were captured and sorted. As shown in Figure F, approximately 73 percent of the material in this sector was estimated to be divertible. With the exception of recyclable paper (3 percent), each divertible class contributed at least 15 percent to the total self-haul waste in this metropolitan area.

Figure F. Overview of Waste Divertibility: Self-haul Waste, San Francisco Bay Area, 2005

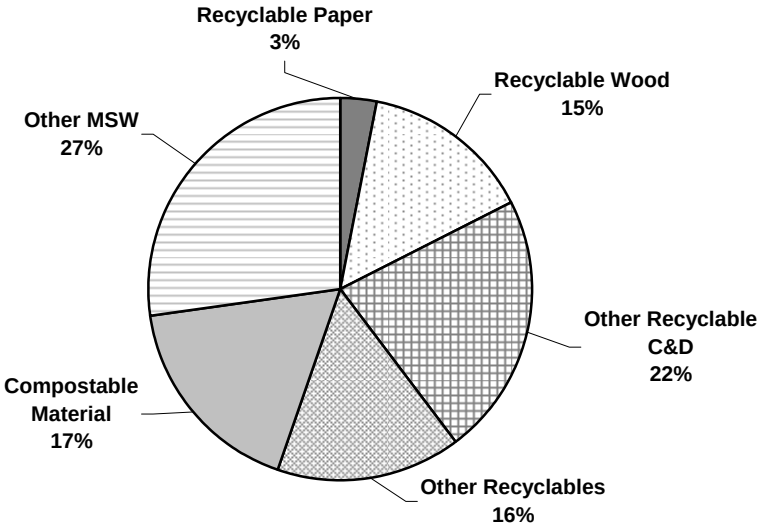


Table 13 lists the ten most prevalent materials in the San Francisco Bay Area self-haul waste sector. The four materials with the highest composition percentages, lumber, bulky items, concrete, and leaves and grass, made up about 48 percent of the total, when summed together. Only three of the top ten materials were not considered divertible. The full composition results for self-haul waste in this metropolitan area are listed in Table 14.

Table 13. Top Ten Disposed Materials: Self-haul Waste, San Francisco Bay Area, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	14.7%	14.7%	104,859
Bulky Items	no	11.4%	26.1%	81,713
Concrete	yes	11.3%	37.5%	80,878
Leaves & Grass	yes	10.4%	47.9%	74,079
Rock, Soil, Fines	yes	9.2%	57.1%	65,942
Other Ferrous Metal	yes	8.3%	65.4%	58,971
Treated Wood Waste	no	4.5%	69.9%	32,104
Prunings & Trimmings	yes	3.7%	73.6%	26,436
Branches & Stumps	yes	3.3%	76.8%	23,371
Remainder/Composite Metal	no	3.1%	79.9%	22,107
Total		**79.9%**		**570,460**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 14. Detailed Waste Composition: Self-haul Waste, San Francisco Bay Area, 2005

Material	Est. Percent	+ / -	Est. Tons
Paper	**6.4%**		**45,588**
Uncoated Corrugated Cardboard	2.4%	1.5%	17,253
Paper Bags/Kraft	0.3%	0.3%	1,993
Newspaper	0.1%	0.2%	961
White Ledger	0.0%	0.0%	152
Colored Ledger	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	159
Other Office Paper	0.0%	0.0%	26
Magazines/Catalogs	0.1%	0.1%	404
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	2.3%	2.3%	16,139
Remainder/Composite Paper	1.2%	1.2%	8,501
Glass	**0.1%**		**748**
Clear Glass Bottles & Containers	0.0%	0.0%	0
Green Glass Bottles & Containers	0.0%	0.0%	53
Brown Glass Bottles & Containers	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0
Remainder/Composite Glass	0.1%	0.2%	695
Metal	**11.4%**		**81,223**
Tin/Steel Cans	0.0%	0.0%	56
Major Appliances	0.0%	0.0%	0
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	8.3%	5.6%	58,971
Aluminum Cans	0.0%	0.0%	56
Other Non-Ferrous	0.0%	0.0%	33
Remainder/Composite Metal	3.1%	2.0%	22,107
Electronics	**0.5%**		**3,674**
Brown Goods	0.0%	0.0%	0
Computer-related Electronics	0.5%	0.8%	3,674
Other Small Consumer Electronics	0.0%	0.0%	0
TV's & Other CRTs	0.0%	0.0%	0
Plastic	**4.9%**		**35,299**
PETE Bottles	0.0%	0.0%	9
Other PETE Containers	0.0%	0.0%	0
HDPE Natural Bottles	0.0%	0.0%	13
HDPE Colored Bottles	0.0%	0.0%	60
HDPE 5-gallon buckets - Food	0.0%	0.0%	0
HDPE 5-gallon buckets - Non-food	0.0%	0.0%	212
Other HDPE Containers	0.2%	0.3%	1,569
#3-#7 Bottles	0.3%	0.4%	1,788
#3-#7 Other Containers	0.5%	0.8%	3,430
Plastic Trash Bags	0.1%	0.1%	814
Grocery/Merch. Bags	0.2%	0.4%	1,655
Non-Bag Comm./Ind. Packaging Film	0.6%	0.5%	3,953
Film Products	0.0%	0.0%	40
Other Film	0.0%	0.0%	199
Durable Plastic Items	1.3%	1.1%	9,283
Remainder/Composite Plastic	1.7%	1.3%	12,275

Material	Est. Percent	+ / -	Est. Tons
Organic	**20.7%**		**147,470**
Food	0.1%	0.1%	583
Leaves & Grass	10.4%	6.6%	74,079
Prunings & Trimmings	3.7%	2.2%	26,436
Branches & Stumps	3.3%	2.6%	23,371
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.7%	0.8%	5,171
Carpet	1.4%	1.5%	10,189
Remainder/Composite Organics	1.1%	1.1%	7,640
Construction & Demolition	**43.8%**		**312,484**
Concrete	11.3%	9.1%	80,878
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.7%	0.9%	4,754
Lumber	14.7%	6.7%	104,859
Treated Wood Waste	4.5%	3.7%	32,104
Gypsum Board	1.5%	1.9%	11,017
Rock, Soil, Fines	9.2%	5.0%	65,942
Remainder/Composite C&D	1.8%	1.0%	12,930
Household Hazardous Waste	**0.2%**		**1,152**
Paint	0.0%	0.0%	0
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.2%	0.3%	1,152
Special Waste	**12.1%**		**86,023**
Ash	0.0%	0.0%	0
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	11.4%	5.9%	81,713
Tires	0.6%	1.0%	4,310
Remainder/Composite Special Waste	0.0%	0.0%	0
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**713,660**
Sample count:	**39**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Self-haul Waste, Central Valley

For self-haul waste from the Central Valley, a total of 45 samples were characterized. Figure G depicts the results of this sampling in terms of divertibility classes. The largest divertibility classes were other recyclable C&D, which made up one-third of self-haul waste from the Central Valley. Approximately 27 percent of self-haul waste in this area was estimated to be other MSW.

Figure G. Overview of Waste Divertibility: Self-haul Waste, Central Valley, 2005

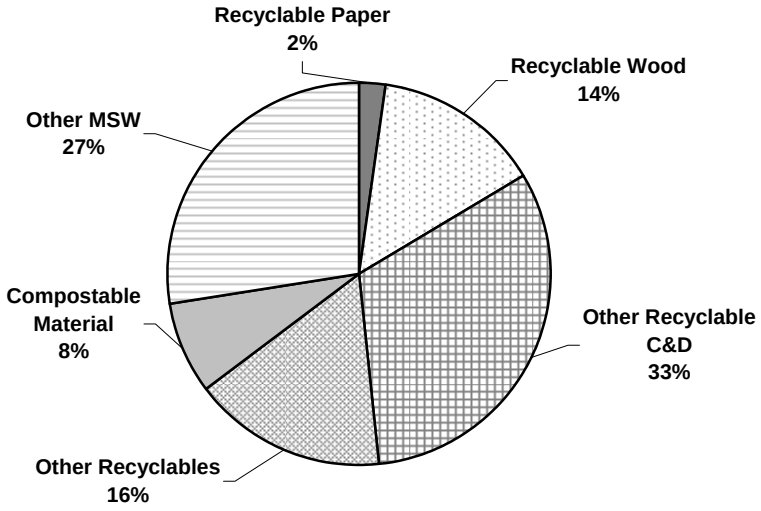


Table 15 lists the top ten disposed materials for self-haul waste in the Central Valley. Rock, soil, fines was the most prevalent single material, making up almost 19 percent of the total, by weight. Lumber and concrete accounted for about 14 percent and 13 percent, respectively. Seven of the top ten materials were considered divertible. The full composition results for self-haul waste in this metropolitan area can be found in Table 16.

Table 15. Top Ten Disposed Materials: Self-haul Waste, Central Valley, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Rock, Soil, Fines	yes	18.8%	18.8%	10,204
Lumber	yes	14.2%	33.0%	7,730
Concrete	yes	12.6%	45.6%	6,826
Other Ferrous Metal	yes	9.1%	54.7%	4,948
Bulky Items	no	9.1%	63.7%	4,916
Treated Wood Waste	no	6.6%	70.4%	3,611
Remainder/Composite C&D	no	6.1%	76.5%	3,333
Prunings & Trimmings	yes	3.7%	80.2%	1,992
Carpet	yes	3.5%	83.7%	1,928
Leaves & Grass	yes	2.9%	86.7%	1,580
Total		**86.7%**		**47,067**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 16. Detailed Waste Composition: Self-haul Waste, Central Valley, 2005

Material	Est. Percent	+ / -	Est. Tons
Paper	**2.6%**		**1,412**
Uncoated Corrugated Cardboard	2.1%	1.7%	1,141
Paper Bags/Kraft	0.0%	0.0%	0
Newspaper	0.0%	0.0%	4
White Ledger	0.1%	0.2%	60
Colored Ledger	0.1%	0.1%	30
Computer Paper	0.0%	0.0%	0
Other Office Paper	0.0%	0.0%	0
Magazines/Catalogs	0.0%	0.0%	0
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	0.2%	0.2%	90
Remainder/Composite Paper	0.2%	0.1%	88
Glass	**1.1%**		**570**
Clear Glass Bottles & Containers	0.0%	0.0%	1
Green Glass Bottles & Containers	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	3
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0
Remainder/Composite Glass	1.0%	1.2%	566
Metal	**13.2%**		**7,187**
Tin/Steel Cans	0.8%	1.1%	422
Major Appliances	1.0%	1.6%	525
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	9.1%	6.9%	4,948
Aluminum Cans	0.0%	0.0%	0
Other Non-Ferrous	0.0%	0.0%	8
Remainder/Composite Metal	2.4%	1.9%	1,283
Electronics	**1.0%**		**523**
Brown Goods	0.6%	1.0%	345
Computer-related Electronics	0.2%	0.3%	115
Other Small Consumer Electronics	0.1%	0.2%	64
TV's & Other CRTs	0.0%	0.0%	0
Plastic	**1.7%**		**923**
PETE Bottles	0.0%	0.0%	1
Other PETE Containers	0.0%	0.0%	0
HDPE Natural Bottles	0.0%	0.0%	1
HDPE Colored Bottles	0.0%	0.0%	1
HDPE 5-gallon buckets - Food	0.1%	0.2%	79
HDPE 5-gallon buckets - Non-food	0.0%	0.0%	11
Other HDPE Containers	0.2%	0.2%	103
#3-#7 Bottles	0.0%	0.0%	0
#3-#7 Other Containers	0.1%	0.2%	76
Plastic Trash Bags	0.0%	0.0%	18
Grocery/Merch. Bags	0.0%	0.0%	0
Non-Bag Comm./Ind. Packaging Film	0.0%	0.0%	2
Film Products	0.0%	0.0%	0
Other Film	0.0%	0.0%	1
Durable Plastic Items	0.9%	0.6%	486
Remainder/Composite Plastic	0.3%	0.1%	141

Material	Est. Percent	+ / -	Est. Tons
Organic	**12.5%**		**6,804**
Food	0.1%	0.2%	57
Leaves & Grass	2.9%	2.2%	1,580
Prunings & Trimmings	3.7%	2.8%	1,992
Branches & Stumps	1.1%	1.4%	622
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.4%	0.6%	208
Carpet	3.5%	3.0%	1,928
Remainder/Composite Organics	0.8%	0.7%	418
Construction & Demolition	**58.8%**		**31,926**
Concrete	12.6%	6.5%	6,826
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.0%	0.0%	0
Lumber	14.2%	5.5%	7,730
Treated Wood Waste	6.6%	3.9%	3,611
Gypsum Board	0.4%	0.7%	222
Rock, Soil, Fines	18.8%	7.6%	10,204
Remainder/Composite C&D	6.1%	3.5%	3,333
Household Hazardous Waste	**0.1%**		**56**
Paint	0.0%	0.0%	0
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.1%	0.2%	56
Special Waste	**9.1%**		**4,916**
Ash	0.0%	0.0%	0
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	9.1%	6.6%	4,916
Tires	0.0%	0.0%	0
Remainder/Composite Special Waste	0.0%	0.0%	0
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**54,317**
Sample count:	**45**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Comparison of Self-haul Waste between Metropolitan Areas

Several materials appeared in the top ten tables for self-haul waste in all four metropolitan areas: bulky items; concrete; leaves and grass; lumber; other ferrous metal; prunings and trimmings; and rock, soil, fines. Conversely, carpet (3.5 percent) and remainder/composite C&D (6.1 percent) appeared in the top ten list only for the Central Valley, remainder/composite organics (2.8 percent) and uncoated corrugated cardboard (6.9 percent) appeared only in San Diego self-haul waste, remainder/composite metal (3.1 percent) appeared only in the Bay Area, and gypsum board (5.0 percent) appeared only in the L.A. Basin top ten.

In terms of divertibility classes, for both San Diego and the L.A. Basin self-haul waste was composed largely of compostable material: 39 percent and 44 percent, respectively. Other recyclable C&D was the largest divertibility class in Central Valley self-haul waste, while Bay Area self-haul waste was fairly evenly divided among divertibility classes, except recyclable paper.

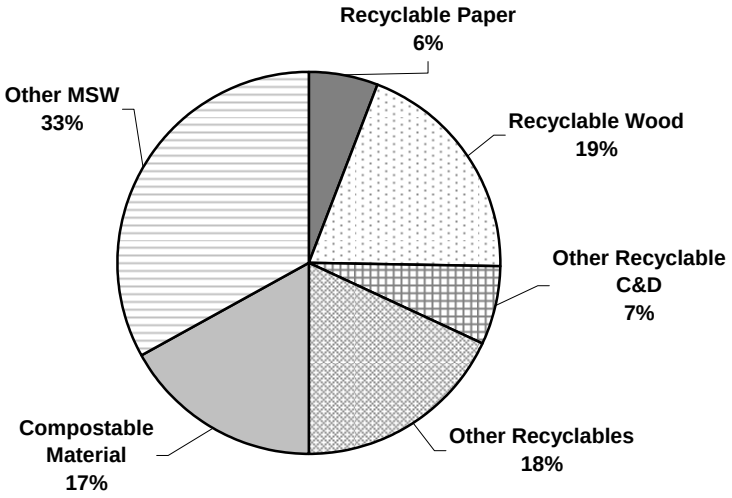
Loose Drop-box Waste

Overall Loose Drop-box Waste

The purpose of this portion of the study was to characterize the non-C&D waste from the four major metropolitan areas transported for disposal in loose drop-box containers. A total of 161 samples were sorted to obtain composition data for the drop-box waste sector. All drop-box samples from all four metropolitan areas were combined to show results for overall drop-box waste.

Figure H presents the results for overall loose drop-box waste by divertibility class. Approximately two-thirds of this waste was estimated to be divertible. Compostable material, other recyclables, and recyclable wood each contributed between 17 percent and 19 percent of the total, by weight.

Figure H. Overview of Waste Divertibility: Overall Loose Drop-box, 2005



Lumber, at nearly 20 percent of the total, was the most prevalent material in the drop-box waste stream. Bulky items, treated wood waste, prunings and trimmings, and uncoated corrugated cardboard each made up between 5 percent and 9 percent of the total. The full composition results for this waste sector are detailed in Table 18.

Table 17. Top Ten Disposed Materials: Overall Loose Drop-box, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	19.3%	19.3%	319,247
Bulky Items	no	8.3%	27.6%	136,938
Treated Wood Waste	no	5.7%	33.3%	94,686
Prunings & Trimmings	yes	5.3%	38.6%	87,569
Uncoated Corrugated Cardboard	yes	5.0%	43.5%	82,504
Leaves & Grass	yes	4.6%	48.2%	76,940
Food	yes	4.5%	52.7%	75,314
Other Ferrous Metal	yes	4.1%	56.9%	68,421
Remainder/Composite C&D	no	3.9%	60.8%	64,269
Rock, Soil, Fines	yes	3.8%	64.6%	63,045
Total		**64.6%**		**1,068,932**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 18. Detailed Waste Composition: Overall Loose Drop-box, 2005

Material	Est. Percent	+ / -	Est. Tons
Paper	**10.5%**		**173,670**
Uncoated Corrugated Cardboard	5.0%	1.7%	82,504
Paper Bags/Kraft	0.2%	0.2%	3,064
Newspaper	0.2%	0.1%	3,563
White Ledger	0.1%	0.1%	1,259
Colored Ledger	0.0%	0.0%	469
Computer Paper	0.0%	0.0%	225
Other Office Paper	0.2%	0.3%	3,758
Magazines/Catalogs	0.2%	0.3%	3,653
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	2.7%	2.0%	45,362
Remainder/Composite Paper	1.8%	1.1%	29,812
Glass	**1.5%**		**24,045**
Clear Glass Bottles & Containers	0.1%	0.1%	1,066
Green Glass Bottles & Containers	0.0%	0.0%	432
Brown Glass Bottles & Containers	0.0%	0.0%	54
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.9%	1.1%	14,427
Remainder/Composite Glass	0.5%	0.7%	8,066
Metal	**10.1%**		**167,345**
Tin/Steel Cans	0.1%	0.0%	916
Major Appliances	1.8%	1.4%	29,406
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	4.1%	1.2%	68,421
Aluminum Cans	0.0%	0.0%	268
Other Non-Ferrous	0.4%	0.4%	6,897
Remainder/Composite Metal	3.7%	1.5%	61,437
Electronics	**0.4%**		**6,356**
Brown Goods	0.1%	0.2%	2,250
Computer-related Electronics	0.1%	0.1%	1,216
Other Small Consumer Electronics	0.0%	0.0%	103
TV's & Other CRTs	0.2%	0.2%	2,788
Plastic	**9.7%**		**160,365**
PETE Bottles	0.0%	0.0%	463
Other PETE Containers	0.0%	0.0%	4
HDPE Natural Bottles	0.0%	0.0%	326
HDPE Colored Bottles	0.0%	0.0%	292
HDPE 5-gallon buckets - Food	0.1%	0.1%	1,209
HDPE 5-gallon buckets - Non-food	0.1%	0.1%	1,396
Other HDPE Containers	0.1%	0.1%	1,080
#3-#7 Bottles	0.0%	0.1%	674
#3-#7 Other Containers	0.1%	0.1%	1,779
Plastic Trash Bags	0.1%	0.1%	1,772
Grocery/Merch. Bags	0.0%	0.0%	140
Non-Bag Comm./Ind. Packaging Film	0.5%	0.4%	8,029
Film Products	2.8%	2.3%	46,126
Other Film	0.5%	0.7%	8,690
Durable Plastic Items	3.7%	2.2%	60,614
Remainder/Composite Plastic	1.7%	0.9%	27,772

Material	Est. Percent	+ / -	Est. Tons
Organic	**22.6%**		**373,480**
Food	4.5%	2.7%	75,314
Leaves & Grass	4.6%	2.8%	76,940
Prunings & Trimmings	5.3%	2.4%	87,569
Branches & Stumps	2.3%	1.3%	38,143
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.9%	0.5%	14,466
Carpet	2.8%	1.4%	46,441
Remainder/Composite Organics	2.1%	1.0%	34,608
Construction & Demolition	**35.9%**		**594,297**
Concrete	1.4%	0.7%	22,406
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.2%	0.2%	2,658
Lumber	19.3%	3.6%	319,247
Treated Wood Waste	5.7%	1.8%	94,686
Gypsum Board	1.7%	1.0%	27,986
Rock, Soil, Fines	3.8%	2.2%	63,045
Remainder/Composite C&D	3.9%	2.0%	64,269
Household Hazardous Waste	**0.2%**		**2,500**
Paint	0.1%	0.1%	952
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.1%	0.1%	1,549
Special Waste	**9.3%**		**153,576**
Ash	0.1%	0.1%	1,305
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	8.3%	3.1%	136,938
Tires	0.9%	0.8%	14,555
Remainder/Composite Special Waste	0.0%	0.1%	778
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**1,655,634**
Sample count:	**161**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Drop-box Waste, San Diego Area

Figure I presents an overview of drop-box waste from the San Diego Area, according to divertibility class. A total of 45 samples were sorted for this sector in this area. Recyclable wood made up the largest portion of this waste (22 percent), followed by compostable material and other recyclables, both of which accounted for about 18 percent of the total, by weight. Together, the divertible materials were estimated to account for about 73 percent of this sector's waste.

Figure I. Overview of Waste Divertibility: Drop-box Waste, San Diego Area, 2005

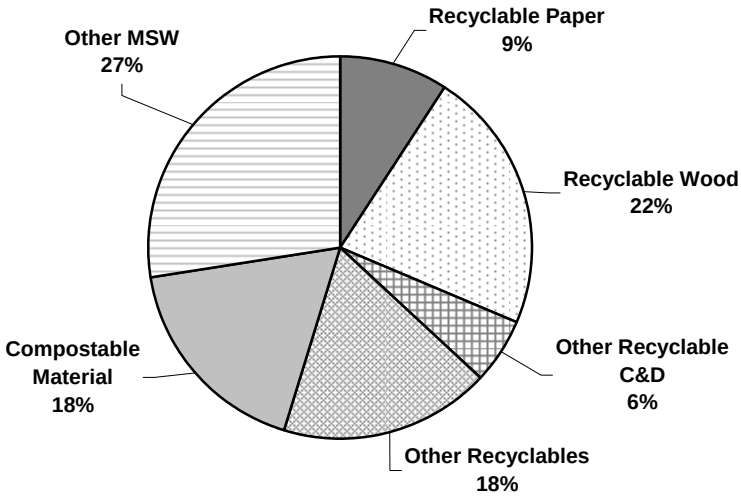


Table 19 lists the ten most common materials for drop-box waste in the San Diego Area. Lumber was the most prominent material in this material class, accounting for approximately 22 percent of the total, by weight. Prunings and trimmings, bulky items, uncoated corrugated cardboard, and carpet each accounted for between 7 percent and 10 percent of this sector's waste. Table 20 lists the detailed composition results for this sector.

Table 19. Top Ten Disposed Materials: Drop-box Waste, San Diego Area, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	22.1%	22.1%	68,752
Prunings & Trimmings	yes	9.7%	31.8%	30,012
Bulky Items	no	9.4%	41.1%	29,144
Uncoated Corrugated Cardboard	yes	7.8%	48.9%	24,183
Carpet	yes	7.2%	56.1%	22,350
Remainder/Composite Metal	no	4.7%	60.8%	14,681
Branches & Stumps	yes	3.9%	64.7%	12,213
Leaves & Grass	yes	3.9%	68.6%	12,062
Remainder/Composite Organics	no	3.8%	72.4%	11,806
Other Ferrous Metal	yes	3.6%	76.1%	11,339
Total		**76.1%**		**236,542**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 20. Detailed Waste Composition: Drop-box Waste, San Diego Area, 2005

Material	Est. Percent	+ / -	Est. Tons
Paper	**10.8%**		**33,594**
Uncoated Corrugated Cardboard	7.8%	4.2%	24,183
Paper Bags/Kraft	0.0%	0.0%	83
Newspaper	0.2%	0.3%	524
White Ledger	0.1%	0.1%	345
Colored Ledger	0.0%	0.0%	3
Computer Paper	0.0%	0.0%	0
Other Office Paper	1.1%	1.8%	3,408
Magazines/Catalogs	0.0%	0.0%	0
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	0.6%	0.6%	1,862
Remainder/Composite Paper	1.0%	0.6%	3,186
Glass	**0.2%**		**587**
Clear Glass Bottles & Containers	0.1%	0.1%	225
Green Glass Bottles & Containers	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	54
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.0%	0.0%	0
Remainder/Composite Glass	0.1%	0.2%	308
Metal	**9.9%**		**30,829**
Tin/Steel Cans	0.0%	0.0%	28
Major Appliances	1.5%	2.4%	4,522
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	3.6%	2.3%	11,339
Aluminum Cans	0.0%	0.0%	99
Other Non-Ferrous	0.1%	0.1%	159
Remainder/Composite Metal	4.7%	3.8%	14,681
Electronics	**0.9%**		**2,702**
Brown Goods	0.0%	0.0%	0
Computer-related Electronics	0.4%	0.5%	1,216
Other Small Consumer Electronics	0.0%	0.1%	103
TV's & Other CRTs	0.4%	0.7%	1,384
Plastic	**6.4%**		**19,873**
PETE Bottles	0.0%	0.0%	36
Other PETE Containers	0.0%	0.0%	3
HDPE Natural Bottles	0.0%	0.0%	1
HDPE Colored Bottles	0.0%	0.1%	145
HDPE 5-gallon buckets - Food	0.0%	0.1%	154
HDPE 5-gallon buckets - Non-food	0.1%	0.1%	251
Other HDPE Containers	0.0%	0.0%	17
#3-#7 Bottles	0.0%	0.0%	0
#3-#7 Other Containers	0.2%	0.2%	635
Plastic Trash Bags	0.1%	0.1%	225
Grocery/Merch. Bags	0.0%	0.0%	0
Non-Bag Comm./Ind. Packaging Film	1.8%	2.1%	5,470
Film Products	0.8%	1.0%	2,389
Other Film	0.1%	0.2%	347
Durable Plastic Items	1.9%	1.3%	5,891
Remainder/Composite Plastic	1.4%	1.1%	4,309

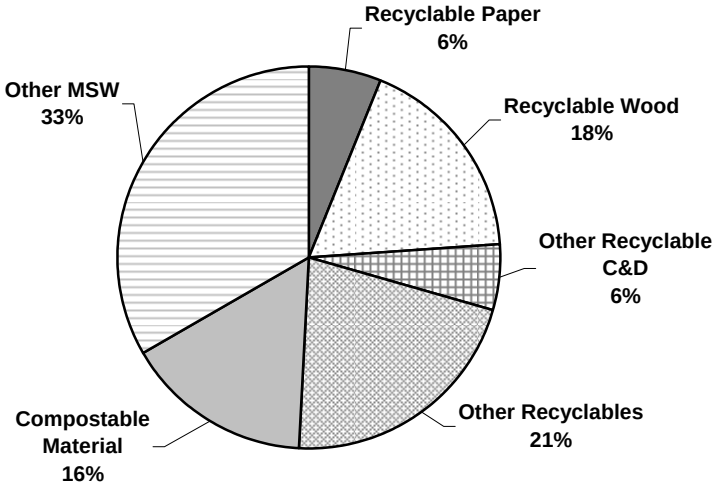
Material	Est. Percent	+ / -	Est. Tons
Organic	**28.8%**		**89,609**
Food	0.1%	0.1%	313
Leaves & Grass	3.9%	2.8%	12,062
Prunings & Trimmings	9.7%	5.8%	30,012
Branches & Stumps	3.9%	2.8%	12,213
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.3%	0.3%	854
Carpet	7.2%	5.3%	22,350
Remainder/Composite Organics	3.8%	3.6%	11,806
Construction & Demolition	**33.0%**		**102,659**
Concrete	3.3%	2.5%	10,299
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.4%	0.7%	1,281
Lumber	22.1%	8.1%	68,752
Treated Wood Waste	2.4%	1.8%	7,606
Gypsum Board	1.4%	2.0%	4,322
Rock, Soil, Fines	1.1%	1.1%	3,283
Remainder/Composite C&D	2.3%	2.1%	7,116
Household Hazardous Waste	**0.2%**		**712**
Paint	0.2%	0.4%	712
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.0%	0.0%	0
Special Waste	**9.8%**		**30,382**
Ash	0.0%	0.0%	0
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	9.4%	6.8%	29,144
Tires	0.4%	0.5%	1,239
Remainder/Composite Special Waste	0.0%	0.0%	0
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**310,948**
Sample count:	**45**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Drop-box Waste, Southern California/Los Angeles Basin

A total of 46 samples were characterized from drop-box waste in the Southern California/Los Angeles Basin. Figure J presents the results for this area's drop-box waste according to divertibility class. Approximately two-thirds of this waste was estimated to be divertible. The largest divertible class was other recyclables (21 percent), followed by recyclable wood (18 percent), and compostable material (16 percent).

Figure J. Overview of Waste Divertibility: Drop-box Waste, Southern California/Los Angeles Basin, 2005



The most prevalent material type, lumber, made up almost 18 percent of the drop-box waste in the L.A. Basin (Table 21). Most of the top ten materials were considered divertible, with the exception of bulky items, durable plastic items, and remainder/composite metal. The full composition results are listed in Table 22.

Table 21. Top Ten Disposed Materials: Drop-box Waste, Southern California/Los Angeles Basin, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	17.7%	17.7%	112,475
Bulky Items	no	8.3%	26.0%	52,889
Durable Plastic Items	no	6.9%	32.8%	43,659
Film Products	yes	6.5%	39.4%	41,643
Prunings & Trimmings	yes	6.0%	45.4%	38,298
Other Miscellaneous Paper	yes	5.2%	50.6%	33,264
Uncoated Corrugated Cardboard	yes	5.2%	55.8%	33,141
Food	yes	4.1%	59.9%	25,992
Rock, Soil, Fines	yes	3.9%	63.8%	24,724
Remainder/Composite Metal	no	3.9%	67.7%	24,692
Total		**67.7%**		**430,779**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 22. Detailed Waste Composition: Drop-box Waste, Southern California/Los Angeles Basin, 2005

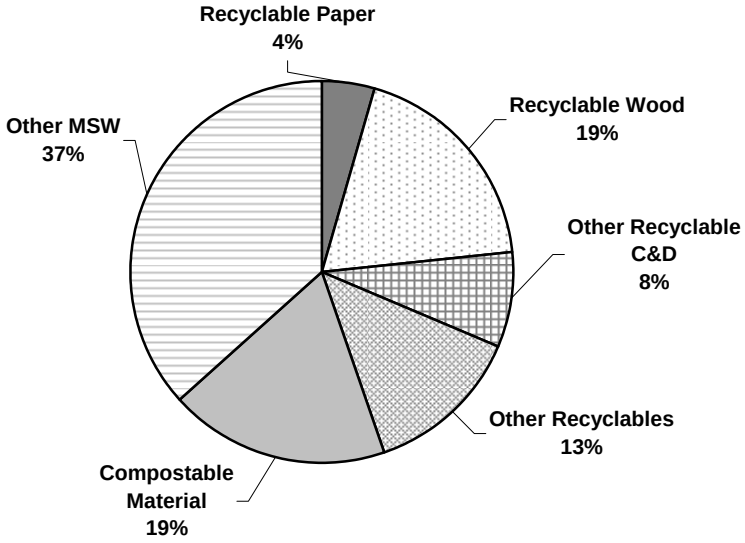
Material	Est. Percent	+ / -	Est. Tons
Paper	**13.8%**		**87,775**
Uncoated Corrugated Cardboard	5.2%	3.5%	33,141
Paper Bags/Kraft	0.3%	0.3%	1,854
Newspaper	0.4%	0.3%	2,408
White Ledger	0.0%	0.0%	69
Colored Ledger	0.1%	0.1%	359
Computer Paper	0.0%	0.1%	224
Other Office Paper	0.0%	0.0%	272
Magazines/Catalogs	0.1%	0.1%	629
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	5.2%	5.2%	33,264
Remainder/Composite Paper	2.4%	2.6%	15,556
Glass	**3.4%**		**21,465**
Clear Glass Bottles & Containers	0.1%	0.2%	693
Green Glass Bottles & Containers	0.1%	0.1%	432
Brown Glass Bottles & Containers	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	2.1%	2.7%	13,224
Remainder/Composite Glass	1.1%	1.8%	7,116
Metal	**11.2%**		**71,244**
Tin/Steel Cans	0.1%	0.1%	562
Major Appliances	3.4%	3.3%	21,618
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	3.5%	1.9%	22,439
Aluminum Cans	0.0%	0.0%	127
Other Non-Ferrous	0.3%	0.3%	1,806
Remainder/Composite Metal	3.9%	2.6%	24,692
Electronics	**0.0%**		**0**
Brown Goods	0.0%	0.0%	0
Computer-related Electronics	0.0%	0.0%	0
Other Small Consumer Electronics	0.0%	0.0%	0
TV's & Other CRTs	0.0%	0.0%	0
Plastic	**14.6%**		**93,162**
PETE Bottles	0.0%	0.0%	271
Other PETE Containers	0.0%	0.0%	0
HDPE Natural Bottles	0.0%	0.0%	80
HDPE Colored Bottles	0.0%	0.0%	80
HDPE 5-gallon buckets - Food	0.0%	0.1%	272
HDPE 5-gallon buckets - Non-food	0.1%	0.1%	346
Other HDPE Containers	0.1%	0.1%	437
#3-#7 Bottles	0.0%	0.0%	0
#3-#7 Other Containers	0.2%	0.1%	1,059
Plastic Trash Bags	0.2%	0.1%	991
Grocery/Merch. Bags	0.0%	0.0%	99
Non-Bag Comm./Ind. Packaging Film	0.1%	0.1%	746
Film Products	6.5%	5.9%	41,643
Other Film	0.1%	0.1%	693
Durable Plastic Items	6.9%	5.6%	43,659
Remainder/Composite Plastic	0.4%	0.4%	2,786
Organic	**17.4%**		**110,531**
Food	4.1%	3.9%	25,992
Leaves & Grass	3.8%	5.0%	24,074
Prunings & Trimmings	6.0%	4.6%	38,298
Branches & Stumps	1.8%	1.7%	11,688
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.8%	0.6%	5,154
Carpet	0.4%	0.4%	2,307
Remainder/Composite Organics	0.5%	0.4%	3,018
Construction & Demolition	**30.5%**		**194,089**
Concrete	0.2%	0.2%	1,582
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.2%	0.3%	1,103
Lumber	17.7%	5.7%	112,475
Treated Wood Waste	3.6%	1.9%	22,790
Gypsum Board	1.4%	2.1%	9,158
Rock, Soil, Fines	3.9%	3.8%	24,724
Remainder/Composite C&D	3.5%	2.5%	22,257
Household Hazardous Waste	**0.1%**		**346**
Paint	0.0%	0.1%	240
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.0%	0.0%	107
Special Waste	**9.1%**		**57,913**
Ash	0.2%	0.3%	1,305
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	8.3%	5.3%	52,889
Tires	0.5%	0.5%	2,941
Remainder/Composite Special Waste	0.1%	0.2%	778
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**636,526**
Sample count:	**46**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Drop-box Waste, San Francisco Bay Area

Forty-two drop-box samples were sorted from the San Francisco Bay Area. Figure K displays the composition results, by divertibility class, for this sector's waste. Compostable material and recyclable wood each made up about 19 percent of the total, by weight. Approximately 63 percent of this waste was calculated to be divertible.

Figure K. Overview of Waste Divertibility: Drop-box Waste, San Francisco Bay Area, 2005



As shown in Table 23, the most prevalent material type for drop-box waste in the Bay Area was lumber (19.0 percent). Treated wood waste, the second most common material (almost 10 percent), is not considered divertible. Table 24 presents the detailed composition results for Bay Area drop-box waste.

Table 23. Top Ten Disposed Materials: Drop-box Waste, San Francisco Bay Area, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	19.0%	19.0%	121,181
Treated Wood Waste	no	9.3%	28.2%	59,362
Bulky Items	no	8.5%	36.8%	54,501
Food	yes	7.4%	44.1%	47,017
Leaves & Grass	yes	6.3%	50.4%	40,318
Remainder/Composite C&D	no	5.4%	55.9%	34,827
Rock, Soil, Fines	yes	5.4%	61.2%	34,304
Other Ferrous Metal	yes	4.3%	65.6%	27,718
Uncoated Corrugated Cardboard	yes	3.5%	69.1%	22,470
Remainder/Composite Plastic	no	3.0%	72.1%	19,317
Total		**72.1%**		**461,016**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 24. Detailed Waste Composition: Drop-box Waste, San Francisco Bay Area, 2005

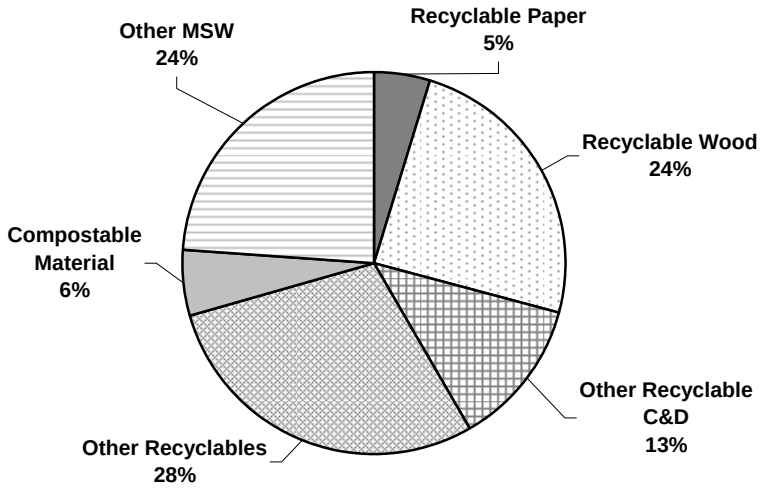
Material	Est. Percent	+ / -	Est. Tons
Paper	**6.3%**		**40,294**
Uncoated Corrugated Cardboard	3.5%	1.6%	22,470
Paper Bags/Kraft	0.1%	0.1%	654
Newspaper	0.1%	0.1%	625
White Ledger	0.1%	0.2%	845
Colored Ledger	0.0%	0.0%	107
Computer Paper	0.0%	0.0%	0
Other Office Paper	0.0%	0.0%	77
Magazines/Catalogs	0.5%	0.8%	3,022
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	0.3%	0.3%	2,207
Remainder/Composite Paper	1.6%	1.2%	10,286
Glass	**0.2%**		**1,517**
Clear Glass Bottles & Containers	0.0%	0.0%	149
Green Glass Bottles & Containers	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.1%	0.2%	726
Remainder/Composite Glass	0.1%	0.1%	643
Metal	**8.6%**		**55,127**
Tin/Steel Cans	0.0%	0.0%	59
Major Appliances	0.5%	0.8%	3,266
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	4.3%	2.2%	27,718
Aluminum Cans	0.0%	0.0%	36
Other Non-Ferrous	0.8%	0.9%	4,908
Remainder/Composite Metal	3.0%	2.2%	19,139
Electronics	**0.5%**		**3,468**
Brown Goods	0.3%	0.5%	2,064
Computer-related Electronics	0.0%	0.0%	0
Other Small Consumer Electronics	0.0%	0.0%	0
TV's & Other CRTs	0.2%	0.4%	1,404
Plastic	**6.5%**		**41,663**
PETE Bottles	0.0%	0.0%	144
Other PETE Containers	0.0%	0.0%	0
HDPE Natural Bottles	0.0%	0.0%	244
HDPE Colored Bottles	0.0%	0.0%	59
HDPE 5-gallon buckets - Food	0.1%	0.2%	744
HDPE 5-gallon buckets - Non-food	0.1%	0.1%	678
Other HDPE Containers	0.1%	0.2%	607
#3-#7 Bottles	0.0%	0.0%	0
#3-#7 Other Containers	0.0%	0.0%	83
Plastic Trash Bags	0.1%	0.1%	524
Grocery/Merch. Bags	0.0%	0.0%	30
Non-Bag Comm./Ind. Packaging Film	0.2%	0.2%	1,565
Film Products	0.3%	0.3%	2,005
Other Film	1.2%	1.7%	7,597
Durable Plastic Items	1.3%	0.7%	8,067
Remainder/Composite Plastic	3.0%	2.1%	19,317
Organic	**25.9%**		**165,467**
Food	7.4%	6.0%	47,017
Leaves & Grass	6.3%	5.1%	40,318
Prunings & Trimmings	2.9%	3.1%	18,710
Branches & Stumps	2.1%	2.6%	13,314
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	1.2%	1.1%	7,990
Carpet	3.0%	2.3%	19,127
Remainder/Composite Organics	3.0%	1.8%	18,990
Construction & Demolition	**41.8%**		**267,010**
Concrete	1.0%	1.1%	6,395
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.0%	0.0%	173
Lumber	19.0%	6.3%	121,181
Treated Wood Waste	9.3%	4.2%	59,362
Gypsum Board	1.7%	1.3%	10,768
Rock, Soil, Fines	5.4%	4.2%	34,304
Remainder/Composite C&D	5.4%	4.3%	34,827
Household Hazardous Waste	**0.0%**		**0**
Paint	0.0%	0.0%	0
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	0.0%	0.0%	0
Special Waste	**10.1%**		**64,877**
Ash	0.0%	0.0%	0
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	8.5%	5.2%	54,501
Tires	1.6%	1.9%	10,376
Remainder/Composite Special Waste	0.0%	0.0%	0
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**639,424**
Sample count:	**42**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Drop-box Waste, Central Valley

To characterize Central Valley drop-box waste, 28 samples were captured and sorted. The results of this sampling are presented in Figure L, in terms of divertibility class. Divertible material accounted for about 76 percent of the total, by weight. Recyclable wood and other recyclables, together, made up over half of this waste.

Figure L. Overview of Waste Divertibility: Drop-box Waste, Central Valley, 2005



As listed in Table 25, lumber made up almost 25 percent of the Central Valley drop-box waste, followed by other miscellaneous paper (11.7 percent) and other ferrous metal (10.1 percent). The top ten materials accounted for about 81 percent of this sector's waste. The composition estimates for all 74 material types are shown in Table 26.

Table 25. Top Ten Disposed Materials: Drop-box Waste, Central Valley, 2005

Material	Divertible	Est. Percent	Cum. Percent	Est. Tons
Lumber	yes	24.5%	24.5%	16,839
Other Miscellaneous Paper	yes	11.7%	36.2%	8,029
Other Ferrous Metal	yes	10.1%	46.3%	6,927
Treated Wood Waste	no	7.2%	53.4%	4,928
Concrete	yes	6.0%	59.4%	4,129
Gypsum Board	yes	5.4%	64.9%	3,738
Durable Plastic Items	no	4.4%	69.2%	2,996
Remainder/Composite Metal	no	4.3%	73.5%	2,925
Uncoated Corrugated Cardboard	yes	3.9%	77.4%	2,709
Carpet	yes	3.9%	81.3%	2,657
Total		**81.3%**		**55,878**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Table 26. Detailed Waste Composition: Drop-box Waste, Central Valley, 2005

Material	Est. Percent	+ / -	Est. Tons
Paper	**17.5%**		**12,006**
Uncoated Corrugated Cardboard	3.9%	2.7%	2,709
Paper Bags/Kraft	0.7%	1.0%	473
Newspaper	0.0%	0.0%	7
White Ledger	0.0%	0.0%	0
Colored Ledger	0.0%	0.0%	0
Computer Paper	0.0%	0.0%	1
Other Office Paper	0.0%	0.0%	1
Magazines/Catalogs	0.0%	0.0%	2
Phone Books/Directories	0.0%	0.0%	0
Other Misc. Paper	11.7%	9.1%	8,029
Remainder/Composite Paper	1.1%	0.8%	784
Glass	**0.7%**		**477**
Clear Glass Bottles & Containers	0.0%	0.0%	0
Green Glass Bottles & Containers	0.0%	0.0%	0
Brown Glass Bottles & Containers	0.0%	0.0%	0
Other Colored Glass Bottles & Containers	0.0%	0.0%	0
Flat Glass	0.7%	1.1%	477
Remainder/Composite Glass	0.0%	0.0%	0
Metal	**14.8%**		**10,146**
Tin/Steel Cans	0.4%	0.4%	266
Major Appliances	0.0%	0.0%	0
Used Oil Filters	0.0%	0.0%	0
Other Ferrous	10.1%	6.8%	6,927
Aluminum Cans	0.0%	0.0%	5
Other Non-Ferrous	0.0%	0.1%	24
Remainder/Composite Metal	4.3%	4.7%	2,925
Electronics	**0.3%**		**185**
Brown Goods	0.3%	0.4%	185
Computer-related Electronics	0.0%	0.0%	0
Other Small Consumer Electronics	0.0%	0.0%	0
TV's & Other CRTs	0.0%	0.0%	0
Plastic	**8.2%**		**5,667**
PETE Bottles	0.0%	0.0%	12
Other PETE Containers	0.0%	0.0%	1
HDPE Natural Bottles	0.0%	0.0%	2
HDPE Colored Bottles	0.0%	0.0%	7
HDPE 5-gallon buckets - Food	0.1%	0.1%	40
HDPE 5-gallon buckets - Non-food	0.2%	0.3%	121
Other HDPE Containers	0.0%	0.0%	19
#3-#7 Bottles	1.0%	1.6%	674
#3-#7 Other Containers	0.0%	0.0%	2
Plastic Trash Bags	0.0%	0.0%	32
Grocery/Merch. Bags	0.0%	0.0%	12
Non-Bag Comm./Ind. Packaging Film	0.4%	0.3%	249
Film Products	0.1%	0.1%	88
Other Film	0.1%	0.1%	53
Durable Plastic Items	4.4%	4.3%	2,996
Remainder/Composite Plastic	2.0%	1.4%	1,359
Organic	**11.5%**		**7,872**
Food	2.9%	3.7%	1,991
Leaves & Grass	0.7%	1.2%	486
Prunings & Trimmings	0.8%	0.9%	548
Branches & Stumps	1.3%	2.2%	928
Agricultural Crop	0.0%	0.0%	0
Manures	0.0%	0.0%	0
Textiles	0.7%	0.7%	468
Carpet	3.9%	4.4%	2,657
Remainder/Composite Organics	1.2%	1.2%	794
Construction & Demolition	**44.4%**		**30,538**
Concrete	6.0%	6.8%	4,129
Asphalt Paving	0.0%	0.0%	0
Asphalt Roofing	0.1%	0.2%	101
Lumber	24.5%	8.8%	16,839
Treated Wood Waste	7.2%	5.9%	4,928
Gypsum Board	5.4%	6.6%	3,738
Rock, Soil, Fines	1.1%	1.8%	734
Remainder/Composite C&D	0.1%	0.2%	68
Household Hazardous Waste	**2.1%**		**1,442**
Paint	0.0%	0.0%	0
Vehicle & Equip. Fluids	0.0%	0.0%	0
Used Oil	0.0%	0.0%	0
Batteries	0.0%	0.0%	0
Remainder/Composite HHW	2.1%	3.4%	1,442
Special Waste	**0.6%**		**403**
Ash	0.0%	0.0%	0
Sewage Solids	0.0%	0.0%	0
Industrial Sludge	0.0%	0.0%	0
Treated Medical Waste	0.0%	0.0%	0
Bulky Items	0.6%	0.9%	403
Tires	0.0%	0.0%	0
Remainder/Composite Special Waste	0.0%	0.0%	0
Mixed Residue	**0.0%**		**0**
Mixed Residue	0	0.0%	0
Totals	**100.0%**		**68,736**
Sample count:	**28**		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

Comparison of Drop-box Waste between Metropolitan Areas

Only two materials appeared in the top ten tables for drop-box waste in all four metropolitan areas: lumber, which was number one in all areas, contributing between 17 percent to 25 percent; and uncoated corrugated cardboard. Bulky items, other ferrous metal, and remainder/composite metal were each common to three of the four regions. Gypsum board and concrete (Central Valley), branches and stumps and remainder/composite organics (San Diego), remainder/composite C&D and remainder/composite plastic (Bay Area), and film products (L.A. Basin) were each unique to one metropolitan area.

By divertible classes, other recyclables was the largest divertible class for the L.A. Basin and Central Valley. Recyclable wood and compostable material were each large divertible classes in each region, with the exception of the Central Valley, with each one accounting for at least 16 percent of the total for each area. Compostable material accounted for an estimated 6 percent for the Central Valley region.

Abbreviations and Acronyms

C&D — Construction and Demolition

CIWMB — California Integrated Waste Management Board

CRV — California Redemption Value

HHW — Household Hazardous Waste

MSW — Municipal Solid Waste

Glossary of Terms

Construction — the building of any facility or structure or any portion thereof including any tenant improvements to an existing facility or structure

Commercially Hauled Waste — waste that is collected and transported by contracted or franchised haulers

Compostable — describes organic waste material that under the right conditions can be turned in to soil amendment (compost)

Demolition — the tearing down of any facility, structure, pavement or building, (wall, fence) whether in whole or in part, whether interior or exterior

Disposal — refers to waste materials that are sent to landfills

Divertible — material for which technologies and markets exist in California to recover these materials from the waste stream, through recycling or composting

Municipal Solid Waste (MSW) — means all solid wastes generated by residential, commercial, and industrial sources, and all solid waste generated at construction and demolition sites, at food-processing facilities, and at treatment works for water and waste water, which are collected and transported under the authorization of a jurisdiction or are self-hauled

Self-haul Waste — waste hauled by individuals, businesses, or government agencies that haul their own garbage

Waste Density — unit of measurement calculated by dividing the weight of waste material by the volume of waste material and expressed in pounds/cubic yards

Waste Sector — the division of the overall waste stream into segments. The waste stream can be divided according to activity that generated the waste, vehicle type delivering the waste, geographic region, etc. Waste sectors examined in the current study included commercial self-haul waste and drop-box waste.

Waste Stream — in this context, refers to the entire stream of construction and demolition wastes that are sent to landfill

Waste Substream — a portion of the disposal waste stream

Appendix A:
Detailed Methodology

Overview

This appendix describes the major elements of the methodology of the study, from sampling and surveying, site selection to sorting methods, to the calculations and analysis.

Waste Sectors Examined in This Study

For the purposes of this study, the waste stream was divided into two sectors, commercial self-haul and loose drop-box waste. These sectors are defined as follows:

- **Commercial Self-haul Waste** —Waste hauled by businesses or government agencies that haul their own garbage; includes waste delivered by anyone other than a resident or contracted or franchised hauler. For this study, only commercial self-haul waste was sampled. Residential self-haulers were surveyed, but excluded from sampling.
- **Loose Drop-box waste** —Waste arriving at disposal facilities in loose or open top (as opposed to compacting) drop-boxes that is typically hauled by contracted or franchised haulers, or by an independent hauler.

For both sectors, loads that were categorized as coming from roofing or construction and demolition (C&D) sources were excluded from this portion of the study. These loads were characterized in a companion study.

Selection and Recruitment of Participating Sites

Sampling was conducted at disposal facilities such as landfills and transfer stations. We selected disposal facilities using the steps described below.

- Assembly of list – CIWMB staff assembled a complete list of disposal facilities in each of the four urban areas that were believed to handle 100 tons or more of non-C&D commercial self-haul and loose drop-box waste per day that had not already passed through a waste transfer station.
- The list of facilities within each region was placed in random order, using a random number generator.
- Then, Cascadia phoned the candidate facilities, starting with the first facility appearing on the random-ordered list, to recruit participation in the study. In each season, when two sampling days were confirmed in each region, the recruitment process was complete.
- When the facilities were contacted by telephone, three screening criteria were applied: (1) the facility received an average of at least 100 tons of directly-hauled non-C&D commercial self-haul and loose drop-box waste per operating day, (2) an adequate number of vehicles from both sectors are available daily to be sampled, and (3) management was willing to accommodate the expected waste sampling activities.
- Because most of the selected facilities also received an adequate amount of C&D waste, scheduling and sampling efforts were coordinated with Task 3 activities to allow sampling for both tasks to occur simultaneously.[‡]

[‡] Del Norte Transfer Station, visited for the study on Saturday, June 25, 2005, was selected to have a self-haul sampling event on a weekend day, even though it did not meet the criteria for Task 3.

If a site met the qualification criteria, a questionnaire was used during the remainder of the telephone interview to obtain essential information for the prospective surveying and sampling. An example of the questionnaire used for interviews with personnel at each selected disposal facility can be found in Appendix C. In addition to obtaining contact information for the staff that were able to assist in making arrangements for data collection at each facility, the questionnaire and interview process collected the following information:

- The facility's days and hours of operation.
- The vehicle traffic expected for each sector on each day of the week, and the estimated peak time of day for each type of load.
- How many scalehouses the facility had, and if specific types of vehicles were directed to different scalehouses. (E.g., did commercial haulers use a separate gate from self-haulers or cash customers?)
- Any rules that may have been used for recording the net weight of vehicles and for recording alternate minimum weights for small vehicles.
- Unusual conditions (e.g., weather, anomalies in traffic patterns, etc.) that might have affected data collection and necessitate special logistical arrangements.
- Recycling activities conducted at the facility, such as a green waste drop-off area.

While administering the questionnaire, the study team communicated the data collection crew's needs for space, their need for the assistance of a vehicle spotter, loader and operator, and the need for access to restrooms and shelter at the facility.

After a disposal facility was recruited for participation in the study, a letter of confirmation was sent to the facility's management via fax or e-mail. The letter summarized the information that had been obtained through the recruitment and interview process, including the approximate dates of data collection activities, arrangements for the use of equipment such as a loader, arrangements for assistance in the use of a loader, arrangements for space in which to work, etc. The management of each facility was asked to verify verbally the information summarized in the letter. Approximately 2 weeks prior to the scheduled visit, the management of each site was contacted by phone to remind them of the visit and their role in the sampling activities. Each facility was also contacted by phone one or two days prior to the actual visit.

Vehicle Surveys

In order to quantify the portion of waste within the four urban areas that was commercial self-haul and loose drop-box waste, surveys were conducted at the entrance of each participating facility. The surveys were administered to the drivers of all commercial self-haul vehicles and loose drop-boxes bringing waste for disposal at the gate where the surveyor was posted. Information on weekend disposal patterns was gathered to supplement survey data for weekdays and to adjust data to better reflect overall disposal at the facility.

The surveys were conducted at each participating disposal facility on the same days that waste samples were obtained. On each survey day, the surveyor was on-site for an eight-hour period. The survey times at each site were chosen such that the 8-hour window encompassed the busiest times of the day, in terms of vehicle traffic at the facility.

Information that was obtained through the survey process includes:

- The type of vehicle (large or small self-haul vehicle vs. loose drop-box)

- The sector (commercial self-haul vs. loose drop-box waste)
- The jurisdiction from which the load originated
- The net weight of the load

If there is more than one vehicle entrance at a particular facility, then a survey plan was constructed that allowed collection of representative tonnage data from each entrance. In most cases, this involved constructing a schedule in which the surveyor rotated from entrance to entrance, in sequence every hour, starting with a randomly chosen entrance. If the multiple entrances at a facility each received a different mix of vehicle types or waste types, then a plan was developed that corrected for the differences across entrances and allowed the survey data from each entrance to be "scaled up" to reflect the total mixture of waste arriving at the facility.

The Cascadia project manager trained the surveyor and vehicle selector in the use of the Sample Selection Form and the Vehicle Survey Form prior to the beginning of the first sampling season (see Appendix C for forms).

Vehicle Selection Method

In addition to the staff member conducting the vehicle surveys described above, an additional person had the duty of selecting vehicles for sampling. Vehicles were interviewed as they arrived to determine whether they met the criteria for either waste sector. If the vehicle met the criteria for sampling, the driver's answers were recorded on the Sample Selection Form. Then, the staff member assigned a unique sample ID number to the load and recorded that sample ID number on the Sample Selection Form. Vehicles were selected for sampling until each sector's quota for that day was reached. The number of vehicles sampled each day was tracked on the Sample Tracking Form.

The vehicle selector then placed a Sample Placard on the vehicle's windshield or dashboard to identify it as a vehicle intended for sampling, and directed the driver to the sampling area. Please see Appendix C for examples of the above mentioned forms.

Capture and Characterization of Samples

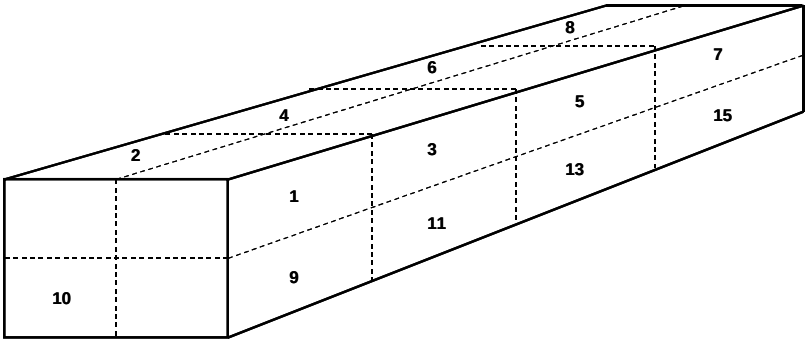
The professional sorting crew, Sky Valley Associates, includes 4 or 5 experienced waste sorters and a manager. Each load selected for sampling was tipped into an elongated pile on the ground or the floor of the disposal facility. The field crew supervisor then oversaw the following steps to obtain the sample:

1. **Visually dividing each sample load into 16 cells.** An imaginary 16-cell grid[§] was superimposed on the tipped load, as depicted in Figure M.
2. **Instructing the loader operator to capture waste from a randomly selected cell in the grid**. The field crew supervisor directed the loader operator to the randomly selected cell in the grid to obtain the waste sample.
3. **Select a sample estimated to weigh at least 200 pounds from the pile.** Material from the identified cell was placed onto a tarpaulin for sorting. In most cases, a loader was available to transport the material, but at some facilities samples were removed from the pile by hand.

[§] The number of cells in this grid was adjusted downward for small loads. For example, a small load could be divided into eight cells instead of 16 to ensure that a sufficient amount of waste (at least 200 pounds per cell) was captured for sampling.

The specifications for selecting self-hauled samples were slightly different, because self-hauled loads vary greatly in size. A sample of at least 200 pounds was taken only if the entire load weighed at least 250 pounds. For loads weighing between 175 and 250 pounds, the entire load was sorted as a sample. In the cases when a load weighed less than 175 pounds, additional loads from the same waste sector were collected until the total weight exceeded 200 pounds. The combined small vehicle loads were then sorted as one sample.

Figure M. The 16-Cell Grid as Applied to a Tipped Load



The sorting crew sorted the material by hand into the prescribed 74 material types. Plastic laundry baskets were used to contain the separated components. The sorting crew members typically specialize in groups of materials, such as papers or plastics, and sort from the baskets containing their specialty.

The manager of the sorting crew monitored the homogeneity of the component baskets as they accumulated, rejecting materials that were improperly classified. Open laundry baskets allowed the manager to see the material at all times. The manager also verified the purity of each component as it was weighed, before recording the weight on field sheets. The materials were sorted to the greatest reasonable level of detail by hand, until no more than a small amount of homogeneous fine material ("mixed residue") remained. The overall goal was to sort each sample directly into component categories in order to reduce the amount of indistinguishable fines.

The manager of the sorting crew recorded composition weights on paper forms (Sample Tally Sheets), examples of which are presented in Appendix C. Originals were delivered by the sorting crew supervisor to Cascadia's home office for entry into a database. Random spot checks were conducted to ensure the accuracy of the data entry process.

Schedule of Field Work Activities and Sample Allocation

Sampling took place over 8 weekdays during each season of the study. The summer season included an additional day of sampling on a weekend day. The goal for each sampling day was ten samples per sector, for a total of 320 non-C&D commercial self-haul and loose drop-box samples: 160 from commercial self-haul loads and 160 from loose drop-boxes. Table 27 presents the schedule of field work and the number of samples obtained at each site.

Table 27. Schedule of Field Work and Number of Samples by Site

Site	Metro Area	Date	Number of Self-haul Samples	Number of Drop-box Samples
Miramar Landfill	San Diego	12/7/2004	9	15
Miramar Landfill	San Diego	12/8/2004	8	14
Antelope Valley Landfill	LA Basin	12/9/2004	11	10
Colton Landfill	LA Basin	12/10/2004	7	13
Guadalupe Landfill	Bay Area	12/13/2004	13	6
Sonoma Disposal Site	Bay Area	12/14/2004	10	17
L & D Landfill	Central Valley	12/15/2004	9	11
Sacramento County Landfill	Central Valley	12/16/2004	11	9
Miramar Landfill	San Diego	6/21/2005	8	8
Otay Landfill	San Diego	6/22/2005	11	8
Chiquita Canyon Landfill	LA Basin	6/23/2005	4	12
Puente Hills Landfill	LA Basin	6/24/2005	1	
Del Norte Transfer Station	LA Basin	6/25/2005	17	11
West Contra Costa Landfill	Bay Area	6/27/2005	4	12
Vasco Road	Bay Area	6/28/2005	12	7
L & D Landfill	Central Valley	6/29/2005	12	6
Western Regional Landfill	Central Valley	6/30/2005	13	2
Total			**160**	**161**

Description of Calculations and Statistical Procedures Used

Quantifying Disposed Waste

Data from vehicle surveys and facility tonnage reports were analyzed to yield estimates of percentages and tonnages of material types in the metropolitan areas' self-haul and drop-box waste stream. The calculation method is described below.

Step 1. Aggregating survey records to produce findings at the facility level. For a given facility on a given day, each vehicle that was surveyed had its net weight of waste assigned to one of the two waste sectors, in accordance with the response of the driver. The net weights were summed within each sector on each sampling day. If a site had more than one scale, estimates were derived for each scale first.

For each scale, the sum of net weights was "scaled up" to match the number of hours the facility was open. For instance, in the example below, 26.7 tons of material was delivered by self-haul loads at that scale in 2 hours. The facility was open for 9.5 hours, so the tons at Scale 1 were scaled up by a factor of 9.5/2, or 4.75. The estimate for that scale for the day for that sector was 26.7 multiplied by 4.75, or 126.8 tons. If there were multiple scales, each scale's total (126.8, 115.0, 207.1, 125.9 tons) was summed for all scales to produce a daily estimate (574.8 tons).

Scale	1		2		3		4		Daily Total
	Hours at scale	*Hours in day*	*Hours at scale*	*Hours in day*	*Hours at scale*	*Hours in day*	*Hours at scale*	*Hours in day*	
	2	**9.5**	**2**	**9.5**	**2**	**9.5**	**1**	**9.5**	
Tons of self-haul loads observed	26.7	126.8	24.2	115.0	43.6	207.1	13.3	125.9	574.8

The figures, when added together, may not exactly match the totals shown, due to rounding.

Next, the projection of waste tonnage for a weekday, based on the vehicle survey, was "scaled up" by a factor of five to produce an estimate of tonnages for each type of waste for all weekdays for a period of one week. Data from the study was not used to estimate weekend activity, since the one site that was visited on a weekend day, Del Norte Transfer Station, was not typical of the other participating facilities, which were all landfills. To create estimates for weekend activity, data was analyzed from a similar study, conducted on waste at three Orange County landfills.[1] Based on vehicle activity during the Orange County study, Saturday was estimated to represent 0.8 of a weekday for commercial self-haul and 0.5 for loose drop-box waste, and Sunday was assumed to have no activity for these sectors. Most facilities were open Monday through Saturday. If they were only open on weekdays, no weekend estimates were included. In the following example, 574.5 tons in one weekday was calculated to correspond to 173,272 tons for the entire year for that facility.

	Daily Total	Weekend Days	Weekdays	Scaling factor	Days per Year	Annual Total
Self-haul	574.5	1.0	5.0	5.8	301.6	173,272

The figures, when added together, may not exactly match the totals shown, due to rounding.

Step 2. Aggregating tonnage from facilities to produce findings for each metropolitan area. Tonnage estimates for each sector's waste were combined for participating facilities within each metropolitan area, using a weighted averaging method. The tonnage estimates for each sector at all participating facilities within each area were aggregated, and relative proportions were calculated for each sector. The aggregated proportions for each sector were then applied to the total 2004 combined disposal figure for all disposal sites within that metropolitan area, as drawn from the CIWMB Disposal Reporting System.

If a facility was visited more than once, the annual estimates derived from each day's surveys were averaged. In the below example, the same facility was visited on three days during the study: 12/7/2004, 12/8/2004, and 6/21/2005. An annual estimate of self-haul waste was estimated based on each survey day. These three independent estimates were averaged to produce one figure for this facility. The estimate 163,993.9 tons was the average of the annual estimates derived from each of the three survey days.

Date	Annual Estimate for Self-haul Waste (tons)
12/7/2004	156,333
12/8/2004	173,272
6/21/2005	162,377
Average	**163,994**

The figures, when added together, may not exactly match the totals shown, due to rounding.

Tonnage estimates for each metropolitan area were calculated as illustrated in the following example. Between two and five sites were visited in each metropolitan area. For each site, annual

tonnage estimates were summed by sector. In the following example, 232,358 tons of self-haul waste was the combined annual estimate for the two sites visited in that area. Estimates for drop-box waste were calculated in the same manner to produce the annual total for drop-box waste in that area: 235,910 tons. The total tonnage, as reported to the CIWMB, for each site was summed (2,909,609 tons). The percentage of this total was calculated for each sector. This percentage, which was estimated to be about 8 percent for both sectors, was applied to the total disposal reported for all sites in that area (3,835,091 tons). The resulting figures, 306,807 tons and 310,948 tons, for self-haul and drop-box waste respectively, were the annual disposal estimates for that area.

	Self-haul Waste	Drop-box Waste	Other Waste	Total
Miramar Landfill	163,994	175,362	1,139,507	1,478,863
Otay Landfill	68,364	60,548	1,301,834	1,430,746
Total estimated for sites visited in San Diego area	232,358	235,910	2,441,341	2,909,609
% by sector for San Diego area	8%	8%	84%	100%
Total reported to CIWMB for all sites in San Diego area	3,835,091			
Quantity by sector for San Diego area	306,807	310,948	3,217,877	3,835,091

The figures, when added together, may not exactly match the totals shown, due to rounding.

Estimating Waste Composition

The composition estimate denoted by r_j represents the ratio of the material's weight to the total sample weight for each noted group. It is derived by summing each material's weight across all of the selected samples and dividing by the sum of the total sample weight, as shown in the following equation:

$$r_j = \frac{\sum_i c_{ij}}{\sum_i w_i}$$

where:

c = weight of particular material

w = sum of all material weights

for i = 1 to n, where n = number of selected samples

for j = 1 to m, where m = number of materials

The confidence interval for this estimate is derived in two steps. First, the variance around the estimate is calculated, accounting for the fact that the ratio includes two random variables (the material and total sample weights).[**] The variance of the ratio estimator equation follows:

$$\mathrm{Var}(r_j) \approx \left(\frac{1}{n}\right)\left(\frac{1}{\overline{w}^2}\right)\left(\frac{\sum_i \left(c_{ij} - r_j w_i\right)^2}{n-1}\right)$$

where:

$$\overline{w} = \frac{\sum_i w_i}{n}$$

Second, precision levels at the 90 percent confidence interval are calculated for a material's mean as follows:

$$r_j \pm \left(z\sqrt{\mathrm{Var}(r_j)}\right)$$

where z = the value of the z-statistic (1.645) corresponding to a 90 percent confidence level

Weighted Averages

For overall self-haul and overall drop-box waste, composition data from each of the four metropolitan areas was combined in a weighted fashion, as described below. The following calculations were completed separately to produce waste profiles for overall self-haul and overall drop-box waste.

The mean percent estimate for a material for the overall self-haul and overall drop-box waste reflected a weighted average of the percent estimates for the metropolitan areas. Tonnages calculated from the vehicle surveys and facility disposal figures were used to weight the metropolitan area data. The tonnages for each metropolitan area and sector, and associated weighting factor are listed below, in Table 28.

[**] For more information regarding the variance calculation, please refer to William G. Cochran, *Sampling Techniques, 3rd Edition*, John Wiley & Sons, Inc., Indianapolis, Indiana, 1977.

Table 28. Weighting Factors for Overall Self-haul and Overall Drop-box Waste

Sector	San Diego	San Francisco/ Bay Area	Southern California/ L.A. Basin	Central Valley	Total
Commercial self-haul	306,266	713,660	313,276	54,317	**1,387,519**
Proportion of self-haul waste in area to total self-haul waste disposed in all four areas	22.1%	51.4%	22.6%	3.9%	**100.0%**
Drop-box	310,948	639,424	636,526	68,736	**1,655,634**
Proportion of drop-box waste in area to total drop-box waste disposed in all four areas	18.8%	38.6%	38.4%	4.2%	**100.0%**

The figures, when added together, may not exactly match the totals shown, due to rounding.

In the equation below, O_j represents the mean percent estimate for material j in the overall, or weighted, sector profile. The mean percent for the material in each metropolitan area is numbered 1, 2, 3, etc. The relative weighting factors for each sector in each metropolitan area, expressed as percentages of total tonnage disposed for that sector for all four metropolitan areas, are represented by the variables p_1, p_2, p_3, etc. The mean estimate of the percent of the disposed waste stream corresponding to the material j for each metropolitan area is represented by the variables r_{j1}, r_{j2}, r_{j3}, etc.

$$O_j = \left(p_1 * r_{j1}\right) + \left(p_2 * r_{j2}\right) + \left(p_3 * r_{j3}\right) + \ldots$$

where:

p = the proportion of disposed waste contributed by a given subsector in relation to the quantity of waste associated with the larger overall, or weighted, sector profile

r = ratio of material weight to total waste weight in the metropolitan area

for j = 1 to m, where m = number of materials

The following example illustrates the equation used to calculate the mean percent estimate of uncoated corrugated cardboard for overall self-haul waste. For each area, the relative proportion of that metropolitan area's waste to the total waste for all four metropolitan areas is applied to the mean estimate percent of cardboard for that area. The weighted combination of the composition findings for uncoated corrugated cardboard would be performed as follows:

$O_{\text{cardboard}}$ = (22.1% * 6.9%) + (51.4% * 2.4%) + (22.6% * 0.5%) + (3.9%*2.1%) = **3.0%**

The variance of the weighted average is calculated:

$$VarO_j = \left(p_1^{\,2} * \hat{V}_{r_{j1}}\right) + \left(p_2^{\,2} * \hat{V}_{r_{j2}}\right) + \left(p_3^{\,2} * \hat{V}_{r_{j3}}\right) + \ldots$$

where:

$\hat{V}_{r_j}$ = variance associated with the composition estimate for a given material in a given substream

Changes to Study Design

As outlined in the study design, sampling was intended to take place at a total of 16 disposal sites, four sites within each region. Due to a lack of sites that met the study criteria and were willing to participate, only 14 sites were visited for the study. The schedule of sampling events is presented in Table 4.

The study design called for the collection and sorting of a total of 320 samples: 160 from self-haul and 160 from drop-box loads. The samples were intended to be evenly distributed through all four metropolitan areas. As shown in Table 5, samples were distributed between the four regions with fewer self-haul samples in the Bay Area and San Diego, and fewer drop-box samples in Central Valley. One additional drop-box sample was sorted than was planned.

Additionally, the study design called for the samples to be sorted into 73 material types. The final material list used for sampling included 74 material types. The original type HDPE 5-gallon Buckets was split into two material types: HDPE 5-gallon Buckets — food and HDPE 5-gallon Buckets — non-food. Please see Appendix B for the list and definitions of material types used in this study.

During the planning phase, Cascadia planned to use a method for selecting vehicles for sampling that included estimating the number of vehicles expected for each sector at each site. This method was found to be unfeasible for the current study as estimates of loads by sector were not available. Instead, the vehicle selector interviewed loads as they arrived to find if they matched the criteria for either sector. Loads were selected until the sampling quota for the day was reached. Please see the section Vehicle Selection Method for more information.

Instead of 16 sampling days, as intended in the study design, 17 days of sampling and surveying were completed. During the summer season, one sampling event was conducted on a Saturday in order to include weekend activity in the study.

Appendix B:
List and Definitions of Material Types

List of Material types

The list below shows a hierarchy of material classes and subclasses. As part of the Statewide Waste Characterization Study, solid waste was sorted into the 74 specific material types shown, and composition percentages were calculated for these material types

California's standard list of material types contains 67 categories, as defined in the 2004 Statewide Study. This list was modified somewhat to capture data on specific categories for this study only. All the modified types can be re-combined to be consistent with the 67 standard types.

Material ID #	Material Type Name
PAPER	
1	Uncoated Corrugated Cardboard
2	Paper Bags/Kraft
3	Newspaper
4	White Ledger
5	Colored Ledger
6	Computer Paper
7	Other Office Paper
8	Magazines and Catalogs
9	Phone Books and Directories
10	Other Miscellaneous Paper
11	Remainder/ Composite Paper
GLASS	
12	Clear Glass Bottles and Containers
13	Green Glass Bottles and Containers
14	Brown Glass Bottles and Containers
15	Other Colored Glass Bottles and Containers
16	Flat Glass
17	Remainder/ Composite Glass
METAL	
18	Tin/Steel Cans
19	Major Appliances
20	Used Oil Filters
21	Other Ferrous
22	Aluminum Cans
23	Other Non-Ferrous
24	Remainder/ Composite Metal
ELECTRONICS	
25	Brown Goods

Material ID #	Material Type Name
26	Computer-related Electronics
27	Other Small Consumer Electronics
28	Televisions and Other Items with CRTs
PLASTIC	
29	PETE Bottles
30	Other PETE Containers
31	HDPE Natural Bottles
32	HDPE Colored Bottles
33	HDPE 5-gallon Buckets — food
34	HDPE 5-gallon Buckets — non-food
35	Other HDPE Containers
36	#3–#7 Bottles
37	#3–#7 Other Containers
38	Plastic Trash Bags
39	Plastic Grocery and Other Merchandise Bags
40	Non-Bag Commercial and Industrial Packaging Film
41	Film Products
42	Other Film
43	Durable Plastic Items
44	Remainder/ Composite Plastic
ORGANICS	
45	Food
46	Leaves and Grass
47	Prunings and Trimmings
48	Branches and Stumps
49	Agricultural Crop Residues
50	Manures
51	Textiles
52	Carpet
53	Remainder/ Composite Organics
CONSTRUCTION & DEMOLITION	
54	Concrete
55	Asphalt Paving
56	Asphalt Roofing
57	Lumber
58	Treated Wood Waste
59	Gypsum Board

Material ID #	Material Type Name
60	Rock, Soil, and Fines
61	Remainder/ Composite Construction and Demolition
HOUSEHOLD HAZARDOUS	
62	Paint
63	Vehicle and Equipment Fluids
64	Used Oil
65	Batteries
66	Remainder/ Composite Household Hazardous
SPECIAL WASTE	
67	Ash
68	Sewage Solids
69	Industrial Sludge
70	Treated Medical Waste
71	Bulky Items
72	Tires
73	Remainder/ Composite Special Waste
MIXED RESIDUE	
74	Mixed Residue

Definitions of Material Types

PAPER		
1	**Uncoated Corrugated Cardboard**	**Uncoated Corrugated Cardboard** usually has three layers. The center wavy layer is sandwiched between the two outer layers. It does not have any wax coating on the inside or outside. Examples include entire cardboard containers, such as shipping and moving boxes, computer packaging cartons, and sheets and pieces of boxes and cartons. This type does not include chipboard.
2	**Paper Bags/Kraft**	**Paper Bags** means bags and sheets made from Kraft paper. Examples include paper grocery bags, fast food bags, department store bags, and heavyweight sheets of Kraft packing paper.
3	**Newspaper**	**Newspaper** means paper used in newspapers. Examples include newspaper and glossy inserts, and all items made from newsprint, such as free advertising guides, election guides, plain news packing paper, stapled college schedules of classes, and tax instruction booklets.
4	**White Ledger**	**White Ledger** means uncolored bond, rag, or stationary grade paper. It may have colored ink on it. When the paper is torn, the fibers are white. Examples include white photocopy, white laser print, and letter paper.
5	**Colored Ledger**	**Colored Ledger** means colored bond, rag, or stationery grade paper. When the paper is torn, the fibers are colored throughout. Examples include colored photocopy and letter paper. This type does not include fluorescent dyed paper or deep-tone dyed paper such as goldenrod colored paper.
6	**Computer Paper**	**Computer Paper** means paper used for computer printouts. This type usually has a strip of form feed holes along two edges. If there are no holes, then the edges show tear marks. This type can be white or striped. Examples include computer paper and printouts from continuous feed printers. This type does not include "white ledger" used in laser or impact printers, nor computer paper containing groundwood.
7	**Other Office Paper**	**Other Office Paper** means other kinds of paper used in offices. Examples include manila folders, manila envelopes, index cards, white envelopes, white window envelopes, white or colored notebook paper, carbonless forms, and junk mail. This type does not include "white ledger", "colored ledger", or "computer paper".
8	**Magazines and Catalogs**	**Magazines and Catalogs** means items made of glossy coated paper. This paper is usually slick, smooth to the touch, and reflects light. Examples include glossy magazines, catalogs, brochures, and pamphlets.
9	**Phone Books and Directories**	**Phone Books and Directories** means thin paper between coated covers. These items are bound along the spine with glue. Examples include whole or damaged telephone books, "yellow pages", real estate listings, and some non-glossy mail order catalogs.
10	**Other Miscellaneous Paper**	**Other Miscellaneous Paper** means items made mostly of paper that do not fit into any of the above types. Paper may be combined with minor amounts of other materials such as wax or glues. This type includes items made of chipboard, groundwood paper, and deep-toned or fluorescent dyed paper. Examples include cereal and cracker boxes, unused paper plates and cups, goldenrod colored paper, school construction paper/butcher paper, milk cartons, ice cream cartons and other frozen food boxes, unopened junk mail, colored envelopes for greeting cards, pulp paper egg cartons, unused pulp paper plant pots, and hardcover and softcover books.

11	**Remainder/ Composite Paper**	**Remainder/Composite Paper** means items made mostly of paper but combined with large amounts of other materials such as wax, plastic, glues, foil, food, and moisture. Examples include waxed corrugated cardboard, aseptic packages, waxed paper, tissue, paper towels, blueprints, sepia, onion skin, fast food wrappers, carbon paper, self-adhesive notes, and photographs.
GLASS		
12	**Clear Glass Bottles and Containers**	**Clear Glass Bottles and Containers** means clear glass beverage and food containers with or without a California Redemption Value (CRV) label. Examples include whole or broken clear soda and beer bottles, fruit juice bottles, peanut butter jars, and mayonnaise jars.
13	**Green Glass Bottles and Containers**	**Green Glass Bottles and Containers** means green-colored glass containers with or without a CRV label. Examples include whole or broken green soda and beer bottles, and whole or broken green wine bottles.
14	**Brown Glass Bottles and Containers**	**Brown Glass Bottles and Containers** means brown-colored glass containers with or without a CRV label. Examples include whole or broken brown soda and beer bottles, and whole or broken brown wine bottles.
15	**Other Colored Glass Bottles and Containers**	**Other Colored Glass Bottles and Containers** means colored glass containers and bottles other than green or brown with or without a CRV label. Examples include whole or broken blue or other colored bottles and containers.
16	**Flat Glass**	**Flat Glass** means clear or tinted glass that is flat. Examples include glass windowpanes, doors, and tabletops, flat automotive window glass (side windows), safety glass, and architectural glass. This type does not include windshields, laminated glass, or any curved glass.
17	**Remainder/ Composite Glass**	**Remainder/Composite Glass** means glass that cannot be put in any other type. It includes items made mostly of glass but combined with other materials. Examples include Pyrex, Corningware, crystal and other glass tableware, mirrors, non-fluorescent light bulbs, and auto windshields.
METAL		
18	**Tin/Steel Cans**	**Tin/Steel Cans** means rigid containers made mainly of steel. These items will stick to a magnet and may be tin-coated. This type is used to store food, beverages, paint, and a variety of other household and consumer products. Examples include canned food and beverage containers, empty metal paint cans, empty spray paint and other aerosol containers, and bimetal containers with steel sides and aluminum ends.
19	**Major Appliances**	**Major Appliances** means discarded major appliances of any color. These items are often enamel-coated. Examples include washing machines, clothes dryers, hot water heaters, stoves, and refrigerators. This type does not include electronics, such as televisions and stereos.
20	**Used Oil Filters**	**Used Oil Filters** means metal oil filters used in motor vehicles and other engines, which contain a residue of used oil.
21	**Other Ferrous**	**Other Ferrous** means any iron or steel that is magnetic or any stainless steel item. This type does not include "tin/steel cans". Examples include structural steel beams, metal clothes hangers, metal pipes, stainless steel cookware, security bars, and scrap ferrous items.
22	**Aluminum Cans**	**Aluminum Cans** means any food or beverage container made mainly of aluminum. Examples include aluminum soda or beer cans, and some pet food cans. This type does not include bimetal containers with steel sides and aluminum ends.

23	**Other Non-Ferrous**	**Other Non-Ferrous** means any metal item, other than aluminum cans, that is not stainless steel and that is not magnetic. These items may be made of aluminum, copper, brass, bronze, lead, zinc, or other metals. Examples include aluminum window frames, aluminum siding, copper wire, shell casings, brass pipe, and aluminum foil.
24	**Remainder/ Composite Metal**	**Remainder/Composite Metal** means metal that cannot be put in any other type. This type includes items made mostly of metal but combined with other materials and items made of both ferrous metals and non-ferrous metal combined. Examples include small non-electronic appliances such as toasters and hair dryers, motors, insulated wire, and finished products that contain a mixture of metals, or metals and other materials, whose weight is derived significantly from the metal portion of its construction.
ELECTRONICS		
25	**Brown Goods**	**Brown Goods** means generally larger, non-portable electronic goods that have some circuitry. Examples include microwaves, stereos, VCRs, DVD players, radios, audio/visual equipment, and non-CRT televisions (such as LCD televisions).
26	**Computer-related Electronics**	**Computer-related Electronics** means electronics with large circuitry that is computer-related. Examples include processors, mice, keyboards, laptops, disk drives, printers, modems, and fax machines.
27	**Other Small Consumer Electronics**	**Other Small Consumer Electronics** means portable non-computer-related electronics with large circuitry. Examples include personal digital assistants (PDAs), cell phones, phone systems, phone answering machines, computer games and other electronic toys, portable CD players, camcorders, and digital cameras.
28	**Televisions and Other Items with CRTs**	**Televisions and Other Items with CRTs.** Examples include televisions, computer monitors, and other items containing a cathode ray tube (CRT).
PLASTIC		
29	**PETE Bottles**	**PETE Bottles** means clear or colored PETE (polyethylene terephthalate) bottles and jars. Generally, these containers are narrower at the top than at the bottom and have a neck. When marked for identification, it bears the number 1 in the center of the triangular recycling symbol and may also bear the letters PETE or PET. The color is usually transparent green, clear or amber. A PETE bottle usually has a small dot left from the manufacturing process, not a seam. It does not turn white when bent. Examples include soft drink and water bottles, some liquor bottles, cooking oil bottles, aspirin bottles, some food jars such as peanut-butter and pastry containers and similar items.
30	**Other PETE Containers**	**Other PETE Containers** means PETE (polyethylene terephthalate) containers (other than bottles and jars). When marked for identification, it bears the number 1 in the center of the triangular recycling symbol and may also bear the letters PETE or PET. A PETE container usually has a small dot left from the manufacturing process, not a seam. Examples include opaque black trays used for frozen food packaging and non-food clamshell packaging.

31	**HDPE Natural Bottles**	**HDPE Natural Bottles** means natural HDPE (high-density polyethylene) bottles and jars. Generally, these containers are narrower at the top than at the bottom and have a neck. This plastic is cloudy white, allowing light to pass through it. When marked for identification, it bears the number 2 in the triangular recycling symbol. Examples include milk jugs, water jugs, and some juice bottles.
32	**HDPE Colored Bottles**	**HDPE Colored Bottles** means colored HDPE (high-density polyethylene) bottles and jars. Generally, these containers are narrower at the top than at the bottom and have a neck. This plastic is a solid color, preventing light from passing through it. When marked for identification, it bears the number 2 in the triangular recycling symbol. Examples include detergent bottles, some shampoo and hair-care bottles, empty motor oil, empty antifreeze, and other empty vehicle and equipment fluid bottles, and some food containers such as for coffee and non-dairy creamer.
33	**HDPE 5-gallon Buckets — Food**	**HDPE 5-gallon Buckets — Food** means all types of HDPE (high-density polyethylene) 5-gallon buckets that can be clearly identified as food or food related packaging. This plastic is usually a solid color, preventing light from passing through it (colored). When marked for identification, it bears the number 2 in the triangular recycling symbol on the bottom of the bucket.
34	**HDPE 5-gallon Buckets — Non-food**	**HDPE 5-gallon Buckets — Non-food** means all types of HDPE (high-density polyethylene) 5-gallon buckets other than those that are clearly identifiable as food or food related packaging. This plastic is usually a solid color, preventing light from passing through it (colored). When marked for identification, it bears the number 2 in the triangular recycling symbol on the bottom of the bucket.
35	**Other HDPE Containers**	**Other HDPE Containers** means all types of HDPE (high-density polyethylene) containers not included above. When marked for identification, it bears the number 2 in the triangular recycling symbol. Examples include some margarine, cottage cheese, and yogurt tubs.
36	**#3–#7 Bottles**	**#3–#7 Bottles** means plastic bottles and jars made of types of plastic other than HDPE (high-density polyethylene) or PETE (polyethylene terephthalate). Generally, these containers are narrower at the top than at the bottom and have necks. Items may be made of PVC (polyvinyl chloride), LDPE (low-density polyethylene), PP (polypropylene), PS (polystyrene), or mixed resins. When marked for identification, these bottles bear the number 3, 4, 5, 6, or 7 in the triangular recycling symbol. Examples include bottles for some salad dressings, vegetable oils, juices, syrup, shampoo, and vitamins. NOTE: Previously called “Miscellaneous Plastic Containers”.
37	**#3–#7 Other Containers**	**#3–#7 Other Containers** means plastic containers (other than bottles and jars) made of types of plastic other than HDPE (high-density polyethylene) or PETE (polyethylene terephthalate). Items may be made of PVC (polyvinyl chloride), LDPE (low-density polyethylene), PP (polypropylene), PS (polystyrene), or mixed resins. When marked for identification, these items bear the number 3, 4, 5, 6, or 7 in the triangular recycling symbol. Examples include food containers such as flexible and brittle yogurt cups, some margarine tubs, microwave food trays, clamshell-shaped fast food or muffin containers, and foam egg cartons. NOTE: Previously called “Miscellaneous Plastic Containers”.
38	**Plastic Trash Bags**	**Plastic Trash Bags** means plastic bags sold for use as trash bags, for both residential and commercial use. Does not include other plastic bags like shopping bags that might have been used to contain trash.

39	**Plastic Grocery and Other Merchandise Bags**	**Plastic Grocery And Other Merchandise Bags** means plastic shopping bags used to contain merchandise to transport from the place of purchase, given out by the store with the purchase. Includes dry-cleaning plastic bags intended for 1-time use.
40	**Non-Bag Commercial and Industrial Packaging Film**	**Non-Bag Commercial And Industrial Packaging Film** means film plastic used for large-scale packaging or transport packaging. Examples include shrink-wrap, mattress bags, furniture wrap, and film bubble wrap.
41	**Film Products**	**Film Products** means plastic film used for purposes other than packaging. Examples include agricultural film (films used in various farming and growing applications, such as silage greenhouse films, mulch films, and wrap for hay bales), plastic sheeting used as drop cloths, and building wrap.
42	**Other Film**	**Other Film** means all other plastic film that does not fit into any other type. Examples include other types of plastic bags (sandwich bags, zipper-recloseable bags, newspaper bags, produce bags, frozen vegetable bags, bread bags), food wrappers such as candy-bar wrappers, mailing pouches, bank bags, X-ray film, metallized film (wine containers and balloons), and plastic food wrap.
43	**Durable Plastic Items**	**Durable Plastic Items** means all other plastic objects other than containers, or film plastic. Examples include mop buckets, plastic outdoor furniture, plastic toys, large paint/food buckets, CD's, plastic stay straps, sporting goods, and plastic house wares such as dishes, cups, and cutlery. This type also includes building materials such as house siding, window sashes and frames, housings for electronics (such as computers, televisions and stereos), fan blades, impact-resistance cases (e.g. tool boxes, first aid boxes, tackle boxes, sewing kits, etc.), and plastic pipes and fittings.
44	**Remainder/ Composite Plastic**	**Remainder/Composite Plastic** means plastic that cannot be put in any other type. They are usually recognized by their optical opacity. This type includes items made mostly of plastic but combined with other materials. Examples include auto parts made of plastic attached to metal, plastic drinking straws, foam drinking cups, produce trays, foam meat and pastry trays, foam packing blocks, packing peanuts, foam plates and bowls, plastic strapping, plastic lids, some kitchen ware, toys, new plastic laminate (e.g., Formica), vinyl, linoleum, plastic lumber, insulating foams, imitation ceramics, handles and knobs, plastic string (such as is used for hay bales), and plastic rigid bubble/foil packaging (as for medications).
ORGANIC		
45	**Food**	**Food** means food material resulting from the processing, storage, preparation, cooking, handling, or consumption of food. This type includes material from industrial, commercial, or residential sources. Examples include discarded meat scraps, dairy products, egg shells, fruit or vegetable peels, and other food items from homes, stores, and restaurants. This type includes grape pomace and other processed residues or material from canneries, wineries, or other industrial sources.
46	**Leaves and Grass**	**Leaves and Grass** means plant material, except woody material, from any public or private landscapes. Examples include leaves, grass clippings, sea weed, and plants. This type does not include woody material or material from agricultural sources.

47	**Prunings and Trimmings**	**Prunings and Trimmings** means woody plant material up to 4 inches in diameter from any public or private landscape. Examples include prunings, shrubs, and small branches with branch diameters that do not exceed 4 inches. This type does not include stumps, tree trunks, or branches exceeding 4 inches in diameter. This type does not include material from agricultural sources.
48	**Branches and Stumps**	**Branches and Stumps** means woody plant material, branches, and stumps that exceed four inches in diameter from any public or private landscape.
49	**Agricultural Crop Residues**	**Agricultural Crop Residues** means plant material from agricultural sources. Examples include orchard and vineyard prunings, vegetable by-products from farming, residual fruits, vegetables, and other crop remains after usable crop is harvested. This type does not include processed residues from canneries, wineries, or other industrial sources.
50	**Manures**	**Manures** means manure and soiled bedding materials from domestic, farm, or ranch animals. Examples include manure and soiled bedding from animal production operations, racetracks, riding stables, animal hospitals, and other sources.
51	**Textiles**	**Textiles** means items made of thread, yarn, fabric, or cloth. Examples include clothes, fabric trimmings, draperies, and all natural and synthetic cloth fibers. This type does not include cloth-covered furniture, mattresses, leather shoes, leather bags, or leather belts.
52	**Carpet**	**Carpet** means flooring applications consisting of various natural or synthetic fibers bonded to some type of backing material. Does not include carpet padding.
53	**Remainder/ Composite Organics**	**Remainder/Composite Organics** means organic material that cannot be put in any other type or subtype. This type includes items made mostly of organic materials but combined with other materials. Examples include leather items, cork, hemp rope, garden hoses, rubber items, hair, carpet padding, cigarette butts, diapers, feminine hygiene products, wood products (popsicle sticks and toothpicks), sawdust, and animal feces.
CONSTRUCTION & DEMOLITION		
54	**Concrete**	**Concrete** means a hard material made from sand, gravel, aggregate, cement mix, and water. Examples include pieces of building foundations, concrete paving, and cinder blocks.
55	**Asphalt Paving**	**Asphalt Paving** means a black or brown, tar-like material mixed with aggregate used as a paving material.
56	**Asphalt Roofing**	**Asphalt Roofing** means composite shingles and other roofing material made with asphalt. Examples include asphalt shingles and attached roofing tar and tar paper.
57	**Lumber (non-treated)**	**Lumber (non-treated)** means non-treated processed wood for building, manufacturing, landscaping, packaging, and non-treated processed wood from demolition. Examples include dimensional lumber, lumber cutoffs, engineered wood such as plywood and particleboard, wood scraps, pallets, wood fencing, wood shake roofing, and wood siding.

58	**Treated Wood Waste**	**Treated Wood Waste** means wood that has been treated with a chemical preservative for purposes of protecting the wood against attacks from insects, microorganisms, fungi, and other environmental conditions that can lead to decay of the wood, and the chemical preservative is registered pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Sec. 136 and following). This includes wood that has been pressure treated, chemically treated (with copper etc.) or treated with creosote (e.g. railroad ties, marine timbers and pilings, landscape timbers, and telephone poles).
59	**Gypsum Board**	**Gypsum Board** means interior wall covering made of a sheet of gypsum sandwiched between paper layers. Examples include used or unused, broken or whole sheets of sheetrock, drywall, gypsum board, plasterboard, gypboard, gyproc, and wallboard.
60	**Rock, Soil, and Fines**	**Rock, Soil and Fines** means rock pieces of any size and soil, dirt, and other matter. Examples include rock, stones, and sand, clay, soil, and other fines. This type also includes non-hazardous contaminated soil.
61	**Remainder/ Composite Construction and Demolition**	**Remainder/Composite Construction and Demolition** means construction and demolition material that cannot be put in any other type. This type may include items from different categories combined, which would be very hard to separate. Examples include brick, ceramics, tiles, toilets, sinks, dried paint not attached to other materials, and fiberglass insulation. This type may also include demolition debris that is a mixture of items such as plate glass, wood, tiles, gypsum board, and aluminum scrap.
HOUSEHOLD HAZARDOUS		
62	**Paint**	**Paint** means containers with paint in them. Examples include latex paint, oil based paint, and tubes of pigment or fine art paint. This type does not include dried paint, empty paint cans, or empty aerosol containers.
63	**Vehicle and Equipment Fluids**	**Vehicle and Equipment Fluids** means containers with fluids used in vehicles or engines, except used oil. Examples include used antifreeze and brake fluid. This type does not include empty vehicle and equipment fluid containers.
64	**Used Oil**	**Used Oil** means the same as defined in Health and Safety Code section 25250.1(a). Examples include spent lubricating oil such as crankcase and transmission oil, gear oil, and hydraulic oil.
65	**Batteries**	**Batteries** means any type of battery including both dry cell and lead acid. Examples include car, flashlight, small appliance, watch, and hearing aid batteries.
66	**Remainder/ Composite Household Hazardous**	**Remainder/Composite Household Hazardous** means household hazardous material that cannot be put in any other type. This type also includes household hazardous material that is mixed. Examples include household hazardous waste which if improperly put in the solid waste stream may present handling problems or other hazards, such as pesticides, caustic cleaners, and fluorescent light bulbs.
SPECIAL WASTE		
67	**Ash**	**Ash** means a residue from the combustion of any solid or liquid material. Examples include ash from structure fires, fireplaces, incinerators, biomass facilities, waste-to-energy facilities, and barbecues.
68	**Sewage Solids**	**Sewage Solids** means residual solids and semi-solids from the treatment of domestic waste water or sewage. Examples include biosolids, sludge, grit, screenings, and septage. This type does not include sewage or waste water discharged from the sewage treatment process.

69	**Industrial Sludge**	**Industrial Sludge** means sludge from factories, manufacturing facilities, and refineries. Examples include paper pulp sludge, and water treatment filter cake sludge.
70	**Treated Medical Waste**	**Treated Medical Waste** means medical waste that has been processed in order to change its physical, chemical, or biological character or composition, or to remove or reduce its harmful properties or characteristics, as defined in Section 25123.5 of the California Health and Safety Code.
71	**Bulky Items**	**Bulky Items** means large hard to handle items that are not defined separately, including furniture, mattresses, and other large items. Examples include all sizes and types of furniture, mattresses, box springs, and base components.
72	**Tires**	**Tires** means vehicle tires. Examples include tires from trucks, automobiles, motorcycles, heavy equipment, and bicycles.
73	**Remainder/ Composite Special Waste**	**Remainder/Composite Special Waste** means special waste that cannot be put in any other type. Examples include asbestos-containing materials, such as certain types of pipe insulation and floor tiles, auto fluff, auto-bodies, trucks, trailers, truck cabs, untreated medical waste/pills/hypodermic needles, and artificial fireplace logs.
MIXED RESIDUE		
74	**Mixed Residue**	**Mixed Residue** means material that cannot be put in any other type in the other categories. This type includes mixed residue that cannot be further sorted. Examples include clumping kitty litter and residual material from a materials recovery facility or other sorting process that cannot be put in any of the previous remainder/composite types.

Divertibility of Material Types

Each of the 74 material types presented in the previous section were classified according to the following divertibility classes: Recyclable Paper, Recyclable Wood, Other Recyclable C&D, Other Recyclables, Compostable Material, and Other MSW. Table 29 presents the 74 material types according to these divertibility classes.

Table 29. Material types by Divertibility Class

Recyclable Paper

Paper
- Uncoated Corrugated Cardboard
- Paper Bags/Kraft
- Newspaper
- White Ledger
- Colored Ledger
- Computer Paper
- Other Office Paper
- Magazines/Catalogs
- Phone Books/Directories

Recyclable Wood

Const/demo
- Lumber

Other Recyclable C&D

Const/demo
- Concrete
- Asphalt Paving
- Gypsum Board
- Rock, Soil, Fines

Other Recyclables

Paper
- Other Misc. Paper

Glass
- Clear Glass Bottles & Containers
- Green Glass Bottles & Containers
- Brown Glass Bottles & Containers
- Other Colored Glass Bottles & Containers

Metal
- Tin/Steel Cans
- Major Appliances
- Used Oil Filters
- Other Ferrous
- Aluminum Cans
- Other Non-Ferrous

Electronics
- Brown Goods
- Computer-related Electronics
- Other Small Consumer Electronics
- TV's & Other CRTs

Plastic
- PETE Bottles
- Other PETE Containers
- HDPE Natural Bottles
- HDPE Colored Bottles
- HDPE 5-gallon buckets - Food
- HDPE 5-gallon buckets - Non-food
- Other HDPE Containers
- #3-#7 Bottles
- #3-#7 Other Containers
- Grocery/Merch. Bags
- Non-Bag Comm./Ind. Packaging Film
- Film Products

Organic
- Textiles
- Carpet

HHW
- Paint
- Vehicle & Equip. Fluids
- Used Oil
- Batteries

Special
- Sewage Solids
- Tires

Compostable Material

Organic
- Food
- Leaves & Grass
- Prunings & Trimmings
- Branches & Stumps
- Agricultural Crop
- Manures

Other MSW

Paper
- Remainder/Composite Paper

Glass
- Flat Glass
- Remainder/Composite Glass

Metal
- Remainder/Composite Metal

Plastic
- Plastic Trash Bags
- Other Film
- Durable Plastic Items
- Remainder/Composite Plastic

Organic
- Remainder/Composite Organics

Const/demo
- Asphalt Roofing
- Treated Wood Waste
- Remainder/Composite C&D

HHW
- Remainder/Composite HHW

Special
- Ash
- Industrial Sludge
- Treated Medical Waste
- Bulky Items
- Remainder/Composite Special Waste

Mixed Residue
- Mixed Residue

Appendix C:
Field Forms and Databases Used During the Study

Examples of forms that were used in the study are included in the following order:

- Facility Questionnaire
- Scale Tracking Form
- Sample Tracking Form
- Vehicle Survey Form
- Sample Selection Form
- Sample Placard
- Sample Tally Sheet
- Database Screens for Entering Sample Data
- Vehicle Data Entry From

Facility Questionnaire

Name of site:

1. SCHEDULE

Range of dates for sampling and surveying:

- ☐ San Diego Region: Tuesday and Wednesday, June 21 & 22
- ☐ Los Angeles Region: Thursday and Friday, June 23 & 24
- ☐ Bay Area Region: Monday and Tuesday, June 27 & 28
- ☐ Sacramento Region: Wednesday and Thursday, June 29 & 30

Dates that definitely will not work:

Can we have access to a loader? Would it be available throughout the day?

2. TONNAGE & VEHICLE QUANTITIES

Does the facility have a MRF? What types of loads are MRF'ed?

How many total tons does the facility receive daily? _____

How many vehicles with trash (not exempt loads) enter on a weekday, on average?

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
End-dumps (not exempt loads)							
Roll-offs							
Self-haul vehicles with accounts (including large other or flatbed)							
Self-haul vehicles without accounts (including passenger cars,							

pick-up, SUV, or van)							
Other vehicles?							
Transfer trucks?							
Packers – Front loaders or rear loaders?							
Total Vehicle Count							

Peak times of day on a weekday?

For end-dumps:

For roll-offs:

For self-haul vehicles with accounts, including contractors and landscapers:

For self-haul vehicles without accounts:

Can we have one weekday's transaction records for the day we are there?

Do you have a sense of how many roll-offs might be open vs. compactor?

3. CONTACT INFORMATION

Physical address:
City, Zip:

Site owner/operator:

Person approving use of the site:
Mailing address:
City, Zip:
Phone:

Person with data about the site:
Phone:

Email:
Fax:

On-site manager or supervisor (primary contact for logistics):
Phone:
Email:
Will this person be available on the indicated dates?

Contact person for crew when they arrive the morning of sampling:
Phone:

Backup contact:
Phone:

Scalehouse contact:
Phone:

Correspondence should be sent to:

4. SITE TRAFFIC INFORMATION

Facility's hours of operation:

M _____

T _____

W _____

Th _____

F _____

Sat _____

Sun_____

Do you accept vehicles before opening the gate to the public?

If so, what hours and what kinds of vehicles?

5. Site Information

Are there site conditions we need to be aware of such as high winds, snakes or other animals, other special circumstances?

How many gatehouses does your facility have? _____

How many scales? _____

Do different types of vehicles go to different gatehouses/scales – i.e., all self-haul going to one scale? If yes, please explain.

6. Net Weight Procedures

Do all vehicles get weighed? If not, which vehicles don't get weighed?

Drivers of loads will be surveyed at the entrance throughout the day. The survey is very brief, involving just a few questions. We also will need to learn the net weight of each vehicle that we survey. We may give the driver of each vehicle a numbered card to hand to your gatehouse staff when the driver leaves the facility. Can your gatehouse staff write the net weight of each vehicle on each card?

7. MATERIAL HANDLING

Other than MRFing, what materials are recovered at this site? How and when are vehicles diverted so that recovered materials can be separated from disposed waste?

Material	How and when diverted

The purpose of the study is to take samples of disposed wastes only. How can we sample from vehicles after they have had materials recovered?

8. Recycling Barriers and Opportunities

Are there any recycling facilities nearby? What materials do they recycle?

9. SAMPLING AND SORTING PROCEDURES

We need an area for the sorting crew to work, for the entire time we will be at the site. It should be about the size of 9 or 10 truck bays. Can the site accommodate this? Where do you think that will be?

Crews have hardhats, orange vests, coveralls, boots, and gloves. Are there any other safety equipment or special procedures you want them to use?

We will need to have the loads cleared once or twice each day, probably by a bulldozer or cat. Is this okay?

10. FINAL LOGISTICS

Can you please send me a plan or map of area where we could sample (taken from permit)

Please remember to notify gate personnel.

The CIWMB may wish to set up site visits during sorting for Board staff to observe fieldwork for the project. Is this okay?

We will send you a copy of our insurance policy. Is there anything else you need from us?

Scale Tracking Form

Date:_____

Site: _____

Number of incoming scales at this facility: _____

Number of outgoing scales at this facility: _____

Draw a diagram of the scale layout, including directions (N,S,E,W) and roads.

Briefly identify/name and describe of the types of loads that go across each incoming or outgoing scale. If applicable, indicate the time you started and stopped surveying at each of the scales.

Scale name/location:	Description of loads:	Start Survey	End Survey
1)			
2)			
3)			
4)			
5)			
6)			

Sample Tracking Form

Site: _____ **Date:** _____/_____/_____

C&D SAMPLES

Sector/Subsector		Targets Optimal	Revised	Tally Using Hash Marks
NEW	R	6		
NEW	NR	8		
NEW COMBINED		**14**		
REMOD	R	5		
REMOD	NR	7		
REMOD COMBINED		**12**		
DEMO		9		
ROOF		5		
OC&D		5		
DEMO, ROOF, OC&D		**19**		
DAILY GOAL:		**45**		

NON-C&D SAMPLES

Sector/Subsector	Targets Optimal	Range	Tally Using Hash Marks
NON-SH	9	8 to 10	
NON-DB	7	6 to 8	
DAILY GOAL:	**16**		

Vehicle Survey Form (front)

SAMPLE ID	VEHICLE	HAULER	NET WT	NOTES	JURISDICTION	FROM CONST. SITE?	ACTIVITY	BUILDING TYPE	C&D SH ONLY: Why Dispose
	SM=small vehicles DB=drop-box ED=end dump LG=other large vehicle	HSH=homeowner self-haul BSH=business self-haul COM=commercial hauler	Net weights only Record gross weights in NOTES	Record the following, if applicable: 1) Comments 2) Weigh Back Transaction #'s 3) Min. Vehicle Gross Weights 4) Min. Vehicle Make & Model 5) Weigh back card ID	City or unincorporated area the waste comes from	Y=yes → N=no →	Y=yes: N=new construction, R=remodel, D=demolition, RF=roofing, OC=other c&d N=no: L=landscaping / landclearing, ON=other non-c&d, DK=don't know	R=residential buildings N=non-residential buildings OS=other structures	Why did you bring this load here rather than recycling it? 1=don't know where/how to recyc. 2=recyc. is too difficult/far away 3=recyc. is too costly 4=the load is not recyclable 5=other reason not incl. above
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS	1 2 3 4 5

Vehicle Survey Form (back)

Surveyor: _____ **Survey Sheet** _____ **of** _____

Date: _____

Site: _____

Weather: _____

Sample Selection Form

SAMPLE ID	VEHICLE	HAULER	NET WT	NOTES	JURISDICTION	FROM CONST. SITE?	ACTIVITY	BUILDING TYPE
	SM=small vehicles DB=drop-box ED=end dump LG=other large vehicle	HSH=homeowner self-haul BSH=business self-haul COM=commercial hauler	Net weights only Record gross weights in NOTES	Record the following, if applicable: 1) Comments 2) Weigh Back Transaction #'s 3) Min. Vehicle Gross Weights 4) Min. Vehicle Make & Model 5) Weigh back card ID	City or unincorporated area the waste comes from	Y=yes N=no	N=new construction R=remodel D=demolition RF=roofing OC=other c&d L=landscaping / landclearing ON=other non-c&d DK=don't know	R=residential buildings N=non-residential buildings OS=other structures
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS
	SM DB ED LG	HSH BSH COM				Y N	N R D RF OC L ON DK	R N OS

Sample Placard

6/21/2005

NON-DB

1

Non-C&D Drop-box

Random Cell: 3

Sample Tally Sheet

Sample ID: _____ **Date:** _____

Measure and record the load volume. (Include trailer dimensions if applicable.)

_____ft x _____ft x _____ft & _____ft x _____ft x _____ft

PAPER			
Cardboard			
Paper Bags/Kraft			
Newspaper			
White Ledger			
Colored Ledger			
Computer Paper			
Other Office Paper			
Magazines/Catalogs			
Phone Book/Directory			
Other Misc. Paper			
R/C Paper			
GLASS			
Clear			
Green			
Brown			
Other Color			
Flat Glass			
R/C Glass			
METAL			
Aluminum Cans			
Tin/Steel Cans			
Other Non-Ferrous			
Major Appliances			
Used Oil Filters			
Other Ferrous			
R/C Metal			
PLASTIC			
PETE Bottles			
Other PETE			
HDPE Natural Bottles			
HDPE Colored Bottles			
HDPE 5-gallon (Food)			
HDPE 5-gallon (Non-food)			
Other HDPE			
#3-#7 Bottles			
Other #3-#7			
Plastic Trash Bags			
Grocery/Merch. Bags			
Non-bag Packaging Film			
Film Products			
Other Film			
Durable Plastic Items			
R/C Plastic			

E-WASTE			
Brown Goods			
Computer-related			
Other Small Consumer			
TV's & Other CRTs			
ORGANIC			
Food			
Leaves and Grass			
Prunings & Trimmings			
Branches & Stumps			
Agricultural Crop			
Manures			
Textiles			
Carpet			
R/C Organics			
C&D			
Concrete			
Asphalt Paving			
Asphalt Roofing			
Lumber			
Treated Wood Waste			
Gypsum Board			
Rock, Soil, Fines			
R/C C&D			
HHW			
Paint			
Vehicle & Equip. Fluids			
Used Oil			
Batteries			
R/C HHW			
SPECIAL			
Ash			
Sewage Solids			
Industrial Sludge			
Treated Medical Waste			
Bulky Items			
Tires			
R/C Special Waste			
Mixed Residue			

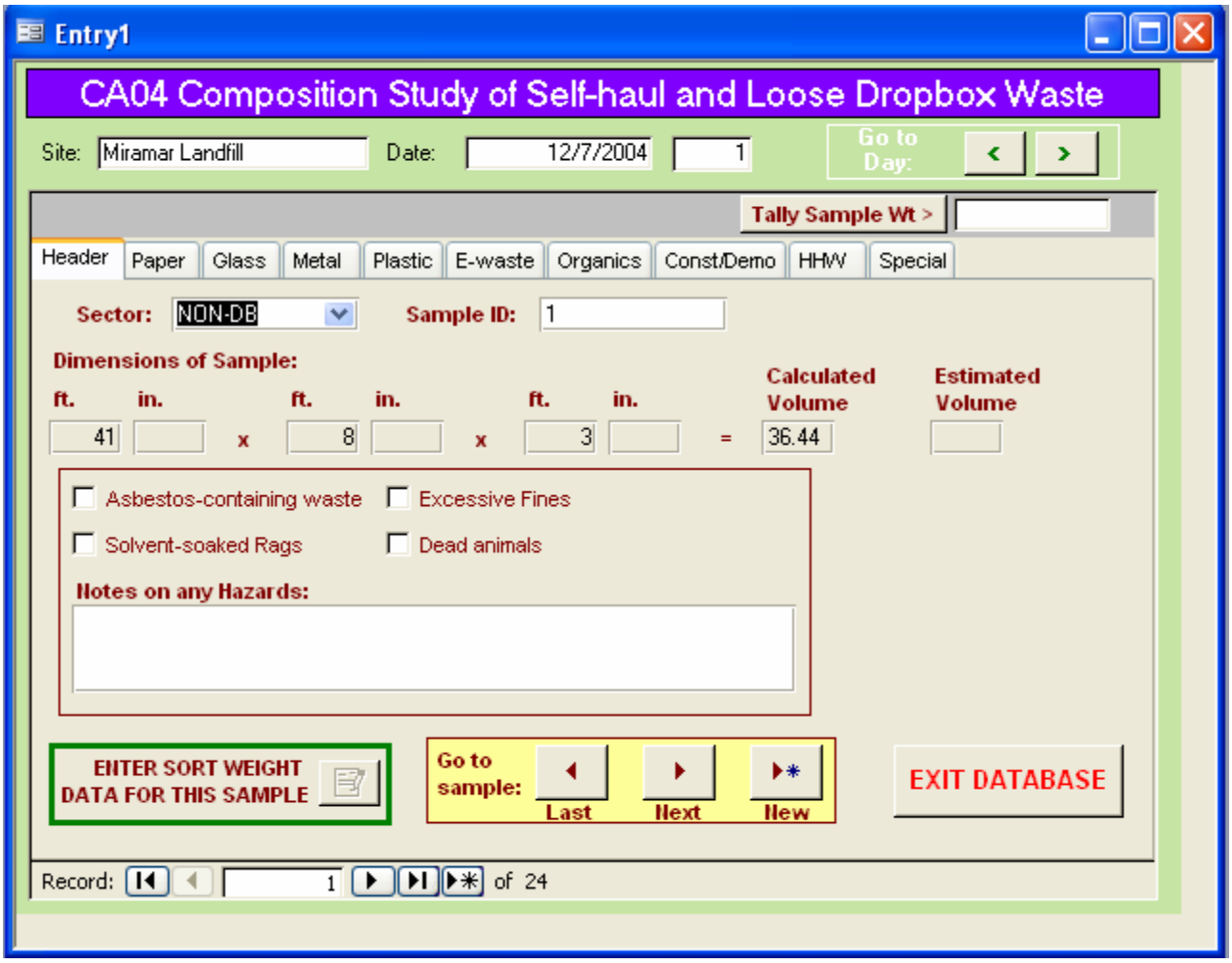
Check box & make notes if find:

☐ Asbestos-containing waste ☐ Excessive fines (ie from sand blasting):

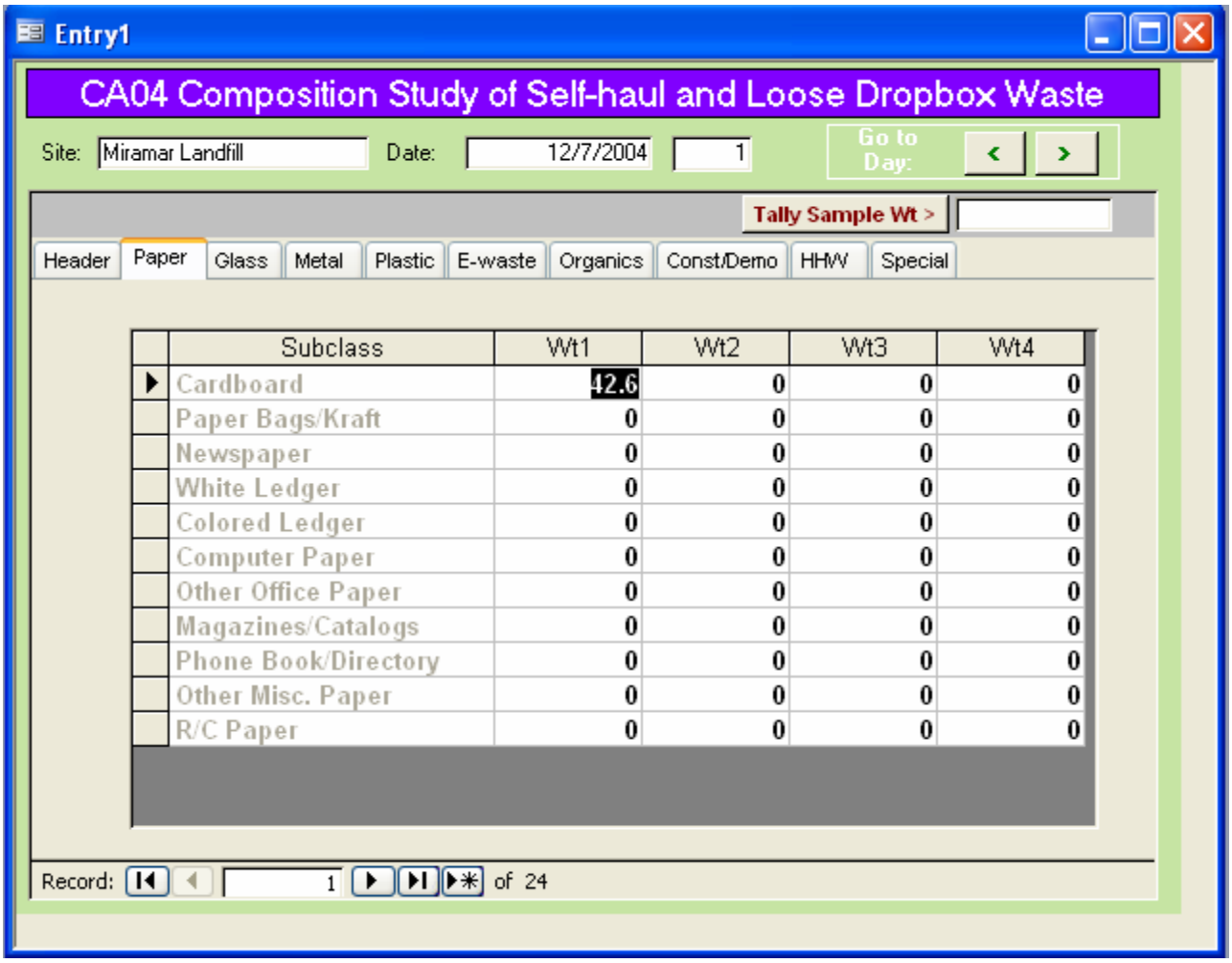
☐ Solvent-soaked rags ☐ Dead animals

Notes on any Hazards:

Database Screens for Entering Sample Data



Database Screens for Entering Sample Data



Vehicle Data Entry From

ANTELOPE VALLEY LANDFILL - 12/9/04														
	ID	DATE	VEHICLE	HAULER	NetWtTons	etWtPound	NOTES	JURISDICTION	CONST.	ACTIVITY	ILDING TY	SURVEYOR	&D SH ONL	NOTES
G	DEMO 1	12/9/04	DB	COM	9.63	19250		PALMDALE	Y	OC	OS	Kaye	4	3 OF 3
G	NEW NR 1	12/9/04	LG	BSH	4.76	9520		PALMDALE	Y	N	N	Kaye		7:00 AM
G	NEW NR 2	12/9/04	DB	COM	5.12	10240		PALMDALE	Y	N	N	Kaye	4	8:00 AM
G	NEW NR 3	12/9/04	DB	COM	2.75	5500		PALMDALE	Y	N	N	Kaye		9:15 AM
G	NEW R 1	12/9/04	LG	BSH	3.63	7260		PALMDALE	Y	N	R	Kaye	4	10:00 AM
G	NEW R 2	12/9/04	LG	BSH	1.87	3740		PALMDALE	Y	N	R	Kaye	5	3 OF 3
G	NON DB 1	12/9/04	DB	COM	1.85	3700		PALMDALE	N	ON		Kaye		7:00 AM
G	NON DB 1(	12/9/04	DB	COM	2.20	4400		PALMDALE	N	ON		Kaye		3 OF 3
G	NON DB 2	12/9/04	DB	COM	4.50	9000		LANCASTER	N	ON		Kaye		8:00 AM
G	NON DB 3	12/9/04	DB	COM	2.24	4480		PALMDALE	N	ON		Kaye		9:15 AM
G	NON DB 4	12/9/04	DB	COM	2.12	4240		PALMDALE	N	ON		Kaye		10:00 AM
G	NON DB 5	12/9/04	DB	COM	2.57	5140		PALMDALE	N	ON		Kaye		3 OF 3
G	NON DB 6	12/9/04	DB	COM	1.45	2900		LITTLE ROCK	N	ON		Kaye		3 OF 3
G	NON SH 1	12/9/04	LG	BSH	4.62	9240		PALMDALE	N	ON		Kaye		9:00 AM
G	NON SH 1(	12/9/04	LG	BSH	1.71	3420		PALMDALE	N	L		Kaye		3 OF 3
G	NON SH 1:	12/9/04	SM	BSH	1.05	2100	W/ TRAILER	SIMI VALLEY	Y	R	R	Kaye	5	3 OF 3
G	NON SH 2	12/9/04	LG	BSH	1.33	2660	(MISSED)	PALMDALE	N	L		Kaye		10:00 AM
G	NON SH 3	12/9/04	SM	BSH	0.68	1360	(STAGE SET) VOUCHER	PALMDALE	N	ON		Kaye		10:00 AM
G	NON SH 4	12/9/04	SM	BSH	0.22	440	DUMPED -GREEN WASTE	PALMDALE	N	L		Kaye		10:00 AM
G	NON SH 5	12/9/04	LG	BSH	2.69	5380		PALMDALE	N	L		Kaye		10:00 AM
G	NON SH 6	12/9/04	LG	BSH	1.83	3660		PALMDALE	N	L		Kaye		10:00 AM
G	NON SH 7	12/9/04	LG	BSH	4.04	8080		PALMDALE	N	L		Kaye		10:00 AM
G	NON SH 8	12/9/04	SM	BSH	0.02	40		LANCASTER	N	ON		Kaye		3 OF 3
G	NON SH 9	12/9/04	LG	BSH	2.81	5620		PALMDALE	N	ON		Kaye		3 OF 3
G	EMOD NR	12/9/04	LG	BSH	2.51	5020		PALMDALE	Y	R	N	Kaye	4	8:00 AM
G	EMOD R 1	12/9/04	SM	BSH	0.49	980		PALMDALE	Y	R	R	Kaye	1	8:00 AM
G	EMOD R 1	12/9/04	SM	BSH	0.65	1300	VOUCHER #33	PALMDALE	Y	R	R	Kaye	4	8:00 AM
G	EMOD R 1	12/9/04	SM	BSH	0.97	1940		COURT HILLS	Y	R	R	Kaye	5	10:00 AM
G	EMOD R 1	12/9/04	DB	COM	4.31	8620		QUARTZ HILL	Y	R	R	Kaye	4	3 OF 3
G	ROOF 1	12/9/04	LG	BSH	4.65	9300	ROOF 1	PALMDALE	Y	RF	R	Kaye	1	8:00 AM
G	ROOF 2	12/9/04	LG	BSH	4.23	8460	ROOFING? (NO RECEIPT)	PALMDALE	Y	RF	R	Kaye	4	9:15 AM
G	ROOF 3	12/9/04	LG	BSH	1.19	2380		LANCASTER	Y	RF	R	Kaye	4	10:00 AM
G		12/9/04	DB	COM	1.45	2900		PALMDALE	N	ON		Kaye		6:00 AM
G		12/9/04	DB	COM	1.56	3120		PALMDALE	N	ON		Kaye		6:00 AM
G		12/9/04	DB	COM	2.05	4100		PALMDALE	Y	R	N	Kaye		7:00 AM
G		12/9/04	DB	BSH	2.41	4820	PALLETS	PEARBLOSSOM	N	ON		Kaye		8:00 AM
G		12/9/04	DB	COM	4.19	8380		PALMDALE	N	L		Kaye		7:00 AM
G		12/9/04	LG	BSH	0.17	340	PENSKE TRUCK used by W	PALMDALE	N	ON		Kaye		7:00 AM
G		12/9/04	LG	BSH	1.78	3560		PALMDALE	N	L		Kaye		3 OF 3
G		12/9/04	LG	COM	3.05	140	*average LG	PALMDALE	N	ON		Kaye		6:00 AM
G		12/9/04	LG	BSH	3.11	6220	CITY STREET SWEAPING	PALMDALE	N	ON		Kaye		3 OF 3

.

Bibliography

Waste Characterization Study at Three Active Landfills, prepared by Cascadia Consulting Group, Inc. for County of Orange, Integrated Waste Management Department, 2004.

Source Reference Notes

1. *Waste Characterization Study at Three Active Landfills*, prepared by Cascadia Consulting Group, Inc. for County of Orange, Integrated Waste Management Department, 2004, pp. C-1 – C-5.