Appendix A
Definitions of Material Components for C&D Sampling

WOOD WASTES

RECYCLABLE

New/Clean Used Lumber – New or demolition dimensional lumber scraps. Includes materials such as 2 x 4s, 2 x 6s, 2 x 12s, and other residual materials from framing and related construction activities. May contain nails or other trace contaminants.

New/Demolition Engineered Wood – New or demolition scrap from sheeted goods such as plywood, particleboard, wafer board, oriented strand board (OSB), and other residual materials used for sheathing and related construction uses. May contain nails, paint, or other trace contaminants.

Remanufacturing Scrap – Scrap from production of prefabricated wood products such as cabinets.

Pallets and Crates – Wood pallets, crates, and packaging made of lumber/engineered wood.

Unfinished Furnishings – All-wood furniture or cabinets that have not been treated with paint, stain, or some other chemical finish.

NON-RECYCLABLE

Creosote/Pressure-Treated Wood – New and used lumber or engineered wood that has been treated with creosote. May include railroad ties, marine timbers and pilings, some landscape timbers, and telephone poles.

Painted/Stained Wood – New and used lumber or engineered wood with a significant portion of the surface treated with paint or stain products.

Mixed Demolition Wood – Used wood contaminated with other wastes in such a way that it cannot easily be separated, but consisting primarily (more than 50%) of wood. An example is wood with sheetrock attached.

Wood Roofing and Siding – New or used untreated wood that is commonly used for siding or roofing applications, such as cedar shingles or shakes. Commonly contains trace amounts of tarpaper and nails.

Finished Furnishings – All-wood furniture or cabinets that have been treated with paint, stain, or some other chemical finish.

Other Wood – Products made primarily of wood, not otherwise classified above.

GLASS

Clear Containers – Clear bottles and jars, used for food, soft drinks, beer, wine, or other beverages.

Green Containers – Green bottles and jars, used for food, soft drinks, beer, wine, or other beverages.

Brown Containers – Brown bottles and jars, used for food, soft drinks, beer, wine, or other beverages.

Window Glass – Glass commonly found in windows and doors, including plate glass and wired window glass.

Mirror Glass – Flat glass that is laminated to or otherwise coated with a reflective film or sheet material.

Other/Non-Recyclable Glass – Light bulbs, auto glass, and other glass products that are not easily recyclable.

HAZARDOUS WASTE

Latex Paint – Water-based paints and similar products.

Wood Preservatives – Oil-based wood preservatives.

Oil-Based Finishes – Solvent-based paints, varnishes, and similar products.

Solvents and Thinners – Various solvents, including chlorinated and flammable solvents, paint strippers, solvents contaminated with other products such as paints, degreasers and some other cleaners if the primary ingredient is (or was) a solvent, and alcohols such as methanol and isopropanol.

Adhesives and Glue – Glues and adhesives of various sorts, including rubber cement, wood putty, glazing and spackling compounds, caulking compounds, grout, and joint and auto body fillers.

Asbestos – Insulation or vinyl-asbestos tile.

Other Hazardous Waste – Asbestos-containing wastes if this is the primary hazard associated with the waste; gunpowder, unspent ammunition, picric acid, and other potentially explosive chemicals; and radioactive materials and other wastes that do not fit into the above categories. This category does not include smoke alarms, which are classified as “other plastic.”

MINERAL AGGREGATES

Asphaltic Concrete – Paving material for roads and other surfaces composed of aggregates and asphalt binders. Commonly known as "blacktop" pavement.

Built-Up Roofing – Roofing material composed of several layers of heavy asphalt-saturated felt. Includes torch-down and hot-tar roofs.

Composition Shingles – Roofing material composed of fiberglass or organic felts saturated with asphalt and covered with asphalt and inert aggregates. Commonly known as three-tab roofing shingles.

Tarpaper/Asphalt Felt – Various weights of papers saturated with asphalt or tar used in siding and roofing applications as a moisture barrier.

Concrete With/Without Rebar – Construction material composed of Portland cement and water combined with sand, gravel, crushed stone, or other inert materials, often containing a steel internal structure composed of reinforcing bars or metal mesh.

Bricks/Masonry Tile – Common building unit made of hard-baked clay of various types. Manufactured in several forms, usually rectangular in shape and reddish in color.

Concrete Masonry Unit (CMU) – Concrete masonry consisting of cement, sand, and possibly other fillers such as gravel, ash, or fibrous materials. Common forms are concrete blocks, cinder blocks, or other brick-type units.

Clay Roofing Tile – Roofing material made from hard-burned clay, designed with overlapping or interlocking edges.

Slate/Quarry Tile – Roofing material composed of fine-grained natural stone split into thin plates and cut into roofing tiles.

New Gypsum Scrap – Clean gypsum wallboard scrap. Wallboard is composed of calcium sulfate dihydrate sandwiched between heavy layers of Kraft-type paper.

Mixed/Demolition Gypsum Scrap – Gypsum wallboard scrap resulting from demolition and/or remodeling activity. Wallboard scrap may contain surface coatings, tape, paint, nails, or screws.

Other Mineral Aggregates – Products made primarily of mineral aggregates, not otherwise classified above.

METALS

Drywall Corners/Metal Bindings – Metal corners used in hanging drywall or other metal bindings.

Galvanized Steel – Steel alloyed with zinc coating to increase corrosion resistance. Commonly used in sheet applications such as flashing and ductwork, as well as in other construction materials such as nails.

Insulated Wire/Cable – Conductors, primarily copper, insulated with plastic or other non-metallic sheaths for insulation or corrosion/moisture resistance.

Other Ferrous Metals – Ferrous and alloyed ferrous scrap materials derived from iron, including household, industrial, and commercial products. This category includes scrap iron and steel that will adhere to a magnet.

Other Nonferrous Metals – Metals that are not materials derived from iron, including copper, brass, bronze, aluminum, lead, pewter, zinc, and other metals that will not adhere to a magnet.

PAPER

Corrugated Cardboard (OCC/Kraft Bags) – Kraft linerboard, containerboard cartons, and shipping boxes with corrugated paper medium (unwaxed). This category also includes Kraft (brown) paper bags. Excludes waxed and plastic-coated cardboard, solid boxboard, and bags that are not pure unbleached Kraft.

Tyvek Vapor Barrier – Construction material used primarily in siding and other moisture barrier applications composed of paper fiber combined with plastic fibers.

Other Paper – Paper not included above that is not easily recyclable. Includes carbon paper, tissue, photographs, paper normally soiled through use such as paper plates and paper towels, waxed cardboard, poly-lined chipboard, foil-lined papers, Christmas wrapping paper, microwave containers, frozen food boxes, and hardcover books.

PLASTICS AND LAMINATES

Five-Gallon #2 With/Without Handles – HDPE buckets in standard 5-gallon commercial sizes with metal wire or other type handles. Usually have round or square shape and are frequently used as containers for paint or other construction materials.

Plastic Film, Bags, and Wrap – All film, bags, and thin plastic packaging, including wrappings, vacuum-formed packaging, bubble packs, and other films, as well as plastic strapping and other thin flexible plastic packaging. Also includes shower curtains, plastic sheeting, trash bags, and other thin plastic products.

PVC Pipe – Pipe or conduit made from polyvinyl chloride used in plumbing and electrical applications. Usually characterized with a “PVC” or “#3” stamp. Usually white in color.

ABS Pipe – Pipe made from acrylonitrile butadiene styrene used in drainage and other applications. Usually black in color and characterized by an "ABS" stamp.

Polyurethane Foam/Carpet Padding – A type of thermosetting plastic used in closed-cell applications such as poured-in-place insulation or carpet padding.

Laminate/Formica – Laminated sheets of thermoset plastics commonly used in countertop and cabinetmaking applications. May contain colored silicate minerals known as mica.

Fiberglass (Acoustical) Ceiling Panels – Lightweight panels consisting of paper fiber and glass or other mineral or organic fibers used in commercial construction for sound deadening properties.

Structural Fiberglass – Includes a variety of fiber-reinforced plastics increasingly common in construction products and structural applications. May include a variety of thermoset-type resins or epoxies and other fiber types in addition to glass.

Linoleum – Floor-covering material consisting of a mixture of wood and other fillers, linseed oil, and rosins on either a burlap or canvas backing.

Other Plastics – Products made primarily of plastic, not otherwise classified above.

OTHER MATERIALS

Rock – Large pieces of mineral matter or rock.

Dirt – Contains sand and other nutrient-rich organic matter. Dirt is commonly generated by land clearing activity and used in finish applications on construction projects.

Gravel – Small pieces of mineral matter or rock. May include naturally generated round-shaped pea gravel created by flowing water or mechanically generated crushed rock.

Sand – Very fine pieces of mineral matter.

Large Appliances – Household or light commercial appliances commonly known as "white goods." Includes washers, dryers, hot water heaters, refrigerators, ranges, and other appliances.

Porcelain – Toilets, sinks, and similar materials.

Insulation – Polystyrene and other miscellaneous insulating materials.

Other Miscellaneous Fines – Mixed indistinguishable residue.

OTHER ORGANICS

Carpeting – General category of flooring applications consisting of various natural or synthetic fibers bonded to some type of backing material.

Upholstery – Various types of natural-fiber or synthetic-fiber cloth fabrics used in furniture and other interior applications.

Other Organics – Other organic materials or textiles, such as rags, not classified above.

YARD WASTE

Stumps and Logs – Tree sections, logs, and stumps of trees and shrubs with any adhering soil.

Large Prunings – Other natural woods, such as logs and branches in excess of four inches in diameter (four inches is the limit used for defining prunings as yard waste).

Small Prunings – Prunings under 4 inches in diameter.

Leaves and Grass – Lawn clippings, weeds, and leaves.

Municipal Solid Waste (MSW)

MSW – Solid waste generated by residences, stores, offices, and other generators of wastes that are not industrial, agricultural, or CDL (construction, demolition, and land clearing) wastes *(Source: KCC 10.04.020EEE)*.

Appendix B
Field Observation Procedures

At the disposal area, the sampling crew first verified that the load had not originated in Seattle or outside of King County. Then, staff recorded the volume of the load by measuring the length, width, and height of the load while it remained in the vehicle. After the driver dumped the load, the sampling crew conducted the following steps to estimate the volume composition.

Step 1. Identified major classes of material present.

A crewmember walked around the entire load and indicated on the sampling form each of the 12 major material classes that were present in the load. The 12 main material classes included the following items:

- Glass
- Hazardous waste
- Metals
- Mineral aggregates
- Municipal solid waste (MSW)
- Paper
- Plastics and laminates
- Other materials
- Other organics
- Wood wastes (non-recyclable)
- Wood wastes (recyclable)
- Yard waste

Step 2. Estimated composition by volume for each major material class.

Beginning with the largest major material class present by volume, the sampling crew then estimated the volumetric percentage of this material class and recorded it on the form. Staff members repeated this process for the next most common material class, and so forth, until the volume percentage of every material class had been estimated. The sampling crew then calculated the total percentages for all material classes, ensuring that the total equaled 100%.

Step 3. Estimated composition by volume for each specific material component.

The field staff then considered each major material class separately and estimated the percentage of the major class that each material component of that class comprised. (For a list of the specific material components and definitions, please see Appendix A.)

For example, the *Metals* material class included the following material components:

- Drywall corners/metal bindings
- Galvanized steel
- Insulated wire/cable
- Other ferrous metals
- Other nonferrous metals

While considering only the *Metals* material class, the sampling crew estimated the volume percentage of the *Metals* class that each of the material components listed above composed, ensuring that the sum of the percentages for the material components totaled 100%. Staff repeated this process for the other major classes.

Step 4. Check and reconcile percentage data.

The sampling crew then double-checked that the percentage estimates for the major material classes added up to 100%, and they ensured that the percentage estimates for the components within each major class also totaled 100%.

Appendix C
Field Forms for C&D Waste Sampling

Figure C-1 presents the field form used by the sampling crew to assess the composition of C&D waste loads.

Figure C-2 shows the form used by the surveyor to interview drivers as they entered the C&D disposal facility.

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Figure C-1. C&D Waste Sampling Form

Step 1:
Site: 3rd & Lander Black River

RNW

Date: _____

Numbered Card: _____

Step 2: Measure and record the load volume.
(Include trailer dimensions if applicable.)

Dimensions:

_____ft x _____ft x _____ft

_____ft x _____ft x _____ft

Step 3: Identify and record all main material classes (in bold) that appear in the load.

Step 4: Estimate composition of load by volume for each main material class (in bold).

Step 5: For each material class, estimate composition by volume of each specific material component (in plain text).
Note! Record material components comprising less than 5% of the material class as "other" (e.g. other plastics).

Step 6: Make sure main material class estimates AND material component estimates EACH total 100%.

☐ **Wood Wastes: _____%**

Recyclable

	New/Clean Used Lumber
	New/Demo. Engineered Wood
	Remanufacturing Scrap
	Pallets & Crates
	Unfinished Furnishings

Not Recyclable

	Creosote/Pressure Treated
	Painted/Stained Wood
	Mixed Demo. Wood
	Wood Roofing and Siding
	Finished Furnishings
	Other Wood
%	***Subtotal (must equal 100%)***

☐ **Glass: _____%**

	Clear Containers
	Green Containers
	Brown Containers
	Window Glass
	Mirror Glass
	Other/Non-recyc Glass
%	***Subtotal (must equal 100%)***

☐ **Haz. Waste: _____%**

	Latex Paint
	Wood Preservatives
	Oil-Based Finishes
	Solvents and Thinners
	Adhesives and Glue
	Asbestos
	Other Haz Waste
%	***Subtotal (must equal 100%)***

☐ **Metals: _____%**

	Drywall Corners/Metal Bindings
	Galvanized Steel
	Insulated Wire/Cable
	Other Ferrous Metals
	Other Nonferrous Metals
%	***Subtotal (must equal 100%)***

☐ **Mineral Aggregates: _____%**

	Asphaltic Concrete
	Built-Up Roofing
	Composition Shingles
	Tarpaper/Asphalt Felt
	Concrete with/without Rebar
	Bricks/Masonry Tile
	Concrete Masonry Unit (CMU)
	Clay Roofing Tile
	Slate/Quarry Tile
	New Gypsum Scrap
	Mixed/Demo. Gypsum Scrap
	Other Mineral Aggregates
%	***Subtotal (must equal 100%)***

☐ **Paper: _____%**

	OCC/Kraft Bags or Paper
	Tyvek Vapor Barrier
	Other Paper
%	***Subtotal (must equal 100%)***

☐ **Plastics & Laminates: _____%**

	5 Gal. Buckets #2 with/without Handles
	Plastic Film, Bags and Wrap
	PVC Pipe
	ABS Pipe
	Polyurethane Foam/Carpet Padding
	Laminate/Formica
	Fiberglass (Acoustical) Ceiling Panels
	Structural Fiberglass
	Linoleum
	Other Plastics
%	***Subtotal (must equal 100%)***

☐ **Other Materials: _____%**

	Rock
	Dirt
	Gravel
	Sand
	Large Appliances
	Porcelain
	Insulation
	Other Miscellaneous Fines
%	***Subtotal (must equal 100%)***

☐ **Other Organics: _____%**

	Carpeting
	Upholstery
	Other Organics (e.g. rags)
%	***Subtotal (must equal 100%)***

☐ **Yard Waste: _____%**

	Stumps & Logs
	Large Prunings
	Small Prunings
	Leaves and Grass
%	***Subtotal (must equal 100%)***

Grand Total:_____%
(Must equal 100%)

Figure C-2. C&D Load Survey Form (front)

Step 1: Verify that the load contains at least 80% C&D waste AND is to be disposed (not recycled).

Step 2: Confirm load origin. Do not survey if from Seattle!!	*Step 3: Obtain receipt & record net weight*	*Step 4: Observe*			*Step 5: Ask all Drivers*			*Step 6: Ask Self-Haul Only*	
City	**Net Weight/ Net Weight ID**	**Hauler Type**	**Vehicle Type**	**Trailer**	**Residential/ Business**	**Construction Type**	**Satisfaction**	**Diyer/ Contractor**	**Comments**
If city is not on the list of King County cities, clarify whether it is a rural area inside King County or a city outside King County	When surveying at 3rd and Lander, record net weight card ID number here	**C** = Commercial **CD** = C&D **S** = self-haul	**1 =** dump truck (includes flatbeds that dump) **2 =** tractor/trailer (semi) **3 =** rolloff **4 =** other large (includes hand unload flatbeds) **5 =** small vehicles (includes pick up trucks, vans, SUVs and cars)	**1** = hydro **2 =** manual	**R** = residential **NR** = non-residential **M** = mixed load	**1 = new construction** **2** = new remodel **3** = new roofing **4** = mixed new const. **5 = demolition** **6** = demolition remodel **7** = demolition roofing **8** = mixed demo. **9 = other mixed** **10 = landclearing** **11 = commercial waste**	From 1 to 5 (1 = extremely dissatisfied & 5 = extremely satisfied), how satisfied are you with the current C&D disposal system in KC?	**DI** = do-it-yourselfer **CB** = contractor/builder **O** = other (e.g. gov.)	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	
		C CD S			R NR M			DI CB O	

Figure C-2. C&D Load Survey Form (back)

Complete this section for every page

Page _____ of _____

Date: _____

Circle the site: 3rd & Lander Eastmont Black River RNW

Complete this section for first page only

Start Time: _____

Stop Time: _____

Weather and Other Notes about Today's Surveying:

Appendix D
Waste Composition Calculations

Cascadia determined waste composition and annual tonnage figures through analysis of the waste samples and on-site surveys, as well as through data that the private waste facilities provide to King County in monthly flow reports. The following appendix details each step of the calculation process.

Step 1. Composition Data by Volume Converted to Weight

The waste sampling procedure estimated the composition of each load by volume. Cascadia converted these volumetric estimates to weights using waste density conversion factors, as described below. (Appendix E presents the volume-to-weight conversion factors used in the analysis.) Cascadia converted the percentage estimates, described in more detail in Appendix B, to tonnage data using the following formula:

$(c*s*v*d)/2000$

where:

c = percentage estimate of the main material class

s = percentage estimate of the specific material component

v = total volume of the sampled load

d = density conversion of the specific material component

The sum of the estimated material weights yields the projected net weight of each load. Cascadia compared this projected net weight to the actual net weight, which the surveyor had recorded for each surveyed and sampled vehicle. The expected relationship between the projected net weight and the actual net weight is expressed by the formula:

$p/a=1$

where:

p = projected net weight

a = actual net weight

Cascadia calculated *p*/*a* for each sampled load and then divided the projected tonnage figure for each of the 70 materials by the *p/a* for that sample. This adjustment resulted in a projected net weight equal to the actual net weight.

Step 2. Annual Tonnages

Flow reports submitted to King County listed tonnages of material accepted at Third & Lander, Black River, and Eastmont in 2001. Cascadia added the monthly data presented in these reports to calculate the annual C&D disposal figure. The flow reports, however, did not include tonnage figures for Recycling Northwest. Cascadia interviewed staff at the facility to estimate the tonnage for this facility.

The tonnage listed in the flow reports for Third & Lander and Black River included tons brought to the facilities in intermodal containers. Cascadia estimated the tonnage attributed to intermodal loads and subtracted it from the total.

Intermodal tonnage data in the flow reports did not distinguish between tons originating in King County and those originating in the City of Seattle. To estimate the intermodal tonnage from King County, excluding Seattle, Cascadia calculated the proportion of C&D tonnage brought by vehicles other than intermodal shipments from King County as compared with the total tonnage, excluding intermodal shipments. Cascadia then applied the resulting ratio, calculated for each month, toward the total reported intermodal tonnage for the same month.

For example, in January 2001, Black River received 6,275.55 tons of C&D from King County and 7,639.66 total tons. In other words, about 82% of the C&D material at Black River originated in King County. Black River accepted 278.55 tons of waste in intermodal containers in January. This tonnage, multiplied by 82%, yields an estimated 228.41 tons of C&D waste in intermodal shipments to Black River that originated in King County. Cascadia then subtracted this 228.41 tons from 6,275.55 to yield the number of tons of C&D waste going to Black River from King County, excluding intermodal containers.

Step 3. Composition Calculations

The composition estimates represent the **ratio of the material component's weight to the total waste**. Cascadia derived these estimates by adding each material component's weight across all of the selected samples and dividing by the sum of the total weight of waste, as shown in the following equation:

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

where:

c = the weight of a particular material component

w = the sum of all component weights, which is identical to the sum of the projected weight of the sampled loads

for i = 1 to n

where n = the number of selected samples

for j = 1 to m

where m = the number of material components

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

$$\hat{V}_{r_j} = \left(\frac{1}{n}\right) \cdot \left(\frac{1}{\overline{w}^2}\right) \cdot \left(\frac{\sum_i \left(c_{ij} - r_j w_i\right)^2}{n-1}\right)$$

where:

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

Second, **precision levels** at the 90% confidence interval were calculated for a material component's mean as follows:

$$r_j \pm \left(t \cdot \sqrt{\hat{V}_{r_j}} \right)$$

where:

t = the value of the *t*-statistic (1.645) corresponding to a 90% confidence level

For more detail, please refer to Chapter 6, "Ratio, Regression and Difference Estimation," *Elementary Survey Sampling*, by R.L. Scheaffer, W. Mendenhall, and L. Ott (PWS Publishers, 1986).

Step 4. Weighted Averages

Cascadia calculated the overall waste composition estimates and the composition estimates for each substream by performing a weighted average by hauler type, generator type, construction type, and vehicle type. Cascadia calculated weighted averages using survey data net weights and vehicle counts.

The weighted averages were performed as follows:

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

where:

p = the proportion of tonnage contributed by the vehicle type to the site

r = the ratio of component weight to total waste weight for the noted vehicle type to the site

for *j* = 1 to *m*

where *m* = the number of material components

The **variance of the weighted average** was calculated as follows:

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

Weighting factors were calculated for the overall waste stream and for each substream.

Appendix E
Volume-to-Weight Conversion Factors

ID	Subclass	Lbs/Yard	Source
1	New/Clean Used Lumber	330	CIWMB
2	New/Demo. Engineered Wood	330	CIWMB
3	Remanufacturing Scrap	330	CIWMB
4	Pallets & Crates	240	Measurement
5	Unfinished Furnishings	330	CIWMB
6	Creosote/Pressure Treated	330	CIWMB
7	Painted/Stained Wood	330	CIWMB
8	Mixed Demo. Wood	330	CIWMB
9	Wood Roofing and Siding	330	CIWMB
10	Finished Furnishings	330	CIWMB
11	Other Wood	330	CIWMB
12	Clear Containers	600	EPA
13	Green Containers	600	EPA
14	Brown Containers	600	EPA
15	Window Glass	1,000	EPA
16	Mirror Glass	1,000	EPA
17	Other/Non-recyc Glass	1,000	EPA
18	Latex Paint	1,616	Measurement
19	Wood Preservatives	1,585	FEECO
20	Oil-Based Finishes	1,585	FEECO
21	Solvents and Thinners	1,566	FEECO
22	Adhesives and Glue	1,080	FEECO
23	Asbestos	540	FEECO
24	Other Haz Waste	1,329	Average
25	Drywall Corners/Metal Bindings	338	CIWMB
26	Galvanized Steel	540	SD
27	Insulated Wire/Cable	338	CIWMB
28	Other Ferrous Metals	540	SD
29	Other Nonferrous Metals	540	SD
30	Asphaltic Concrete	1,215	FEECO
31	Built-Up Roofing	600	SD
32	Composition Shingles	419	CIWMB
33	Tarpaper/Asphalt Felt	400	Measurement
34	Concrete With/Without Rebar	2,700	FEECO
35	Bricks/Masonry Tile	3,024	FEECO
36	Concrete Masonry Unit (CMU)	2,676	Measurement
37	Clay Roofing Tile	2,738	Measurement
38	Slate/Quarry Tile	3,318	Measurement
39	New Gypsum Scrap	410	SD
40	Mixed/Demo. Gypsum Scrap	410	SD
41	Other Mineral Aggregates	1,628	Average

ID	Subclass	Lbs/Yard	Source
42	OCC/Kraft Bags or Paper	100	CIWMB
43	Tyvek Vapor Barrier	23	CIWMB
44	Other Paper	364	CIWMB
45	5 Gal. Buckets #2 With/Without Handles	24	EPA
46	Plastic Film, Bags and Wrap	23	CIWMB
47	PVC Pipe	341	CIWMB
48	ABS Pipe	222	Measurement
49	Polyurethane Foam/Carpet Padding	43	Measurement
50	Laminate/Formica	773	Measurement
51	Fiberglass (Acoustical) Ceiling Panels	108	Measurement
52	Structural Fiberglass	425	CIWMB
53	Linoleum	121	Measurement
54	Other Plastics	50	EPA
55	Rock	2,570	CIWMB
56	Dirt	1,890	FEECO
57	Gravel	2,565	CIWMB
58	Sand	2,441	CIWMB
59	Large Appliances	180	EPA
60	Porcelain	317	Measurement
61	Insulation	17	CIWMB
62	Other Miscellaneous Fines	945	FEECO: 20/60/20 avg. gypsum dust/wood shavings/dry earth
63	Carpeting	305	SD
64	Upholstery	175	EPA
65	Other Organics (e.g. rags)	225	CIWMB
66	Stumps & Logs	1,080	SD
67	Large Prunings	375	SD
68	Small Prunings	375	SD
69	Leaves and Grass	400	SD
70	MSW	100	LA City

Data Source Abbreviations

Average refers to an average of the components in the material class.

CIWMB refers to *Conducting a Diversion Study – A Guide for California Jurisdictions*, March 2001, California Integrated Solid Waste Management Board.

EPA refers to the U.S. Environmental Protection Agency's publication, *Measuring Recycling: A Guide for State and Local Governments*, document number EPA530-R-97-011, published September 1997.

FEECO refers to FEECO International, *Complete Systems and Equipment Handbook*, 9th printing.

LA CITY refers to a calculated density from *Characterization of Municipal Solid Waste for the City of Los Angeles*, conducted by Cascadia Consulting Group, 2001.

Measurement refers to direct measurements of representative samples taken by Cascadia staff members.

SD refers to conversion factors developed and used in *Waste Composition Study 1999-2000: Final Report*, prepared by Cascadia Consulting Group for the City of San Diego's Environmental Services Department, 2000.

Appendix F
Detailed C&D Waste Composition Tables

Chapter 2 of the report presented waste composition data for each of the analyzed substreams but excluded the *detailed* waste composition tables. This appendix presents that information.

Overall Waste Characterization

Table F-1. Composition by Weight – Overall C&D

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**29,335**	**21.7%**	
New/Clean Used Lumber	11,606	8.6%	1.5%
New/Demo. Engineered Wood	13,336	9.9%	1.3%
Remanufacturing Scrap	313	0.2%	0.3%
Pallets and Crates	4,070	3.0%	0.7%
Unfinished Furnishings	10	0.0%	0.0%
Non-Recyclable Wood	**31,684**	**23.4%**	
Creosote/Pressure Treated	2,665	2.0%	1.1%
Painted/Stained Wood	15,774	11.7%	2.2%
Mixed Demo. Wood	5,879	4.4%	1.5%
Wood Roofing and Siding	5,659	4.2%	1.0%
Finished Furnishings	643	0.5%	0.2%
Other Wood	1,063	0.8%	0.4%
Glass	**1,829**	**1.4%**	
Clear Containers	56	0.0%	0.1%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	1,704	1.3%	0.7%
Mirror Glass	3	0.0%	0.0%
Other/Non-Recyc. Glass	67	0.0%	0.0%
Hazardous Waste	**219**	**0.2%**	
Latex Paint	90	0.1%	0.1%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	24	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	28	0.0%	0.0%
Asbestos	77	0.1%	0.1%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**27,588**	**20.4%**	
Asphaltic Concrete	506	0.4%	0.6%
Built-Up Roofing	2,683	2.0%	0.8%
Composition Shingles	8,489	6.3%	1.5%
Tarpaper/Asphalt Felt	3,611	2.7%	0.7%
Concrete With/Without Rebar	1,749	1.3%	0.7%
Bricks/Masonry Tile	523	0.4%	0.4%
Concrete Masonry Unit (CMU)	65	0.0%	0.0%
Clay Roofing Tile	191	0.1%	0.2%
Slate/Quarry Tile	161	0.1%	0.2%
New Gypsum Scrap	3,483	2.6%	1.1%
Mixed/Demo. Gypsum Scrap	6,067	4.5%	1.0%
Other Mineral Aggregates	60	0.0%	0.1%

	Tons	Mean	+/–
Metals	**14,684**	**10.9%**	
Drywall Corners/Metal Bindings	650	0.5%	0.2%
Galvanized Steel	6,975	5.2%	0.9%
Insulated Wire/Cable	429	0.3%	0.1%
Other Ferrous Metals	5,923	4.4%	0.9%
Other Nonferrous Metals	707	0.5%	0.3%
Paper	**8,148**	**6.0%**	
OCC/Kraft Bags or Paper	4,719	3.5%	0.6%
Tyvek Vapor Barrier	19	0.0%	0.0%
Other Paper	3,410	2.5%	0.4%
Plastics and Laminates	**4,255**	**3.1%**	
#2 Plastic Buckets	172	0.1%	0.0%
Plastic Film, Bags and Wrap	943	0.7%	0.2%
PVC Pipe	1,244	0.9%	0.5%
ABS Pipe	510	0.4%	0.3%
Polyurethane Foam/Carpet Padding	185	0.1%	0.1%
Laminate/Formica	147	0.1%	0.1%
Fiberglass (Acoustical) Ceiling Panels	365	0.3%	0.2%
Structural Fiberglass	84	0.1%	0.1%
Linoleum	79	0.1%	0.0%
Other Plastics	525	0.4%	0.1%
Other Materials	**9,812**	**7.3%**	
Rock	517	0.4%	0.3%
Dirt	3,701	2.7%	1.0%
Gravel	661	0.5%	0.5%
Sand	0	0.0%	0.0%
Large Appliances	435	0.3%	0.2%
Porcelain	179	0.1%	0.1%
Insulation	1,321	1.0%	0.4%
Other Miscellaneous Fines	2,997	2.2%	0.5%
Other Organics	**4,091**	**3.0%**	
Carpeting	3,157	2.3%	0.6%
Upholstery	306	0.2%	0.1%
Other Organics (e.g., rags)	628	0.5%	0.3%
Yard Waste	**2,780**	**2.1%**	
Stumps and Logs	412	0.3%	0.2%
Large Prunings	822	0.6%	0.7%
Small Prunings	1,076	0.8%	0.3%
Leaves and Grass	470	0.3%	0.2%
MSW	**705**	**0.5%**	
MSW	705	0.5%	0.1%

Sample Count	**550**	**Total Tons**	**135,129**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Hauler Type

Table F-2. Composition by Weight – Certificated Haulers

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**9,479**	**23.7%**	
New/Clean Used Lumber	2,488	6.2%	1.7%
New/Demo. Engineered Wood	4,531	11.3%	2.6%
Remanufacturing Scrap	0	0.0%	0.0%
Pallets and Crates	2,460	6.2%	2.1%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**8,250**	**20.7%**	
Creosote/Pressure Treated	943	2.4%	3.0%
Painted/Stained Wood	4,143	10.4%	2.8%
Mixed Demo. Wood	1,037	2.6%	1.8%
Wood Roofing and Siding	1,363	3.4%	1.7%
Finished Furnishings	224	0.6%	0.3%
Other Wood	540	1.4%	1.1%
Glass	**1,409**	**3.5%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	1,351	3.4%	2.3%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	58	0.1%	0.1%
Hazardous Waste	**97**	**0.2%**	
Latex Paint	90	0.2%	0.3%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	7	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**5,454**	**13.7%**	
Asphaltic Concrete	506	1.3%	2.0%
Built-Up Roofing	243	0.6%	0.7%
Composition Shingles	461	1.2%	1.0%
Tarpaper/Asphalt Felt	489	1.2%	0.7%
Concrete With/Without Rebar	658	1.6%	1.3%
Bricks/Masonry Tile	85	0.2%	0.4%
Concrete Masonry Unit (CMU)	26	0.1%	0.1%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	138	0.3%	0.5%
New Gypsum Scrap	1,498	3.7%	3.2%
Mixed/Demo. Gypsum Scrap	1,350	3.4%	1.4%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**3,996**	**10.0%**	
Drywall Corners/Metal Bindings	75	0.2%	0.1%
Galvanized Steel	1,564	3.9%	1.8%
Insulated Wire/Cable	205	0.5%	0.3%
Other Ferrous Metals	1,799	4.5%	1.3%
Other Nonferrous Metals	353	0.9%	0.8%
Paper	**3,421**	**8.6%**	
OCC/Kraft Bags or Paper	2,236	5.6%	1.9%
Tyvek Vapor Barrier	6	0.0%	0.0%
Other Paper	1,179	3.0%	1.0%
Plastics and Laminates	**2,237**	**5.6%**	
#2 Plastic Buckets	55	0.1%	0.1%
Plastic Film, Bags and Wrap	561	1.4%	0.6%
PVC Pipe	668	1.7%	1.3%
ABS Pipe	356	0.9%	0.8%
Polyurethane Foam/Carpet Padding	32	0.1%	0.1%
Laminate/Formica	20	0.0%	0.1%
Fiberglass (Acoustical) Ceiling Panels	209	0.5%	0.5%
Structural Fiberglass	29	0.1%	0.1%
Linoleum	26	0.1%	0.1%
Other Plastics	281	0.7%	0.3%
Other Materials	**3,108**	**7.8%**	
Rock	86	0.2%	0.2%
Dirt	1,397	3.5%	2.5%
Gravel	124	0.3%	0.5%
Sand	0	0.0%	0.0%
Large Appliances	257	0.6%	0.5%
Porcelain	80	0.2%	0.2%
Insulation	499	1.2%	1.1%
Other Miscellaneous Fines	665	1.7%	0.6%
Other Organics	**873**	**2.2%**	
Carpeting	513	1.3%	0.7%
Upholstery	49	0.1%	0.1%
Other Organics (e.g., rags)	311	0.8%	0.7%
Yard Waste	**1,223**	**3.1%**	
Stumps and Logs	94	0.2%	0.3%
Large Prunings	646	1.6%	2.3%
Small Prunings	326	0.8%	0.5%
Leaves and Grass	157	0.4%	0.3%
MSW	**403**	**1.0%**	
MSW	403	1.0%	0.3%

Sample Count	**150**	**Total Tons**	**39,949**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-3. Composition by Weight – C&D Haulers

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**7,665**	**26.2%**	
New/Clean Used Lumber	3,817	13.0%	5.5%
New/Demo. Engineered Wood	3,107	10.6%	2.6%
Remanufacturing Scrap	311	1.1%	1.6%
Pallets and Crates	430	1.5%	0.8%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**6,634**	**22.7%**	
Creosote/Pressure Treated	472	1.6%	0.4%
Painted/Stained Wood	3,928	13.4%	4.5%
Mixed Demo. Wood	1,418	4.8%	1.5%
Wood Roofing and Siding	497	1.7%	0.4%
Finished Furnishings	56	0.2%	0.2%
Other Wood	263	0.9%	0.7%
Glass	**196**	**0.7%**	
Clear Containers	56	0.2%	0.3%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	140	0.5%	0.5%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	0	0.0%	0.0%
Hazardous Waste	**0**	**0.0%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**2,659**	**9.1%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	87	0.3%	0.4%
Composition Shingles	331	1.1%	1.0%
Tarpaper/Asphalt Felt	344	1.2%	0.5%
Concrete With/Without Rebar	429	1.5%	0.7%
Bricks/Masonry Tile	233	0.8%	1.1%
Concrete Masonry Unit (CMU)	33	0.1%	0.2%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	5	0.0%	0.0%
New Gypsum Scrap	206	0.7%	0.6%
Mixed/Demo. Gypsum Scrap	991	3.4%	1.9%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**5,640**	**19.3%**	
Drywall Corners/Metal Bindings	239	0.8%	0.5%
Galvanized Steel	3,585	12.2%	1.9%
Insulated Wire/Cable	149	0.5%	0.2%
Other Ferrous Metals	1,490	5.1%	2.3%
Other Nonferrous Metals	177	0.6%	0.4%
Paper	**1,837**	**6.3%**	
OCC/Kraft Bags or Paper	1,302	4.4%	1.3%
Tyvek Vapor Barrier	8	0.0%	0.0%
Other Paper	527	1.8%	0.9%
Plastics and Laminates	**660**	**2.3%**	
#2 Plastic Buckets	44	0.1%	0.1%
Plastic Film, Bags and Wrap	158	0.5%	0.2%
PVC Pipe	113	0.4%	0.3%
ABS Pipe	62	0.2%	0.2%
Polyurethane Foam/Carpet Padding	87	0.3%	0.2%
Laminate/Formica	7	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	29	0.1%	0.1%
Structural Fiberglass	0	0.0%	0.0%
Linoleum	45	0.2%	0.2%
Other Plastics	115	0.4%	0.2%
Other Materials	**1,732**	**5.9%**	
Rock	32	0.1%	0.2%
Dirt	653	2.2%	1.5%
Gravel	105	0.4%	0.0%
Sand	0	0.0%	0.0%
Large Appliances	122	0.4%	0.5%
Porcelain	10	0.0%	0.0%
Insulation	137	0.5%	0.1%
Other Miscellaneous Fines	674	2.3%	1.4%
Other Organics	**1,612**	**5.5%**	
Carpeting	1,291	4.4%	1.7%
Upholstery	141	0.5%	0.6%
Other Organics (e.g., rags)	180	0.6%	0.9%
Yard Waste	**454**	**1.6%**	
Stumps and Logs	75	0.3%	0.1%
Large Prunings	47	0.2%	0.1%
Small Prunings	102	0.3%	0.2%
Leaves and Grass	231	0.8%	0.7%
MSW	**193**	**0.7%**	
MSW	193	0.7%	0.4%

Sample Count	**113**	**Total Tons**	**29,283**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-4. Composition by Weight – Self-Haulers

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**12,195**	**18.5%**	
New/Clean Used Lumber	5,305	8.1%	1.5%
New/Demo. Engineered Wood	5,699	8.6%	1.7%
Remanufacturing Scrap	3	0.0%	0.0%
Pallets and Crates	1,178	1.8%	0.7%
Unfinished Furnishings	10	0.0%	0.0%
Non-Recyclable Wood	**16,799**	**25.5%**	
Creosote/Pressure Treated	1,250	1.9%	1.3%
Painted/Stained Wood	7,704	11.7%	3.5%
Mixed Demo. Wood	3,425	5.2%	2.8%
Wood Roofing and Siding	3,798	5.8%	1.8%
Finished Furnishings	362	0.5%	0.3%
Other Wood	260	0.4%	0.2%
Glass	**224**	**0.3%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	212	0.3%	0.2%
Mirror Glass	3	0.0%	0.0%
Other/Non-Recyc. Glass	9	0.0%	0.0%
Hazardous Waste	**122**	**0.2%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	17	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	28	0.0%	0.0%
Asbestos	77	0.1%	0.2%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**19,465**	**29.5%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	2,352	3.6%	1.6%
Composition Shingles	7,693	11.7%	2.9%
Tarpaper/Asphalt Felt	2,778	4.2%	1.3%
Concrete With/Without Rebar	662	1.0%	1.2%
Bricks/Masonry Tile	204	0.3%	0.5%
Concrete Masonry Unit (CMU)	6	0.0%	0.0%
Clay Roofing Tile	191	0.3%	0.5%
Slate/Quarry Tile	18	0.0%	0.1%
New Gypsum Scrap	1,777	2.7%	1.2%
Mixed/Demo. Gypsum Scrap	3,725	5.7%	1.6%
Other Mineral Aggregates	59	0.1%	0.1%

	Tons	Mean	+/–
Metals	**5,054**	**7.7%**	
Drywall Corners/Metal Bindings	336	0.5%	0.3%
Galvanized Steel	1,832	2.8%	1.1%
Insulated Wire/Cable	76	0.1%	0.1%
Other Ferrous Metals	2,634	4.0%	1.2%
Other Nonferrous Metals	177	0.3%	0.3%
Paper	**2,889**	**4.4%**	
OCC/Kraft Bags or Paper	1,181	1.8%	0.4%
Tyvek Vapor Barrier	4	0.0%	0.0%
Other Paper	1,705	2.6%	0.5%
Plastics and Laminates	**1,357**	**2.1%**	
#2 Plastic Buckets	73	0.1%	0.1%
Plastic Film, Bags and Wrap	224	0.3%	0.1%
PVC Pipe	464	0.7%	0.7%
ABS Pipe	92	0.1%	0.1%
Polyurethane Foam/Carpet Padding	66	0.1%	0.1%
Laminate/Formica	120	0.2%	0.1%
Fiberglass (Acoustical) Ceiling Panels	127	0.2%	0.2%
Structural Fiberglass	55	0.1%	0.1%
Linoleum	7	0.0%	0.0%
Other Plastics	129	0.2%	0.1%
Other Materials	**4,972**	**7.5%**	
Rock	399	0.6%	0.6%
Dirt	1,651	2.5%	1.1%
Gravel	432	0.7%	1.1%
Sand	0	0.0%	0.0%
Large Appliances	56	0.1%	0.1%
Porcelain	89	0.1%	0.1%
Insulation	685	1.0%	0.3%
Other Miscellaneous Fines	1,659	2.5%	0.8%
Other Organics	**1,608**	**2.4%**	
Carpeting	1,354	2.1%	0.9%
Upholstery	117	0.2%	0.1%
Other Organics (e.g., rags)	137	0.2%	0.2%
Yard Waste	**1,102**	**1.7%**	
Stumps and Logs	244	0.4%	0.4%
Large Prunings	129	0.2%	0.1%
Small Prunings	648	1.0%	0.5%
Leaves and Grass	82	0.1%	0.1%
MSW	**110**	**0.2%**	
MSW	110	0.2%	0.1%

Sample Count	**287**	**Total Tons**	**65,896**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

The self-haul substream as shown in this table also includes a small category that included self-haul vehicles that were neither do-it-yourselfers nor contractors. This very small substream constitutes about 788 tons and should be added to the sum of the do-it-yourselfer substream (Table F-5) and the contractor substream (Table F-6) to obtain the total of 65,896 for the overall self-haul substream shown above.

Table F-5. Composition by Weight – Do-It-Yourselfers

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**195**	**3.9%**	
New/Clean Used Lumber	115	2.3%	2.8%
New/Demo. Engineered Wood	38	0.8%	0.3%
Remanufacturing Scrap	0	0.0%	0.0%
Pallets and Crates	42	0.8%	0.6%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**1,802**	**35.7%**	
Creosote/Pressure Treated	374	7.4%	6.5%
Painted/Stained Wood	644	12.8%	7.5%
Mixed Demo. Wood	377	7.5%	4.8%
Wood Roofing and Siding	264	5.2%	3.6%
Finished Furnishings	70	1.4%	0.8%
Other Wood	71	1.4%	0.6%
Glass	**15**	**0.3%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	15	0.3%	0.0%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	0	0.0%	0.0%
Hazardous Waste	**107**	**2.1%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	107	2.1%	4.1%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**698**	**13.8%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	0	0.0%	0.0%
Composition Shingles	221	4.4%	1.5%
Tarpaper/Asphalt Felt	17	0.3%	0.3%
Concrete With/Without Rebar	0	0.0%	0.0%
Bricks/Masonry Tile	0	0.0%	0.0%
Concrete Masonry Unit (CMU)	0	0.0%	0.0%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	33	0.6%	1.3%
New Gypsum Scrap	37	0.7%	0.7%
Mixed/Demo. Gypsum Scrap	390	7.7%	0.2%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**709**	**14.1%**	
Drywall Corners/Metal Bindings	0	0.0%	0.0%
Galvanized Steel	73	1.4%	0.4%
Insulated Wire/Cable	0	0.0%	0.0%
Other Ferrous Metals	636	12.6%	7.6%
Other Nonferrous Metals	0	0.0%	0.0%
Paper	**514**	**10.2%**	
OCC/Kraft Bags or Paper	453	9.0%	1.1%
Tyvek Vapor Barrier	0	0.0%	0.0%
Other Paper	61	1.2%	1.9%
Plastics and Laminates	**96**	**1.9%**	
#2 Plastic Buckets	0	0.0%	0.0%
Plastic Film, Bags and Wrap	4	0.1%	0.1%
PVC Pipe	31	0.6%	0.9%
ABS Pipe	0	0.0%	0.0%
Polyurethane Foam/Carpet Padding	14	0.3%	0.2%
Laminate/Formica	0	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	0	0.0%	0.0%
Structural Fiberglass	0	0.0%	0.0%
Linoleum	7	0.1%	0.2%
Other Plastics	39	0.8%	1.1%
Other Materials	**129**	**2.6%**	
Rock	0	0.0%	0.0%
Dirt	106	2.1%	1.1%
Gravel	0	0.0%	0.0%
Sand	0	0.0%	0.0%
Large Appliances	12	0.2%	0.2%
Porcelain	0	0.0%	0.0%
Insulation	11	0.2%	0.0%
Other Miscellaneous Fines	0	0.0%	0.0%
Other Organics	**218**	**4.3%**	
Carpeting	209	4.1%	4.4%
Upholstery	0	0.0%	0.0%
Other Organics (e.g., rags)	9	0.2%	0.2%
Yard Waste	**540**	**10.7%**	
Stumps and Logs	287	5.7%	3.0%
Large Prunings	19	0.4%	0.5%
Small Prunings	143	2.8%	1.3%
Leaves and Grass	91	1.8%	2.9%
MSW	**18**	**0.4%**	
MSW	18	0.4%	0.3%

Sample Count	**33**	**Total Tons**	**5,040**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-6. Composition by Weight – Contractors

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**11,478**	**19.1%**	
New/Clean Used Lumber	5,218	8.7%	1.5%
New/Demo. Engineered Wood	5,489	9.1%	1.9%
Remanufacturing Scrap	3	0.0%	0.0%
Pallets and Crates	758	1.3%	0.5%
Unfinished Furnishings	10	0.0%	0.0%
Non-Recyclable Wood	**14,537**	**24.2%**	
Creosote/Pressure Treated	792	1.3%	1.3%
Painted/Stained Wood	7,188	12.0%	4.0%
Mixed Demo. Wood	2,767	4.6%	3.1%
Wood Roofing and Siding	3,363	5.6%	1.9%
Finished Furnishings	276	0.5%	0.3%
Other Wood	151	0.3%	0.2%
Glass	**222**	**0.4%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	210	0.3%	0.2%
Mirror Glass	3	0.0%	0.0%
Other/Non-Recyc. Glass	9	0.0%	0.0%
Hazardous Waste	**47**	**0.1%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	18	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	29	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**18,732**	**31.2%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	1,969	3.3%	1.5%
Composition Shingles	7,736	12.9%	3.2%
Tarpaper/Asphalt Felt	2,544	4.2%	1.4%
Concrete With/Without Rebar	691	1.2%	1.4%
Bricks/Masonry Tile	214	0.4%	0.6%
Concrete Masonry Unit (CMU)	6	0.0%	0.0%
Clay Roofing Tile	199	0.3%	0.5%
Slate/Quarry Tile	0	0.0%	0.0%
New Gypsum Scrap	1,819	3.0%	1.4%
Mixed/Demo. Gypsum Scrap	3,493	5.8%	1.7%
Other Mineral Aggregates	62	0.1%	0.2%

	Tons	Mean	+/–
Metals	**4,029**	**6.7%**	
Drywall Corners/Metal Bindings	334	0.6%	0.3%
Galvanized Steel	1,402	2.3%	0.9%
Insulated Wire/Cable	58	0.1%	0.1%
Other Ferrous Metals	2,051	3.4%	1.0%
Other Nonferrous Metals	184	0.3%	0.4%
Paper	**2,586**	**4.3%**	
OCC/Kraft Bags or Paper	1,106	1.8%	0.4%
Tyvek Vapor Barrier	4	0.0%	0.0%
Other Paper	1,475	2.5%	0.6%
Plastics and Laminates	**1,320**	**2.2%**	
#2 Plastic Buckets	77	0.1%	0.1%
Plastic Film, Bags and Wrap	214	0.4%	0.1%
PVC Pipe	470	0.8%	0.8%
ABS Pipe	97	0.2%	0.1%
Polyurethane Foam/Carpet Padding	59	0.1%	0.1%
Laminate/Formica	114	0.2%	0.2%
Fiberglass (Acoustical) Ceiling Panels	120	0.2%	0.2%
Structural Fiberglass	58	0.1%	0.1%
Linoleum	4	0.0%	0.0%
Other Plastics	107	0.2%	0.1%
Other Materials	**4,744**	**7.9%**	
Rock	395	0.7%	0.7%
Dirt	1,602	2.7%	1.2%
Gravel	442	0.7%	1.2%
Sand	0	0.0%	0.0%
Large Appliances	50	0.1%	0.1%
Porcelain	91	0.2%	0.2%
Insulation	475	0.8%	0.2%
Other Miscellaneous Fines	1,689	2.8%	0.9%
Other Organics	**1,503**	**2.5%**	
Carpeting	1,138	1.9%	0.8%
Upholstery	114	0.2%	0.1%
Other Organics (e.g., rags)	251	0.4%	0.1%
Yard Waste	**786**	**1.3%**	
Stumps and Logs	75	0.1%	0.2%
Large Prunings	124	0.2%	0.2%
Small Prunings	557	0.9%	0.6%
Leaves and Grass	32	0.1%	0.1%
MSW	**82**	**0.1%**	
MSW	82	0.1%	0.0%

Sample Count	**238**	**Total Tons**	**60,068**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Generator Type

Table F-7. Composition by Weight – Residential

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**16,891**	**21.4%**	
New/Clean Used Lumber	6,503	8.2%	2.2%
New/Demo. Engineered Wood	9,159	11.6%	1.8%
Remanufacturing Scrap	310	0.4%	0.6%
Pallets and Crates	909	1.1%	0.6%
Unfinished Furnishings	10	0.0%	0.0%
Non-Recyclable Wood	**24,229**	**30.6%**	
Creosote/Pressure Treated	1,152	1.5%	1.0%
Painted/Stained Wood	12,895	16.3%	3.6%
Mixed Demo. Wood	3,872	4.9%	2.5%
Wood Roofing and Siding	5,544	7.0%	1.7%
Finished Furnishings	384	0.5%	0.2%
Other Wood	381	0.5%	0.3%
Glass	**593**	**0.8%**	
Clear Containers	56	0.1%	0.1%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	495	0.6%	0.3%
Mirror Glass	3	0.0%	0.0%
Other/Non-Recyc. Glass	39	0.0%	0.1%
Hazardous Waste	**191**	**0.2%**	
Latex Paint	90	0.1%	0.1%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	24	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	77	0.1%	0.2%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**18,911**	**23.9%**	
Asphaltic Concrete	506	0.6%	1.0%
Built-Up Roofing	1,649	2.1%	1.1%
Composition Shingles	7,504	9.5%	2.4%
Tarpaper/Asphalt Felt	2,787	3.5%	1.1%
Concrete With/Without Rebar	1,017	1.3%	1.0%
Bricks/Masonry Tile	437	0.6%	0.6%
Concrete Masonry Unit (CMU)	65	0.1%	0.1%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	161	0.2%	0.3%
New Gypsum Scrap	1,557	2.0%	1.0%
Mixed/Demo. Gypsum Scrap	3,169	4.0%	1.3%
Other Mineral Aggregates	59	0.1%	0.1%

	Tons	Mean	+/–
Metals	**3,435**	**4.3%**	
Drywall Corners/Metal Bindings	234	0.3%	0.2%
Galvanized Steel	1,006	1.3%	0.5%
Insulated Wire/Cable	94	0.1%	0.1%
Other Ferrous Metals	1,919	2.4%	0.6%
Other Nonferrous Metals	182	0.2%	0.2%
Paper	**3,733**	**4.7%**	
OCC/Kraft Bags or Paper	2,196	2.8%	0.5%
Tyvek Vapor Barrier	12	0.0%	0.0%
Other Paper	1,526	1.9%	0.6%
Plastics and Laminates	**1,822**	**2.3%**	
#2 Plastic Buckets	130	0.2%	0.1%
Plastic Film, Bags and Wrap	314	0.4%	0.1%
PVC Pipe	511	0.6%	0.6%
ABS Pipe	123	0.2%	0.1%
Polyurethane Foam/Carpet Padding	142	0.2%	0.1%
Laminate/Formica	146	0.2%	0.1%
Fiberglass (Acoustical) Ceiling Panels	91	0.1%	0.1%
Structural Fiberglass	39	0.0%	0.1%
Linoleum	36	0.0%	0.0%
Other Plastics	290	0.4%	0.2%
Other Materials	**5,318**	**6.7%**	
Rock	290	0.4%	0.4%
Dirt	2,293	2.9%	1.1%
Gravel	432	0.5%	0.9%
Sand	0	0.0%	0.0%
Large Appliances	220	0.3%	0.2%
Porcelain	165	0.2%	0.1%
Insulation	217	0.3%	0.2%
Other Miscellaneous Fines	1,700	2.1%	0.7%
Other Organics	**2,013**	**2.5%**	
Carpeting	1,469	1.9%	0.6%
Upholstery	247	0.3%	0.2%
Other Organics (e.g., rags)	297	0.4%	0.3%
Yard Waste	**1,679**	**2.1%**	
Stumps and Logs	289	0.4%	0.3%
Large Prunings	214	0.3%	0.1%
Small Prunings	849	1.1%	0.5%
Leaves and Grass	327	0.4%	0.3%
MSW	**294**	**0.4%**	
MSW	294	0.4%	0.1%

Sample Count	**339**	**Total Tons**	**79,109**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-8. Composition by Weight – Non-Residential

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**12,087**	**22.2%**	
New/Clean Used Lumber	4,903	9.0%	1.8%
New/Demo. Engineered Wood	4,021	7.4%	1.8%
Remanufacturing Scrap	0	0.0%	0.0%
Pallets and Crates	3,163	5.8%	1.5%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**7,172**	**13.1%**	
Creosote/Pressure Treated	1,514	2.8%	2.4%
Painted/Stained Wood	2,751	5.0%	1.3%
Mixed Demo. Wood	2,007	3.7%	0.9%
Wood Roofing and Siding	62	0.1%	0.2%
Finished Furnishings	259	0.5%	0.3%
Other Wood	580	1.1%	0.8%
Glass	**1,230**	**2.3%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	1,203	2.2%	1.7%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	27	0.0%	0.1%
Hazardous Waste	**0**	**0.0%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**8,423**	**15.4%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	865	1.6%	1.1%
Composition Shingles	981	1.8%	1.1%
Tarpaper/Asphalt Felt	824	1.5%	0.6%
Concrete With/Without Rebar	732	1.3%	1.0%
Bricks/Masonry Tile	86	0.2%	0.3%
Concrete Masonry Unit (CMU)	0	0.0%	0.0%
Clay Roofing Tile	191	0.4%	0.6%
Slate/Quarry Tile	0	0.0%	0.0%
New Gypsum Scrap	1,892	3.5%	2.4%
Mixed/Demo. Gypsum Scrap	2,851	5.2%	1.6%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**11,205**	**20.5%**	
Drywall Corners/Metal Bindings	416	0.8%	0.4%
Galvanized Steel	5,974	11.0%	2.0%
Insulated Wire/Cable	335	0.6%	0.2%
Other Ferrous Metals	3,954	7.2%	1.9%
Other Nonferrous Metals	525	1.0%	0.7%
Paper	**4,393**	**8.1%**	
OCC/Kraft Bags or Paper	2,501	4.6%	1.4%
Tyvek Vapor Barrier	6	0.0%	0.0%
Other Paper	1,886	3.5%	0.7%
Plastics and Laminates	**2,417**	**4.4%**	
#2 Plastic Buckets	42	0.1%	0.0%
Plastic Film, Bags and Wrap	618	1.1%	0.4%
PVC Pipe	731	1.3%	0.9%
ABS Pipe	388	0.7%	0.6%
Polyurethane Foam/Carpet Padding	43	0.1%	0.1%
Laminate/Formica	0	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	274	0.5%	0.4%
Structural Fiberglass	45	0.1%	0.1%
Linoleum	42	0.1%	0.1%
Other Plastics	235	0.4%	0.1%
Other Materials	**4,047**	**7.4%**	
Rock	226	0.4%	0.4%
Dirt	1,344	2.5%	1.8%
Gravel	229	0.4%	0.4%
Sand	0	0.0%	0.0%
Large Appliances	215	0.4%	0.4%
Porcelain	14	0.0%	0.0%
Insulation	1,101	2.0%	0.8%
Other Miscellaneous Fines	918	1.7%	0.8%
Other Organics	**2,063**	**3.8%**	
Carpeting	1,682	3.1%	1.2%
Upholstery	59	0.1%	0.1%
Other Organics (e.g., rags)	322	0.6%	0.5%
Yard Waste	**1,100**	**2.0%**	
Stumps and Logs	123	0.2%	0.2%
Large Prunings	609	1.1%	1.7%
Small Prunings	225	0.4%	0.3%
Leaves and Grass	142	0.3%	0.1%
MSW	**406**	**0.7%**	
MSW	406	0.7%	0.3%

Sample Count	**203**	**Total Tons**	**54,543**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-9. Composition by Weight – Mixed Generators

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**357**	**24.1%**	
New/Clean Used Lumber	200	13.5%	0.0%
New/Demo. Engineered Wood	154	10.4%	0.0%
Remanufacturing Scrap	3	0.2%	0.0%
Pallets and Crates	0	0.0%	0.0%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**274**	**18.6%**	
Creosote/Pressure Treated	0	0.0%	0.0%
Painted/Stained Wood	122	8.2%	0.0%
Mixed Demo. Wood	0	0.0%	0.0%
Wood Roofing and Siding	50	3.4%	0.0%
Finished Furnishings	0	0.0%	0.0%
Other Wood	103	6.9%	0.0%
Glass	**6**	**0.4%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	6	0.4%	0.0%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	0	0.0%	0.0%
Hazardous Waste	**28**	**1.9%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	28	1.9%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**250**	**16.9%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	169	11.5%	0.0%
Composition Shingles	0	0.0%	0.0%
Tarpaper/Asphalt Felt	0	0.0%	0.0%
Concrete With/Without Rebar	0	0.0%	0.0%
Bricks/Masonry Tile	0	0.0%	0.0%
Concrete Masonry Unit (CMU)	0	0.0%	0.0%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	0	0.0%	0.0%
New Gypsum Scrap	34	2.3%	0.0%
Mixed/Demo. Gypsum Scrap	47	3.2%	0.0%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**52**	**3.5%**	
Drywall Corners/Metal Bindings	0	0.0%	0.0%
Galvanized Steel	0	0.0%	0.0%
Insulated Wire/Cable	0	0.0%	0.0%
Other Ferrous Metals	52	3.5%	0.0%
Other Nonferrous Metals	0	0.0%	0.0%
Paper	**23**	**1.6%**	
OCC/Kraft Bags or Paper	23	1.6%	0.0%
Tyvek Vapor Barrier	0	0.0%	0.0%
Other Paper	0	0.0%	0.0%
Plastics and Laminates	**17**	**1.1%**	
#2 Plastic Buckets	1	0.0%	0.0%
Plastic Film, Bags and Wrap	12	0.8%	0.0%
PVC Pipe	3	0.2%	0.0%
ABS Pipe	0	0.0%	0.0%
Polyurethane Foam/Carpet Padding	0	0.0%	0.0%
Laminate/Formica	0	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	1	0.0%	0.0%
Structural Fiberglass	0	0.0%	0.0%
Linoleum	0	0.0%	0.0%
Other Plastics	0	0.0%	0.0%
Other Materials	**448**	**30.3%**	
Rock	0	0.0%	0.0%
Dirt	64	4.3%	0.0%
Gravel	0	0.0%	0.0%
Sand	0	0.0%	0.0%
Large Appliances	0	0.0%	0.0%
Porcelain	0	0.0%	0.0%
Insulation	5	0.3%	0.0%
Other Miscellaneous Fines	379	25.7%	0.0%
Other Organics	**15**	**1.0%**	
Carpeting	6	0.4%	0.0%
Upholstery	0	0.0%	0.0%
Other Organics (e.g., rags)	9	0.6%	0.0%
Yard Waste	**2**	**0.1%**	
Stumps and Logs	0	0.0%	0.0%
Large Prunings	0	0.0%	0.0%
Small Prunings	1	0.1%	0.0%
Leaves and Grass	1	0.1%	0.0%
MSW	**5**	**0.3%**	
MSW	5	0.3%	0.0%

Sample Count	**8**	**Total Tons**	**1,477**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Construction Type

Table F-10. Composition by Weight – New Construction

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**16,158**	**35.6%**	
New/Clean Used Lumber	5,502	12.1%	2.1%
New/Demo. Engineered Wood	8,741	19.2%	3.0%
Remanufacturing Scrap	310	0.7%	1.0%
Pallets and Crates	1,594	3.5%	1.5%
Unfinished Furnishings	10	0.0%	0.0%
Non-Recyclable Wood	**7,179**	**15.8%**	
Creosote/Pressure Treated	618	1.4%	1.6%
Painted/Stained Wood	4,532	10.0%	2.7%
Mixed Demo. Wood	1,688	3.7%	1.2%
Wood Roofing and Siding	169	0.4%	0.5%
Finished Furnishings	130	0.3%	0.3%
Other Wood	42	0.1%	0.0%
Glass	**272**	**0.6%**	
Clear Containers	56	0.1%	0.2%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	217	0.5%	0.6%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	0	0.0%	0.0%
Hazardous Waste	**55**	**0.1%**	
Latex Paint	27	0.1%	0.1%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	28	0.1%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**5,421**	**11.9%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	72	0.2%	0.3%
Composition Shingles	658	1.4%	0.9%
Tarpaper/Asphalt Felt	262	0.6%	0.4%
Concrete With/Without Rebar	1,055	2.3%	1.8%
Bricks/Masonry Tile	133	0.3%	0.4%
Concrete Masonry Unit (CMU)	0	0.0%	0.0%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	139	0.3%	0.5%
New Gypsum Scrap	1,829	4.0%	2.2%
Mixed/Demo. Gypsum Scrap	1,274	2.8%	1.4%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**3,509**	**7.7%**	
Drywall Corners/Metal Bindings	364	0.8%	0.5%
Galvanized Steel	1,529	3.4%	0.9%
Insulated Wire/Cable	214	0.5%	0.2%
Other Ferrous Metals	1,299	2.9%	0.8%
Other Nonferrous Metals	104	0.2%	0.2%
Paper	**4,901**	**10.8%**	
OCC/Kraft Bags or Paper	3,031	6.7%	1.2%
Tyvek Vapor Barrier	19	0.0%	0.0%
Other Paper	1,852	4.1%	1.1%
Plastics and Laminates	**2,176**	**4.8%**	
#2 Plastic Buckets	123	0.3%	0.1%
Plastic Film, Bags and Wrap	400	0.9%	0.2%
PVC Pipe	885	1.9%	1.4%
ABS Pipe	357	0.8%	0.7%
Polyurethane Foam/Carpet Padding	64	0.1%	0.1%
Laminate/Formica	18	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	45	0.1%	0.1%
Structural Fiberglass	16	0.0%	0.1%
Linoleum	19	0.0%	0.1%
Other Plastics	250	0.5%	0.2%
Other Materials	**3,504**	**7.7%**	
Rock	154	0.3%	0.3%
Dirt	1,712	3.8%	2.4%
Gravel	0	0.0%	0.0%
Sand	0	0.0%	0.0%
Large Appliances	85	0.2%	0.2%
Porcelain	29	0.1%	0.1%
Insulation	72	0.2%	0.1%
Other Miscellaneous Fines	1,450	3.2%	1.0%
Other Organics	**1,451**	**3.2%**	
Carpeting	1,167	2.6%	1.0%
Upholstery	158	0.3%	0.4%
Other Organics (e.g., rags)	126	0.3%	0.2%
Yard Waste	**486**	**1.1%**	
Stumps and Logs	67	0.1%	0.2%
Large Prunings	90	0.2%	0.2%
Small Prunings	270	0.6%	0.3%
Leaves and Grass	59	0.1%	0.1%
MSW	**331**	**0.7%**	
MSW	331	0.7%	0.3%

Sample Count	**207**	**Total Tons**	**45,445**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-11. Composition by Weight – Demolition

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**7,863**	**14.0%**	
New/Clean Used Lumber	4,459	7.9%	2.9%
New/Demo. Engineered Wood	2,724	4.8%	1.2%
Remanufacturing Scrap	3	0.0%	0.0%
Pallets and Crates	678	1.2%	0.5%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**18,095**	**32.1%**	
Creosote/Pressure Treated	1,368	2.4%	2.2%
Painted/Stained Wood	10,290	18.3%	4.6%
Mixed Demo. Wood	3,474	6.2%	3.5%
Wood Roofing and Siding	1,739	3.1%	1.4%
Finished Furnishings	395	0.7%	0.3%
Other Wood	829	1.5%	0.9%
Glass	**858**	**1.5%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	808	1.4%	0.7%
Mirror Glass	3	0.0%	0.0%
Other/Non-Recyc. Glass	46	0.1%	0.1%
Hazardous Waste	**164**	**0.3%**	
Latex Paint	63	0.1%	0.2%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	24	0.0%	0.1%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	77	0.1%	0.2%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**10,232**	**18.2%**	
Asphaltic Concrete	506	0.9%	1.4%
Built-Up Roofing	444	0.8%	0.6%
Composition Shingles	1,637	2.9%	1.5%
Tarpaper/Asphalt Felt	1,218	2.2%	1.0%
Concrete With/Without Rebar	386	0.7%	0.4%
Bricks/Masonry Tile	390	0.7%	0.8%
Concrete Masonry Unit (CMU)	65	0.1%	0.1%
Clay Roofing Tile	191	0.3%	0.6%
Slate/Quarry Tile	5	0.0%	0.0%
New Gypsum Scrap	820	1.5%	1.0%
Mixed/Demo. Gypsum Scrap	4,510	8.0%	2.0%
Other Mineral Aggregates	59	0.1%	0.2%

	Tons	Mean	+/–
Metals	**9,223**	**16.4%**	
Drywall Corners/Metal Bindings	242	0.4%	0.2%
Galvanized Steel	4,886	8.7%	1.9%
Insulated Wire/Cable	190	0.3%	0.1%
Other Ferrous Metals	3,321	5.9%	1.8%
Other Nonferrous Metals	584	1.0%	0.7%
Paper	**1,191**	**2.1%**	
OCC/Kraft Bags or Paper	715	1.3%	0.4%
Tyvek Vapor Barrier	0	0.0%	0.0%
Other Paper	476	0.8%	0.5%
Plastics and Laminates	**1,420**	**2.5%**	
#2 Plastic Buckets	33	0.1%	0.0%
Plastic Film, Bags and Wrap	187	0.3%	0.2%
PVC Pipe	242	0.4%	0.3%
ABS Pipe	82	0.1%	0.2%
Polyurethane Foam/Carpet Padding	113	0.2%	0.1%
Laminate/Formica	129	0.2%	0.2%
Fiberglass (Acoustical) Ceiling Panels	315	0.6%	0.4%
Structural Fiberglass	68	0.1%	0.1%
Linoleum	58	0.1%	0.1%
Other Plastics	193	0.3%	0.2%
Other Materials	**3,305**	**5.9%**	
Rock	191	0.3%	0.6%
Dirt	1,200	2.1%	1.2%
Gravel	0	0.0%	0.0%
Sand	0	0.0%	0.0%
Large Appliances	346	0.6%	0.4%
Porcelain	149	0.3%	0.2%
Insulation	390	0.7%	0.3%
Other Miscellaneous Fines	1,029	1.8%	1.0%
Other Organics	**2,286**	**4.1%**	
Carpeting	1,883	3.3%	1.2%
Upholstery	149	0.3%	0.1%
Other Organics (e.g., rags)	254	0.5%	0.5%
Yard Waste	**1,572**	**2.8%**	
Stumps and Logs	117	0.2%	0.2%
Large Prunings	689	1.2%	1.6%
Small Prunings	466	0.8%	0.5%
Leaves and Grass	300	0.5%	0.4%
MSW	**151**	**0.3%**	
MSW	151	0.3%	0.1%

Sample Count	**215**	**Total Tons**	**56,359**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-12. Composition by Weight – Roofing

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**780**	**4.4%**	
New/Clean Used Lumber	73	0.4%	0.3%
New/Demo. Engineered Wood	600	3.4%	2.9%
Remanufacturing Scrap	0	0.0%	0.0%
Pallets and Crates	107	0.6%	0.6%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**3,932**	**22.2%**	
Creosote/Pressure Treated	0	0.0%	0.0%
Painted/Stained Wood	238	1.3%	1.2%
Mixed Demo. Wood	144	0.8%	0.8%
Wood Roofing and Siding	3,535	19.9%	5.9%
Finished Furnishings	15	0.1%	0.0%
Other Wood	0	0.0%	0.0%
Glass	**76**	**0.4%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	76	0.4%	0.0%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	0	0.0%	0.0%
Hazardous Waste	**0**	**0.0%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**10,105**	**56.9%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	1,889	10.6%	5.7%
Composition Shingles	6,063	34.2%	9.9%
Tarpaper/Asphalt Felt	2,021	11.4%	3.5%
Concrete With/Without Rebar	0	0.0%	0.0%
Bricks/Masonry Tile	0	0.0%	0.0%
Concrete Masonry Unit (CMU)	0	0.0%	0.0%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	0	0.0%	0.0%
New Gypsum Scrap	133	0.7%	1.2%
Mixed/Demo. Gypsum Scrap	0	0.0%	0.0%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**672**	**3.8%**	
Drywall Corners/Metal Bindings	4	0.0%	0.0%
Galvanized Steel	225	1.3%	1.1%
Insulated Wire/Cable	0	0.0%	0.0%
Other Ferrous Metals	442	2.5%	1.0%
Other Nonferrous Metals	0	0.0%	0.0%
Paper	**749**	**4.2%**	
OCC/Kraft Bags or Paper	81	0.5%	0.2%
Tyvek Vapor Barrier	0	0.0%	0.0%
Other Paper	668	3.8%	0.9%
Plastics and Laminates	**89**	**0.5%**	
#2 Plastic Buckets	3	0.0%	0.0%
Plastic Film, Bags and Wrap	63	0.4%	0.1%
PVC Pipe	0	0.0%	0.0%
ABS Pipe	0	0.0%	0.0%
Polyurethane Foam/Carpet Padding	3	0.0%	0.0%
Laminate/Formica	0	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	5	0.0%	0.1%
Structural Fiberglass	0	0.0%	0.0%
Linoleum	1	0.0%	0.0%
Other Plastics	14	0.1%	0.0%
Other Materials	**1,211**	**6.8%**	
Rock	140	0.8%	1.2%
Dirt	128	0.7%	0.9%
Gravel	537	3.0%	3.9%
Sand	0	0.0%	0.0%
Large Appliances	0	0.0%	0.0%
Porcelain	1	0.0%	0.0%
Insulation	389	2.2%	0.0%
Other Miscellaneous Fines	16	0.1%	0.0%
Other Organics	**45**	**0.3%**	
Carpeting	34	0.2%	0.2%
Upholstery	0	0.0%	0.0%
Other Organics (e.g., rags)	11	0.1%	0.1%
Yard Waste	**77**	**0.4%**	
Stumps and Logs	0	0.0%	0.0%
Large Prunings	12	0.1%	0.1%
Small Prunings	64	0.4%	0.3%
Leaves and Grass	0	0.0%	0.0%
MSW	**10**	**0.1%**	
MSW	10	0.1%	0.0%

Sample Count	**60**	**Total Tons**	**17,747**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-13. Composition by Weight – Mixed/Other Construction

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**4,545**	**29.2%**	
New/Clean Used Lumber	1,574	10.1%	4.5%
New/Demo. Engineered Wood	1,279	8.2%	3.9%
Remanufacturing Scrap	0	0.0%	0.0%
Pallets and Crates	1,692	10.9%	3.8%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**2,472**	**15.9%**	
Creosote/Pressure Treated	679	4.4%	2.7%
Painted/Stained Wood	712	4.6%	2.9%
Mixed Demo. Wood	573	3.7%	1.8%
Wood Roofing and Siding	212	1.4%	0.7%
Finished Furnishings	102	0.7%	0.3%
Other Wood	192	1.2%	0.4%
Glass	**623**	**4.0%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	603	3.9%	5.3%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	20	0.1%	0.2%
Hazardous Waste	**0**	**0.0%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**1,822**	**11.7%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	277	1.8%	0.0%
Composition Shingles	127	0.8%	1.0%
Tarpaper/Asphalt Felt	109	0.7%	1.0%
Concrete With/Without Rebar	309	2.0%	3.1%
Bricks/Masonry Tile	0	0.0%	0.0%
Concrete Masonry Unit (CMU)	0	0.0%	0.0%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	18	0.1%	0.2%
New Gypsum Scrap	701	4.5%	6.2%
Mixed/Demo. Gypsum Scrap	281	1.8%	2.1%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**1,276**	**8.2%**	
Drywall Corners/Metal Bindings	39	0.3%	0.3%
Galvanized Steel	333	2.1%	1.3%
Insulated Wire/Cable	26	0.2%	0.3%
Other Ferrous Metals	860	5.5%	2.5%
Other Nonferrous Metals	18	0.1%	0.2%
Paper	**1,311**	**8.4%**	
OCC/Kraft Bags or Paper	895	5.7%	4.0%
Tyvek Vapor Barrier	0	0.0%	0.0%
Other Paper	416	2.7%	1.1%
Plastics and Laminates	**571**	**3.7%**	
#2 Plastic Buckets	14	0.1%	0.0%
Plastic Film, Bags and Wrap	294	1.9%	1.2%
PVC Pipe	118	0.8%	1.2%
ABS Pipe	72	0.5%	0.8%
Polyurethane Foam/Carpet Padding	5	0.0%	0.0%
Laminate/Formica	0	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	0	0.0%	0.0%
Structural Fiberglass	0	0.0%	0.0%
Linoleum	0	0.0%	0.0%
Other Plastics	69	0.4%	0.3%
Other Materials	**1,793**	**11.5%**	
Rock	31	0.2%	0.3%
Dirt	662	4.2%	1.6%
Gravel	124	0.8%	1.3%
Sand	0	0.0%	0.0%
Large Appliances	4	0.0%	0.0%
Porcelain	0	0.0%	0.0%
Insulation	469	3.0%	2.9%
Other Miscellaneous Fines	502	3.2%	0.8%
Other Organics	**308**	**2.0%**	
Carpeting	72	0.5%	0.5%
Upholstery	0	0.0%	0.0%
Other Organics (e.g., rags)	236	1.5%	1.7%
Yard Waste	**644**	**4.1%**	
Stumps and Logs	228	1.5%	1.5%
Large Prunings	30	0.2%	0.1%
Small Prunings	275	1.8%	1.3%
Leaves and Grass	111	0.7%	0.5%
MSW	**213**	**1.4%**	
MSW	213	1.4%	0.7%

Sample Count	**68**	**Total Tons**	**15,578**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Vehicle Type

Table F-14. Composition by Weight – Dump Trucks

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**12,497**	**23.9%**	
New/Clean Used Lumber	5,299	10.2%	1.9%
New/Demo. Engineered Wood	6,433	12.3%	2.1%
Remanufacturing Scrap	3	0.0%	0.0%
Pallets and Crates	754	1.4%	0.5%
Unfinished Furnishings	10	0.0%	0.0%
Non-Recyclable Wood	**11,976**	**22.9%**	
Creosote/Pressure Treated	929	1.8%	1.6%
Painted/Stained Wood	6,150	11.8%	2.8%
Mixed Demo. Wood	1,845	3.5%	1.0%
Wood Roofing and Siding	2,775	5.3%	2.0%
Finished Furnishings	189	0.4%	0.3%
Other Wood	90	0.2%	0.2%
Glass	**250**	**0.5%**	
Clear Containers	56	0.1%	0.2%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	185	0.4%	0.3%
Mirror Glass	3	0.0%	0.0%
Other/Non-Recyc. Glass	6	0.0%	0.0%
Hazardous Waste	**45**	**0.1%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	17	0.0%	0.1%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	28	0.1%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**14,479**	**27.7%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	1,991	3.8%	2.0%
Composition Shingles	5,739	11.0%	3.0%
Tarpaper/Asphalt Felt	1,422	2.7%	1.2%
Concrete With/Without Rebar	748	1.4%	1.5%
Bricks/Masonry Tile	204	0.4%	0.6%
Concrete Masonry Unit (CMU)	33	0.1%	0.1%
Clay Roofing Tile	191	0.4%	0.6%
Slate/Quarry Tile	0	0.0%	0.0%
New Gypsum Scrap	1,689	3.2%	1.5%
Mixed/Demo. Gypsum Scrap	2,463	4.7%	1.8%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**2,893**	**5.5%**	
Drywall Corners/Metal Bindings	230	0.4%	0.3%
Galvanized Steel	1,271	2.4%	0.7%
Insulated Wire/Cable	72	0.1%	0.1%
Other Ferrous Metals	1,191	2.3%	0.8%
Other Nonferrous Metals	130	0.2%	0.4%
Paper	**2,714**	**5.2%**	
OCC/Kraft Bags or Paper	1,588	3.0%	0.7%
Tyvek Vapor Barrier	4	0.0%	0.0%
Other Paper	1,121	2.1%	0.6%
Plastics and Laminates	**1,262**	**2.4%**	
#2 Plastic Buckets	83	0.2%	0.1%
Plastic Film, Bags and Wrap	209	0.4%	0.1%
PVC Pipe	454	0.9%	0.9%
ABS Pipe	87	0.2%	0.2%
Polyurethane Foam/Carpet Padding	86	0.2%	0.1%
Laminate/Formica	74	0.1%	0.1%
Fiberglass (Acoustical) Ceiling Panels	105	0.2%	0.2%
Structural Fiberglass	45	0.1%	0.1%
Linoleum	3	0.0%	0.0%
Other Plastics	116	0.2%	0.1%
Other Materials	**3,748**	**7.2%**	
Rock	399	0.8%	0.8%
Dirt	1,347	2.6%	1.3%
Gravel	537	1.0%	1.3%
Sand	0	0.0%	0.0%
Large Appliances	23	0.0%	0.0%
Porcelain	40	0.1%	0.1%
Insulation	129	0.2%	0.2%
Other Miscellaneous Fines	1,273	2.4%	0.8%
Other Organics	**1,202**	**2.3%**	
Carpeting	934	1.8%	0.8%
Upholstery	154	0.3%	0.3%
Other Organics (e.g., rags)	114	0.2%	0.2%
Yard Waste	**1,038**	**2.0%**	
Stumps and Logs	275	0.5%	0.5%
Large Prunings	153	0.3%	0.2%
Small Prunings	534	1.0%	0.6%
Leaves and Grass	75	0.1%	0.1%
MSW	**94**	**0.2%**	
MSW	94	0.2%	0.1%

Sample Count	**251**	**Total Tons**	**52,198**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-15. Composition by Weight – Roll-Off Containers

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**12,849**	**21.9%**	
New/Clean Used Lumber	3,343	5.7%	1.5%
New/Demo. Engineered Wood	5,993	10.2%	2.1%
Remanufacturing Scrap	310	0.5%	0.8%
Pallets and Crates	3,203	5.5%	1.6%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**10,189**	**17.4%**	
Creosote/Pressure Treated	980	1.7%	2.1%
Painted/Stained Wood	4,998	8.5%	2.0%
Mixed Demo. Wood	1,020	1.7%	0.7%
Wood Roofing and Siding	2,196	3.7%	1.4%
Finished Furnishings	277	0.5%	0.3%
Other Wood	717	1.2%	0.8%
Glass	**1,402**	**2.4%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	1,344	2.3%	1.6%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	58	0.1%	0.1%
Hazardous Waste	**97**	**0.2%**	
Latex Paint	90	0.2%	0.2%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	7	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**9,557**	**16.3%**	
Asphaltic Concrete	506	0.9%	1.4%
Built-Up Roofing	520	0.9%	0.5%
Composition Shingles	1,608	2.7%	2.0%
Tarpaper/Asphalt Felt	1,726	2.9%	1.0%
Concrete With/Without Rebar	653	1.1%	0.9%
Bricks/Masonry Tile	133	0.2%	0.3%
Concrete Masonry Unit (CMU)	26	0.0%	0.1%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	138	0.2%	0.4%
New Gypsum Scrap	1,639	2.8%	2.2%
Mixed/Demo. Gypsum Scrap	2,608	4.4%	1.4%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**8,224**	**14.0%**	
Drywall Corners/Metal Bindings	340	0.6%	0.3%
Galvanized Steel	3,162	5.4%	1.8%
Insulated Wire/Cable	301	0.5%	0.2%
Other Ferrous Metals	3,938	6.7%	1.8%
Other Nonferrous Metals	483	0.8%	0.6%
Paper	**4,869**	**8.3%**	
OCC/Kraft Bags or Paper	2,877	4.9%	1.3%
Tyvek Vapor Barrier	15	0.0%	0.0%
Other Paper	1,978	3.4%	0.9%
Plastics and Laminates	**2,728**	**4.7%**	
#2 Plastic Buckets	80	0.1%	0.1%
Plastic Film, Bags and Wrap	676	1.2%	0.4%
PVC Pipe	743	1.3%	0.9%
ABS Pipe	360	0.6%	0.6%
Polyurethane Foam/Carpet Padding	78	0.1%	0.1%
Laminate/Formica	72	0.1%	0.1%
Fiberglass (Acoustical) Ceiling Panels	253	0.4%	0.4%
Structural Fiberglass	29	0.0%	0.1%
Linoleum	69	0.1%	0.1%
Other Plastics	369	0.6%	0.2%
Other Materials	**4,599**	**7.8%**	
Rock	117	0.2%	0.2%
Dirt	1,692	2.9%	1.8%
Gravel	124	0.2%	0.3%
Sand	0	0.0%	0.0%
Large Appliances	275	0.5%	0.4%
Porcelain	87	0.1%	0.1%
Insulation	1,128	1.9%	0.8%
Other Miscellaneous Fines	1,174	2.0%	1.0%
Other Organics	**2,157**	**3.7%**	
Carpeting	1,731	3.0%	1.1%
Upholstery	93	0.2%	0.1%
Other Organics (e.g., rags)	333	0.6%	0.5%
Yard Waste	**1,373**	**2.3%**	
Stumps and Logs	112	0.2%	0.2%
Large Prunings	646	1.1%	1.6%
Small Prunings	366	0.6%	0.3%
Leaves and Grass	248	0.4%	0.4%
MSW	**569**	**1.0%**	
MSW	569	1.0%	0.3%

Sample Count	**206**	**Total Tons**	**58,612**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-16. Composition by Weight – End-Dump Tractor Trailers

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**2,645**	**18.0%**	
New/Clean Used Lumber	2,376	16.2%	10.3%
New/Demo. Engineered Wood	270	1.8%	1.0%
Remanufacturing Scrap	0	0.0%	0.0%
Pallets and Crates	0	0.0%	0.0%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**6,063**	**41.3%**	
Creosote/Pressure Treated	375	2.6%	0.0%
Painted/Stained Wood	3,848	26.2%	15.0%
Mixed Demo. Wood	1,654	11.3%	12.7%
Wood Roofing and Siding	50	0.3%	0.0%
Finished Furnishings	0	0.0%	0.0%
Other Wood	135	0.9%	0.0%
Glass	**108**	**0.7%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	108	0.7%	1.0%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	0	0.0%	0.0%
Hazardous Waste	**0**	**0.0%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**1,024**	**7.0%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	0	0.0%	0.0%
Composition Shingles	164	1.1%	0.9%
Tarpaper/Asphalt Felt	17	0.1%	0.2%
Concrete With/Without Rebar	152	1.0%	0.6%
Bricks/Masonry Tile	178	1.2%	2.0%
Concrete Masonry Unit (CMU)	0	0.0%	0.0%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	0	0.0%	0.0%
New Gypsum Scrap	0	0.0%	0.0%
Mixed/Demo. Gypsum Scrap	512	3.5%	3.0%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**2,958**	**20.1%**	
Drywall Corners/Metal Bindings	59	0.4%	0.6%
Galvanized Steel	2,436	16.6%	2.0%
Insulated Wire/Cable	29	0.2%	0.1%
Other Ferrous Metals	343	2.3%	0.5%
Other Nonferrous Metals	91	0.6%	0.7%
Paper	**134**	**0.9%**	
OCC/Kraft Bags or Paper	99	0.7%	0.1%
Tyvek Vapor Barrier	0	0.0%	0.0%
Other Paper	34	0.2%	0.2%
Plastics and Laminates	**131**	**0.9%**	
#2 Plastic Buckets	1	0.0%	0.0%
Plastic Film, Bags and Wrap	35	0.2%	0.1%
PVC Pipe	20	0.1%	0.1%
ABS Pipe	63	0.4%	0.0%
Polyurethane Foam/Carpet Padding	8	0.1%	0.0%
Laminate/Formica	0	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	1	0.0%	0.0%
Structural Fiberglass	0	0.0%	0.0%
Linoleum	0	0.0%	0.0%
Other Plastics	2	0.0%	0.0%
Other Materials	**1,067**	**7.3%**	
Rock	0	0.0%	0.0%
Dirt	518	3.5%	2.0%
Gravel	0	0.0%	0.0%
Sand	0	0.0%	0.0%
Large Appliances	98	0.7%	0.9%
Porcelain	0	0.0%	0.0%
Insulation	56	0.4%	0.1%
Other Miscellaneous Fines	396	2.7%	0.7%
Other Organics	**416**	**2.8%**	
Carpeting	206	1.4%	1.6%
Upholstery	55	0.4%	0.4%
Other Organics (e.g., rags)	155	1.1%	1.7%
Yard Waste	**146**	**1.0%**	
Stumps and Logs	0	0.0%	0.0%
Large Prunings	12	0.1%	0.0%
Small Prunings	52	0.4%	0.1%
Leaves and Grass	82	0.6%	0.4%
MSW	**0**	**0.0%**	
MSW	0	0.0%	0.0%

Sample Count	**17**	**Total Tons**	**14,691**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-17. Composition by Weight – Other Large Vehicles

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**499**	**14.7%**	
New/Clean Used Lumber	298	8.8%	2.9%
New/Demo. Engineered Wood	132	3.9%	1.4%
Remanufacturing Scrap	0	0.0%	0.0%
Pallets and Crates	69	2.0%	0.5%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**1,261**	**37.1%**	
Creosote/Pressure Treated	19	0.6%	0.5%
Painted/Stained Wood	354	10.4%	7.2%
Mixed Demo. Wood	114	3.3%	3.0%
Wood Roofing and Siding	513	15.1%	8.8%
Finished Furnishings	154	4.5%	2.4%
Other Wood	107	3.2%	0.9%
Glass	**28**	**0.8%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	25	0.7%	1.0%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	3	0.1%	0.1%
Hazardous Waste	**77**	**2.3%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	77	2.3%	3.5%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**566**	**16.6%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	0	0.0%	0.0%
Composition Shingles	10	0.3%	0.0%
Tarpaper/Asphalt Felt	20	0.6%	0.1%
Concrete With/Without Rebar	172	5.1%	0.0%
Bricks/Masonry Tile	7	0.2%	0.3%
Concrete Masonry Unit (CMU)	0	0.0%	0.0%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	5	0.1%	0.3%
New Gypsum Scrap	66	1.9%	2.2%
Mixed/Demo. Gypsum Scrap	287	8.4%	4.8%
Other Mineral Aggregates	0	0.0%	0.0%

	Tons	Mean	+/–
Metals	**298**	**8.8%**	
Drywall Corners/Metal Bindings	4	0.1%	0.2%
Galvanized Steel	69	2.0%	0.7%
Insulated Wire/Cable	28	0.8%	0.4%
Other Ferrous Metals	198	5.8%	1.0%
Other Nonferrous Metals	0	0.0%	0.0%
Paper	**281**	**8.3%**	
OCC/Kraft Bags or Paper	89	2.6%	0.3%
Tyvek Vapor Barrier	0	0.0%	0.0%
Other Paper	193	5.7%	0.4%
Plastics and Laminates	**60**	**1.8%**	
#2 Plastic Buckets	8	0.2%	0.0%
Plastic Film, Bags and Wrap	18	0.5%	0.1%
PVC Pipe	9	0.3%	0.4%
ABS Pipe	0	0.0%	0.0%
Polyurethane Foam/Carpet Padding	3	0.1%	0.1%
Laminate/Formica	0	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	6	0.2%	0.0%
Structural Fiberglass	0	0.0%	0.0%
Linoleum	3	0.1%	0.1%
Other Plastics	13	0.4%	0.5%
Other Materials	**130**	**3.8%**	
Rock	0	0.0%	0.0%
Dirt	0	0.0%	0.0%
Gravel	0	0.0%	0.0%
Sand	0	0.0%	0.0%
Large Appliances	10	0.3%	0.3%
Porcelain	0	0.0%	0.0%
Insulation	4	0.1%	0.1%
Other Miscellaneous Fines	116	3.4%	0.5%
Other Organics	**136**	**4.0%**	
Carpeting	112	3.3%	2.7%
Upholstery	4	0.1%	0.2%
Other Organics (e.g., rags)	20	0.6%	1.7%
Yard Waste	**40**	**1.2%**	
Stumps and Logs	0	0.0%	0.0%
Large Prunings	0	0.0%	0.0%
Small Prunings	6	0.2%	0.3%
Leaves and Grass	34	1.0%	0.0%
MSW	**24**	**0.7%**	
MSW	24	0.7%	0.4%

Sample Count	**26**	**Total Tons**	**3,400**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Table F-18. Composition by Weight – Small Vehicles

Calculated at a 90% confidence interval

	Tons	Mean	+/–
Recyclable Wood	**837**	**13.4%**	
New/Clean Used Lumber	287	4.6%	2.1%
New/Demo. Engineered Wood	507	8.1%	4.9%
Remanufacturing Scrap	0	0.0%	0.0%
Pallets and Crates	42	0.7%	0.5%
Unfinished Furnishings	0	0.0%	0.0%
Non-Recyclable Wood	**2,205**	**35.4%**	
Creosote/Pressure Treated	365	5.9%	5.4%
Painted/Stained Wood	420	6.7%	3.8%
Mixed Demo. Wood	1,260	20.2%	7.9%
Wood Roofing and Siding	124	2.0%	0.2%
Finished Furnishings	23	0.4%	0.4%
Other Wood	14	0.2%	0.3%
Glass	**40**	**0.6%**	
Clear Containers	0	0.0%	0.0%
Green Containers	0	0.0%	0.0%
Brown Containers	0	0.0%	0.0%
Window Glass	40	0.6%	0.5%
Mirror Glass	0	0.0%	0.0%
Other/Non-Recyc. Glass	0	0.0%	0.0%
Hazardous Waste	**0**	**0.0%**	
Latex Paint	0	0.0%	0.0%
Wood Preservatives	0	0.0%	0.0%
Oil-Based Finishes	0	0.0%	0.0%
Solvents and Thinners	0	0.0%	0.0%
Adhesives and Glue	0	0.0%	0.0%
Asbestos	0	0.0%	0.0%
Other Haz Waste	0	0.0%	0.0%
Mineral Aggregates	**1,971**	**31.6%**	
Asphaltic Concrete	0	0.0%	0.0%
Built-Up Roofing	173	2.8%	0.0%
Composition Shingles	977	15.7%	6.9%
Tarpaper/Asphalt Felt	429	6.9%	5.0%
Concrete With/Without Rebar	23	0.4%	0.6%
Bricks/Masonry Tile	0	0.0%	0.0%
Concrete Masonry Unit (CMU)	6	0.1%	0.2%
Clay Roofing Tile	0	0.0%	0.0%
Slate/Quarry Tile	18	0.3%	0.6%
New Gypsum Scrap	88	1.4%	0.8%
Mixed/Demo. Gypsum Scrap	196	3.1%	3.5%
Other Mineral Aggregates	60	1.0%	1.4%

	Tons	Mean	+/–
Metals	**306**	**4.9%**	
Drywall Corners/Metal Bindings	16	0.3%	0.0%
Galvanized Steel	33	0.5%	0.6%
Insulated Wire/Cable	0	0.0%	0.0%
Other Ferrous Metals	254	4.1%	4.1%
Other Nonferrous Metals	3	0.0%	0.0%
Paper	**146**	**2.4%**	
OCC/Kraft Bags or Paper	64	1.0%	0.2%
Tyvek Vapor Barrier	0	0.0%	0.0%
Other Paper	83	1.3%	1.2%
Plastics and Laminates	**73**	**1.2%**	
#2 Plastic Buckets	1	0.0%	0.0%
Plastic Film, Bags and Wrap	5	0.1%	0.1%
PVC Pipe	17	0.3%	0.4%
ABS Pipe	0	0.0%	0.0%
Polyurethane Foam/Carpet Padding	11	0.2%	0.2%
Laminate/Formica	0	0.0%	0.0%
Fiberglass (Acoustical) Ceiling Panels	0	0.0%	0.0%
Structural Fiberglass	10	0.2%	0.3%
Linoleum	4	0.1%	0.1%
Other Plastics	25	0.4%	0.5%
Other Materials	**266**	**4.3%**	
Rock	0	0.0%	0.0%
Dirt	144	2.3%	3.5%
Gravel	0	0.0%	0.0%
Sand	0	0.0%	0.0%
Large Appliances	29	0.5%	0.7%
Porcelain	52	0.8%	1.3%
Insulation	4	0.1%	0.1%
Other Miscellaneous Fines	37	0.6%	0.9%
Other Organics	**179**	**2.9%**	
Carpeting	174	2.8%	2.7%
Upholstery	0	0.0%	0.0%
Other Organics (e.g., rags)	6	0.1%	0.1%
Yard Waste	**185**	**3.0%**	
Stumps and Logs	25	0.4%	0.8%
Large Prunings	10	0.2%	0.2%
Small Prunings	118	1.9%	1.4%
Leaves and Grass	32	0.5%	0.9%
MSW	**18**	**0.3%**	
MSW	18	0.3%	0.0%

Sample Count	**50**	**Total Tons**	**6,227**

Note: Estimated tonnage is rounded to the nearest ton. Estimated mean percentage and error range are rounded to the nearest tenth of a percent. Therefore, the tonnages and mean percentages as displayed in the table, when added together, may not equal the subtotals and totals shown, due to rounding. For more detail, please see Interpreting the Results *on page 2-5.*

Appendix G
Definitions of C&D-Related Material Components from Sampling at King County Transfer Stations, 1999-2000[1]

Dimensional Lumber – Wood commonly used in construction for framing and related uses, including 2 x 4s, 2 x 6s, and sheets of plywood.

Treated Wood – Wood treated with preservatives such as creosote, including dimensional lumber. This category may also include some plywood, oriented strand board (OSB), chemically treated wood, and other wood.

Contaminated Wood – Wood contaminated with other wastes in such a way that they cannot easily be separated, but consisting primarily (more than 50%) of wood. An example is wood with sheetrock attached.

Roofing and Siding – Wood from demolition or construction that is commonly used for siding or roofing of buildings. This category includes only wood products, such as cedar shingles or shakes.

Stumps – Stumps of trees and shrubs, with any adhering soil.

Large Prunings – Other natural woods, such as logs and branches in excess of four inches in diameter (four inches is the standard used for defining prunings as yard waste).

Other Wood – Other types of wood, including wood products that do not fit into the above categories.

Carpet/Upholstery – General category of flooring applications consisting of various natural or synthetic fibers bonded to some type of backing material and of various types of natural-fiber or synthetic-fiber cloth fabrics used in furniture and other interior applications.

Other Ferrous – Ferrous and alloyed ferrous scrap materials derived from iron, including household, industrial, and commercial products including other cans and containers. This category includes scrap iron and steel that will adhere to a magnet.

Other Nonferrous – Metals that are not materials derived from iron, including copper, brass, bronze, aluminum, lead, pewter, zinc, and other metals that will not adhere to a magnet. Metals that are significantly contaminated are not included.

[1] These material definitions correspond to the analysis discussed in Section 2-9 of the report.

Construction/Demolition Waste (except wood) – Construction, demolition, or land clearing waste that cannot be placed into one of the above categories, such as concrete, plaster, rocks, gravel, bricks, and insulation of various types.

Gypsum Wallboard – Calcium sulfate dihydrate sandwiched between heavy layers of Kraft-type paper.

Appendix H
Generator, Hauler, and Processor Interview Guides

The following sections include questionnaires used to guide interviews with the generators, haulers, and processors in the recycling study.

Generator Interview Guide

Company _____ **Contact** _____

Address _____ **Phone** _____

_____

Hi. My name is _____, and I am working on a project for King County. Construction and demolition (C&D) debris is a large part of the County's waste stream, so the Solid Waste Division is conducting interviews to learn more about current C&D waste handling practices and what can be done to increase recycling. May I ask you a few questions? This interview will take about 20 minutes.

If no: Is there another time that would be more convenient?

If yes: Thanks. All your responses will be kept strictly confidential. By the way, I work for Cascadia Consulting Group, which is the contractor for this project. Our policy is to not reveal to the County any information specific to your organization. Do you have any questions before we begin?

1. What types of construction and demolition materials do you generate? *(Interviewer note: Be prepared to provide a quick definition of C&D materials.)*

2. Which materials are disposed? *(Interviewer note: If necessary, distinguish between material that is disposed rather than recycled.)*

3. Where is material taken for disposal?

4. Who hauls the materials that are disposed?

5. If materials are self-hauled, how much time does it typically take to haul materials for disposal?

6. How much does it cost you to dispose of C&D waste (per ton or per yard)? *(Note: This figure includes the cost of hauling plus the cost of disposal.)*

7. Which materials are recycled?

8. Where are the recycled materials taken for processing?

9. Who hauls materials for recycling?

10. If materials are self-hauled, how much time does it typically take to haul materials for recycling?

11. For each material type, how much does hauling C&D materials for recycling cost you (per ton or per yard)?

12. What influences your decision to dispose or recycle each material? *(Interviewer note: If cost is the primary determinant for either recycling or disposal, probe to determine the differences in cost.)*

13. Are you able to separate recyclable C&D materials by type at the job site?

14. What factors impact your ability to separate materials for recycling?

15. What are the greatest opportunities for increased recycling of the C&D material you generate?

    If necessary, prompt with questions such as:
    - *What circumstances would make you more likely to recycle the materials you currently dispose?*
    - *Of the materials that you currently dispose, which would be most beneficial to recycle and why?*

16. What are the largest barriers to recycling?

    If necessary, prompt with questions such as:
    - *What circumstances prevent you from recycling the materials you currently dispose?*
    - *What are the reasons why you don't recycle materials that are now disposed?*

17. What can be done to eliminate or reduce each of these barriers?

18. What could the public sector (local governments, for example) do to increase recycling of C&D waste?

19. What is your level of satisfaction with the current C&D disposal and recycling system in King County?

20. Are there recycling activities or programs in other areas that you would like to see in King County?

21. Is there anything else we should know about C&D disposal or recycling in King County?

Thank you for your time and input!

Hauler Interview Guide

Company _____ **Contact** _____

Address _____ **Phone** _____

_____

Hi. My name is _____, and I am working on a project for King County. Construction and demolition (C&D) debris is a large part of the County's waste stream, so the Solid Waste Division is conducting interviews to learn more about current C&D waste handling practices and what can be done to increase recycling. May I ask you a few questions? This interview will take about 20 minutes.

If no: Is there another time that would be more convenient?

If yes: Thanks. All your responses will be kept strictly confidential. By the way, I work for Cascadia Consulting Group, which is the contractor for this project. Our policy is to not reveal to the County any information specific to your organization. Do you have any questions before we begin?

1. What types of construction and demolition materials do you haul?

2. Which materials are disposed?

3. Where is material taken for disposal?

4. Typically, how far do you travel to dispose of material and how long does it take?

5. What do you charge to haul C&D waste for disposal (per ton or per yard)?

6. Which materials are recycled?

7. Where are the recycled materials taken for processing?

8. Typically, how far do you travel to recycle material and how long does it take?

9. For each material type, what is your rate structure for hauling C&D materials for recycling (per ton or per yard)?

10. What influences the rate structure? (e.g., amount, size of container, distance to facility, etc.)

11. What influences your decision to dispose or recycle each material? *(Interviewer note: Probe for the role that cost plays and determine other factors that may influence the decision not to recycle.)*

12. What are the greatest opportunities for increased recycling of the C&D material you haul?

If necessary, prompt with questions such as:
- *What circumstances would make you more likely to recycle the materials you currently dispose?*
- *What is the largest waste stream that you currently do not recycle?*
- *How do the markets and prices affect your recycling and disposal decisions?*

13. What are the largest barriers to recycling?

If necessary, prompt with questions such as:
- *What circumstances prevent you from recycling the materials you currently dispose?*
- *How do the markets and prices affect recycling practices?*
- *Is distance to processors a concern?*

14. What can be done to eliminate or reduce each of these barriers?

15. What is your level of satisfaction with the current C&D disposal and recycling system in King County?

16. Is there a need for additional transfer sites for disposal? If so, where?

17. Is there a need for additional transfer sites for recycling? If so, where?

18. What could the public sector (local governments, for example) do to increase recycling of C&D waste?

19. Are there recycling activities or programs in other areas that you would like to see in King County?

20. Is there anything else we should know about C&D disposal or recycling in King County?

Thank you for your time and input!

Processor Interview Guide

Company _____ **Contact** _____

Address _____ **Phone** _____

_____

Hi. My name is _____, and I am working on a project for King County. Construction and demolition (C&D) debris is a large part of the County's waste stream, so the Solid Waste Division is conducting interviews to learn more about current C&D waste handling practices and what can be done to increase recycling. May I ask you a few questions? This interview will take about 20 minutes.

If no: Is there another time that would be more convenient?

If yes: Thanks. All your responses will be kept strictly confidential. By the way, I work for Cascadia Consulting Group, which is the contractor for this project. Our policy is to not reveal to the County any information specific to your organization. Do you have any questions before we begin?

1. What types of construction and demolition materials do you accept at your facility? (*Probe for commingled versus pure loads and acceptable levels for contaminants, etc.)*
   (Write response on chart in first column.)

2. How is material transported to your facility? (i.e., by rail or truck)

3. What types of businesses deliver materials to your facility? (i.e., manufacturers, commercial haulers, C&D haulers, or individual self-haulers)

4. to *12*. *(Refer to interview chart on following page.)*

1) What types of C&D materials do you accept at your facility?	4) What do you charge for each material?	5) What type of processing occurs for each material?	6) How much of each material comes from King County, excluding Seattle? Note units per month or per year.	7) For each material, how many tons per month or per year can your facility process?	8) For each material, how many tons do you currently receive, or at what percent of capacity is your facility operating? Note units per month or per year.	9) Do you anticipate the tonnage you receive will increase or decrease in the next year? In the next five years? 1 Year	5 Years	10) What are the end markets for each material you handle? (Note: We are asking about end uses such as hog fuel or pulp chip, not specific customers)	11) Where are these end markets located?	12) How much material from your facility goes to each of these end uses? Note units per month or per year.
1)								a)		
								b)		
								c)		
2)								a)		
								b)		
								c)		
3)								a)		
								b)		
								c)		
4)								a)		
								b)		
								c)		
5)								a)		
								b)		
								c)		
6)								a)		
								b)		
								c)		
7)								a)		
								b)		
								c)		
8)								a)		
								b)		
								c)		
9)								a)		
								b)		
								c)		
10)								a)		
								b)		
								c)		

13. Are there any emerging new uses for the recycled materials you process?

14. In the past five years, what have been the main changes in the markets for the materials you process? *(If possible, probe further about general changes in quantities sold, market prices, number of competitors.)*

15. Why have these changes occurred?

16. What changes do you expect in the next five years?

17. What are the greatest opportunities for increased recycling of C&D materials?

    If necessary, prompt with questions such as:
    - *Which materials would you like more of and how could the tonnage of these materials be increased?*
    - *What circumstances or new technologies would make it more feasible to process materials that you do not currently handle?*

18. What are the largest barriers to recycling?

    If necessary, prompt with questions such as:
    - *What circumstances prevent you from processing more material or new materials that you don't currently handle?*
    - *How do the markets and prices affect recycling practices?*

19. What can be done to eliminate or reduce each of these barriers?

20. What could the public sector (local governments, for example) do to increase recovery and recycling of the type(s) of C&D material you process?

21. Are there recycling activities or programs in other areas that you would like to see in King County?

22. Is there anything else we should know about C&D recycling in King County?

Thank you for your time and input!

Appendix I
Wood Waste Generation Estimates

Data was not collected specifically in this study or earlier King County studies with the purpose of determining how much of the wood waste stream in King County comes from construction activities and how much comes from non-construction sources, which include manufacturing scrap and industrial packaging, such as pallets and crates. Therefore, the information in this appendix (please see Figure I-1) was used to estimate the relative proportion of King County's C&D wood waste that is generated by construction activity to that generated by non-construction activity. To calculate that proportion, it was necessary to apply U.S. Environmental Protection Agency and King County estimates for construction-related wood waste generation (Tables 1 and 2) to King County estimates for total wood waste generation in the county, excluding Seattle (Table 3).

Tables 1 and 2, "Construction-Related Wood Waste," provide an estimate for the county's share of the U.S. construction-related wood waste generation. Table 1 was used to first calculate the county's percentage of the U.S. population (0.42%) and employment (0.26%) from the 2000 census. To obtain an estimate of the county's residential construction-related waste generation, the county percentage of U.S. population from Table 1 was applied to the EPA estimate for U.S. construction-related waste generation from residential sources, as shown in Table 2. Likewise, to obtain an estimate of the county's commercial construction-related waste generation, the county percentage of U.S. employment was applied to the EPA estimate for U.S. construction-related waste generation by commercial sources. Finally, to obtain an estimate for the amount of county construction-related waste that is wood, percentage estimates from this study's visual surveys – 52% for residential and 37% for commercial – as shown in Table 2, were applied to the estimates for residential and commercial construction-related waste generation in the county.

Table 3, "Total Wood Waste," provides an estimate for the amount of wood waste generated in the county. The estimate for the amount of wood waste disposed in the county, as shown in Table 3, uses waste composition data from two sources: (1) estimates for wood waste at private facilities, including intermodal facilities, in this report, and (2) estimates for self-hauled wood waste at public facilities as reported in Section 2.9 of this report, which were taken from the *1999/2000 Comprehensive Waste Stream Characterization and Transfer Station Surveys – Final Report.*

Table 3 also contains an estimate for the amount of wood waste recycled in the county. That estimate is derived from estimates obtained from the wood processors who were interviewed for this report. Combining the amounts of

wood waste disposed and wood waste recycled provides an overall estimate for wood waste generation in King County, excluding Seattle.

To determine the proportion of C&D wood waste that is generated by construction activity, instead of by non-construction activity, it is necessary to compare the estimate for total construction-related wood waste generation in King County, as shown in Table 2, to the estimate for total wood waste generation in King County, as shown in Table 3, using the following calculation: 200,915 divided by 330,408 equals 60.8%, or about 60%. Based on this calculation, it can be concluded that the remaining 39.2%, or about 40%, of the total wood waste generated in King County comes from non-construction activity.

Figure I-1. Estimated Wood Waste Generation Rates in King County

Construction-Related Wood Waste

Table 1

	United States	King County, including Seattle	Seattle	King County, excluding Seattle	King County % of U.S. population/ employment, excluding Seattle
Population	281,421,906	1,737,034	563,374	1,173,660	0.42%
Employment	191,829,271	1,199,620	698,474	501,146	0.26%

Table 2

	Estimated C&D waste generation in U.S. (tons)	King County % of U.S. population/ employment, excluding Seattle	Estimated C&D waste generation in King County, excluding Seattle (tons)	Estimated % wood waste from C&D activities in King County, excluding Seattle	Estimated wood waste from C&D activities in King County, excluding Seattle (tons)
Residential	58,160,000	0.42%	242,554	52%	126,128
Commercial	77,370,000	0.26%	202,126	37%	74,787
Total			**444,680**		**200,915**

NOTE: Tonnages and percentages are rounded. For more information about rounding, please see Interpreting the Results *on page 2-5.*

Figure I-1. Estimated Wood Waste Generation Rates in King County (continued)

Total Wood Waste

Table 3

	Disposal of wood in King County, excluding Seattle (tons)	Recycling of wood in King County, excluding Seattle (tons)	Total wood disposal and recycling in King County, excluding Seattle (tons)
Residential	73,384		
Commercial	46,909		
Total	**120,293**	**210,000**	**330,293**

Sources: U.S. Environmental Protection Agency, U.S. Census, King County Waste Monitoring Program.

NOTE: Tonnages and percentages are rounded. For more information about rounding, please see Interpreting the Results *on page 2-5.*