

Waste Characterization Study 2023 Final Report

ReGen Monterey

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1.0 INTRODUCTION

ReGen Monterey (ReGen) operates an integrated waste management facility located in unincorporated Monterey County just to the west of the City of Salinas and about two miles north of the City of Marina. ReGen's property includes facilities such as the Monterey Peninsula Landfill, Single Stream Recyclables and Construction & Demolition Debris Materials Recovery Facility, Composting, Aggregate Recycling, a Franchise Collection Truck Yard Facility, Administrative Offices, Landfill Gas to Energy, Last Chance Mercantile and Maintenance Buildings.

ReGen Monterey provides an integrated waste management role to its nine member jurisdictions of **Carmel-by-the-Sea, Del Rey Oaks, Marina, City of Monterey, Pacific Grove, Sand City, Seaside, the Pebble Beach Community Services District (PBCSD), and the western unincorporated Monterey County area.** ReGen also provides various recycling and disposal services to non-member agencies such as the cities of Capitola, Scotts Valley, Watsonville, Santa Cruz as well as other public and private contracted and direct self-haul customers primarily from the tri-county area of Monterey, San Benito, and Santa Cruz counties.

The waste composition study presented in this document pertains only to the waste collected from the communities that comprise ReGen's nine member jurisdictions as listed above and is not intended for, nor applies to, solid waste materials collected in non-member jurisdictions areas.

1.1 STUDY PURPOSE

The purpose of this study is to understand the types and quantities of materials in the 'trash can' ("grey cart") as collected from both residential and commercial customers in ReGen's Member Agency communities (referred to later as the "District" or as "In-District"). The materials in the 'trash can' are intended to be only those materials that are to be disposed of in the landfill and not intended to be recycled, diverted, nor managed by a specific waste program. The waste characterization results are intended to inform infrastructure planning, community outreach needs, and provide a 2023 snapshot of solid waste disposal behavior to, in part, monitor SB1383 implementation and adoption progress.

ReGen retained SCS Engineers (SCS) to conduct manual characterizations of both a) curbside collected residential and commercial waste and b) visual characterizations of self-hauled waste delivered to ReGen Monterey for landfill disposal. **Table 1** details the collection haulers that service In-District households and businesses and the corresponding jurisdictions served.

Table 1. Franchise Haulers and the Jurisdictions they Serve

Franchise Hauler	Jurisdiction Served
Greenwaste Recovery, Inc	Marina
	Sand City
	Del Rey Oaks
	Seaside
	Carmel by the Sea
	Pebble Beach CSD
	Pacific Grove
Monterey City Disposal Service, Inc.	City of Monterey

Franchise Hauler	Jurisdiction Served
USA Waste of California, Inc. (a Waste Management Company)	Unincorporated Monterey County

2.0 FIELD METHODS

This section summarizes methods used to characterize the municipal solid waste (MSW or “waste”) stream that was generated by residential and commercial customers in the franchise collection system and self-haul customers from the communities that comprise ReGen’s nine member jurisdictions. Fieldwork was completed over two two-week field efforts, excluding weekends:

- September 18 through September 29, 2023; and
- October 16 through October 27, 2023.

Fieldwork was scheduled for typical operations and avoided special events, rain, or other activities that could impact the normal waste received at a facility.

Two sampling methods were utilized during the study period:

- **Sort Method A** consisted of manually hand-sorting waste samples into pre-determined material categories, obtaining weights, and characterizing material as a percent by weight. This manual method was used to categorize the waste materials collected from residential and commercial customers.
- **Sort Method B** consisted of visually inspecting entire waste loads, estimating volumetric proportions of pre-determined material categories, converting volumes to weights using published material density data, and then characterizing material as a percent by weight. This visual sorting method was used to categorize roll-off containers and “self-haul” customer materials destined for landfill disposal.

In total, SCS manually sorted 182 waste samples from residential or commercial sources and visually characterized 105 waste loads delivered in roll-off containers or by self-haul customers. This report describes the field methods and presents the summarized results of the data collected.

2.1 WASTE SAMPLING PLAN

SCS developed a stratified sampling plan to select representative sources of waste materials (e.g., residential or commercial sources; self-haul or roll-off) for sampling and sorting to characterize waste disposed and destined for the landfill by the following:

- **Residential and Commercial MSW** – waste collected by franchise haulers from residential and commercial sources. Residential waste is typically collected by side and rear load collection vehicles from single-family households. Commercial waste is typically collected by front load collection vehicles from commercial entities such as offices, restaurants, retail establishments, malls, institutions, warehouses, and hotels. Commercial waste loads may also contain residential waste generated from multi-family residences as those properties typically use dumpsters. Sort Method A was used to characterize material from these sources.

- **Roll-Off Containers and Self-Hauled Waste** – Roll-Off containers can be either compactor or open top and are generally from a single generator on a regular schedule, i.e., one time per week. Typical waste generators include commercial businesses, industrial, or institutional sources. Self-Hauled waste is delivered directly to the ReGen facilities by residents or commercial entities (e.g., contractors). This waste is usually comprised of bulky items such as furniture and/or materials generated from construction and demolition activities. Sort Method B was used to characterize material from these sources.

2.1.1 Residential and Commercial Municipal Solid Waste (MSW)

SCS used waste tonnage data provided by ReGen for the month of June 2023 to prepare a representative sampling plan. The monthly waste tonnages delivered from each jurisdiction was tabulated and is presented in **Table 2**. Residential versus commercial contributions were estimated using route data provided by franchise haulers and by correlating the vehicle type (rear-load, front-load etc.) to the customer type. SCS distributed the 180 planned waste samples in proportion to the monthly waste tonnages delivered to ReGen in June 2023 to target representative sampling from each jurisdiction. As a result, jurisdictions that deliver greater quantities of waste were sampled more frequently. ReGen requested that a minimum of four manually sorted samples be performed for each jurisdiction.

Table 2. Monthly Residential and Commercial Waste Deliveries to ReGen by Jurisdiction

Franchise Hauler	Jurisdiction Served	Residential		Commercial	
		Tons	Percent	Tons	Percent
Greenwaste Recovery, Inc	Marina	378	12.4%	343	11.3%
	Sand City	A	A	B	B
	Del Rey Oaks	35	1.2%	4	0.1%
	Seaside	634	20.7%	357	11.8%
	Carmel by the Sea	222	7.3%	B	B
	Pebble Beach CSD	123	4.0%	7	0.2%
	Pacific Grove	366	12.0%	101	3.3%
	Mixed Origin	NA	NA	456	15.0%
Monterey City Disposal Service, Inc.	City of Monterey	261	8.5%	1,052	34.7%
USA Waste of California, Inc. (a Waste Management Company)	Unincorporated Monterey County	1,038	33.9%	713	23.5%
Total		3,057	100.0%	3,034	100.0%
		50.2%		49.8%	
		6,091			

Note: A – Residential waste from Sand City is usually collected in the same truck as residential waste from Seaside.

B – As a result of Greenwaste Recovery's truck routing and the desire to collect full trucks before delivering for disposal, many commercial collection routes cross jurisdictional boundaries. For example, the same truck may pick up waste from Sand City, Seaside and Del Rey Oaks before heading to ReGen for disposal. These routes are called "mixed origin".

Table 3 below presents the planned and actual number of samples acquired and sorted during the field effort. The actual sample distribution varies slightly from the planned distribution due to variations in waste load deliveries throughout the day and availability of SCS and ReGen staff to target specific waste loads.

Table 3. Number of Samples by Jurisdiction (Sample Method A)

Franchise Hauler	Jurisdiction Served	Planned		Actual	
		Residential	Commercial	Residential	Commercial
Greenwaste Recovery, Inc	Marina	11	10	9	10
	Sand City *	4	0	4	0
	Del Rey Oaks	3	1	4	1
	Seaside	15	11	19	9
	Carmel by the Sea	7	0	7	0
	Pebble Beach CSD	4	0	4	0
	Pacific Grove	11	3	10	3
	Mixed Origin	0	14	0	14
Monterey City Disposal Service, Inc.	City of Monterey	8	30	9	29
USA Waste of California, Inc. (a Waste Management Company)	Unincorporated Monterey County	28	20	27	23
Total		91	89	93	89
		180		182	

Note: * Because residential waste from Sand City is collected in a truck that also collects residential waste from Seaside, SCS and ReGen coordinated with the franchise hauler to collect a load containing only residential waste from Sand City for this study.

2.1.2 Roll-Off and Self-Hauled Waste

About 56,500 tons of waste materials are delivered annually to ReGen in roll-off containers or self-hauled vehicles such as dump trucks, pickup trucks, and trailers. These deliveries are typically bulky materials or waste from construction and demolition projects and are not conducive to manual sorting. Obtaining a 200-pound sample of this material would skew the waste characterization results due to the size and weight of the materials in the waste load.

Not all roll-off/self-haul customers were eligible for the study; only those customers that were given a scale code of “MSW” or “Bulky Public” and whose waste materials were generated in one of the In-District jurisdictions were selected for visual characterization. ReGen scalehouse staff selected loads that would be destined for landfill disposal. There were no sample targets for loads generated by specific jurisdictions. As a result, 105 waste loads that originated in ReGen’s District were visually characterized.

2.1.3 Equipment

Equipment used to carry out this study is as follows:

- **Containers** – Approximately sixty containers, ranging from five-gallon buckets to 32-gallon refuse containers were used for placement of sorted waste components. Each container was tare-weighted at the start of each week.
- **Sort Table** – A table-like platform on which materials were sorted into their designated categories. The sort table was a piece of plywood that was impermeable and capable of supporting waste samples. The plywood was mounted on containers about four feet from the ground.
- **Scales** – Factory-calibrated scales were used to weigh waste samples and sorted waste components; scales recorded weight to the nearest tenth of a pound.
- **Personnel Protective Equipment (PPE)** – Protecting the health and safety of all project staff was the number one priority of the project. Field staff were required to wear steel/composite toe shoes or boots, safety glasses, reflective safety vests, and puncture resistant gloves at all times when participating in fieldwork. Additional safety equipment was made available for personal comfort including ear plugs, dust masks, and coveralls.
- **Data Forms** – SCS created a separate data collection form called a Sort Data Sheet for each waste sample hand-sorted and a Visual Data Sheet for each visually characterized waste load. The forms contained fields to capture information on the waste sample, including the waste generating sector and hauler information and was used to record waste component weights.

2.1.4 Material Types

MSW from residential and commercial sources and delivered by franchised haulers to the ReGen facility for disposal was sampled and manually sorted into distinct material classifications and types described in **Table 4**. Roll-Off containers and self-hauled loads were visually characterized into the material types listed in **Table 5**.

Table 4. Material Categories for Manual Sorting (Sample Method A)

Material Type		Description
Paper	Uncoated Corrugated Cardboard	Non-waxed shipping/moving boxes, 3-layers, no food residue
	White Office Paper	White paper
	Mixed Paper	Office paper, computer paper, paper bags, phone books, magazines and catalogs, food/detergent boxes, office mix, junk mail
	Paper Board	Thick paper-based material, cereal box, supply box
	Old Newspaper (ONP)	Old newspaper and any newspaper
	Aseptic Lined Containers	Soup containers, soy containers, Tetra Pak, juice boxes
	Plastic Lined Paper	Dixie cups, coated plates, coffee cups
	Gable-top Containers	Milk boxes, juice boxes,
Plastic	PET	CRV containers, soda and water bottles
	PET Thermoform	Clamshells, cups, tubs, lids, boxes, trays, egg cartons and similar rigid, non-bottle packaging made of PET (#1) resin
	Natural HDPE	Milk jugs, small juice bottles

Material Type		Description
Plastic	Pigment HDPE	Detergent bottles, some hair-care bottles/margarine/yogurt tubs, clamshell packaging, empty motor oil, empty antifreeze, and other empty vehicle and equipment fluid containers
	Polypropylene #5	Food containers (ketchup, yogurt, cottage cheese, margarine, syrup, take-out), medicine containers, straws, bottle caps, Britta filters, Rubbermaid containers and other opaque plastic containers, including baby bottles
	Mixed Plastic #3,4,6,7	Detergent/cleaning product bottles, personal care bottles, food containers, yogurt cups, syrup bottles, microwave trays, clamshell-shaped fast food containers, vitamin bottles
	Polystyrene	Styrofoam clam shells, Styrofoam packaging including blocks and peanuts
	Film Plastic	Shrink-wrap, mattress bags, furniture wrap, film bubble wrap, plastic shopping bags, dry cleaning bags, agricultural film
	Rigid Plastic	Tubs, buckets, toys, waste collection cart
Metal	Bi Metal	Steel/tin food and beverage cans, and foil food trays
	Ferrous Metal	Scrap metal, car bumper,
	Aluminum	Aluminum beverage cans (CRV)
	Aluminum Other	Aluminum food cans (e.g., cat food cans), foil
Glass	Mixed Glass	All glass bottles and jars (mayonnaise, apple juice, wine, etc.), CA redemption bottles (beer, juice, wine coolers, etc.)
Organics	Perishable Edible Food	Food that appears to be edible and has limited life. Salad, fruits, veggies, breads
	Shelf Stable Edible Food	Food that appears to be edible and can last on the shelf. Canned goods, rice, beans, dry goods.
	Inedible Food Scraps (NO meat or dairy)	Food scraps, eggshells, citrus rinds, coffee grounds, banana peels, onion skins, bread, candy, grains, beans, coffee filters
	Inedible Meat Products	Beef, poultry, fish, animal bones, deli meat,
	Inedible Packaged Meat Products	Above in a package
	Inedible Dairy Products	Cheese, sour cream, butter, yogurt
	Inedible Packaged Dairy Products	Above in package
	Raw Meat	Raw beef, raw pork, raw chicken
	Hard-to-Compost Landscape	Palms, yucca, ice plant, poison oak, cannabis
	Yard Debris	Leaves, branches, grasses, twigs, flowers
	Wood Material	Unpainted and untreated wood, dimensional lumber, sheathing, pallets
	Compostable Containers	Compostable cutlery, compostable to-go packaging, compostable cups, plates
	Food Soiled Paper	Tissues, soiled mixed paper, paper towels, soiled cardboard, paper soiled by use not proximity
	Treated/Painted Wood Products	Treated or painted wood

Material Type		Description
Hazardous	HHW	Paint, vehicle and equipment fluid, used oil, mercury containing items, fluorescent lights
	Lithium Batteries	Rechargeable batteries used in vaping devices, cell phones, tablets, laptops, electric toothbrushes, etc.
	Other Batteries	Household, watch, car and other batteries
	Manufactured Products	Electronic waste, items with cord, brown goods, white goods
Other	Medical Waste	Sharps, bandages, items with bodily fluids, prescription drugs
	Treated/Painted Wood Products	Treated or painted wood
	Inerts	Asphalt, concrete, rock, brick, CMU products, gypsum, tile, soil
	Organic Textiles	Cotton, hemp, silk fabric/clothing, organic carpets
	Non-Organic Textiles	Unlabeled fabric or clothing made of unnatural fibers (polyester, nylon, acrylic, etc.)
	Refuse	Non-Hazardous Solid Waste, anything else that does not fit in above categories

Table 5. Material Categories for Visual Characterization (Sample Method B)

Material Types		Material Types	
Paper	Cardboard	Inerts	Concrete
	Mixed Paper		Brick
Plastic	CRV Plastic		Rock
	Rigid Plastics		Gypsum Board/Drywall
	Remainder Plastics		Asphalt Roofing
	PVC Pipe or Products		Asphalt Paving
	Plastic Film		Soil
Metal	CRV Aluminum		Tires
	Non-Ferrous Metals		Mattresses/Box Springs
	Ferrous Metals		Carpet/Carpet Padding
	Rebar	Donatable	Furniture Donatable
	Other Metal		Building Materials
	White Goods		Rec. Equipment
Glass	Glass Containers/Jars		Other
	Glass Other	Hazardous	HHW
Organic	Yard Debris		Manufactured Products
	Food Scraps	Other	Textiles
	Engineered Wood		Furniture
	Other Wood		Insulation
	Clean Dimensional Lumber		Medical Waste
	Clean Pallets and Crates		Bulky Waste
	Treated/Painted Wood		Miscellaneous/Bagged Waste
	Hard-to-Compost Organics		

2.2 SAMPLING AND SORTING METHODS

2.2.1 Sample Selection

The SCS Sampling Manager oversaw the selection and collection of each waste sample. With the help of ReGen staff and coordination with the waste haulers, the Sampling Manager implemented the site-specific sampling plan to identify which trucks to stop for waste screening. Drivers were interviewed to obtain details on the waste contained in the vehicle and the city of origin. SCS staff worked closely with the scalehouse to identify trucks from which to collect samples, direct a loader or bobcat to obtain a random waste sample and transport the sample to the sorting crew.

If the sample met the criteria for sampling and sorting, the Sampling Manager would direct the driver of the truck to a designated area where the entire waste load would be discharged. The SCS Sampling Manager would then visually inspect the waste to confirm the waste load should be sampled. In most instances, only one waste sample was obtained from each truck originating from a targeted jurisdiction.

2.2.2 Sample Gathering

At the direction of the Sampling Manager, the vehicle driver would discharge the entire load of waste materials from the truck and a heavy equipment operator would obtain a sample of waste from a randomly selected “section” of the waste pile¹ that would be transported to the sorting area. Consistent with ASTM International’s Standard Test Method of Characterizing Unprocessed Solid Waste,² each sample was weighed until approximately 220 pounds of waste materials were obtained.

2.2.3 Sorting Methods

Sample Method A: Manual Sorting

The sorting and weighing program for waste samples entailed the use of one sorting crew comprised of six people and an SCS Crew Supervisor. The basic procedures and objectives for sorting (as described below) were identical for each sample, each day. Sorting was performed as follows:

1. The sort crew transferred approximately 220-pounds of waste materials onto the sorting table and began sorting activities. Large or heavy waste items, such as bags of yard waste, were torn open, examined, and then placed directly into the appropriate waste container for subsequent weighing.
2. Plastic bags of waste were opened and sort crew members manually segregated each material item, according to categories defined in **Table 4** and placed the material into the appropriate waste container. These steps were repeated until the entire sample was sorted.
3. At the completion of sorting each waste sample, the waste containers with the sorted materials were weighed and recorded on the Sort Data Sheet. Measurements were made to the nearest tenth of a pound.

¹ The waste pile was visually divided into six sections (1-8) and samples were obtained from a randomly selected section.

² ASTM International: Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste; D 5231-92 (reapproved 2003)

4. After the weight of each material type had been recorded, the materials were piled near the sorting area for transport to processing or disposal area.

This four-step process was repeated until all of the day's targeted waste samples were characterized. Waste samples were maintained in as-disposed condition or as close to this as possible until the actual sorting began. Proper site layout and close supervision of sampling was maintained to avoid the need to repeatedly handle waste materials.

Sample Method B: Visual Characterization

The SCS Sampling Manager worked with ReGen weighmaster staff to select waste loads eligible for visual characterization. When a customer arrives at ReGen's facility, weighmasters determine the material type by interviewing drivers and inspecting the load with overhead cameras. If a customer's material was destined for landfill and originated from one of ReGen's member agencies, it was eligible for visual characterization. When a load was identified for visual characterization, the driver was directed to a separate area to discharge the entire load. The SCS Sampling Manager walked around the entire discharged waste load and made notes on the materials present in the sample.

Table 5 presents the material categories used for visual characterization. Based on each material's volume, the SCS Sampling Manager would estimate the percent composition of each of the material categories in the sample. For each sample visually characterized, the volumes were converted to weights using volume-to-weight conversion factors maintained by USEPA on its website (Appendix A).

2.3 ANALYSIS AND PRESENTATION

2.3.1 Waste Composition

Data gathered in the field and recorded on individual data sheets were entered into a spreadsheet database. The accuracy of data in the spreadsheet was verified by additional comparisons against the field forms.

For residential and commercial MSW samples that utilized Sample Method A (manual sorting), the composition of each sample was calculated by dividing each material component weight by the weight of the entire sample. The individual material component proportions for each sample were averaged to derive compositional summaries of residential and commercial waste.

For roll-off and self-hauled waste that utilized Sample Method B (visual characterization), the volumetric proportions of materials of selected waste loads were recorded. Using volume-to-weight conversion factors, the volumetric proportions were converted to an estimated weight by material type. The total material weights were determined and divided by the total weight of all sampled waste loads to derive a compositional summary of roll-off/self-hauled waste. These compositional summaries are presented in Section 3.

2.3.2 Material Segregation Assessment

Referencing ReGen's current material acceptance programs, each material component was assigned to an appropriate bin or program. The following bin or programs have been identified as part of SB1383 three bin system:

- **Single Stream Recycling (SSR) – Blue Bin** - This includes materials that can currently be put in the curbside recycling bin that are actually being recycled in the current recycling program

(e.g., as opposed to products with a recycling symbol that are not recycled because there are no processing facilities present to accomplish recycling of those materials).

- **Organics – Green Bin:** This includes organic materials that can currently be put in the curbside organics bin for the composting program.
- **Refuse– Grey Bin:** This includes materials that that can currently be put in the curbside refuse bin. Note that the color of the bin varies within Monterey County. This is intended to be the bin destined for landfill disposal.
- **Other Programs:** This includes materials for which there are available programs to collect these materials that avoid landfill disposal (e.g., eWaste, household hazardous wastes, treated wood, special or regulated wastes, etc.).
- **Construction and Demolition (C&D):** This includes materials that can currently be accepted at ReGen in the C&D program. Only material assessed in visual Sort Method B was categorized to this program.

Tables 6 & 7 show the material components grouped according to the appropriate bin or program.

The Material Segregation Assessment demonstrates if materials are placed in the appropriate bin as of ReGen’s current program guidelines. If an item is categorized by an alternate bin or program to the Grey Bin, it was misplaced or mishandled per ReGen program guidelines. Not every material component is accepted curbside.

Table 6. Material Segregation by Material Component – Sample Method A

Material Components	Blue Bin	Green Bin	Grey Bin	Other Program
PAPER				
Uncoated Corrugated Cardboard	X			
White Office Paper	X			
Mixed Paper	X			
Paper Board	X			
ONP	X			
Aseptic Lined Containers			X	
Plastic Lined Paper			X	
Gable-top Containers			X	
PLASTIC				
PET	X			
PET Thermoform	X			
Natural HDPE	X			
Pigment HDPE	X			
Polypropylene #5	X			
Mixed Plastic #3,4,6,7			X	
Polystyrene			X	
Film Plastic			X	
Rigid Plastic	X			
METAL				
Bi Metal	X			
Ferrous Metal	X			
Aluminum	X			
Aluminum Other	X			
GLASS				
Mixed Glass	X			

Material Components	Blue Bin	Green Bin	Grey Bin	Other Program
ORGANICS				
Perishable Edible Food				X
Shelf Stable Edible Food				X
Inedible Food Scraps (NO meat or dairy)		X		
Inedible Meat Products		X		
Inedible Packaged Meat Products			X	
Inedible Dairy Products		X		
Inedible Packaged Dairy Products			X	
Raw Meat			X	
Hard-to-Compost Landscape			X	
Yard Debris		X		
Wood Material				X
Compostable Containers			X	
Food Soiled Paper			X	
Treated/Painted Wood Products				X
HAZARDOUS				
HHW				X
Lithium Batteries				X
Other Batteries				X
Medical Waste			X	
OTHER				
Manufactured Products				X
Inerts				X
Organic Textiles				X
Non-Organic Textiles				X
Refuse			X	

Table 7. Material Segregation by Material Component – Sample Method B

Material Components	Blue Bin	Green Bin	Grey Bin	C&D	Other Program
PAPER					
Cardboard	X				
Mixed Paper	X				
PLASTIC					
CRV Plastic	X				
Rigid Plastics	X				
Remainder Plastics			X		
PVC Pipe or Products			X		
Plastic Film			X		
METAL					
CRV Aluminum	X				
Non-Ferrous Metals	X				
Ferrous Metals	X				
Rebar				X	
Other Metal	X				
White Goods					X
GLASS					
Glass Containers/Jars	X				
Glass Other	X				
ORGANICS					
Yard Debris		X			
Food Scraps		X			
Engineered Wood			X		
Other Wood				X	
Clean Dimensional Lumber				X	
Clean Pallets and Crates				X	
Treated/Painted Wood					X
Hard-to-Compost Organics			X		

Material Components	Blue Bin	Green Bin	Grey Bin	C&D	Other Program
INERTS					
Concrete				X	
Brick				X	
Rock				X	
Gypsum Board/Drywall				X	
Asphalt Roofing				X	
Asphalt Paving				X	
Soil					X
Tires					X
Mattresses/Box Springs					X
Carpet/Carpet Padding					X
DONATABLE					
Furniture Donatable					X
Building Materials					X
Rec. Equipment					X
Other					X
HAZARDOUS					
HHW					X
Manufactured Products					X
OTHER					
Textiles					X
Furniture				X	
Insulation			X		
Medical Waste			X		
Bulky Waste			X		
Miscellaneous/Bagged Waste			X		

3.0 RESULTS

3.1 IN-DISTRICT RESIDENTIAL AND COMMERCIAL MSW

Approximately 72,000 tons of In-District Franchise MSW (excluding roll-offs) was delivered to the ReGen Facility for landfill disposal in 2023. Residential waste is 50.1 percent of this quantity or approximately 36,100 tons annually, and commercial waste is 49.9 percent or approximately 35,900 tons annually. Residential and commercial MSW was characterized using Sample Method A (manual sorting).

3.1.1 Overall In-District Residential

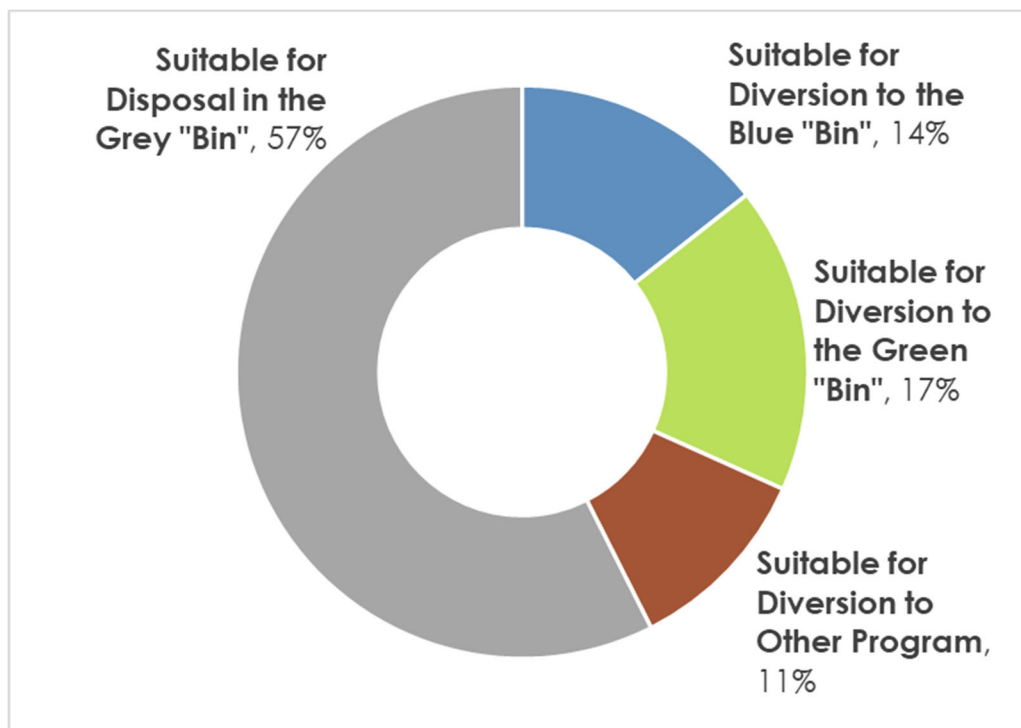
Waste Composition

A summary of overall in-District residential waste is provided in Table 8 . As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 13.7 percent. Over one percent of the material is considered hazardous waste.

Material Segregation Assessment

ReGen's overall in-District residential Material Segregation Assessment is shown in **Exhibit 1**. As shown, approximately 31 percent of materials could have been placed in another curbside bin. An additional 11 percent of materials are accepted in alternate programs.

Exhibit 1. Overall In-District Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

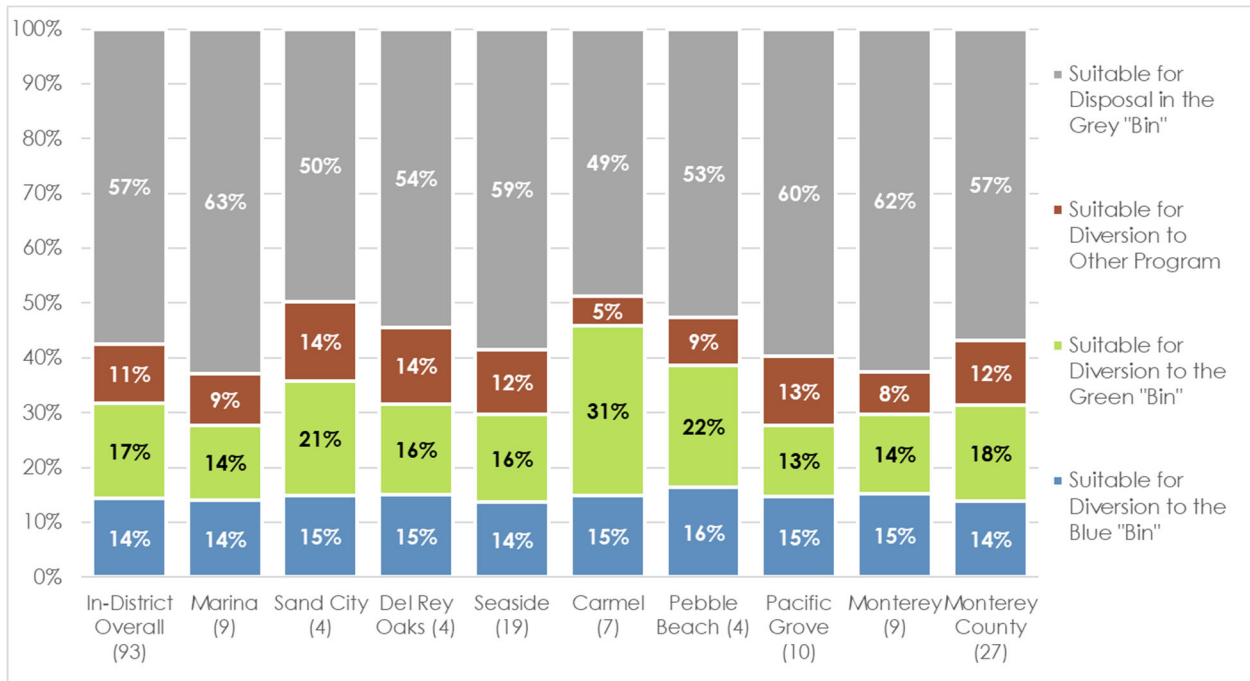
Table 8. Overall In-District Residential Waste Composition

Material Components	Composition	+/-	Annual Tons	Material Components	Composition	+/-	Annual Tons
PAPER	8.9%	0.5%	3,192	ORGANICS	33.1%	1.6%	11,949
Uncoated Corrugated Cardboard	0.9%	0.2%	320	Perishable Edible Food	2.0%	0.4%	730
White Office Paper	0.4%	0.1%	130	Shelf Stable Edible Food	1.3%	0.3%	460
Mixed Paper	3.0%	0.3%	1,090	Inedible Food Scraps (NO meat or dairy)	13.7%	1.1%	4,930
Paper Board	1.5%	0.1%	550	Inedible Meat Products	1.5%	0.4%	550
ONP	0.3%	<0.1%	110	Inedible Packaged Meat Products	0.6%	0.1%	200
Aseptic Lined Containers	0.2%	<0.1%	70	Inedible Dairy Products	<0.1%	<0.1%	9
Plastic Lined Paper	2.4%	0.2%	860	Inedible Packaged Dairy Products	0.5%	0.1%	180
Gable-top Containers	0.2%	<0.1%	62	Raw Meat	0.8%	0.3%	300
PLASTIC	6.0%	0.3%	2,150	Hard-to-Compost Landscape	0.2%	0.2%	70
PET	0.4%	<0.1%	160	Yard Debris	2.1%	1.1%	760
PET Thermoform	1.1%	<0.1%	390	Wood Material	0.6%	0.3%	220
Natural HDPE	0.2%	<0.1%	60	Compostable Containers	0.9%	0.1%	340
Pigment HDPE	0.3%	<0.1%	90	Food Soiled Paper	8.0%	0.4%	2,880
Polypropylene #5	1.2%	<0.1%	430	Treated/Painted Wood Products	0.9%	0.2%	320
Mixed Plastic #3,4,6,7	0.3%	<0.1%	110	HAZARDOUS	1.1%	0.4%	409
Polystyrene	0.3%	<0.1%	110	HHW	0.3%	0.2%	110
Film Plastic	1.4%	0.1%	500	Lithium Batteries	<0.1%	<0.1%	1
Rigid Plastic	0.8%	0.1%	300	Other Batteries	<0.1%	<0.1%	28
METAL	1.9%	0.2%	690	Manufactured Products	0.7%	0.3%	270
Bi Metal	0.5%	<0.1%	180	OTHER	46.7%	1.6%	16,850
Ferrous Metal	0.4%	0.1%	150	Medical Waste	8.8%	0.9%	3,190
Aluminum	0.2%	<0.1%	90	Inerts	1.0%	0.2%	360
Aluminum Other	0.7%	<0.1%	270	Organic Textiles	0.5%	0.2%	190
GLASS	2.4%	0.3%	860	Non-Organic Textiles	3.4%	0.5%	1,240
Mixed Glass	2.4%	0.3%	860	Refuse	32.9%	1.6%	11,870
				TOTAL	100.0%		36,100

Composition based on 93 samples.

Exhibit 2 presents the residential waste composition by material segregation assessment, overall (all residential samples combined) and by jurisdiction. The number in parenthesis next to each jurisdiction represents the number of residential samples acquired from that jurisdiction.

Exhibit 2. Residential Waste Composition by Material Segregation Assessment Overall and by Jurisdiction



3.1.2 Overall In-District Commercial MSW

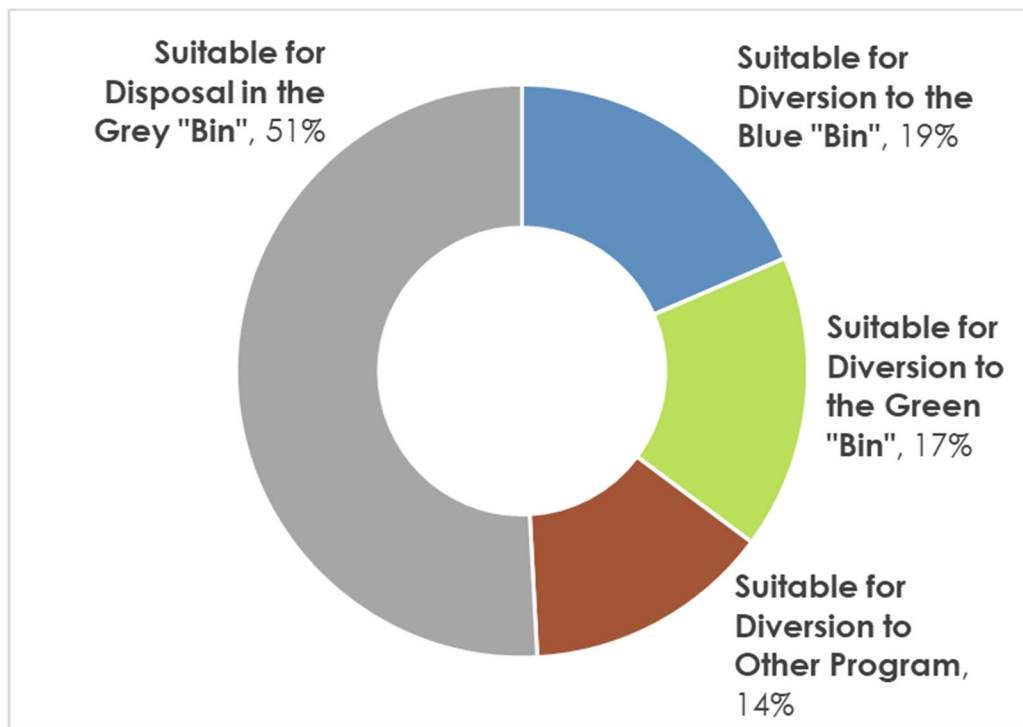
Waste Composition

A summary of overall in-District commercial waste is provided in **Table 9**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 11.1 percent. Over one percent of the material is considered hazardous waste.

Material Segregation Assessment

ReGen's overall in-District commercial Material Segregation Assessment is shown in **Exhibit 3**. As shown, approximately 36 percent of materials could have been placed in another curbside bin. An additional 14 percent of materials are accepted in alternate programs.

Exhibit 3. Overall In-District Commercial Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

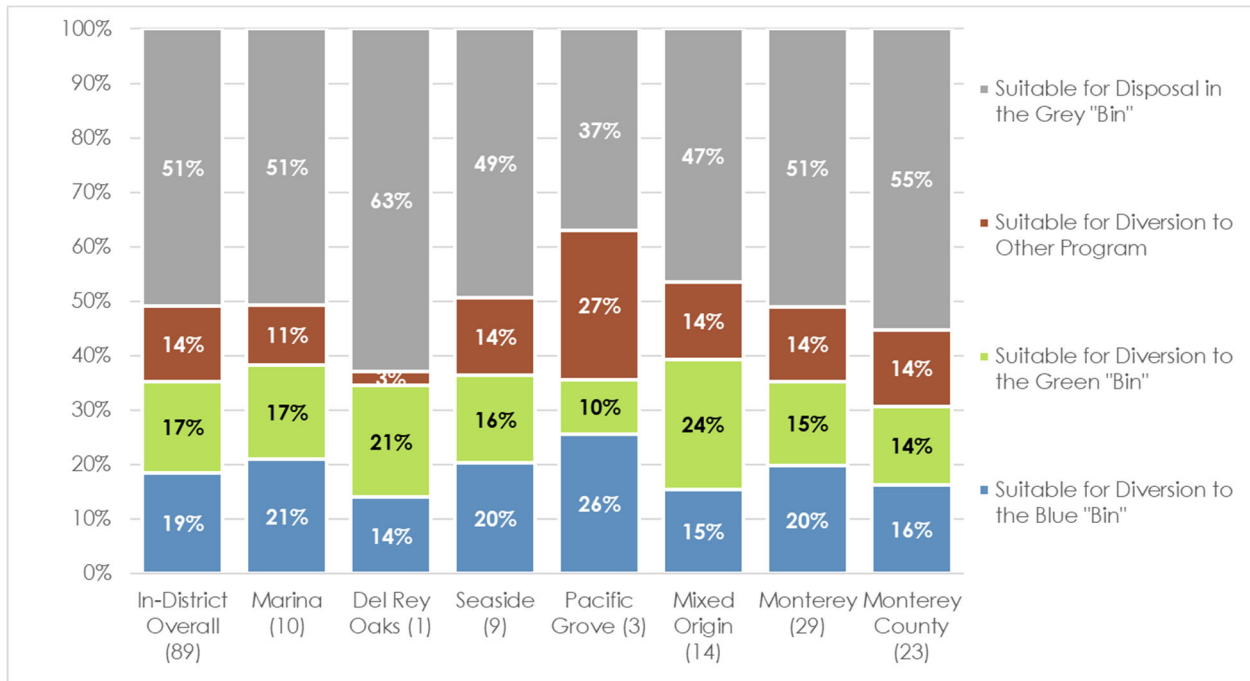
Table 9. Overall In-District Commercial Waste Composition

Material Components	Composition	+/-		Material Components	Composition	+/-	Annual Tons
PAPER	12.0%	1.0%	4,300	ORGANICS	33.4%	2.0%	11,970
Uncoated Corrugated Cardboard	2.5%	0.4%	880	Perishable Edible Food	1.7%	0.5%	620
White Office Paper	0.6%	0.2%	230	Shelf Stable Edible Food	1.4%	0.4%	500
Mixed Paper	3.2%	0.4%	1,130	Inedible Food Scraps (NO meat or dairy)	11.1%	1.1%	3,990
Paper Board	2.2%	0.3%	780	Inedible Meat Products	0.8%	0.1%	280
ONP	0.4%	0.1%	130	Inedible Packaged Meat Products	0.2%	<0.1%	70
Aseptic Lined Containers	0.2%	<0.1%	60	Inedible Dairy Products	<0.1%	<0.1%	10
Plastic Lined Paper	2.8%	0.4%	1,000	Inedible Packaged Dairy Products	0.3%	<0.1%	120
Gable-top Containers	0.2%	<0.1%	90	Raw Meat	0.5%	0.2%	170
PLASTIC	7.1%	0.5%	2,550	Hard-to-Compost Landscape	0.5%	0.4%	170
PET	0.8%	0.1%	300	Yard Debris	4.7%	1.6%	1,690
PET Thermoform	0.9%	<0.1%	320	Wood Material	0.8%	0.5%	300
Natural HDPE	0.3%	<0.1%	100	Compostable Containers	1.4%	0.2%	520
Pigment HDPE	0.3%	<0.1%	120	Food Soiled Paper	6.8%	0.6%	2,420
Polypropylene #5	1.2%	0.1%	450	Treated/Painted Wood Products	3.1%	1.5%	1,110
Mixed Plastic #3,4,6,7	0.3%	<0.1%	120	HAZARDOUS	1.4%	0.5%	520
Polystyrene	0.3%	<0.1%	90	HHW	0.2%	<0.1%	70
Film Plastic	1.5%	0.3%	550	Lithium Batteries	<0.1%	<0.1%	4
Rigid Plastic	1.4%	0.3%	500	Other Batteries	<0.1%	<0.1%	16
METAL	2.1%	0.4%	760	Manufactured Products	1.2%	0.5%	430
Bi Metal	0.4%	0.1%	150	OTHER	41.3%	2.1%	14,840
Ferrous Metal	0.7%	0.4%	270	Medical Waste	7.4%	1.2%	2,670
Aluminum	0.4%	<0.1%	160	Inerts	2.3%	1.3%	830
Aluminum Other	0.5%	<0.1%	180	Organic Textiles	0.4%	0.1%	160
GLASS	2.7%	0.3%	960	Non-Organic Textiles	2.7%	0.5%	980
Mixed Glass	2.7%	0.3%	960	Refuse	28.4%	2.1%	10,200
				TOTAL	100.0%		35,900

Composition based on 89 samples.

Exhibit 4 presents the commercial waste composition by material segregation assessment: overall (all commercial samples combined) and by jurisdiction. The number in parenthesis next to each jurisdiction represents the number of commercial samples acquired from that jurisdiction.

Exhibit 4. Commercial Waste Composition by Material Segregation Assessment Overall and by Jurisdiction



3.2 IN-DISTRICT ROLL-OFFS AND SELF-HAULED WASTE

Approximately 56,500 tons of In-District waste was delivered in roll-off containers or self-hauled directly by the generator or related contractor in 2023. Waste delivered in roll-offs/self-hauled was characterized using Sample Method B (visual characterization).

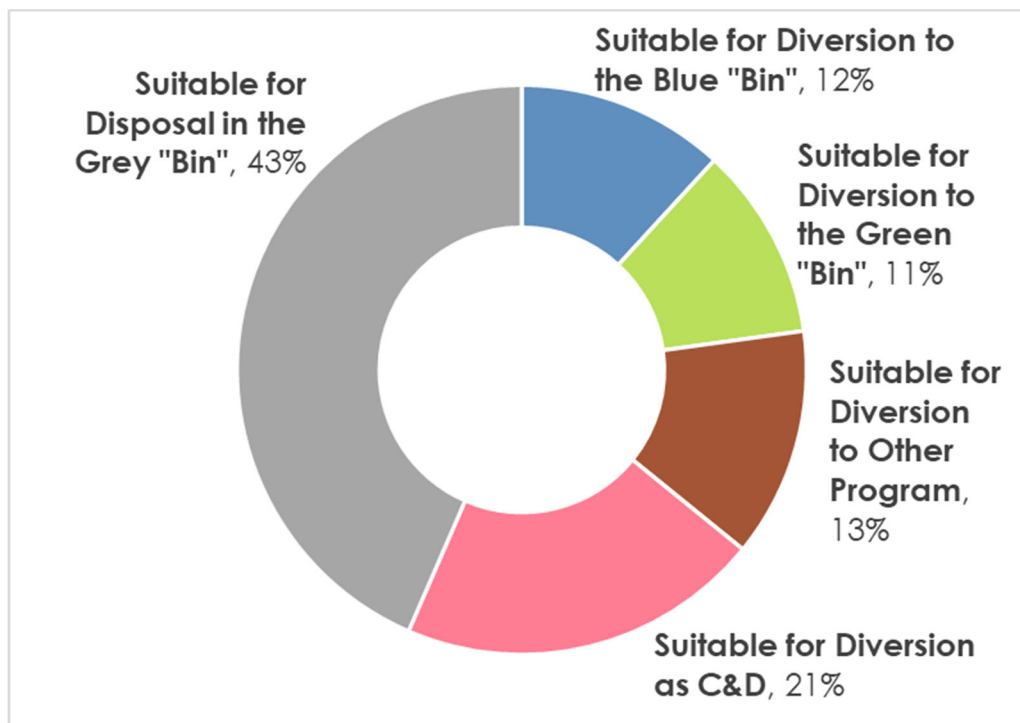
Waste Composition

A summary of overall in-District roll-off and self-hauled waste is provided in **Table 10**. As shown, Miscellaneous/Bagged Waste is the highest single material component at 29.9 percent. Yard debris comprises 8.8 percent, and six percent of the material is considered hazardous waste.

Material Segregation Assessment

ReGen's overall in-District roll-off and self-hauled Material Segregation Assessment is shown in **Exhibit 3**. As shown, approximately 57 percent of materials are accepted in alternate programs which could divert the material from landfill disposal.

Exhibit 5. Overall In-District Roll-Off and Self-Hauled Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 10. In-District Roll-Off and Self-Hauled Waste Composition

Material Components	Composition	Annual Tons	Material Components	Composition	Annual Tons
PAPER	5.8%	3,290	INERTS	18.3%	10,360
Cardboard	2.4%	1,370	Concrete	3.7%	2,080
Mixed Paper	3.4%	1,920	Brick	0.9%	490
PLASTIC	3.8%	2,170	Rock	1.7%	980
CRV Plastic	0.2%	110	Gypsum Board/Drywall	3.2%	1,790
Rigid Plastics	0.8%	470	Asphalt Roofing	6.4%	3,640
Remainder Plastics	0.9%	490	Asphalt Paving	0.1%	70
PVC Pipe or Products	0.6%	320	Soil	1.2%	690
Plastic Film	1.4%	780	Tires	<0.1%	30
METAL	3.8%	2,180	Mattresses/Box Springs	0.4%	240
CRV Aluminum	0.2%	100	Carpet/Carpet Padding	0.6%	350
Non-Ferrous Metals	2.1%	1,170	DONATABLE	0.9%	530
Ferrous Metals	1.0%	540	Furniture Donatable	0.5%	290
Rebar	<0.1%	30	Building Materials	0.3%	180
Other Metal	0.3%	160	Rec. Equipment	<0.1%	50
White Goods	0.3%	180	Other	<0.1%	10
GLASS	1.5%	840	HAZARDOUS	6.0%	3,410
Glass Containers/Jars	0.9%	500	HHW	0.1%	60
Glass Other	0.6%	340	Manufactured Products	5.9%	3,350
ORGANICS	27.1%	15,290	OTHER	32.6%	18,430
Yard Debris	8.8%	5,000	Textiles	0.5%	280
Food Scraps	2.1%	1,210	Furniture	1.0%	550
Engineered Wood	7.9%	4,480	Insulation	0.2%	120
Other Wood	1.2%	680	Medical Waste	<0.1%	40
Clean Dimensional Lumber	0.6%	340	Bulky Waste	1.0%	570
Clean Pallets and Crates	1.8%	1,020	Miscellaneous/Bagged Waste	29.9%	16,870
Treated/Painted Wood	2.9%	1,660	TOTAL		56,500
Hard-to-Compost Organics	1.6%	900	Composition based on visual characterization of 105 waste loads.		

3.3 JURISDICTIONAL ASSESSMENTS

Residential and commercial waste compositions, derived through Sample Method A, are presented for each of the In-District jurisdictions below.

3.3.1 Carmel

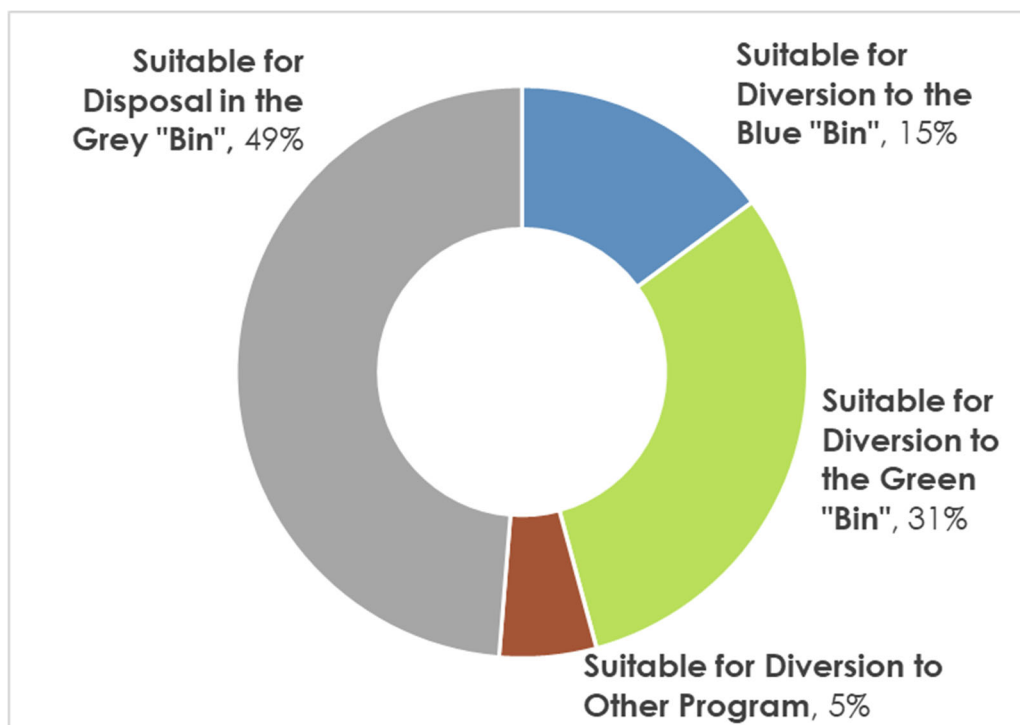
Residential Waste Composition

A summary of Carmel residential waste is provided in **Table 11**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 24.3 percent. Less than one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Carmel's residential Material Segregation Assessment is shown in **Exhibit 6**. As shown, approximately 46 percent of materials could have been placed in another curbside bin. An additional five percent of materials are accepted in alternate programs.

Exhibit 6. Carmel Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Commercial Waste Composition

See Mixed Origin below.

Table 11. Carmel Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	9.2%	1.3%	ORGANICS	45.0%	6.0%
Uncoated Corrugated Cardboard	0.6%	0.3%	Perishable Edible Food	0.4%	0.2%
White Office Paper	0.3%	0.2%	Shelf Stable Edible Food	0.5%	0.3%
Mixed Paper	2.9%	0.7%	Inedible Food Scraps (NO meat or dairy)	24.3%	6.0%
Paper Board	1.3%	0.5%	Inedible Meat Products	3.8%	2.0%
ONP	0.6%	0.4%	Inedible Packaged Meat Products	<0.1%	<0.1%
Aseptic Lined Containers	0.2%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.8%	0.7%	Inedible Packaged Dairy Products	0.1%	0.1%
Gable-top Containers	0.3%	0.1%	Raw Meat	1.1%	1.1%
PLASTIC	5.8%	1.2%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	0.5%	0.2%	Yard Debris	2.8%	2.0%
PET Thermoform	0.8%	0.4%	Wood Material	0.8%	0.8%
Natural HDPE	0.2%	<0.1%	Compostable Containers	1.8%	0.5%
Pigment HDPE	<0.1%	<0.1%	Food Soiled Paper	8.8%	2.6%
Polypropylene #5	1.1%	0.2%	Treated/Painted Wood Products	0.6%	0.3%
Mixed Plastic #3,4,6,7	0.4%	0.2%	HAZARDOUS	0.6%	0.3%
Polystyrene	0.1%	<0.1%	HHW	0.2%	0.2%
Film Plastic	1.3%	0.4%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	1.3%	1.3%	Other Batteries	<0.1%	<0.1%
METAL	1.0%	0.4%	Manufactured Products	0.3%	0.3%
Bi Metal	0.2%	<0.1%	OTHER	34.3%	6.3%
Ferrous Metal	0.3%	0.3%	Medical Waste	4.0%	1.2%
Aluminum	0.2%	<0.1%	Inerts	0.4%	0.2%
Aluminum Other	0.4%	0.1%	Organic Textiles	0.9%	1.3%
GLASS	4.1%	1.2%	Non-Organic Textiles	1.4%	1.0%
Mixed Glass	4.1%	1.2%	Refuse	27.6%	5.9%
			TOTAL	100.0%	
			Composition based on 7 samples.		

3.3.2 Del Rey Oaks

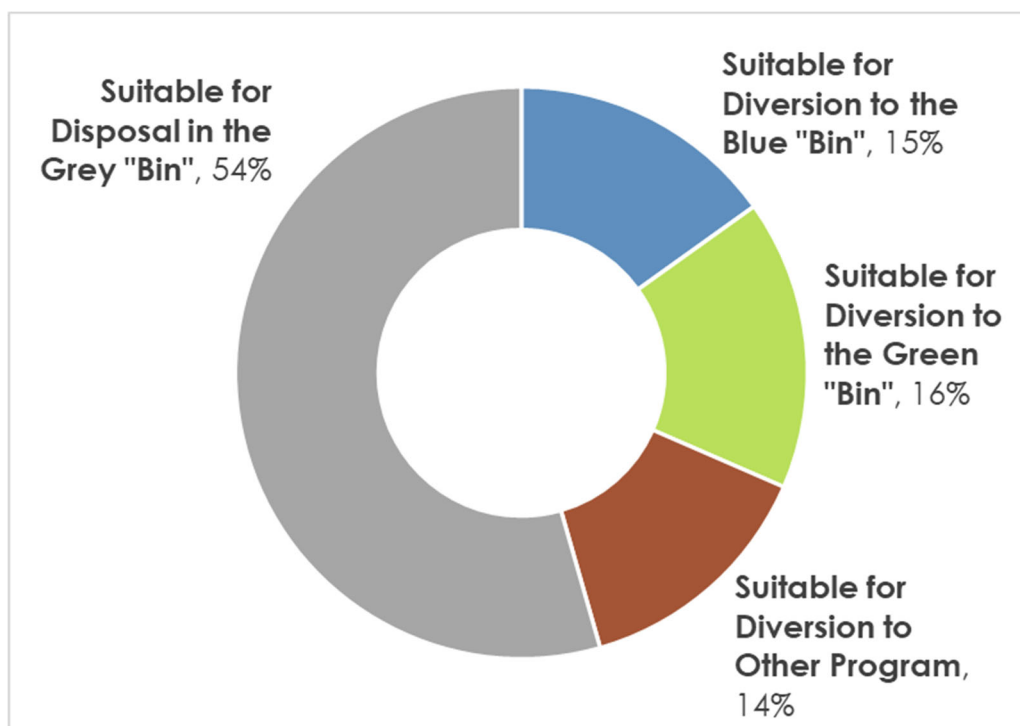
Residential Waste Composition

A summary of Del Rey Oaks residential waste is provided in **Table 12**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 12.9 percent. Less than one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Del Rey Oaks's residential Material Segregation Assessment is shown in **Exhibit 7**. As shown, approximately 31 percent of materials could have been placed in another curbside bin. An additional 14 percent of materials are accepted in alternate programs.

Exhibit 7. Del Rey Oaks Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 12. Del Rey Oaks Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	8.5%	1.4%	ORGANICS	35.3%	2.0%
Uncoated Corrugated Cardboard	0.7%	0.4%	Perishable Edible Food	3.1%	2.8%
White Office Paper	0.3%	0.2%	Shelf Stable Edible Food	3.0%	4.2%
Mixed Paper	2.2%	0.6%	Inedible Food Scraps (NO meat or dairy)	12.9%	3.5%
Paper Board	2.0%	0.9%	Inedible Meat Products	2.6%	1.7%
ONP	0.2%	0.2%	Inedible Packaged Meat Products	<0.1%	0.2%
Aseptic Lined Containers	0.3%	0.3%	Inedible Dairy Products	<0.1%	0.1%
Plastic Lined Paper	2.6%	0.3%	Inedible Packaged Dairy Products	0.5%	0.3%
Gable-top Containers	0.2%	0.1%	Raw Meat	1.5%	1.2%
PLASTIC	5.8%	1.1%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	0.6%	0.2%	Yard Debris	0.9%	1.0%
PET Thermoform	0.8%	<0.1%	Wood Material	0.5%	0.8%
Natural HDPE	0.3%	0.4%	Compostable Containers	0.6%	0.3%
Pigment HDPE	0.4%	0.3%	Food Soiled Paper	7.0%	1.1%
Polypropylene #5	0.9%	0.3%	Treated/Painted Wood Products	2.7%	1.6%
Mixed Plastic #3,4,6,7	0.5%	0.4%	HAZARDOUS	0.7%	0.3%
Polystyrene	0.3%	0.1%	HHW	0.2%	0.1%
Film Plastic	0.9%	0.3%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	1.1%	0.3%	Other Batteries	<0.1%	<0.1%
METAL	3.6%	2.0%	Manufactured Products	0.4%	0.4%
Bi Metal	1.0%	0.3%	OTHER	44.2%	3.8%
Ferrous Metal	1.0%	1.3%	Medical Waste	10.1%	0.8%
Aluminum	0.4%	0.1%	Inerts	1.5%	0.9%
Aluminum Other	1.2%	0.9%	Organic Textiles	0.3%	0.5%
GLASS	2.0%	0.7%	Non-Organic Textiles	2.3%	1.6%
Mixed Glass	2.0%	0.7%	Refuse	29.9%	3.3%
			TOTAL	100.0%	

Composition based on 4 samples.

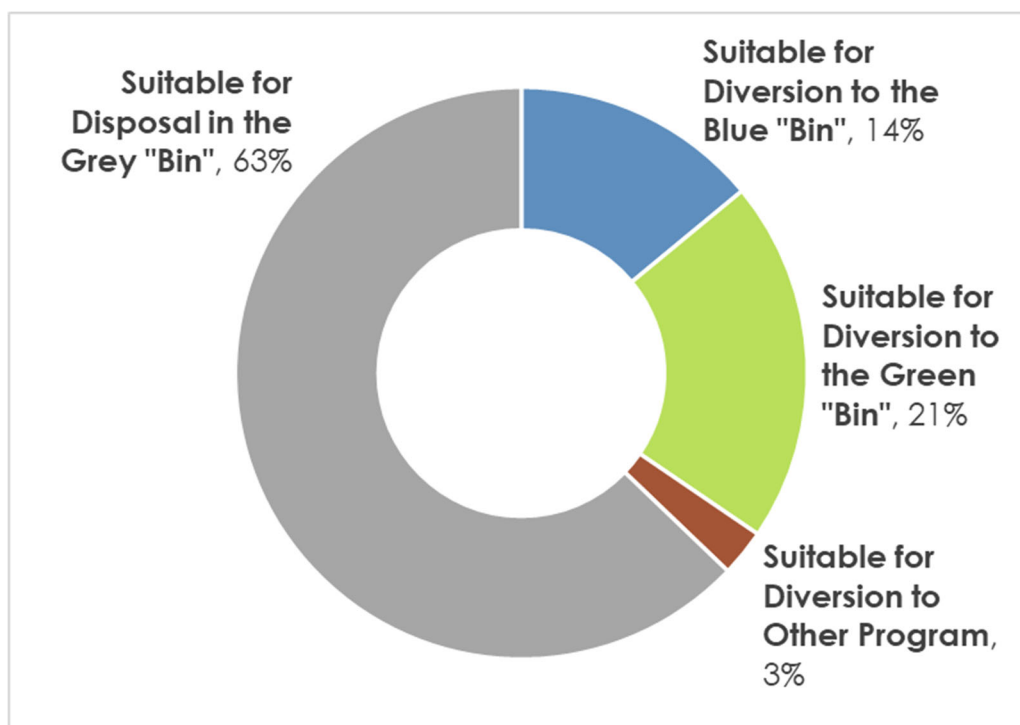
Commercial Waste Composition

A summary of Del Rey Oaks commercial waste is provided in **Table 13**. Only one sample was acquired that was commercial waste solely from Del Rey Oaks because the hauler typically commingles commercial waste from various jurisdictions. Without more than one sample, the confidence (+/-) cannot be calculated and is presented as "NA" in the table. As shown, Medical Waste is the highest single material component at 38.3 percent. This single sample had multiple bags of blood-soaked tissues, gloves and scrubs. Less than one percent of the material is considered hazardous waste.

Commercial Material Segregation Assessment

Del Rey Oaks' commercial Material Segregation Assessment is shown in **Exhibit 8**. As shown, approximately 35 percent of materials could have been placed in another curbside bin. An additional three percent of materials are accepted in alternate programs.

Exhibit 8. Del Rey Oaks Commercial Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 13. Del Rey Oaks Commercial Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	6.7%	NA	ORGANICS	29.1%	NA
Uncoated Corrugated Cardboard	0.7%	NA	Perishable Edible Food	1.2%	NA
White Office Paper	0.5%	NA	Shelf Stable Edible Food	0.6%	NA
Mixed Paper	2.7%	NA	Inedible Food Scraps (NO meat or dairy)	13.9%	NA
Paper Board	1.1%	NA	Inedible Meat Products	0.1%	NA
ONP	<0.1%	NA	Inedible Packaged Meat Products	<0.1%	NA
Aseptic Lined Containers	<0.1%	NA	Inedible Dairy Products	<0.1%	NA
Plastic Lined Paper	0.7%	NA	Inedible Packaged Dairy Products	0.8%	NA
Gable-top Containers	1.0%	NA	Raw Meat	0.1%	NA
PLASTIC	5.5%	NA	Hard-to-Compost Landscape	1.3%	NA
PET	0.2%	NA	Yard Debris	6.5%	NA
PET Thermoform	0.7%	NA	Wood Material	<0.1%	NA
Natural HDPE	0.8%	NA	Compostable Containers	0.1%	NA
Pigment HDPE	0.7%	NA	Food Soiled Paper	4.5%	NA
Polypropylene #5	0.4%	NA	Treated/Painted Wood Products	<0.1%	NA
Mixed Plastic #3,4,6,7	<0.1%	NA	HAZARDOUS	<0.1%	NA
Polystyrene	1.0%	NA	HHW	<0.1%	NA
Film Plastic	0.5%	NA	Lithium Batteries	<0.1%	NA
Rigid Plastic	1.2%	NA	Other Batteries	<0.1%	NA
METAL	1.1%	NA	Manufactured Products	<0.1%	NA
Bi Metal	0.7%	NA	OTHER	53.7%	NA
Ferrous Metal	<0.1%	NA	Medical Waste	38.3%	NA
Aluminum	0.3%	NA	Inerts	0.5%	NA
Aluminum Other	0.2%	NA	Organic Textiles	<0.1%	NA
GLASS	3.9%	NA	Non-Organic Textiles	0.4%	NA
Mixed Glass	3.9%	NA	Refuse	14.5%	NA
			TOTAL	100.0%	
			Composition based on 1 sample; hence a confidence interval cannot be calculated.		

3.3.3 Marina

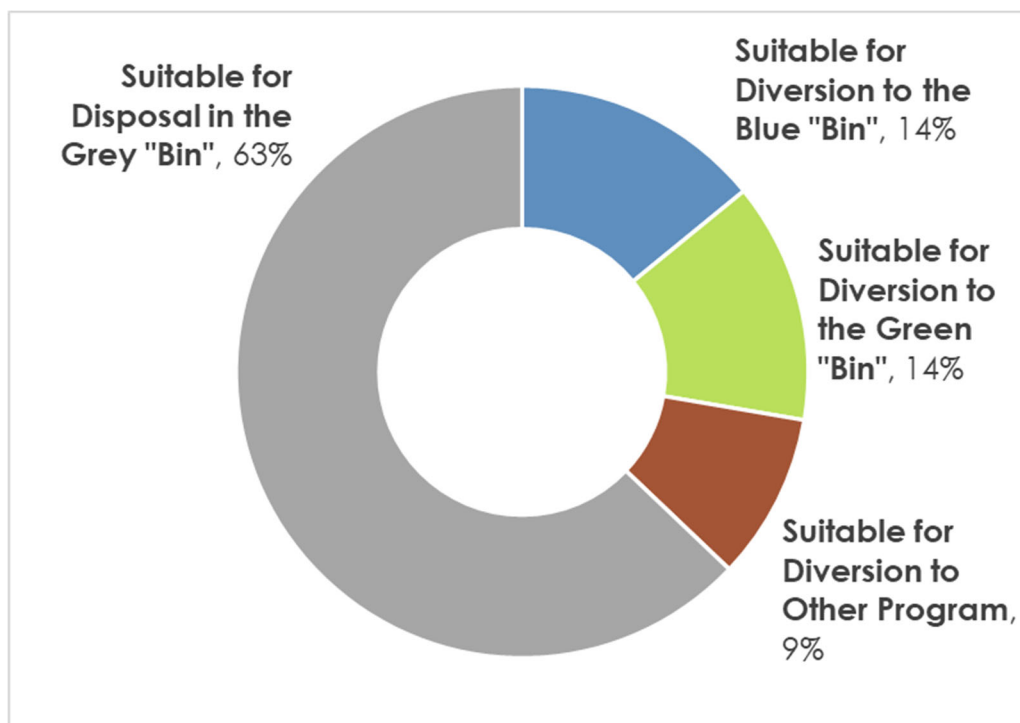
Residential Waste Composition

A summary of Marina residential waste is provided in **Table 14**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 11.8 percent. Over one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Marina's residential Material Segregation Assessment is shown in **Exhibit 9**. As shown, approximately 28 percent of materials could have been placed in another curbside bin. An additional nine percent of materials are accepted in alternate programs.

Exhibit 9. Marina Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 14. Marina Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	9.6%	1.3%	ORGANICS	26.4%	4.2%
Uncoated Corrugated Cardboard	0.5%	0.2%	Perishable Edible Food	1.6%	1.0%
White Office Paper	0.3%	0.2%	Shelf Stable Edible Food	0.4%	0.2%
Mixed Paper	3.8%	1.1%	Inedible Food Scraps (NO meat or dairy)	11.8%	2.7%
Paper Board	1.3%	0.2%	Inedible Meat Products	0.9%	0.3%
ONP	0.2%	<0.1%	Inedible Packaged Meat Products	0.3%	0.2%
Aseptic Lined Containers	0.2%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	3.1%	0.5%	Inedible Packaged Dairy Products	0.3%	0.2%
Gable-top Containers	0.1%	<0.1%	Raw Meat	0.3%	0.4%
PLASTIC	6.3%	0.8%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	0.5%	0.1%	Yard Debris	0.8%	0.4%
PET Thermoform	1.2%	0.3%	Wood Material	<0.1%	<0.1%
Natural HDPE	0.1%	<0.1%	Compostable Containers	0.9%	0.4%
Pigment HDPE	0.3%	0.1%	Food Soiled Paper	8.0%	1.7%
Polypropylene #5	1.5%	0.4%	Treated/Painted Wood Products	0.9%	0.5%
Mixed Plastic #3,4,6,7	0.3%	<0.1%	HAZARDOUS	1.5%	1.3%
Polystyrene	0.3%	<0.1%	HHW	0.9%	1.3%
Film Plastic	1.6%	0.5%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	0.5%	0.2%	Other Batteries	<0.1%	<0.1%
METAL	2.1%	0.4%	Manufactured Products	0.5%	0.4%
Bi Metal	0.9%	0.4%	OTHER	52.4%	5.4%
Ferrous Metal	0.3%	0.1%	Medical Waste	10.9%	2.7%
Aluminum	0.3%	0.1%	Inerts	0.6%	0.2%
Aluminum Other	0.6%	0.1%	Organic Textiles	0.4%	0.3%
GLASS	1.7%	0.7%	Non-Organic Textiles	4.0%	1.7%
Mixed Glass	1.7%	0.7%	Refuse	36.5%	5.8%
			TOTAL	100.0%	

Composition based on 9 samples.

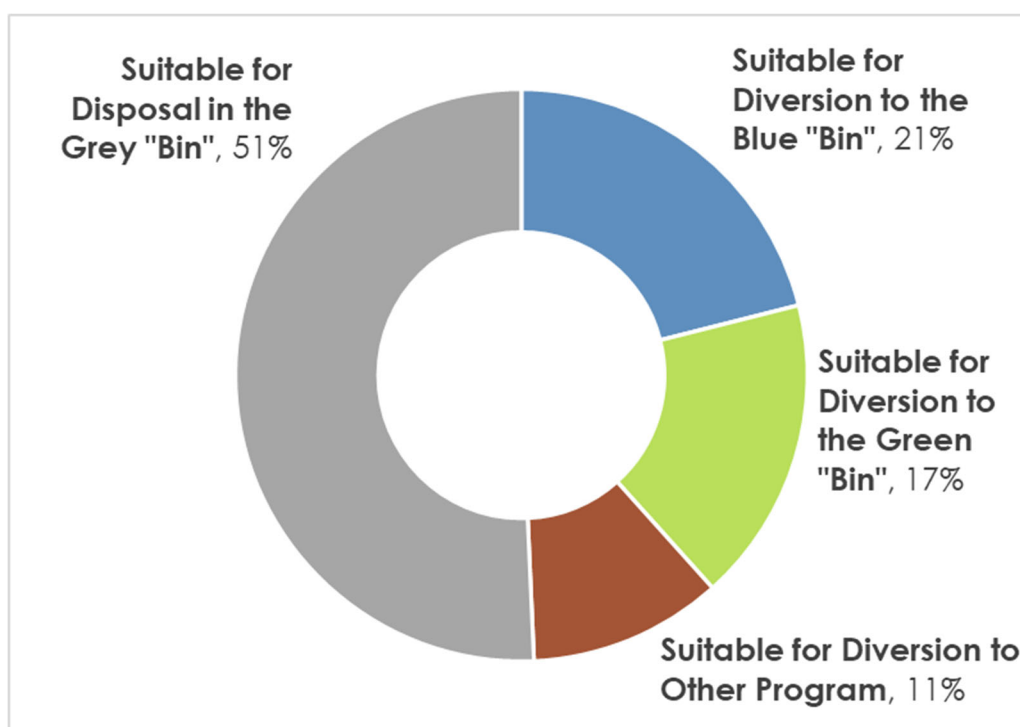
Commercial Waste Composition

A summary of Marina commercial waste is provided in **Table 15**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 15.6 percent. Over one percent of the material is considered hazardous waste.

Commercial Material Segregation Assessment

Marina's commercial Material Segregation Assessment is shown in **Exhibit 10**. As shown, approximately 38 percent of materials could have been placed in another curbside bin. An additional 11 percent of materials are accepted in alternate programs.

Exhibit 10. Marina Commercial Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 15. Marina Commercial Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	14.2%	3.2%	ORGANICS	34.7%	4.3%
Uncoated Corrugated Cardboard	2.5%	1.0%	Perishable Edible Food	3.2%	1.2%
White Office Paper	0.4%	0.3%	Shelf Stable Edible Food	1.4%	0.8%
Mixed Paper	4.5%	1.9%	Inedible Food Scraps (NO meat or dairy)	15.6%	2.9%
Paper Board	2.8%	0.5%	Inedible Meat Products	0.7%	0.3%
ONP	0.2%	0.1%	Inedible Packaged Meat Products	0.2%	0.2%
Aseptic Lined Containers	0.3%	0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	3.4%	0.6%	Inedible Packaged Dairy Products	1.0%	0.5%
Gable-top Containers	0.2%	<0.1%	Raw Meat	0.8%	0.6%
PLASTIC	8.7%	0.9%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	1.3%	0.3%	Yard Debris	0.9%	0.7%
PET Thermoform	1.4%	0.3%	Wood Material	0.1%	0.1%
Natural HDPE	0.4%	0.2%	Compostable Containers	2.0%	0.7%
Pigment HDPE	0.4%	0.2%	Food Soiled Paper	8.3%	1.1%
Polypropylene #5	2.2%	0.4%	Treated/Painted Wood Products	0.4%	0.2%
Mixed Plastic #3,4,6,7	0.4%	0.1%	HAZARDOUS	1.5%	1.3%
Polystyrene	0.2%	<0.1%	HHW	<0.1%	<0.1%
Film Plastic	1.7%	0.5%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	0.9%	0.6%	Other Batteries	<0.1%	<0.1%
METAL	1.8%	0.3%	Manufactured Products	1.4%	1.3%
Bi Metal	0.7%	0.2%	OTHER	36.6%	3.1%
Ferrous Metal	<0.1%	<0.1%	Medical Waste	6.6%	1.7%
Aluminum	0.6%	0.2%	Inerts	1.1%	1.3%
Aluminum Other	0.4%	<0.1%	Organic Textiles	0.9%	0.9%
GLASS	2.5%	0.6%	Non-Organic Textiles	2.4%	0.8%
Mixed Glass	2.5%	0.6%	Refuse	25.7%	2.9%
			TOTAL	100.0%	

Composition based on 10 samples.

3.3.4 Mixed Origin

As a result of the hauler's truck routing and the desire by the hauler to collect full trucks before delivering for disposal, many garbage truck collection routes cross jurisdictional boundaries. For example, the same truck may pick up waste from Sand City, Seaside and Del Rey Oaks before heading to ReGen for disposal. These routes are called "mixed origin". GreenWaste Incorporated collects commercial waste from mixed origins which makes it difficult to distinguish where loads are collected. However, these loads make up a significant volume of material delivered to ReGen. Therefore, mixed origin loads were sampled and are presented here as part of the data set.

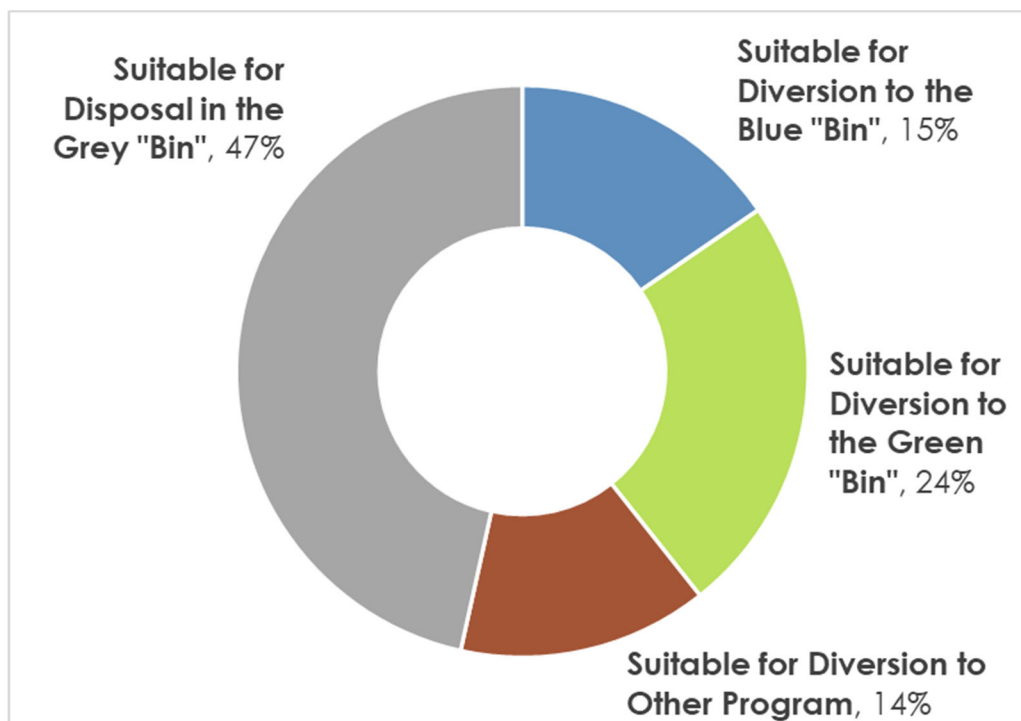
Commercial Waste Composition

A summary of Mixed Origin commercial waste is provided in **Table 16**. As shown, Yard Debris is the highest single material component at 12.2 percent. Over one percent of the material is considered hazardous waste.

Commercial Material Segregation Assessment

Mixed Origin's commercial Material Segregation Assessment is shown in **Exhibit 11**. As shown, approximately 39 percent of materials could have been placed in another curbside bin. An additional 14 percent of materials are accepted in alternate programs.

Exhibit 11. Mixed Origin Commercial Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 16. Mixed Origin Commercial Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	9.2%	1.1%	ORGANICS	38.0%	4.5%
Uncoated Corrugated Cardboard	1.9%	0.8%	Perishable Edible Food	1.4%	0.6%
White Office Paper	0.3%	0.2%	Shelf Stable Edible Food	0.8%	0.5%
Mixed Paper	2.2%	0.7%	Inedible Food Scraps (NO meat or dairy)	10.7%	1.3%
Paper Board	1.7%	0.3%	Inedible Meat Products	1.0%	0.5%
ONP	0.2%	<0.1%	Inedible Packaged Meat Products	0.3%	0.2%
Aseptic Lined Containers	0.2%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.3%	0.7%	Inedible Packaged Dairy Products	0.3%	0.1%
Gable-top Containers	0.4%	0.3%	Raw Meat	0.2%	0.1%
PLASTIC	6.6%	1.7%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	0.6%	0.2%	Yard Debris	12.2%	6.2%
PET Thermoform	0.8%	0.2%	Wood Material	2.6%	2.4%
Natural HDPE	0.1%	<0.1%	Compostable Containers	1.4%	0.4%
Pigment HDPE	0.2%	<0.1%	Food Soiled Paper	5.7%	0.9%
Polypropylene #5	1.0%	0.2%	Treated/Painted Wood Products	1.4%	0.6%
Mixed Plastic #3,4,6,7	0.3%	<0.1%	HAZARDOUS	1.4%	1.3%
Polystyrene	0.2%	<0.1%	HHW	0.2%	0.2%
Film Plastic	2.2%	1.4%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	1.2%	0.4%	Other Batteries	<0.1%	<0.1%
METAL	2.3%	0.7%	Manufactured Products	1.1%	1.3%
Bi Metal	0.3%	0.2%	OTHER	39.6%	4.7%
Ferrous Metal	1.0%	0.8%	Medical Waste	7.2%	3.9%
Aluminum	0.3%	0.2%	Inerts	2.5%	2.8%
Aluminum Other	0.6%	0.2%	Organic Textiles	0.7%	0.3%
GLASS	3.0%	0.8%	Non-Organic Textiles	3.4%	1.5%
Mixed Glass	3.0%	0.8%	Refuse	25.9%	3.7%
			TOTAL	100.0%	

Composition based on 14 samples.

3.3.5 Monterey

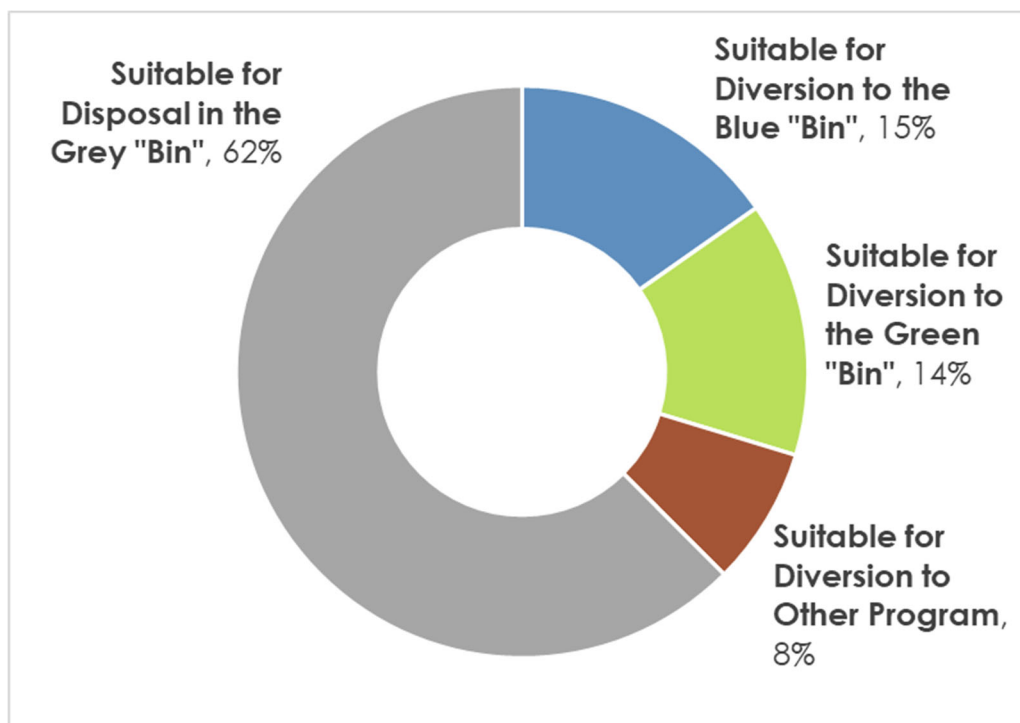
Residential Waste Composition

A summary of Monterey residential waste is provided in **Table 17**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 11.9 percent. Over one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Monterey's residential Material Segregation Assessment is shown in **Exhibit 12**. As shown, approximately 29 percent of materials could have been placed in another curbside bin. An additional eight percent of materials are accepted in alternate programs.

Exhibit 12. Monterey Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 17. Monterey Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	8.7%	3.3%	ORGANICS	29.3%	5.3%
Uncoated Corrugated Cardboard	0.5%	0.3%	Perishable Edible Food	1.7%	0.6%
White Office Paper	0.6%	0.5%	Shelf Stable Edible Food	0.9%	0.5%
Mixed Paper	3.5%	2.5%	Inedible Food Scraps (NO meat or dairy)	11.9%	3.8%
Paper Board	1.2%	0.3%	Inedible Meat Products	1.1%	0.5%
ONP	0.2%	0.1%	Inedible Packaged Meat Products	0.5%	0.4%
Aseptic Lined Containers	0.2%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.3%	0.4%	Inedible Packaged Dairy Products	0.5%	0.3%
Gable-top Containers	0.2%	<0.1%	Raw Meat	0.7%	0.5%
PLASTIC	5.9%	0.6%	Hard-to-Compost Landscape	0.9%	1.5%
PET	0.3%	<0.1%	Yard Debris	1.4%	1.5%
PET Thermoform	1.1%	0.2%	Wood Material	0.1%	0.1%
Natural HDPE	0.1%	<0.1%	Compostable Containers	1.3%	0.8%
Pigment HDPE	0.2%	<0.1%	Food Soiled Paper	7.5%	0.9%
Polypropylene #5	1.1%	0.3%	Treated/Painted Wood Products	0.7%	0.6%
Mixed Plastic #3,4,6,7	0.3%	<0.1%	HAZARDOUS	1.1%	0.9%
Polystyrene	0.3%	0.1%	HHW	0.4%	0.6%
Film Plastic	1.8%	0.6%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	0.7%	0.4%	Other Batteries	<0.1%	<0.1%
METAL	2.4%	0.6%	Manufactured Products	0.7%	0.6%
Bi Metal	0.7%	0.1%	OTHER	49.2%	5.2%
Ferrous Metal	0.9%	0.5%	Medical Waste	10.0%	2.9%
Aluminum	0.3%	<0.1%	Inerts	1.2%	0.5%
Aluminum Other	0.6%	0.2%	Organic Textiles	<0.1%	<0.1%
GLASS	3.3%	2.1%	Non-Organic Textiles	2.0%	0.4%
Mixed Glass	3.3%	2.1%	Refuse	35.9%	5.9%
			TOTAL	100.0%	

Composition based on 9 samples.

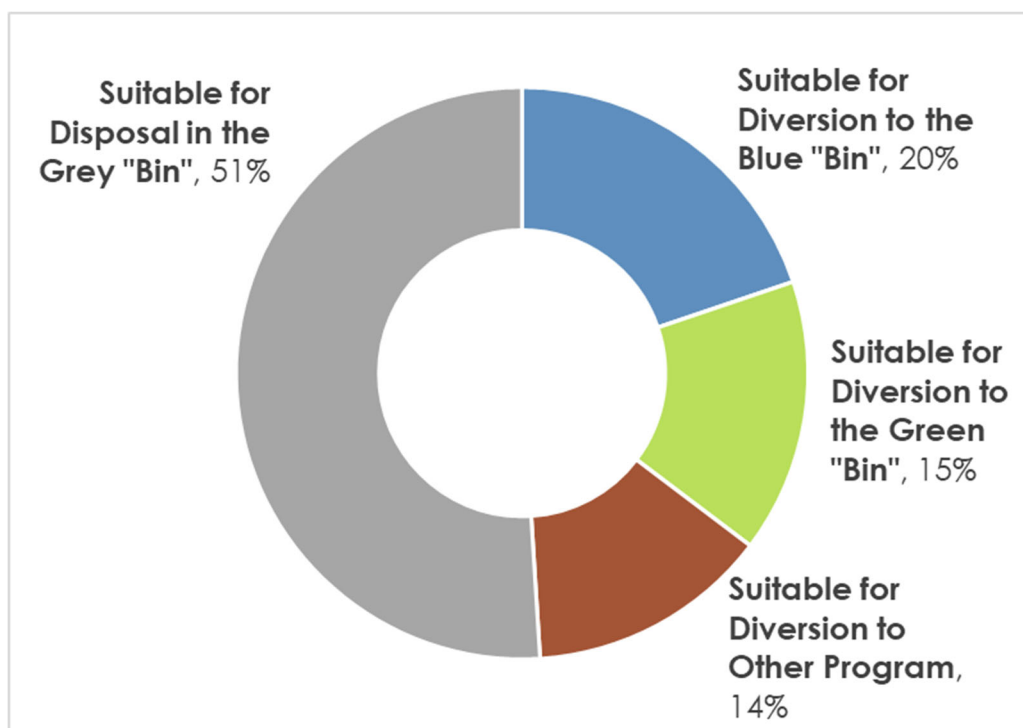
Commercial Waste Composition

A summary of Monterey commercial waste is provided in **Table 18**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 11 percent. Over one percent of the material is considered hazardous waste.

Commercial Material Segregation Assessment

Monterey's commercial Material Segregation Assessment is shown in **Exhibit 13**. As shown, approximately 35 percent of materials could have been placed in another curbside bin. An additional 14 percent of materials are accepted in alternate programs.

Exhibit 13. Monterey Commercial Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 18. Monterey Commercial Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	14.0%	1.8%	ORGANICS	34.3%	3.7%
Uncoated Corrugated Cardboard	3.1%	1.1%	Perishable Edible Food	1.6%	0.8%
White Office Paper	1.1%	0.4%	Shelf Stable Edible Food	0.8%	0.2%
Mixed Paper	4.0%	0.7%	Inedible Food Scraps (NO meat or dairy)	11.0%	1.9%
Paper Board	2.2%	0.5%	Inedible Meat Products	0.7%	0.2%
ONP	0.3%	0.2%	Inedible Packaged Meat Products	0.2%	<0.1%
Aseptic Lined Containers	0.2%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.8%	0.6%	Inedible Packaged Dairy Products	0.3%	0.1%
Gable-top Containers	0.2%	<0.1%	Raw Meat	0.5%	0.4%
PLASTIC	7.3%	0.8%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	1.1%	0.2%	Yard Debris	3.8%	3.0%
PET Thermoform	0.9%	0.1%	Wood Material	0.6%	0.5%
Natural HDPE	0.2%	<0.1%	Compostable Containers	1.5%	0.4%
Pigment HDPE	0.4%	<0.1%	Food Soiled Paper	8.2%	1.5%
Polypropylene #5	1.2%	0.2%	Treated/Painted Wood Products	5.0%	3.6%
Mixed Plastic #3,4,6,7	0.4%	0.2%	HAZARDOUS	1.2%	0.5%
Polystyrene	0.4%	0.2%	HHW	0.2%	0.1%
Film Plastic	1.3%	0.2%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	1.4%	0.5%	Other Batteries	<0.1%	<0.1%
METAL	1.6%	0.3%	Manufactured Products	1.0%	0.5%
Bi Metal	0.4%	0.2%	OTHER	39.4%	2.9%
Ferrous Metal	0.2%	0.2%	Medical Waste	9.1%	1.9%
Aluminum	0.5%	<0.1%	Inerts	1.8%	1.3%
Aluminum Other	0.5%	0.2%	Organic Textiles	0.4%	0.2%
GLASS	2.3%	0.5%	Non-Organic Textiles	2.2%	0.8%
Mixed Glass	2.3%	0.5%	Refuse	25.9%	2.8%
			TOTAL	100.0%	

Composition based on 29 samples.

3.3.6 Monterey County

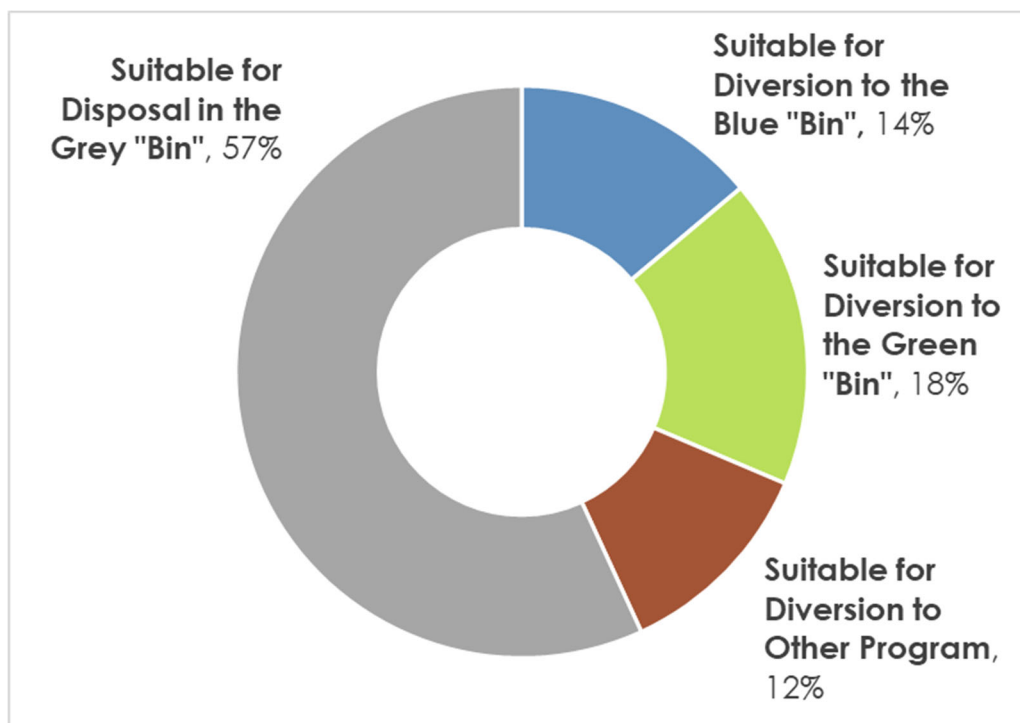
Residential Waste Composition

A summary of Monterey County residential waste is provided in **Table 19**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 12.4 percent. Over one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Monterey County's residential Material Segregation Assessment is shown in **Exhibit 14**. As shown, approximately 32 percent of materials could have been placed in another curbside bin. An additional 12 percent of materials are accepted in alternate programs.

Exhibit 14. Monterey County Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 19. Monterey County Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	9.0%	1.1%	ORGANICS	33.2%	2.8%
Uncoated Corrugated Cardboard	1.1%	0.4%	Perishable Edible Food	2.1%	0.5%
White Office Paper	0.3%	0.2%	Shelf Stable Edible Food	1.5%	0.7%
Mixed Paper	3.2%	0.5%	Inedible Food Scraps (NO meat or dairy)	12.4%	1.7%
Paper Board	1.6%	0.2%	Inedible Meat Products	1.8%	1.1%
ONP	0.4%	0.2%	Inedible Packaged Meat Products	0.6%	0.4%
Aseptic Lined Containers	0.2%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.0%	0.3%	Inedible Packaged Dairy Products	0.4%	0.2%
Gable-top Containers	0.2%	<0.1%	Raw Meat	0.7%	0.3%
PLASTIC	5.6%	0.6%	Hard-to-Compost Landscape	0.2%	0.3%
PET	0.3%	<0.1%	Yard Debris	3.2%	3.1%
PET Thermoform	1.0%	0.1%	Wood Material	0.7%	0.4%
Natural HDPE	0.2%	<0.1%	Compostable Containers	0.8%	0.1%
Pigment HDPE	0.3%	<0.1%	Food Soiled Paper	8.0%	0.8%
Polypropylene #5	1.1%	0.2%	Treated/Painted Wood Products	0.7%	0.4%
Mixed Plastic #3,4,6,7	0.3%	<0.1%	HAZARDOUS	1.6%	1.1%
Polystyrene	0.3%	<0.1%	HHW	0.3%	0.1%
Film Plastic	1.4%	0.2%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	0.8%	0.2%	Other Batteries	0.1%	<0.1%
METAL	1.7%	0.2%	Manufactured Products	1.2%	1.1%
Bi Metal	0.4%	<0.1%	OTHER	47.0%	2.7%
Ferrous Metal	0.2%	0.1%	Medical Waste	8.6%	1.7%
Aluminum	0.2%	<0.1%	Inerts	0.7%	0.3%
Aluminum Other	0.9%	0.1%	Organic Textiles	0.7%	0.4%
GLASS	1.9%	0.5%	Non-Organic Textiles	3.7%	1.2%
Mixed Glass	1.9%	0.5%	Refuse	33.2%	2.8%
			TOTAL	100.0%	

Composition based on 27 samples.

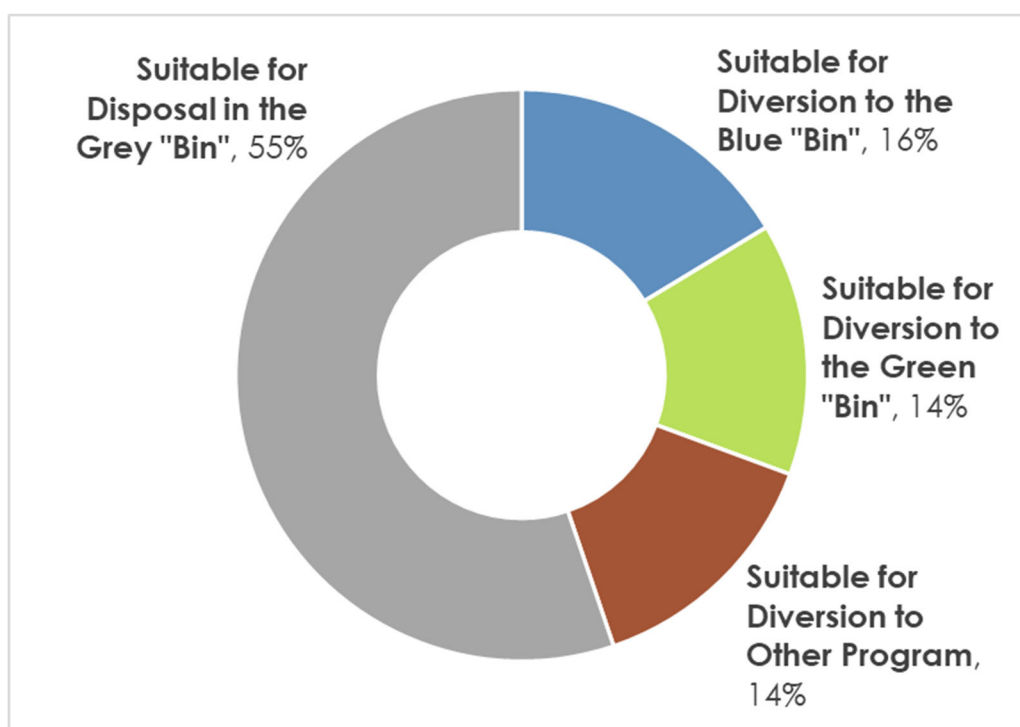
Commercial Waste Composition

A summary of Monterey County commercial waste is provided in **Table 20**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 8.4 percent. Less than one percent of the material is considered hazardous waste.

Commercial Material Segregation Assessment

Monterey County's commercial Material Segregation Assessment is shown in **Exhibit 15**. As shown, approximately 30 percent of materials could have been placed in another curbside bin. An additional 14 percent of materials are accepted in alternate programs.

Exhibit 15. Monterey County Commercial Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 20. Monterey County Commercial Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	10.5%	2.3%	ORGANICS	30.8%	4.3%
Uncoated Corrugated Cardboard	1.6%	0.5%	Perishable Edible Food	1.6%	1.3%
White Office Paper	0.4%	0.2%	Shelf Stable Edible Food	1.3%	0.6%
Mixed Paper	2.4%	0.7%	Inedible Food Scraps (NO meat or dairy)	8.4%	2.2%
Paper Board	2.1%	0.7%	Inedible Meat Products	0.7%	0.3%
ONP	0.6%	0.3%	Inedible Packaged Meat Products	0.2%	0.1%
Aseptic Lined Containers	0.1%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	3.0%	1.3%	Inedible Packaged Dairy Products	0.3%	0.1%
Gable-top Containers	0.2%	0.1%	Raw Meat	0.4%	0.3%
PLASTIC	6.5%	0.9%	Hard-to-Compost Landscape	1.8%	1.4%
PET	0.6%	0.1%	Yard Debris	5.2%	2.5%
PET Thermoform	0.9%	0.2%	Wood Material	0.8%	0.6%
Natural HDPE	0.2%	<0.1%	Compostable Containers	1.2%	0.4%
Pigment HDPE	0.2%	<0.1%	Food Soiled Paper	5.0%	1.1%
Polypropylene #5	1.1%	0.3%	Treated/Painted Wood Products	3.9%	3.3%
Mixed Plastic #3,4,6,7	0.2%	<0.1%	HAZARDOUS	0.8%	0.4%
Polystyrene	0.2%	<0.1%	HHW	0.2%	<0.1%
Film Plastic	1.3%	0.3%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	1.7%	0.7%	Other Batteries	<0.1%	<0.1%
METAL	1.9%	0.9%	Manufactured Products	0.6%	0.4%
Bi Metal	0.3%	<0.1%	OTHER	46.9%	5.7%
Ferrous Metal	0.7%	0.9%	Medical Waste	6.0%	1.9%
Aluminum	0.4%	0.1%	Inerts	3.3%	4.1%
Aluminum Other	0.5%	0.1%	Organic Textiles	0.2%	0.2%
GLASS	2.7%	0.7%	Non-Organic Textiles	2.3%	0.8%
Mixed Glass	2.7%	0.7%	Refuse	35.2%	5.9%
			TOTAL	100.0%	

Composition based on 23 samples.

3.3.7 Pacific Grove

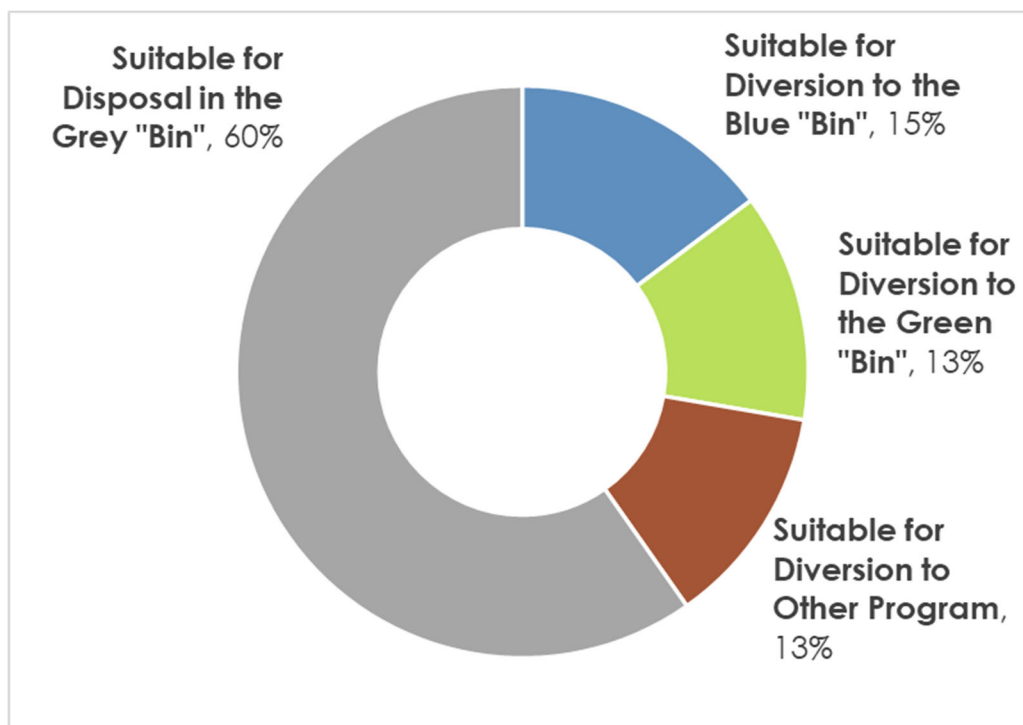
Residential Waste Composition

A summary of Pacific Grove residential waste is provided in **Table 21**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 11.8 percent. Over one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Pacific Grove's residential Material Segregation Assessment is shown in **Exhibit 16**. As shown, approximately 28 percent of materials could have been placed in another curbside bin. An additional 13 percent of materials are accepted in alternate programs.

Exhibit 16. Pacific Grove Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 21. Pacific Grove Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	10.3%	1.0%	ORGANICS	29.2%	3.2%
Uncoated Corrugated Cardboard	1.1%	0.7%	Perishable Edible Food	1.3%	0.6%
White Office Paper	0.4%	0.3%	Shelf Stable Edible Food	1.7%	0.9%
Mixed Paper	3.8%	0.5%	Inedible Food Scraps (NO meat or dairy)	11.8%	2.8%
Paper Board	1.7%	0.4%	Inedible Meat Products	0.9%	0.3%
ONP	0.3%	0.2%	Inedible Packaged Meat Products	0.7%	0.4%
Aseptic Lined Containers	0.1%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.7%	0.9%	Inedible Packaged Dairy Products	0.3%	0.1%
Gable-top Containers	0.2%	0.1%	Raw Meat	0.6%	0.4%
PLASTIC	6.6%	1.0%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	0.4%	0.2%	Yard Debris	0.2%	0.2%
PET Thermoform	1.2%	0.2%	Wood Material	0.2%	0.3%
Natural HDPE	<0.1%	<0.1%	Compostable Containers	0.9%	0.2%
Pigment HDPE	0.3%	0.1%	Food Soiled Paper	8.9%	0.8%
Polypropylene #5	1.1%	0.2%	Treated/Painted Wood Products	1.5%	0.9%
Mixed Plastic #3,4,6,7	0.3%	<0.1%	HAZARDOUS	1.2%	0.4%
Polystyrene	0.4%	0.2%	HHW	<0.1%	<0.1%
Film Plastic	1.3%	0.3%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	1.6%	0.5%	Other Batteries	0.1%	0.1%
METAL	1.6%	0.3%	Manufactured Products	1.0%	0.4%
Bi Metal	0.5%	<0.1%	OTHER	49.8%	3.7%
Ferrous Metal	<0.1%	0.1%	Medical Waste	8.7%	1.6%
Aluminum	0.3%	0.2%	Inerts	1.3%	0.8%
Aluminum Other	0.7%	0.1%	Organic Textiles	0.9%	0.5%
GLASS	1.3%	0.3%	Non-Organic Textiles	4.3%	1.9%
Mixed Glass	1.3%	0.3%	Refuse	34.5%	4.0%
			TOTAL	100.0%	

Composition based on 10 samples.

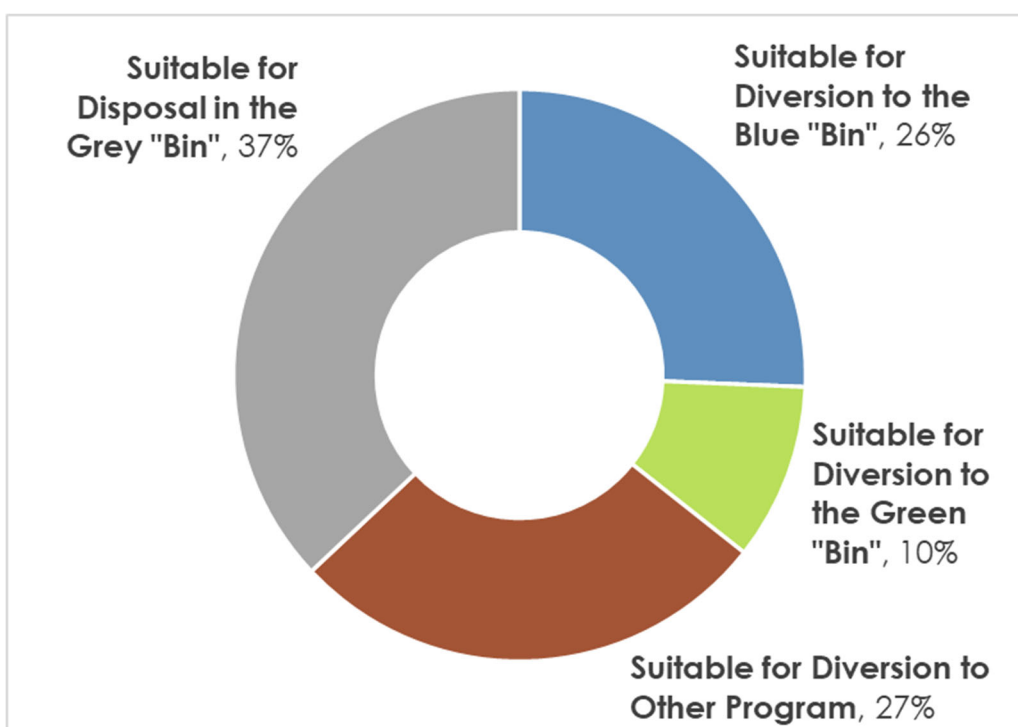
Commercial Waste Composition

A summary of Pacific Grove commercial waste is provided in **Table 22**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 8.9 percent. Over four percent of the material is considered hazardous waste.

Commercial Material Segregation Assessment

Pacific Grove's commercial Material Segregation Assessment is shown in **Exhibit 17**. As shown, approximately 36 percent of materials could have been placed in another curbside bin. An additional 27 percent of materials are accepted in alternate programs.

Exhibit 17. Pacific Grove Commercial Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 22. Pacific Grove Commercial Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	12.1%	3.7%	ORGANICS	26.7%	3.5%
Uncoated Corrugated Cardboard	2.9%	1.3%	Perishable Edible Food	2.1%	0.3%
White Office Paper	1.3%	1.2%	Shelf Stable Edible Food	2.3%	2.2%
Mixed Paper	2.8%	0.8%	Inedible Food Scraps (NO meat or dairy)	8.9%	2.1%
Paper Board	2.5%	0.2%	Inedible Meat Products	1.0%	0.5%
ONP	0.3%	<0.1%	Inedible Packaged Meat Products	<0.1%	0.2%
Aseptic Lined Containers	0.2%	0.2%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.0%	0.6%	Inedible Packaged Dairy Products	<0.1%	<0.1%
Gable-top Containers	<0.1%	0.1%	Raw Meat	<0.1%	<0.1%
PLASTIC	7.7%	1.6%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	0.9%	0.5%	Yard Debris	<0.1%	0.2%
PET Thermoform	1.0%	0.5%	Wood Material	0.2%	0.3%
Natural HDPE	0.2%	<0.1%	Compostable Containers	1.3%	0.9%
Pigment HDPE	0.5%	0.8%	Food Soiled Paper	5.3%	2.4%
Polypropylene #5	0.9%	0.4%	Treated/Painted Wood Products	5.4%	5.4%
Mixed Plastic #3,4,6,7	0.3%	<0.1%	HAZARDOUS	4.4%	7.0%
Polystyrene	0.2%	0.2%	HHW	<0.1%	<0.1%
Film Plastic	1.0%	0.4%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	2.7%	2.3%	Other Batteries	<0.1%	<0.1%
METAL	2.2%	2.6%	Manufactured Products	4.4%	7.0%
Bi Metal	1.6%	2.5%	OTHER	39.5%	9.2%
Ferrous Metal	<0.1%	<0.1%	Medical Waste	3.6%	3.8%
Aluminum	0.4%	0.2%	Inerts	8.4%	11.4%
Aluminum Other	0.2%	<0.1%	Organic Textiles	0.2%	0.3%
GLASS	7.4%	4.0%	Non-Organic Textiles	4.3%	3.3%
Mixed Glass	7.4%	4.0%	Refuse	23.0%	3.5%
			TOTAL	100.0%	

Composition based on 3 samples.

3.3.8 Pebble Beach

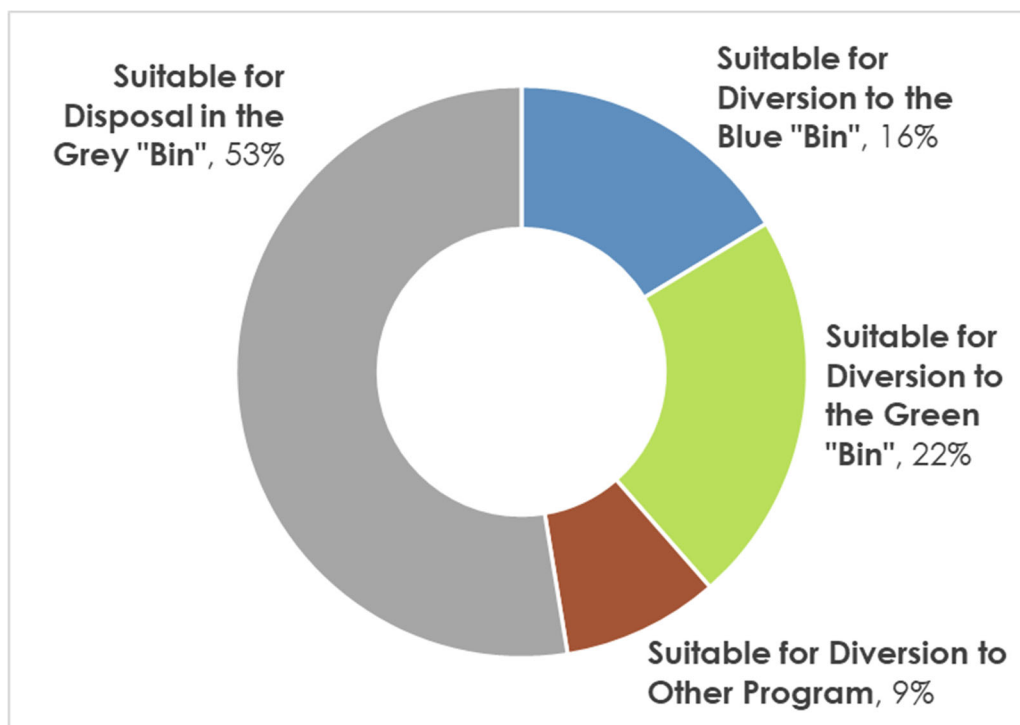
Residential Waste Composition

A summary of Pebble Beach residential waste is provided in **Table 23**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 11.3 percent. Less than one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Pebble Beach's residential Material Segregation Assessment is shown in **Exhibit 18**. As shown, approximately 38 percent of materials could have been placed in another curbside bin. An additional nine percent of materials are accepted in alternate programs.

Exhibit 18. Pebble Beach Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Commercial Waste Composition

See Mixed Origin above.

Table 23. Pebble Beach Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	8.2%	0.9%	ORGANICS	36.4%	10.5%
Uncoated Corrugated Cardboard	1.3%	1.3%	Perishable Edible Food	0.9%	1.2%
White Office Paper	0.6%	0.9%	Shelf Stable Edible Food	0.2%	0.3%
Mixed Paper	2.6%	0.5%	Inedible Food Scraps (NO meat or dairy)	11.3%	1.8%
Paper Board	1.5%	0.3%	Inedible Meat Products	1.3%	1.3%
ONP	0.6%	0.3%	Inedible Packaged Meat Products	0.6%	0.3%
Aseptic Lined Containers	0.2%	0.2%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	1.1%	0.2%	Inedible Packaged Dairy Products	0.5%	0.6%
Gable-top Containers	0.2%	0.1%	Raw Meat	0.4%	0.2%
PLASTIC	6.1%	1.9%	Hard-to-Compost Landscape	0.2%	0.3%
PET	0.5%	0.2%	Yard Debris	9.6%	10.4%
PET Thermoform	1.3%	0.3%	Wood Material	0.3%	0.3%
Natural HDPE	0.1%	<0.1%	Compostable Containers	0.8%	0.3%
Pigment HDPE	0.2%	0.1%	Treated/Painted Wood Products	2.6%	3.2%
Polypropylene #5	1.3%	0.3%	Food Soiled Paper	7.6%	1.7%
Mixed Plastic #3,4,6,7	0.4%	0.1%	HAZARDOUS	0.7%	0.3%
Polystyrene	0.3%	0.4%	HHW	0.3%	0.3%
Film Plastic	1.5%	0.9%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	0.3%	0.2%	Other Batteries	<0.1%	<0.1%
METAL	3.1%	1.2%	Manufactured Products	0.3%	0.2%
Bi Metal	0.4%	0.2%	OTHER	42.8%	8.8%
Ferrous Metal	2.1%	1.1%	Medical Waste	5.8%	3.0%
Aluminum	0.2%	<0.1%	Inerts	1.7%	1.7%
Aluminum Other	0.4%	<0.1%	Organic Textiles	0.3%	0.2%
GLASS	2.8%	1.6%	Non-Organic Textiles	2.1%	1.2%
Mixed Glass	2.8%	1.6%	Refuse	32.9%	8.4%
			TOTAL	100.0%	

Composition based on 4 samples.

3.3.9 Sand City

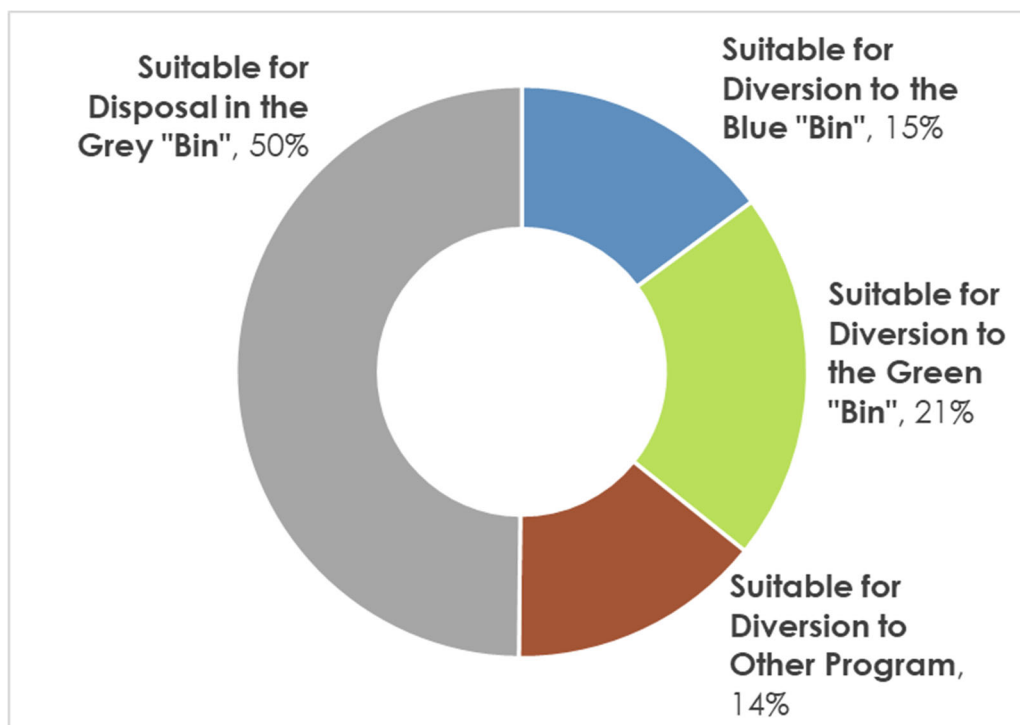
Residential Waste Composition

A summary of Sand City residential waste is provided in **Table 24**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 19.5 percent. Over one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Sand City's residential Material Segregation Assessment is shown in **Exhibit 19**. As shown, approximately 36 percent of materials could have been placed in another curbside bin. An additional 14 percent of materials are accepted in alternate programs.

Exhibit 19. Sand City Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Commercial Waste

See Mixed Origin above.

Table 24. Sand City Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	8.4%	1.7%	ORGANICS	40.2%	4.8%
Uncoated Corrugated Cardboard	1.3%	0.8%	Perishable Edible Food	4.9%	1.1%
White Office Paper	0.6%	0.6%	Shelf Stable Edible Food	1.7%	1.5%
Mixed Paper	1.9%	1.0%	Inedible Food Scraps (NO meat or dairy)	19.5%	4.4%
Paper Board	1.8%	0.7%	Inedible Meat Products	0.5%	0.6%
ONP	0.1%	<0.1%	Inedible Packaged Meat Products	1.3%	1.0%
Aseptic Lined Containers	0.2%	0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.4%	0.2%	Inedible Packaged Dairy Products	0.3%	0.2%
Gable-top Containers	<0.1%	<0.1%	Raw Meat	1.9%	2.9%
PLASTIC	6.5%	0.6%	Hard-to-Compost Landscape	0.6%	0.8%
PET	0.8%	0.2%	Yard Debris	0.9%	0.7%
PET Thermoform	1.0%	0.3%	Wood Material	0.1%	0.2%
Natural HDPE	0.2%	0.2%	Compostable Containers	0.8%	0.4%
Pigment HDPE	0.4%	0.2%	Food Soiled Paper	7.7%	0.9%
Polypropylene #5	1.4%	0.2%	Treated/Painted Wood Products	<0.1%	<0.1%
Mixed Plastic #3,4,6,7	0.3%	0.3%	HAZARDOUS	1.5%	1.8%
Polystyrene	<0.1%	<0.1%	HHW	0.9%	1.3%
Film Plastic	1.4%	0.2%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	1.0%	0.5%	Other Batteries	0.1%	<0.1%
METAL	1.2%	0.1%	Manufactured Products	0.4%	0.5%
Bi Metal	0.4%	0.2%	OTHER	39.1%	4.7%
Ferrous Metal	<0.1%	<0.1%	Medical Waste	7.4%	5.4%
Aluminum	0.3%	0.1%	Inerts	1.7%	0.7%
Aluminum Other	0.5%	<0.1%	Organic Textiles	<0.1%	0.1%
GLASS	3.2%	1.5%	Non-Organic Textiles	4.4%	2.1%
Mixed Glass	3.2%	1.5%	Refuse	25.5%	2.0%
			TOTAL	100.0%	

Composition based on 4 samples.

3.3.10 Seaside

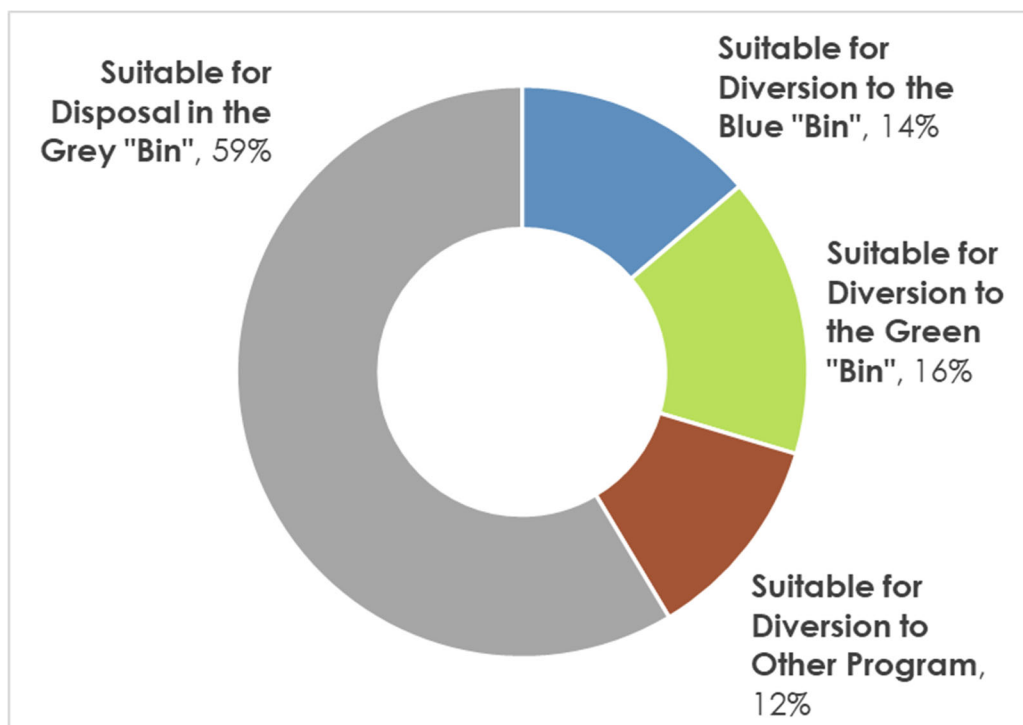
Residential Waste Composition

A summary of Seaside residential waste is provided in **Table 25**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 13.6 percent. Less than one percent of the material is considered hazardous waste.

Residential Material Segregation Assessment

Seaside's residential Material Segregation Assessment is shown in **Exhibit 20**. As shown, approximately 30 percent of materials could have been placed in another curbside bin. An additional 12 percent of materials are accepted in alternate programs.

Exhibit 20. Seaside Residential Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 25. Seaside Residential Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	7.9%	0.8%	ORGANICS	32.9%	3.3%
Uncoated Corrugated Cardboard	0.7%	0.2%	Perishable Edible Food	2.7%	1.1%
White Office Paper	0.3%	0.3%	Shelf Stable Edible Food	1.3%	0.6%
Mixed Paper	2.2%	0.6%	Inedible Food Scraps (NO meat or dairy)	13.6%	2.2%
Paper Board	1.6%	0.2%	Inedible Meat Products	1.1%	0.4%
ONP	0.3%	<0.1%	Inedible Packaged Meat Products	0.6%	0.2%
Aseptic Lined Containers	0.2%	<0.1%	Inedible Dairy Products	<0.1%	<0.1%
Plastic Lined Paper	2.5%	0.4%	Inedible Packaged Dairy Products	0.9%	0.5%
Gable-top Containers	0.1%	<0.1%	Raw Meat	1.1%	0.9%
PLASTIC	6.0%	0.4%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	0.5%	<0.1%	Yard Debris	1.1%	0.9%
PET Thermoform	1.1%	0.1%	Wood Material	1.2%	1.2%
Natural HDPE	0.2%	<0.1%	Compostable Containers	0.9%	0.2%
Pigment HDPE	0.3%	<0.1%	Treated/Painted Wood Products	0.5%	0.2%
Polypropylene #5	1.4%	0.2%	Food Soiled Paper	7.8%	0.7%
Mixed Plastic #3,4,6,7	0.3%	<0.1%	HAZARDOUS	0.6%	0.3%
Polystyrene	0.4%	<0.1%	HHW	<0.1%	<0.1%
Film Plastic	1.3%	0.2%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	0.6%	0.1%	Other Batteries	<0.1%	<0.1%
METAL	1.9%	0.4%	Manufactured Products	0.5%	0.2%
Bi Metal	0.5%	0.1%	OTHER	48.1%	3.6%
Ferrous Metal	0.4%	0.3%	Medical Waste	10.1%	2.2%
Aluminum	0.3%	<0.1%	Inerts	1.1%	0.7%
Aluminum Other	0.7%	0.1%	Organic Textiles	0.3%	0.3%
GLASS	2.7%	0.6%	Non-Organic Textiles	4.0%	1.2%
Mixed Glass	2.7%	0.6%	Refuse	32.5%	4.0%
			TOTAL	100.0%	

Composition based on 19 samples.

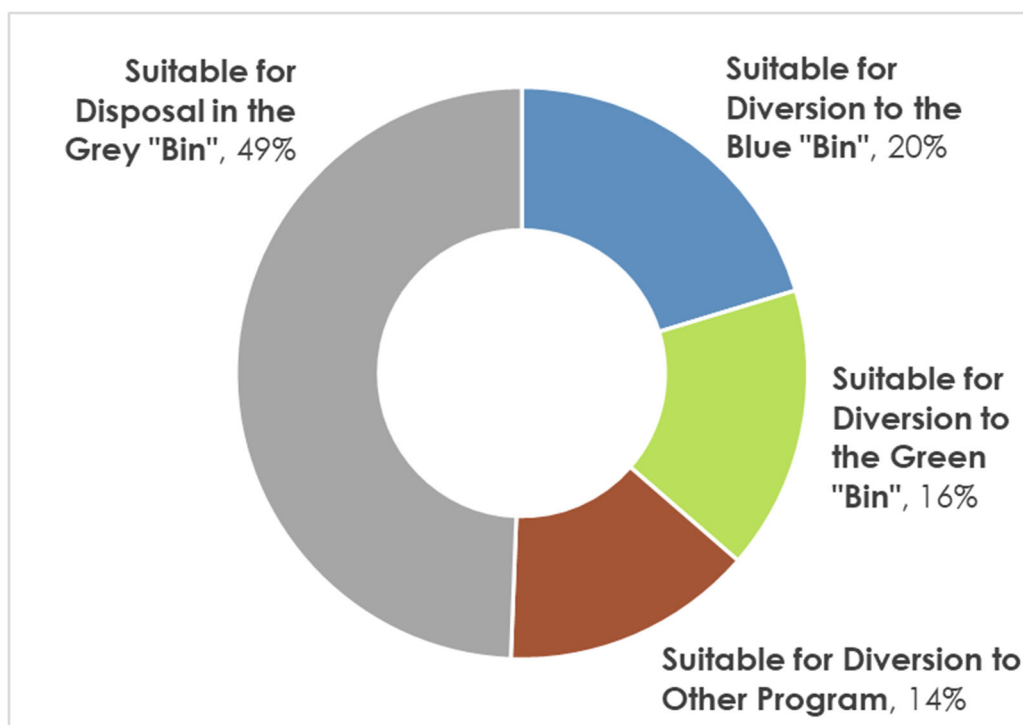
Commercial Waste Composition

A summary of Seaside commercial waste is provided in **Table 26**. As shown, Inedible Food Scraps (no meat or dairy) is the highest single material component at 14.6 percent. About three percent of the material is considered hazardous waste.

Commercial Material Segregation Assessment

Seaside's commercial Material Segregation Assessment is shown in **Exhibit 21**. As shown, approximately 36 percent of materials could have been placed in another curbside bin. An additional 14 percent of materials are accepted in alternate programs.

Exhibit 21. Seaside Commercial Material Segregation Assessment



Note: Composition may not add to 100 percent due to rounding.

Table 26. Seaside Commercial Waste Composition

Material Components	Composition	+/-	Material Components	Composition	+/-
PAPER	12.1%	1.8%	ORGANICS	30.8%	7.3%
Uncoated Corrugated Cardboard	3.4%	1.3%	Perishable Edible Food	1.1%	0.9%
White Office Paper	0.4%	0.2%	Shelf Stable Edible Food	4.1%	3.4%
Mixed Paper	2.5%	0.7%	Inedible Food Scraps (NO meat or dairy)	14.6%	4.7%
Paper Board	2.5%	0.4%	Inedible Meat Products	1.0%	0.3%
ONP	0.3%	0.1%	Inedible Packaged Meat Products	0.1%	0.2%
Aseptic Lined Containers	0.2%	<0.1%	Inedible Dairy Products	0.2%	0.1%
Plastic Lined Paper	2.6%	1.1%	Inedible Packaged Dairy Products	0.1%	<0.1%
Gable-top Containers	0.1%	<0.1%	Raw Meat	0.7%	0.4%
PLASTIC	6.8%	1.1%	Hard-to-Compost Landscape	<0.1%	<0.1%
PET	0.7%	0.3%	Yard Debris	0.3%	0.3%
PET Thermoform	0.6%	0.1%	Wood Material	<0.1%	<0.1%
Natural HDPE	0.5%	0.2%	Compostable Containers	1.4%	0.6%
Pigment HDPE	0.4%	0.2%	Food Soiled Paper	7.0%	0.9%
Polypropylene #5	1.2%	0.2%	Treated/Painted Wood Products	0.2%	0.2%
Mixed Plastic #3,4,6,7	0.3%	<0.1%	HAZARDOUS	3.0%	3.5%
Polystyrene	0.2%	<0.1%	HHW	0.5%	0.5%
Film Plastic	1.9%	0.8%	Lithium Batteries	<0.1%	<0.1%
Rigid Plastic	1.0%	0.5%	Other Batteries	<0.1%	<0.1%
METAL	4.7%	2.8%	Manufactured Products	2.5%	3.5%
Bi Metal	0.4%	0.3%	OTHER	40.5%	5.9%
Ferrous Metal	3.4%	3.0%	Medical Waste	5.2%	2.1%
Aluminum	0.4%	0.2%	Inerts	0.7%	0.6%
Aluminum Other	0.4%	0.1%	Organic Textiles	0.4%	0.4%
GLASS	2.1%	0.5%	Non-Organic Textiles	4.7%	1.9%
Mixed Glass	2.1%	0.5%	Refuse	29.5%	5.2%
			TOTAL	100.0%	

Composition based on 9 samples.

3.3.11 Jurisdictional Comparison

Residential

Presented below in **Table 27** is the notable jurisdictional differences in material segregation. This table provides insights about how the jurisdiction's residential data compares to the overall dataset.

Table 27. Notable Differences in Residential Material Segregation by Jurisdiction

Jurisdiction	Notable Differences in Residential Material Segregation	
	Higher than Average	Lower than Average
Carmel	Material Suitable for Diversion to the Green Bin	Material Suitable for Diversion to Other Programs
Del Rey Oaks	Material Suitable for Diversion to Other Programs	None
Marina	None	None
City of Monterey	None	Material Suitable for Diversion to Other Programs
Unincorporated Monterey County	None	None
Pacific Grove	None	Material Suitable for Diversion to the Green Bin
Pebble Beach CSD	None	None
Sand City	None	None
Seaside	None	None

Table 28 identifies notable differences between In-District residential waste and jurisdictional waste streams by specific material types.

Table 28. Notable Differences in Residential Waste Material Types by Jurisdiction

Jurisdiction	Notable Differences by Material Type	
	Higher than Average	Lower than Average
Marina	Plastic Lined Paper	• OCC • Rigid Plastic • Shelf Stable Edible Food • Hard-to-Compost Landscape • Other Batteries

Jurisdiction	Notable Differences by Material Type	
	Higher than Average	Lower than Average
Sand City	• PET • Perishable Edible Food • Inedible Food Scraps	• ONP • Gable-top Containers • Polystyrene • Aluminum Other • Inedible Meat Products • Wood Material • Treated Painted Wood Products • Organic Textiles
Del Rey Oaks	Bi Metal	• PET Thermoforms • Film Plastic • Inedible Packaged Meat Products
Seaside	None	• Rigid Plastic • HHW
Carmel	• Mixed Glass • Inedible Food Scraps • Compostable Containers	• Pigment HDPE • Polystyrene • Bi Metal • Aluminum Other • Perishable Edible Food • Shelf Stable Edible Food • Inedible Packaged Meat Products • Inedible Packaged Dairy Products • Hard-to-Compost Landscape • Medical Waste • Inerts • Non-Organic Textiles
Pebble Beach	Ferrous Metal	• Plastic Lined Paper • Rigid Plastic • Aluminum Other • Shelf Stable Edible Food
Pacific Grove	Rigid Plastic	• Ferrous Metal • Mixed Glass • Yard Debris • HHW
City of Monterey	None	• Wood Material • Organic Textiles • Non-Organic Textiles
Unincorporated Monterey County	None	• Aluminum

Commercial

Presented below in **Table 29** are the notable jurisdictional differences in material segregation. This table provides insights about how the jurisdiction's commercial data compares to the overall dataset.

Table 29. Notable Differences in Commercial Material Segregation by Jurisdiction

Jurisdiction	Notable Differences in Commercial Waste Material Segregation	
	Higher than Average	Lower than Average
Marina	None	None
Seaside	None	None
Pacific Grove	Material Suitable for Diversion to the Blue Bin Material Suitable for Diversion to Other Programs	Material Suitable for Diversion to the Green Bin
Mixed Origin	Material Suitable for Diversion to the Green Bin	None
City of Monterey	None	None
Unincorporated Monterey County	None	None

Other notable differences between overall In-District commercial waste and jurisdictional waste streams on the material component level are listed below in **Table 30**.

Table 30. Notable Differences in Commercial Waste Material Types by Jurisdiction

Jurisdiction	Statistically Significant Differences	
	Higher than Average	Lower than Average
Marina	• PET • PET Thermoform • Polypropylene #5 • Inedible Food Scraps • Inedible Packaged Dairy Products	• Ferrous Metal • Yard Debris • Wood Materials • Treated/Painted Wood Products
Seaside	None	• Gable-top Containers • PET Thermoforms • Inedible Packaged Dairy Products • Hard-to-Compost Landscape • Yard Debris • Wood Materials • Other Batteries • Treated/Painted Wood Products

Jurisdiction	Statistically Significant Differences	
	Higher than Average	Lower than Average
Pacific Grove	Mixed Glass	• Aluminum Other • Inedible Dairy Products • Inedible Packaged Dairy Products • Yard Debris • HHW
Mixed Origin	None	• Natural HDPE • Raw Meat • Hard-to-Compost Landscape
City of Monterey	None	• Hard-to-Compost Landscape
Unincorporated Monterey County	None	• PET • Food Soiled Paper



APPENDIX A

USEPA VOLUME TO WEIGHT CONVERSION FACTORS

Volume-to-Weight Conversion Factors

U.S. Environmental Protection Agency

Office of Resource Conservation and Recovery

April 2016

EPA's 1997 report, "Measuring Recycling: A Guide for State and Local Governments", was a guide to facilitate standardization of MSW data collection at the local level, which included volume-to-weight conversion factors for comparing recovery efforts between municipalities, regions and states. The factors are also valuable when planners work with the national recovery data presented in EPA's sustainable materials management report series.

This document provides updates to the volume-to-weight conversion factors found in the 1997 report Appendix B.

The goal of this update is to identify more current secondary data measurements of the various products. Of particular interest are products known to have been source reduced through light weighting since the early nineties such as plastic, glass and metal packaging. Some factors included on the original table are excluded from the revised table due to lack of updated data. Primary data collection was not performed.

The original Appendix B table included 12 materials categories; the updated table provides factors for 15 material categories, including the following.

- | | |
|--------------------------|--|
| • Appliances | • Municipal Solid Waste |
| • Automotive | • Paper |
| • Carpeting | • Plastic |
| • Commingled Recyclables | • Textiles |
| • Electronics | • Wood |
| • Food | • Yard Trimmings |
| • Glass | • Construction & Demolition Debris (C&D) |
| • Metals | |

All of the categories include multiple products and/or density measurements. Four product categories—carpeting, commingled recyclable material, electronics and construction and demolition debris—are new. Previously lead-acid batteries and scrap tires were separate categories but are combined into the single category "Automotive" in the updated table.

Other differences include the removal/addition of products within some of the categories to better reflect the current recycling industry. For example, eliminating "Tab Card" and adding "Mixed Paper" to the paper category reflects the move toward commingled recyclables collection. The addition of "Electronics" reflects the growth in these products since the original table was published.

The updated factors are shown in the table below.

Standard Volume-to-Weight Conversion Factors

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Appliances	Major Appliances			
	<i>Dishwasher</i>	1 unit	125	1
	<i>Clothes Dryer</i>	1 unit	125	1
	<i>Stove</i>	1 unit	150	1
	<i>Refrigerator</i>	1 unit	250	1
	<i>Clothes Washer</i>	1 unit	150	1
Automotive	Lead-Acid Battery			
	<i>Auto</i>	one	36	3
	<i>Truck</i>	one	47	3
	Scrap Tire			
	<i>Light Duty Tires (passenger, light truck)</i>	one	22.5	5
	<i>Commercial Tires</i>	one	120	5
	Fluids			
	<i>Used Motor Oil</i>	gallon	7.4	2
	<i>Antifreeze</i>	gallon	8.42	2
	Other Automotive			
	<i>Oil Filters not crushed</i>	drum	175	1
	<i>Oil Filters crushed</i>	drum	700	1
	<i>Oil Filters</i>	gallon	5	1
Carpeting	Carpet			
	<i>Carpet</i>	cubic yard	147	6
	<i>Carpet Padding</i>	cubic yard	62	6
Commingled Recyclable Material	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles) and Paper			
	<i>Commingled Recyclables</i>	cubic yard	262	4
	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles), Corrugated Containers and Paper			
	<i>Campus Recyclables</i>	cubic yard	92	7
	<i>Commingled Recyclables</i>	cubic yard	111	4
	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles) – No paper			
	<i>Campus Recyclables</i>	cubic yard	70	7
	<i>Commingled Recyclables</i>	cubic yard	67	4
	<i>Commercial Recyclables</i>	cubic yard	113	8
	Containers (Cans, Plastic) - No glass			
	<i>Campus Recyclables</i>	cubic yard	32	7
	Containers (Cans, Plastic) and Paper - No glass			
	<i>Residential Recyclables</i>	cubic yard	260	2
	Containers (Food/beverage, Glass) Corrugated Containers and Paper			
	<i>Commercial Recyclables</i>	cubic yard	88	2
	<i>Commercial Recyclables</i>	cubic yard	58	21
	<i>Multifamily Recyclables</i>	cubic yard	96	2
	<i>Multifamily Recyclables</i>	cubic yard	51	21

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Commingled Recyclable Material	<i>Single family Recyclables</i>	cubic yard	126	2
	Containers (Food/beverage, Glass) Corrugated Containers and Paper- No glass			
	<i>Campus Recyclables</i>	cubic yard	139	2
	<i>Commercial Recyclables</i>	cubic yard	155	2
Electronics	Computer Equipment			
	<i>Desktop</i>	one	27	24
	<i>Laptop</i>	one	9.8	24
	Monitor			
	<i>CRT</i>	one	40	1
	<i>15"</i>	one	30	2
	<i>17"</i>	one	45	2
	<i>21"</i>	one	60	2
	<i>Flat Panel</i>	one	24	1
	<i>Mixed Monitors</i>	one	29.4	24
	Televisions			
	<i>CRT < 19 inch</i>	one	41	1
	<i>CRT ≥ 19 inch</i>	one	73	1
	<i>Flat Panel</i>	one	29	1
	<i>Mixed TVs</i>	one	67.3	24
	Peripheral Devices			
	<i>Printers</i>	one	16.1	24
	<i>Mice</i>	one	0.2	9
	<i>Keyboards</i>	one	2.9	9
	Mobile Devices			
	<i>Cellular Phone</i>	one	0.22	9
	Mixed Electronics			
	<i>Brown Goods</i>	cubic yard	343	6
	<i>Computer-related Electronics</i>	cubic yard	354	6
	<i>Other Small Consumer Electronics</i>	cubic yard	438	6
Food				
	Fats, Oils, Grease	55-gallon	412	2
	Organics - commercial	cubic yard	135	21
	Source Separated Organics - commercial	cubic yard	1,000	15
	Food Waste - restaurants	cubic yard	396	21
	Food Waste	cubic yard	463	4
	Food Waste	cubic foot	22-45	4
	Food waste - university	gallon	3.8	22
	Food Waste	64 gallon toter	150	4
	Food waste	2 cubic yard full towable	2,736	4
Glass	Bottles			
	<i>Loose</i>	cubic yard	380	4

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Metals	Aluminum Cans			
	<i>Uncompacted</i>	cubic yard	46	4
	<i>Uncompacted</i>	case = 24 cans	0.7	11
	<i>Baled</i>	cubic yard	250-500	10
	Steel Cans			
	<i>Whole</i>	cubic yard	50-175	10
	<i>Baled</i>	cubic yard	700-1,000	10
	Steel Cans - Institution			
	<i>Whole</i>	can	0.09	7
	<i>Whole</i>	cubic yard	136	7
Paper	Newsprint			
	<i>Loose</i>	cubic yard	360-800	1
	<i>Baled</i>	cubic yard	750-1,000	10
	Books - paperback, loose	cubic yard	428	23
	Old Corrugated Containers			
	<i>Flattened</i>	cubic yard	106	4
	<i>Baled</i>	cubic yard	700-1,100	10
	Old Corrugated Containers and Chip Board			
	<i>Uncompacted</i>	cubic yard	74.54	4
	Office Paper			
	<i>Computer Paper</i>			
	<i>Loose</i>	cubic yard	375-465	1
	<i>Compacted/Baled</i>	cubic yard	755-925	1
	<i>Mixed</i>			
	<i>Loose</i>	cubic yard	110-380	1
	<i>Loose</i>	cubic yard	323	4
	<i>Compacted</i>	cubic yard	610-755	1
	<i>Shredded</i>	cubic yard	128	4
	<i>Mixed Baled</i>	cubic yard	1,000-1,200	10
	Miscellaneous			
	<i>Cartons (milk and juice) uncrushed</i>	cubic yard	50	7
Plastic	PET			
	<i>PET Bottles - baled</i>	30"x42"x 48"	525-630	12
	<i>PET Thermoform - baled</i>	30"x42"x 48"	525-595	12
	HDPE			
	<i>HDPE Dairy - baled</i>	30"x42"x 48"	525-700	12
	<i>HDPE Mixed - baled</i>	30"x42"x 48"	525-700	12
	Mixed PET and HDPE			
	<i>Loose</i>	cubic yard	32	7
	Mixed Bottles/Containers #1 - #7			
	<i>Loose</i>	cubic yard	40.4	4
	Mixed Bottles/Containers #3 - #7			

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Plastic	<i>Loose</i>	cubic yard	25.7	4
	Film			
	<i>LDPE, loose</i>	cubic yard	35	13
	<i>LDPE, compacted</i>	cubic yard	150	13
	<i>LDPE, baled</i>	30" x 42" x 48"	1,100	13
	Miscellaneous			
	<i>Trash Bags</i>	cubic yard	35	6
	<i>Grocery/Merchandise Bags</i>	cubic yard	35	6
	<i>Expanded Polystyrene Packaging/Insulation</i>	cubic yard	32	6
Textiles	Mixed Textiles			
	<i>Loose</i>	cubic yard	125-175	10
	<i>Baled</i>	cubic yard	600-750	10
Wood	Wood			
	<i>Wood Chips, green</i>	cubic yard	473	1
	<i>Wood Chips, dry</i>	cubic yard	243	1
	<i>Saw Dust, wet</i>	cubic yard	530	1
	<i>Saw Dust, dry</i>	cubic yard	275	1
	<i>Pallets</i>	one	25	1
	<i>Pallets and Crates</i>	cubic yard	169	18
	<i>Christmas Trees, loose</i>	cubic yard	30	1
Yard Trimmings	Yard Trimmings			
	<i>Leaves</i>	cubic yard	250-500	1
	<i>Leaves (Minnesota)</i>	cubic yard	300 - 383	15
	Mixed Yard Waste			
	<i>Uncompacted</i>	cubic yard	250	1
	<i>Compacted</i>	cubic yard	640	1
	Prunings & Trimmings	cubic yard	127	6
	Branches & Stumps	cubic yard	127	6
Municipal Solid Waste	MSW - Commercial			
	Commercial - dry waste	cubic yard	56-73	16, 8
	Commercial - all waste, uncompacted	cubic yard	138	21
	Mixed MSW - Residential, Institutional, Commercial			
	<i>Uncompacted</i>	cubic yard	250-300	14
	<i>Compacted</i>	cubic yard	400-700	14
	Mixed MSW - Multifamily uncompacted	cubic yard	95	21
	MSW - Landfill			
	<i>Compacted - MSW Small Landfill with Best Management Practices</i>	cubic yard	1,200-1,700	17
	<i>Compacted - MSW Large Landfill with Best Management Practices</i>	cubic yard	1,700-2,000	17

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Municipal Solid Waste	<i>Compacted - MSW Very Large Landfill with Best Management and Cover Practices, Combined MMSW/Industrial/and other solid waste, or/and Leachate Recirculation</i>	cubic yard	>2,000	17
C &D	Concrete			
	<i>Large Concrete with Re-bar</i>	cubic yard	860	18
	<i>Large Concrete without Re-bar</i>	cubic yard	860	18
	<i>Small Concrete with Re-bar</i>	cubic yard	860	18
	<i>Small Concrete without Re-bar</i>	cubic yard	860	18
	Asphalt Paving			
	<i>Large Asphalt Paving with Re-bar</i>	cubic yard	773	19
	<i>Large Asphalt Paving without Re-bar</i>	cubic yard	773	19
	<i>Small Asphalt Paving with Re-bar</i>	cubic yard	773	19
	<i>Small Asphalt Paving without Re-Bar</i>	cubic yard	773	19
	Roofing			
	<i>Composition Roofing</i>	cubic yard	731	18
	<i>Other Asphalt Roofing</i>	cubic yard	731	18
	Other Aggregates	cubic yard	860	18
	Wood			
	<i>Clean Dimensional Lumber</i>	cubic yard	169	18
	<i>Clean Engineered Wood</i>	cubic yard	268	18
	<i>Other Recyclable Wood</i>	cubic yard	169	18
	<i>Painted/Stained Wood</i>	cubic yard	169	18
	<i>Treated Wood</i>	cubic yard	169	18
	Gypsum Board			
	<i>Clean Gypsum Board</i>	cubic yard	467	18
	<i>Painted/Demolition Gypsum</i>	cubic yard	467	18
	Aggregate			
	<i>Large Rock</i>	cubic yard	999	18
	<i>Small Rock/Gravel</i>	cubic yard	999	18
	Dirt and Sand	cubic yard	929	18
	Remainder/Composite Construction and Demolition	cubic yard	417	18
	Construction & Demolition Bulk	cubic yard	484	20
	Metal			
	<i>Major Appliances</i>	cubic yard	145	18
	<i>Other Ferrous</i>	cubic yard	225	18
	<i>Other Non-Ferrous</i>	cubic yard	225	18
	<i>Remainder/Composite Metal (avg of metals, without used oil filters)</i>	cubic yard	143	18
	<i>HVAC Ducting</i>	cubic yard	47	18

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- 4 Keep America Beautiful. Volume-to-Weight Recycling and Trash Conversion Factors Report. December 2013.
- 5 Rubber Manufacturers Association (RMA). 2013 U.S. Scrap Tire Management Summary. November 2014.
http://www.rma.org/download/scrap-tires/market-reports/US_STMarket2013.pdf
- 6 California Integrated Waste Management Board. Targeted Statewide Waste Characterization Study: Detailed Characterization of Construction and Demolition Waste. June 2006. <http://www.calrecycle.ca.gov/publications/Documents/Disposal%5C34106007.pdf>
Brown Goods: larger, non-portable electronic goods that have some circuitry. Examples include microwaves, stereos, VCRs, DVD players, radios, audio/visual equipment, and non-CRT televisions (such as LCD televisions).
Computer-related Electronics: electronics with large circuitry that is computer-related. Examples include processors, mice, keyboards, laptops, disk drives, printers, modems, and fax machines.
Other Small Consumer Electronics: portable non-computer-related electronics with large circuitry. Examples include personal digital assistants (PDAs), cell phones, phone systems, phone answering machines, computer games and other electronic toys, portable CD players, camcorders, and digital cameras.
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- 13 Caldwell, Maggie. Recycling Plastic Film and Shrink Wrap. May 16, 2014. <http://www.federalinternational.com/blog/recy>
- 14 Caterpillar Performance Handbook. 40th Edition. January 2010.
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- 16 Minnesota Department of Administration 2015 hauler records (excludes organics).
- 17 Minnesota Pollution Control Agency. 2013 MPCA MSW Landfill Annual Report Data.
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- 20 Florida Dept of Environmental Protection <http://www.dep.state.fl.us/waste/categories/recycling/cd/canddmain.htm>
- 21 CalRecycle. 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California. September 10, 2015.
<http://www.calrecycle.ca.gov/Publications/Documents/1543/20151543.pdf>
Organics - putrescible material hauled by a contracted third party to a permitted facility mainly engaged in producing compost or mulch, or in anaerobic digestion of organics. Minor mechanical separation of contaminants or recyclable materials may occur at the facility prior to composting or digestion.
- 22 Goldstein, Nora. "Food Scraps Composting Laboratory". *BioCycle*. January 2013, Vol. 54, No. 1, p. 33.
<https://www.biocycle.net/2013/01/22/food-scraps-composting-laboratory/>
- 23 U.S. EPA. Standard Volume-to-Weight Conversion Factors. Last updated: February 28, 2006. <https://www.epa.gov/smm/metrics-waste-reduction>
- 24 National Center for Electronics Recycling (NCER). <http://www.electronicrecycling.org/>
Mixed monitors and TVs: total pounds collected divided by total units collected.