Final
Zero Waste Marin
Waste Characterization Study Report

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1.0 EXECUTIVE SUMMARY

The Marin County Hazardous and Solid Waste Management Joint Powers Authority, better known as Zero Waste Marin (ZWM), selected SCS Engineers (SCS) to conduct a physical characterization study of the waste generated within Marin County's geographic boundaries. The goal of this project is to understand the level of recoverable material in the landfill waste stream generated in the county by commodity type. The study began in the winter of 2024 over a two-week sampling period to establish the composition of the material being sent to landfill within the county. The data collected during the study will guide ZWM as staff expands and/or develops new waste diversion and reduction programs.

Based on information provided by Zero Waste Marin, SCS developed a sampling protocol that detailed the field procedures, sampling plan, and material categories for sorting. SCS coordinated with Marin County waste haulers to haul specific routes to Redwood Landfill. The routes were identified and rerouted based on the collection data provided by each hauler. The material selected shows a distribution across the county for commercial, multi-family, and residential sectors. Roughly eight 200-pound samples were selected per day from landfill loads for two non-consecutive weeks in December 2024 and January 2025 (Monday through Friday), totaling 80 samples. These 80 samples were sorted into 74 material categories.

Each sample's composition was calculated by dividing each material component's weight by the entire sample weight. The individual material compositions for each sample were averaged to derive the overall summary of material composition in **Table 1**.

Table 1. Material Composition by Sector Type

Material Type	Overall	Commercial	Multi-Family	Residential	Self-Haul
Paper	12.6%	12.8%	12.3%	12.5%	4.2%
Glass	2.3%	2.8%	2.9%	1.6%	2.0%
Metal	2.9%	2.8%	4.0%	2.7%	6.0%
Plastic	14.9%	15.4%	13.6%	14.6%	2.6%
Food	23.9%	25.2%	24.8%	22.2%	0.7%
Yard Waste	2.7%	3.5%	3.9%	1.3%	4.4%
Other Organics	8.6%	7.6%	5.9%	10.6%	7.4%
Textiles	6.2%	6.7%	6.4%	5.5%	6.3%
Inerts	0.9%	0.8%	0.6%	1.1%	30.3%
HHW	3.3%	4.4%	3.9%	1.9%	14.1%
Other	21.6%	18.0%	21.7%	25.9%	22.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

A total of 60 percent of the sorted material could be diverted from landfills through available programs within the county. Of this material, 35 percent is compostable. Compostable material includes the food, yard waste, and the other organics categories. The top recyclable and compostable material categories are listed in **Table 2**.

Table 2. Top Recyclable and Compostable Materials Found in the Landfill Stream

Top Recyclable Materials Found	Top Compostable Materials Found
Mixed Paper	Not Donatable – Food (Non-Meat): fruits, vegetables, baked goods
Cardboard	Inedible Food Scraps: bones, peels, shells
Other Magnetic Metal	Other Compostable Paper

Based on these findings, SCS recommends that ZWM focus its waste reduction and diversion programs towards the compostable material found in the landfill waste stream. Of the compostable material found in the waste stream, 24 percent is food. Focusing outreach and education efforts on the diversion of food waste will have the greatest impact on the waste stream within the county. It is recommended that ZWM focus this outreach towards the commercial sector as it was found to have the highest levels of food waste in the waste stream.

Additionally, the visual characterization of self-hauled waste identified that majority of incoming loads contained a mix of materials. The two largest recoverable materials found within the sampled self-haul loads at the Marin Resource Recovery Center are bulky items and yard debris and trimmings. SCS recommends ZWM educate residents and junk haulers on the importance of separating their self-haul loads for disposal. This will help reduce the amount of recoverable material sent to landfills.

2.0 INTRODUCTION

Zero Waste Marin is comprised of representatives from Marin's 11 cities and towns, Belvedere, Corte Madera, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, Sausalito, Tiburon; and the Unincorporated County of Marin. ZWM's mission is to protect natural resources by promoting source reduction of waste through reuse, repair, and more mindful purchasing.

ZWM selected SCS Engineers to conduct a physical characterization of the waste generated within the county. The primary objectives of the study were to:

1. Identify the level of recoverable material in the landfill waste stream generated in the county, by commodity type.

2. Identify if specific business sector types are contributing substantial quantities of recyclable and compostable materials to the waste stream.

3. Collect data in compliance with SB 1383 (2016) and AB 2346 (2024) that will help inform ZWM's waste diversion programs and outreach efforts.

The physical waste characterization began in the Winter of 2024 over a two-week sampling period to establish the composition of the material being sent to landfill within the county. While the study provides a valuable snapshot of waste generation and disposal behaviors, it is important to recognize that waste composition can vary seasonally due to changes in consumer behavior, weather conditions, and holiday-related activities. For example, winter months may see increased food waste due to holiday gatherings or reduced yard waste due to dormant landscaping. These seasonal influences should be considered when interpreting the findings and applying them to year-round waste diversion planning and program development.

SCS coordinated efforts with the haulers servicing in-county households and businesses.

1. Bay Cities Refuse
2. Marin Sanitary Service
3. Mill Valley Refuse Service
4. Recology Sonoma Marin
5. Tamalpais Community Services District

These haulers conducted special routing to allow SCS to conduct the detailed waste characterization. The study included commercial, multi-family, and single-family residential waste delivered to Redwood Landfill.

Over the two weeks of sampling at Redwood Landfill, a total of 80 samples were collected and sorted into 74 material categories. The study methods and results detailed below will inform ZWM staff of focus areas for waste reduction and diversion strategies.

3.0 METHODOLOGY

Based on information provided by ZWM staff and waste haulers in the county, SCS developed a sampling protocol that detailed the field procedures, sampling plan, and material categories for sorting. SCS selected eight 200-pound samples per day from loads bound for the landfill for two non-consecutive weeks (Monday through Friday), totaling 80 samples.

3.1 SAMPLING PLAN

ZWM identified four waste sectors to be included in the study.

1. Commercial Waste - Waste collected by a waste hauling company from businesses, institutions, and public venues. For this study, collection vehicles were rerouted for sampling to Redwood Landfill for disposal.

2. Single-Family Residential Waste - Waste collected by a waste hauling company from single-family residences (including townhouses or buildings with up to four residential units). It typically arrives at the solid waste facility in side-loading packer trucks.

3. Multi-Family Residential Waste - Waste collected by a waste hauling company from multi-family properties such as apartments and condominiums with more than four residential units. Waste from multi-family properties is typically collected along with commercial waste in

front-loading packer trucks; however, special routes were arranged to collect solely from multi-family properties for this study.

4. **Self-Hauled Waste** - Waste that is brought to solid waste facilities by the resident or business that generated it. This sector also includes contractors such as landscaping companies and renovators that deliver waste generated during their business operations.

SCS created a sampling plan based on the 2023 annual collection data provided by the five waste haulers within the county. Samples were selected to be representative of the waste generated in each jurisdiction within the county. The percentage of material generated by each business sector and jurisdiction was calculated based on the provided data. This percentage was then used to identify the number of samples for each sector to be included in the study, of which all jurisdictions with over one percent of the total percentage were represented. Jurisdictions with one percent or fewer of the reported tons were not included in the sampling plan. This was done to keep the sampled material representative of the material disposed within the county.

Table 3 outlines the collection data reported by each hauler and displays the sample distribution amongst the waste generator sectors. **Table 4** outlines the sampling plan by jurisdiction based on the data provided.

Table 3. Sample Selection

Sector	Tons Collected	Percent of Total	Number of Samples
Commercial	48,713	48%	38
Multifamily	12,030	12%	10
Residential	40,168	40%	32
Overall	100,911	100%	80

Bulky item collection data was provided by the five franchised waste haulers. However, due to the variability in the data provided, it is outlined separately in **Section 5.4.**

Table 4. Jurisdiction Sample Selection

Sector	Tons Collected	Percent of Total	Planned Number of Samples	Number of Samples Pulled
Belvedere	717	1%	0	0
Corte Madera	3,599	4%	3	3
Fairfax	2,075	2%	1	1
Larkspur	6,171	6%	4	3
Mill Valley	5,241	5%	4	4
Novato	23,318	23%	19	19
Ross	883	1%	0	0
San Rafael	30,060	30%	24	24
Sausalito	2,374	2%	2	3
San Anselmo	3,922	4%	4	4
Tiburon	3,002	3%	3	3
Unincorporated	19,549	19%	16	16
Total	**100,911**	**100%**	**80**	**80**

3.2 FIELD METHODS

SCS relies on proven protocols and a trained crew to ensure meticulous fieldwork and consistent results. The team consisted of two SCS field managers and six hand sorters. Both Field Managers have experience supervising waste characterization studies. It is standard for one Field Manager to collect samples while another supervises the team of hand sorters.

3.2.1 Sample Selection

The SCS Sampling Manager oversaw the selection and collection of each waste sample. The five waste haulers provided special truck routing to Redwood Landfill for inclusion in the waste characterization study. The Sampling Manager monitored trucks entering the facility. This individual utilized the site-specific sampling plan to identify which trucks to stop for further waste screening. Based on the sampling plan, the Sampling Manager stopped trucks and interviewed the driver to obtain details on the waste contained in the vehicle and the city of origin. 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.

SCS staff worked closely with the scale house at Redwood Landfill and each of the five haulers to identify trucks to collect samples. Drivers that conducted special routing procedures to capture specific waste streams were

automatically routed to the designated sampling area by the scale house. After the truck was safely emptied, the SCS Sampling Manager visually inspected the waste to confirm the load should be sampled.

Once the truck emptied its contents in the designated sampling area, SCS supervisors followed the steps below to obtain a sample:

- The SCS sampling supervisor visually divided the waste load into eight subsections. A section is randomly chosen for sampling. At this point the supervisor directed facility staff operating a skid steer to scoop a sample from the selected section.
- The Sampling Manager arranged a collection of 32-gallon containers to capture the sample. The sample was dumped from the skid steer onto the containers, as shown in **Figure 1.**
- Once the sample is adequately placed in the containers, the Sampling Manager weighed each container until a weight of approximately 210-215 pounds was calculated. SCS sampling protocol includes extra sample material if some is lost during the sorting process.
- The team of hand sorters then assisted the Field Manager to transport the containers to the sorting area and place the sample on the table.
- SCS noted sample origin, sector, hauling company, date of collection and sorting, and any unique information about the sample on the data form.

3.2.2 Sorting Procedure

SCS uses the hand sort procedure based on the ASTM procedure D 5231- 92. The waste samples were placed on a sorting table and separated by hand into the 74 pre-determined material type categories as follows.

Figure 2. Sorting Table

- The work crew loaded each sample onto the sorting table as shown in **Figure 2**. The team then hand-sorted the materials into the material categories defined in **Appendix A**. Large, heavy, or bulky waste items were placed directly into the appropriate container for subsequent weighing.
- Plastic bags of trash were opened, and work crew members manually segregated each item of waste until all the identifiable components were placed into the proper container. The remaining material was swept off the platform and placed in a separate container for “mixed residue”.
- Upon completion of sorting each sample, the containers of segregated materials were moved to the scale where the SCS site manager checked each category for homogeneity, weighed,

and recorded the net weight on the waste sample record. Measurements were made to the nearest 0.01 pound.

- After the weight of each waste material had been recorded, the materials were placed into designated areas for landfill disposal.

3.3 DIVERSION ANALYSIS

Each of the 74 material categories was classified into one of four divertibility groups:

Divertible Materials - This includes materials for which source reduction programs or methods, collection programs, and/or recycling infrastructure exist.

Compostable Materials - This includes green waste materials that are appropriate for municipal composting programs.

Potentially Divertible - This includes materials for which methods and/or technology exist for recycling, reuse, or other beneficial uses, although programs to collect and process the materials are limited or nonexistent in Marin County.

Other Materials - This includes materials that do not fit any of the definitions above and that are not easily diverted from disposal.

Table 5. Material Diversion Classifications

Material Components	Divertible	Compostable	Potentially Divertible	Other
PAPER				
Uncoated Corrugated Cardboard	X			
Newspaper	X			
White Ledger	X			
Mixed Paper	X			
Aseptic Cartons / Gable-top			X	
Paper/Fiber Food Service Ware				X
Remainder/Composite Paper				X
GLASS				
CRV Glass Bottles and Containers	X			
Non-CRV Glass Bottles and	X			
Other Glass				X
METAL				
Steel/Tin Cans	X			
Aluminum Cans – CRV	X			
Aluminum Cans – Non-CRV	X			
Other Ferrous	X			
Other Non-Ferrous	X			
Remainder/Composite Metal				X
PLASTIC				
PETE Bottles – CRV	X			
PETE Bottles – Non-CRV	X			
PET Thermaforms	X			
HDPE #2 Colored Containers	X			
HDPE #2 Neutral Containers	X			
PP #5 Containers	X			
Other Plastic Containers (3, 4, 6, 7)	X			
Bioplastics				X
Recyclable Plastic Film			X	
Nonrecyclable Film				X
Durable Plastic Items	X			
Expanded Polystyrene				X
Remainder/Composite Plastic				X
FOOD				
Potentially Donatable – **Vegetative**		X		
Potentially Donatable - **Eggs**,		X		
Potentially Donatable – **Meat**		X		
Potentially Donatable -		X		
Potentially Donatable - **Packaged**		X		
Not Donatable – **Meat**		X		
Not Donatable – **Non-meat**		X		
Inedible		X		

Material Components	Divertible	Compostable	Potentially Divertible	Other
YARD WASTE				
Leaves and Grass		X		
Chips, Prunings, Trimmings		X		
Branches, Stumps		X		
Other Recycleable Wood		X		
OTHER ORGANICS				
Manure		X		
Other Compostable Paper		X		
Remainder/Composite Organic				X
Clean Dimensional Lumber		X		
Clean Engineered Wood		X		
Pallets & Crates		X		
TEXTILES				
Cloth and Clothing			X	
Shoes, Purses, Belts			X	
Carpet			X	
Other				X
INERTS				
Concrete			X	
Asphalt			X	
Clean Gypsum Board			X	
Rock, Soil, and Fines			X	
Remainder/Composite Construction & Demolition			X	
HAZARDOUS & E-WASTE				
Paint	X			
Vehicle and Equipment Fluids			X	
Used Oil and Oil Filters	X			
Large Rechargeable Batteries	X			
Household Batteries	X			
Universal Waste Electronic Devices (UWED)	X			
Covered Electronic Waste	X			
Fluorescent Tubes	X			
Treated Wood Waste				X
Propane Gas Cylinders	X			
Pharmaceuticals	X			
Sharps	X			
Vapes			X	
All Other HHW				X
RESIDUE/OTHER				
Bulky Items				X
Tires	X			
Remainder/ Composite Special Waste				X
Mixed Residue/Other				X

4.0 RESULTS

The material weights were gathered in the field and recorded into a spreadsheet database. Each sample's composition was calculated by dividing each material component's weight by the entire sample weight. The individual material compositions for each sample were averaged to derive the overall summary of material composition. The detailed sample results display the 10 major material categories and 74 subcategories, with a 95 percent confidence interval, and are shown in **Appendices B - E**. The confidence interval provides a range for which with 95 percent confidence the composition of that material will fall. For materials with a confidence interval greater than the composition the lower limit should be interpreted as 0.0%.

4.1 OVERALL MSW

A summary of average material compositions is displayed in **Exhibit 1**. As shown in **Exhibit 1**, Food Waste, Other Materials, and Plastic were the dominant material classes found in Marin County's overall municipal solid waste (MSW) stream. The largest contributors to the Food Waste category were "Not Donatable – Non-meat" (10.0 percent) and "Inedible Food" (8.3 percent). The Other Material category is largely comprised of "Mixed Residue" (20.8 percent). Nonrecyclable plastic film made up half (7.0 percent) of the plastics found in the waste stream.

Exhibit 1. Overall MSW Composition

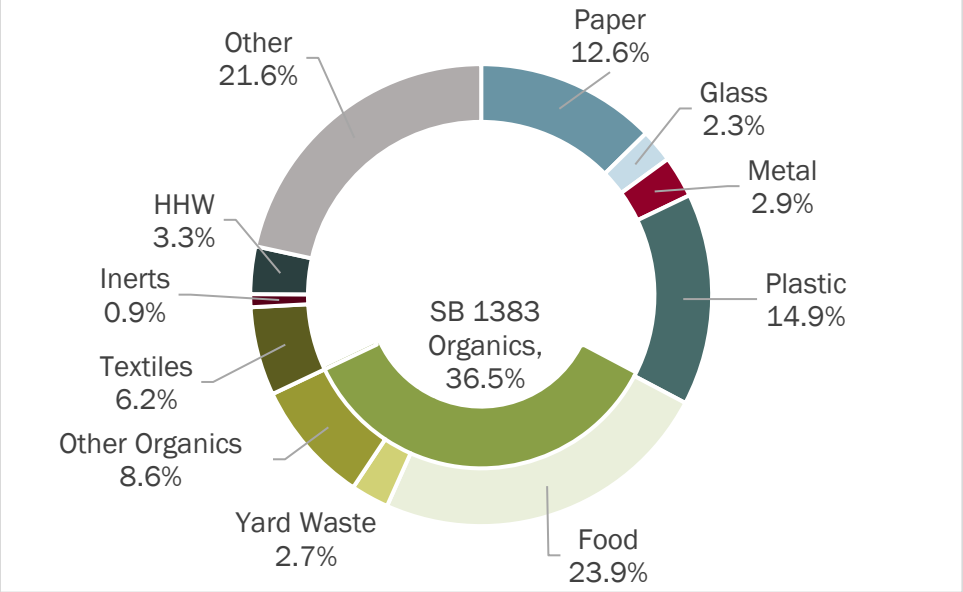


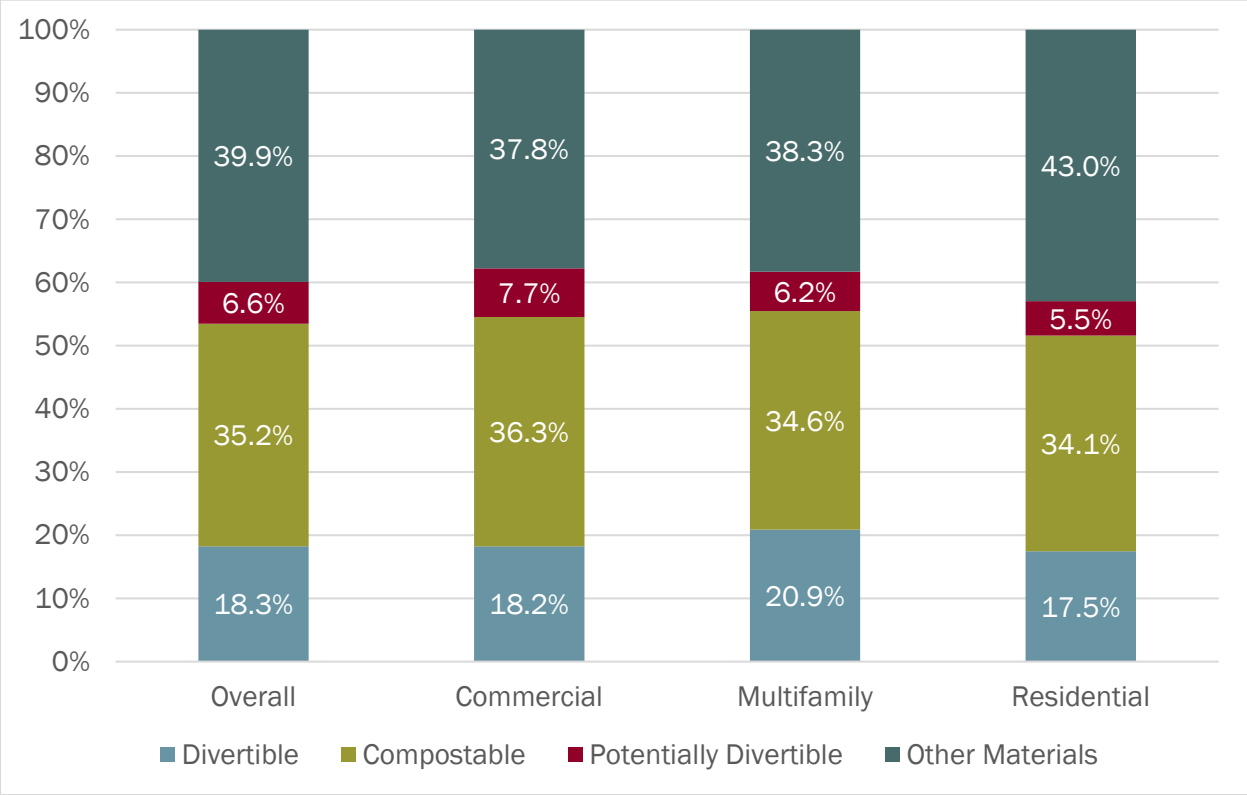
Table 6 identifies the top ten material types found in the County's waste stream.

Table 6. Top Ten Material Compositions

Rank	Composition	Material Type	Diversion Classification
1	20.8%	Mixed Residue/Other	Other Material
2	10.0%	Not Donatable – Food Non-meat	Compostable
3	8.3%	Inedible Food	Compostable
4	7.1%	Other Compostable Paper	Compostable
5	7.0%	Nonrecyclable Film	Other Material
6	4.7%	Mixed Paper	Divertible
7	3.2%	Paper/Fiber Food Service Ware	Other Material
8	3.2%	Cloth and Clothing	Potentially Divertible
9	2.1%	Potentially Donatable – Vegetative (Perishable/Fresh)	Compostable
10	1.8%	Remainder/Composite Plastic	Other

As shown in **Exhibit 2**, about 60 percent of the overall Marin County waste stream can be classified as divertible, potentially divertible, or compostable.

Exhibit 2. Overall Diversion Assessment



4.1.1 SB 343 Considerations

SB 343 prohibits the use of the chasing arrows recycling symbol on packaging unless the material is considered to be recyclable in at least 60 percent of California recycling programs as determined through a waste characterization study conducted by CalRecycle. The 2024 preliminary findings of this study identify the percent of California's population with collection access for each material type. A majority of the ZWM material categories classified as divertible align with the findings of CalRecycle's SB 343 waste study.

Materials that are not recyclable countywide are detailed below:

- Aseptic / Gable top containers are classified as potentially divertible in ZWM's study. CalRecycle's *SB 343 Revised Preliminary Findings Report* found that 72 – 74 percent of California's population has access to recycling collection programs accepting Aseptic / Gable top containers.

Aseptic / Gable top containers will continue to be sold in California with the chasing arrows symbol on their packaging and marketed for recycling under SB 343. A complete list of material types and associated recycling accessibility rates can be found in **Appendix B.** The highlighted grey material categories are determined to be captured in less than 60 percent of California recycling programs.

The information provided above reflects the category list of materials designated recyclable in the SB 343 Final Findings Report released April 4, 2025.

4.2 COMMERCIAL MSW

As shown in Exhibit 3, Food Waste, Other Materials, and Plastic were the dominant material classes found in Marin County's commercial waste stream. The largest contributors to the Food Waste category were "Not Donatable – Non-meat" (10.4 percent) and "Inedible Food" (9.2 percent). The Other Material category is largely comprised of "Mixed Residue" (16.6 percent). Nonrecyclable plastic film made up half (7.3 percent) of the plastics found in the waste stream.

Exhibit 3. Commercial MSW Composition

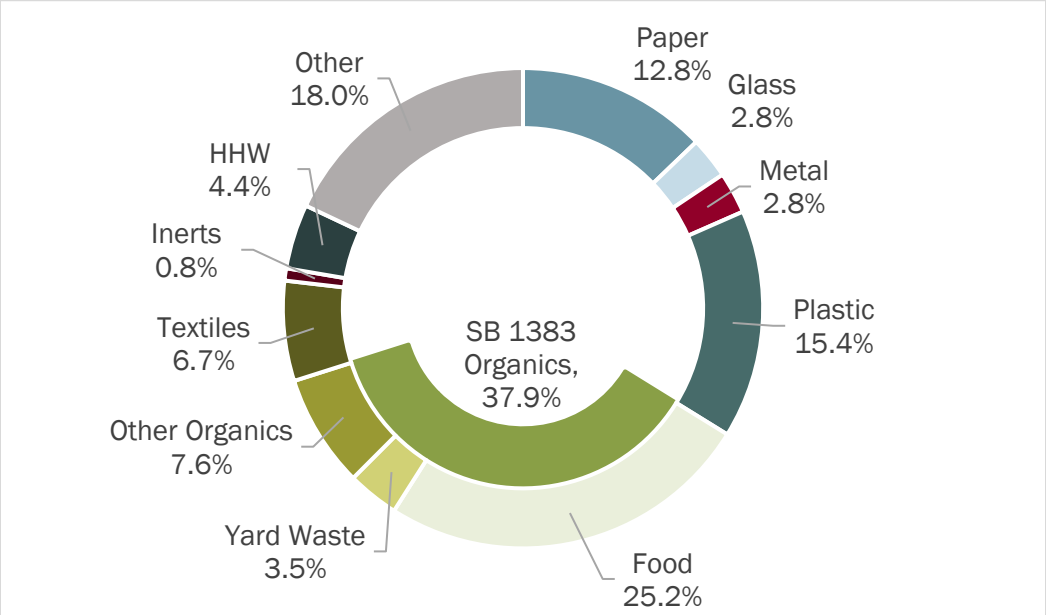


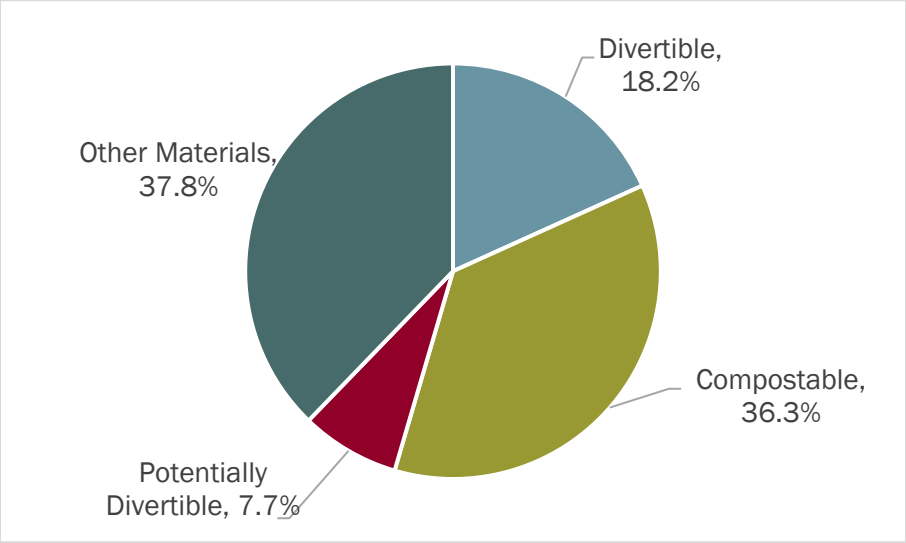
Table 7 identifies the top ten material types found in the County's commercial waste stream.

Table 7. Top Ten Commercial Material Compositions

Rank	Composition	Material Type	Diversion Classification
1	16.6%	Mixed Residue/Other	Other Material
2	10.4%	Not Donatable – Non-meat	Compostable
3	9.2%	Inedible Food	Compostable
4	7.3%	Nonrecyclable Film	Other Material
5	6.8%	Other Compostable Paper	Compostable
6	4.0%	Cloth and Clothing	Potentially Divertible
7	4.0%	Mixed Paper	Divertible
8	4.0%	Paper/Fiber Food Service Ware	Other Material
9	2.9%	Potentially Donatable – Vegetative (Perishable/Fresh)	Compostable
10	2.1%	Leaves and Grass	Compostable

As shown in **Exhibit 4**, about 62 percent of the commercial Marin County waste stream can be classified as divertible, potentially divertible, or compostable.

Exhibit 4. Commercial Diversion Assessment



4.3 MULTI-FAMILY MSW

As shown in **Exhibit 5**, Food Waste, Other Materials, and Plastic were the dominant material classes found in Marin County's multi-family residential waste stream. The largest contributors to the Food Waste category were "Not Donatable – Non-meat" (11.7 percent) and "Inedible Food" (6.1 percent). The Other Material category is largely comprised of "Mixed Residue" (21.7 percent). Nonrecyclable plastic film made up just over half (7.3 percent) of the plastics found in the waste stream.

Exhibit 5. Multi-Family MSW Composition

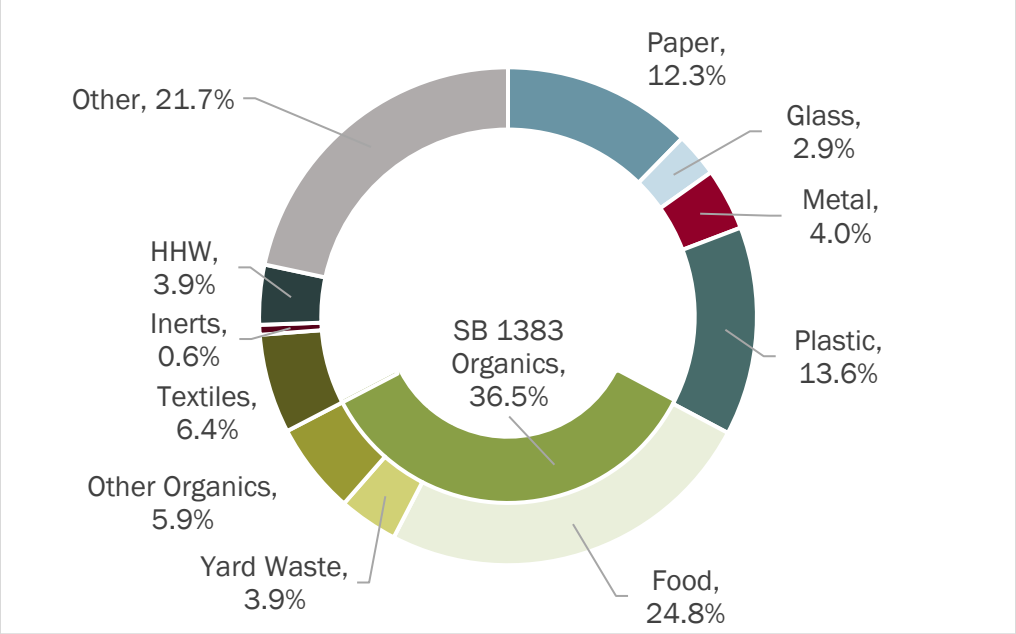


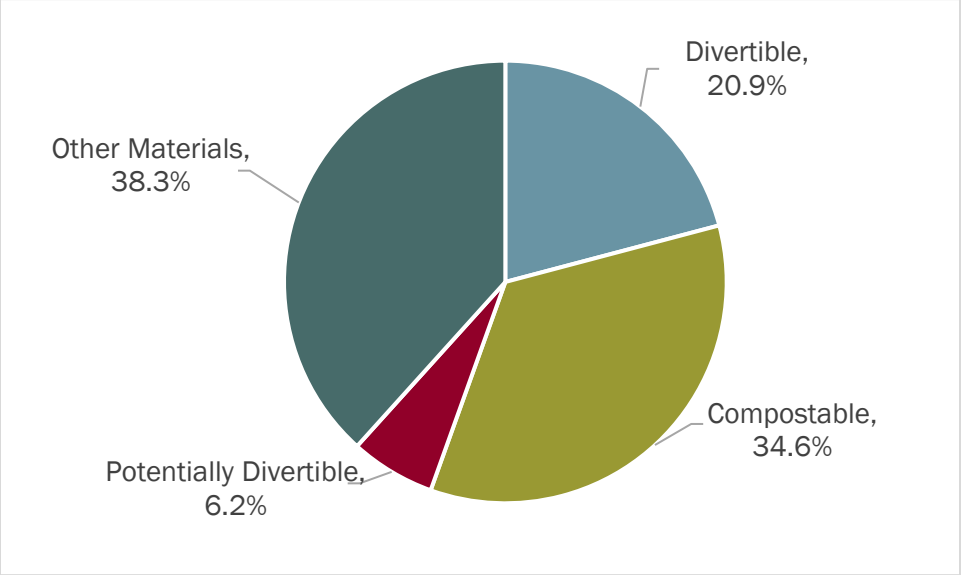
Table 8 identifies the top ten material types found in the County's multi-family residential waste stream.

Table 8. Top Ten Multi-Family Material Compositions

Rank	Composition	Material Type	Diversion Classification
1	21.7%	Mixed Residue/Other	Other Material
2	11.7%	Not Donatable – Non-meat	Compostable
3	6.1%	Inedible Food	Compostable
4	5.3%	Other Compostable Paper	Compostable
5	5.1%	Mixed Paper	Divertible
6	5.1%	Nonrecyclable Film	Other Material
7	3.2%	Cloth and Clothing	Potentially Divertible
8	2.9%	Paper/Fiber Food Service Ware	Other Material
9	2.9%	Not Donatable – Meat	Compostable
10	2.9%	Leaves and Grass	Compostable

As shown in **Exhibit 6**, about 62 percent of the Marin County multi-family waste stream can be classified as divertible, potentially divertible, or compostable.

Exhibit 6. Multi-Family Diversion Assessment



4.4 SINGLE-FAMILY RESIDENTIAL MSW

As shown in **Exhibit 7**, Other Materials, Food Waste, and Plastic were the dominant material classes found in Marin County's single-family residential waste stream. The Other Material category is largely comprised of "Mixed Residue" (25.6 percent). The largest contributors to the Food Waste category

were “Not Donatable – Non-meat” (9.1 percent) and “Inedible Food” (7.9 percent). Nonrecyclable plastic film made up half (7.3 percent) of the plastics found in the waste stream.

Exhibit 7. Residential MSW Composition

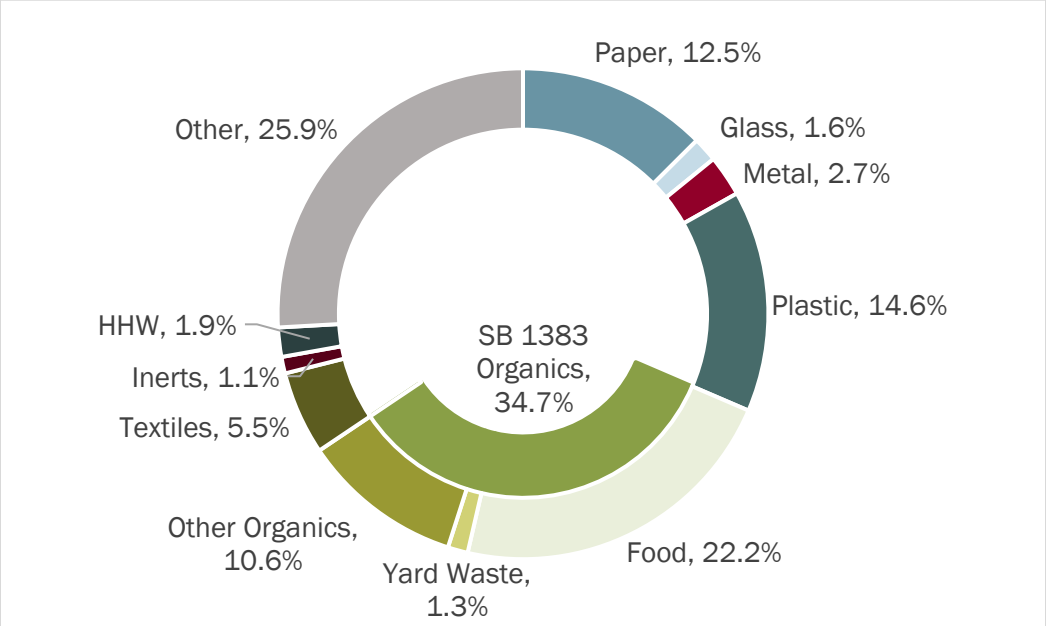


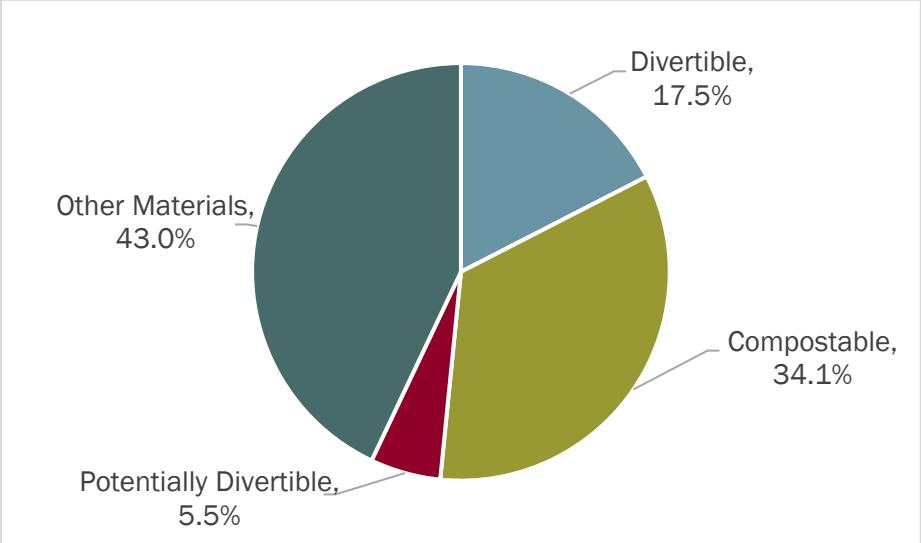
Table 9 identifies the top ten material types found in the County’s single-family residential waste stream.

Table 9. Top Ten Single-Family Material Compositions

Rank	Composition	Material Type	Diversion Classification
1	25.6%	Mixed Residue/Other	Other Material
2	9.1%	Not Donatable – Non-meat	Compostable
3	8.0%	Other Compostable Paper	Compostable
4	7.9%	Inedible Food	Compostable
5	7.3%	Nonrecyclable Film	Other Material
6	5.4%	Mixed Paper	Divertible
7	2.5%	Paper/Fiber Food Service Ware	Other Material
8	2.2%	Other Textiles	Other Material
9	2.1%	Cloth and Clothing	Potentially Divertible
10	2.0%	Remainder/Composite Plastic	Other Material

As shown in **Exhibit 8**, about 57 percent of the Marin County single-family waste stream can be classified as divertible, potentially divertible, or compostable.

Exhibit 8. Single-Family Diversion Assessment



4.5 JURISDICTIONAL ASSESSMENT

The compositions of the samples for each jurisdiction, including Unincorporated Marin County (Unincorporated) were calculated by dividing each material component's weight by the weight of the entire sample. The samples sorted for each jurisdiction were then averaged and the percentages are displayed in **Exhibit 9.**

It's important to note that the design did not encompass every jurisdiction in Marin County. The results presented below should be interpreted with discretion regarding specific jurisdictions. While the results provide valuable insights into the targeted locations, they may not hold true for each jurisdiction within the county due to the parameters of this study. Additionally, due to relative waste generation, only one sample for Fairfax was collected.

Exhibit 9. Jurisdiction MSW Composition

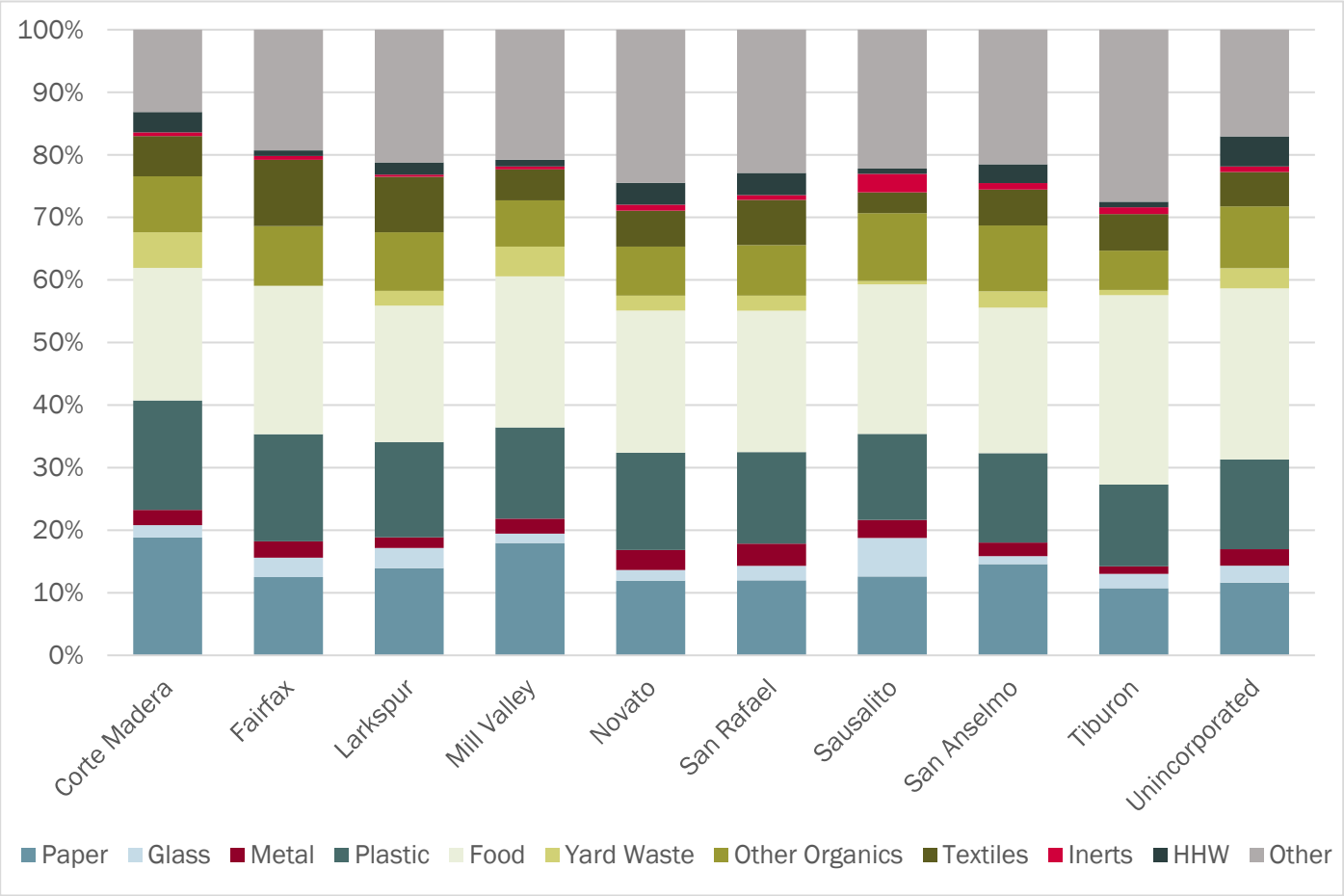
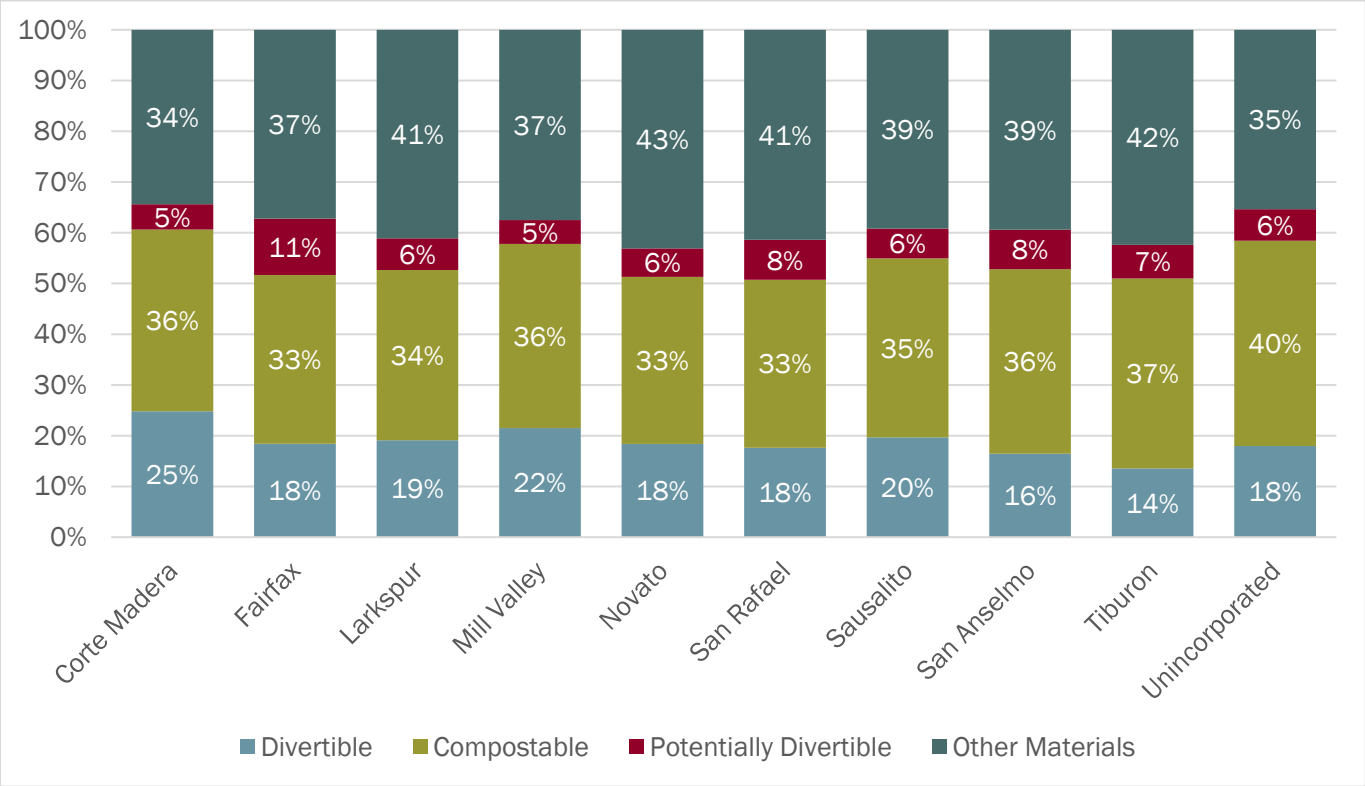


Exhibit 10 displays the divertibility of the collected material for each jurisdiction.

Exhibit 10. Jurisdiction Diversion Assessment



5.0 VISUAL CHARACTERIZATION

A visual waste characterization was conducted from March 10 – 14, 2025 at the Marin Resource Recovery Center (MRRC). The original scope of work for the ZWM waste characterization study planned for the visual characterization to take place at Redwood Landfill in Novato to capture the material hauled directly to landfills for disposal outside of the five franchised haulers. WM expressed concerns about safety hazards on the landfill face and declined to include the visual audits as a part of the broader waste characterization study conducted onsite.

The visual characterization of self-hauled material is an important component to fully understand waste generation and disposal in Marin County, as these materials are not captured in the hand-sort process.

Self-haul loads are typically bulky materials and waste from construction and demolition, and landscaping projects that 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. **Figure 3** shows an example of a sample included in the visual waste characterization at MRRC.

Figure 3. Example of C&D visual sample.

5.1 RESULTS

Roll-off containers and self-hauled loads were visually characterized into the 38 material types listed in the visual data sheet **Appendix F.** A total of 58 waste loads that originated in the county were visually characterized at MRRC. **Table 11** displays the number of samples included in the study from each jurisdiction. Due to the location of the facility and nature of self-haul loads, not every jurisdiction was captured in the visual characterization.

Table 10. Selected Visual Samples

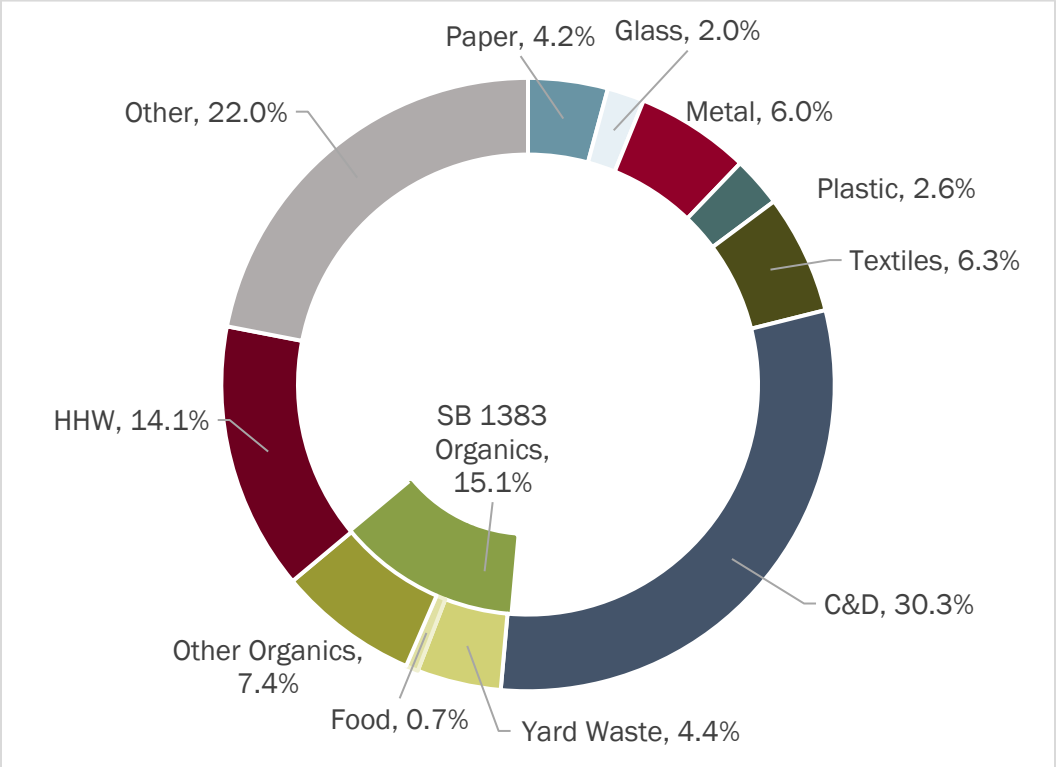
Jurisdiction	Samples
Belvedere	1
Corte Madera	1
Mill Valley	6
Ross	1
San Anselmo	1
San Rafael	39
Sausalito	3
Tiburon	1
Unincorporated	5
Total	**58**

5.2 OVERALL

It should be noted that the material sampled at MRRC goes through a sorting process to recover recyclable material; therefore, the overall composition listed in **Exhibits 11 - 14** does not reflect the composition of the material sent directly to the landfill. **Exhibit 11** displays the material composition of the 58 selected samples. **Appendix H** displays the detailed compositions for the 38 detailed categories.

The composition for each material type was assigned a volumetric percentage of the total sample load in the field. This percentage was multiplied by the total sample volume to identify the approximate cubic yards of each material type. Utilizing the EPA's Volume-to-Weight Conversion Factors[1] the approximate weight of each material type was calculated. The total weight per material type is calculated and represented as a percentage.

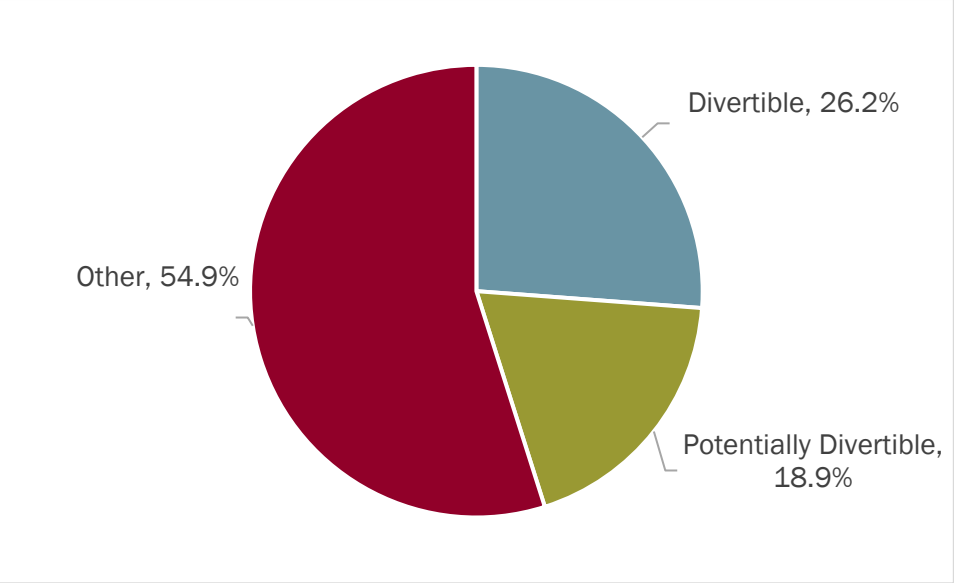
Exhibit 11. Overall Self-Haul Composition



[1] EPA, (2016). Volume-to-Weight Conversion Factors U.S. Environmental Protection Agency Office of Resource Conservation and Recovery (April, 2016). Retrieved from: https://www.epa.gov/sites/default/files/2016-04/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fnl.pdf

Exhibit 12 displays the percent of material captured by MRRC before the remainder is sent to the landfill. Of the sampled material, it is estimated that roughly 26 percent of the material is diverted for recycling or composting before the remainder is sent to landfill. For the MRRC visual characterization, potentially divertible refers to material MRRC would have been able to capture for recycling or composting processes had the material entered the facility clean and unmixed with other materials. Of the visually sampled material, a total of 74 percent of the material was sent to the landfill. **Appendix I** displays the detailed material diversion classifications.

Exhibit 12. Self-Haul Diversion Assessment



5.3 JURISDICTIONAL ASSESSMENT

Exhibit 13 displays the composition for the selected samples from each jurisdiction. For many of the selected jurisdictions, five or fewer samples were selected. Therefore, due to the limited number of samples collected from certain jurisdictions, the data presented should be interpreted as indicative rather than conclusive. These results provide directional insights but may not fully represent the waste composition trends across all areas. Refer to **Table 10** for sample size per jurisdiction.

Exhibit 13. Self-Haul Composition by Jurisdiction

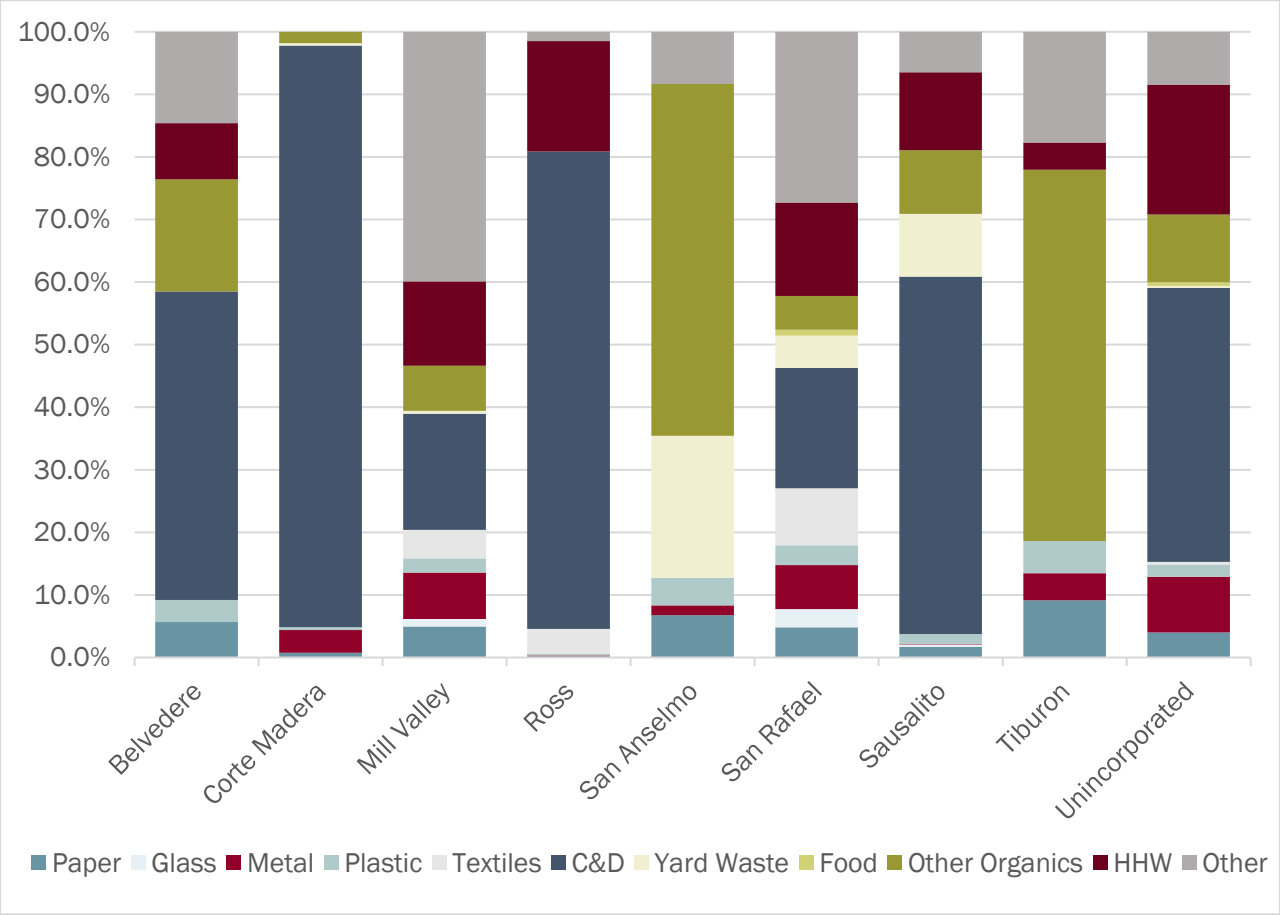
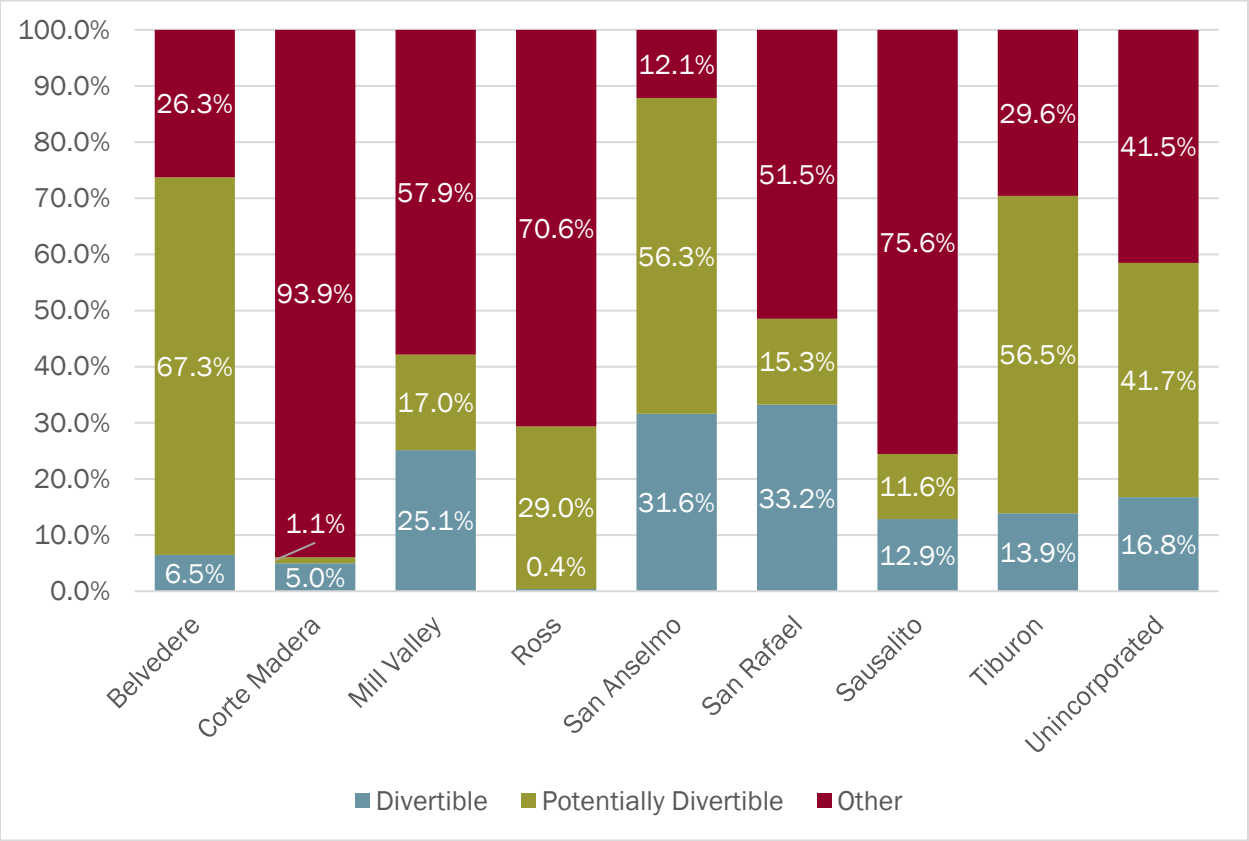


Exhibit 14 displays the percent of divertible material per jurisdiction. It should be noted that MRRC sorts and recovers material from received loads before sending the remainder to the landfill. The diversion assessment below identifies the rough estimate of material diverted before being sent to the landfill. The potentially divertible category in this case represents the percent of material that could have been diverted had the material been clean and unmixed when it entered the MRRC.

Exhibit 14. Self-Haul Jurisdiction Diversion Assessment



5.4 HAULER-REPORTED BULKY ITEM DATA & CONSIDERATIONS

Bulky items offer unique challenges for waste management specialists. Four of the five local waste haulers (Bay Cities Refuse, Marin Sanitary Service, Mill Valley Refuse, and Recology) in Marin County offer bulky item collections and pickups within their service areas. Tamalpais Community Service District hosts bi-annual events at which residents can bring extra waste and bulky items. Hauler-reported bulky item data was **provided separately** and was not included in SCS' analysis of self-haul loads at the MRRC. This hauler-reported data on bulky item collection was included following a recommendation from the ZWM Local Task Force. The data is intended to provide additional context that extends beyond the range of information collected in this study. It may be similar in composition to visually characterized materials; however, we recommend that this information not be included with the visual sampling data provided in **Sections 5.0–5.3**.

Haulers provided varying measurements of data collected on bulky item pickups. Most haulers classify "Extra Pickups" as bulky item collections, creating uncertainty in the dataset as to which items are truly bulky or oversized. Additionally, the weights and item numbers of oversized diverted items were occasionally estimated or not provided at all. Considering the variable data from each hauler, SCS has synthesized each hauler's 2024 reported bulky item data into a table for comparison purposes. This highlights an area for recommended data standardization among hauler reports and provides insight into subjects that could help ZWM further understand the total waste profile of the County.

Topics for consideration when analyzing the bulky waste data summary included in **Table 11**:

- Bulky item definitions vary between haulers (Extra MSW pickups vs. true bulky item collection)
- Type of item collected (ex., Furniture, white goods, C&D, etc.)
- Estimation of item weights and volumes for some provided hauler data
- Bulky disposal methods (landfill or recycling)
- Percentage of total waste stream

Table 11 represents ZWM's bulky item data provided.

Table 11. Hauler-Reported Bulky Item Data

Hauler	2024 Total Bulky Tonnage	2024 Bulky Item Count
Bay Cities Refuse	26.2	N/A
Marin Sanitary Service	123.4	2808
Mill Valley Refuse	189.6*	3945
Recology	295.1**	1678***
Tamalpais Community Service	31.9	N/A
Total	666.2	8431

* Estimated item weights
** Specifically reported as MSW tonnage
*** Weight of diverted items not available

6.0 RECOMMENDATIONS

Based on the material sorted in the field SCS recommends the following.

- General Recommendations:
    - Focus on Commercial sector education since that has the greatest opportunity for improvement.
    - Increase the commercial awareness of hazardous materials and the opportunities for recycling/diversion.
    - Promote textile reuse and recycling programs in the area. The Responsible Textile Recovery Act of 2024 (CA SB 707) will require the diversion of textiles beginning July 1, 2028.
    - Confirm recycling processing for cartons, gable-top containers, and LDPE #4 plastics before SB 343 compliance dates.
    - Educate residents and junk haulers on the importance of separating their self-haul loads for disposal. This will help reduce the amount of recoverable material sent to landfills.
    - Create guidelines and/or a template for Marin County haulers to track bulky item data more cohesively.
- SB 1383 Focus Areas:
    - Focus outreach and education programs on food scrap collection for all sectors. A large proportion of sorted green waste material was non-donatable and inedible food scraps.
    - An increased public awareness of compostable/food-soiled paper and fiber service ware diversion would capture large amounts of green waste material.
    - Overall, a large percentage (35 percent) of the waste stream is compostable. It's recommended that ZWM confirms the capacity for this material at local composting facilities and Food Recovery Organizations.
    - Implement and expand food recovery efforts within the county. The commercial sector showed that 4.1 percent of the waste stream was potentially donatable food, 2.9 percent of which was vegetative produce. Food Recovery Organizations prefer these nutritionally dense donations.
- Future Study Recommendations:

- Conduct visual characterizations at Redwood Landfill to understand the material generated within the county that is not hauled to the landfill by franchised haulers. This will help complete the picture of disposal within the county.

Appendix A

Material Categories

		DESCRIPTION
PAPER	Uncoated Corrugated Cardboard	Paper laminate usually composed of three layers. The center wavy layer is sandwiched between the two outer layers. It does not have any coating on the inside or outside. This type does not include chipboard boxes such as cereal and tissue boxes.
	Newspaper	Newspapers/Newspaper Inserts: means paper used in newspapers and all items made from newsprint.
	White Ledger	White Ledger means uncolored bond, rag, or stationary grade paper. It may have colored ink on it. When the paper is torn, the fibers are white. Examples include white photocopy, white laser print, and letter paper.
	Mixed Paper	Paper that is recyclable and generally NOT composted.
	Aseptic Cartons / Gable-top Cartons	Bleached poly-coated paperboard containers or paper containers with a foil liner of various sizes and shapes that contain shelf-stable food products. Aseptic containers may include a plastic pour spout as part of the container.
	Paper/Fiber Food Service Ware	Items used to store and/or convey food that could have used a reusable alternative. This does NOT include fiber containers in grocery stores used to package berries or mushrooms. Lined and unlined.
	Remainder / Composite Paper	Items made mostly of paper but combined with large amounts of other materials. These are items that do not fit into any other categories and are not generally compostable or recyclable. Example?
GLASS	CRV Glass Bottles and Containers	CRV Glass Bottles and Containers means any color (clear, brown, green, etc.) glass beverage and food containers with a California Redemption Value (CRV) label. Examples include whole or broken soda bottles and fruit juice bottles.
	Non-CRV Glass Bottles and Containers	Non-CRV Glass Bottles and Containers) means any color (clear, brown, green, etc.) glass containers that do not have a CRV label.
	Other Glass	Glass not defined above.
METAL	Tin/Steel Cans	Rigid containers made mainly of steel, both CRV and non-CRV containers. These items will stick to a magnet and may be tin-coated. This subtype is used to store food, beverages, paint, and a variety of other household and consumer products.
	Aluminum Cans – CRV	Aluminum Cans – CRV means any food or beverage container that is made mainly of aluminum and are marked as CRV containers. Examples include most aluminum soda or beer cans. This type does not include bimetal containers with steel sides and aluminum ends.
	Aluminum Cans – Non-CRV	Aluminum Cans – non-CRV means any food or beverage container that is made mainly of aluminum and is not marked as CRV containers.

METAL	**Other Ferrous**	Iron or steel that is magnetic or any stainless-steel item. This type does not include tin/steel cans.
	Other Non-Ferrous	Metal item, other than aluminum cans, that is not stainless steel and that is not magnetic. These items may be made of aluminum, copper, brass, bronze, lead, zinc, or other metals.
	Remainder/Composite Metal	**Remainder/Composite Metal** means metal that cannot be put in any other type. This type includes items made mostly of metal but combined with other materials and items made of ferrous and non-ferrous metals. This includes products whose weight is derived significantly from the metal portion of their construction.
PLASTIC	**PETE Bottles – CRV**	**PETE Bottles – CRV** means clear or colored PETE (polyethylene terephthalate) bottles that are marked as CRV containers. When marked for identification, they bear the number 1 in the center of the triangular recycling symbol and may also bear the letters PETE or PET. The color is usually clear, transparent green, or amber. A PETE bottle usually has a small dot left from the manufacturing process, not a seam. It does not turn white when bent. Examples of narrow and wide-neck bottles include: soft drink, water, beer, and liquor bottles.
	PETE Bottles – Non-CRV	**PETE Bottles – Non-CRV)** means clear or colored PETE (polyethylene terephthalate) bottles that are not marked as CRV containers. When marked for identification, they bear the number 1 in the center of the triangular recycling symbol and may also bear the letters PETE or PET. The color is usually clear, transparent green, or amber. A PETE bottle usually has a small dot left from the manufacturing process, not a seam. It does not turn white when bent. Examples of narrow and wide-neck bottles include: cooking oil, pastry jars, food jars, and aspirin bottles.
	PET Thermaforms	**Other PETE Containers – Non-CRV** means PETE (polyethylene terephthalate) containers (other than bottles) that are not marked as CRV containers. When marked for identification, they bear the number 1 in the center of the triangular recycling symbol and may also bear the letters PETE or PET. A PETE container usually has a small dot left from the manufacturing process, not a seam. **Other PETE Containers** means PETE (polyethylene terephthalate) containers other than bottles. When marked for identification, they bear the number 1 in the center of the triangular recycling symbol and may also bear the letters PETE or PET. A PETE container usually has a small dot left from the manufacturing process, not a seam.
	HDPE #2 Colored Containers	**HDPE Colored Containers –** This plastic is a solid color, preventing light from passing through it. When marked for identification, it bears the number 2 in the triangular recycling symbol. Examples include narrow and wide-mouth food containers, such as for coffee and coffee creamer, detergent bottles, some shampoo and hair-care bottles, empty motor oil, empty antifreeze, and other empty vehicle and equipment fluid bottles.
	HDPE #2 Neutral Containers	**Other HDPE Containers –** When marked for identification, it bear the number 2 in the triangular recycling symbol.
	PP #5 Containers	Bottles, jars, containers, lids, and other packaging labeled with PP (5), both with and without the CRV symbol.

PLASTIC	**Other Plastic Containers (3, 4, 6, 7)**	Bottles, jars, containers, lids, and other packaging that are made of types of plastic other than PET (1), HDPE (2), or PP (5). Items may be made of vinyl, LDPE, PVC, PS, or other plastic. They may bear the number 3, 4, 6, or 7 in the triangular recycling symbol, or may bear no recycling triangular symbol.
	Bioplastics	Labeled compostable plastics.
	Recyclable Plastic Film	**Recyclable Plastic Film** means clean plastic film that can be recycled. Examples include; clean plastic bags sold for use as trash bags for residential and commercial use. It also includes plastic shopping bags used to contain merchandise for transport from the place of purchase and given out by the store with the purchase, such as grocery shopping bags, other merchandise bags, or dry-cleaning plastic bags intended for one-time use. This material also includes non-bag commercial and industrial packaging film such as shrink-wrap, mattress bags, furniture wrap, and film bubble wrap.
	Nonrecyclable Film	**Nonrecyclable Film** means all other plastic film that does not fit into any other type. Examples include other types of plastic bags (sandwich bags, zipper-recloseable bags, newspaper bags, produce bags, frozen vegetable bags, bread bags), food wrappers such as candy-bar wrappers, mailing pouches, bank bags, X-ray film, metalized film (wine containers and balloons), plastic food wrap, and contaminated recyclable plastic film.
	Durable Plastic Items	Plastic items other than containers or film plastic that are made to last for more than one use. These items may bear the numbers 1 through 7 in the triangular recycling symbol.
	Expanded Polystyrene Packaging	**Expanded Polystyrene Packaging** means packaging items made of expanded polystyrene. Does not include nonpackaging items such as insulation boards.
	Remainder / Composite Plastic	**Remainder/Composite Plastic** means plastic that cannot be put in any other type. This type includes items made mostly of plastic but combined with other materials.
Food	**Potentially Donatable – Vegetative (Perishable / Fresh)**	**Food - Potentially Donatable – Vegetative (Perishable/Fresh)** means uncooked or cooked fresh vegetables, fruits, and fungi that are in a whole state (i.e., not partially consumed) and are unmixed with non-vegetative food types. Items that are excluded from this category include condiments, non-perishable packaged fruits, and vegetables such as: packaged dried fruits and vegetables, canned fruits and vegetables, and nuts. Unpackaged vegetables, fruits, and fungifound in a whole state in residenti al loads are excluded from this category and should be sorted as “not donatable – non-meat”. However, unpackaged vegetables fruits, and fungi found in a whole state in commercial loads are included in this category.
	Potentially Donatable - Eggs, Dairy, and Dairy Alternatives	**Food - Potentially Donatable - Eggs, Dairy, and Dairy Alternatives** means egg or dairy products and dairy alternatives that are in a whole state, unmixed with other food types, and in the original unopened package. Items may be refrigerated or shelf stable.

FOOD	Potentially Donatable – Meat	**Food - Potentially Donatable – Meat** means any uncooked or cooked meat (beef, poultry, pork, lamb) or fish product that is in a whole state, is unmixed with other food types, and is in the original unopened package. This includes meat alternatives.
	Potentially Donatable - Cooked / Baked / Prepared Perishable Items	**Food - Potentially Donatable - Cooked/Baked/Prepared Perishable Items** means items that are in a whole state but could have multiple food types mixed together as a part of cooking or preparation and are still in their original unopened package.
	Potentially Donatable - Packaged Non-perishable	**Food - Potentially Donatable - Packaged Non-perishable** means shelf-stable foods that are in a whole state and are in the original unopened package. Includes foods contained in aseptic or retort packages and other products that do not require refrigeration until after opening. Also includes non-perishable beverages such as sodas. Excluded from this category are shelf-stable meats, shelf-stable dairy products, and shelf-stable dairy alternatives.
	Not Donatable – Meat	**Food - Not Donatable – Meat** means any food that is predominantly meat or fish, but the product is not in a whole state (i.e., partially consumed), or the product's packaging has been opened, or the product was not contained in any packaging at all.
	Not Donatable – Non-meat	**Food - Not Donatable – Non-meat** means any food that is not predominantly meat or fish, not in a whole state, or not in its original unopened package. Includes any non-meat partially consumed foods, any non-meat foods in a package that has been opened – as best as can be determined, any non-meat foods that are not in their original packaging. Item may contain small amounts of meat or fish. This category also includes fruit and vegetable peels, skins, trimmings, and or any parts of fruits and vegetables not included in the inedible category. In addition, this category also includes any indistinguishable food.
	Inedible	**Food - Inedible** means items typically not consumed by people in the United States. Categories of inedible parts include bones, pits, shells, banana peels, coffee grounds and tea leaves, rinds, woody stems/tops and vines, and corn cobs/husks. Note that small amounts of edible material associated with the inedible material are permitted to be included as "inedible." Excludes other fruit and vegetable peels, skins, trimmings, cores, and ends not included in the previous categories (e.g., potato peels, carrot tops, apple cores, broccoli stalks, cucumber ends).
Yard Waste	Leaves and Grass	**Leaves and Grass** means plant material, except woody material, from any public or private landscape. This type does not include woody material or material from agricultural sources.
	Chips, Prunings, Trimmings	**Prunings and Trimmings** means woody plant material up to 4 inches in diameter from any public or private landscape. This type does not include stumps, tree trunks, or material from agricultural sources.
	Branches, Stumps	**Branches and Stumps** means woody plant material, branches, and stumps that exceed 4 inches in diameter, from any public or private landscape.
	Clean Dimensional Lumber	**Clean Dimensional Lumber** means unpainted new or demolition dimensional lumber. May contain nails or other trace contaminants.

OTHER ORGANICS		Clean Engineered Wood	**Clean Engineered Wood** means unpainted new or demolition scrap from sheeted goods. May contain nails or other trace contaminants.
		Pallets & Crates	**Clean Pallets and Crates** means unpainted wood pallets, crates, and packaging made of lumber/engineered wood. May contain nails or other trace contaminants.
		Other Recyclable Wood	**Other Recyclable Wood** means recyclable wood is not included in any other category. This may include scrap from the production of prefabricated wood products that have not been treated with paint, stain, or other chemical finish. Wood material should not be contaminated with another material (e.g. tar). May contain nails or other trace contaminants.
		Treated Wood Waste	Any wood with paint or preservative treatment including particleboard, chipboard, OSB (oriented strand board), MDF (medium-density fiberboard) and masonite.
	Manure		**Manures** means manure and soiled bedding materials from large domestic, farm, or ranch animals. Does not include feces from small household pets such as dogs and cats.
	Compostable Paper / Fiber		**Other Compostable Paper** means items that do not fit any other category, are made of paper, can be composted, and are generally not recycled. May be contaminated with food, moisture, or wax
	Remainder / Composite Green Waste		**Remainder/Composite Green Waste** means green waste material that cannot be put in any other type.
Textiles/ Other	Cloth and Clothing		Textiles means items made of thread, yarn, fabric, or cloth. Examples include clothes, fabric trimmings, draperies, and all natural and synthetic cloth fibers. This type does not include cloth-covered furniture, mattresses, leather shoes, leather bags, or leather belts.
	Shoes, Purses, Belts		Textiles with cloth and leather components
	Carpet		**Carpet** means flooring applications consisting of various natural or synthetic fibers bonded to some type of backing material. This type does not include carpet padding or woven rugs with no backing.
	Other		Items not fitting into other textile categories
C&D	Concrete		**Concrete** means a hard material made from sand, gravel, aggregate, cement mix, and water. Examples include pieces of building foundations, concrete paving, and cinder blocks.
	Asphalt		**Asphalt Paving** means a black or brown, tar-like material mixed with aggregate used as a paving material. **Asphalt Roofing** means composite shingles and other roofing material made with asphalt. Examples include asphalt shingles and attached roofing tar and tar paper.
	Clean Gypsum Board		**Clean Gypsum Board** means interior wall covering made of a sheet of gypsum sandwiched between paper layers that are not painted. Examples include used or unused, broken or whole sheets of sheetrock, drywall, gypsum board, plasterboard, gypboard, gyproc, and wallboard.
	Rock, Soil, and Fines		**Rock, Soil and Fines** means rock pieces of any size and soil, dirt, and other matter. Examples include rock, stones, and sand, clay, soil, and other fines. This type also includes non-hazardous contaminated soil.

	Remainder/ Composite Construction and Demolition	**Remainder/Composite Construction and Demolition** means construction and demolition material that cannot be put in any other type. This type may include items from different categories combined, which would be very hard to separate. Examples include brick, ceramics, tiles, toilets, sinks, dried paint not attached to other materials, and fiberglass insulation. This type may also include demolition debris that is a mixture of items such as plate glass, wood, tiles, painted gypsum board, and aluminum scrap. **Carpet Padding** means materials used under carpet to provide insulation and padding. Examples include plastic carpet padding, foam carpet padding, felt carpet padding, and other carpet padding.
HHW	**Paint**	**Paint** means containers with paint in them. Examples include latex paint and oil based paint. This type does not include fine art paint, dried paint, empty paint cans, or empty aerosol containers. ARCHITECTURAL PAINT ONLY.
	Vehicle and Equipment Fluids	**Vehicle and Equipment Fluids** means containers with fluids used in vehicles or engines, except used oil. Examples include used antifreeze and brake fluid. This type does not include empty vehicles and equipment fluid containers.
	Used Oil and Oil Filters	**Used Oil and Oil Filters** means the same as defined in Health and Safety Code section 25250.1(a). Examples include spent lubricating oil such as crankcase and transmission oil, gear oil, and hydraulic oil. Oil filters means metal oil filters used in motor vehicles and other engines, which contain a residue of used oil.
	Large Rechargeable Batteries	**Large Rechargeable Batteries** means large rechargeable or lead acid batteries. Examples include car batteries and other vehicle batteries. **Count or estimate batteries & photograph.**
	Household Batteries	**Household Batteries** means non-rechargeable batteries typically used in consumer devices. Examples include alkaline, carbon/zinc batteries, watches, and hearing aid batteries.
	Universal Waste Electronic Devices (UWED)	**Universal Waste Electronic Devices (UWED)** means electronics with large circuitry that is computer-related. Examples include processors, mice, keyboards, disk drives, printers, modems, fax machines, stereos, VCRs, microwaves, DVD players (screens smaller than 4 inches), radios, audio/visual equipment, personal digital assistants (PDAs), cell phones, phone systems, phone answering machines, computer games and other electronic toys, portable CD players, camcorders, and digital cameras.
HHW	**Covered Electronic Waste**	**Covered Electronic Waste** means electronic devices that the Department of Toxic Substances Control has determined to be hazardous when discarded as part of the Electronic Waste Recycling Act (2003), including video display devices. Examples include televisions, computer monitors, and other items containing a cathode ray tube (CRT). Also includes LCD desktop monitors, laptops with LCD displays, LCD televisions, and portable DVD players with screens that are 4 inches or larger (measured diagonally).
	Fluorescent Tubes	**Fluorescent Tubes** means fluorescent light tubes and compact fluorescent bulbs (CFL).
	Propane Gas Cylinders	**Propane Gas Cylinders** means small, compact, and portable propane gas cylinders used to power devices such as camping stoves, tailgating grills, heaters, and more. Generally, these cylinders are not refillable.

	Pharmaceuticals	**Pharmaceuticals** means both prescription and over-the-counter medications and supplements in all forms. Does not include containers for these items, except for tubes for creams and ointments and other containers that cannot be easily separated from the product they contain.
	Sharps	Sharps and needles.
	All Other HHW	**Other HHW** means other hazardous wastes not described elsewhere in these definitions.
Special Waste	**Bulky Items**	**Bulky Items** means large, hard-to-handle items that are not defined separately, including furniture and other large items. Examples include all sizes and types of furniture and base components for beds.
	Tires	**Tires** means vehicle tires. Examples include tires from trucks, automobiles, motorcycles, heavy equipment, and bicycles.
	Vapes	**Vapes** - Disposable and rechargeable. COUNT
	Remainder/ Composite Special Waste	**Remainder/Composite Special Waste** means special waste that cannot be put in any other type. Examples include asbestos-containing materials, such as certain types of pipe insulation and floor tiles, auto fluff, auto-bodies, trucks, trailers, truck cabs, untreated medical waste, and artificial fireplace logs. **Ash means** a residue from the combustion of any solid or liquid material. Examples include ash from structure fires, fireplaces, incinerators, biomass facilities, waste-to-energy facilities, and barbecues. **Untreated medical waste** means waste from a generator or a health care related facility which has not been treated and may serve to transmit an infectious disease. Includes the following: pathological waste, liquid or semi-liquid blood, contaminated items, and microbiological waste.
	Mixed Residue/Other	**Mixed Residue** means material that cannot be put in any other type in the other categories. This type includes mixed residue that cannot be further sorted. Examples include clumping kitty litter and residual material from a materials recovery facility or other sorting process that cannot be put in any of the previous remainder/composite types, cigarette butts, diapers, feminine hygiene products, wood products (popsicle sticks and toothpicks), sawdust, animal feces, and painted or stained wood. **Treated Medical Waste** means medical waste that has been processed in order to change its physical, chemical, or biological character or composition, or to remove or reduce its harmful properties or characteristics, as defined in Section 25123.5 of the California Health and Safety Code. **Diapers & Sanitary Products** means single-use items that are made from a combination of natural and/or synthetic fibers.

Appendix B – SB 343 Material List

SB 343 Material Type and Form Name	Percent of Population with Collection Access	ZWM Characterization Study Category	Recycled County - Wide
Uncoated Corrugated Cardboard/ Old Corrugated Containers (OCC)	99%	Uncoated Corrugated Cardboard	Yes
White Office-Type Paper and Mail	99%	White Ledger	Yes
Tin/Steel Cans, Lids - Non-CRV	99%	Tin/Steel Cans	Yes
Tin/Steel Beverage Containers - CRV	99%	Tin/Steel Cans	Yes
PET Clear Bottles - Non-CRV	99%	PETE Bottles – Non-CRV	Yes
PET Clear Beverage Bottles - CRV	99%	PETE Bottles – CRV	Yes
HDPE Clear Beverage Bottles - Non-CRV	99%	HDPE #2 Neutral Containers	Yes
HDPE Clear Beverage Bottles - CRV	99%	HDPE #2 Neutral Containers	Yes
Folded Paper Containers and Other Paperboard Packaging	98%	Mixed Paper	Yes
Newspapers/ Newspaper Inserts	97%	Newspaper	Yes
Magazines and Catalogs	97%	Mixed Paper	Yes
Paper Bags and Kraft Paper	97%	Mixed Paper	Yes
Other Mixed Paper	97%	Mixed Paper	Yes
Glass Containers - Clear/ Flint - Non-CRV	97%	Non-CRV Glass Bottles and Containers	Yes
Glass Beverage Containers - Clear/Flint - CRV	97%	CRV Glass Bottles and Containers	Yes
Glass Containers - Green/ Emerald - Non-CRV	97%	Non-CRV Glass Bottles and Containers	Yes
Glass Beverage Containers - Green/Emerald –CRV	97%	CRV Glass Bottles and Containers	Yes
Glass Containers - Brown/ Amber - Non-CRV	97%	Non-CRV Glass Bottles and Containers	Yes
Glass Beverage Containers - Brown/Amber - CRV	97%	CRV Glass Bottles and Containers	Yes
Glass Containers - Other Colors - Non-CRV	97%	Non-CRV Glass Bottles and Containers	Yes
Glass Beverage Containers - Other Colors - CRV	97%	CRV Glass Bottles and Containers	Yes
Aluminum Cans and Lids - Non-CRV	96%	Aluminum Cans - Non-CRV	Yes
Aluminum Beverage Cans - CRV	96%	Aluminum Cans - CRV	Yes
Aluminum Bottles - Non-CRV	96%	Aluminum Cans - Non-CRV	Yes
Aluminum Bottles for Beverages - CRV	96%	Aluminum Cans - CRV	Yes
PET Pigmented Bottles - Non-CRV	96%	PETE Bottles – Non-CRV	Yes
PET Pigmented Beverage Bottles - CRV	96%	PETE Bottles – CRV	Yes

Clean Molded Paper Fiber	94%	Mixed Paper	Yes
Other HDPE Clear Single-Use Rigids	92%	HDPE #2 Neutral Containers	Yes
HDPE Pigmented Single-Use Rigids	92%	HDPE #2 Colored Containers	Yes
Other PET Clear Single-Use Rigids	91%	Durable Plastic Items	Yes
Other PET Pigmented Single-Use Rigids	90%	Durable Plastic Items	Yes
PET Thermoformed Clamshells and Containers	88%	PET Thermaforms	Yes
HDPE Buckets: Food	88%	HDPE #2 Colored Containers	Yes
HDPE Buckets: Non-Food	88%	HDPE #2 Colored Containers	Yes
Other HDPE Multi-Use Rigids	88%	HDPE #2 Colored Containers	Yes
PET Multi-Use Rigids	85%	Durable Plastic Items	Yes
Aluminum Foil (>3 mm), Molded Containers	82%	Other Non-Ferrous	Yes
Aluminum Foil (<3 mm), Sheets	81%	Other Non-Ferrous	Yes
Other Non-Ferrous Metal	78%	Other Non-Ferrous	Yes
PP Clear Single-Use Rigids	78%	PP #5 Containers	Yes
PP Pigmented Single-Use Rigids	78%	PP #5 Containers	Yes
Other Ferrous Metal	77%	Other Ferrous	Yes
LDPE Clear Beverage Bottles	75%	Other Plastic Containers (3, 4, 6, 7)	Yes
Gable-top Cartons - Non-CRV	74%	Aseptic/Gable-top Cartons	No
Gable-top Cartons/ Aseptics - CRV	73%	Aseptic/Gable-top Cartons	No
LDPE Clear Single-Use Rigids	73%	Other Plastic Containers (3, 4, 6, 7)	Yes
LDPE Pigmented Single-Use Rigids	73%	Other Plastic Containers (3, 4, 6, 7)	Yes
Aseptic Containers - Non-CRV	72%	Aseptic/Gable-top Cartons	No
Tin/Steel or Aluminum Aerosol Containers	71%	Tin/Steel Cans	Yes
LDPE Multi-Use	70%	Other Plastic Containers (3, 4, 6, 7)	Yes
PVC Single-Use Rigids	52%	Durable Plastic Items	
PVC Multi-Use	52%	Durable Plastic Items	
Mixed Plastic Multi-Use	51%	Remainder / Composite Plastic	
Remainder/ Composite Glass	46%	Other Glass	
Fines and Residuals	46%	Mixed Residue	
Green Material, Clean Wood, and Food Scraps	40%	Organics	
PS Thermoformed Clamshells and Containers	40%	Expanded Polystyrene Packaging	
PS Densified: Multi-Use	40%	Expanded Polystyrene Packaging	
Remainder/ Composite Fiber	38%	Remainder/Composite Paper	
Other (7) Single-Use Rigids	38%	Other Plastic Containers (3, 4, 6, 7)	
Unknown Plastic Type or Mixture of Multiple Plastic Resins (Single-Use)	38%	Remainder / Composite Plastic	

Plant Material Food Service Ware	37%	Compostable Paper / Fiber	
PS Densified: Single-Use Food Service Ware	37%	Expanded Polystyrene Packaging	
Other Multi-Material Laminate Single-Use	35%	Remainder/Composite Paper	
PS Expanded - Packaging	35%	Expanded Polystyrene Packaging	
PS Expanded - Food Service Ware	35%	Expanded Polystyrene Packaging	
Mailing Pouches & Shipping Envelopes	29%	Remainder/Composite Paper	
Films - Plastic Non-Bags - Agricultural and Commercial	29%	Recyclable Plastic Film	
Films - Plastic Non-Bags - Other Film	29%	Nonrecyclable Film	
Films - Plastic Bags - Designed for Reuse	28%	Recyclable Plastic Film	
Films - Plastic Bags - Designed for Disposal	28%	Nonrecyclable Film	
Plastic Wine Bladders	26%	Recyclable Plastic Film	
Films - Plastic Bags - Compostable	23%	Bioplastics	
Textiles and Clothing	19%	Textiles/Other	
Single-Use Ceramic Packaging	7%	Mixed Residue	
Treated Wood	7%	Treated Wood Waste	

Appendix C – Overall Hand Sort Material Compositions

Material Components	Composition	*+ / -
PAPER		
Uncoated Corrugated Cardboard	1.7%	0.4%
Newspaper	0.3%	0.1%
White Ledger	0.8%	0.3%
Mixed Paper	4.7%	0.5%
Aseptic Cartons / Gable-top	0.5%	0.1%
Paper/Fiber Food Service Ware	3.2%	0.4%
Remainder/Composite Paper	1.5%	0.3%
GLASS		
CRV Glass Bottles and Containers	1.0%	0.3%
Non-CRV Glass Bottles and	0.8%	0.2%
Other Glass	0.5%	0.2%
METAL		
Steel/Tin Cans	0.4%	0.1%
Aluminum Cans – CRV	0.4%	0.0%
Aluminum Cans – Non-CRV	<0.1%	0.0%
Other Ferrous	1.2%	0.4%
Other Non-Ferrous	0.7%	0.1%
Remainder/Composite Metal	0.3%	0.2%
PLASTIC		
PETE Bottles – CRV	0.5%	0.1%
PETE Bottles – Non-CRV	0.3%	0.0%
PET Thermaforms	0.9%	0.1%
HDPE #2 Colored Containers	0.3%	0.1%
HDPE #2 Neutral Containers	0.2%	0.0%
PP #5 Containers	1.1%	0.1%
Other Plastic Containers (3, 4, 6, 7)	0.4%	0.1%
Bioplastics	0.1%	0.1%
Recyclable Plastic Film	0.8%	0.3%
Nonrecyclable Film	7.0%	0.6%
Durable Plastic Items	1.1%	0.4%
Expanded Polystyrene	0.4%	0.1%
Remainder/Composite Plastic	1.8%	0.4%
FOOD		
Potentially Donatable – **Vegetative**	2.1%	0.7%
Potentially Donatable - **Eggs**,	0.2%	0.1%
Potentially Donatable – **Meat**	0.2%	0.1%
Potentially Donatable -	0.5%	0.2%
Potentially Donatable - **Packaged**	0.9%	0.2%
Not Donatable – **Meat**	1.8%	0.4%
Not Donatable – **Non-meat**	10.0%	1.1%
Inedible	8.3%	1.1%

Material Components	Composition	*+ / -
YARD WASTE		
Leaves and Grass	1.5%	0.8%
Chips, Prunings, Trimmings	0.7%	0.5%
Branches, Stumps	0.4%	0.4%
Other Recycleable Wood	<0.1%	0.0%
OTHER ORGANICS		
Manure	<0.1%	0.0%
Other Compostable Paper	7.1%	0.6%
Remainder/Composite Organic	0.2%	0.1%
Clean Dimensional Lumber	0.4%	0.2%
Clean Engineered Wood	0.7%	0.9%
Pallets & Crates	0.2%	0.3%
TEXTILES		
Cloth and Clothing	3.2%	1.1%
Shoes, Purses, Belts	0.6%	0.2%
Carpet	0.6%	0.4%
Other	1.8%	0.4%
INERTS		
Concrete	0.1%	0.1%
Asphalt	<0.1%	0.0%
Clean Gypsum Board	<0.1%	0.1%
Rock, Soil, and Fines	<0.1%	0.0%
Remainder/Composite Construction & Demolition	0.6%	0.2%
HAZARDOUS & E-WASTE		
Paint	0.2%	0.2%
Vehicle and Equipment Fluids	0.0%	N/A
Used Oil and Oil Filters	<0.1%	0.1%
Large Rechargeable Batteries	0.0%	N/A
Household Batteries	<0.1%	0.0%
Universal Waste Electronic Devices (UWED)	1.0%	0.4%
Covered Electronic Waste	0.1%	0.2%
Fluorescent Tubes	<0.1%	0.0%
Treated Wood Waste	1.3%	0.7%
Propane Gas Cylinders	<0.1%	0.0%
Pharmaceuticals	0.1%	0.0%
Sharps	<0.1%	0.0%
Vapes	<0.1%	0.0%
All Other HHW	0.4%	0.5%
RESIDUE/OTHER		
Bulky Items	0.6%	0.9%
Tires	0.1%	0.1%
Remainder/ Composite Special Waste	<0.1%	0.1%
Mixed Residue/Other	20.8%	2.1%

*If the confidence interval (+/-) is greater than the composition value, then the lower confidence limit should be interpreted as 0.0%

Appendix D – Commercial Hand Sort Material Compositions

Material Components	Composition	*+ / -
PAPER		
Uncoated Corrugated Cardboard	1.6%	0.6%
Newspaper	0.2%	0.1%
White Ledger	0.9%	0.5%
Mixed Paper	4.0%	0.9%
Aseptic Cartons / Gable-top	0.5%	0.1%
Paper/Fiber Food Service Ware	4.0%	0.6%
Remainder/Composite Paper	1.7%	0.5%
GLASS		
CRV Glass Bottles and Containers	1.4%	0.5%
Non-CRV Glass Bottles and	0.7%	0.3%
Other Glass	0.7%	0.3%
METAL		
Steel/Tin Cans	0.3%	0.1%
Aluminum Cans – CRV	0.4%	0.1%
Aluminum Cans – Non-CRV	<0.1%	0.0%
Other Ferrous	1.0%	0.5%
Other Non-Ferrous	0.8%	0.2%
Remainder/Composite Metal	0.3%	0.3%
PLASTIC		
PETE Bottles – CRV	0.6%	0.1%
PETE Bottles – Non-CRV	0.2%	0.1%
PET Thermaforms	0.8%	0.1%
HDPE #2 Colored Containers	0.3%	0.1%
HDPE #2 Neutral Containers	0.3%	0.1%
PP #5 Containers	1.1%	0.2%
Other Plastic Containers (3, 4, 6, 7)	0.4%	0.2%
Bioplastics	0.2%	0.1%
Recyclable Plastic Film	1.0%	0.6%
Nonrecyclable Film	7.3%	1.2%
Durable Plastic Items	1.5%	0.8%
Expanded Polystyrene	0.3%	0.1%
Remainder/Composite Plastic	1.5%	0.5%
FOOD		
Potentially Donatable – **Vegetative**	2.9%	1.5%
Potentially Donatable - **Eggs**,	<0.1%	0.1%
Potentially Donatable – **Meat**	<0.1%	0.1%
Potentially Donatable -	0.5%	0.3%
Potentially Donatable - **Packaged**	0.6%	0.2%
Not Donatable – **Meat**	1.5%	0.5%
Not Donatable – **Non-meat**	10.4%	1.6%
Inedible	9.2%	2.2%

Material Components	Composition	*+ / -
YARD WASTE		
Leaves and Grass	2.1%	1.2%
Chips, Prunings, Trimmings	0.8%	1.0%
Branches, Stumps	0.6%	0.7%
Other Recycleable Wood	<0.1%	0.0%
OTHER ORGANICS		
Manure	<0.1%	0.0%
Other Compostable Paper	6.8%	1.0%
Remainder/Composite Organic	0.1%	0.2%
Clean Dimensional Lumber	0.3%	0.2%
Clean Engineered Wood	<0.1%	N/A
Pallets & Crates	0.4%	0.6%
TEXTILES		
Cloth and Clothing	4.0%	2.1%
Shoes, Purses, Belts	0.4%	0.3%
Carpet	0.8%	0.7%
Other	1.4%	0.4%
INERTS		
Concrete	<0.1%	0.0%
Asphalt	0.0%	N/A
Clean Gypsum Board	0.2%	0.2%
Rock, Soil, and Fines	<0.1%	0.0%
Remainder/Composite Construction & Demolition	0.6%	0.4%
HAZARDOUS & E-WASTE		
Paint	0.3%	0.4%
Vehicle and Equipment Fluids	0.0%	N/A
Used Oil and Oil Filters	<0.1%	0.2%
Large Rechargeable Batteries	0.0%	N/A
Household Batteries	<0.1%	0.0%
Universal Waste Electronic Devices (UWED)	1.0%	0.7%
Covered Electronic Waste	0.3%	0.4%
Fluorescent Tubes	0.0%	N/A
Treated Wood Waste	1.6%	1.0%
Propane Gas Cylinders	<0.1%	0.0%
Pharmaceuticals	<0.1%	0.0%
Sharps	<0.1%	0.0%
Vapes	<0.1%	0.0%
All Other HHW	0.9%	1.0%
RESIDUE/OTHER		
Bulky Items	1.3%	2.0%
Tires	<0.1%	0.2%
Remainder/ Composite Special Waste	<0.1%	0.0%
Mixed Residue/Other	16.6%	2.8%

*If the confidence interval (+/-) is greater than the composition value, then the lower confidence limit should be interpreted as 0.0%

Appendix E – Multi-Family Hand Sort Material Compositions

Material Components	Composition	*+ / -
PAPER		
Uncoated Corrugated Cardboard	2.6%	1.4%
Newspaper	<0.1%	0.0%
White Ledger	0.6%	0.4%
Mixed Paper	5.1%	1.2%
Aseptic Cartons / Gable-top	0.3%	0.1%
Paper/Fiber Food Service Ware	2.9%	1.1%
Remainder/Composite Paper	0.7%	0.3%
GLASS		
CRV Glass Bottles and Containers	1.5%	0.6%
Non-CRV Glass Bottles and	1.0%	0.6%
Other Glass	0.4%	0.2%
METAL		
Steel/Tin Cans	0.4%	0.2%
Aluminum Cans – CRV	0.4%	0.1%
Aluminum Cans – Non-CRV	<0.1%	0.1%
Other Ferrous	2.1%	1.8%
Other Non-Ferrous	0.7%	0.3%
Remainder/Composite Metal	0.4%	0.4%
PLASTIC		
PETE Bottles – CRV	0.7%	0.2%
PETE Bottles – Non-CRV	0.3%	0.1%
PET Thermaforms	1.0%	0.5%
HDPE #2 Colored Containers	0.5%	0.6%
HDPE #2 Neutral Containers	0.3%	0.1%
PP #5 Containers	0.8%	0.2%
Other Plastic Containers (3, 4, 6, 7)	0.4%	0.2%
Bioplastics	<0.1%	0.0%
Recyclable Plastic Film	0.9%	0.2%
Nonrecyclable Film	5.1%	1.1%
Durable Plastic Items	0.5%	0.4%
Expanded Polystyrene	0.4%	0.1%
Remainder/Composite Plastic	2.7%	1.7%
FOOD		
Potentially Donatable – **Vegetative**	1.3%	0.7%
Potentially Donatable - **Eggs**,	0.2%	0.2%
Potentially Donatable – **Meat**	0.6%	0.9%
Potentially Donatable -	0.4%	0.3%
Potentially Donatable - **Packaged**	1.6%	0.8%
Not Donatable – **Meat**	2.9%	1.2%
Not Donatable – **Non-meat**	11.7%	3.0%
Inedible	6.1%	1.2%

Material Components	Composition	*+ / -
YARD WASTE		
Leaves and Grass	2.9%	4.7%
Chips, Prunings, Trimmings	0.9%	1.2%
Branches, Stumps	0.1%	0.1%
Other Recycleable Wood	<0.1%	0.0%
OTHER ORGANICS		
Manure	<0.1%	N/A
Other Compostable Paper	5.3%	1.0%
Remainder/Composite Organic	<0.1%	0.0%
Clean Dimensional Lumber	0.2%	0.2%
Clean Engineered Wood	0.3%	0.7%
Pallets & Crates	<0.1%	N/A
TEXTILES		
Cloth and Clothing	3.2%	1.7%
Shoes, Purses, Belts	0.7%	0.5%
Carpet	0.5%	0.7%
Other	2.1%	1.0%
INERTS		
Concrete	0.3%	0.6%
Asphalt	0.0%	N/A
Clean Gypsum Board	<0.1%	0.0%
Rock, Soil, and Fines	<0.1%	0.0%
Remainder/Composite Construction & Demolition	0.3%	0.2%
HAZARDOUS & E-WASTE		
Paint	<0.1%	0.1%
Vehicle and Equipment Fluids	0.0%	N/A
Used Oil and Oil Filters	0.0%	N/A
Large Rechargeable Batteries	0.0%	N/A
Household Batteries	0.2%	0.2%
Universal Waste Electronic Devices (UWED)	1.1%	1.0%
Covered Electronic Waste	0.1%	0.2%
Fluorescent Tubes	0.0%	N/A
Treated Wood Waste	1.9%	N/A
Propane Gas Cylinders	0.0%	N/A
Pharmaceuticals	0.4%	0.2%
Sharps	<0.1%	0.0%
Vapes	<0.1%	0.0%
All Other HHW	<0.1%	0.0%
RESIDUE/OTHER		
Bulky Items	0.0%	N/A
Tires	0.0%	N/A
Remainder/ Composite Special Waste	<0.1%	0.0%
Mixed Residue/Other	21.7%	3.2%

*If the confidence interval (+/-) is greater than the composition value, then the lower confidence limit should be interpreted as 0.0%

Appendix F – Residential Hand Sort Material Compositions

Material Components	Composition	*+ / -
PAPER		
Uncoated Corrugated Cardboard	1.5%	0.7%
Newspaper	0.4%	0.3%
White Ledger	0.6%	0.4%
Mixed Paper	5.4%	0.6%
Aseptic Cartons / Gable-top	0.6%	0.1%
Paper/Fiber Food Service Ware	2.5%	0.6%
Remainder/Composite Paper	1.5%	0.4%
GLASS		
CRV Glass Bottles and Containers	0.4%	0.2%
Non-CRV Glass Bottles and	0.8%	0.3%
Other Glass	0.4%	0.1%
METAL		
Steel/Tin Cans	0.5%	0.1%
Aluminum Cans – CRV	0.3%	0.1%
Aluminum Cans – Non-CRV	<0.1%	0.0%
Other Ferrous	1.1%	0.5%
Other Non-Ferrous	0.6%	0.1%
Remainder/Composite Metal	0.3%	0.2%
PLASTIC		
PETE Bottles – CRV	0.3%	0.1%
PETE Bottles – Non-CRV	0.3%	0.1%
PET Thermaforms	1.1%	0.1%
HDPE #2 Colored Containers	0.3%	0.1%
HDPE #2 Neutral Containers	0.1%	0.1%
PP #5 Containers	1.1%	0.2%
Other Plastic Containers (3, 4, 6, 7)	0.3%	0.1%
Bioplastics	<0.1%	0.1%
Recyclable Plastic Film	0.4%	0.1%
Nonrecyclable Film	7.3%	0.5%
Durable Plastic Items	0.7%	0.3%
Expanded Polystyrene	0.5%	0.2%
Remainder/Composite Plastic	2.0%	0.4%
FOOD		
Potentially Donatable – **Vegetative**	1.4%	0.5%
Potentially Donatable - **Eggs**,	0.2%	0.1%
Potentially Donatable – **Meat**	0.2%	0.1%
Potentially Donatable -	0.5%	0.3%
Potentially Donatable - **Packaged**	1.1%	0.2%
Not Donatable – **Meat**	1.8%	0.5%
Not Donatable – **Non-meat**	9.1%	1.6%
Inedible	7.9%	0.9%

Material Components	Composition	*+ / -
ORGANICS		
Leaves and Grass	0.3%	0.4%
Chips, Prunings, Trimmings	0.6%	0.6%
Branches, Stumps	0.4%	0.5%
Other Recycleable Wood	<0.1%	0.0%
OTHER ORGANICS		
Manure	<0.1%	0.1%
Other Compostable Paper	8.0%	0.8%
Remainder/Composite Organic	0.3%	0.2%
Clean Dimensional Lumber	0.6%	0.5%
Clean Engineered Wood	1.7%	2.3%
Pallets & Crates	<0.1%	N/A
TEXTILES		
Cloth and Clothing	2.1%	0.6%
Shoes, Purses, Belts	0.8%	0.3%
Carpet	0.5%	0.6%
Other	2.2%	0.8%
INERTS		
Concrete	0.3%	0.2%
Asphalt	<0.1%	0.1%
Clean Gypsum Board	0.0%	N/A
Rock, Soil, and Fines	<0.1%	0.0%
Remainder/Composite Construction & Demolition	0.7%	0.3%
HAZARDOUS & E-WASTE		
Paint	<0.1%	0.1%
Vehicle and Equipment Fluids	0.0%	N/A
Used Oil and Oil Filters	0.0%	N/A
Large Rechargeable Batteries	0.0%	N/A
Household Batteries	<0.1%	0.0%
Universal Waste Electronic Devices (UWED)	1.0%	0.5%
Covered Electronic Waste	0.0%	N/A
Fluorescent Tubes	<0.1%	0.0%
Treated Wood Waste	0.6%	0.3%
Propane Gas Cylinders	<0.1%	0.0%
Pharmaceuticals	0.2%	0.1%
Sharps	<0.1%	0.0%
Vapes	<0.1%	0.0%
All Other HHW	<0.1%	0.0%
RESIDUE/OTHER		
Bulky Items	0.0%	N/A
Tires	0.2%	0.3%
Remainder/ Composite Special Waste	0.1%	0.1%
Mixed Residue/Other	25.6%	3.2%

*If the confidence interval (+/-) is greater than the composition value, then the lower confidence limit should be interpreted as 0.0%

Appendix G – Visual Data Form

Marin 2024 Waste Characterization Study - Visual Sample												
Date:		**M**	**T**	**W**	**Th**	**F**						**Time:**
Sample #:		**Sector:** (circle one)		**RES**		**COM**						**Est. Incoming Vol:**
Jurisdiction of Origin:		**General Categorization[1]:** (circle one)			**C&D**	**RW**	**CW**	**BI**	**LD**			
Notes:												

MATERIAL TYPE		Proportion to Weight			
		Est. % of Load	Notes	EPA density (lb./CY)	Weight
Paper	Cardboard				
	Mixed Paper				
	Other Paper				
Glass	Glass Bottles & Containers				
	Other Glass				
Metal	Aluminum Cans				
	Steel/Tin Cans				
	Non-Ferrous Metals				
	Ferrous Metals				
	Other Metal				
Plastic	Plastic Bottles & Containers				
	Plastic Film				
	Rigid Plastics				
	Expanded Polystyrene				
	Other Plastics				
Organics	Yard Debris/Green Waste				
	Food				
	Clean Dimensional Lumber				
	Clean Engineered Wood				
	Clean Pallets and Crates				
	Manure				
	Other Compostable				
C&D	Concrete				
	Asphalt				
	Gypsum Board/Drywall				
	Rock, Soil, and Fines				
	Other C&D				
HHW	Paint				
	Used Oil and Filters				
	Batteries				
	Electronic Waste				
	Other HHW				
Other	Carpet/Carpet Padding				
	Textiles				
	Treated/Painted Wood				
	Bulky Items				
	Tires				
	Residual/Bagged Waste				

Appendix H – Overall Self-Haul Material Compositions

Material Components	Composition
PAPER	
Cardboard	1.3%
Mixed Paper	2.0%
Other Paper	0.9%
GLASS	
Glass Bottles & Containers	0.5%
Other Glass	1.5%
METAL	
Aluminum Cans	0.1%
Steel/Tin Cans	0.1%
Non-Ferrous Metals	3.1%
Ferrous Metals	2.6%
Other Metal	0.1%
PLASTIC	
Plastic Bottles & Containers	0.2%
Plastic Film	1.3%
Rigid Plastics	0.7%
Expanded Polystyrene	0.1%
Other Plastics	0.3%
FOOD	
Food	0.7%
YARD WASTE	
Yard Debris/Green Waste	4.4%
OTHER ORGANICS	
Clean Dimensional Lumber	3.4%
Clean Engineered Wood	1.0%
Clean Pallets and Crates	2.4%
Manure	0.0%
Other Compostable	0.6%

Material Components	Composition
TEXTILES	
Carpet/Carpet Padding	4.4%
Textiles	1.9%
C&D	
Concrete	2.8%
Asphalt	0.0%
Gypsum Board/Drywall	2.4%
Rock, Soil, and Fines	1.9%
Other C&D	23.3%
HAZARDOUS & E-WASTE	
Paint	0.0%
Used Oil and Filters	0.0%
Batteries	0.0%
Electronic Waste	1.5%
Treated/Painted Wood	12.4%
Other HHW	0.2%
RESIDUE/OTHER	
Bulky Items	9.0%
Tires	0.4%
Residual/Bagged Waste	12.5%

Composition based on visual characterization of 58 waste loads

Appendix I - Self-Haul Material Diversion Classifications

Material Components		Divertible	Potentially Divertible	Other
Paper	Cardboard	X		
	Mixed Paper	X		
	Other Paper			X
Glass	Glass Bottles & Containers	X		
	Other Glass			X
Metal	Aluminum Cans	X		
	Steel/Tin Cans	X		
	Non-Ferrous Metals	X		
	Ferrous Metals	X		
	Other Metal			X
Plastic	Plastic Bottles & Containers	X		
	Plastic Film			X
	Rigid Plastics	X		
	Expanded Polystyrene			X
	Other Plastics			X
Organics	Yard Debris/Green Waste	X		
	Food		X	
	Clean Dimensional Lumber		X	
	Clean Engineered Wood		X	
	Clean Pallets and Crates		X	
	Manure		X	
	Other Compostable			X
Textiles	Carpet/Carpet Padding		X	
	Textiles			X
C&D	Concrete		X	
	Asphalt		X	
	Gypsum Board/Drywall		X	
	Rock, Soil, and Fines		X	
	Other C&D			X
HHW	Paint	X		
	Used Oil and Filters	X		
	Batteries	X		
	Electronic Waste	X		
	Treated/Painted Wood			X
	Other HHW			X
Other	Bulky Items	X		
	Tires	X		
	Residual/Bagged Waste			X