MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

AB 939 LOCAL TASK FORCE

May 8, 2025
1600 Los Gamos Drive, Suite 211
San Rafael, CA 94903
10:00AM – 11:15AM

AGENDA

Call to Order.

1) Open Time for Public Comment (Information) (5 min)
2) Approval of the March 6, 2025 Local Task Force (LTF) Minutes (Action) (2 min)
3) Legislative Update (Information) (5 min)
4) Results of the County-Wide Waste Characterization Study (Information) (20 min)
5) Presentation from Olyns: Reverse Vending Machines in Marin County (Information) (20 min)
6) Final Report from Reusables at the Farmers Market Pilot Program (Information) (10 min)
7) Subcommittee Reports (Information) (10 min)
8) Recommend Agenda Items for the Next LTF Meeting (Information) (2 min)
9) Adjournment.

The full agenda including staff reports can be viewed at:
https://zerowastemarin.org/agenda-minutes/





All public meetings and events sponsored or conducted by the County of Marin are held in accessible sites. Requests for accommodations may be requested by calling (415) 473-4381 (voice) (415) 473-3232 (TTY) at least **four work days** in advance of the event. Copies of documents are available in alternative formats, upon written request.

Contact the County's Waste Management Division at 415-473-6647 for more information.

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere

Corte Madera

County of Marin

Fairfax

Larkspur

Mill Valley

Novato

Ross

San Anselmo

San Rafael

Sausalito

Tiburon

Date: May 8, 2025

To: Local Task Force Members

From: Casey Fritz, Senior Planner

Re: Open Time for Public Comment

The public is welcome to address the Local Task Force at this time on matters not on the agenda that are within its jurisdiction.

Please be advised that pursuant to Government Code Section 54954.2, the LTF is not permitted to discuss or act on any matter not on the agenda unless it determines that an emergency exists, or that there is a need to take immediate action which arose following posting of the agenda.

Recommendation

Receive public comment. Information only.

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere

Corte Madera

County of Marin

Fairfax

Larkspur

Mill Valley

Novato

Ross

San Anselmo

San Rafael

Sausalito

Tiburon

Date: May 8, 2025

To: Local Task Force Members

From: Casey Fritz, Senior Planner

Re: Approval of the LTF Minutes

Please find attached the Draft Action Minutes from the last meeting on March 6, 2025.

Recommendation

Adopt a motion to receive and file the Action Minutes.

Board Chair: Please confirm the vote on this item by reading the following items out loud after the vote.

Motion:	
Second:	
Ayes:	
Noes:	
Abstentions:	

2
MARIN COUNTY HAZARDOUS AND SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

LTF Meeting Minutes
Thursday, March 6, 2025
10:00 am – 11:00 am
In Person: 1600 Los Gamos Drive, Suite 211 San Rafael, CA

LTF BOARD MEMBERS PRESENT
Special Districts
Chair, Dale McDonald, Las Gallinas Valley Sanitary District
Kevin McElroy, Bolinas Public Utilities District

Environmental Organizations
Susan Hopp, Plastic Free Marin
Kyle LaRue, Conservation Corps North Bay

Haulers
Greg Christie, Bay Cities Refuse
Justin Wilcock, Marin Sanitary Service
Celia Furber, Recology Sonoma-Marin

Public
Matt McCarron, Novato
Jinesse Reynolds, Ross Valley
Deirdre Fennessy, Unincorporated
Chuck Hornbrook, Southern Marin

STAFF PRESENT
Casey Fritz (Staff)
Andrew Shelton (Staff)
Meilin Tsao (Staff)
Justin Newsome (Admin)

Call to Order Regular Meeting
Regular session was called to order at 10:02 a.m.

1. Open Time for Public Comment (Items not on the agenda)
No public comment.

2. JPA Board Meeting Minutes from January 9, 2025

Motion to approve the LTF Meeting Minutes from January 9, 2025.

First Chuck Hornbrook, Southern Marin
Second Jinesse Reynolds, Ross Valley

Vote Count

Dale McDonald: Aye	Justin Wilcock: Aye
Garrett Toy: Absent	Celia Furber: Aye
Kevin McElroy: Abstain	Matt McCarron: Aye
Susan Hopp: Aye	Jinesse Reynolds: Aye
Kyle LaRue: Aye	Deirdre Fennessy: Aye
Greg Christie: Aye	Chuck Hornbrook: Aye

Ayes: 10 Noes: 0 Absent: 1 Abstain: 1

Motion passed

3. Choose LFT Co-Chair
Motion to approve the Co-Chair: Nominee: Celia Furber
First Justin Wilcock, Marin Sanitary Service
Second Matt McCarron, Novato

Vote Count

Dale McDonald: Aye	Justin Wilcock: Aye
Garrett Toy: Absent	Celia Furber: Aye
Kevin McElroy: Aye	Matt McCarron: Aye
Susan Hopp: Aye	Jinesse Reynolds: Aye
Kyle LaRue: Aye	Deirdre Fennessy: Aye
Greg Christie: Aye	Chuck Hornbrook: Absent

Ayes: 10 Noes: 0 Absent: 2 Abstain: 0

Motion passed

4. Legislative Update & Preliminary Waste Characterization Data (Information)
ZMW Staff Meilin Tsao shared an update on Zoe Heller's appointment and information on where those in support can express their opinions to the Senate Rules Committee. SB1013 (passed in 2022) enabled wine and distilled spirits into the CA CRV program (1/4/2024), the labeling requirements for wine and distilled spirit containers that are apart of the program are mandated to meet the same labeling requirements as other CRV packages beginning July 1, 2025. Additionally, the $100 fine for not establishing recycling has been removed and now requires a partnership for compliance or complying separately. More grant programs have been created through SB1013.

Olyns has is going to roll out their 7 reverse vending machines for recycling in Marin County once they receive the notice to proceed from CalRecycle, the locations are tentative. ZWM Staff Tsao gave a preliminary update on the Waste Characterization Study (WCS), sharing some of the percentage breakdowns for the 80 separate 200lbs samples. Additionally, percentage breakdowns of the diversion assessment were provided.

The LTF had a Q&A held regarding the history of WCS.

5. Update on ZWM Outreach Programs (Information)

ZWM Staff Casey Fritz gave an update that the Bring Your Own Cup campaign has begun outreach to businesses across the county. Businesses around Sausalito were visited and saw counter cards and window decals that were visible. The Thursday Famers Marker reusables pilot program is ending March 27th, ZWM staff will attend the weeks prior with Sparkl for surveys of the attendees. The County Print Shop provided the option to print on 100% recyclable paper for the Countywide post card, the paper supply was delayed which is causing a slight delay but should be disbursed soon.

ZWM staff attended the Marin Renters Assoc. meeting to where information on SB1383 was provided to landlords along with Marin Sanitary. The food dehydrations bins have been deployed (65 of the 125 available) to those that quality with additional inquiries for community members that are interested. They have also been added to some public schools. The Repair Fair was well received with 64 items successfully repaired in 3 hours and 135lbs of clothing donated. The next events will be at the Novato City Hall and in Mill Valley.

The LTF had an expressed gratitude for the work of the ZWM staff and requested a list of the volunteers for the Repair Fair.

6. Report out from Subcommittees

Infrastructure and End Market shared their visit to Strategic Materials (glass recycling in Fairfield, CA), where they receive 25 trucks per day with 90% beverage containers. Discussions were had about communication struggles with the public, EU v. USA glass recycling, and solar panel useable lifespans. Additionally, the subcommittee is planning a visit to a landfill.

The LTF followed with a brief discussion.

Compliance and Regulations did not have an update.

Outreach and Education shared concerns from property owners for contamination and pests regarding proper placement of items in bins. Printable materials for bins would be deemed helpful for residents. Additionally, a suggestion for more tabling to assist with community Q&A.

The LTF followed with a brief discussion.

Construction and Demolition shared a recap from the California Product Stewardship presentation: survey percentage date, educational steps taken, and outreach mediums. Additionally, a meeting was held regarding the education on reusables campaign model. A shift in focus will happen regarding education in deconstruction and recommendations will follow.

7. **Recommend Agenda Items for the Next LTF Meeting**
   Staff noted the recommendation of agenda item in previous agenda discussion.

   Information Only

   Board Comments or Action Items No Board comments
   Public Comments No public comments

8. **Adjournment**
   Chair McDonald adjourned the meeting at 11:13 a.m.

Board Chair: Please confirm the vote on this item by reading the following items out aloud after the vote.

Motion: _____ Second: _____

Ayes: _____

_____

Noes: _____

_____

Abstentions: _____

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere

Corte Madera

County of Marin

Fairfax

Larkspur

Mill Valley

Novato

Ross

San Anselmo

San Rafael

Sausalito

Tiburon

Date: May 8, 2025

To: Local Task Force Members

From: Meilin Tsao, Waste Management Specialist

Re: Legislative Update

Staff member Meilin Tsao, who leads legislative tracking for Zero Waste Marin, will provide an overview of legislative tracking and an update on current legislative priorities.

Recommendation

Information only; receive and file.

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere

Corte Madera

County of Marin

Fairfax

Larkspur

Mill Valley

Novato

Ross

San Anselmo

San Rafael

Sausalito

Tiburon

Date: May 8, 2025

To: Local Task Force Members

From: Meilin Tsao, Waste Management Specialist

Re: Results of the County-Wide Waste Characterization Study

In late 2024 and early 2025 Zero Waste Marin worked with SCS Engineers to conduct a waste characterization study of the landfill material at the Novato landfill site. The goal of this study was to determine how much divertable material is still going into landfill, and what categories of waste are being landfilled.

A nearly-final report with the study results is now available, and will be presented by Meilin Tsao. ZWM staff asks that the LTF submit any comments they might like included in the final version of this report, to be presented to the JPA Board.

Recommendation

Information only; receive and file.

Final
Zero Waste Marin
Waste Characterization Study Report

Zero Waste Marin
1600 Los Gamos, Suite 210
San Rafael, CA 94903
(415) 464-7491

SCS ENGINEERS

01224157.00 | April 30, 2025

4683 Chabot Drive, Suite 200
Pleasanton, CA 94588
925-426-0080

Table of Contents

Section Page

Exhibits

Figures

Tables

Appendices

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
Paper	12.6%	12.8%	12.3%	12.5%
Glass	2.3%	2.8%	2.9%	1.6%
Metal	2.9%	2.8%	4.0%	2.7%
Plastic	14.9%	15.4%	13.6%	14.6%
Food	23.9%	25.2%	24.8%	22.2%
Yard Waste	2.7%	3.5%	3.9%	1.3%
Other Organics	8.6%	7.6%	5.9%	10.6%
Textiles	6.2%	6.7%	6.4%	5.5%
Inerts	0.9%	0.8%	0.6%	1.1%
HHW	3.3%	4.4%	3.9%	1.9%
Other	21.6%	18.0%	21.7%	25.9%
Total	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.

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.

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

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.

Figure 1. Sample Collection

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**.

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

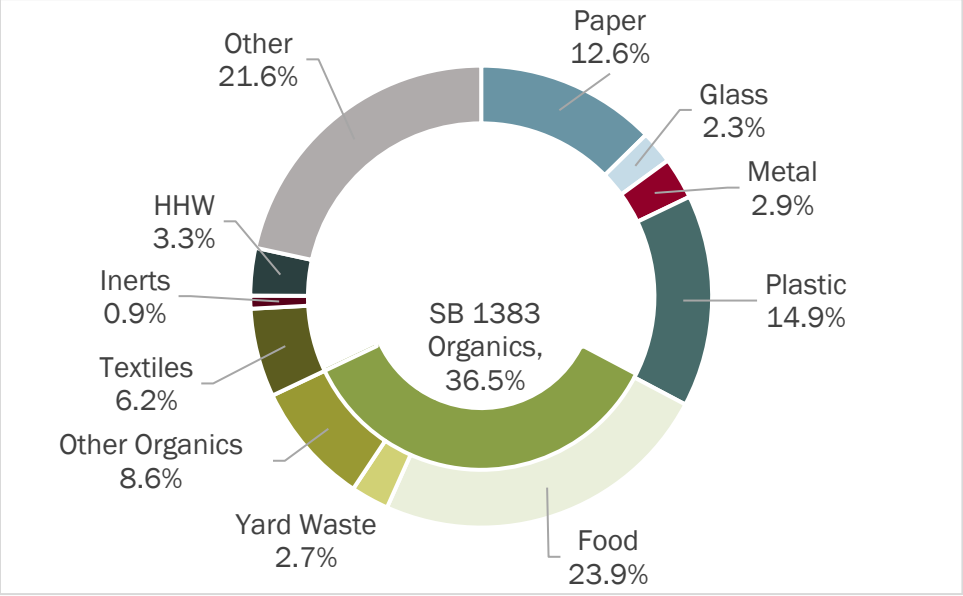


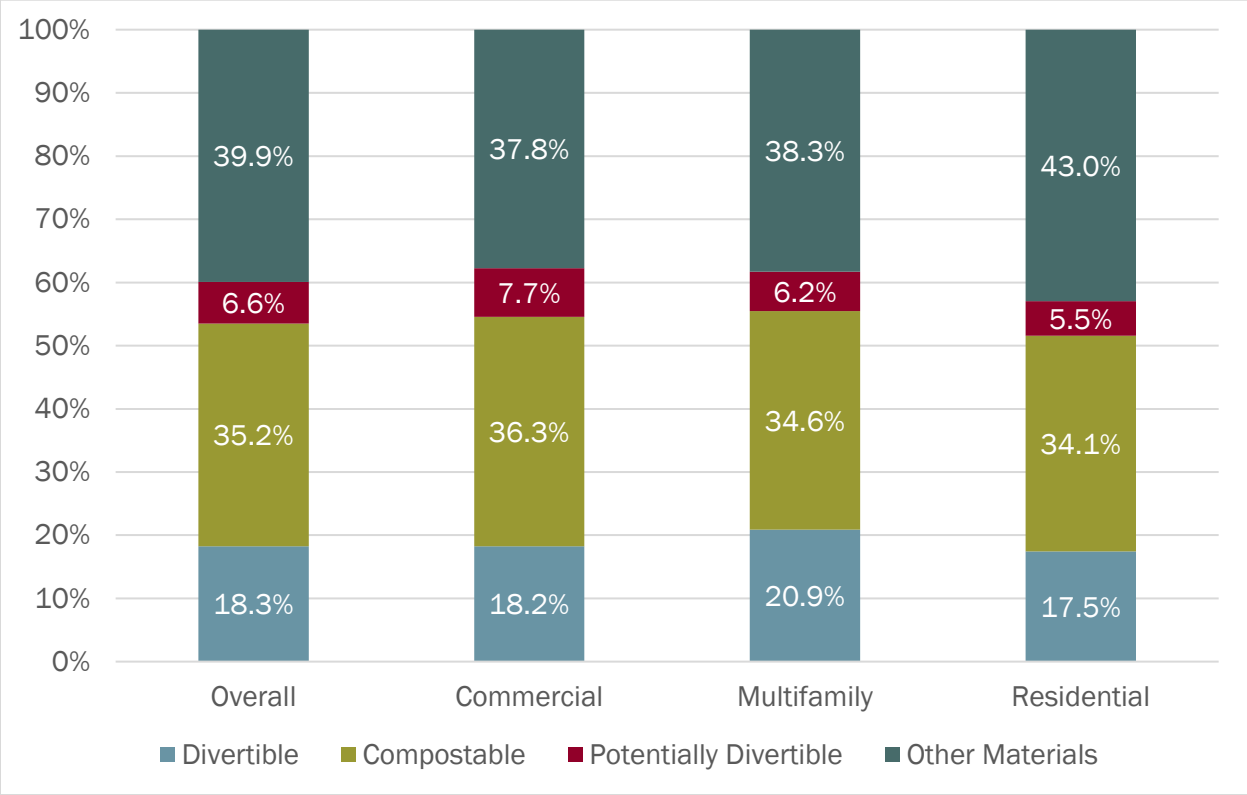
Table 6 identifies the top ten material types found in the County's waste stream.

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

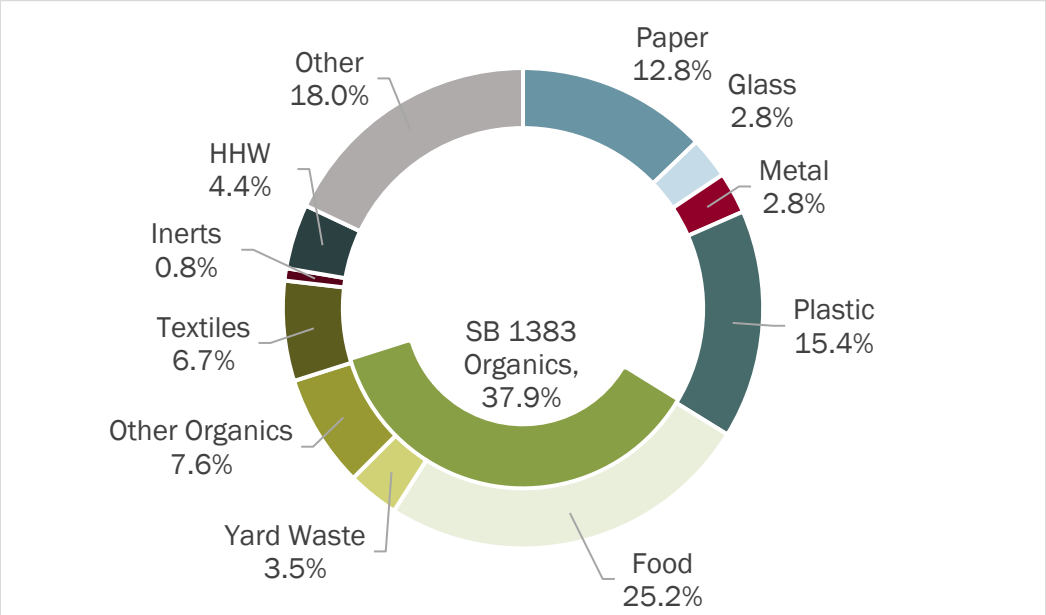


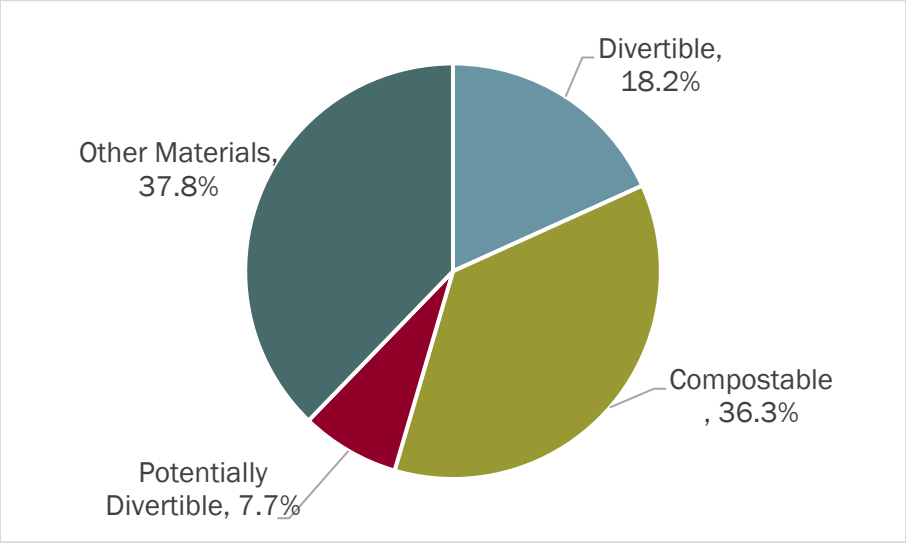
Table 7 identifies the top ten material types found in the County's commercial waste stream.

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

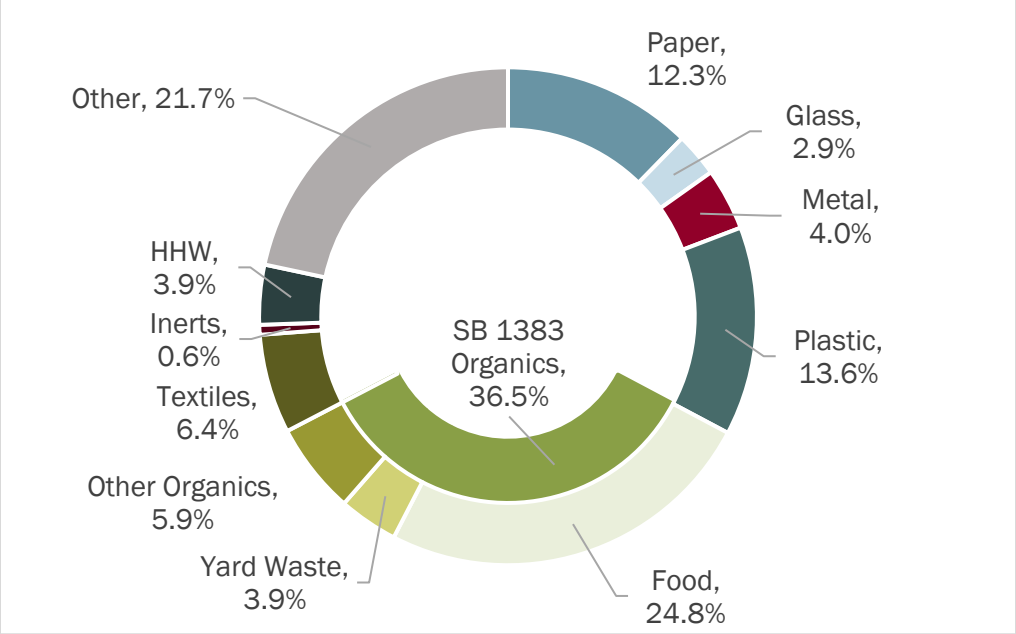


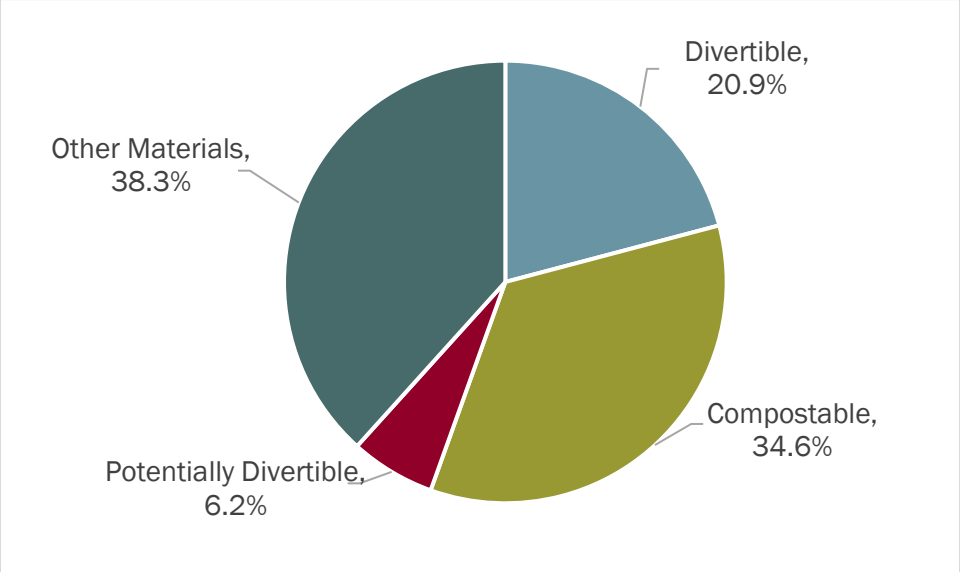
Table 8 identifies the top ten material types found in the County's multi-family residential waste stream.

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

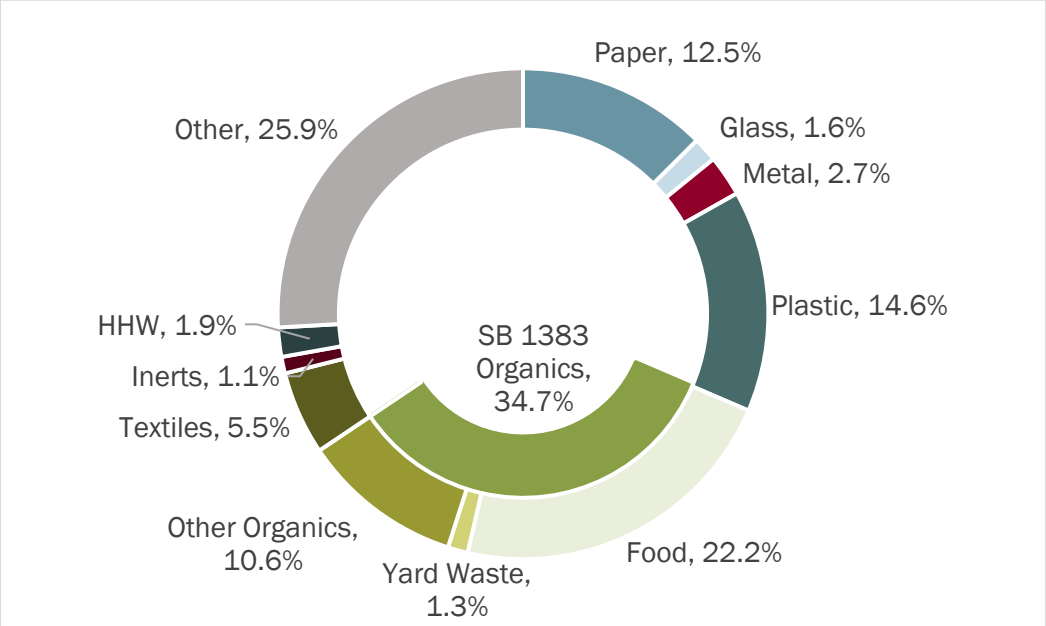


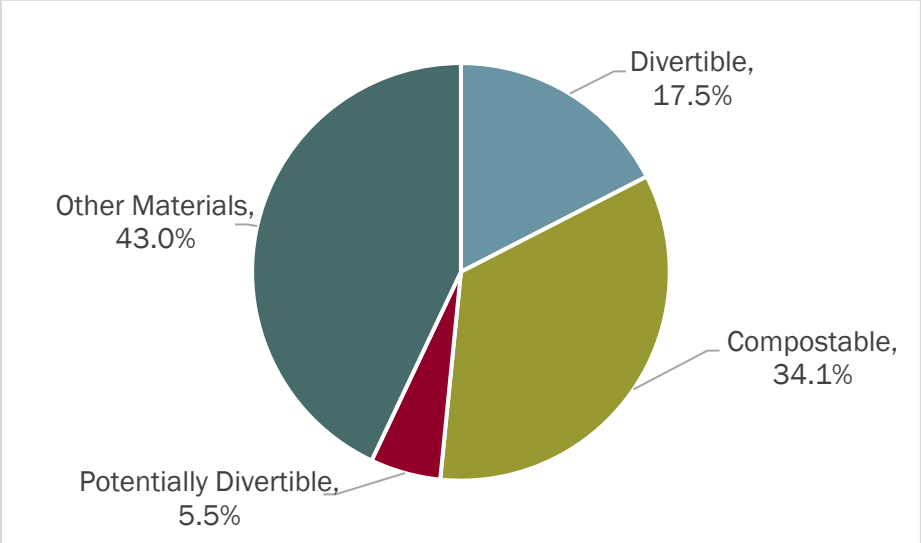
Table 9 identifies the top ten material types found in the County’s single-family residential waste stream.

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

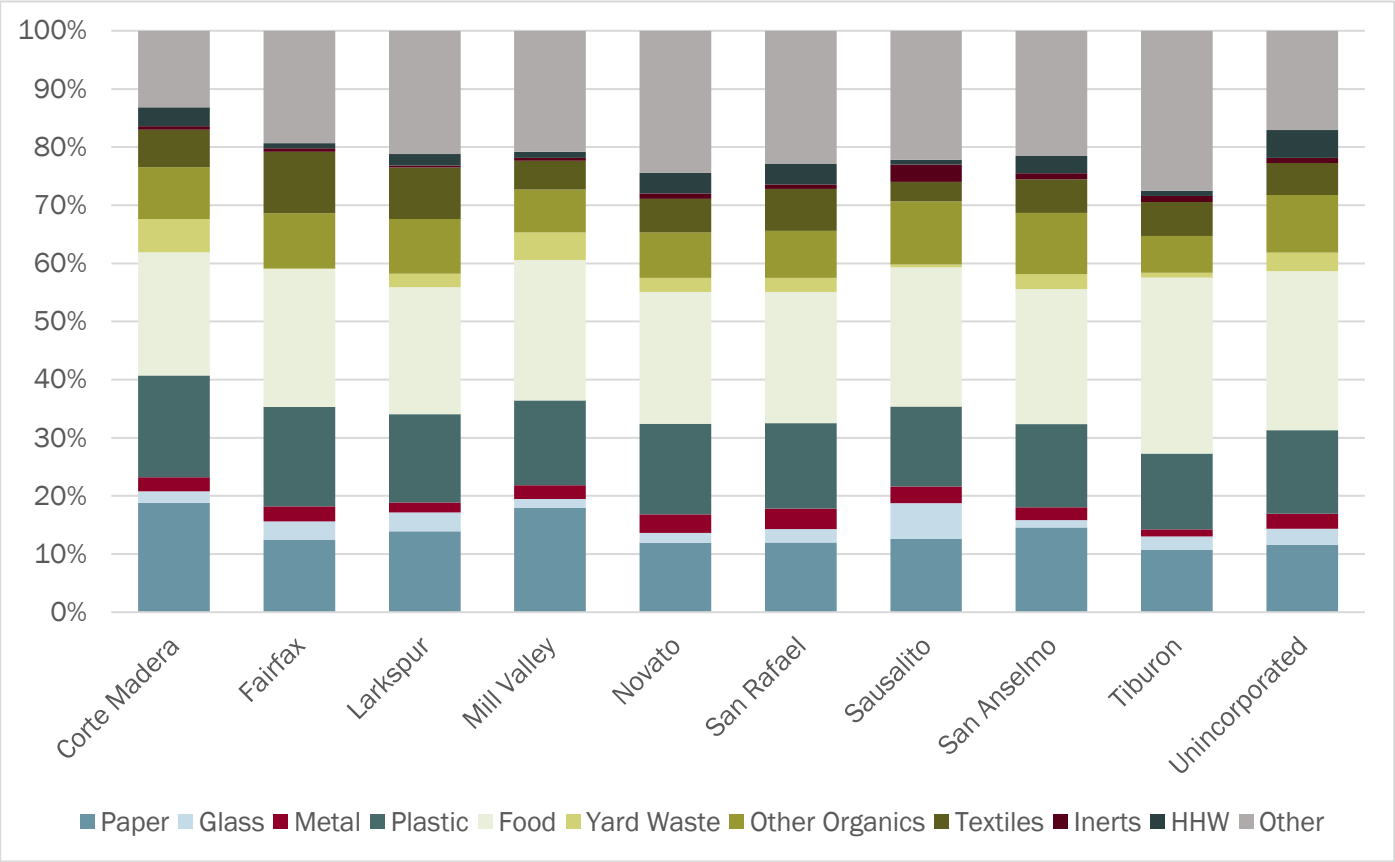
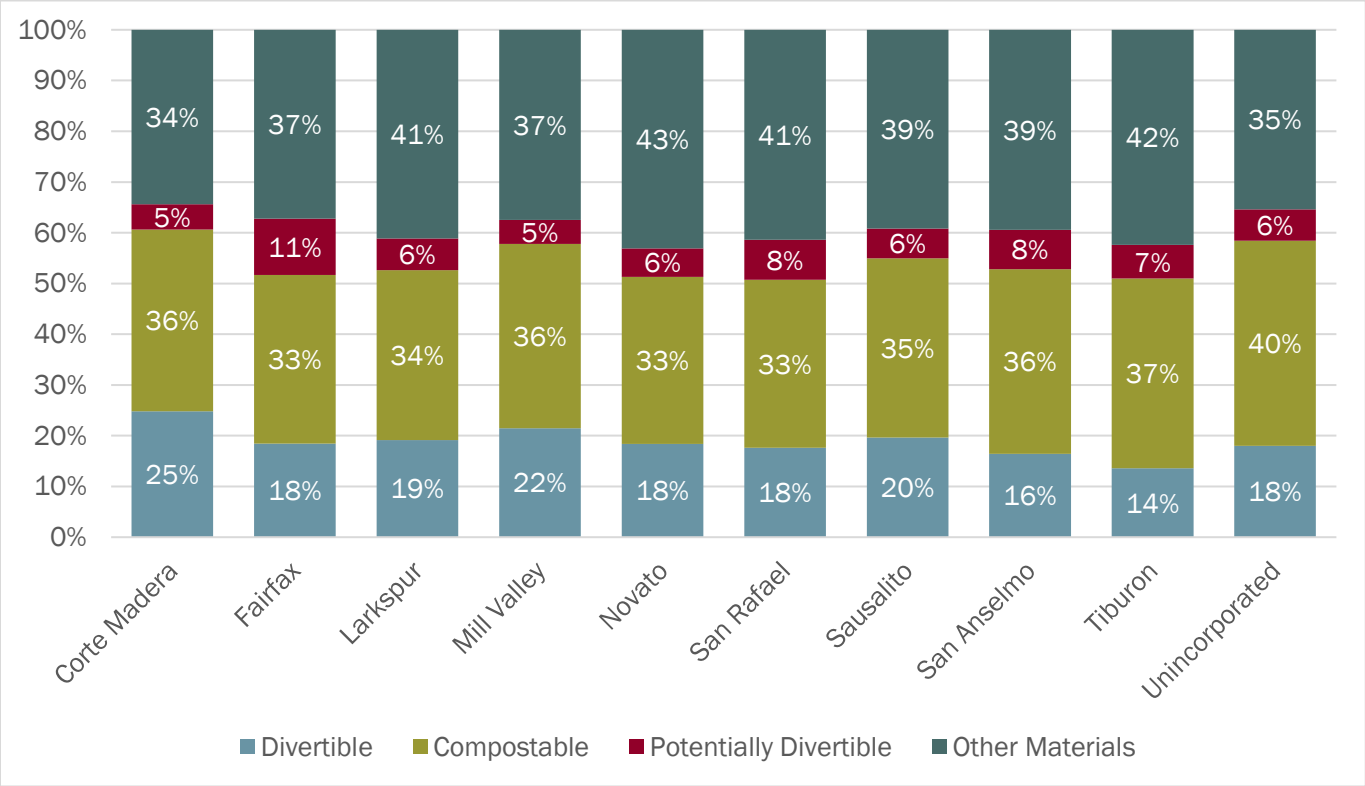


Exhibit 10 displays the divertibility of the collected material for each jurisdiction.

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 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 10** 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.

Exhibit 11. Overall Self-Haul Composition

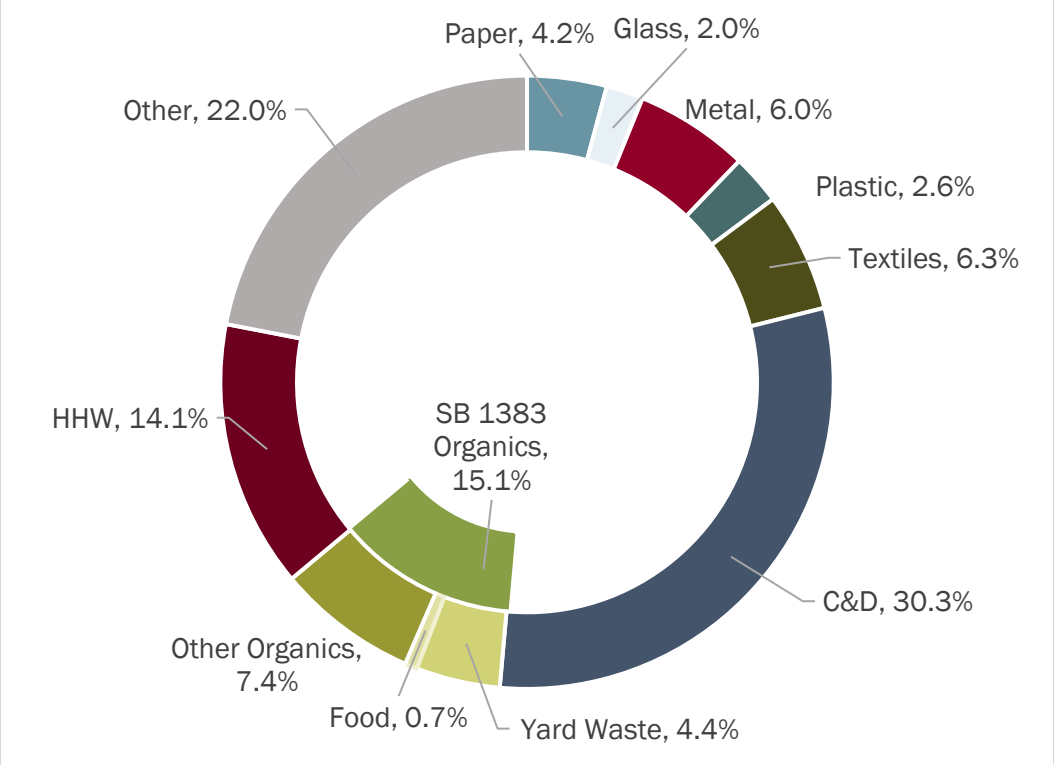
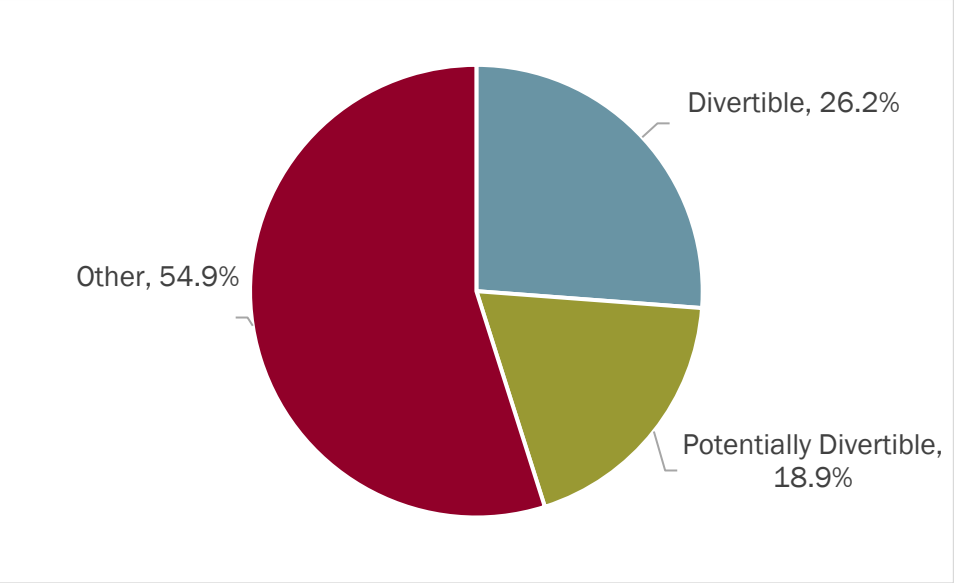


Exhibit 12 displays the percent of material captured by MRRC before the remainder is sent to the landfill. Of the sampled material, it is estimated that roughly 26 percent of the material is diverted for recycling or composting before the remainder is sent to landfill. For the MRRC visual characterization, 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, the composition may not be truly representative of the average self-haul material for each listed jurisdiction. Refer to **Table 10** for sample size per jurisdiction.

Exhibit 13. Self-Haul Composition by Jurisdiction

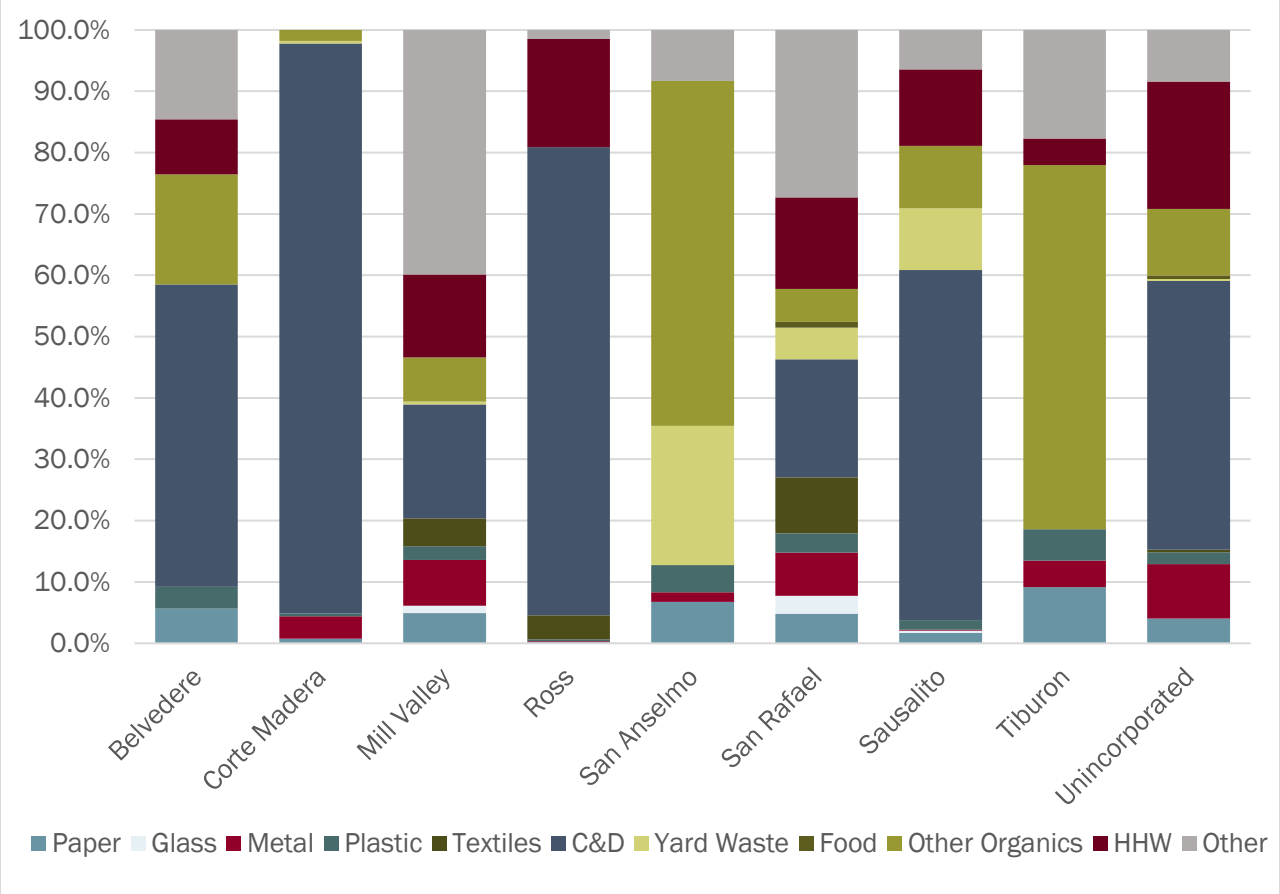
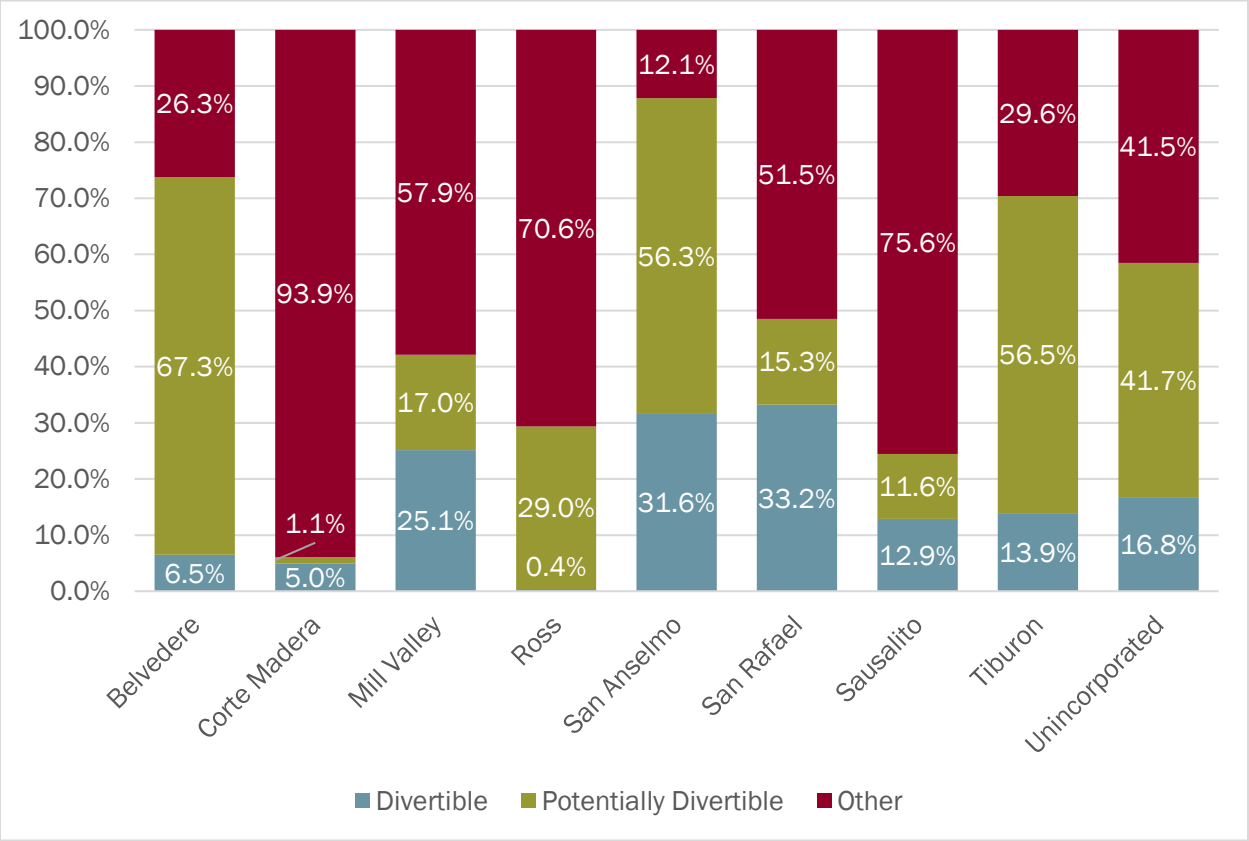


Exhibit 14 displays the percent of divertible material per jurisdiction. It should be noted that MRRC sorts and recovers material from received loads before sending the remainder to the landfill. The diversion assessment below identifies the rough estimate of material diverted before being sent to the 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



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.
- 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%

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%

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%

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%

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

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere

Corte Madera

County of Marin

Fairfax

Larkspur

Mill Valley

Novato

Ross

San Anselmo

San Rafael

Sausalito

Tiburon

Date: May 8, 2025

To: Local Task Force Members

From: Casey Fritz, Senior Planner

Re: Presentation from Olyns: Reverse Vending Machines in Marin County

Olyns Inc. (https://www.olyns.com/) is a company that installs reverse vending machines in accessible areas, such as grocery stores, to make it easier to recycle bottles and cans with California Redemption Value (CRV). Lise Murphy and Philip Stanger from Olyns will present to the Local Task Force their plans for implementing reverse vending machines in Marin County.

Recommendation

Information only; receive and file.

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere

Corte Madera

County of Marin

Fairfax

Larkspur

Mill Valley

Novato

Ross

San Anselmo

San Rafael

Sausalito

Tiburon

Date: May 8, 2025

To: Local Task Force Members

From: Casey Fritz, Senior Planner

Re: Final Report from Reusables at the Farmers Market Pilot Program

In the FY 2024/25 budget, Zero Waste Marin included funding for several pilot projects aimed at reducing waste. One of these pilot projects was to provide reusable foodware at the Marin County Civic Center Farmers' Market. ZWM worked with vendor Sparkl Reusables to run this pilot at the Thursday Farmers Market.

The final report is now available, and Casey Fritz will share highlights of the results.

Recommendation

Information only; receive and file.

Marin County Department of Public Works, PO Box 4186, San Rafael, CA 94913
Phone: 415-473-6647. Fax 415-473-2391

SPARKL REUSABLES
THE ZERO WASTE SOLUTION
sparklreusables.com – 415.347.6412

Three-Month Pilot of Reusables at Civic Center Farmer's Market
Final Metrics Report to Zero Waste Marin

March 31st 2025

Index:

1. Summary of Main Activities

Sparkl's journey at the Thursday Civic Center Farmers Market began when Zero Waste Marin (ZWM) approached Sparkl in July 2024 to explore interest in providing reusable dishware, collection, and dishwashing services at the market. At the time, Sparkl was in the midst of a similar pilot at the Rohnert Park Farmers Market, which we believe was the first large-scale deployment of reusable foodware at a California farmers market.

In September 2024, ZWM confirmed Executive Committee approval to fund a three-month pilot. Sparkl then submitted a proposal and a draft implementation timeline. On December 5th, ZWM introduced Sparkl to the Agricultural Institute of Marin (AIM)—the operator of the Farmers Market—for a walk-through and vendor introductions.

When Sparkl surveyed market vendors about container preferences, we found strong interest in reusable clamshells and coffee cups. Since most food vendors preferred clamshells over plates—the most expensive of our reusables—we proposed launching with a deposit model, charging a refundable $5 for clamshells and $2 for cups, the same model we used at the Rohnert Park summer market.

ZWM suggested we start by surveying customers about their interest in a deposit system for reusable food serviceware and their preferred container and cup materials. Over the next week, we secured a second team member to help with customer surveys, printed outreach materials, and set up an information table.

Mid-December marked the launch of customer surveys, with insights recorded and incorporated into updated versions. As we shared findings with ZWM and AIM, there was concern that the deposit model may be a barrier for some and hinder wider adoption. With that in mind, ZWM expressed a preference for Sparkl to implement a no-deposit model. Paul drafted financial analyses for this approach including cost implications of using alternative materials such as ceramic cups. In order to hedge against the risk of high cost to replace more expensive cups without a deposit, Sparkl settled on using our #5 polypropylene plastic cups with a sleeve and lid. Vendor and customer outreach continued through December, while Sparkl secured reusable inventory for the program's launch.

By early January, we transitioned from research to implementation. On January 2nd, we distributed reusable dishware and cups to vendors, installed signage and bins at the farmers market, and educated vendors on the process and best practices. Vendors were guided to start offering the reusables to their repeat customers first as a way to ensure higher returns and to warm up to promoting the program. Customer and vendor responses were positive, and we added a return bin at the Sunday market based on customer feedback. Additionally, an email sent by the County of Marin's Department of Public Works Public Information Office to all County of Marin employees led to a stronger turnout of employees requesting reusables, especially reusable cups from coffee vendors, early in the market day. (One of the main offices for County of Marin employees is the Marin County Civic Center, which is located on the same property as the Thursday Civic Center Farmers Market that is operated by AIM.)

As January progressed, we focused on increasing vendor and customer engagement and participation, promoting reusables for on-site dining, and brainstorming incentives to boost return rates. Despite slower market traffic, interest in reusables remained strong. We identified a preliminary 50% return rate, though one of the two coffee vendors has a 25% return rate. By month's end, participation and returns improved, with notable engagement from customers and vendors interested in purchasing reusables. Additional return bins were placed at the far ends of the market to enhance accessibility. We believe that one of the reasons for the lower return rate of the white cups was that particular vendor's strong social media presence, leading to many of their customers coming for drinks and directly going home, rather than walking the market.

Our work in February encompassed the following activities to further boost the program's impact. We strengthened vendor commitment by working with AIM to reinforce messaging with vendors around defaulting to reusables for on–site dining. Payment links for direct purchase of containers and cups were introduced with applications like Venmo and Zelle, as we had noticed growing interest in visitors who wanted to take reusable products home for ongoing personal use. Given the low return rate on some reusables (white coffee cups and clamshells), raffle flyers were finalized to boost engagement and help us to realize increased returns in the final weeks of the pilot (see below).

March saw key milestones in the program's success. Familiar faces stopped by the booth to say hello and thank you, and others—including a reporter, restaurant and refill shop owners, school administrators, environmental activists, and city leaders—came to learn more. Our first raffle winners were drawn, and vendors were encouraged to promote returns-for-tickets. Additional food vendors donated $5-off coupons as raffle prizes, strengthening partnerships. By March 13th, an additional Sparkl staffer, Brendan, joined the team to help with earlier presence at the market, per AIM's request. Market patrons continued purchasing Sparkl reusable containers and cups for home and BYO use at other businesses. By March 20th, the raffle incentive had successfully increased return rates, especially for Sparkl containers, which saw a return rate of approximately 45% in January, increasing to 66% in March alone after the raffle had been deployed. Community appreciation for the program was evident, with many patrons looking for ways to support its continuation.

On March 27th, the final market day was met with rain, but the community spirit endured. Containers were still being returned, raffle winners picked up their prizes, and both patrons and vendors expressed deep appreciation for the program. Sparkl left prizes at the AIM booth for those unable to collect them that day, along with two return bins.

When Sparkl representatives returned the following week to collect remaining items, they repeatedly encountered customers arriving at the AIM booth to return containers and retrieve prizes—all while expressing enthusiasm and support. This underscored the program's success. We hope that the groundwork laid over these three months has positioned Sparkl for potential expansion and lasting impact in the journey toward a more sustainable market experience!

List of the Participating Vendors

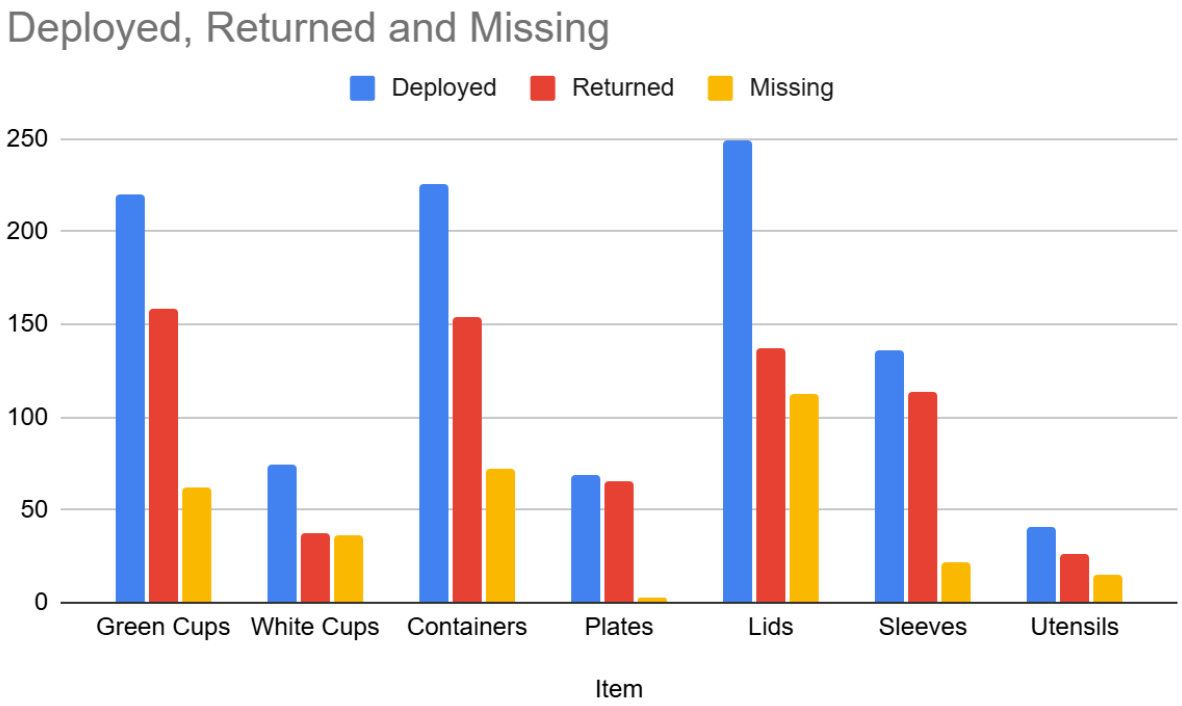
- Zolo's Coffee Roasters
- Myriad Coffee
- La Esperanza Pupuseria
- Kinoko
- Pibil / Porchetta Toscana
- Rozmary Kitchen
- Mr. Dim Sum
- Wanna's Kitchen
- Fireswamp Provisions

2. Total Reusable Items Deployed / Single-use Items Prevented

Month	Cups Deployed	Clamshells & Plates Deployed	Accessories (sleeves, lids, utensils) Deployed	Monthly Total Reusables
January	169	96	185	450
February	60	11	111	182
March	76	113	119	308

3. Total Materials Used and Returned Throughout the Pilot

Item	Used	Returned	Lost Items	Return Rate
Green Cups	220	158	62	71.82%
White Cups	74	38	36	51.35%
Containers	226	154	72	68.14%
Plates	69	66	3	95.25%
Lids	249	137	112	55.02%
Sleeves	136	114	22	83.82%
Utensils	41	26	15	63.41%
TOTAL	**1015**	**693**	**322**	**68.28%**



4. Customer Feedback

- 34 community members surveyed
- 50% had not heard of the program before being surveyed
- Question: What would make it easier to participate in the program?
    - More participating vendors
    - Easier return locations
    - More advertising around the community and farmers market
    - Clearer instructions on how the program works
- 75% of customers surveyed stated that reducing single-use waste was “very important.”
- 84% support continuing the reusable program
- Some customers did not like the material Sparkl’s serviceware was made out of (plastic). Customers would be more likely to participate and pay a deposit if the material were changed (ceramic or aluminum).

5. Vendor Feedback

- 7/9 participating vendors were surveyed
    - Rozmary Kitchen
    - Kinko
    - Myriad Coffee
    - La Esperanza
    - Wannas Kitchen
    - Mr Dim Sum
    - Fireswamp Provisions

- Question: How easy was it to integrate Sparkl's reusables into your operations?
    - 3 of 7 vendors said it was "very easy" to integrate Sparkl's reusables into their operations.
    - 1 of 7 felt "neutral" about integrating the reusables into their operations
    - 3 of 7 stated it was "somewhat difficult"
- Question: What was the biggest benefit of participating?
    - 56% said "Reducing waste and positive environmental impact" was the biggest benefit.
- Question: What were the biggest challenges?
    - Time and capacity were the biggest challenges for vendors.
    - When their business became busy, there was not enough time or staff members to explain the reusable program to every consumer.
- Question: Would you be interested in continuing the program?
    - 71% of vendors said "maybe"
    - 29% of vendors said "yes"
- Suggestions for future programs
    - More container options
    - Participation in both markets
    - Simple, captivating signage explaining the program

6. Other Program Information

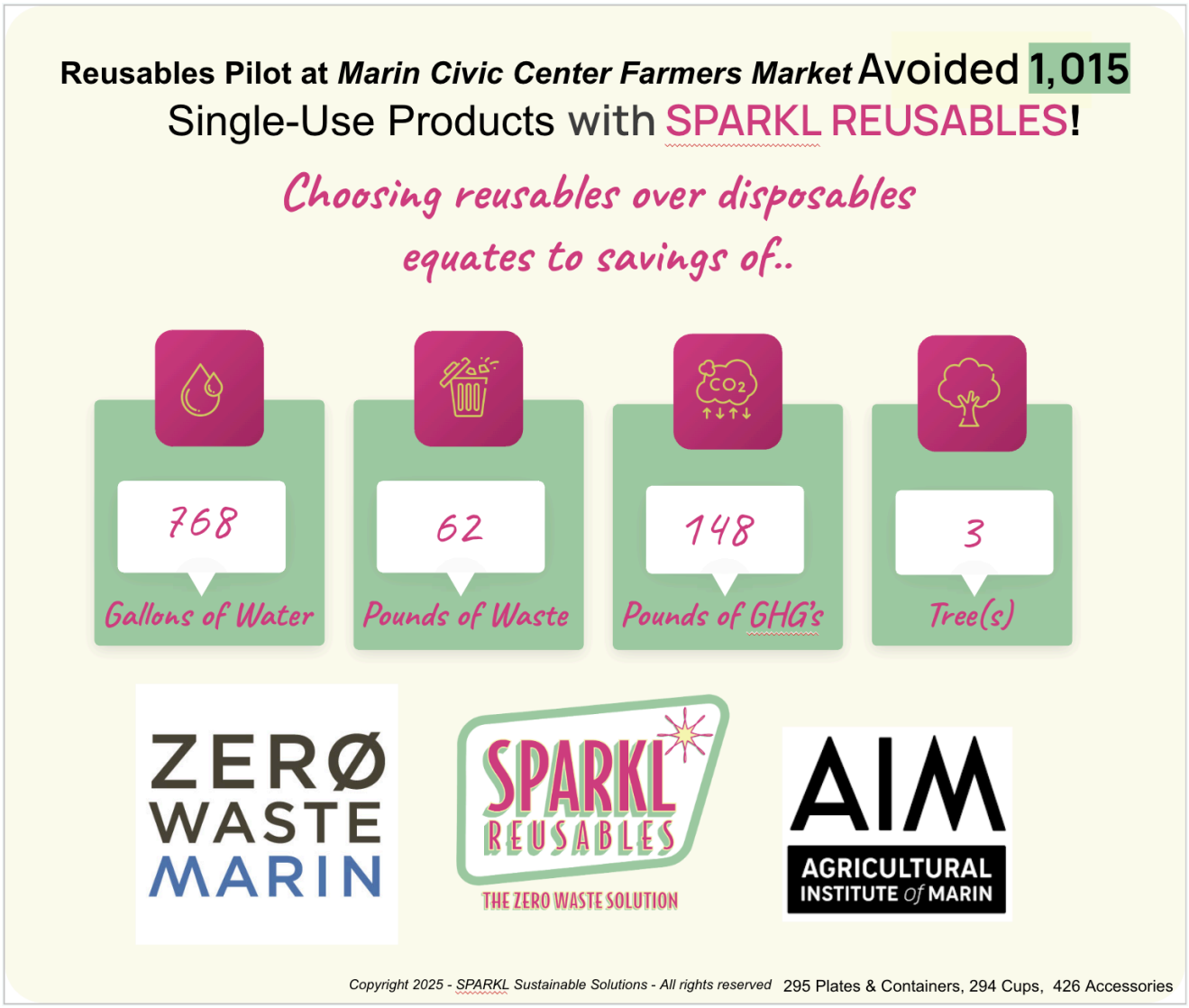
- Raffle for returns was a popular incentive
- Plates had the highest return rate of all items deployed
- Return bins positioned at the far end of the market was a helpful addition
- Regular Sparkl check-ins helped remind vendors to offer reusables to customers
- Some vendors kept their inventory while others wanted it delivered every market
- A percentage of users kept reusing Sparkl cups instead of returning them to Sparkl booth.
- Better coordination during large group visits (camps and schools, etc) to prevent overwhelming the three bin system while also using it as a teaching moment for reusables.

7. Photos of customers participating in the program

Link to complete photo album here

Left: *Cory Bytoff, Sustainability Manager, City of San Rafael, enjoying food from Mr. Dim Sum,* ***Center left:*** *A happy customer,* ***Center Right:*** *Children learning about reusables with Sparkl,* ***Right:*** *Marin Magazine journalist taking an interest in the program.*

8. Sparkl Sustainability Metrics Digital Placard



MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere

Corte Madera

County of Marin

Fairfax

Larkspur

Mill Valley

Novato

Ross

San Anselmo

San Rafael

Sausalito

Tiburon

Date: May 8, 2025

To: Local Task Force Members

From: Casey Fritz, Senior Planner

Re: Report Out From Subcommittees

Subcommittees were established in the November 2023 Local Task Force meeting with a goal of facilitating more focused discussion and recommendations. The Subcommittees formed included:

- Infrastructure & End Markets
- Compliance & Regulations
- Outreach & Education
- Construction & Demolition

At each meeting, Subcommittees will report out on their recent activities and any upcoming recommendations or projects.

Recommendation

Each Subcommittee should report out on their progress. Staff recommend that each Subcommittee also state their intended focus and priorities.

MARIN COUNTY HAZARDOUS & SOLID WASTE MANAGEMENT JOINT POWERS AUTHORITY

Belvedere

Corte Madera

County of Marin

Fairfax

Larkspur

Mill Valley

Novato

Ross

San Anselmo

San Rafael

Sausalito

Tiburon

Date: May 8, 2025

To: Local Task Force Members

From: Casey Fritz, Senior Planner

Re: Recommend Agenda Items for the Next LTF Meeting

In the August 2023 Local Task Force meeting, an LTF member suggested that the Task Force allocate five minutes to allow members to provide suggested topics for upcoming Zero Waste Marin LTF meetings.

This now standing item will provide members of the Task Force the opportunity to make suggestions regarding future agenda topics for the consideration of Staff, ensuring that the needs of the Task Force are being addressed.

Recommendation

Receive oral report and discuss the opportunity for future suggested agenda items for Staff consideration.