

# HB 1033 Advisory Council – Meeting 4 Packet Jan. 9, 2024

## Meeting Goals

- Gain a better understanding of ASTM compostable product standards
- Continue challenge identification process
- Review current research surrounding compostable products produced and disposed in WA state and discuss findings

## Date & Time

- Tuesday January 9<sup>th</sup>, 2 - 4pm, [Zoom](#)

## Meeting Packet

- Agenda
- Research memo: Types of compostable products produced and disposed in Washington, based on 2024 product registry and 2022-2023 statewide organics characterization study

# Agenda Overview

Total duration = 120 minutes

Duration	Agenda Item
10 min	Welcome, agenda, & objectives
30 min	ASTM presentation on compostable standards
10 min	Re-cap: where we've been and where we're headed
60 min	<p>Review research related to organics waste characterization and list of compostable products sold/distributed in WA. Continue challenge identification process by discussing:</p> <ul style="list-style-type: none"> <li>• What does this research tell us about what is working to achieve “the state’s goal of managing organic materials, including food waste, in an environmentally sustainable way that increases food waste diversion and ensure that finished compost is clean and marketable?”</li> <li>• What does it tell us about what is not working to achieve the state’s goal?</li> <li>• Where do we see opportunities and barriers to improve compostable products management in Washington state?</li> <li>• In what areas do we still need more information to move this committee’s work forward?</li> <li>• Are there findings that do not align with your experience? If so, what is the difference?</li> </ul>
5 min	Public comment
5 min	Closing remarks and preview next steps

# Memorandum

To: Compostable Products Advisory Committee  
From: Cascadia Consulting Group, Inc.  
Date: January 3, 2024  
Subj: Types of compostable products produced and disposed in Washington, based on 2024 product registry and 2022-2023 statewide organics characterization study

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## Purpose & Methodology

The research topics detailed in [HB 1033](#) that are addressed in this memo include:

- (b) The types of compostable products, and amounts if known, sold or distributed in Washington
- (f) Estimates of the percentage of compostable products used in Washington that are disposed<sup>1</sup> of at organic materials management facilities.

The intent of this memo is to provide the Advisory Committee with data on upstream (types and amounts of compostable products distributed) and downstream (percentage of compostable products disposed at commercial compost facilities) compostable products data. In other words, we are aiming to answer the question: Out of the amount and types of compostable products generated, how much of each type are ending up at commercial compost facilities?

The Cascadia research team is currently attempting to compile data on the amount of compostable products sold or distributed in Washington, and as such, it is likely that a future research memo will continue to answer the research questions outlined above.

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<sup>1</sup> For the purposes of this research memo, “disposed” is used throughout to align with the language used in HB 1033, however, products collected for composting are typically referred to as “recovered” in reported waste metrics.

## Discussion Questions for Consideration

- What does this research tell us about what is working to achieve *“the state’s goal of managing organic materials, including food waste, in an environmentally sustainable way that increases food waste diversion and ensure that finished compost is clean and marketable?”*
- What does the research tell us about what is not working to achieve the state’s goal?
- Where do we see opportunities and barriers to improve compostable products management in Washington state?
- Are there findings that do not align with your experience? If so, what is the difference?

## Methodology

### Overview of Research Methods

The Cascadia team used the following research methods to understand data points related to compostable products’ sales, distribution, and disposal in Washington state.

- **Types of compostable products produced in Washington:** The Cascadia research team analyzed the list of compostable products declared by producers with Ecology as of January 1, 2024, as required by Washington’s Plastic Product Degradability Law (RCW 70A.455). The analysis looks at the number of declared products by product type, material type, brand, and producer.
- **Amount of compostable products (specifically film bags and film products, food packaging, and food service products) sold or distributed in Washington:** The research team is requesting data from producers that have declared products through Ecology as well as other distributors and manufacturers recommended by Advisory Committee members. We anticipate that this information will be challenging to receive, and the research team will make multiple requests to receive this information. It may not be possible to present a complete picture of the number of products sold or distributed in Washington to the Advisory Committee.
- **Amount of compostable products disposed at organic materials management facilities:** Cascadia analyzed preliminary results from the 2022-2023 statewide organics and recycling characterization study, which Cascadia conducted for the Washington State Department of Ecology.<sup>2</sup> The study is not yet final and the results

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<sup>2</sup> Contract No. C23000114

have not been published. Cascadia also referenced the 2020 – 2021 Waste Characterization Study completed for the Washington State Department of Ecology to compare estimated annual tonnages of compostable products and food waste disposed in the landfill, recycling and organics.

## Waste Characterization Study Methodology

The data presented includes the composition of inbound residential organics broken out by material types and classes, such as single-use food service compostable paper, PLA compostable food packaging, yard debris, and food. The complete statewide study report will be available by the end of February 2024.

The study was completed across four regions of the state (Central, Eastern, Northwest, and Southwest) during four separate seasons (fall, winter, spring, and summer), and included commercial and residential (single-family and multifamily) generators. For detailed information on the study definitions, such as the recoverability groups (widely accepted, limited accepted, potentially recoverable, non-recoverable) and material list and definitions, please refer to Appendix C and D.

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## Findings

### Summary

#### Overarching Findings

By weight, compostable products are a small fraction of the material disposed in residential organics. However, this metric may not accurately reflect the impact of the presence of compostable products in the organics stream for three reasons:

- These products are lightweight, much more so than food and yard debris.
- The commercial sector is a notable gap in the available data, and compostable products likely represent a bigger piece of the organics stream than reported.
- Garbage data from the most recent 2020-2021 statewide waste characterization shows that there is the potential for many more compostable products to enter the organics stream if diversion rates increase.

The statewide organics characterization study and the state's list of producer declared compostable products provide insightful data into the upstream and downstream impacts of compostable products, however, more information is needed to truly understand the percentage of compostable products used in Washington that are

disposed of at organic materials management facilities. While comparing statewide waste characterization study data from 2020-2021 to statewide organics characterization study data from 2022-2023 suggests that significantly more compostable products (and food) are disposed into the landfill than to organics facilities, obtaining data on the amount of products sold or distributed in the state has the potential to provide a more complete picture.

Depending on response rates and completeness of the sales data the Cascadia research team receives from manufacturers and distributors, it may be possible to compare the estimated number of units (or weight of material) sold or distributed in the state to the number of units or weight of products disposed at compost facilities.

## Producer Declared Compostable Products

As of January 1, 2024, there are 168 compostable products that producers have declared to Ecology. Of these, there are 21 different product types, 10 material types, and 43 brands manufactured by 26 producers. Top level findings include:

- **Bags make up a significant portion of the types of declared products**, with 51 different types of bags, followed by 24 different cups, and 10 other food service products.
- **PLA (polylactic acid) is the most common material type** and is used in 54 different product types (which includes containers with lids and no lids, cups, mixed cutlery, bags, forks, knives, spoons, clam shells, portion cups, other food service products, food wraps, wrapped straws, and lids for food containers). PBAT (polybutylene adipate terephthalate) is used in 47 different products, namely bags, followed by wood/other fiber that is lined which is used in 26 different products.

Please refer to Appendix A: Producer Declared Compostable Products Data for more information.

## Statewide Organics Characterization Study

### FINDINGS

- **An estimated 897,700 tons of organics are collected annually statewide.** Residential organics account for an estimated 71% (637,000 tons), and commercial organics account for the remaining 29% (260,700 tons). Nearly 90% of all organics are collected and disposed from the Northwest (60%) and Southwest (29%) regions.
- **Statewide, an estimated 97.6% of the residential organics consisted of materials that are widely accepted in curbside organics programs.** The total organics disposed by all regions consisted of 97% or more widely accepted compostable materials, and the central region had the greatest proportion of widely

accepted compostable materials (nearly 100%). All other materials accounted for the remaining 2.4% (15,256 tons).

- **Yard debris made up the majority of residential organics (88% or 562,476 tons), while food only comprised 6% (39,748 tons)** and compostable food service products and packaging accounted for less than 2% as follows:
  - Single-use Food Service Compostable Paper and Compostable Paper Products accounted for 1.2% (7,322 tons)
  - PLA compostable materials accounted for 0.1% (899 tons). Most of the PLA products were plastic bags and film (818 tons).
- **More tons of compostable food service products and packaging were disposed in residential organics than in residential recycling.** An estimated 2.6% (4,508 tons) of residential recycling consisted of widely and limited accepted compostable materials. Of that material, roughly half consisted of compostable food service products and packaging (2,287 tons) and half consisted of food (2,050 tons). Most of the compostable food service products and packaging was Single-use Food Service Compostable Paper (1,389 tons).
- **Comparison against other studies indicates that significantly more food and compostable food service products and packaging are collected and disposed in landfills than compost facilities.** Data from the 2020 - 2021 Statewide Waste Characterization Study revealed that 18.9% (446,436 tons) of residential garbage consisted of food waste, and compostable products and packaging (which includes paper and PLA) made up 7.5% (178,473 tons).<sup>3</sup> Please note that this study should not be used as a direct comparison with the 2022-2023 statewide organics study.
- **Materials that contaminate the organics stream comprise just over 2% of residential organics.** The three most prevalent potentially recoverable or non-recoverable materials were: animal manure & litter (0.3%); construction & demolition waste (0.1%); and remainder composite paper products (0.1%). While these tonnages are small compared to the other material types, this data does not necessarily reflect the full impact of non-compostable materials present in the organics stream. We hope to gain more information through interviews with the compost facilities to understand how these materials impact operations and quality of finished compost.

Please refer to Appendix B: Statewide Organics Study Figures and Composition Tables for more information.

## DATA LIMITATIONS

The following limitations should be considered when reviewing the data:

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<sup>3</sup> *2020 – 2021 Washington Statewide Waste Characterization Study*

- Collection programs vary widely throughout the state and no single recoverability framework will fully depict which materials are accepted in each program and what end markets are available. As a result, applications of these statewide results should carefully consider regional recoverability and market differences.
- Waste characterization studies do not account for the potential use of pick lines at compost facilities to remove materials from the stream before the composting process. If compostable products are removed by facilities during this process, this data is not captured in the information presented.
- The sampling plan for the study resulted in some data limitations, such as low sample counts for the commercial sector, which does not allow for providing estimated tonnages and composition for commercial generators.
- Composition estimates provided in the composition tables are rounded such that 0.0% indicates a composition estimate of less than 0.5% and a dash ("-") indicates a true zero.
- Material types with large confidence intervals (or error ranges) for non-compostable products (relative to the estimated composition) means that one should not adhere too closely to specific estimates. For example, instead of saying with certainty that mixed paper products account for 0.1% of the residential organics stream in the central region, it would be more accurate to say that mixed paper products are present in a very small amount in the organics stream, and potentially more so than other non-compostable products like packaging film plastic, plastic garbage bags, etc.



## Key Findings

### Statewide Organics Characterization Study

Findings	Notes
<p>Widely accepted compostable materials comprised 97.6% (621,744 tons annually) of residential inbound organics.</p>	<ul style="list-style-type: none"> <li>• Yard Debris accounted for 88.3% (562,476 tons)</li> <li>• Food accounted for 6.2% (39,748 tons)</li> <li>• Other Organics accounted for 1.9% (12,197 tons)               <ul style="list-style-type: none"> <li>• Clean Wood accounted for 1.9% (12,131 tons)</li> <li>• Other Compostables accounted for 0.0% (66 tons)</li> </ul> </li> <li>• Paper accounted for 1.2% (7,322 tons)               <ul style="list-style-type: none"> <li>• Compostable Paper Products accounted 0.8% (4,782 tons)</li> <li>• Single-use Food Service Compostable Paper accounted for 0.4% (2,540 tons)</li> </ul> </li> </ul>
<p>Limited accepted compostable materials comprised 0.2% (1,434 tons) of residential inbound organics.</p>	<ul style="list-style-type: none"> <li>• PLA compostable materials accounted for 0.1% (899 tons):               <ul style="list-style-type: none"> <li>• PLA Compostable Plastic Bags &amp; Film accounted for 0.1% (818 tons)</li> <li>• PLA Compostable Food Packaging accounted for 0.0% (58 tons)</li> <li>• PLA Compostable Plastic Utensils accounted for 0.0% (23 tons)</li> </ul> </li> <li>• Other Compostable Paper Packaging accounted for 0.1% (535 tons)</li> </ul>

Findings	Notes
<p>Other materials (which includes potentially recoverable, non-recoverable, widely accepted recyclable and limited accepted recyclable) comprised 2.2% (13,822 tons) of residential inbound organics.</p>	<ul style="list-style-type: none"> <li>• The three most prevalent potentially recoverable or non-recoverable materials were: Animal Manure &amp; Litter (0.3%); Construction &amp; Demolition Waste (0.1%); and Remainder Composite Paper Products (0.1%).</li> <li>• The three most prevalent widely or limited accepted recyclable materials were: Cardboard &amp; Kraft Packaging (0.7%); Mixed Paper Packaging (0.2%); and Other Polycoated Packaging (0.1%). Some of these materials may be accepted in the organics stream.</li> </ul>
<p>The residential organics composition by material class was similar across all four regions. The Northwest and Southwest regions did have an increased presence of food, paper, and other organics. Note that the paper material class is a combination of Paper Packaging and Paper Products classes which include some non-compostable materials such as Aseptic and Gable Top Containers. See Figure 3.</p>	<ul style="list-style-type: none"> <li>• As the data indicates, programs in the Central and Eastern regions do not accept much food waste in their organics collection.             <ul style="list-style-type: none"> <li>• Central: 0% paper, 0% food, 98% yard debris, and 1% other organics.</li> <li>• Eastern: 0% paper, 1% food, 98% yard debris, and 1% other organics.</li> <li>• Northwest: 3% paper, 8% food, 87% yard debris, and 2% other organics.</li> <li>• Southwest: 2% paper, 5% food, 88% yard debris and 5% other organics.</li> </ul> </li> </ul>
<p>Nearly 90% of all estimated annual organics tons in the state are generated by the northwest (60%) and by the southwest (29%) regions. See Figure 5 and Figure 6.</p>	<ul style="list-style-type: none"> <li>• The overall statewide per capita rate of organics collection is estimated at 0.12 tons per year.</li> <li>• The Northwest and Southwest regions generate roughly double the tons per capita than the Central and Eastern regions.             <ul style="list-style-type: none"> <li>• Central generates 0.05 tons per capita.</li> <li>• Eastern generates 0.07 tons per capita.</li> </ul> </li> </ul>

Findings	Notes
	<ul style="list-style-type: none"> <li>• Northwest generates 0.14 tons per capita.</li> <li>• Southwest generates 0.12 tons per capita.</li> <li>• The Northwest and Southwest regions also generate significantly more commercial organics tons than the Central and Eastern regions. However, it is important to note that Not all haulers report tons to Ecology, especially open-market commercial organics haulers, and the tons reported only represent a portion of all recycling and organics waste generated in Washington State.               <ul style="list-style-type: none"> <li>• Central: 49% (17,100 tons) commercial, 51% (17,900 tons) residential</li> <li>• Eastern: 11% (6,800 tons) commercial, 89% (57,800 tons) residential</li> <li>• Northwest: 19% (101,500 tons) commercial, 81% (434,700 tons) residential</li> <li>• Southwest: 52% (135,300 tons) commercial, 48% (126,600 tons) residential</li> </ul> </li> </ul>
<p>There was minimal variation in the composition of inbound residential organics substreams (food &amp; yard debris vs. yard debris only), with a 3% increase in food for residential substreams that accept food &amp; yard debris. See Figure 7.</p>	<ul style="list-style-type: none"> <li>• In the food and yard debris substream, 2% of the materials consisted of paper, 4% consisted of food, 92% consisted of yard debris, and 2% consisted of other organics.</li> <li>• In the yard debris only substream, 1% of materials consisted of paper, 1% consisted of food, 97% consisted of yard debris, and 1% consisted of other organics.</li> </ul>

## Producer Declared Compostable Products

Findings	Notes
<p>There are 168 producer declared compostable products that consist of 21 different product types, 10 material types, and 43 brands manufactured by 23 producers in Washington. The compliance rate of producers for declaring compostable products is unknown.</p>	<ul style="list-style-type: none"> <li>• The top five most common product types are bags (51), cups (24), Other food service products (10), unwrapped straws (9), and plates (9).</li> <li>• The top five most frequently used material types are:               <ul style="list-style-type: none"> <li>• PLA (polylactic acid): used in 54 declared products and 14 different product types.</li> <li>• PBAT (polybutylene adipate terephthalate): used in 47 declared products and only two product types (bags and other food service products).</li> <li>• Wood/other fiber (lined): used in 26 declared products and 8 different product types.</li> <li>• Sugarcane (bagasse): used in 14 declared products and 9 different product types.</li> <li>• Wood/other fiber (mixed materials): used in seven declared products and four different product types.</li> </ul> </li> </ul>
<p>The 10 material types used in compostable products include: Bamboo, cellulose bioplastic, other bioplastics, other materials, PBAT (polybutylene adipate terephthalate), PLA (polylactic acid), wood/other fiber (lined), wood/other fiber (mixed materials), sugarcane (bagasse), and starch-based bioplastic.</p>	<ul style="list-style-type: none"> <li>• Bamboo: Six declared products and three different product types (forks, knives, and spoons).</li> <li>• Cellulose bioplastic: Six declared products and two different product types (wrapped and unwrapped straws).</li> <li>• Other bioplastic: One declared product and one product type (bags)</li> <li>• Other materials: Five declared products and four different product types (Containers no lids, bags, unwrapped straws, and other sheet film products).</li> </ul>

Findings	Notes
	<ul style="list-style-type: none"><li>• PBAT (polybutylene adipate terephthalate): 47 declared products and two different product types (bags and other food service products).</li><li>• PLA (polylactic acid): 54 declared products and 14 different product types (containers no lids, cups, mixed cutlery, bags, forks, knives, spoons, clam shells, portion cups, other food service products, containers with lids, food wraps, unwrapped straws, and lids for food containers).</li><li>• Wood/other fiber (lined): 26 declared products and eight different product types (bowls, cups, portion cups, plates, boxes for food, containers no lids, lids for food containers, and other food service products).</li><li>• Wood/other fiber (mixed materials): Seven declared products and four different product types (wrapped straws, unwrapped straws, other food service products, and plates).</li><li>• Sugarcane (bagasse): 14 declared products and nine different product types (bowls, clam shells, containers no lids, plates, trays, hinged containers, containers with lids, cups, and lids for food containers).</li><li>• Starch-based bioplastic: Two declared products and one product type (bags).</li></ul>

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## Next Research Steps

To continue answering the research questions posed in this memo, the Cascadia research team will:

1. Conduct interviews with organic materials management facilities to help evaluate the presence and impact of compostable products in the organics stream.
2. Research if organics (specifically food) diverted from landfill increases through the use of compostable products. The research team will answer this question by reviewing past statewide waste characterization studies to see if the amount of organics and food has decreased over time as well as gather more insight during facility interviews add policy-related interviews with jurisdictions.
3. Attempt to compile data on the amount of compostable products sold or distributed in Washington. Based on the response rate and data received, the research team will compare this data with the amount of compostable products disposed downstream as a way to estimate the percentage of compostable products disposed at compost facilities.
4. Review the 2022-2023 statewide recycling study to determine the amount of single-use plastics disposed through inbound recycling programs and compare to the amount of compostable plastics disposed in organics reported in this memo.

# Appendix A: Producer Declared Compostable Products Data

	Quantity
Number of Declared Products	168
Number of Product Types	21
Number of Material Types	10
Brands	43
Producers	26

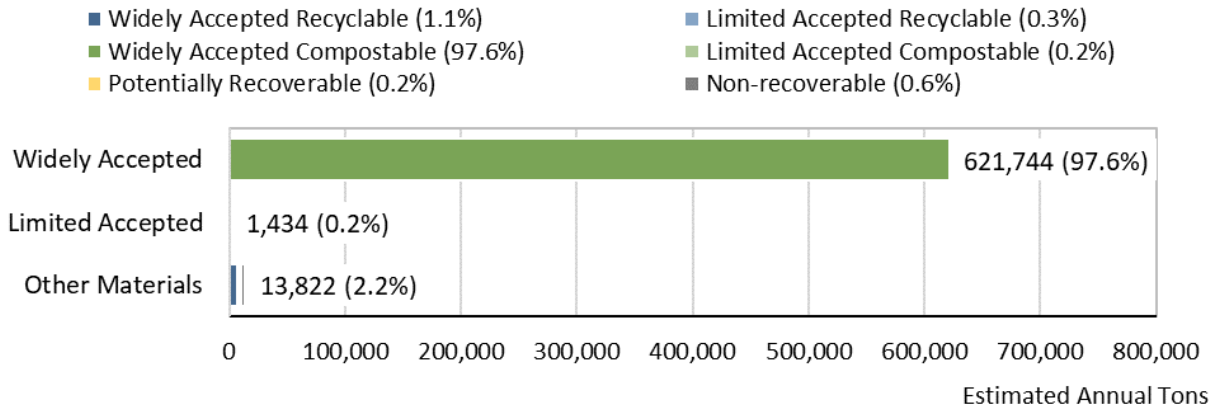
Material Types	Product Types	Number of Products	Product Types Material is Used for
Bamboo	3	6	Forks, Knives, Spoons
Cellulose bioplastic	2	6	Straws (unwrapped), Straws (wrapped)
Other bioplastic	1	1	Bags
Other materials	4	5	Containers (no lids), Bags, Straws (unwrapped), Other sheet film product
PBAT (polybutylene adipate terephthalate)	2	47	Bags, other food service product
PLA (polylactic acid)	14	54	Containers (no lids), Cups, Mixed cutlery, Bags, Forks, Knives, Spoons, Clam shells, Portion cups, Other food service products, Containers (with lids), Food wraps, Straws (unwrapped), Lids (for food containers)
Wood/Other Fiber (lined)	8	26	Bowls, Cups, Portion cups, Plates, Boxes (food), Containers (no lids), Lids (for food containers), Other food service product
Wood/Other Fiber (mixed materials)	4	7	Straws (wrapped), other food service product, Plates, Straws (unwrapped)
Sugarcane (Bagasse)	9	14	Bowls, Clam shells, Containers (no lids), Plates, Trays, Containers (hinged), Containers (with lids), Cups, Lids (for food containers)
Starch-based bioplastic	1	2	Bags

<b>Product Category</b>	<b>Number of Product Types Declared</b>
<b>Bags</b>	51
<b>Bowls</b>	7
<b>Boxes (Food)</b>	4
<b>Clam shells</b>	3
<b>Containers (hinged)</b>	1
<b>Containers (no lids)</b>	8
<b>Containers (with lids)</b>	3
<b>Cups</b>	24
<b>Food Wrap</b>	1
<b>Forks</b>	5
<b>Knives</b>	5
<b>Lids (for food containers)</b>	4
<b>Mixed cutlery</b>	7
<b>Other food service products</b>	10
<b>Other sheet film product</b>	1
<b>Plates</b>	9
<b>Portion Cups</b>	6
<b>Spoons</b>	5
<b>Straws (unwrapped)</b>	9
<b>Straws (wrapped)</b>	4
<b>Trays</b>	1
<b>Total</b>	168

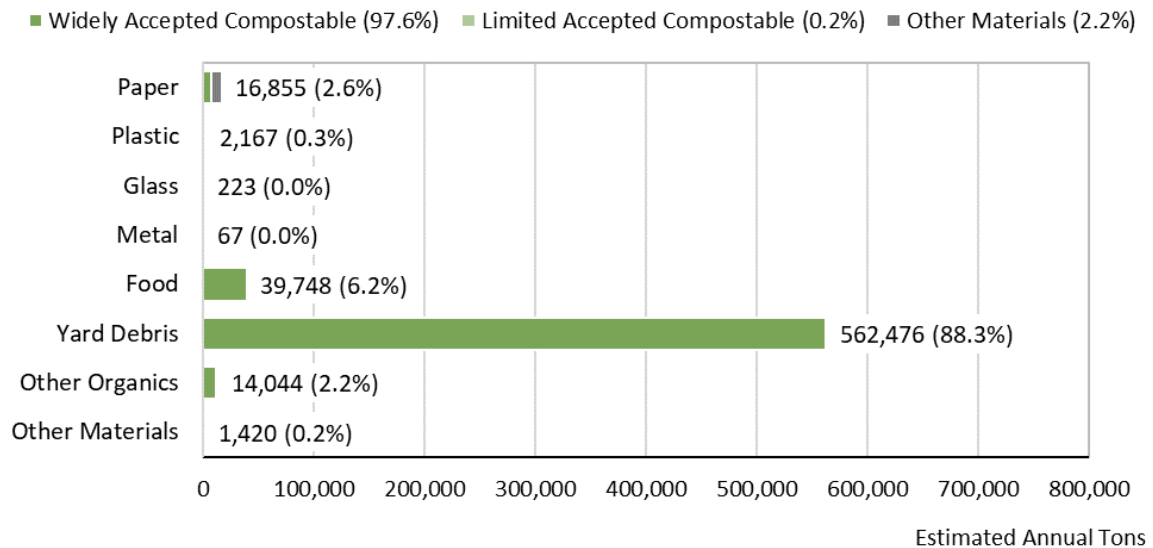


# Appendix B: Statewide Organics Study Figures and Draft Composition Tables

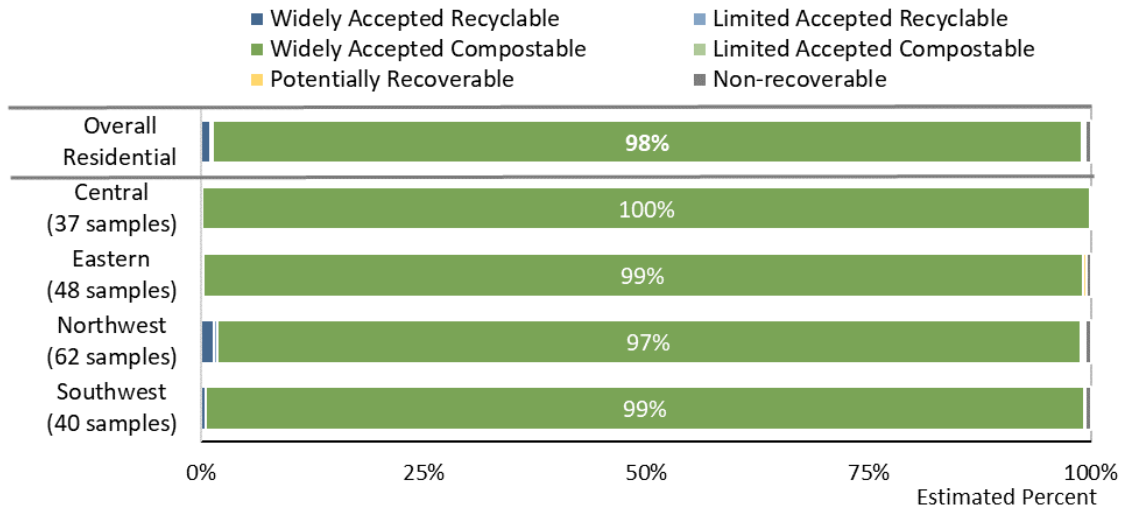
**Figure 1. Tons by Recoverability: Residential Inbound Organics**



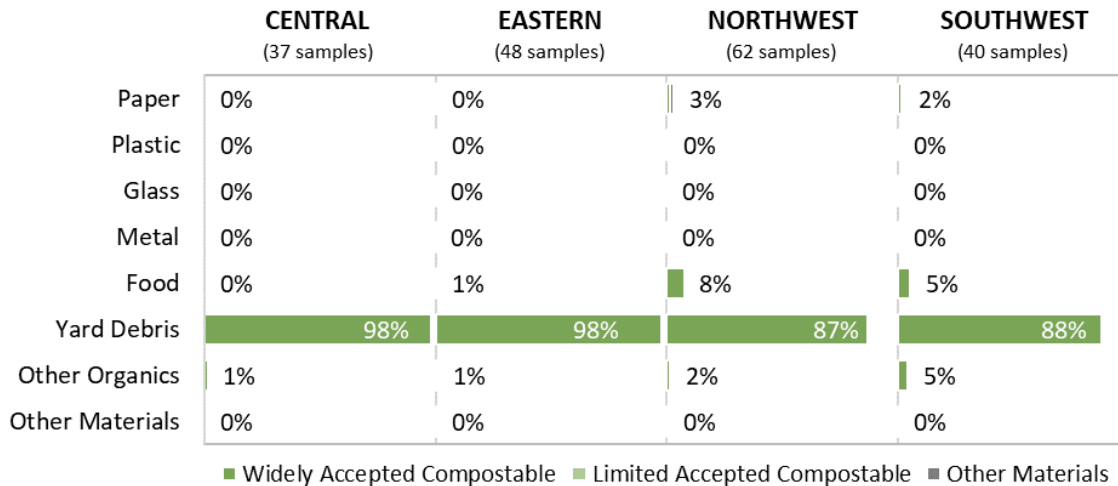
**Figure 2. Tons by Material Class: Residential Inbound Organics**



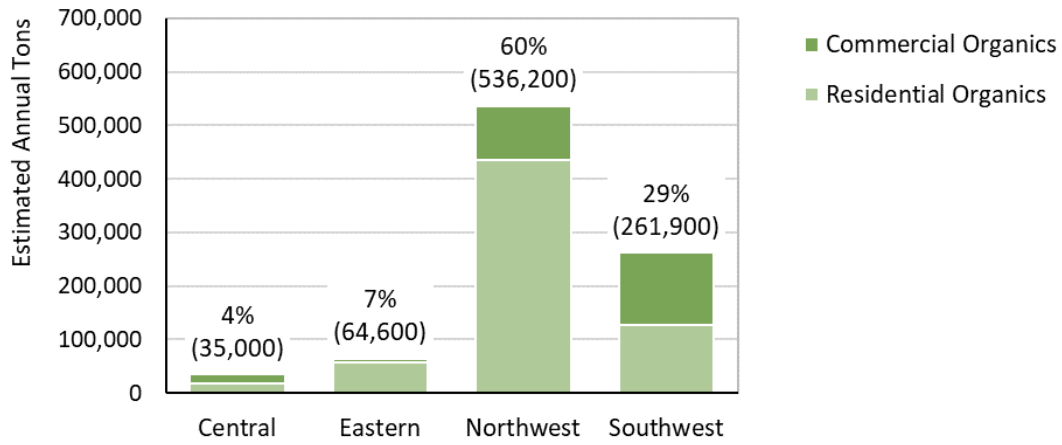
**Figure 3. Composition by Recoverability: Overall Inbound Organics by Region**



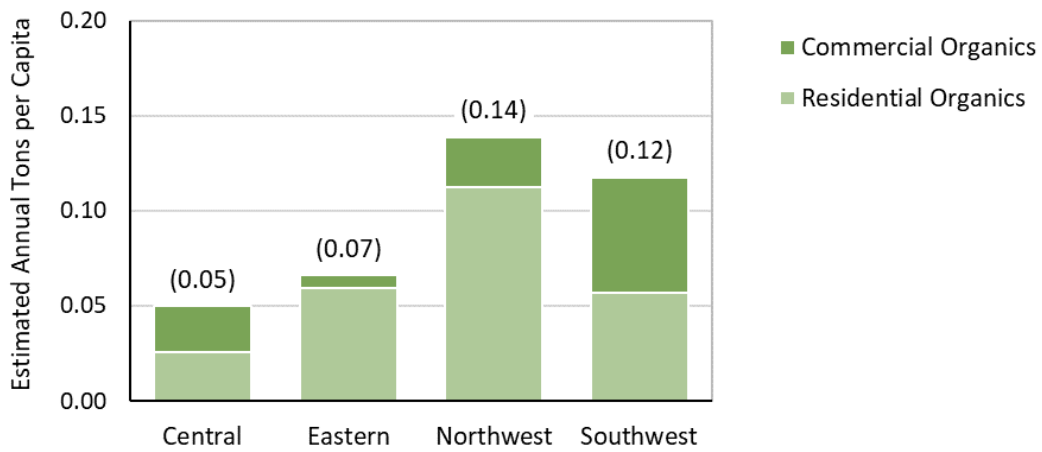
**Figure 4. Composition by Material Class and Region: Residential Organics**



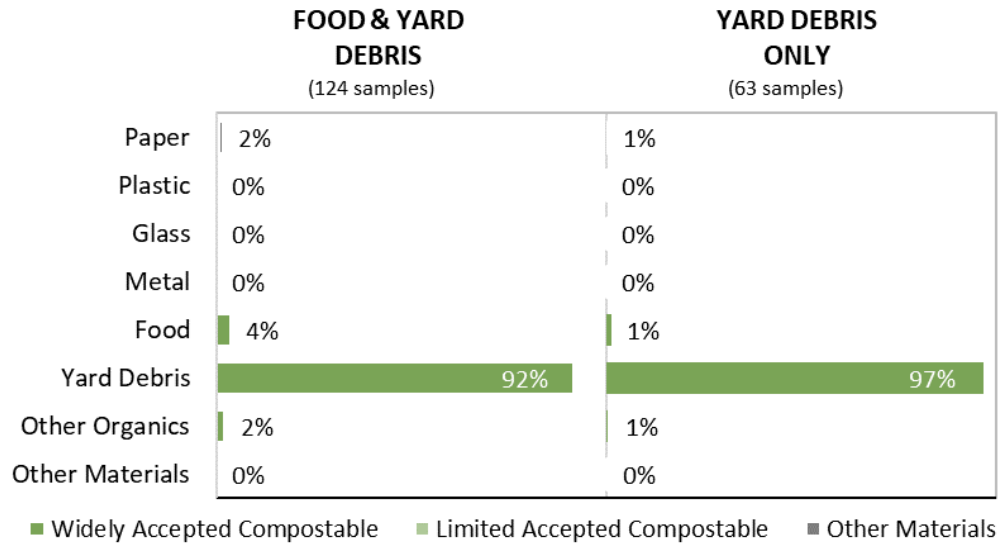
**Figure 5. Estimated Annual Organic Tons**



**Figure 6. Estimated Organics Collected per Capita**



**Figure 7. Material Class: Residential Organics Substreams**



**Table 1. Detailed Composition Table: Residential Organics**

Material	Est. %	+ / -	Est. Tons	Material	Est. %	+ / -	Est. Tons
<b>Widely Accepted Recyclable</b>	<b>1.1%</b>	<b>0.3%</b>	<b>7,172</b>	<b>Paper Products</b>	<b>1.0%</b>	<b>0.3%</b>	<b>6,291</b>
<b>Limited Accepted Recyclable</b>	<b>0.3%</b>	<b>0.1%</b>	<b>1,845</b>	Newspaper Products	0.0%	0.0%	61
<b>Widely Accepted Compostable</b>	<b>97.6%</b>	<b>0.6%</b>	<b>621,744</b>	Cardboard & Kraft Paper Products	0.0%	0.0%	97
<b>Limited Accepted Compostable</b>	<b>0.2%</b>	<b>0.1%</b>	<b>1,434</b>	Magazines	0.0%	0.0%	50
<b>Potentially Recoverable</b>	<b>0.2%</b>	<b>0.1%</b>	<b>1,055</b>	High-grade Paper Products	0.1%	0.1%	500
<b>Non-recoverable</b>	<b>0.6%</b>	<b>0.2%</b>	<b>3,749</b>	Other Groundwood Paper Products	0.0%	0.0%	-
<b>Paper Packaging</b>	<b>1.7%</b>	<b>0.5%</b>	<b>10,564</b>	Mixed Paper Products	0.0%	0.0%	115
Cardboard & Kraft Packaging	0.7%	0.2%	4,488	Product Paper Cups	0.0%	0.0%	-
Mixed Paper Packaging	0.2%	0.1%	1,304	Compostable Paper Products	0.8%	0.3%	4,782
Packaging Paper Cups	0.0%	0.0%	2	Remainder/Composite Paper Products	0.1%	0.1%	685
Aseptic Containers	0.0%	0.0%	44	<b>Plastic Products</b>	<b>0.3%</b>	<b>0.1%</b>	<b>1,597</b>
Gable Top Containers	0.1%	0.1%	582	#1 PETE Products	0.0%	0.0%	-
Other Polycoated Packaging	0.1%	0.1%	780	#2 HDPE Products	0.0%	0.0%	230
Single-use Food Service Compostable Paper	0.4%	0.1%	2,540	#3 PVC Products	0.0%	0.0%	0
Other Compostable Paper Packaging	0.1%	0.1%	535	#4 LDPE Products	0.0%	0.0%	-
Newspaper Packaging	0.0%	0.0%	-	#5 PP Products	0.0%	0.0%	13
Remainder/Composite Paper Packaging	0.0%	0.0%	288	#6 PS Products	0.0%	0.0%	3
<b>Plastic Packaging</b>	<b>0.1%</b>	<b>0.0%</b>	<b>570</b>	Bulky Rigid Plastic Products	0.0%	0.0%	169
#1 PETE Bottles	0.0%	0.0%	67	PLA Compostable Plastic Bags & Film	0.1%	0.1%	818
#1 PETE Non-bottles	0.0%	0.0%	59	PLA Compostable Plastic Utensils	0.0%	0.0%	23
#2 HDPE Natural Bottles	0.0%	0.0%	21	#7 Other/Unknown Products	0.0%	0.0%	210
#2 HDPE Colored Bottles	0.0%	0.0%	54	Plastic Garbage Bags	0.0%	0.0%	70
#2 HDPE Jars & Tubs	0.0%	0.0%	6	Plastic Non-bag Film Products	0.0%	0.0%	36
#3 PVC Packaging	0.0%	0.0%	-	Remainder/Composite Plastic Products	0.0%	0.0%	24
#4 LDPE Packaging	0.0%	0.0%	-	<b>Organics</b>	<b>96.7%</b>	<b>0.8%</b>	<b>616,268</b>
#5 PP Packaging	0.0%	0.0%	88	Fruits & Vegetables, Edible	1.9%	0.7%	12,108
#6 PS Packaging	0.0%	0.0%	19	Fruits & Vegetables, Non-edible	2.0%	0.9%	13,023
#7 Other/Unknown Packaging	0.0%	0.0%	20	Homegrown Fruits & Vegetables	0.6%	0.2%	3,811
PLA Compostable Food Packaging	0.0%	0.0%	58	Meat, Edible	0.2%	0.1%	967
EPS Expanded Polystyrene Packaging	0.0%	0.0%	12	Meat, Non-edible	0.1%	0.1%	879
Plastic Merchandise Bags	0.0%	0.0%	27	Mixed/Other Food Waste, Edible	1.4%	0.7%	8,798
Transportation Packaging Film Plastic	0.0%	0.0%	12	Mixed/Other Food Waste, Non-edible	0.6%	0.4%	3,971
Packaging Film Plastic	0.0%	0.0%	110	Yard Debris	87.7%	2.4%	558,665
Flexible Plastic Packaging	0.0%	0.0%	5	Food Processing Wastes	0.0%	0.0%	-
Remainder/Composite Plastic	0.0%	0.0%	11	Other Compostables	0.0%	0.0%	66
<b>Metal</b>	<b>0.0%</b>	<b>0.0%</b>	<b>67</b>	Clean Wood	1.9%	0.8%	12,131
Aluminum Beverage Cans	0.0%	0.0%	33	Animal Manure & Litter	0.3%	0.2%	1,626
Food Cans-Tinned	0.0%	0.0%	13	Remainder/Composite Organics	0.0%	0.0%	221
Aluminum Foil/Containers	0.0%	0.0%	10	<b>Other Materials</b>	<b>0.2%</b>	<b>0.1%</b>	<b>1,420</b>
Other Aluminum	0.0%	0.0%	-	Electronics & Small Appliances	0.0%	0.0%	0
Empty Aerosol Cans	0.0%	0.0%	-	Textiles (synthetic) & Shoes	0.0%	0.0%	49
Other Metal	0.0%	0.0%	11	Construction & Demolition Waste	0.1%	0.1%	944
<b>Glass</b>	<b>0.0%</b>	<b>0.0%</b>	<b>223</b>	Tanglers (non-plastic)	0.0%	0.0%	6
Clear Glass Containers	0.0%	0.0%	84	HHW/Special Waste	0.0%	0.0%	3
Green Glass Containers	0.0%	0.0%	63	Diapers	0.0%	0.0%	14
Other Colored Glass Containers	0.0%	0.0%	39	Furniture/Bulky	0.0%	0.0%	-
Plate Glass	0.0%	0.0%	-	Mixed Residue	0.1%	0.0%	404
Non-glass Ceramics	0.0%	0.0%	22	<b>Estimated Tons</b>	<b>100.0%</b>		<b>637,000</b>
Remainder/Composite Glass	0.0%	0.0%	15	<b>Sample Count</b>			<b>187</b>

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

**Table 2. Detailed Composition Table: Residential Inbound Recycling**

Material	Est. %	+ / -	Est. Tons	Material	Est. %	+ / -	Est. Tons
<b>Widely Accepted Recyclable</b>	<b>74.9%</b>	<b>2.3%</b>	<b>132,945</b>	<b>Paper Products</b>	<b>17.7%</b>	<b>3.0%</b>	<b>31,401</b>
<b>Limited Accepted Recyclable</b>	<b>14.4%</b>	<b>1.9%</b>	<b>25,553</b>	Newspaper Products	2.7%	0.6%	4,830
<b>Widely Accepted Compostable</b>	<b>2.5%</b>	<b>0.5%</b>	<b>4,375</b>	Cardboard & Kraft Paper Products	0.9%	0.8%	1,558
<b>Limited Accepted Compostable</b>	<b>0.1%</b>	<b>0.0%</b>	<b>133</b>	Magazines	4.9%	1.0%	8,759
<b>Potentially Recoverable</b>	<b>2.8%</b>	<b>0.6%</b>	<b>5,021</b>	High-grade Paper Products	1.5%	0.4%	2,604
<b>Non-recoverable</b>	<b>5.3%</b>	<b>0.7%</b>	<b>9,373</b>	Other Groundwood Paper Products	0.6%	0.2%	1,066
				Mixed Paper Products	5.9%	1.1%	10,507
<b>Paper Packaging</b>	<b>47.8%</b>	<b>4.8%</b>	<b>84,828</b>	Product Paper Cups	0.0%	0.0%	1
Cardboard & Kraft Packaging	34.8%	4.5%	61,763	Compostable Paper Products	0.4%	0.2%	764
Mixed Paper Packaging	5.7%	0.8%	10,042	Remainder Composite Paper Products	0.7%	0.2%	1,313
Packaging Paper Cups	0.0%	0.0%	7	<b>Plastic Products</b>	<b>1.6%</b>	<b>0.3%</b>	<b>2,912</b>
Aseptic Containers	0.2%	0.0%	354	#1 PETE Products	0.1%	0.2%	257
Gable Top Containers	0.5%	0.1%	901	#2 HDPE Products	0.0%	0.0%	20
Other Polycoated Packaging	5.1%	1.1%	8,969	#3 PVC Products	0.0%	0.0%	4
Single-use Food Service Compostable Paper	0.8%	0.2%	1,389	#4 LDPE Products	0.0%	0.0%	-
Other Compostable Paper Packaging	0.1%	0.0%	106	#5 PP Products	0.0%	0.0%	58
Newspaper Packaging	0.2%	0.3%	440	#6 PS Products	0.0%	0.0%	19
Remainder/Composite Paper Packaging	0.5%	0.1%	857	Bulky Rigid Plastic Products	0.4%	0.2%	710
<b>Plastic Packaging</b>	<b>10.0%</b>	<b>1.6%</b>	<b>17,759</b>	PLA Compostable Plastic Bags & Film	0.0%	0.0%	19
#1 PETE Bottles	3.6%	0.5%	6,367	PLA Compostable Plastic Utensils	0.0%	0.0%	4
#1 PETE Non-bottles	1.4%	0.3%	2,533	#7 Other/Unknown Products	0.5%	0.2%	958
#2 HDPE Natural Bottles	1.2%	0.4%	2,041	Plastic Garbage Bags	0.1%	0.1%	264
#2 HDPE Colored Bottles	1.0%	0.2%	1,709	Plastic Non-bag Film Products	0.0%	0.0%	77
#2 HDPE Jars & Tubs	0.3%	0.1%	581	Remainder/Composite Plastic Products	0.3%	0.1%	521
#3 PVC Packaging	0.0%	0.0%	16	<b>Organics</b>	<b>1.4%</b>	<b>0.4%</b>	<b>2,488</b>
#4 LDPE Packaging	0.0%	0.0%	21	Fruits & Vegetables, Edible	0.1%	0.1%	189
#5 PP Packaging	0.8%	0.1%	1,494	Fruits & Vegetables, Non-edible	0.1%	0.0%	112
#6 PS Packaging	0.1%	0.0%	105	Homegrown Fruits & Vegetables	0.0%	0.0%	-
#7 Other/Unknown Packaging	0.4%	0.1%	758	Meat, Edible	0.0%	0.0%	69
PLA Compostable Food Packaging	0.0%	0.0%	5	Meat, Non-edible	0.1%	0.1%	189
EPS Expanded Polystyrene Packaging	0.1%	0.0%	187	Mixed/Other Food Waste, Edible	0.6%	0.2%	1,111
Plastic Merchandise Bags	0.2%	0.0%	360	Mixed/Other Food Waste, Non-edible	0.2%	0.2%	377
Transportation Packaging Film Plastic	0.2%	0.1%	433	Yard Debris	0.0%	0.0%	32
Packaging Film Plastic	0.5%	0.1%	883	Food Processing Wastes	0.0%	0.0%	3
Flexible Plastic Packaging	0.1%	0.0%	145	Other Compostables	0.0%	0.0%	15
Remainder/Composite Plastic	0.1%	0.0%	121	Clean Wood	0.1%	0.1%	125
<b>Metal</b>	<b>5.1%</b>	<b>0.8%</b>	<b>9,011</b>	Animal Manure & Litter	0.0%	0.0%	56
Aluminum Beverage Cans	2.3%	0.5%	4,130	Remainder/Composite Organics	0.1%	0.1%	210
Food Cans-Tinned	1.5%	0.2%	2,586	<b>Other Materials</b>	<b>3.2%</b>	<b>0.6%</b>	<b>5,681</b>
Aluminum Foil/Containers	0.1%	0.0%	130	Electronics & Small Appliances	0.3%	0.3%	575
Other Aluminum	0.2%	0.1%	343	Textiles (synthetic) & Shoes	0.6%	0.3%	1,013
Empty Aerosol Cans	0.1%	0.0%	96	Construction & Demolition Waste	0.2%	0.1%	288
Other Metal	1.0%	0.3%	1,726	Tanglers (non-plastic)	0.1%	0.1%	142
<b>Glass</b>	<b>13.1%</b>	<b>3.5%</b>	<b>23,319</b>	HHW/Special Waste	0.1%	0.1%	237
Clear Glass Containers	6.0%	1.8%	10,684	Diapers	0.3%	0.2%	619
Green Glass Containers	4.6%	1.2%	8,240	Furniture/Bulky	0.0%	0.0%	-
Other Colored Glass Containers	2.4%	0.9%	4,233	Mixed Residue	1.6%	0.4%	2,807
Plate Glass	0.0%	0.0%	17				
Non-glass Ceramics	0.1%	0.1%	94	<b>Estimated Tons</b>	<b>100%</b>		<b>177,400</b>
Remainder/Composite Glass	0.0%	0.0%	50	<b>Sample Count</b>			<b>112</b>

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

**Table 3. Top 10 Most Prevalent Non-widely or Limited Accepted Compostables:  
Residential Organics**

Material	Est. %	+ / -	Est. Tons
Cardboard & Kraft Packaging	0.7%	0.2%	4,488
Animal Manure & Litter	0.3%	0.2%	1,626
Mixed Paper Packaging	0.2%	0.1%	1,304
Construction & Demolition Waste	0.1%	0.1%	944
Other Polycoated Packaging	0.1%	0.1%	780
Remainder Composite Paper Products	0.1%	0.1%	685
Gable Top Containers	0.1%	0.1%	582
High-grade Paper Products	0.1%	0.1%	500
Mixed Residue	0.1%	0.0%	404
Remainder/Composite Paper Packaging	0.0%	0.0%	288
Total for Top Non-widely or Limited Accepted Compostables	1.8%		11,601
Other Non-widely or Limited Accepted Compostables	0.3%		2,220
<b>Total Non-widely or Limited Accepted Compostables</b>	<b>2.2%</b>		<b>13,822</b>

*Percentages for material types may not total 100% due to rounding.*

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## Appendix C: Recoverability Groups

Materials were divided into six recoverability groups, which consider potential methods of recovery and how availability may vary throughout Washington. The definitions below align with the recoverability potential of each material in the majority of curbside diversion programs statewide. See Appendix B: Material List and Definitions for detail on how specific materials were categorized.

- **Widely accepted compostable:** Materials accepted in a majority of the state's curbside composting programs.
- **Limited accepted compostable:** Materials accepted in some of the state's curbside composting programs.
- **Widely accepted recyclable:** Materials that have consistently available recycling markets and are accepted in a majority of the state's curbside recycling programs.
- **Limited accepted recyclable:** Materials that have inconsistent recycling markets and/or are accepted in some of the state's curbside recycling programs.
- **Potentially recoverable:** Materials that can be recovered for beneficial uses through specialty recycling programs or other recovery programs designed for solid waste. Markets may exist for these materials but may be underdeveloped or not currently utilized.
- **Non-recoverable:** Materials that are not readily recyclable or compostable or face other market-related barriers.



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# Appendix D: Material List and Definitions

There were 82 material types evaluated in this analysis, organized into six classes.

## Widely accepted recyclable

### Paper Packaging

1. **Cardboard & Kraft Packaging:** unwaxed Kraft paper corrugated containers and boxes, unless poly- or foil-laminated. Includes cardboard boxes and brown Kraft paper bags and packaging paper.
2. **Mixed Paper Packaging:** low-grade recyclable papers, including non-corrugated paperboard packaging, and other packaging made from groundwood paper. Includes egg cartons, and cereal and cracker boxes.
3. **Packaging Paper Cups:** cups made of uncoated paper material used to contain a beverage purchased from an establishment (e.g., soda purchased from a fast food restaurant). Does not include plastic-coated paper cups.

### Paper Products

4. **Newspaper Products:** printed groundwood newsprint, including glossy ads and Sunday edition magazines that are delivered with the newspaper (unless these are found separately during sorting).
5. **Cardboard & Kraft Paper Products:** unwaxed Kraft paper and corrugated products, unless poly- or foil-laminated. Could include cat scratching pads.
6. **Magazines:** magazines, catalogs, and similar products with glossy paper. Includes Sunday edition news magazines, if found separate from the newspaper.
7. **High-grade Paper Products:** high-grade white or light-colored bond and copy machine papers and envelopes, and continuous-feed computer printouts and forms of all types, except multiple copy carbonless paper.

## Plastic Packaging

8. **#1 PETE Bottles:** includes plastic bottles bearing the #1, such as carbonated drink bottles and water bottles. Lids and caps are left attached to containers when feasible.
9. **#1 PETE Non-bottles:** includes plastic non-bottle packaging bearing the #1, and would include oven-ready meal trays and other packaging.
10. **#2 HDPE Natural Bottles:** includes milk jugs and water jugs and any natural bottle bearing the #2. Lids and caps are left attached to containers when feasible.
11. **#2 HDPE Colored Bottles:** includes detergent bottles, some personal care product bottles, and any opaque plastic bottle bearing the #2. Lids and caps are left attached to containers when feasible.
12. **#2 HDPE Jars & Tubs:** yogurt and margarine tubs and any packaging jar or tub bearing the #2. Lids and caps are left attached to containers when feasible. This category includes 5-gallon plastic pails (with or without handles) and lids.

## Plastic Products

13. **#1 PETE Products:** includes any PET product bearing the #1 and used in a non-packaging application.
14. **#2 HDPE Products:** includes any other non-packaging product bearing the #2.

## Metal

15. **Aluminum Beverage Cans:** aluminum beverage cans.
16. **Food Cans-Tinned:** including zinc or tin-coated steel food containers. This material includes bi-metal beverage cans, but not paint cans or other types of cans.

## Glass

17. **Clear Glass Containers:** bottles and jars made from clear glass.
18. **Green Glass Containers:** bottles and jars made from green glass.
19. **Other Colored Glass Containers:** bottles and jars made from brown glass. Note that blue glass was included with brown glass.

## Limited accepted recyclable

### Paper Packaging

20. **Aseptic Containers:** multi-layer paper packaging designed to keep food and other putrescible contents fresh. Includes items like paper soup cartons and paper juice cartons.
21. **Gable Top Containers:** polycoated paper packaging often used for liquid products such as milk, plant-based beverages, and juice. Most are opened by pushing open with a screw top closure or the gables at the top back and pulling the top (spout) out.
22. **Other Polycoated Packaging:** other polycoated paper packaging. Includes ice cream cartons and frozen food boxes. Does not include aseptic and gable top containers.

### Paper Products

23. **Other Groundwood Paper Products:** non-packing products made from groundwood paper, including phone books, some tablet paper, and paperback books.
24. **Mixed Paper Products:** low-grade recyclable papers, including colored papers, notebook or other lined paper, envelopes with plastic windows, non-corrugated paperboard, carbonless copy paper, and junk mail. This includes shredded paper.
25. **Product Paper Cups:** cups made of paper material purchased with the intent of future use (e.g., a package of paper cups purchased for a birthday party). Does not include plastic-coated paper cups.

### Plastic Packaging

26. **#3 PVC Packaging:** includes any plastic bottle or container marked with a # 3. Lids and caps are left attached to containers when feasible.
27. **#4 LDPE Packaging:** includes any plastic bottle or container marked with the #4. Lids and caps are left attached to containers when feasible.
28. **#5 PP Packaging:** includes any plastic packaging marked with the #5 as well as plastic straws. Lids and caps are left attached to containers when feasible.

- 29. #6 PS Packaging:** includes any plastic packaging marked with the #6 such as compact disc cases, some plastic to-go beverage cups, and any other rigid PS packaging. Lids and caps are left attached to containers when feasible.
- 30. #7 Other/Unknown Packaging:** includes all non-numbered plastic packaging and any other plastic packaging product not listed in another category. Lids and caps are left attached to containers when feasible. This includes plastic strapping.

## Plastic Products

- 31. #3 PVC Products:** includes any non-packaging product bearing the #3 but also including plastic piping, and some toys.
- 32. #4 LDPE Products:** includes any other non-packaging product bearing the #4.
- 33. #5 PP Products:** includes any plastic non-packaging product bearing the #5 but also includes some reusable food containers.
- 34. #6 PS Products:** includes any plastic non-packaging product bearing the #6 but also includes plastic tableware.
- 35. Bulky Rigid Plastic Products:** large (larger than a five-gallon bucket), wholly plastic products intended to be used multiple times over a long period. Examples include garbage cans, some large children's toys, and plastic furniture.

## Metal

- 36. Aluminum Foil/Containers:** aluminum foil, food trays, and similar items.
- 37. Other Aluminum:** aluminum scrap and products that do not fit into the above two materials.
- 38. Empty Aerosol Cans:** EMPTY, mixed material/metal aerosol cans.

## Widely accepted compostable

### Paper Packaging

- 39. Single-use Food Service Compostable Paper:** includes paper or paper packaging soiled with food that was used in a "single-use food service" capacity. Examples include paper plates, compostable paper cups (no plastic coating), pizza boxes, french-fry containers. Does not include napkins or paper towels.

## Paper Products

40. **Compostable Paper Products:** non-packaging papers that can be composted. Includes paper soiled with food that was not used in a “food service” capacity. Examples include napkins, paper towels, plates (if purchased empty), coffee filters, and tissue. Also includes shredded paper and newspapers used to contain food waste.

## Organics

41. **Fruits & Vegetables, Edible:** the edible portion of food that comes from a plant but does not appear to have grown on the customer’s property. Includes fruits and vegetables in the original or another container when the container weight is less than 10% of the total weight.
42. **Fruits & Vegetables, Non-edible:** the non-edible portions of food that comes from plants. Examples include fruit peels, vegetable peelings, potato skins, pits, cores, and juiced oranges.
43. **Homegrown Fruits & Vegetables:** food that comes from a plant growing on or cleared from the customer’s property. Examples include fruits and vegetables disposed of because of falling or pruning from trees and gardens.
44. **Meat, Edible:** the edible portion of non-dairy food that comes from an animal. Examples include eggs and eggs in shell, fresh meat, cooked meat, and meat scraps. Does not include dairy products such as cheese and milk. Includes meat in the original or another container when the container weight is less than 10% of the total weight.
45. **Meat, Non-edible:** the non-edible portions of food that comes from an animal. Examples include eggshells, bones, gristle and meat trimmings, fish skins, and seafood shells.
46. **Mixed/Other Food Waste, Edible:** any food that cannot be put in the above categories BUT deemed edible. Examples include food items that are a combination of the above categories, as well as unused tea packets, grains, crackers, bread, dairy, and cereal. Includes food in the original or another container when the container weight is less than 10% of the total weight.
47. **Mixed/Other Food Waste, Non-edible:** any food that cannot be put in the above categories AND deemed non-edible. Examples include food items that are a combination of the above categories, as well as coffee grounds, used tea packets, and visibly non-edible grains, crackers, bread, dairy, and cereal.

48. **Yard Debris:** includes leaves, grass clippings, sod, garden wastes, brush, prunings, logs under 6", and clumped soil and rocks associated with yard debris.
49. **Food Processing Wastes:** processing wastes that are left over from growing and processing fruit, vegetables, meat, seafood, or other foods and that are treated as a waste (for example, meat packing plant waste, fish processing waste). Does not include food residuals from restaurants or grocery stores or food purchased as groceries. Does not include food from home gardens, fishing, hunting, or other home food processing.
50. **Other Compostables:** other compostable organic materials not included above, such as hair, popsicle sticks, chopsticks, and toothpicks.
51. **Clean Wood:** wood that has not been processed, including stumps of trees and shrubs, with the adhering soil (if any), and other natural woods, such as logs and branches in excess of six inches in diameter. Also includes dimensional lumber (wood commonly used in construction for framing and related uses), wood pallets, crates, and similar shipping containers, other untreated wood products, and wood by-products such as sawdust and shavings.

## Limited accepted compostable

### Paper Packaging

52. **Other Compostable Paper Packaging:** non-food service packaging paper that may be composted such as waxed cardboard boxes, and all containers except cups from fast food establishments.

### Plastic Packaging

53. **PLA Compostable Food Packaging:** any compostable plastic packaging or food containers made from corn, potato, sugarcane, or any other compostable resin that are marked with the words "compostable" or "#7 PLA" in the plastic identifier. Lids and caps are left attached to containers when feasible. Includes materials from food service providers (e.g., restaurants, food trucks, food vendors), grocery stores, and other retailers. Examples include takeout containers, produce packaging, meat/produce trays IF compostable. Does not include utensils and straws.

## Plastic Products

54. **PLA Compostable Plastic Bags & Film:** bags and film made of PLA designed to compost. Includes compostable plastic items, such as film “plastic” bags made of materials such as corn starch, potato, or soy (e.g., BioBag, EcoSafe).
55. **PLA Compostable Plastic Utensils:** includes utensils (e.g., cups/lids, bowls, clamshells, plates, trays, cutlery, and straws that are not from food service providers) marked with the words “compostable” or “#7 PLA” in the plastic identifier.

## Potentially recoverable

### Paper Packaging

56. **Newspaper Packaging:** shredded newspaper packing material.

### Plastic Packaging

57. **EPS Expanded Polystyrene Packaging:** includes packing peanuts, coolers, egg cartons, meat trays, take out containers, and other polystyrene foam packaging.
58. **Plastic Merchandise Bags:** will include all grocery, shopping, and merchandise bags.
59. **Transportation Packaging Film Plastic:** includes bubble wrap and shrink wrap and any other packaging film used in a typically industrial manner.

### Metal

60. **Other Metal:** mixed metal items such as motors, metal window blinds, metal tableware and utensils. Other metal that are too contaminated to be marketed. Includes large electronics that are predominantly metal (e.g., washer and dryer), and other bulky metal items (e.g., patio furniture).

### Other Materials

61. **Electronics & Small Appliances:** computer monitors, television sets, and other electronics including cell phones, answering machines, electronic toys, stereos,

radios, tape decks, other audio/visual equipment, VCRs, DVD players, computer processors, mice, keyboards, disk drives, printers, scanners, gaming systems, tablet computers, e-readers, and laptops. Also includes small electric appliances such as toasters, blenders, microwave ovens, power tools, curling irons, and light fixtures.

62. **Textiles (synthetic) & Shoes:** clothing, rags, and accessories made of synthetic textiles such as woven nylon, rayon, polyester, and other materials. Examples include pants, shirts, fabric purses, bed sheets, towels, and shoes.
63. **Construction & Demolition Waste:** treated/contaminated wood, gypsum, insulation, rock/concrete/bricks, loose soil and rocks, asphalt shingles/roofing, other construction debris, and mixed fine building material scraps.

## Non-recoverable

### Paper Packaging

64. **Remainder/Composite Paper Packaging:** non-recyclable and non-compostable types of papers such as paper packaging with metal or plastic parts (except aseptic packaging). Examples would include plastic lined or metal handled take-out food containers.

### Paper Products

65. **Remainder/Composite Paper Products:** non-recyclable and non-compostable types of paper products such as carbon paper and hardcover books, and composite materials containing paper mixed with metal or plastic parts.

### Plastic Packaging

66. **Packaging Film Plastic:** includes other types of packaging film such as cling wrap, bread and food bags, and plastic potato chip bags.
67. **Flexible Plastic Packaging:** means plastic pouches made of thicker, multi-layer flexible material. May have a flat bottom so that package would stand up on its own, but not always. Material is thicker than potato chip bags and frozen vegetable bags. Includes plastic coffee bags; juice pouches; baby food pouches – may have plastic screw top; soup pouches; salad dressing pouches; wine pouches; backpacking meals in pouches; soap refill pouches; laundry detergent



pouches; and other similar items. The following table and figures include examples of flexible plastic packaging.

**68. Remainder/Composite Plastic:** other types of packaging that are not one of the above materials and items that are composites of multiple plastics and plastics mixed with other materials. An example of this material type is some bathroom silicone sealant tubes designed to be used with an applicator gun. These tubes frequently have plastic bodies and tips but metal end caps.

## Plastic Products

**69. #7 Other/Unknown Products:** includes all non-numbered plastic packaging and any other plastic packaging product not listed in another category. Lids and caps are left attached to containers when feasible. This includes plastic strapping.

**70. Plastic Garbage Bags:** includes all bags whose primary use is to hold trash or garbage

**71. Plastic Non-bag Film Products:** includes plastic painter's sheeting for drop cloths, other plastic tarps, shower curtains, and any other film product not used for packaging purposes.

**72. Remainder/Composite Plastic Products:** includes all other types of non-packaging plastic that are not one of the above materials and items that are composites of multiple plastics and plastics mixed with other materials. This section also includes plastic sheeting and tarps that are contaminated with other materials such as paint or concrete residue. Examples would include plastic toys with metal attachments.

## Glass

**73. Plate Glass:** flat glass products such as windows, mirrors, and flat products.

**74. Non-glass Ceramics:** ceramics not composed of true glass and not typically used as building materials. Examples include dishes and crockware.

**75. Remainder/Composite Glass:** other types of glass products and scrap that do not fit into the above materials, including light bulbs, glassware, oven-safe baking dishes such as Pyrex, and non-C&D fiberglass. Note that ceramics (plates and knickknacks) will not be included here but will be placed in "Non-Glass Ceramics" above.

## Organics

76. **Animal Manure & Litter:** all animal manures and soiled bedding and litter whether derived from an agricultural or residential origin. Includes kitty litter.
77. **Remainder/Composite Organics:** other organics or composite materials that contain organics that do not easily fit into the above materials. Includes crop residues. Note the identity of anything that is not listed in the examples for this type or anything that is a large quantity. Examples include dryer lint, cigarette butts, candles, and grease. Also includes organic items whose durability makes them hard to compost. Examples include organic textiles such as cotton, wool, and leather, wine corks, burlap sacks, and rope.

## Other Materials

78. **Tanglers (non-plastic):** unaccepted, non-plastic items that are long and thin. Examples include electrical cords, garden hoses, caution tape (and similar tape), streamers, and chains. All plastic long, thin items like twine, rope and strapping are in a separate category ("Other Plastics").
79. **HHW/Special Waste:** potentially hazardous products such as radioactive or dangerous waste(s), ammunition, explosives, paints and solvents, old gasoline, solvents, antifreeze, asbestos, glues and adhesives, hot ashes, caulking compounds and grouts, hazardous cleaners and household chemicals, pesticides/herbicides, oil/gas/fuel tanks, any substances or products containing potentially hazardous chemicals. Also includes non-hazardous soaps, cleaners, medicines, cosmetics, fire extinguishers, and other household chemicals. FULL
80. **Diapers:** disposable baby diapers and adult protective undergarments.
81. **Furniture/Bulky:** furniture made of mixed materials and in any condition. Mattresses made of mixed materials and in any condition. General category of flooring applications consisting of various natural or synthetic fibers bonded to some type of backing material.
82. **Mixed Residue:** items not defined in the above categories will be included here. Examples include non-distinguishable fines, Q-tips/cotton swabs, sports equipment (e.g., basketball).