

City of Hoboken Zero Waste Plan

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Report For

City of Hoboken, New Jersey

Approved By



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1.0 Introduction



1.1 Overview of City

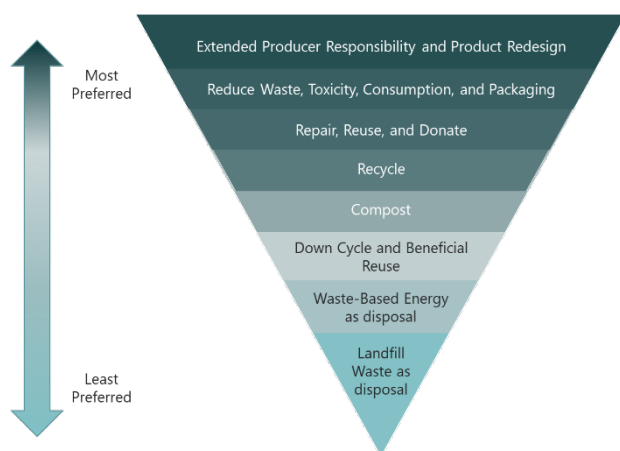
The City of Hoboken is approximately one square mile and one of the most densely populated municipalities in the United States. The birthplace of Frank Sinatra, home to one of America's Greatest Main Streets, as well as over 170 restaurants with cuisines from all over the world, and just a short ferry or train ride from New York City, Hoboken is a happening place. Additionally, according to the U.S. Census, the City of Hoboken population rose to 60,419 in 2020, an increase of nearly 21% from 50,005 in 2010, and the second-highest increase in population per person in Hudson County. In 2019, the city developed a greenhouse gas (GHG) emissions inventory and adopted a Climate Action Plan which found that solid waste accounts for nearly 10% of citywide GHG emissions. As a densely populated city with a vibrant and engaged community, Hoboken faces unique opportunities and challenges for waste management and for achieving Zero Waste.

1.2 Overview of Zero Waste

Sustainability, resiliency, and the effects of climate change are all related. In addition, waste that is mitigated and managed through holistic waste management has the potential to significantly contribute to a net zero carbon city. The City of Hoboken acknowledges the zero waste principles based on a hierarchy of material management as adopted by the US Conference of Mayors in 2015 and wants to embed those principles in a Zero Waste Plan that support a sustainable and resilient Hoboken.

The concept of zero waste goes beyond recycling and composting at the end of a product's life cycle to focus on discarded wastes and resources and manage materials in ways that preserve value, minimize environmental impacts, and conserve natural resources. The City of Hoboken seeks to employ innovative waste management strategies to improve quality of life and achieve Zero Waste with equitable outcomes.

Figure 1: Hierarchy of Material Management



Reducing waste through the Zero Waste Plan will provide the following benefits in furtherance of the Hoboken Climate Action Plan and Green Building & Environmental Sustainability Element of the Hoboken Master Plan:

- Reduce the need for landfilling and incineration
- Prevent pollution caused by the manufacturing of products from virgin materials
- Save energy
- Decrease emissions of GHG that contribute to global climate change
- Conserve natural resources such as timber, water, and minerals
- Protect and expand U.S. manufacturing jobs and increase U.S. competitiveness
- Help sustain the environment for future generations

1.3 Goals of Zero Waste Plan

The Zero Waste Plan seeks to evaluate current operations to increase diversion, identify efficiencies, and reduce costs for the city. The Plan considers stakeholder and service user perspectives, as well as best practices to understand how these services are viewed and what improvements could be made. Compiled into a detailed implementation strategy and timeline, the Zero Waste Plan provides a roadmap of evidence-based solutions that recognize the City's significant current and potential growth and support its climate change plans while considering equity and environmental justice. Strategies cover education and outreach, amendments to the municipal cost, procurement personnel, equipment and facilities, and resources needed to deliver and monitor delivery of the Zero Waste Plan.

Goals of the Zero Waste Plan include:

- Rethink how Hoboken manages waste to employ a materials management approach
- Reduce solid waste volume, including preventing food waste (i.e., source reduction)
- Reuse and rescue surplus materials and food to provide to those in need
- Recycle comingled, paper, and food scraps
- Mitigate lower GHG emissions associated with waste management
- Lower the costs of waste management

1.4 Overview of Reports

Eunomia has prepared five reports leading up to the Zero Waste Plan:

- Waste Characterization Study
- Review of Existing Hoboken Waste Management Operations and Costs
- Benchmark Other Cities Waste Management Operations and Costs
- Opportunities for Increasing Diversion and Reducing Costs
- Key Opportunities and Costs

The Waste Characterization Study was conducted to understand the mix of materials that currently comprise the City's waste stream, which is essential for planning how to pursue a zero waste future. A waste characterization study is a primary data collection activity in which waste that is intended for disposal is collected and sorted according to pre-defined categories to provide insight into the proportional composition of materials in the waste stream. The waste characterization provides a 'point in time' assessment of the components of the waste stream to understand the materials that need to be targeted in the Zero Waste Plan. The waste characterization consisted of three nights of collection of waste and five days of sorting, taking place between September 19-23, 2022. In addition to providing insight into the current composition of the waste stream that is destined for landfill, it can also be applied to the total waste disposed to understand the total amounts of each material that needs to be managed through zero waste strategies and actions.

The Review of Existing Hoboken Waste Management Operations and Costs looked at the city's governance, current waste services, the costs of these services, community satisfaction with these services, as well as existing policy, plans, codes, and legislation.

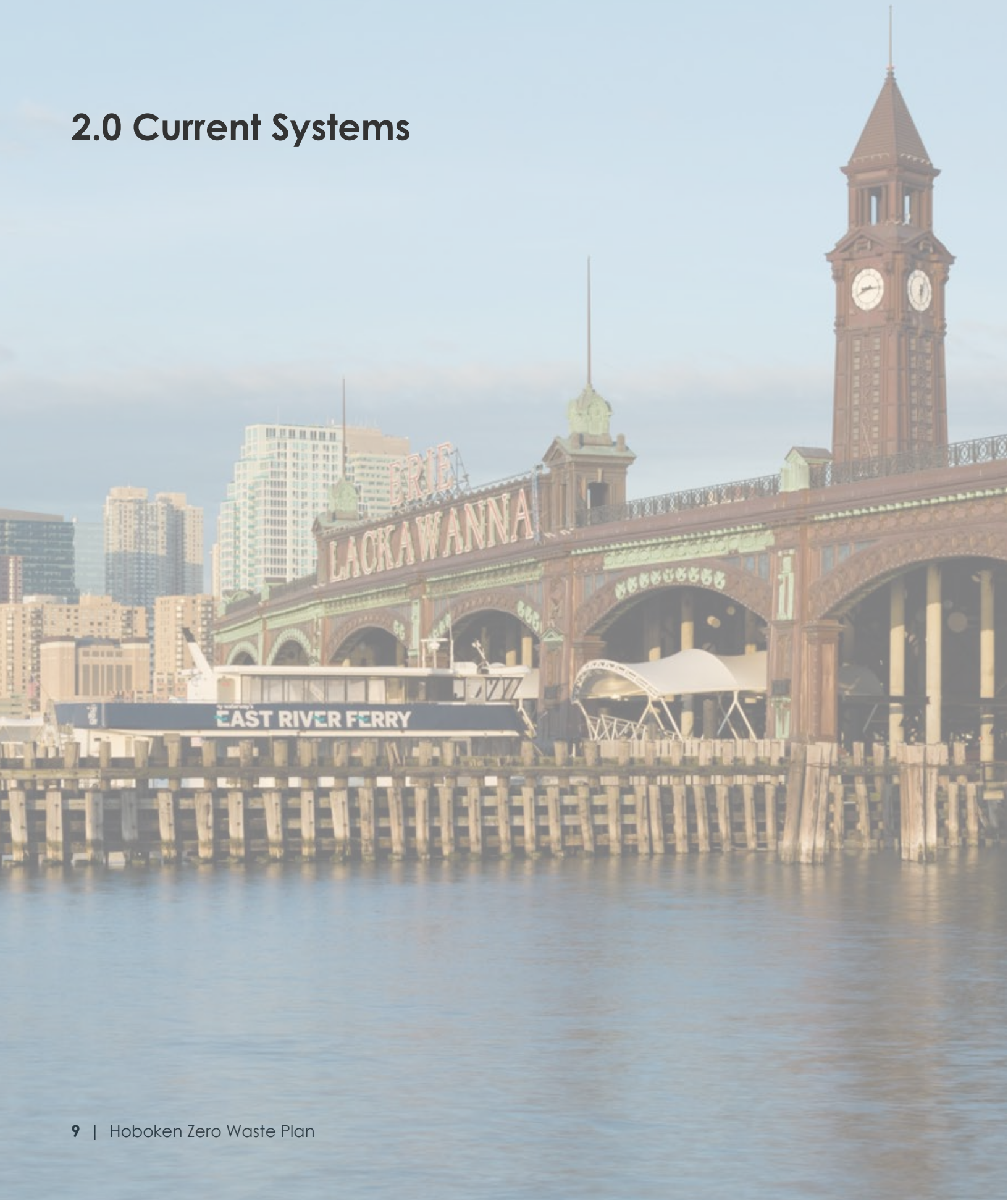
In order to inform the development of solutions for Hoboken, a review of programs in other cities was carried out. Over 30 cities' zero waste activities were reviewed at a high level with a deep dive into seven cities: Seattle, Austin, Boston, Denver, Fort Collins, Chicago, and Toronto. This report underlines the best practices and lessons learned from the cities that are most relevant to Hoboken in reaching zero waste with goals to reduce costs, improve diversion and recycling, and accelerate waste reduction.

A strengths, weaknesses, opportunities, and threats (SWOT) analysis and development of a potential opportunities long list was carried out to identify actionable solutions that will take Hoboken on a pathway to increase diversion, identify efficiencies, and reduce costs to achieve zero waste with equitable outcomes.

The penultimate report consists of 26 opportunities for Hoboken to consider. Each opportunity was evaluated using a standardized criteria that looks at the potential impact on diversion, costs, logistics/feasibility, policy/regulation, quality of life, and stakeholders.

The key findings from all five of these reports have informed the development of Hoboken's Zero Waste Plan and have also been included in the body of this report.

2.0 Current Systems



2.1 Current Services Provided

The City of Hoboken Department of Parks, Recreation, and Public Works (PRPW), formerly known as Environmental Services, manages garbage, recycling, and bulk removal programs as well as drop off days for hazardous materials in partnership with Hudson County. Hoboken also has fourteen community compost drop-off bins where residents can empty their own compost containers. This compost material is collected by Community Compost Company. In addition to the free drop-off containers, a subscription organics collection service is also available.

The City collects waste for household, commercial, and institutional properties alike. Large commercial properties and institutional properties may supplement municipal collection and disposal services with private hauling and disposal.

Figure 2: Limited Business Area in Hoboken



The City is broken up into two areas for the purposes of defining service provision. The Limited Business Area (LBA) includes the main commercial areas of the city. This area covers roughly two miles of road, most of which lies on 1st Street and Washington Street. The rest of the City, outside the LBA, is a mix of residential and mixed use properties with limited commercial premises. Figure 2 shows the LBA in Hoboken, denoted by the green line, with composting drop off points in orange. Figure 3 shows the different collection routes for Cali Hauling Services citywide, including the LBA route and non-LBA routes.

The services available to commercial and residential properties in The City are summarized in Table 1. This includes collection frequency and where the material collected is delivered to for recycling or disposal. Though collection frequencies vary among jurisdictions, most cities in the US provide garbage collection weekly or twice a week. For example, Jersey City, Union City, and North Bergen offer garbage collection two times per week, Hoboken, however, provides garbage collection three times per week citywide and doubles

collection frequency to six times per week in the LBA. More detail on collection frequency is shown in Table 1. Additional information on waste services currently provided in Hoboken are detailed in

Figure 3: Cali Hauling Services Collection Routes

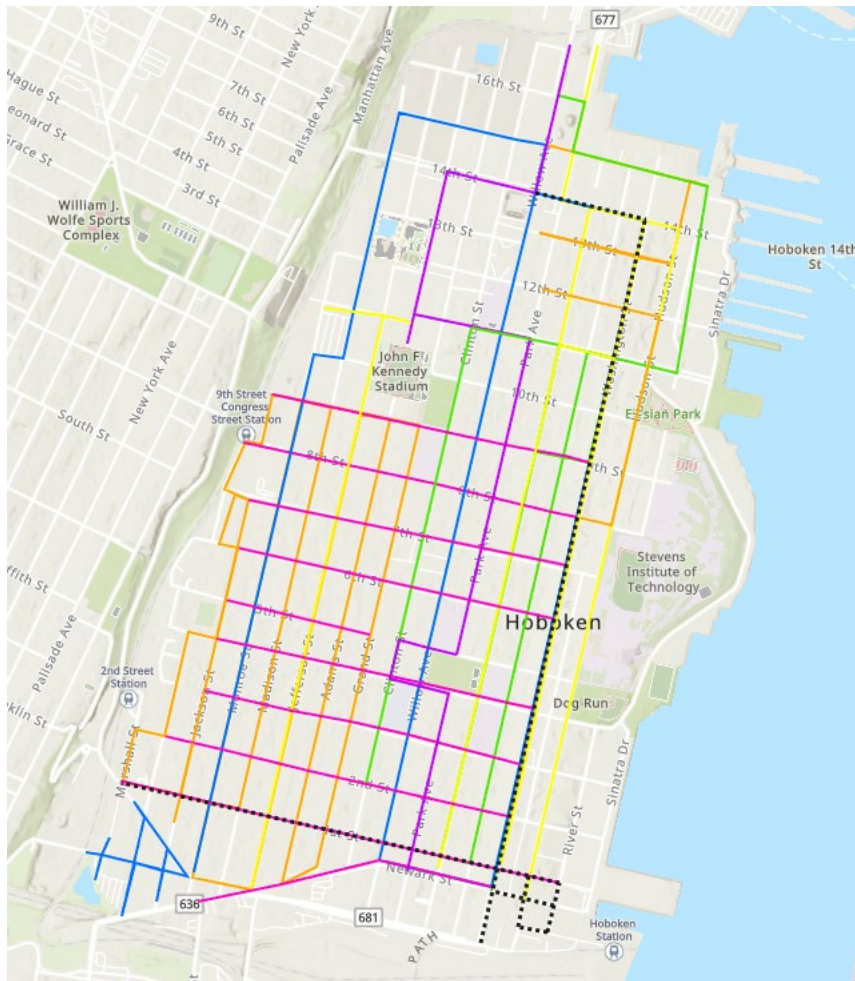


Table 1: Collection Services and Destination

Waste Stream	Citywide Collection	Limited Business Area Collection	Destination
Garbage	Curbside 3 nights a week	Curbside 6 nights a week	DART Transfer Station
Commingled Recycling	Curbside 1 night a week	Curbside 1 night a week	Atlantic Fibers
Glass Bottle Collection	Included in commingled	Included in commingled, and one additional opt-in collection per week	Atlantic Fibers
Old Corrugated Cardboard & Paper	Curbside 1 night a week	Curbside 6 nights a week	Atlantic Fibers

Waste Stream	Citywide Collection	Limited Business Area Collection	Destination
Food Scraps	Community compost drop off	Community compost drop off	Community Compost Company
Yard Waste	Curbside collection 1 day a week	Curbside collection 1 day a week	Natures Choice Hudson County Improvement Authority
Electronic Waste	Curbside collection 1 day a week	Curbside collection 1 day a week	c/o Reverse Logistics Group
Metal ¹	Curbside collection 1 day a week	Curbside collection 1 day a week	SIMS Recycling

2.2 Waste Volume and Composition

As part of the City's development of a Zero Waste Plan, a waste characterization study was conducted between September 19-23, 2022. Understanding the mix of materials that currently comprises the City's waste stream is essential to planning how to pursue a zero waste future. A waste characterization study is a primary data collection activity in which waste that is intended for disposal is collected and sorted according to pre-defined categories to provide insight into the proportional composition of materials in the waste stream. The waste characterization provides a 'point in time' assessment of the components of the waste stream to understand the materials that need to be targeted in the Zero Waste Plan.

In addition to providing insight into the current composition of the waste stream that is destined for landfill, it also provides a can also be applied to the total waste disposed to understand the total amount of each material needs to me managed through Zero Waste strategies and actions. The following section summarizes the approach and findings from the waste characterization study.

There is still a large quantity of material in the garbage stream that could be captured through existing City services. Approximately 21,936 tons of recyclable material that is covered by the City's program is still in the waste stream.

Organics, and more specifically food scraps, were the most prevalent waste fraction in the garbage stream. Therefore, if this waste can be diverted, it would most significantly reduce the amount of waste disposed in Hoboken. Organics constituted 45% of the overall waste characterized. 76% of this fraction was food scraps. As a whole, organics and compostable paper made up 59% of the overall waste disposal sample. Compostable paper was sorted and analyzed under the paper category; however, with proper composting infrastructure, this waste category could be diverted from landfill through composting.

Across all sectors, the majority of the disposal sample was food waste. The respective percentages of the total characterized waste for each waste generation area are provided below:

¹ This includes bulk and scrap metal.

- Single Family and Small Multi-family: 30%
- Large Multi-family: 29%
- Limited Business Area: 38%

Across all sectors, the second most prominent category of the disposal sample was compostable paper, with percent of the characterized waste indicated below:

- Single Family and Small Multi-family: 16%
- Large Multi-family: 13%
- Limited Business Area: 14%

While composting would have the greatest impact on the diversion of waste from the garbage in Hoboken, increasing recycling is another area that needs to be addressed to achieve a zero waste future. Thirty-seven percent of plastics that are currently landfilled could be diverted from landfill through Hoboken's existing recycling collection (rigid plastics #1, 2, 5).

Of the material that is currently being disposed, approximately 64% could be collected for recycling or composting with the current range of materials that Hoboken accepts, with full participation and capture of material. This would allow approximately 80% of the total material that is collected from the curb in Hoboken to be recycled or composted without a change in services offered (but potential need to expand capacity).

These results indicate that increased education, diversion strategies and increased capacity in infrastructure could go a long way in the City's journey toward zero waste. Additional detail on the waste characterization methodology and results can be found in Appendix A.1.0.

2.2.1 Waste Characterization Methodology

The waste characterization study consisted of three nights of collection of waste and five days of sorting. Figure 4 shows an example waste sorting station that was used during the waste characterization. As the waste characterization study was conducted in support of the Zero Waste Plan Development, the intent was to understand the composition of material currently remaining in the waste stream, not what is already being separated for recycling or composting. Therefore, only material put on the curb for garbage collection – intended for landfill – was sampled. Waste was sampled from three different waste generation areas to provide a representative total sample of the city.

These waste generation areas were classified as the following:

- **Limited Business Area (LBA)** – This area is designated by the City of Hoboken as the main commercial hubs and receives more frequent waste collection. It includes Washington St., Newark St., 1st St., 14th St. and Hudson Pl as shown in Figure 2.
- **Large Multi-family** – This refers to specific apartment buildings that contain five or more units. Seventy-eight percent of Hoboken's occupied housing units fall into this category.

Figure 4: Waste sorting station



- **Single Family and Small Multi-family** – This category includes all areas of Hoboken from which the City collects waste that are not included in the previous two categories and consists of a mix of single and smaller multi-family buildings (less than five units) with some dispersed commercial properties.

This breakdown was created as each of these three waste generation areas will have different issues in relation to waste management and require different solutions to increase the amount of material diverted from the garbage stream, and therefore from the landfill.

The waste collected within each waste generation area was sorted into 48 waste component categories within seven major waste fractions, as described in Appendix A.1.0, to determine the proportional weight of each type of waste in the sample.

2.2.2 City Summary

In 2021, the City of Hoboken produced 34,545 tons of waste that was collected by the City for disposal, recycling, or composting. This equals an approximate 16% recycling rate across the residential and commercial sector. The breakdown by the three streams collected by the City is provided in Table 2.

Table 2: Tonnages of Waste Collected for Disposal and Recycling in Hoboken (2021)

Material	Collected for Disposal	Collected for Recycling/ Composting	Total
Paper & Cardboard	8,992	3,216	12,209
Commingle Recyclables (Metals, Glass, Plastic)	6,828	2,267	9,095
Organics	12,147	101	12,248
Special Waste	144		144
Other	849		849
Total	28,960	5,585	34,545

Figure 5: Whole City Waste Characterization (2021)

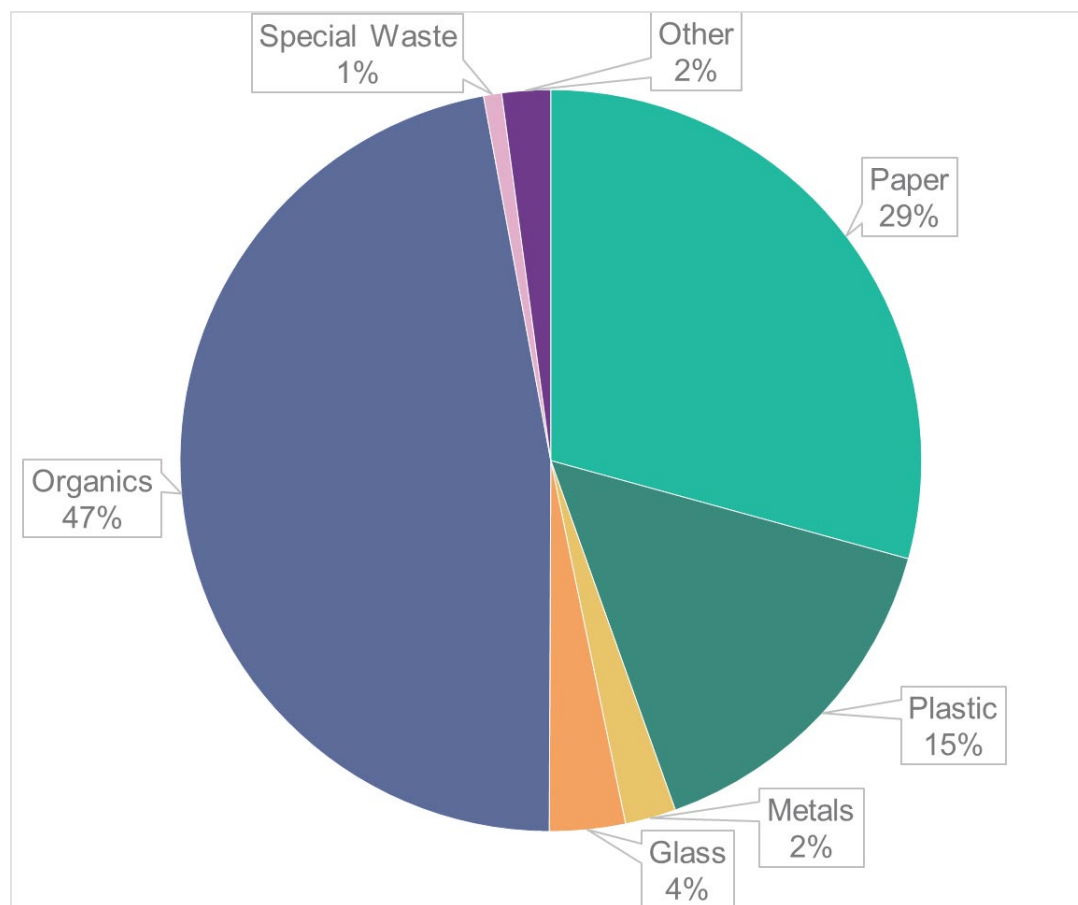
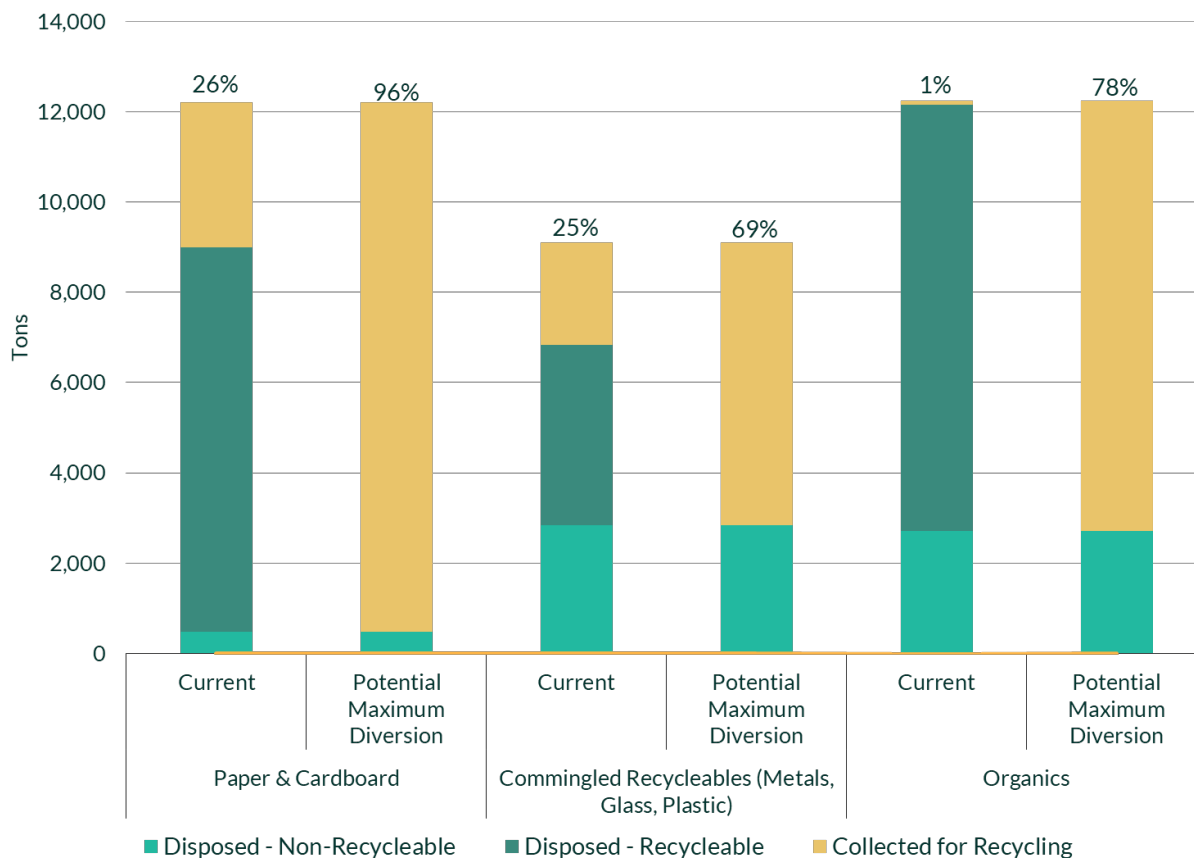


Figure 5 shows the percentage composition of waste collected by material type. By extrapolating the waste characterization to the tons of material that Hoboken collects on an annual basis (in this instance to the tonnages from 2021), it is possible to determine the amount of material that is currently being disposed that could be managed through zero waste strategies. Figure 6 provides an indication of the material that is currently being disposed and the amount, in tons, that could potentially be diverted through Hoboken's current services based on the waste characterization categories (with maximum participation and capture rates as well as increased capacity in the City's programs). The material currently indicated as non-recyclable will need to be dealt with through other strategies to achieve zero waste. The categories that can be recycled or composted through Hoboken's range of materials are indicated in Figure 6 and detailed in the appendix. Of the material that is currently being disposed, approximately 64% could be collected for recycling or composting with the current range of materials that Hoboken accepts, with full participation and capture of material. This would allow approximately 80% of the total material that is currently collected from the curb in Hoboken to be recycled or composted without a change in services offered (but potential need to expand capacity).

Figure 6 graphically illustrates the tons of material that are disposed (split by recyclable and non-recyclable) and currently recycled. Additionally, the recycling rate for each material category is shown above the bars.

Figure 6: Hoboken Material Generation by Subcategory and Recyclability



Both paper & cardboard and commingled recyclables have similar recycling rates, at 26% and 25%, respectively. Organics composting is currently at 1%. As seen in the graph above, there is potential to divert similar amounts of recyclable paper & cardboard and organics. There are around 8,500 tons of potentially divertible paper & cardboard, and 9,500 tons of potentially divertible organics that are currently being disposed each year.

Figure 7: Top Twelve Waste Categories (Citywide, LBA, Large MF)

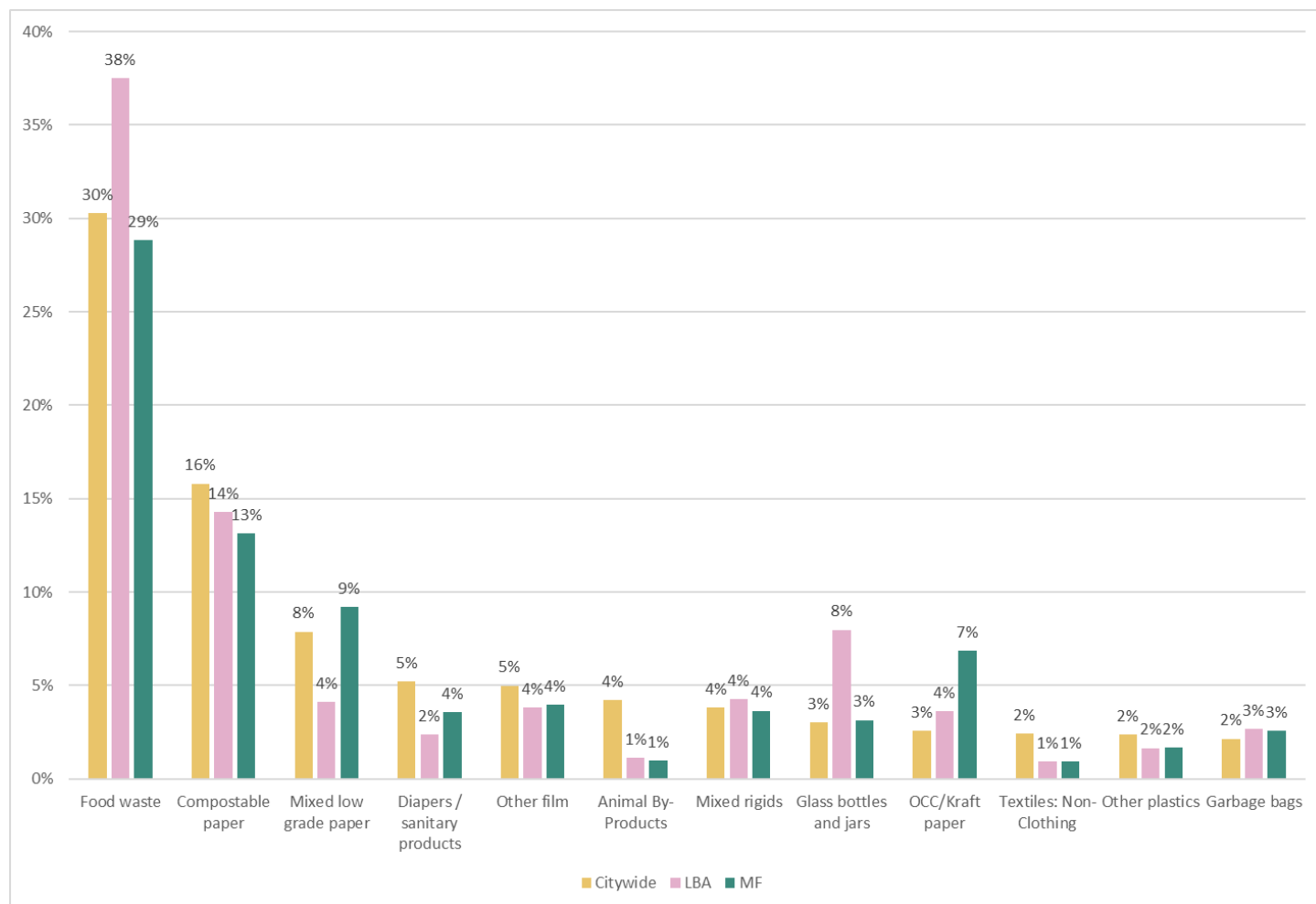
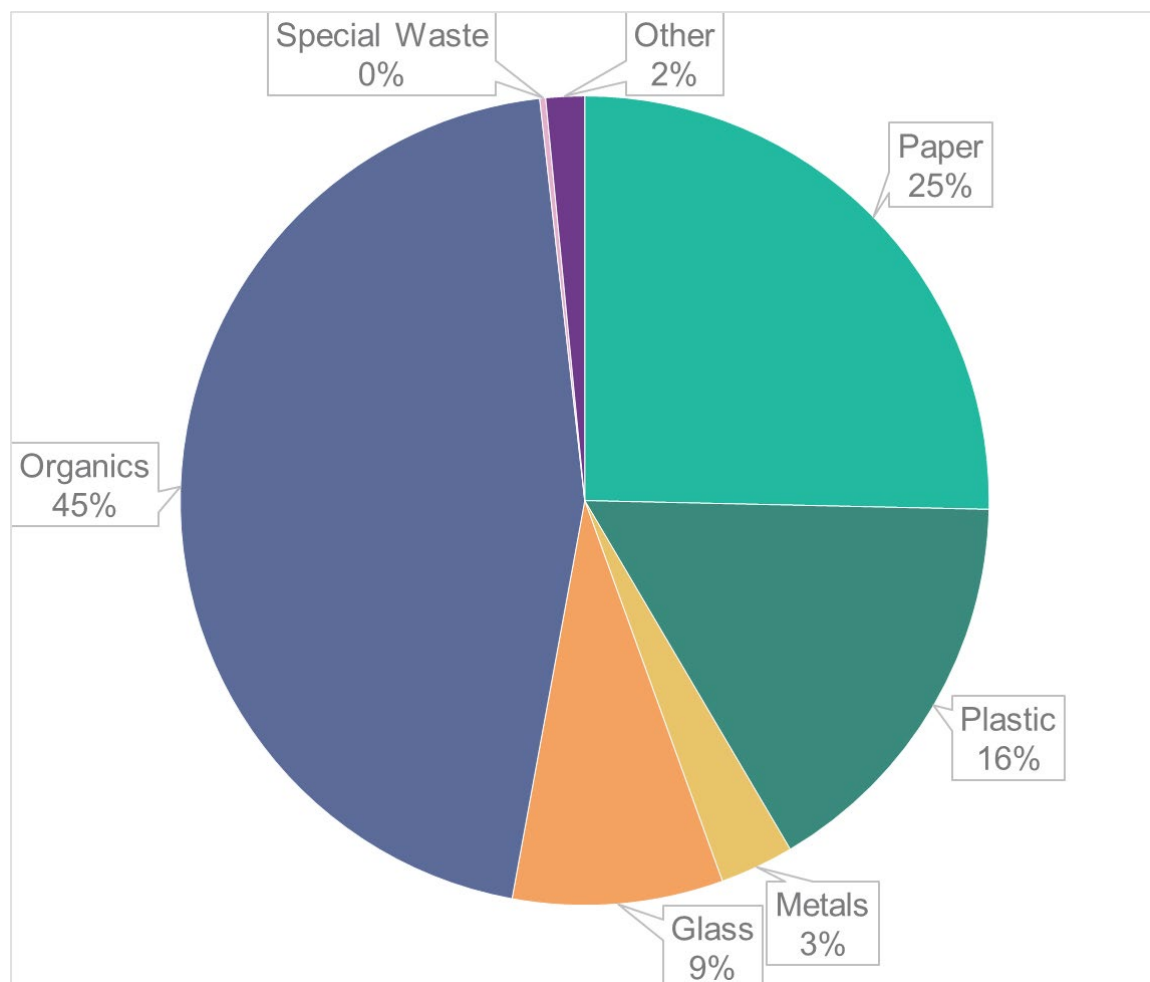


Figure 7 shows the most common waste categories in the three different areas. In all three, food waste is the top waste category with 30% of citywide waste being food waste, 38% of LBA waste, and 29% of large MF waste. The second most common, compostable paper, was also the same across all three categories with 16% of citywide waste being compostable paper, 14% of LBA waste, and 13% of large MF waste.

2.2.3 Limited Business Area

The waste sample collected from the Limited Business Area (LBA) consisted of a mix of commercial and residential waste. The characterization of waste from this waste generation area is provided in Figure 8.

Figure 8: LBA Disposal Sample Breakdown



The highest proportion of the waste sample from the LBA, by weight, was the organics fraction (45%). Over three quarters of the LBA organics stream is food waste (78%), all other subcategories of the organics stream were 7% or less of the organics stream total (yard waste, diapers/sanitary products, etc.).

Paper and plastic comprised the next highest proportions, at 25% and 16%, respectively. Special wastes, which include electronics, batteries, hazardous waste such as pesticides and mercury-laden wastes, were nearly completely absent from the LBA stream. Nearly 90% of the glass disposed in the LBA is glass bottles & jars.

Breaking down these categories further, Figure 9 provides the top ten waste component categories found in the LBA. Note that the percentages do not add up to 100% as these categories are a subset of all the categories in the total waste stream.

Figure 9: LBA - Top Ten Specific Waste Categories

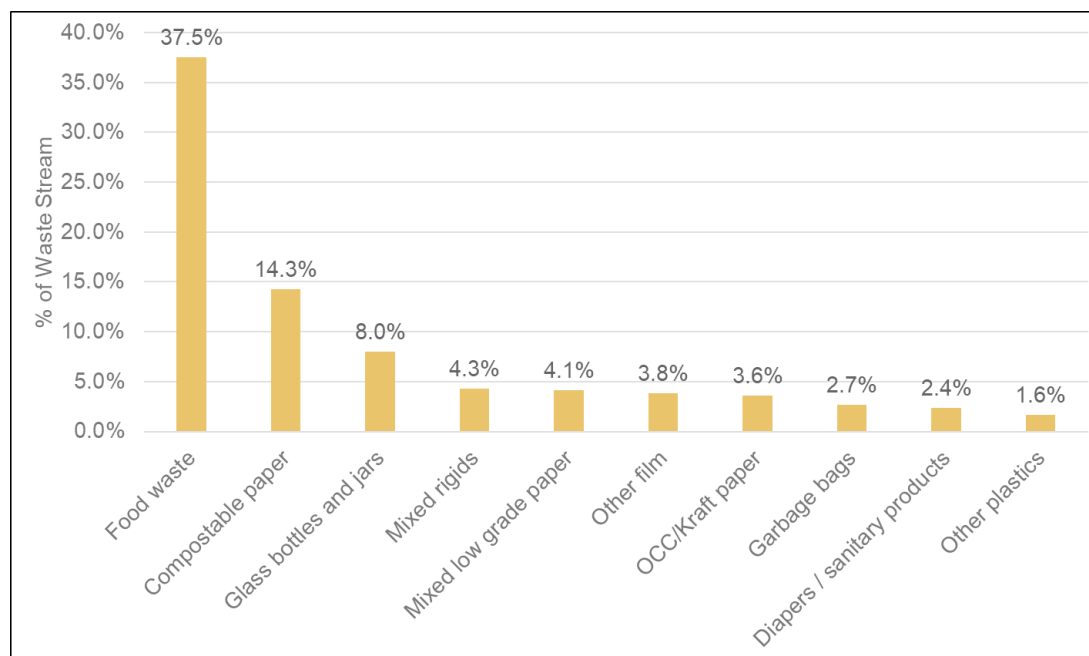


Figure 9 shows that food waste alone is about 38% of the LBA waste stream, followed by compostable paper (14%), glass bottles and jars (8%), plastic mixed rigids, and mixed low-grade paper. Table 3 below provides a summary of the approximate annual tons of each waste fraction in the LBA waste generation area and the corresponding percentage of the garbage stream.

Table 3: LBA Disposal Totals (2021)

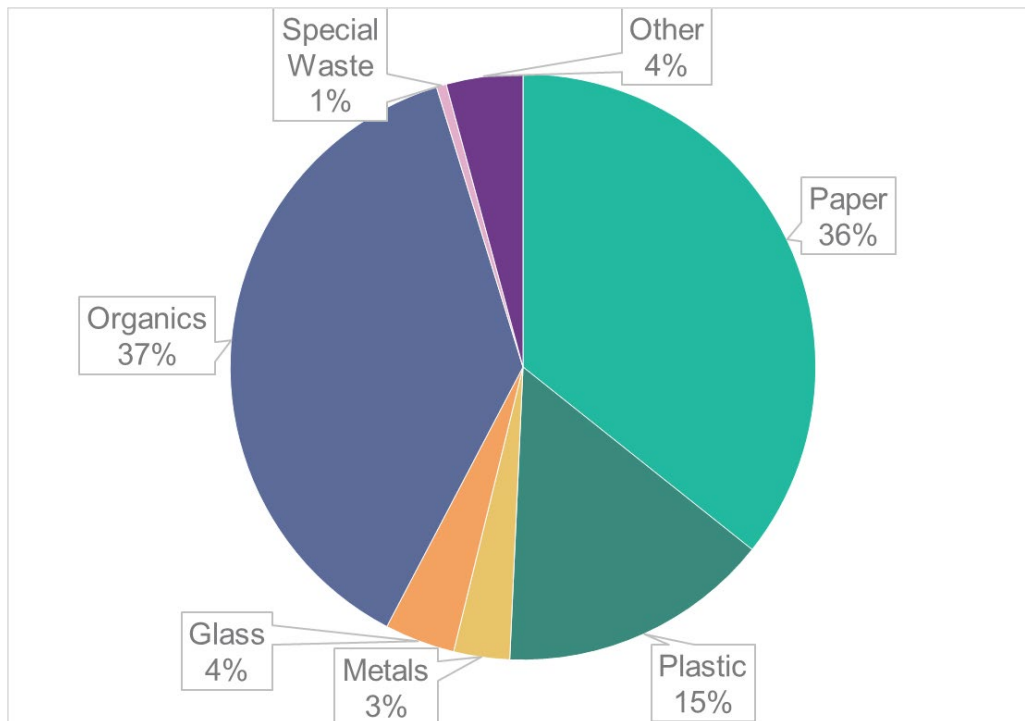
Material Category	Tons Disposed 2021	% of Tons Disposed
Paper	2,403	25%
Plastic	1,534	16%
Metals	280	3%
Glass	797	8%
Organics	4,299	45%
Special Waste	23	0%
Other	146	2%
Total	9,481	100%

4,300 tons of organics are disposed by the LBA annually, which is 45% of the entire disposal stream of the LBA. The next highest material category is paper at around 2,400 tons or 25%, just over half as much paper is disposed as organics. There are 800 tons of glass disposed annually by the LBA, or 8% of the whole disposal stream.

2.2.4 Large Multi-family

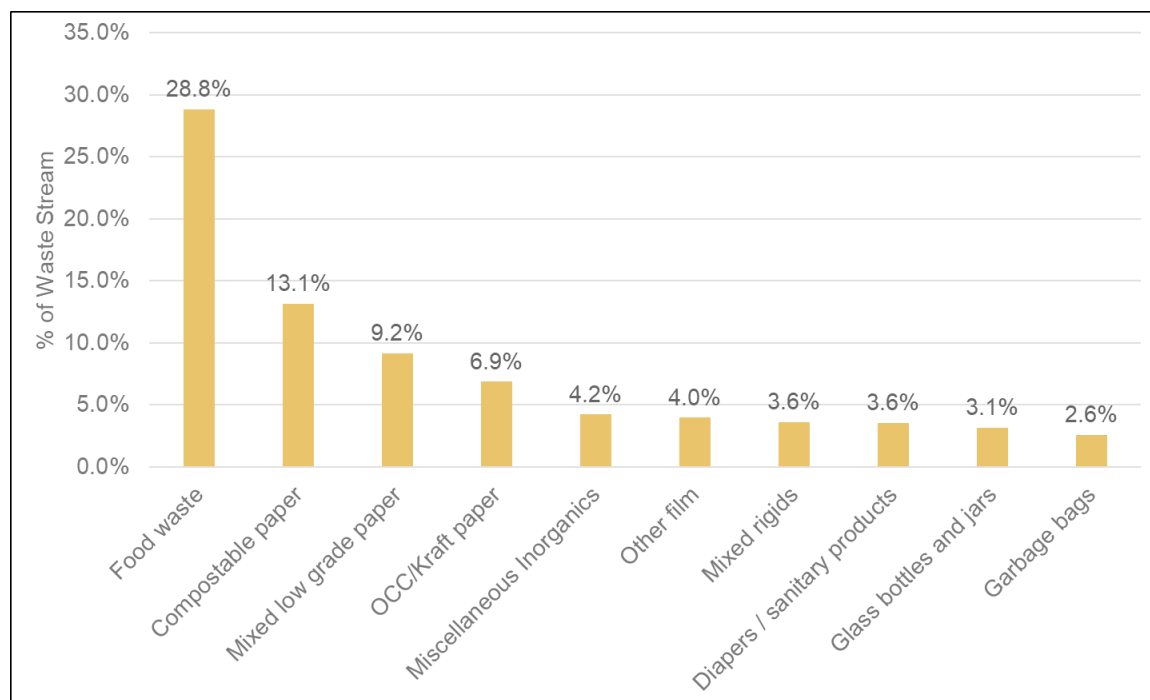
The waste collected from the large multi-family waste category consisted of waste only from multi-family buildings with five or more units. Of Hoboken's occupied housing units, approximately 78% fall into this category. Waste was collected from seven distinct buildings as part of the sample for this study. The characterization of waste from this waste generation area is provided in Figure 10.

Figure 10: Large Multi-family Disposal Sample Breakdown



As in the LBA sample, the majority of Large Multi-family waste sample consisted of organics (37%), followed by paper (36%) and plastic (15%). Figure 11 provides the top ten waste component categories found in the Large Multi-family sample.

Figure 11: Large Multi-family - Top Ten Specific Waste Categories



As in the LBA sample, the largest proportion of the Large Multi-family waste stream is food waste. Food waste alone is about 29% of the large multi-family sample (418 lbs. sample waste). This is followed by compostable paper (13%), mixed low-grade paper (9%), and OCC/kraft paper (brown paper bags, cardboard, 7%). Table 4 provides a summary of the approximate annual tons of each waste fraction and the corresponding percentage of the garbage stream.

Table 4: Multi-Family - Disposed Totals (2021)

Material Category	Tons Disposed 2021	% of Tons Disposed
Paper	4,932	36%
Plastic	2,075	15%
Metals	427	3%
Glass	537	4%
Organics	5,185	38%
Special Waste	76	1%
Other	583	4%
Total	13,815	100%

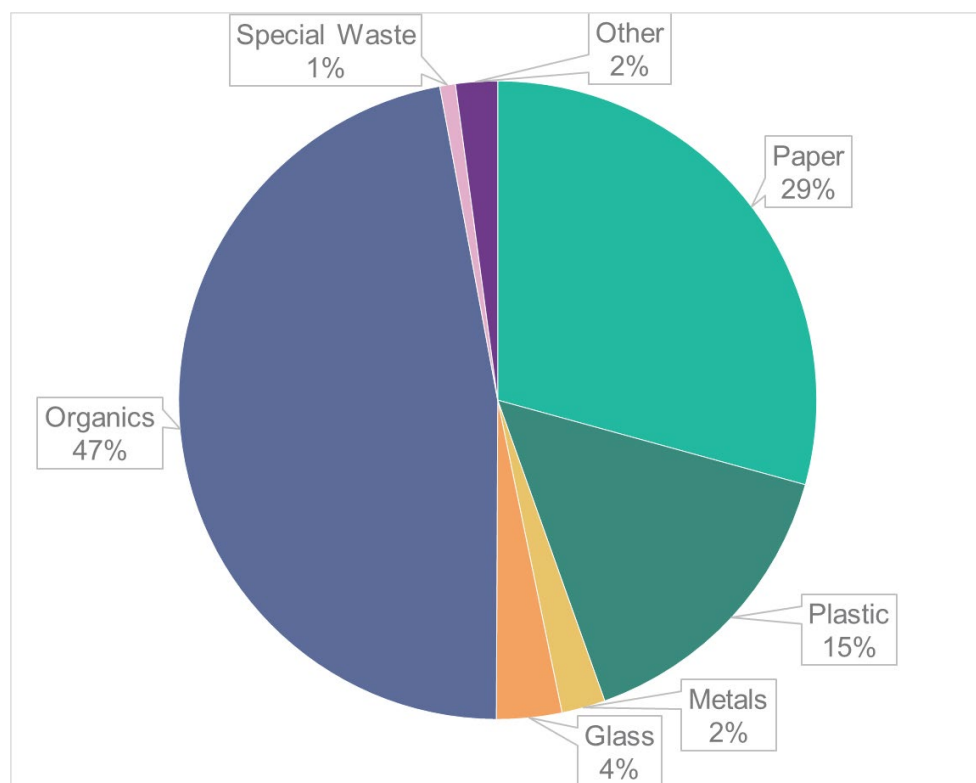
In the Large Multi-family waste generation area, organics is 38% of the garbage stream. This is seven points lower than the fraction of LBA waste disposed that is organics (45%). Glass is 4% of the disposal stream for

Large Multi-family households, which is half the respective value for the LBA (8%). There appears to be more glass disposed in the LBA than in the multi-family sector, both in percentage and raw tonnage terms, as there are 537 tons of glass disposed in the Large Multi-family sector, while there are 797 tons disposed in the LBA. This is despite the Large Multi-family waste generation area disposing approximately 4,000 more tons of all waste annually than the LBA.

2.2.5 Single Family and Small Multi-family

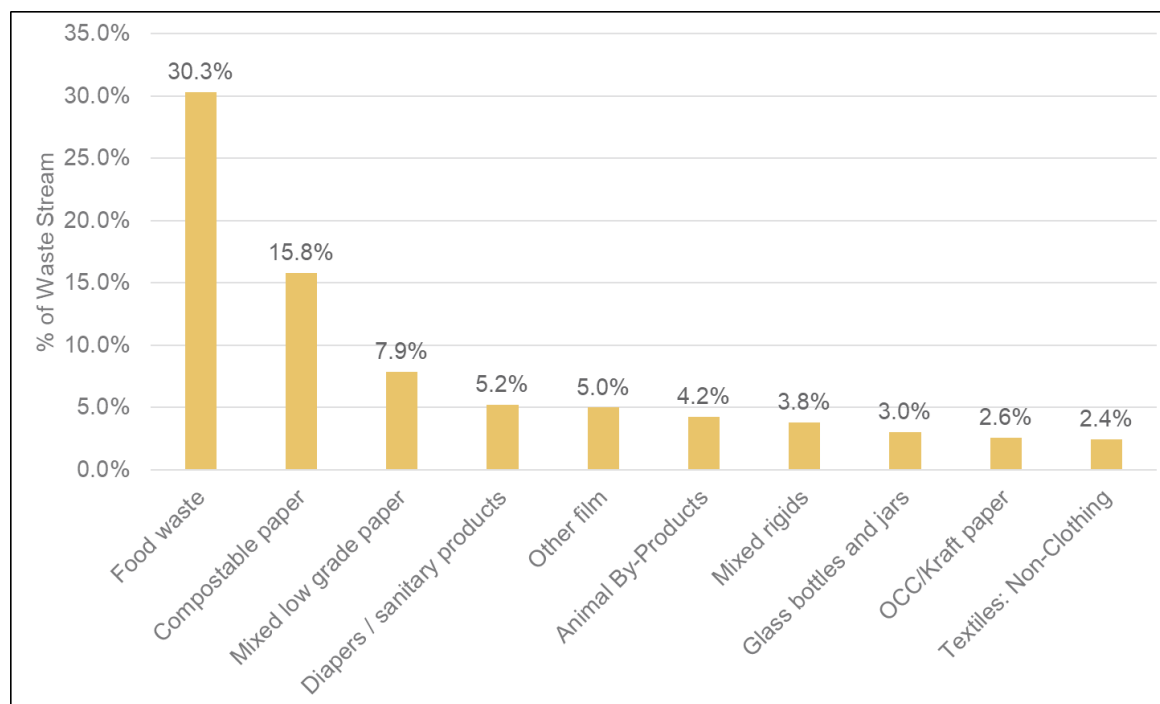
The Single Family and Small Multi-family waste generation area consists primarily of residential waste from single family and small (less than five unit) multi-family buildings, with some commercial properties. The characterization of waste from this waste generation area is provided in Figure 12.

Figure 12: Single Family and Small Multi-family Disposal Sample Breakdown



The highest proportion of the Single Family and Small Multi-family waste sample consisted of organics (47%) followed by paper (29%) and plastic (15%). As shown in Figure 13, the most prominent waste categories reflect the same pattern.

Figure 13: Single Family and Small Multi-family Waste - Top 10 Specific Waste Categories



Food waste alone is about 30% of the Single Family and Small Multi-family waste stream (478 lbs. sample waste). Compostable paper (soiled paper towels, paper plates, wax paper, etc., 16%), mixed low-grade paper (junk mail, magazines, books, etc., 8%), and diapers/sanitary products (5%) were the most prevalent categories following food waste. Table 5 provides a summary of the approximate annual tons of each waste fraction and the corresponding percentage of the garbage stream.

Table 5: Single Family and Small Multi-family Tons Disposed (2021)

Material Category	Tons Disposed 2021	% of Tons Disposed
Paper	1,658	29%
Plastic	866	15%
Metals	125	2%
Glass	187	3%
Organics	2,664	47%
Special Waste	45	1%
Other	120	2%
Total	5,664	100%

An estimated 2,664 tons of organics were disposed of by the Single Family and Small Multi-family waste generation area in Hoboken in 2021. This relates to 47% of the entire garbage stream for that waste generation area, which is two points higher than in the LBA (45%) and nine points higher than the Large Multi-family area (38%). However, because the LBA and Large Multi-family areas each generate more waste

overall than the Single Family and Small Multi-family, they each dispose of more tons of organics annually. The LBA disposes of 4,299 tons of organics, while the multi-family sector disposes of 5,185 tons. These values are both larger than the 2,664 tons of organics disposed by the Single Family and Small Multi-family. The Single Family and Small Multi-family waste generation area has the lowest percentage of glass disposed of the three sectors at 3%. Glass is 8% of the garbage stream in the LBA, and 4% of the disposal stream in the Large Multi-family sector. Additional detail on the waste characterization methodology and results can be found in Appendix A.1.0.

2.3 Community Review of Current Services

In order to evaluate the opinions of Hoboken residents and businesses on current waste management services, a survey was launched in September 2022. Respondents included 464 residents, four businesses, and 14 respondents who classified themselves as both residents and businesses. The key takeaways from the survey are listed below:

- Most residents reported that they receive information about recycling from the City's website or their building management. Residents would like to see better communication and instructions on how to separate waste properly.
- Residents reported that their likelihood to recycle a material varies based on waste category. Cardboard and paper, and comingled recycling are being recycled the most; electronic and bulky products are not more or less likely to be recycled; organics are not likely to be composted.
- Most respondents reported that they recycle once a week, dispose of garbage 1-3 times a week, and do not separate out compost. Residents would like to see more frequent collection of recycling in particular as they are struggling with dual-stream storage space.
- Residents appreciate the lack of traffic blocking during the day; however, they complained about the noise from night pickups.
- Residents provided positive feedback on the composting program and would like to see this program expanded. Survey results indicate nearly 80% of Hoboken residents would compost if it were convenient.
- For hard to get rid of materials (electronics, mattresses, large appliances, furniture, other bulk waste), responses indicated that most residents are currently setting these items out on the curb. However, textiles are more often donated to goodwill or a thrift store.
- Of the businesses that responded, the amount of waste they produce varies greatly. Businesses would like to see more frequent collection and proper storage/bins, as well as further instruction/education on how to dispose of difficult materials. Businesses also mentioned sanitation concerns and recommended the City provide sidewalk spray cleaning services. Per the City code, sidewalk sanitation is the responsibility of the adjacent property owner.

More detail on the survey questions and results is included in Appendix A.3.0.

2.4 Costs Overview

The Zero Waste Plan intends to provide strategies toward zero waste that also produce cost savings and efficiencies for the City. Therefore, an analysis of the current costs was undertaken. Hoboken provides waste services to residential and commercial properties this is unlike neighboring cities including New York City where only residential properties are services by the city and commercial properties but contact and contract directly with private haulers.

Unlikely many cities across the country Hoboken does not charge a utility fee for the collection, recycling and disposal of waste but rather through a combination of property taxes and other revenues; property taxes cover 52.5%, while other payments, such as sales tax and state aid, contribute to the remainder of the expenses, as shown in Table 6. Of Hoboken's peer cities that were reviewed as leaders in zero waste, four of them charge residents for waste collection based on a pay-as-you-throw structure (Seattle, Denver, Austin, and Fort Collins), two use a standard utility fee (Toronto and Chicago), and one charges residents through property tax (Boston). Neighboring cities in New Jersey, including Jersey City, Union City, and North Bergen use a standard utility fee structure.

Table 6: Revenue Sources for Waste Management Services

Other Sources	Amount	Percentage
Property Taxes	\$58,984,640	52.5%
Other Fund Revenues (see detail below)	\$53,464,242	47.5%
Total Funding Sources	\$112,448,882	100.0%
Fund Surplus	\$8,500,000	16%
Local Revenues	\$22,999,000	43%
State Aid	\$11,113,035	21%
Other Special Items	\$13,352,207	25%
Less Court Costs from Other Special Items	\$(2,500,000)	-5%
Total of Other Revenue Sources	\$53,464,242	100%

The City's 2021 budget for waste management services was approximately \$6M, which is 5% of the City's total general fund budget. Of this, approximately 84% or \$5.1M is for waste services – collection, disposal, and recycling. A detailed breakdown of the revenue sources and budget is provided in Appendix A.4.0.

Since the City completed its transition to dual stream recycling in 2020, recycling has become profitable; the City receives a net payment of \$25/ton for all its recyclables.

Of all property taxes collected in Hoboken, 2.27% goes toward waste collection and disposal expenses. Collection costs (\$20.03) and disposal costs (\$11.00) combined comes to \$31.03; however, the average resident pays \$18.92 for waste management services in Hoboken. \$9.93 of this is covered by property taxes, and the remaining \$8.99 would need to be funded by another governmental revenue source.

Table 7: Average Assessment and Costs for Residential Waste Management Services

Description	Totals	Property Tax Allocation (52.5%)	Other Revenues Allocation (47.5%)

Average Assessed Home Value	\$525,000		
Hoboken Property Taxes	\$5,250		
Annual Cost of Collection/Tipping	\$227.01	\$119.18 ¹	\$107.83 ²
Monthly Service Cost	\$18.92	\$9.93	\$8.99

Generally, the cost of providing waste management services for commercial customers varies on the amount of waste generated and collection frequency. In cities that invoice customers based on the level of service offered, restaurants are the highest, and office buildings are the lowest. Restaurants require frequent service due to the putrescible nature of the waste generated and the weight. Food waste is comprised of about 70% water, which is the reason for its heavy weight.

In Hoboken however, assessing the cost of waste management services to commercial properties is not as straightforward as looking at monthly rates and frequency of pickup, as waste collection is paid for through property taxes and not through a utility rate. The cost of waste collection paid by commercial properties in Hoboken are therefore determined through their property values which, among other factors, is determined by size. The amount of waste that a commercial property generates is therefore not factored into how much that commercial property is paying for the waste collection service. To assess how much different types of commercial properties are paying, assessments of commercial property values were made (to then calculate the property tax being paid by the commercial property). This can then be compared with the estimated waste generated by different commercial properties to analyze whether different commercial properties are paying less on a per ton basis than their commercial peers.

Additional detail for both residential and commercial waste service costs can be found in Appendix A.5.0.

2.5 Policy Impact on Services

Waste services in Hoboken are managed and provided by the Department of Parks, Recreation, and Public Works. The City of Hoboken is bound by state law and county requirements, as well as by the City's municipal code.

There are a number of existing policies in place at the state, county and City levels that shape how waste services are and can be provided in Hoboken. As all government policy in the United States, policy from the higher levels of government supersedes that of the more local level and must be adhered to. In the case of waste, New Jersey has policy that provides broader definitions, mandates, and restrictions (see Table 8 below for additional detail). Hudson County, in which Hoboken is located, has a more active role in waste management, creating a periodic solid waste plan with a municipal recycling goal, designating which materials need to be recycled and approving solid waste facilities where the City must haul its solid waste. The Hoboken municipal code establishes regulations for the collection, storage, and management of materials, as informed by the state and the county.

A summary of the different policies that impact on how services are provided now and could be provided in the future is summarized in Table 8 with further details included in Appendix A.7.0.

Table 8: Summary of Policy Related to Hoboken Waste Services

Entity	Policy/Plan	Overview	Key Elements to Achieving Zero Waste
State	Administrative Code Title 5	Chapter 10 establishes safety and sanitation rules for storing waste in multifamily buildings. Chapter 23 outlines the permitting requirement for buildings, which is overseen by the New Jersey Department of Environmental Protection (NJDEP or DEP). Chapter 28 sets standards for safety and sanitation rules for storing residential waste and the separation of recyclable and non-recyclable waste according to relevant municipal rules.	Multifamily buildings must have receptacles to store waste between collection. Receptacles must be kept in a designated area between collections, which the City of Hoboken requires in its code as well. However, receptacles often do not have designated spaces or are not returned to these spaces. Moreover, cardboard is rarely baled and secured, often put directly on the sidewalk where it becomes a litter-prone item. Occupants of buildings and dwellings must store garbage and organic waste in watertight receptacles with tight fitting covers. One receptacle must be provided for each dwelling unit. Recyclable materials must be stored separately from non-recyclable materials.
		Chapter 26 establishes the rules governing solid waste management in the state, including the rules for recycling programs and the responsibilities of each level of government, including counties and municipalities. It also establishes the rules for hazardous solid waste and regulations for solid waste utilities.	Municipalities must establish a recycling program sufficient to achieve the target recovery set in county solid waste plans (detailed below), including requiring all individuals generating municipal solid waste to source separate from the municipal solid waste covering at least recyclable materials designated in the district solid waste plan. Updates to Hoboken's municipal code must be in accordance with Hudson County's solid waste plan. Hudson County has not updated its solid waste plan since 2010.
State	Administrative Code Title 7 Chapter 26		

Entity	Policy/Plan	Overview	Key Elements to Achieving Zero Waste
			The management of hazardous waste and solid waste utilities across the state is overseen by DEP.
State	Organic Recycling Requirements for Large Generators	The State of New Jersey requires food wholesalers, distributors, industrial food processors, supermarkets, resorts, conference centers, banquet halls, restaurants, educational or religious institutions, military installations, prisons, hospitals, medical facilities, or casinos that produces at least 52 tons per year of food waste to separate and recycle food waste.	Only three businesses in Hoboken produce 52 tons or more of food waste per year and are subject to this requirement. These businesses are Trader Joe's, McDonald's, and ShopRite.
State	Single-Use Item Bans	New Jersey bans single-use plastic and paper carryout bags in stores and food service businesses, and grocery stores. The State also bans polystyrene foam food service ware. Food service businesses can only provide customers with single-use plastic straws upon request.	Hoboken had an ordinance banning single-use plastic bags and polystyrene that went into effect in 2019. The city ordinance was superseded by the State ban. Bans aim to eliminate hard to recycle items from the waste stream. Bans can lead to a direct substitution of single-use items that have a similar or greater environmental impact. Bans can be difficult to monitor and require enforcement measures to ensure compliance.
County	Solid Waste Management Plan	The Hudson County Solid Waste Management Plan provides an inventory of waste generated in the county, solid waste and recycling facilities, the procedure for processing applications for	The Hudson County Solid Waste Management Plan provides a list of required materials and additional recommended materials for recycling. Each city in the county, including Hoboken, is required to implement a solid waste program that complies with these requirements. Hudson County

Entity	Policy/Plan	Overview	Key Elements to Achieving Zero Waste
		inclusion of solid waste and recycling facilities in the plan, a strategy to meet the State's recycling goal of 50%, and the list of mandated recyclable materials and entities providing for collection, processing, and marketing services. The plan also outlines the Solid Waste Disposal Strategy, community outreach program outlining generators' responsibilities, enforcement programs, and the adoption of a county-wide uniform municipal recycling ordinance. However, the Plan was released in 2010.	Improvement Authority (HCIA) is a resource on which cities can draw to supplement their programs and receive education and potential funding. This plan also sets a goal of achieving a 50% municipal recycling rate and 60% total recycling rate, but this target is non-binding and does not have a target date.
City	Municipal Code	The Hoboken Municipal Code lays out the rules for development in the City and municipal services. Chapter 58 specifically outlines the role of the Department of Parks, Recreation, and Public Works (Department) in the City of Hoboken, who are in charge of waste management for the City. Chapters 110 and 151 focus on rules for garbage and recycling, respectively. Chapter 196 establishes zoning rules and businesses that require solid waste plans.	Any changes to waste collection and contracting need to be reflected in the City Code. Residents and businesses are required to separate and set out waste in containers with properly fitting lids. Waste containers must be in a designated area between collections, which cannot be on the sidewalk, in front of buildings, or houses. In practice, many waste containers do not have designated spaces or are not returned to those spaces. This point should be clarified or changed as containers are often stored in front of buildings. The code also requires multi-family buildings to provide adequate accommodation for resident's deposit of garbage.

Entity	Policy/Plan	Overview	Key Elements to Achieving Zero Waste
			<p>The City of Hoboken requires separation at source and dual stream recycling. Commercial developments of over 1,000 square feet and multifamily buildings of 3 or more units are required to submit a recycling plan with an analysis of expected composition and amounts of solid waste and recyclables generated. However, there is no guidance on solid waste quantities. Existing plans only relate to commercial properties and focus only on recycling.</p> <p>Furthermore, the estimated standard generation rates by material provided in the code are ill-equipped to capture the variability of generation from different businesses and multifamily properties. These estimated rates should be revised and simplified. Guidance should be included for architects to use these rates and submit more robust solid waste and recycling plans. The addition of organics as a separate stream should be considered as well. The code additionally requires businesses to submit a copy of a contract with a hauling company for waste and recycling collection to receive their certificate of occupancy.</p> <p>However, this does not seem to match the current system, in which the City contracts with a hauler to pick up all waste from businesses and residences across Hoboken.</p> <p>Storage size for residential recyclables should be examined to ensure eight gallons of storage is sufficient. Storage size for commercial generators includes types of containers</p>

Entity	Policy/Plan	Overview	Key Elements to Achieving Zero Waste
			such as hampers that are picked up by forklift, which are not collected by the City's contract hauler and imply private hauling.
City	City of Hoboken Master Plan: Green Building and Environmental Sustainability Element	The City of Hoboken Master Plan provides policy recommendations to promote sustainability and achieve its vision of an environmentally, socially, and economically healthy community. This plan was prepared by the City of Hoboken and adopted in December 2017.	The Master Plan lays out strategies that seek to address many of the City's current issues and that most of these issues have not been remedied since its publication. Therefore, the Master Plan provides support for actions in the Zero Waste Plan that will seek to address these issues. This plan was a non-binding strategy, so the Zero Waste Plan will attempt to build on it where relevant, but there are no constraints associated with this plan. To achieve zero waste, further strategies will be needed, especially those that more directly address waste reduction, such as waste reduction.
City	Climate Action Plan	The Hoboken Climate Action Plan was published in 2019 and is currently serving as the main strategy document related to climate initiatives in the City of Hoboken. The Hoboken Climate Action Plan lays out strategies to reduce GHG emissions and to achieve the goals of net zero energy by 2030 and carbon neutrality by 2050. Hoboken's climate action plan does not focus significantly on GHG emissions from waste.	This Climate Action Plan provides a roadmap for the City of Hoboken, which is currently working towards its implementation. The goals of this plan are re-evaluated every five years. Strategies in the Zero Waste Plan must align with the goals and timelines outlined. The Climate Action Plan's most relevant aspect related to waste is the target of keeping GHG emission from solid waste constant through 2030, despite any increases in waste generation or population growth. Hoboken's climate action plan does not focus significantly on GHG emission from waste. Waste management offers cities a significant opportunity to align zero waste and climate action plans to

Entity	Policy/Plan	Overview	Key Elements to Achieving Zero Waste
			<p>accelerate the transition to a low carbon and circular economy.</p>

2.6 SWOT to Current System

A four step process has been carried out to develop actionable solutions that will take Hoboken on a pathway to increase diversion, identify inefficiencies, and reduce costs to achieve zero waste with equitable outcomes:

- Step 1: Strengths, weakness, opportunities, and threats (SWOT) analysis
- Step 2: Development of long list of potential recommendations based on SWOT
- Step 3: Evaluate long list and assess costs to develop shortlist
- Step 4: Develop shortlist into recommendations and action plan

This section focuses on the SWOT analysis and development of a potential opportunities long list. This work will directly feed into the shortlisting process and the development of the final recommendations for the City of Hoboken's Zero Waste Plan.

2.6.1 SWOT Analysis Methodology

The SWOT analysis consisted of an evaluation of Hoboken's current waste system. The analysis focused on the system's current strengths, weaknesses, opportunities, and threats, as defined below.

Figure 14: SWOT Categorization



Each strength, weakness, opportunity, and threat was grouped by related topic: recycling, organics, and/or reuse. These groupings are pulled from our previous assessment of best practices and lessons learned from the cities that are most relevant to Hoboken in reaching zero waste. Each item was then categorized into services, infrastructure, partnerships, communication, and policy. The reasoning for why each strength, weakness, opportunity, and threat was included as part of the analysis is also described.

The final section of this report focuses on a long list of potential recommendations building off the findings of the SWOT analysis. These potential solutions refer to initiatives and options that could improve Hoboken's waste management system and support progress to achieving their zero waste objectives. This section provides a detailed analysis of each potential solution including its challenges and interdependencies with other initiatives or components of Hoboken's waste system. This list will be refined at the next stage following the completion of the cost benefit analysis.

2.6.2 Internal Strengths

As a relatively small city with well-established waste services, Hoboken has many strengths to pull from as the City develops its Zero Waste Plan. Table 9 outlines Hoboken's key strengths, grouped by category and the main waste stream to which each strength relates.

Table 9: Strengths

Area	Category	Strength	Reason
Recycling	<ul style="list-style-type: none"> Services Policy 	Dual-stream recycling	Hoboken's switch to dual stream has led to an \$85/ton savings on recyclables from 2019, to the point where the City receives a net payment of \$25/ton for all its recyclables. Dual stream systems generally have a 10% lower contamination rate and a higher net recycling rate than single stream systems. ²
	<ul style="list-style-type: none"> Services Policy 	Consistent Recycling for Commercial and Residential Waste	Provides equal access for all and consistent services for Hobokeners whether they are at work or at home.
Recycling	<ul style="list-style-type: none"> Policy Services 	Dedicated Public Works team to support recycling	High appetite to achieve the city's zero waste goals and support waste services.

² The Institute for Local Self-Reliance. <https://ilsr.org/dual-stream-vs-single-stream-recycling/>

Area	Category	Strength	Reason
	• Communication		
Recycling	• Policy	No requirement for trash chutes in new buildings	Without a code requirement for a trash chute, it is easier to design buildings with a central waste room for equal convenience disposal of recycling, food scraps, and trash, making it easier for occupants to separately multiple waste fractions.
Organics	• Services	Existing drop-off compost program	Demonstrates that there is at least one local organics contractor and shows that there is an appetite to divert organics and awareness of the program by some residents.

2.6.3 Internal Weaknesses

There are several areas in which Hoboken can improve when it comes to waste management. Table 10 lists the areas of weakness identified during the SWOT analysis.

Table 10: Weaknesses

Area	Category	Weakness	Reason
Recycling	• Policy • Communication	Labelling or signage requirements not consistent for bins within and City ordinance only requires "Hoboken recycles" decals, no requirement to set out clearly	Results in a lack of standardization of bin labelling and signage across Hoboken, including public waste bins and business waste stations. Creates confusion about what items go in each bin impacting on recycling rates and contamination.

Area	Category	Weakness	Reason
		what is and is not accepted in each recycling bin.	
Recycling	<ul style="list-style-type: none"> • Communication • Policy 	No bin color coding requirements within City ordinance to clearly define garbage, commingled, and paper/card.	Results in a lack of standardization of bin labelling and signage across Hoboken, including public waste bins and business waste stations. Additionally, because dual stream recycling was recently added, most residential buildings use blue bins for commingled recycling and paper and cardboard- very few green bins are in use and signage for paper and cardboard is typically not clear. This creates confusion about what items go in each bin which has the potential to lead to lower recycling rates and contamination
Recycling	<ul style="list-style-type: none"> • Policy 	No City ordinance requirement for recycling and composting at large events	Limits the ability to educate city on what and how to recycle, increases cost of providing service to event and reduced tons recycled.
Recycling	<ul style="list-style-type: none"> • Policy • Services 	Garbage collection is more frequent than recycling collection in both the LBD and the wider city.	Results in recyclable waste ending up in the garbage. See Section 2.0 which includes details on the amount of recyclable material still in the garbage stream.
Recycling	<ul style="list-style-type: none"> • Policy • Infrastructure 	Regulations in Chapter 151 of the Municipal Codes require submission of expected recycling and waste generation for new multifamily buildings have confusing methodologies	Clear guidance for architects is needed to ensure buildings are planned with adequate storage space for trash, recycling, and organic waste. Guidance for building reviewers is needed also to ensure compliance. This guidance could include requirements for compaction

Area	Category	Weakness	Reason
		and there is no clear method to review new building plans	and planning for use of wheeled bins, anticipating future containerization.
Recycling	<ul style="list-style-type: none"> Policy Services 	No bins are typically provided by the city for paper & cardboard and comingled recycling collection. Chapter 151 of the Municipal Code requires property owners to provide recycling bins.	Paper and cardboard are often left at the curb uncontained increasing the likelihood of windblown litter and reducing the ability to capture small paper formats.
Recycling	<ul style="list-style-type: none"> Services Policy 	Properties do not pay directly for service but instead through property taxes,	Because businesses/residents pay for services through property taxes, there is no exact cost recovery e.g., through monthly charged rates for services provided. Impact is that the public do not appreciate the cost of the high frequency service which results in opposition to any policy changes that may require service optimization.
Garbage Recycling	<ul style="list-style-type: none"> Service 	Parking	Street parking can complicate access to garbage and recycling set out on the curb for collection.

2.6.4 External Opportunities

Factors that benefit and support Hoboken's waste management system and pathway to zero waste are outlined below.

Table 11: Opportunities

Area	Category	Opportunity	Reason
Recycling	<ul style="list-style-type: none"> Partnerships/ Services 	Cooperative hauler	Can expect cooperation from hauler in the case of changes to the collection system or other new initiatives.
Recycling	<ul style="list-style-type: none"> Partnerships 	Business Alliance / Green businesses	Route through which to consultant on, pilot, champion, and deliver services to business.
Recycling	<ul style="list-style-type: none"> Partnership 	Green Team (volunteers)	Active and committed group of residents which can input into the development and success of new service and programs.
Recycling	<ul style="list-style-type: none"> Policy 	Chapter 13 section 1E of New Jersey Statutes requires for food waste recycling for large generators	Commercial or institutional entities that generate over 52 tons of food waste per year are required to recycle that food waste. While only three businesses in Hoboken generate over 52 tons of food waste per year, this requirement can set the stage to expand organics waste collection and recycling to all businesses.
Recycling	<ul style="list-style-type: none"> Services 	Hoboken is a small dense city	Quicker, more efficient collection services with reduced vehicle movements and associated environmental impacts. Limited space to store garbage and recycling at the front of property or at curb.
Recycling Organics	<ul style="list-style-type: none"> Infrastructure Services 	Of Hoboken's occupied housing units, approximately 78% are multifamily buildings with 5 or more units as well as over 17,000 units in larger multi-family buildings.	Increasing recycling and organics collection service to multi-family buildings will have a significant impact on the transition to zero waste.

Area	Category	Opportunity	Reason
Recycling Garbage	• Services	No ability to distinguish between commercial and residential waste	Unable to track quantities of commercial vs residential waste making it difficult to understand what programs to implement and how to evaluate.

2.6.5 External Threats

Certain factors may diminish the success of Hoboken's waste management system. Table 12 outlines these threats and the reasoning for why each is a risk.

Table 12: Threats

Area	Category	Threat	Reason
Recycling	• Communication	Transient resident population	Repeated communication and outreach efforts are necessary due to relatively high turnover of residents compared to other cities.
Recycling	• Communication	History of communication issues with some building managers	Absentee landlords or poor communication from building management companies can make communication and education on recycling and separation difficult
Recycling	• Infrastructure	Some large multi-family buildings do not have loading docks	Limits waste collection options and often leads to bags placed on the streets and rodent problems.
Recycling	• Services	Limited competition for service provision collection and processing	Minimal options for contracted haulers and processors, impacts on cost of service and types of services that could be delivered.

Area	Category	Threat	Reason
Recycling	<ul style="list-style-type: none"> Policy Communication 	Businesses often set out waste in the LBA before the 9pm requirement	Standardizing set out times may be difficult due to business closing hours varying, i.e., if a business closes before 9pm.
Recycling	<ul style="list-style-type: none"> Policy 	Hudson County Improvement Authority (HCIA) receives funds from tipping fees, so budget is based on greater amount of garbage	Provides a financial disincentive for a reduction in tonnages of garbage collected
Recycling	<ul style="list-style-type: none"> Policy 	Hoboken Municipal Court has no ability to ultimately enforce fines	Poor enforcement and a lack of repercussion for residents or businesses not following regulation about proper recycling
Recycling	<ul style="list-style-type: none"> Policy 	Difficulty coordinating policy with levels of government that move at different paces	Want to ensure alignment with county and state policy, but some segments of government work at slower paces. For example, Hudson County has not updated its SW management plan since 2010.
Recycling	<ul style="list-style-type: none"> Services Policy 	Hoboken has one of the lowest tax rates in New Jersey. Municipal taxes are set at the average residential property value.	Likely constituent opposition to higher taxes which limits the city's budget and ability to increase services.
Recycling	<ul style="list-style-type: none"> Infrastructure Services 	MRF operator moving further away from Hoboken, from Jersey City to Passaic.	Potential to lead to an increase in hauling costs as further distance to haul recyclables.

Area	Category	Threat	Reason
Recycling	<ul style="list-style-type: none"> Infrastructure Services 	Hoboken is a relatively small dense city	Minimal space to put waste containers on the curb and already limited parking means residents and businesses oppose repurposing parking spaces for waste set out.
Organics	<ul style="list-style-type: none"> Policy 	NJ Law compost requirement applies to large generators only (only applies to Stevens and Shop Rite, McDonalds does not have enough generation)	Currently no mandate for smaller businesses to collect organics and commercial composting at the municipal level will have to be adapted to small businesses
Organics	<ul style="list-style-type: none"> Services 	The closest commercial size organics facility to Hoboken is in Elizabeth, New Jersey – 14 miles away and a 30-45 minute drive. By contrast, garbage is disposed at DART transfer station which is 8 miles from Hoboken city center. The tipping fee at an organics facility would have to be lower than the \$106 per ton the city currently pays for garbage disposal, such that the additional transport costs do not make organics collection more expensive.	Potential disincentivize to organics collection. Composting facilities are licensed at the state level by NJDEP, but there are currently insufficient licensed facilities within proximity to Hoboken.

3.0 Options Analysis



3.1 Method Overview

Eunomia benchmarked Hoboken's waste management by collating and analyzing best practices and lessons learned from other key cities with a focus on reducing costs, improving diversion and recycling, and accelerating waste reduction. The key findings were grouped into the following five topic areas: recycling; organics; repair, reuse, and refill; policy, and partnerships. Opportunities for Hoboken that were identified building from the SWOT analysis built upon these topic areas, and are broken out into the following categories:

- 3.2.1 Garbage
- 3.2.2 Organics
- 3.2.3 Recycling
- 3.2.4 Reuse
- 3.2.5 Miscellaneous

These categories were developed by taking into consideration the key findings from the other cities zero waste plans, and the most logical grouping of the longlisted solutions from the SWOT analysis. Largely similar categories, they have been structured to focus on organics, recycling, and reuse programs, within each are opportunities that focus on services, infrastructure, partnerships, communication, and policy.

As part of the cost-benefit analysis, Eunomia aimed to identify opportunities that increase diversion, create cost savings for the City, improve quality of life for residents, and are reasonably feasible to implement. Table 13 outlines the different metrics against which each opportunity was considered.

Table 13: Evaluation Criteria

Criteria	Green	Amber	Red
Diversion	Decrease waste to landfill	Limited impact on amount of waste to landfill	Potential to increase waste to landfill
Costs	Cost savings	Potential additional costs	Additional costs
Logistics / Feasibility	Possible for the City to implement logistically, with no physical constraints	Possible for the City to implement logistically, with solvable physical constraints	Difficult for the City to implement, with difficult, unchangeable physical constraints
Policy / Regulation	Requires no policy change	Requires policy change within control of the City	Requires policy change outside of City control
Quality of Life	Reduces litter and access to waste for rodents	Little to no impact on litter or access to waste for rodents	Potential to increase litter or access to waste for rodents
Stakeholders	Positive or limited impact	Some impact that needs to be mitigated through stakeholder engagement, consultation, and education	Impact that is difficult to mitigate

3.2 Cost-Benefit Analysis of Opportunities

Table 14 provides an overview of each opportunity and how it was assessed according to the evaluation criteria outlined in Table 13. The following sections provide additional detail for each opportunity and more information on costs is included in Appendix A.6.0.

Table 14: Assessment of Opportunities Overview

	Topic	#	Opportunity	Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
Garbage	Collection Recipients	1	Solid waste utility for commercial and large multifamily buildings						
		2	Reduce garbage collection frequency for <19-unit properties						
	Collection Frequency	3	Reduce garbage collection frequency in LBA						
Organics		4	Residential curbside organics collection						
		5	Caddy swap organics program and pre-treatment equipment						
	Residential Organics Collection	6	Expand organics drop off program						
		7	Code requirement for organics collection for 20+ unit properties						
		8	Code requirement for organics collection for food businesses						
	Commercial Organics Collection	9	LBA curbside organics collection						
		10	Food donation program						
	Infrastructure	11	Advocate for a county composting facility						

	Topic	#	Opportunity	Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
Recycling	Containerization and Capacity	12	Containerization / wheeled bins citywide						
		13	Requirements for large buildings						
		14	P-A-Y-T System						
	Communication and Education	15	Expand public education initiatives						
		16	Standardize labelling citywide						
		17	Increased LBA engagement & communication						
	Reuse	Community Reuse Programs	18	Reuse and repair hub					
19			Citywide stop sale						
20			Furniture donation program						
Business Reuse Programs		21	Reuse Hoboken: public-private partnership						
		22	Reusable food serviceware pilot program						
		23	Reusable cup pilot program						
		24	Policy requirement for reusables						
Misc.	Contracting Strategy	25	Improve hauler reporting and data tracking						
	Public Spaces	26	New requirements for public spaces & parks						

3.2.1 Garbage

(1) Solid Waste Utility for Commercial and Large Multifamily Buildings

The City could cease City-managed services to commercial and larger multi-family buildings, and only provide collection services to residents in buildings with 19 or fewer units. Commercial and large multifamily buildings would need to pay for their own waste collection via a solid waste utility established by the City. The majority of cities across the country do not provide services to commercial and large multifamily properties.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
<ul style="list-style-type: none">• Diversion: Requirement to directly pay for garbage services may result in business recycling more if the payment method incentivized this. The waste, regardless of who collects it, will still be part of Hoboken's waste so the City ceasing providing the service does not mean the waste will disappear. Cost savings from this can be used to implement options with high diversion potentials, such as organics programs.• Costs: Estimated cost savings from ceasing services to businesses and large multifamily buildings is \$3,600,000 annually.• Logistics/Feasibility: Feasible for the City to only offer services to residents in buildings with 19 or fewer units as this is the most common practice in cities across the country. The City could issue a credit on property tax invoices to account for service reduction. Most cities franchise waste collection services for commercial businesses, but, legally, Hoboken would need to establish a solid waste utility to manage payment for waste collection. A solid waste utility that contracts collection services with one hauler, would also limit the number of haulers operating in city limits, thus reducing traffic implications of collection (which may become an issue if businesses were to contract directly with haulers).• Policy: Hoboken would need to establish a solid waste utility to manage payment for waste collection. Modify the municipal code to require commercial and multi-family buildings with 20 or more units to contract with solid waste utility for the waste and recycling services. Need to confirm implications of NJ's condo law and any restrictions this may impose.• Quality of Life: May result in less garbage collection days if businesses decide to contract for less frequent services than what is currently offered, thereby reducing the frequency of bagged waste on sidewalks, especially in the LBA. Could result in illegal dumping which may lead to litter and as such may require increased City enforcement.• Stakeholders: see below					

Interdependencies

As waste collection services are currently funded through property taxes, there would have to be an adjustment so large multifamily residents and businesses are not effectively double charged for waste collection. The City could issue a credit on the property tax invoices using the process detailed in Eunomia's cost of service report to the City.

Stakeholder Impact

- **Residents:** Unlikely to have any impact to residents. Residents of large multifamily buildings would have their service changes managed by building management.
- **Businesses:** Businesses and large multifamily buildings would need to pay for collection services via the waste utility, rather than via property taxes.
- **Hauler:** Haulers would need to work with the City to become licensed to operate in the City or become a preferred service provider. The City's current hauler, Cali Carting, may limit service to City-managed collection to residential buildings or elect to contract with commercial and large multifamily buildings directly as well. One consideration for haulers, especially in the case of multiple haulers operating on the same day: on Washington Street there is potential for residential and commercial building waste to become intermingled if pick up days for residential and commercial collections overlap.

(2) Reduce Garbage Collection Frequency for <19-unit Properties

The City currently offers residential curbside garbage collection 3x a week for all residences which is high compared to most other cities where garbage collection is 2x, 1x, or alternating weeks. The City could reduce collection frequency to residential buildings with ≤ 19 units to 2x a week, still providing frequent garbage collection to residents.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Reducing garbage collection services may result in residents recycling more and increase diversion.
- **Costs:** Estimated cost savings from reducing garbage collection to 2x a week is \$326,000.
- **Logistics/Feasibility:** Feasible for the city to implement, especially in tandem with other high diversion initiatives. There will likely be resistance from some residents or building managers with limited space, but the City can increase outreach to increase diversion via recycling and organics collection.
- **Policy:** Changes in collection frequency do not require policy changes. The city needs to notify residents by publishing the schedule in the official newspapers and/or media sources for at least six days, a minimum of 10 days prior to first collection/pickup date. The City can also mail brochures/newsletters attached to property tax bills.
- **Quality of Life:** Bagged garbage set out less frequently on the curb reduces rodent access to waste. Additionally, this should be implemented with programs that reduce food waste in the garbage stream.
- **Stakeholders:** see below

Interdependencies

The City will have to provide communication and education to residents in advance of reducing garbage collection frequency to avoid the improper set out of material and/or contamination in recycling streams. The City may need to dedicate a portion of staff time during the transition to educate and work with

residents and building managers to identify storage solutions for waste. If the City implements an initiative to increase organics diversion this would help mitigate storage space for garbage.

Stakeholder Impact

- **Residents:** Some residents may struggle with limited space, and this would require them to store garbage for a longer period of time. However, the City could provide increased education about recyclables and, if partnered with an organics program, food waste, to increase diversion and reduce the amount of waste residents are throwing away, thus reducing space requirements for garbage.
- **Businesses:** N/A
- **Hauler:** Limited operational impact if residential collections reduced to 2x a week.

(3) Reduce Garbage Collection Frequency in LBA

Garbage collection in the LBA is currently six days a week, much higher than most cities, and ~10 tons per load. If collection frequency was reduced to five times per week, pickups would rise to 12 tons per load, and if reduced to four times per week, pickups would rise to almost 15 tons per load.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Potential increase in recycling due to reduced garbage collection. Direct diversion impacts are difficult to estimate, but cost savings from this can be used to implement options with high diversion potentials, such as organics programs.
- **Costs:** Remove one night per week saves \$77,000 annually. Removing two nights per week saves \$154,000 annually.
- **Logistics/Feasibility:** Feasible for the city to implement, especially in tandem with other high diversion initiatives. There will likely be resistance from some businesses with limited space, but the City can explain businesses already store waste for two days with the current service schedule.
- **Policy:** Changes in collection frequency do not require policy changes. The city needs to notify residents and businesses by publishing the schedule in the official newspapers and/or media sources for at least six days, a minimum of 10 days prior to the first collection/pickup date. The City can also mail brochures/newsletters attached to property tax bills.
- **Quality of Life:** Bagged garbage set out less frequently on the curb reduces rodent access to waste. Additionally, this should be implemented with programs that reduce food waste in the garbage stream.
- **Stakeholders:** see below

Interdependencies

The City will have to provide communication and education to businesses in advance of reducing garbage collection frequency to avoid the improper set out of material and contamination in recycling streams. The City would need to dedicate a portion of staff time during the transition to educate and work with

businesses to identify storage solutions for waste. If the City implements an initiative to increase organics diversion this would help mitigate storage space for garbage for food waste generating businesses.

There is also potential for the City to reduce garbage collection frequency by one or two days a week, but then offer an opt-in service for a fee for businesses that would like to pay for an additional pick-up day.

Stakeholder Impact

- **Residents:** N/A
- **Businesses:** Some businesses struggle with limited space, and this would require businesses to store garbage a minimum of one additional day. Businesses already store waste two days once a week with collection 6x a week, so if reduced to 5x a week collection, businesses would then be storing waste two days a week, twice a week. Thus, this would not make any difference to current garbage storage needs. The City would need to increase outreach during the transition to communicate this with businesses. The Business Alliance could potentially also support with communication.
- **Hauler:** Limited operational impact if LBA collections reduced to five days a week, potential for increased number of tips and impact on working day if reduced to four days a week.

3.2.2 Organics

Residential

(4) Residential Curbside Organics Collection

A mandatory curbside organics program would consist of weekly collection from 35-gallon containers. Residents would be given kitchen caddies which they could tip into 35-gallon containers at each property, with several units per property. Organics containers would need to be set out on the sidewalk on pick up days.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Assuming a 30% capture rate, there is a diversion potential of 2,100 tons of food waste annually if expanded to all residential households, including multi-family.
- **Costs:** Potential for 10% cost increase on its own.
- **Logistics/Feasibility:** The 35-gallon containers would occupy sidewalk space when set out for collection. The City would need to contract out for this service and use staff resources towards public education and promotion of the program.
- **Policy:** A mandate requiring the separation of organic waste by residents would need to be added to the municipal code.
- **Quality of Life:** Containerization and separation of organics from bagged garbage is likely to reduce rodent access to waste.
- **Stakeholders:** see below

Interdependencies

How many residents participate is dependent on strong outreach and education to ensure resident understanding of what materials can be included and avoid contamination.

If organic waste is diverted from the garbage stream, it would support a reduction in the frequency of garbage collection. If this is rolled out alongside the requirement for containerization, the container size for garbage can be reduced to help encourage recycling and organics diversion and ease space constraints. One option to reduce the haulage time and collection cost of organics would be to transfer through the DART transfer station if infrastructure could be developed there.

Stakeholder Impact

- **Residents:** Residential buildings would need to store organics containers on their property. This is likely to be a challenge for some residents due to space constraints, however with less organics going to garbage, there would be less space required for garbage. Residents would no longer need to carry organic waste to drop off locations.
- **Businesses:** N/A
- **Hauler:** This would be contracted alongside other services when the collection contract is renewed. Program for washing carts maybe required as part of the collection contract. Collection may also need to be during the day due to noise considerations.

(5) Caddy Swap Organics Program and Pre-Treatment Equipment

A caddy swap program would provide a network of neighborhood food scrap drop offs in which residents in buildings with 19 and fewer units would be given a kitchen caddy that they would fill then return to drop off areas and exchange for a clean caddy. The caddy storage containers could be picked up by vehicle or bike and taken to a central location where the caddies would be washed, and the contents would be dewatered to reduce volume and cost of hauling to a composting facility.

Figure 15: Exchange Storage System



Figure 16: Dewatering Equipment



Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- Diversion:** Assuming a 50% participation and capture rate among Hoboken's residents living in 1-to-19-unit buildings, there is a diversion potential of 622 tons of food waste annually. Less diversion than curbside collection, assuming residents have to walk further to swap caddy.

- **Costs:** Potential for 6% cost increase. Additional costs detail is shown in the Appendix.
- **Logistics/Feasibility:** This program has not yet been piloted by another city. The City would need to determine a location to house the pulper and dishwashing equipment, approx. 420 sq. ft., which is included in cost estimates for that space to be rented in a Hoboken commercial building. Approval by the Dept of Transportation (DOT) would be crucial as caddy swap storage would likely require the use of current parking spaces or sidewalk space.
- **Policy:** A mandate requiring the separation of organic waste by residents would need to be added to the municipal code if this program is mandatory.
- **Quality of Life:** Containerization and separation of organics from bagged garbage is likely to reduce rodent access to waste. A caddy swap would also mean that buildings do not need to store and clean a food waste bin, and it is very convenient for residents as they also do not need to wash their own caddies and can drop them off 24/7.
- **Stakeholders:** see below

Interdependencies

This program would need to be implemented alongside the setup of organics pre-processing equipment and washing facility. The City would need to determine a location to house the pulper and dishwashing equipment. The City would also need to collaborate with the DOT to determine what parking or sidewalk spaces could house the drop off units. This program also focuses on residents of buildings with 19 and fewer units, while Op. 7 focuses on buildings with 20+ units.

Success is dependent on how many residents participate, and strong outreach and education to ensure resident understanding of what materials can be included and avoid contamination.

Stakeholder Impact

- **Residents:** Residents would need to store their organic waste in their apartments then bring it to designated drop off spots. There would be an estimated 11 parking spots taken to accommodate the caddy drop off storage containers across the City.
- **Businesses:** There would be an estimated 11 parking spots taken to accommodate the caddy drop off storage containers across the City.
- **Hauler:** This strategy would likely require a contract with an additional hauler specifically for organics, potentially the City's current organics hauler. The current compost program hauls organics to Kerhonkson, NY, nearly 100miles from Hoboken so a reduction in volume has potential to significantly reduce hauling cost.

(6) Expand Organics Drop Off Program

Building off the existing organics drop-off program would be another way of expanding organics collection services. This would increase convenience likely for residents who already participate in organics diversion, more publicity would be necessary for this expansion to increase awareness and participation.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** The drop-off points have a current yield of seven tons per point per year for a total of 100 tons collected. It is unlikely that adding more points would lead to each additional site having the same yield as the current sites. The addition of 16 sites could potentially increase the diversion by 56 tons for a total of 156 tons diverted.
- **Costs:** The Community Compost Company (CCC) currently collects from 14 organics drop-off sites and seven commercial sites for \$100,000 a year. The collection per site is therefore \$4,800/year. This is just over \$1000 per ton. Adding enough drop-points such that the # of people served per point is 2000, adding convenience, would add 16 additional sites. The cost of serving these points would be \$76k, bringing the total cost of service to \$176,000.
- **Logistics/Feasibility:** Possible for the City to implement; however, there are limited opportunities for new locations as drop off spots are already very dense compared to other cities with drop off programs.
- **Policy:** No policy changes required.
- **Quality of Life:** As expanding the existing program would likely not increase organics diversion significantly, this is unlikely to have a large impact on organics content in garbage and resulting rodents or litter.
- **Stakeholders:** see below

Interdependencies

If a curbside collection (Op. 4) or caddy swap program (Op. 5) are implemented, expansion of the existing drop-off program would not be necessary.

Stakeholder Impact

- **Residents:** This is the same service that currently exists where residents would need to store their organic waste in their apartments then bring it to designated drop off spots. This can be a challenge for some residents due to space constraints or the reluctance to transport organic waste to drop off sites when it is more convenient to dispose of it in garbage. Residents also must opt in by taking an online quiz to access the code to unlock drop off bins.
- **Businesses:** N/A – the organics drop off locations are currently for residents only, though there are no barriers to business owners in Hoboken from disposing of organics in the public drop off bins.
- **Hauler:** This would require additional pick-up locations but would not require any significant changes to the hauling process itself which is done by the Community Compost Company.

(7) Code Requirement for Organics Collection for 20+ Unit Properties

The City could amend the code to require 20+ Unit properties to separate organic waste. This is the same as in many cities including NYC. The City would require that, by a certain date, businesses of a certain size would need to separate and collect organics via a solid waste utility set up by the City.

This could be applied specifically to food generating businesses at certain risk levels (as determined by the Dept. of Health) to focus on businesses that do food preparation rather than those that sell pre-packaged foods (and are therefore less likely to have significant levels of organic waste).

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Assuming collection from 420 food generating businesses, there would be an estimated 1,700 tons of organics would be diverted annually.
- **Costs:** Businesses would be responsible for covering organics collection costs. Baseline cost of collection and disposal of food waste generator commercial garbage is currently \$712k. After separate collection mandating organics collection, the same collection frequency for garbage would be \$527k, resulting in \$170k in City cost savings. If the city were to also decrease the collection frequency of garbage by one night, the total savings would be just over \$240k.
- **Logistics/Feasibility:** Possible to implement but will face challenges with stakeholder buy-in given the storage constraints of businesses.
- **Policy:** A mandate requiring the separation of organic waste by food generating businesses would need to be added to the municipal code.
- **Quality of Life:** Containerization and separation of organics from bagged garbage is likely to reduce rodent access to waste.
- **Stakeholders:** see below

Interdependencies

This opportunity would mean a delay in reducing garbage collection frequency because the City would need to allow an appropriate amount of time for businesses to comply, and therefore a delay in the cost savings from less garbage collection. However, the City would not be paying to provide organics collection for businesses and would be saving in disposal costs.

Stakeholder Impact

- **Residents:** N/A; No direct impacts other than that patrons of businesses would have to follow signage to separate waste when disposing of uneaten food, for example.
- **Businesses:** Businesses that do not currently separate organics may struggle to find space to store organics alongside garbage and recycling. Businesses with very limited space may want to contract for more frequent organics collection pickups to avoid large space requirements. Contracting for their own organic waste collection will also result in a cost for businesses.
- **Hauler:** Organics haulers will need to work with the City to become licensed to operate in the City or become a preferred service provider.

Commercial

(8) Code Requirement for Organics Collection for Food Businesses

The City could amend the code to require food generating commercial businesses above an agreed size to separate organic waste. This is the same as in many cities including NYC. The City would require that, by a

certain date, businesses of a certain size would need to separate and collect organics via a solid waste utility set up by the City.

This could be applied specifically to food generating businesses at certain risk levels (as determined by the Dept. of Health) to focus on businesses that do food preparation rather than those that sell pre-packaged foods (and are therefore less likely to have significant levels of organic waste).

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Assuming collection from 420 food generating businesses, there would be an estimated 1,700 tons of organics would be diverted annually.
- **Costs:** Businesses would be responsible for covering organics collection costs via the solid waste utility. Baseline cost of collection and disposal of food waste generator commercial garbage is currently \$712k. After separate collection mandating organics collection via private hauler, the same collection frequency for garbage would be \$527k, resulting in \$170k in City cost savings. If they city were to also decrease the collection frequency of garbage by one night, the total savings would be just over \$240k.
- **Logistics/Feasibility:** Possible to implement but will face challenges with stakeholder buy-in given the storage constraints of businesses.
- **Policy:** A mandate requiring the separation of organic waste by food generating businesses would need to be added to the municipal code.
- **Quality of Life:** Containerization and separation of organics from bagged garbage is likely to reduce rodent access to waste.
- **Stakeholders:** see below

Interdependencies

This opportunity would mean a delay in reducing garbage collection frequency because the City would need to allow an appropriate amount of time for businesses to comply, and therefore a delay in the cost savings from less garbage collection. However, the City would not be paying to provide organics collection for businesses and would be saving in disposal costs.

Stakeholder Impact

- **Residents:** N/A; No direct impacts other than that patrons of businesses would have to follow signage to separate waste when disposing of uneaten food, for example.
- **Businesses:** Businesses that do not currently separate organics may struggle to find space to store organics alongside garbage and recycling. Businesses with very limited space may want to contract for more frequent organics collection pickups to avoid large space requirements. Paying the solid waste utility for organic waste collection will also result in a cost for businesses.
- **Hauler:** Organics haulers will need to work with the City to become licensed to operate in the City or become a preferred service provider.

(9) LBA Curbside Organics Collection

The City could pilot and roll out organic waste collection services within the LBA to commercial entities through a solid waste utility. This program could include just food generating businesses or be expanded to all businesses.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Estimated 1000 - 3000 tons of commercial organics diverted from LBA annually.
- **Costs:** Cost savings potential of \$50,000 if restricted to food waste generators. Additional detail can be found in the Appendix A.5.0.
- **Logistics/Feasibility:** Possible to implement but will face challenges with stakeholder buy-in given the storage constraints of businesses. To be successful, the City should consider having a dedicated outreach staff member to manage communications with businesses. Additionally, if the City pays for containers for businesses that would be ~\$50k.
- **Policy:** Require businesses in zones C-2 and C-3 to separate organic waste. If the city wants to restrict that to food service businesses, it can specify this requirement for businesses that produce over a certain tonnage of organic waste per week or per year.
- **Quality of Life:** Containerization and separation of organics from bagged garbage is shown to reduce rodent access to waste.
- **Stakeholders:** see below

Interdependencies

Reduced garbage collection frequency. This measure requires additional infrastructure to collect organic waste. Ideal to coincide with contract renewal.

Stakeholder Impact

- **Residents:** N/A
- **Businesses:** Businesses may not have enough space to separate and store organic waste, requiring relatively frequent collection that may become less cost effective for the City to manage. To avoid this cost, the City could require businesses to coordinate and pay for organics collection themselves (Op. 8) so businesses can determine the value between space saving and cost of frequent collection for themselves.
- **Hauler:** The hauler may need to purchase trucks for organics collection specifically, as shown in the image below. The truck purchase cost is estimated at \$144k.

(10) Food Donation Program

Hoboken to set up a portal to connect local businesses, nonprofits, schools, government agencies, religious organizations, or community groups so they can donate or receive food. Could follow the model of the [donateNYC Food Portal](#).

Transportation of food would be managed by the donator or receiver of food, or potentially outsourced to a third party non-profit such as [Rescuing Leftover Cuisine](#) or [Share My Meals](#). Addresses both food waste and food insecurity in the city. Hoboken can provide an online map of public donation location for individual residents wishing to donate their own excess food.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** As per the waste hierarchy, food donation should be preferred before composting. In the first six months of NYC's program, 300 users signed up, and 4.5 tons of food were diverted from landfill.
- **Costs:** Percentage of Dept of Parks, Recreation, and Public Works resource time to develop portal on City of Hoboken's website and potentially reach out to DSNY for learnings from donateNYC's portal. Potential for some costs savings from reduction in tonnages collected to landfill or composting, though likely not at a large scale.
- **Logistics/Feasibility:** Possible to implement with external support or funding that is potentially available. Would require a percentage of Dept of Parks, Recreation, and Public Works resource time to develop portal on City of Hoboken's website and potentially reach out to DSNY for learnings from donateNYC's portal.
- **Policy:** No policy changes required. Donors of food are protected by the federal [Bill Emerson Good Samaritan Act of 1996](#) limiting liability. New Jersey has also passed legislation providing additional liability protection for donors. Hoboken would not store, transport, examine, or maintain any liability for any food-related issues
- **Quality of Life:** Containerization and separation of organics from bagged garbage is shown to reduce rodent access to waste. This would also address food insecurity in Hoboken.
- **Stakeholders:** see below

Interdependencies

This would lead to the diversion of organic waste from the garbage stream, but also potentially reduce organic waste collected to be composted, though unlikely at a scale that it renders an organics collection initiative unnecessary as a significant percentage of organic waste is expired or non-edible.

Stakeholder Impact

- **Residents:** Easier access to identify potential donors or recipients of excess food.
- **Businesses:** Easier access to identify potential donors or recipients of excess food.
- **Hauler:** N/A; Donator/Receiver manages transportation of food.

Infrastructure

(11) Advocate for a county composting facility

The current compost program brings organic was to Kerhonkson, NY, nearly 100 miles from Hoboken. Due to limited local locations for the composting of organic material, developing a composting facility will likely be a useful strategy for ensuring the success of any increase in organics collection efforts. Because Hoboken's organic waste tonnage is relatively small, Hoboken could advocate that the Hudson County Improvement Authority (HCIA) invest in and develop a composting facility within Hudson County as there are currently limited local options for the composting of organic material.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
<ul style="list-style-type: none">• Diversion: A composting facility that is nearer to the point of collection would help to enable any of the proposed curbside organics programs with high diversion potentials.• Costs: Due to Hoboken's small scale, it does not make sense for the City to invest in organics processing infrastructure themselves. As such, this recommendation is to demonstrate support for a county-led composting facility, and as such would not be a cost to the City.• Logistics/Feasibility: Practically it would be feasible for Hoboken to voice support for a county composting facility. The initial step would be for Hoboken to send a letter to the County Executives Office about the proposal.• Policy: No policy changes required.• Quality of Life: N/A• Stakeholders: see below					

Interdependencies

Requires a regional pool of resources to address current organic waste needs and consider future waste management systems and community needs. Initial discussions with HCIA have shown interest in the idea.

Stakeholder Impact

- **Residents:** N/A
- **Businesses:** N/A
- **Hauler:** A closer composting facility would likely reduce hauling costs for the Hoboken organics hauler.

3.2.3 Recycling

Containerization & Capacity

(12) Containerization / Wheeled Bins Citywide

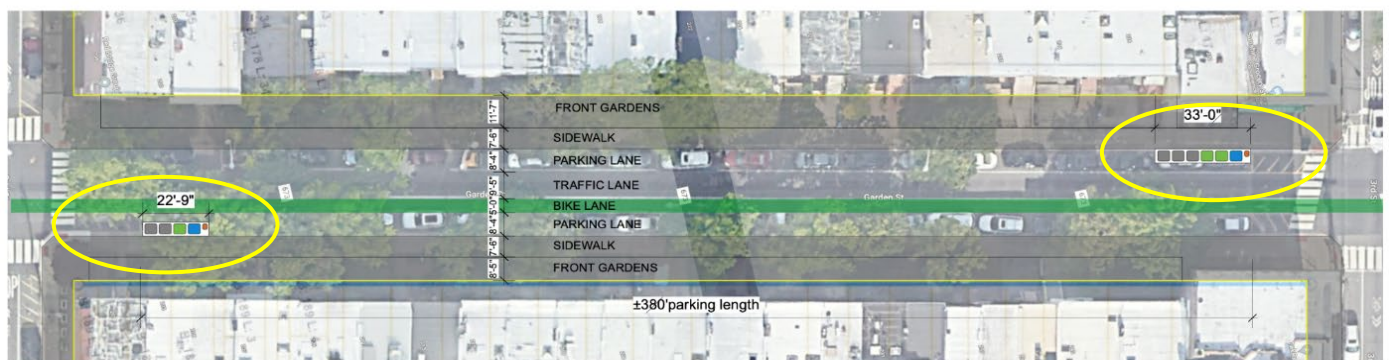
Options for shared waste containers include wheeled bins in enclosures, and hoist or side load stationary containers which could be sited in designated streetside parking spots or on sidewalk bump-outs. A diagram of potential shared waste containers placement on a Washington Street block is shown on the following slide.

Shared containers would be located citywide, including the LBA, and accept garbage, recyclables, and organics from all generators except for large residential and/or commercial buildings (which would be required to use individual wheeled bins). Some considerations would be if the bins should be controlled access and if collection would be preferable during the day due to noise. Further, most large buildings could use four wheeled bins, and it is possible to adapt trash chute bagging compactors to feed into wheeled bins which would also increase the compaction rate in large buildings.

Figure 17: Example Wheeled Bin Enclosures on Park Ave and Washington St



Figure 18: Example Shared Container Placement on Garden St and Washington St



2 groups of bins would be required for this residential block on Garden Street with 135 residential units, it would take up 2.3 parking spaces with 4x/ week collection (2 days storage), 7% of the available parking on the block.



4 groups of bins on the sidewalk curb zone would be required for a typical Washington St block, each 28' x 5'. Placing them in front of loading zones or bus lanes would allow easy access on the street side without losing any parking.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Potential to divert 3,000 tons of cardboard, 2,500 tons of commingled recycling, and 2,500 tons of organics annually.
- **Costs:** The annual cost of the program would be \$3.98 million. This would be a 2% cost increase over the current collection system.
- **Logistics/Feasibility:** The change to a shared waste system would need to take place when the hauler contract is renewed. Approval by the Dept of Transportation (DOT) would be crucial as there would be a reduction in parking spots and/or sidewalk (bump outs) space to accommodate the containers. Possible to implement but will face challenges given that bins would need to be provided by Hoboken, and there would likely be some resistance due to the size of the wheeled bins and space constraints by residents.
- **Policy:** There are currently requirements for buildings to have certain numbers of bins and that would no longer be needed.
- **Quality of Life:** Containerization of waste is shown to reduce rodent access to waste. Fewer bags, bins, and loose piles of cardboard on the street make the street neater.
- **Stakeholders:** see below

Interdependencies

For this strategy, enforcement and education would be needed to avoid contamination and maximize diversion. The procurement process for new hauler would need to clearly explain their role as part of the implementation of this service across the city.

Before implementing citywide, this strategy could be trialed on select blocks of Hoboken to troubleshoot any issues and identify the best way to expand the program citywide.

Stakeholder Impact

- **Residents:** Potential reduction in parking and/or sidewalk space to accommodate bins. Ability to put out recycling, garbage, and organic material any day of the week. Requirement to walk short distance to drop off material. There would be an estimated reduction of 250 parking spaces outside the LBA (with 4x/week collection) to accommodate the containers.
- **Businesses:** There would be an estimated reduction of 60 parking spaces as well as sidewalk space in the LBA (with daily collection) to accommodate the containers.
- **Hauler:** This requires changes in the collection fleet by the contracted hauler; this could be achieved when the contract is retendered. Most similarly dense cities across the world use two and four-wheeled bins so should be feasible for haulers. Existing US rear load trucks can be modified to accept wheeled bins as well as bags (additional ~\$10k per truck plus installation).

(13) Requirements for New Large Buildings

Add containerization, compaction, and adequate waste storage spaces requirements for new large multifamily and commercial generators to better plan for waste separation and management, and to allow access for city's hauler to collect wheeled bins and cardboard bales. Currently, the waste storage requirements are unclear and not comprehensive as they only apply to recycling, not trash or food scraps. New buildings often have small refuse rooms without space for dual stream recycling and food scrap bins, and inadequate central storage space.

Code changes to require all future developments over a certain size to have a) equal convenience disposal for all waste streams in apartments, refuse rooms, and storage rooms, b) trash compaction, cardboard baling, and food scrap pre-treatment equipment (for large food-waste generators only), c) storage area for wheeled bins which can be accessed directly by hauler. Extend applicable requirements to existing buildings.

The city would need to develop (1) updated waste generation data aligned to waste streams, (2) guidance for architects and city's plan reviewers on waste management planning (3) requirements / incentives for compaction of waste streams (compactor, cardboard baler, organics pre-treatment).

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** The city would need to develop (1) updated waste generation data aligned to waste streams, (2) guidance for architects and city's plan reviewers on waste management planning (3) requirements / incentives for compaction of waste streams (compactor, cardboard baler, organics pre-treatment).
- **Costs:** Potential to reduce the labor costs of collection for MF by 33%. Costs of wheeled bin collection and cardboard baling are included under that strategy.
- **Logistics/Feasibility:** Possible to implement with support of hauler and additional funding. With more frequent collection and compaction, the total area required for storage and equipment is less than current so should fit into existing buildings and not require additional space in current buildings

- **Policy:** Change the municipal codes to require better planning for waste separation and management, including equal convenience disposal for all waste streams, compaction, and sufficient storage accessible
- **Quality of Life:** Reducing the bags of waste piled on sidewalks, and the time spent on collection through use of wheeled bins and cardboard bales reduces litter, rodents, and noise at night.
- **Stakeholders:** see below

Interdependencies

Wheeled bin collection, possibly with more frequent collection, should be implemented by the time new buildings that fall under this code change complete construction. Some engagement with developers and architects is needed to ensure the success of this strategy, and requirements will need a phase-in period so buildings already in design will not need to comply.

Stakeholder Impact

- **Residents:** Provides easier means for residents to dispose of food scraps and recycling.
- **Businesses:** There are additional costs to building management to buy compaction equipment, but this typically pays back over a few years due to the labor savings. Compaction, bailing, or other treatments will require some training and education for those in charge of these services.
- **Hauler:** Compaction reduces the volume of waste and makes it easier to collect and transport, potentially saving collection and labor costs for the hauler.

(14) P-A-Y-T System

A Pay-As-You-Throw (PAYT) rate structure charges households variable rates based on the volume of waste set out for collection. PAYT system can be structured where: (a) residents pay a certain rate based on the number or size of bins they put out for collection; or (b) residents must dispose of their trash in official municipal trash bags or trash bag tags (pictured below), which can be purchased at local retail stores.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Based on review of established programs in Ontario, PAYT programs increase the cost of a program but do not necessarily relate to an increase in diversion. To avoid paying, some residents may put garbage into their recycling bags, thus increasing contamination. There is also potential for residents to create counterfeit bags/bag tags or increase illegal dumping on the street or in neighboring bins to avoid paying.
- **Costs:** There is potential for cost savings in the long run, but there will be initial set up costs around communication, outreach, and support with implementation for the City along with new enforcement costs.
- **Logistics/Feasibility:** Enforcement is a necessary component of any successful PAYT policy, especially during the early stages of implementation. Enforcement procedures ensure the PAYT system operates smoothly, fairly and cost effectively. This may be a significant challenge as the City has struggled to enforce proper recycling in the past due to resource and funding limitations. Charging a

fee can be politically fraught and unpopular. There must be specific consideration for low income households and where the bags would be sold.

- **Policy:** As waste collection services are currently funded through property taxes, there would also have to be an adjustment to property taxes, so residents and businesses are not effectively double charged for waste collection. To do this, the City could issue a credit on the property tax invoices using the process detailed in Eunomia's cost of service report to the City.
- **Quality of Life:** There is potential for increased litter and illegal dumping to avoid paying for waste disposal. As there is limited space for bins per household, a more realistic option for Hoboken may be PAYT by bags which would not reduce rodent access to waste.
- **Stakeholders:** see below

Interdependencies

PAYT would alter the funding system for waste management services, and as such policy designating that waste management is funded via taxes would need to be adjusted. If PAYT was implemented via the bag program, the City would need to coordinate with local businesses to stock and sell the designated bags. If PAYT was implemented via bin size, the opportunity would coincide with the wheeled bin collection (Op. 12), and therefore may be easier to implement for single-family residents or large buildings based on the number of bins they use. PAYT could also be tied to the use of shared bins via a key fob or some other way to limit access to residents and track their usage.

Stakeholder Impact

- **Residents:** Residents are accustomed to not seeing a direct cost associated with waste collection as their service costs are currently embedded within the City's tax structure. The City may experience resistance from residents who do not want to pay separate costs for their waste collection. Low-income households would need to be given a coupon or voucher programs to help reduce the burden of collection costs. Logistically, if a cart based PAYT system was implemented, some residents may struggle to find space to store the waste bins.
- **Businesses:** A minimum number of Hoboken retailers would need to stock the municipally regulated trash bags or bag tags, so residents have easy access to purchase the bags.
- **Hauler:** Limited impact. The hauler would have to ensure only city certified bags are collected wither by identifying bag color or label. The hauler may also collaborate with the City to flag which households may need warnings or fines due to improperly set out waste (i.e., not using City bags).

Communication & Education

(15) Expand Public Education Initiatives

The main key to achieving diversion is through public participation which requires public education. There are several ways to increase public awareness of recycling and organics programs, examples include: (1) an educational packet to be provided by realtors/property management upon move-in for residents, (2) increased promotion of the Recycle Coach app, (3) develop a program/events with parks and community gardens to develop education around composting and organics for the public. In order to manage programs like these, City staff must be able to dedicate a portion of their time to public education and communications.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Difficult to quantify precisely, but studies, such as those from the Recycling Partnership's Center for Sustainable Behavior & Impact, have shown that increased public engagement will lead to improved contamination rates and diversion.
- **Costs:** Assuming The Recycling Partnership's cost estimate for effective promotion and education for EPR success of \$1.54 per household and about 30,000 Hoboken households, this strategy would cost approximately \$46,000 annually. Important to note, the effectiveness of almost all proposed initiatives, many of which are cost saving, depends on clear and consistent communication to businesses and residents which will not be possible without City staff time spent on public education.
- **Logistics/Feasibility:** This initiative is crucial to most other suggested opportunities; however, successful expansion of public education will require City staff time and resources, as well as buy-in from other local stakeholders. There are however no physical constraints, and feasible to implement logistically.
- **Policy:** No policy changes required.
- **Quality of Life:** Public education will maximize the impact of initiatives that result in quality of life improvements.
- **Stakeholders:** see below

Interdependencies

Expansion of public education initiatives would likely aid support any other strategies that are implemented.

Stakeholder Impact

- **Residents:** Improved public education and communication would reduce the confusion around recycling for residents and increase confidence when it comes to recycling.
- **Businesses:** N/A
- **Hauler:** N/A

(16) Standardize Labelling Citywide

To reduce consumer confusion around recycling, Hoboken can introduce a standardized labelling system for waste categories across the City, including waste containers within businesses and on sidewalks. These labels can be made available for download or mail order. Labels should be provided in different languages and align with standardized bin colors. A standard waste station set and signage can be made available for small businesses. Labelling requirements should be required by code for businesses and large residential buildings.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Difficult to quantify precisely, but studies ([Buelow et al.](#), [EPA](#)), have shown that clear and consistent labelling will lead to improved contamination rates and diversion.
- **Costs:** Cost would include the printing and distribution of labels along with DES staff time to develop and distribute labels. Included as part of the \$1.54 per annum HH budget for education and awareness in Op. 15.
- **Logistics/Feasibility:** Standardized labels, signage, or bins may be difficult to implement in locations such as chain restaurants that have set waste stations.
- **Policy:** Standard labels should be set out in the Municipal Code alongside bin size requirements.
- **Quality of Life:** Clear, standardized labelling has the potential to reduce contamination. If implemented alongside organics collection programs, reduced organics in garbage, thereby reduced access to organics by rodents, is likely.
- **Stakeholders:** see below

Figure 19: Example Signage from NYC



Interdependencies

Standardization of labelling should be considered alongside any containerization opportunity the City chooses to pursue in order to optimize the diversion potential of said strategies. If the City

Stakeholder Impact

- **Residents:** Citywide standardized signage would reduce the confusion around recycling for residents.
- **Businesses:** Would require cooperation from businesses to comply and label their waste bins with the City's labels. There may be resistance from some businesses, especially larger chains with their own company standardized waste bin labels, to use City labels.
- **Hauler:** N/A

(17) Increased LBA Engagement & Communication

The City could increase staff time dedicated to working with businesses and the Business Alliance to communicate initiatives related to organics and recycling diversion and reduce contamination. This would be most useful if implemented alongside any of the additional initiatives intended to increase organics and recycling diversion in the LBA.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Difficult to quantify, but improved communications in the LBA would likely increase the efficacy of any of the other initiatives that impact Hoboken businesses.
- **Costs:** Part of additional education resource.

- **Logistics/Feasibility:** Additional DES staff time spent on outreach and engagement with businesses regarding initiatives such as the standardization of labelling and bins, is crucial to accomplishing these goals. There are however no physical constraints, and feasible to implement logistically.
- **Policy:** No policy changes required.
- **Quality of Life:** Public education will maximize the diversion and quality of life improvements of selected strategies.
- **Stakeholders:** see below

Interdependencies

This opportunity should be considered in conjunction with any initiatives that impact Hoboken businesses, in order to ensure a smooth transition to any new services and decrease the risk of increased contamination.

Stakeholder Impact

- **Residents:** N/A
- **Businesses:** Better communication between the City and LBA would support commercial recycling. It would be a source to answer questions depending on which LBA initiatives are pursued, e.g., answering business' questions on how to label bins or which private haulers the City recommends contracting with.
- **Hauler:** N/A

3.2.4 Reuse

Community Reuse Program

(18) Reuse and Repair Hub

To help reduce waste the City could develop partnerships with businesses, provide a physical location, or offer small grants to start ups to create a reuse culture plus physical or virtual hub within the city.

Alternatively, a directory of businesses that provide repair services or promote reuse can be a lower cost option to a physical reuse and repair hub. However, such a directory would need to be promoted as residents are unlikely to find it when using traditional search engines. This option is also explored in Op. 21.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** To be determined, highly dependent on outreach and scale of reuse and repair hub. Toronto's community reduce & reuse programs have diverted over 3,221 kg of clothing/textiles, redistributed 4,146 lbs. of surplus food, and repaired 6,831 bikes.
- **Costs:** There are upfront costs for developing a reuse hub, along with maintenance and management of the center. The annual estimate of \$240,000 includes the cost to rent a medium-sized retail space, and one full-time City employee salary. However, the City could provide a

location for small businesses to provide these services or provide an online directory instead for a much lower cost. These businesses would have to divert ~2850 tons of material to offset this cost.

- **Logistics/Feasibility:** Education and outreach needed to communicate program with residents as well as develop partnerships with local businesses and organizations. There may be some logistical challenges identifying an affordable space to host the repair hub. Potential to collaborate with Hudson County Improvement Authority.
- **Policy:** No policy changes required.
- **Quality of Life:** Could reduce the amount of bulky waste on the sidewalk and create a culture of waste reduction and zero waste.
- **Stakeholders:** see below

Interdependencies

This strategy is an opportunity to build off existing infrastructure and leverage partnerships and relationships with any reuse and repair businesses in Hoboken. This initiative would link in with Op. 21 to develop an official Hoboken Reuse program.

Stakeholder Impact

- **Residents:** This would provide residents with a community space and opportunity to learn how to fix household items, such as a broken lamp, wobbly chair, or shirt with a rip.
- **Businesses:** Businesses and artisans could partner with the City to provide repair education services or potentially donate their space to host reuse & repair pop up events. Thereby they would be able to goodwill in the community, raise awareness of their business, and drive traffic to their brick-and-mortar locations.
- **Hauler:** N/A

(19) Citywide Stoop Sale

Conducted at the appropriate interval (e.g., bi-annually), this could be a low-cost opportunity to incorporate reuse into the community's regular activities. Stoop sales would likely occur a few days a year.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** To be determined, highly dependent on outreach and scale of event.
- **Costs:** Annual estimate of \$1,280 if accounting for a salary of City worker to host two weekend stoop sale events annually. There may also be a cost of cleaning any remaining material at the end of the day.
- **Logistics/Feasibility:** Education and outreach needed to communicate program with residents as well as develop partnerships with local businesses and organizations. There may be some logistical challenges determining the space requirements for stoop sales and making sure residents set out on

the specified day and follow any guidelines the City sets to align with potential policy or regulation requirements.

- **Policy:** Dependent on if there are any regulatory issues with hosting public stoop sales on sidewalks.
- **Quality of Life:** Could reduce the amount of waste on the sidewalk and create a culture of waste reduction and zero waste.
- **Stakeholders:** see below

Interdependencies

Staff time for this opportunity, in addition to the adoption of other strategies, may require a new staff member for successful implementation.

Stakeholder Impact

- **Residents:** Provides residents with a local, community-based way to buy and sell unwanted items.
- **Businesses:** N/A
- **Hauler:** N/A

(20) Furniture Donation Programs

A furniture donation program could be expanded out of the existing textile donation program. The City could host donation events and coordinate event pick-up with a non-profit, such as Goodwill. However, residents are not likely to coordinate transportation for their own furniture, especially if they have bulk waste garbage pickup. Alternatively, the City could provide bi-weekly curbside furniture pick-up and storage and then coordinate less frequent pick-ups from storage with a non-profit. Goodwill has a minimum for providing a free pick-up, so this estimate also assumes events will generate enough material and not require any intermediary storage.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** To be determined, highly dependent on outreach and scale of event. Scaled to NYC's report on plastic and wood diverted from donation programs in 2015, Hoboken could divert 50-100 tons of furniture.
- **Costs:** Partnering with a non-profit, such as Goodwill, is recommended as it would severely minimize costs to the City and keep costs to staff time necessary to support with communications and planning.
- **Logistics/Feasibility:** If this program does not build off existing partnerships and infrastructure, logistics of implementation may pose challenges for the City. Potential to collaborate with Hudson County Improvement Authority.
- **Policy:** No policy changes required.
- **Quality of Life:** N/A

- **Stakeholders:** see below

Interdependencies

This strategy is an opportunity to build off existing infrastructure and leverage partnerships. Potential partners include Habitat for Humanity, Goodwill, and the Salvation Army.

This opportunity could be tied to the stoop sale (Op. 19), but implementation on its own may limit the reach of the program. Refurbishment of furniture could also be done through a reuse and repair hub (Op. 18).

Stakeholder Impact

- **Residents:** This program would provide residents with a way to sustainably dispose of their unwanted furniture. However, if the City does not provide collection itself or through a partnership, it may be burdensome for residents to coordinate transport of bulky items. Many residents would likely use bulky waste garbage pickup instead due to convenience.
- **Businesses:** N/A
- **Hauler:** N/A

Business Reuse Programs

(21) Reuse Hoboken: public-private partnership

The City could launch a formal public-private partnership with the city's institutions, restaurants, and businesses to create practical solutions and standardized systems to help the City's businesses and residents move from single-use to reuse. This program could begin with the promotion of a Bring Your Own (BYO) Cup communication initiative (e.g., decals in café windows), meetings with local food service businesses to promote dine-in durables instead of single use items, and the creation of an online portal to connect businesses with reusables service providers.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Difficult to estimate, but likely to decrease waste to landfill as Hoboken increases the use and promotion of reusables while decreasing the use of single use options.
- **Costs:** The main costs for the City would be staff time doing outreach to residents and businesses to promote reuse programs and the development of and updates to a City reuse website. There would also be costs associated with the printing and distribution of outreach materials/signage.
- **Logistics/Feasibility:** Additional City staff time spent on outreach and engagement with businesses regarding initiatives such as the standardization of labelling and bins, is crucial to accomplishing these goals. Potential to collaborate with Hudson County Improvement Authority.
- **Policy:** No policy changes required.
- **Quality of Life:** Transitioning to reusables can result in a reduction of single use items which has the potential to reduce the associated litter from single use items.

- **Stakeholders:** see below

Interdependencies

Highly interconnected with increased LBA engagement and communications (Op. 17).

Stakeholder Impact

- **Residents:** Residents may appreciate more consistent messaging across the City with regard to reuse initiatives.
- **Businesses:** Increased support and communication from the City would help businesses obtain more clarity on reuse initiatives and options. Many reuse initiatives, such as an increase in customers bringing their own containers, have the potential to save businesses money that would otherwise be spent on single use items.
- **Hauler:** N/A

(22) Reusable Food Serviceware Pilot Program

The City could implement a reusables serviceware pilot but would need to first coordinate with technology providers to identify potential challenges and understand the optimal system set up, for example where the containers would be taken to be washed. To demonstrate feasibility of reusable containers for restaurant takeout and delivery, Hoboken could implement a six-month pilot in the LBA utilizing existing technology (e.g., DeliverZero) and integrations to reduce single use food serviceware. There is also potential to collaborate with Hudson County Improvement Authority to pilot reusables in Hoboken public schools.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Assuming the City launches a six-month pilot, that could result in the avoided use of 70,000 takeout containers, which at 35g each is nearly three tons avoided waste.
- **Costs:** If the city contributes \$0.25 per container to incentivize the pilot program, the overall cost would be around \$17,000 for 180 days. Restaurants could save \$500 to \$1,000 each on single-use containers over the 180 days (if the City also offsets technology provider which is an estimated \$0.15 use fee).
- **Logistics/Feasibility:** Consumer and restaurant adoption will require marketing efforts. Quality control of washing at restaurants. Some businesses do not have dishwashing capacity for reusable food service ware requiring transport to available commercial dish washers. At this stage we do not know the optimal flow of containers and ideal collection network, but this would be best discussed with reusables technology providers.
- **Policy:** No policy changes required.
- **Quality of Life:** Reusable food serviceware would likely decrease litter from single-use and takeaway food serviceware, as well as decrease serviceware with food residue in the waste stream that attracts rodents.
- **Stakeholders:** see below

Interdependencies

This strategy could incorporate a reusable cup program (Op. 23). Learnings from this pilot program should inform future policy on reuse (Op. 24).

Could provide evidence of litter reduction in LBA if cups/containers are overflowing trash bins.

Stakeholder Impact

- **Residents:** Need for consumers to opt-in to reusables systems. Some reusables require the use of an app to manage the check out and return of reusable item.
- **Businesses:** This would require businesses to transition from single use disposable containers to reusables which would have upfront costs. However, restaurants could save \$500 to \$1,000 each on single-use containers over the 180 days (if the City offsets technology provider which is an estimated \$0.15 use fee).
- **Hauler:** N/A

(23) Reusable Cup Pilot Program

The City could implement a reusable cup pilot but would need to first coordinate with technology providers to identify potential challenges and understand the optimal system set up, for example where the cups would be taken to be washed. The City could launch a six month pilot program in the LBA utilizing an existing provider's (e.g., DeliverZero or Cup Zero) technology and integrations to reduce single use hot cups.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Assuming the City launches a six-month pilot, this would result in 45,000 cups and lids avoided, which at 15g each, would mean nearly one ton of material diverted from landfill. This assumes a 10% participation level at 25 restaurants resulting in about 45k hot cups avoided during that period.
- **Costs:** If the city contributes \$0.25 per cup for incentives, the overall cost would be around \$11,000 for 180 days.
- **Logistics/Feasibility:** Consumer and restaurant adoption will require marketing efforts. Quality control of washing at restaurants. Some businesses do not have dishwashing capacity for reusable food service ware requiring transport to available commercial dish washers.
- **Policy:** No policy changes required.
- **Quality of Life:** Reusable cups would likely decrease litter from single-use and takeaway cups.
- **Stakeholders:** see below

Interdependencies

Given the opportunity for grant or outside funding, this strategy could be implemented as part of a broader pilot program (Op. 22). Without grant funding, working with businesses on a Reuse Hoboken project (Op. 21) should be prioritized over this opportunity to mitigate costs.

Stakeholder Impact

- **Residents:** Need for consumers to opt-in to reusables systems. Some reusables require the use of an app to manage the check out and return of reusable item.
- **Businesses:** Considerable change; however, restaurants could each save \$200 on cups over the 180 days (if the city offsets \$0.25 use fee (cups plus lids can cost about \$0.10). If a restaurant averages 100 hot cups per day, then washing responsibility would only average 10 cups per day, which should not require new equipment or incremental labor.
- **Hauler:** N/A

(24) Policy Requirement for Reusables

A policy requirement to encourage reuse could take the form of material bans on disposable food service ware. Requiring reusables for on-premise dining (with thoughtful exceptions) is an intermediate step. ReThink Disposable case studies show payback for restaurants in less than a year even when washing equipment is purchased.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** All single-use foodservice items in Hoboken restaurants (excluding napkins) is approximately 3,500 tons per year. On-premise single-use items (excluding napkins) are about 700 short tons per year.
- **Costs:** Businesses would cover upfront costs rather than the City. In the long run, switching to reusables would be cost saving for businesses as well. Upstream's [Reuse Wins Report](#) found reuse saves businesses money for on-site dining 100% of the time. The average savings for a small business are between \$3,000 and \$22,000, with environmental benefits that include eliminating 110,000 to 225,000 packaging items per business and 1,300-2,200 lbs. of waste, on an annual basis.
- **Logistics/Feasibility:** Consumer and restaurant adoption will require marketing efforts, that the City could potentially support with signage or outreach assistance.
- **Policy:** State law already bans polystyrene foam food service items. Material bans on other items such as disposable plates and cutlery require a city ordinance. A ban on single-use plastic food service ware may face opposition from some food service establishments. A pilot program and a requirement to have reusable food service ware for dine-in customers can be a prelude to a ban.
- **Quality of Life:** Reusable food serviceware would decrease litter from single-use and takeaway food serviceware, as well as decrease serviceware with food residue in the waste stream that attracts rodents.
- **Stakeholders:** see below

Interdependencies

A reusable policy requirement would be most successful if developed after the reusable pilot programs (such as Op. 22 and Op. 23), taking into consideration Hoboken-specific learnings.

Stakeholder Impact

- **Residents:** Need for consumers to opt-in to reusables systems. Some reusables require the use of an app to manage the check out and return of reusable packaging. For those that do not want to use an app, they could choose to bring their own reusable container (e.g., a travel mug). For individuals who need single use items (e.g., require a straw for all drinks) would still be able to request single use items.
- **Businesses:** Considerable change; however, restaurants could save money in the long run. Upfront costs can be prohibitive for smaller businesses which might require assistance from the government through grants or other financial incentives. In the long run, the average savings for a small business are between \$3,000 and \$22,000, with environmental benefits that include eliminating 110,000 to 225,000 packaging items per business and 1,300-2,200 lbs. of waste, on an annual basis.
- **Hauler:** N/A

3.2.5 Miscellaneous

(25) Improve Hauler Reporting and Data Tracking

In order to improve data access and transparency around all waste streams collected in Hoboken, the City can require certain reporting mechanisms in future waste contracts. Improved tracking of generated waste by quantity and stream, along with contamination levels, will be very useful to the city in order to understand progress made towards zero waste goals. The city could also explore software solutions to improve reporting from contracted waste haulers and large buildings.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Limited but would allow City to better understand non-compliance and carryout education.
- **Costs:** Unlikely to be a cost if included as a requirement as part of new contract. However, increased data provision or inspection of waste for contamination rates may result in higher overall contract costs.
- **Logistics/Feasibility:** This is something that can be added as a requirement for future waste contracts for haulers.
- **Policy:** No policy changes. Incorporate requirements in future waste contracts.
- **Quality of Life:** N/A
- **Stakeholders:** see below

Interdependencies

Dependent on willingness and ability of hauler to track this information.

Stakeholder Impact

- **Residents:** N/A
- **Businesses:** N/A
- **Hauler:** Responsibility of hauler to implement changes to data tracking and report to the City.

(26) New Requirements for Public Spaces & Parks

Hoboken's parks provide an opportunity for the City to embed reuse and recycling initiatives into public spaces. To incentivize reuse, Hoboken could implement a requirement for bottle fillers and water fountains, preferably freeze protected, in new parks or outdoor recreation spaces. To increase diversion from landfill, Hoboken could update the city code to require recycling at park events. This could follow New York City's requirement for recycling in park events. To support compost initiatives and awareness, the City could require the use of compost in any new park designs and developments.

Impacts

Diversion	Costs	Logistics	Policy	Quality of Life	Stakeholders
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- **Diversion:** Though difficult to estimate, there will likely be a reduction in use of plastics bottles from water fountains, and the recycling requirement at park events is likely to divert material from landfill compared to past events where the only option was garbage.
- **Costs:** Costs are likely to be minimal to update City code to require recycling at events or use compost in parks. Cost may be a challenge for the water filling stations; however, it is likely not prohibitive especially if only a requirement for new parks.
- **Logistics/Feasibility:** These initiatives would be feasible for the City to implement with minimal external support or funding.
- **Policy:** Change code to require recycling for outdoor events. Require new developments and parks to include compost bins and areas dedicated to compost.
- **Quality of Life:** Potential to reduce litter in public spaces by minimizing waste generation.
- **Stakeholders:** see below

Interdependencies

The City will need to embed education and outreach around refillable stations in resident communications and include recycling requirements in event guidelines for businesses or individuals hosting park events. The Dept of Parks, Recreation, and Public Works oversees waste management in Hoboken as well as park maintenance but may need to coordinate with the Dept for Health Services regarding the recycling requirements as they oversee events in Hoboken parks.

Stakeholder Impact

- **Residents:** For the bottle fillers to reduce the use of single use containers, residents will need to be aware and voluntarily use them. Residents attending events will need to follow recycling guidelines, which should be communicated by event organizers.
- **Businesses:** Businesses hosting events in public spaces or parks will need to follow recycling requirements and communicate recycling guidelines to event attendees.
- **Hauler:** Event hosts will need to coordinate with the City and/or hauler to ensure garbage and recyclables are collected.

3.3 Community Feedback on Proposed Options

To evaluate the opinions of Hoboken residents, businesses, and property managers on proposed changes to waste management services, the City opened a survey in September 2023. The survey included a series of questions related to the opportunities outlined in Section 3.2. The results of this survey provided insight on which recommendations the city can expect to receive support for and which recommendations may need additional community outreach to garner support for. Respondents included 244 residents, two businesses, and three property managers. The respondent sample size for the business and property manager surveys are too low to provide meaningful findings, but the responses are included in Appendix A.7.0. The key takeaways from the survey are listed below:

- Approximately 78% of residents are either very supportive (62%) or somewhat supportive (16%) of using lidded bins instead of bags for waste disposal, suggesting a significant willingness to adopt this measure.
- Most residents are willing to participate (60%) in the separation of food waste for composting, when offered for free by the City. Respondents who selected they might participate would be encouraged to participate if there was curbside collection of food waste (12%), city-provided caddies/containers for storing food waste (12%), and closer drop-off locations for food waste (6%). However, if participating in a food waste compost program required payment, most residents (76%) would not participate.
- Almost half (45%) of residents indicated unwillingness to bring food waste/compost to a drop-off location. Limited space to separate food waste at home is the most frequently cited reason (25%), followed closely by not having enough time to separate or transport food waste to drop-off locations (24%).
- Residents appear to be more inclined to accept less frequent garbage collection if it is accompanied by an expansion of collection or drop-off options for food waste/compost. Just over half (57%) of residents indicate unwillingness to have less frequent garbage collection at their building to enable cost reductions. The most cited reason for resistance was limited storage space for waste between collections. However, only 42% of residents indicated unwillingness to receive less frequent garbage collection at their building if the City also expands food waste/compost collection and/or drop-off options.
- Most residents (71%) are willing to participate in events promoting the reuse of items instead of discarding them. Similarly, the majority of residents (66%) are willing to participate in programs that focus on repairing household items rather than discarding them.

More detail on the survey questions and results is included in Appendix A.8.0.

4.0 Action and Implementation Plan



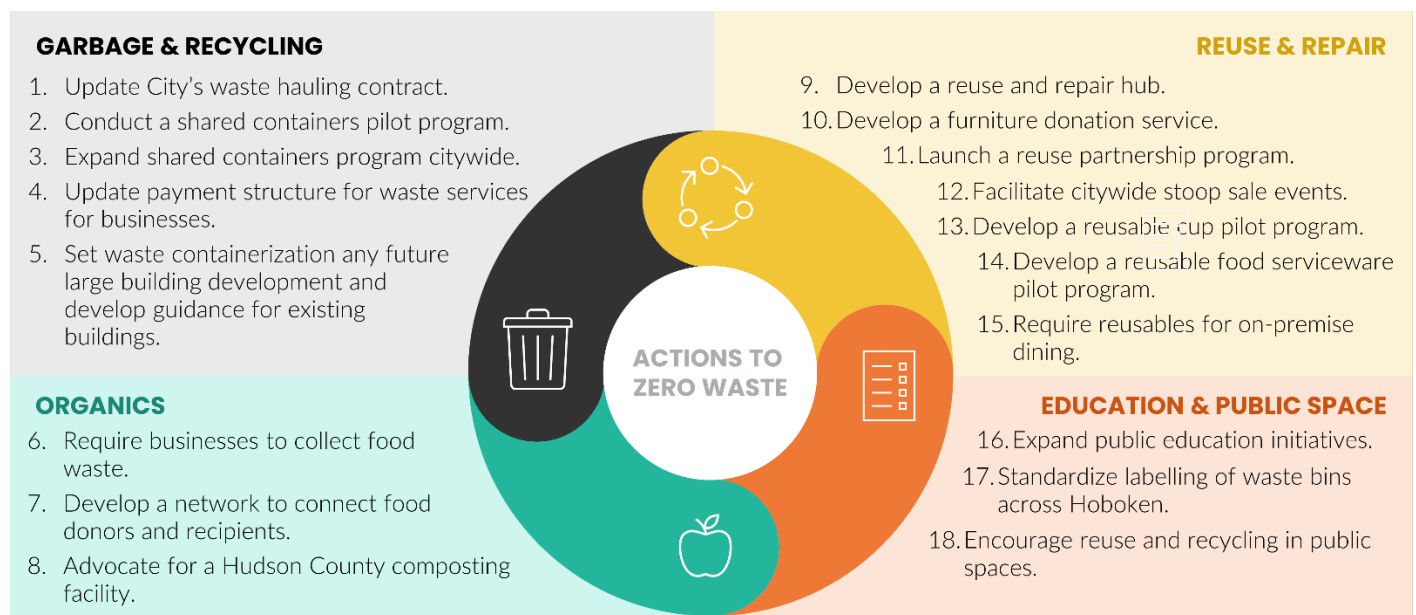
4.1 Action Plan Strategy

To achieve zero waste and move the city towards a more circular future, Hoboken must implement a series of actions to decrease the amount of waste sent to landfill. This action plan strategy offers 18 actions to achieve zero waste, focusing on four core categories:

1. Garbage and recycling;
2. Organics;
3. Reuse and repair; and,
4. Education and public space.

After a series of meetings and workshops with key stakeholders, including representatives from Hudson County Improvement Authority and various City departments, the Zero Waste Plan recommendations were refined to the actions listed in Figure 20. More detail on each recommended action is provided in the following section. The 18 actions are categorized as either short-term or long-term. For the purposes of this plan, short-term strategies begin implementation in the next one to two years (2024 to 2025), and long-term strategies begin in at least three years' time (2026 and later).

Figure 20: Overview of Recommended Actions to Achieve Zero Waste



Garbage and Recycling

Short-term actions

- 1. Update City's waste hauling contract.**
Publicly procure a waste hauling contractor for two years while developing and implementing a pilot program for shared waste containerization. Contract for a shared container pilot program (to be conducted under Action 2) and waste, recycling, and organics collection services for Hoboken

businesses, where costs are paid by businesses through a solid waste utility (to be implemented under Action 4).

2. Conduct a shared containers pilot program.

Conduct a pilot program for shared containers for garbage, recycling, and organics in Hoboken. The learnings from this pilot will inform if and how the shared containers are expanded citywide (Action 3).

Long-term actions

3. Expand shared containers program citywide.

Implement and contract services for a shared containers program citywide, depending on outcomes from shared containers pilot program (Action 2) and procurement process (Action 1).

4. Update payment structure for waste services for businesses.

Develop a solid waste utility (similar to Hoboken's water utility) to charge businesses for waste collection and disposal through the utility, rather than indirectly via property taxes. Refer to Section 2.4 for more detail on the current payment structure.

5. Set waste requirements for any future large building development and develop guidance for existing buildings.

Modify the municipal code to require new large buildings to plan for waste separation and management, including providing equal convenience disposal for all waste streams (garbage, organics, dual-stream recycling), compaction, and sufficient accessible storage. Develop detailed building waste containerization guidance and approval process for the development rehabilitation of old buildings for inclusion in planning process.

Organics

Short-term actions

6. Require businesses to collect food waste.

Modify the municipal code to require food generating businesses to separate organic waste and pay for collection and disposal through the solid waste utility.

7. Develop a network to connect edible food donors and recipients.

Develop an online portal and/or work with non-profit food donation organizations to connect local businesses, nonprofits, schools, and other community groups so they can donate or receive food.

Long-term actions

8. Advocate for a Hudson County composting facility.

Advocate that the Hudson County Improvement Authority (HCIA) invest in and develop a composting facility within Hudson County. A regional composting facility will be crucial to accommodate the growing quantities of food waste collected.

Reuse and Repair

Short-term actions

9. Develop a reuse and repair hub and/or events.

Build off existing infrastructure and leverage partnerships and relationships (also developed in Action 11) with any reuse and repair businesses in Hoboken or the surrounding area to develop a schedule of repair events or an ongoing repair hub.

10. Develop a furniture donation service.

Coordinate with a partner organization to develop a furniture donation service for residents.

Long-term actions

11. Launch a reuse partnership program.

Develop a public private partnership to create practical solutions and standardized systems to help the City's businesses and residents move from single use to reuse.

12. Facilitate citywide stoop sale events.

Conducted at the appropriate interval (e.g., bi-annually), this would be a low-cost opportunity to encourage incorporation of reuse into the community's regular activities.

13. Develop a reusable cup pilot program.

Launch a reusable cup pilot program in Hoboken's Limited Business Area (LBA) utilizing an existing provider's (e.g., Cup Zero) technology and integrations to reduce single use cups.

14. Develop a reusable food serviceware pilot program.

Launch a reusable food serviceware pilot program in Hoboken's Limited Business Area (LBA) utilizing an existing provider's (e.g., DeliverZero) technology and integrations to reduce single use food serviceware (e.g., to-go containers).

15. Require reusables for on-premise dining.

A policy requirement to encourage reuse could take the form of material bans on disposable food service ware. Requiring reusables for on-premise dining (with thoughtful exceptions) is an intermediate step.

Education and Public Spaces

Short-term actions

16. Expand public education initiatives.

Waste diversion from landfill can only be achieved via actions taken by the public which requires public education. Examples include: (1) developing an educational packet to be provided by realtors/property management upon move-in for residents, (2) increased promotion of the Recycle Coach app, (3) developing a program/events with parks and community gardens to develop education around composting and organics for the public.

17. Standardize labelling of waste containers across Hoboken.

To reduce consumer confusion around recycling, Hoboken should introduce a standardized labelling system for waste categories across the city, including waste containers within businesses and on sidewalks. Labels should be provided in different languages and align with standardized bin colors. Labelling requirements should be required by code for businesses and large residential buildings. These labels can be made available for download or mail order.

Long-term actions

18. Encourage reuse and recycling in public spaces.

Hoboken's parks provide an opportunity for the city to embed reuse and recycling initiatives into public spaces. To incentivize reuse, Hoboken should implement a requirement for bottle fillers and water fountains, preferably freeze protected, in any new parks or outdoor recreation spaces. To

increase diversion from landfill, Hoboken should update the city code to require recycling at park events.

4.2 Metrics and Measurement

Measuring performance is an important part of understanding the impact of specific actions and progress toward achieving circularity. Metrics can also inform the pace of implementation and identify if there is any need to adjust strategies over time. More complete and accurate data could also help to attract potential contractors who would have more confidence in estimating costs for services. Through Hoboken's own data collection and through requirements for contractors, it will be important to track the quantity of:

- Tonnage of trash collected and disposed.
- Composition of trash collected and disposed.
- Recyclable materials collected and processed, minus any residue disposed.
- Compostable materials collected and processed, minus any residue disposed.
- Bulky items (e.g., furniture) and other reusable items collected.
- Products and materials repaired and reused (including any cups and/or food service ware trialed as part of pilot programs).
- Participation rates (i.e., set out rates) of curbside programs.
- Characteristics of households on collection routes (e.g., number of single versus multi-family units served).
- Characteristics of residential and commercial entities on collection routes.

By monitoring these data points, the City will be able to track changes in other important metrics, such as disposal per capita, carbon reduction from recycling and reuse, and value to the economy (i.e., gross value added (GVA)) from recycling and reuse. Reporting on these metrics will also inform any future goal setting.

4.3 Timeline

Table 15 outlines the detailed implementation actions and timeline over the next five years to advance Hoboken's zero waste future.

Table 15: Detailed Implementation Timeline

#	Action	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	Update City's Waste Hauling Contract.						
1a	Publicly procure collection services for waste and recycling for two years, including services to collect waste and recycling from shared containers in a pilot program.						
1b	Publicly procure collection services for organics for two years from shared containers in a pilot program.						
1c	Publicly procure shared containers for a pilot program, including installation.						
2	Conduct a shared containers pilot program.						
2a	Estimate the amount of residential waste produced on typical blocks through an analysis of the number of housing units / block, and commercial waste through business database.						
2b	Verify the estimates with bag counts on typical blocks.						
2c	Estimate future waste quantities through implementing measures to increase recycling and organic waste diversion, reduce waste generation and incentivize / require waste compaction (e.g. cardboard balers).						
2d	Determine typical building types which may require different containerization strategies.						
2e	Assess trade-offs between increasing frequency of collection and reduced number of containers.						

#	Action	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
2f	Assess options for different types of containers and truck requirements (unless we have decided it will be wheeled bins for sure so they can just retrofit existing trucks).						
2g	Develop 2-3 scenarios for whole city containerization with associated assumptions, costs, and space requirements.						
2h	Review with stakeholders and adjust as necessary.						
2i	Develop pilots – for shared containers on a few representative blocks and for wheeled bin collection with a few large buildings.						
2j	Implement pilot.						
2k	Evaluate pilot.						
2l	If pilots are successful, develop roll out plan for citywide shared container system.						
3	Issue bid for shared containers program citywide, depending on outcomes from shared containers pilot program (Action 2).						
4	Establish a solid waste utility for garbage, recycling, and organic collections from commercial and potentially multi-family buildings.						
4a	Evaluate types of commercial and multi-facility properties that could operationally and legally fall under utility service provision.						
4b	Complete a rate study for a solid waste utility.						
4c	Carryout stakeholder engagement.						
4d	Obtain necessary approval.						

#	Action	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
4e	<i>Amend code based on Action 4a and 4b.</i>						
4f	<i>Put in place monitoring and enforcement.</i>						
4g	<i>Implement solid waste utility.</i>						
5	Modify the municipal code to require large new buildings to better plan for waste separation and management, including equal convenience disposal for all waste streams (waste, organics, dual-stream recycling), compaction and sufficient accessible storage.						
5a	<i>Collaborate with other Hoboken city departments to understand any impacts waste management planning requirements may have for buildings.</i>						
5b	<i>Develop detailed building waste containerization guidance and approval process for the development rehabilitation of old buildings for inclusion in planning process.</i>						
5c	<i>Modify municipal code to align with findings in Action 5b, amend planning requirements, and integrate into building approval process.</i>						
6	Modify the municipal code to require food generating businesses to separate organic waste and increase staff time for working with businesses and the Business Alliance on waste initiatives.						
6a	<i>Identify food-waste generating businesses.</i>						
6b	<i>Publicly procure collection services for organics for two years from shared containers in a pilot program.</i>						
6c	<i>Introduce ordinance to amend the municipal code.</i>						
6d	<i>Coordinate with food generating businesses and the Hoboken Business Alliance to support their transition to organic waste collection.</i>						

#	Action	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
7	Develop an online portal and/or work with non-profit food donation organization to connect local businesses, nonprofits, schools, government agencies, religious organizations, or community groups so they can donate or receive food.						
7a	<i>Meet with local non-profit food donation organizations (e.g., Share My Meals) to understand collaboration options.</i>						
7b	<i>Engage with businesses and assess needs.</i>						
7c	<i>Develop and launch the portal.</i>						
8	Advocate that the Hudson County Improvement Authority (HCIA) invest in and develop a composting facility within Hudson County.						
9	Develop a reuse and repair hub or events. (Note: will require increased staffing from Recycling Coordinator and Green Team Coordinator.)						
9a	<i>Build off existing infrastructure and leverage partnerships with any reuse and repair businesses in Hoboken or the surrounding area to develop a schedule of repair events or an ongoing repair hub.</i>						
9b	<i>In tandem, or alternatively if there is minimal infrastructure for repair, the City could offer small grants to start ups on repair and reuse in Hoboken to promote local repair initiatives.</i>						
10	Provide a furniture donation service with a partner organization. (Note: will require increased staffing from Recycling Coordinator and Green Team Coordinator.)						
10a	<i>Estimate the amount of furniture that is disposed or could be donated annually.</i>						
10b	<i>Research and select an organization that specializes in furniture donation services.</i>						
10c	<i>Establish a contract with the partner clearly defining legal and financial agreements.</i>						

#	Action	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
10d	<i>In collaboration with the partner, determine logistics and operational aspects such as collection points, storage facilities, transportation arrangements, and scheduling for pickups or drop-offs.</i>						
10e	<i>Develop a comprehensive outreach and education plan to inform and engage the community about the furniture donation service.</i>						
11	Launch Reuse Hoboken, to create practical solutions and standardized systems to help the City's businesses and residents move from single use to reuse. (Note: will require increased staffing from Recycling Coordinator and Green Team Coordinator.)						
11a	<i>Develop an online portal to connect businesses and residents with reusables service providers and resources in Hoboken. Leverage partnerships and relationships developed in Action 9 with any reuse and repair businesses in Hoboken.</i>						
11b	<i>Coordinate with local businesses to promote reusable systems (e.g., dine-in durables instead of single use items).</i>						
12	Coordinate citywide stoop sales on a recurring basis. (Note: will require increased staffing from Recycling Coordinator and Green Team Coordinator.)						
12a	<i>Collaborate with other Hoboken city departments to understand any restrictions or impacts a citywide stoop sale may have on their jurisdiction.</i>						
12b	<i>Coordinate with community groups and residents to promote the event and implement.</i>						
13	Develop reusable cup pilot program.						
13a	<i>Scope out prospective service providers.</i>						
13b	<i>Consult with local HORECA businesses (hotels, restaurants, and cafes).</i>						
13c	<i>Determine the necessary infrastructure and logistics, in collaboration with the service provider and local businesses.</i>						

#	Action	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
13d	<i>Develop a comprehensive public awareness and education campaign.</i>						
13e	<i>Establish mechanisms to monitor and evaluate the effectiveness of the program.</i>						
14	Develop reusable food serviceware pilot program.						
14a	<i>Scope out prospective service providers as well as application (e.g. schools, HORECA, large corporate campuses).</i>						
14b	<i>Consult with identified users.</i>						
14c	<i>Determine the necessary infrastructure and logistics, in collaboration with the service provider and local businesses.</i>						
14d	<i>Support with procurement of service provider.</i>						
14e	<i>Work with service provider to develop a comprehensive public awareness and education campaign.</i>						
14f	<i>Establish mechanisms to monitor and evaluate the effectiveness of the program.</i>						
15	Establish policy requirement for reusables taking the form of material bans on disposable food serviceware.						
15a	<i>Based on findings from pilot programs (Actions 13 and 14), consider policy requirement and further infrastructure implementation.</i>						
16	Expand public education initiatives.						
16a	<i>Develop an educational packet to be provided by realtors/property management upon move-in for residents.</i>						

#	Action	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
16b	<i>Increase promotion of the Recycle Coach app online and at community events.</i>						
16c	<i>Develop a program/events with parks and community gardens to develop education around composting and organics for the public.</i>						
17	Develop labels to standardize labelling of waste bins across Hoboken and continue to provide these labels to residents and businesses.						
17a	<i>Develop labels for recycling.</i>						
17b	<i>Develop labels for composting.</i>						
17c	<i>Distribute labels to residents and businesses.</i>						
18	Establish requirements for new public spaces and parks to implement bottle fillers and events held in the spaces to recycle.						
18a	<i>Coordinate feasibility with relevant Hoboken departments.</i>						
18b	<i>Develop plan including identification of locations for new public spaces.</i>						
18c	<i>Install water bottle fillers and distribute guidance around recycling for events in public spaces.</i>						

Appendix

A.1.0 Current Waste Services

Details of the waste services that are available in the City of Hoboken are provided in the sections below.

A.1.1 Waste and Recycling

Collection Services

The City has collection services every week for the following waste streams from residential, commercial, and institutional properties:

- Municipal solid waste type 10 (i.e., garbage) – per N.J.A.C.7:26-2.13(g) includes waste originating in the community consisting of household waste from private residences, commercial waste which originates in wholesale, retail, or service establishments, such as, restaurants, stores, markets, theaters, hotels and warehouses, and institutional waste material originated in schools, hospitals, research institutions and public buildings. Non-metal furniture and mattresses are also collected with this stream.
- Commingled recyclables which are limited to aluminum, glass, and plastics #1, 2, 5
- Paper and cardboard
- Metal furniture, appliances, electronic waste (e-waste) and yard waste

Prior to 2019 the City, operated a single-stream recycling program. In the fall of 2019, in order to reduce costs and receive higher revenues for recycled commodities, Hoboken switched to a dual-stream recycling program. The program now collects commingled recyclables and paper & cardboard separately. Table 1 summarizes the waste collection services by material and location, as well as the destination for the collected material.

Collection Schedule

To allow for more efficient collections and ensure access all collection is carried out overnight between 11:30pm and 5:30 am on the designated days. Residents and business are required to place their garbage in a cart with a closed lid or in a bag. Commingled recycling should be placed in a cart with a lid or in a clear plastic bag. Paper & cardboard should not be placed in a bag when it is set out for recycling. Citywide, material should be placed at the curb after 7:30pm, while in the Limited Business Area they are placed out after 9:00pm.

Figure 21: City of Hoboken Waste and Recycling Collection Schedule

Schedule		
	CITYWIDE <i>Outside of the limited business area</i> Place bins at the curb after 7:30 PM	LIMITED BUSINESS AREA <i>Washington St, Newark St, 1st St, 14th St, and Hudson Pl</i> Place bins at the curb after 9:00 PM
SUN	GARBAGE , non-metal furniture, mattresses	GARBAGE , non-metal furniture, mattresses CARDBOARD
MON	COMINGLED RECYCLING aluminum, glass, plastics 1, 2, 5	GARBAGE , non-metal furniture, mattresses, CARDBOARD COMINGLED RECYCLING , aluminum, glass, plastics 1, 2, 5
TUE	NONE	GARBAGE , non-metal furniture, mattresses CARDBOARD
WED	GARBAGE , non-metal furniture, mattresses	GARBAGE , non-metal furniture, mattresses CARDBOARD
THU	Metal furniture, appliances, yard waste PAPER RECYCLING, CARDBOARD, E-WASTE	GARBAGE , metal furniture, appliances, yard waste PAPER RECYCLING, CARDBOARD, E-WASTE, GLASS BOTTLES
FRI	GARBAGE , non-metal furniture, mattresses	GARBAGE , non-metal furniture, mattresses CARDBOARD
SAT	NONE	NONE

On Fridays, Environmental Services runs one truck to collect e-waste, yard waste, bulk metal across the City every Friday from 8:00am through 4:00pm. Environmental Services provides supplemental litter and trash collection with four utility vehicles every day from 6:00am-2:00pm, and with one vehicle from 2:00pm to 10:00pm.

A.1.2 Composting Program

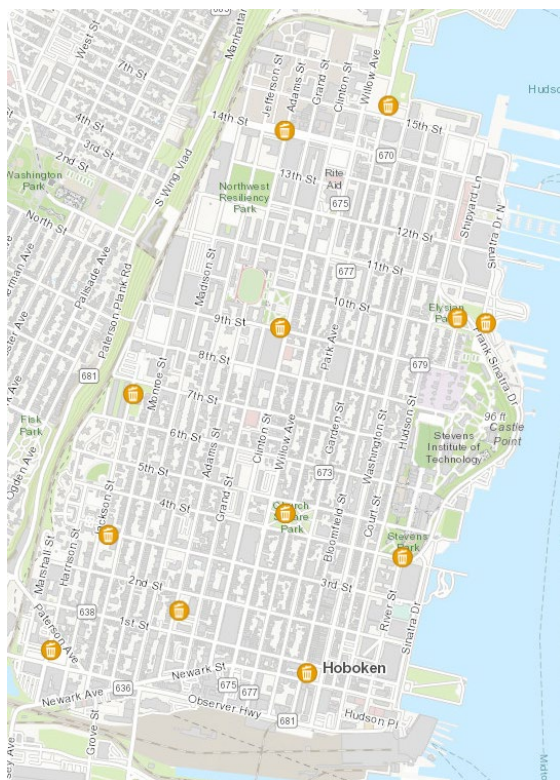
Drop-Off

The City offers a free residential compost drop-off program for organic recycling. Residents can register online to participate, complete a quiz to evaluate their understanding of what can and cannot be composted and once accepted, receive the code to unlock drop-off containers, as pictured in Figure 22. Approved residents can then drop-off their compostable material at any one of the 14 sites around the City to be composted. Residents are then given a clean bucket at the drop-off for the next few days. Material is collected from the drop-off locations twice a week. The number of drop-off locations has risen from one in 2019 to 14 in 2022. The locations of twelve of the drop-off sites are illustrated in Figure 23. There are 2,507 “subscribers,” who have completed the quiz to register for the composting drop-off program, but it is unknown how many of these subscribers are regular users.

Figure 22: Composting Drop-Off Container



Figure 23: Composting Drop-Off Sites



Curbside Subscription

In addition to the drop-off program, the City offers a subscription curbside pick-up program for residents for a fee of \$24/month for biweekly pick-up service or \$39/month for weekly pick-up service. Community Compost Co. has 120 residents they collect from and 8 businesses including multi-unit buildings. Businesses and institutions can also receive curbside food scraps collection for a personalized cost based on the amount of material generated. Community Compost currently hauls from seven commercial customers which range from restaurants & cafés to multi-unit complexes.

All Hoboken's composting programs are operated by Community Compost Company. They collect the material from across the City on Mondays and Thursday and transport it to their composting facility at Arrowhead Farm Agriculture Center, located in Kerhonkson, New York on Tuesdays and Fridays.

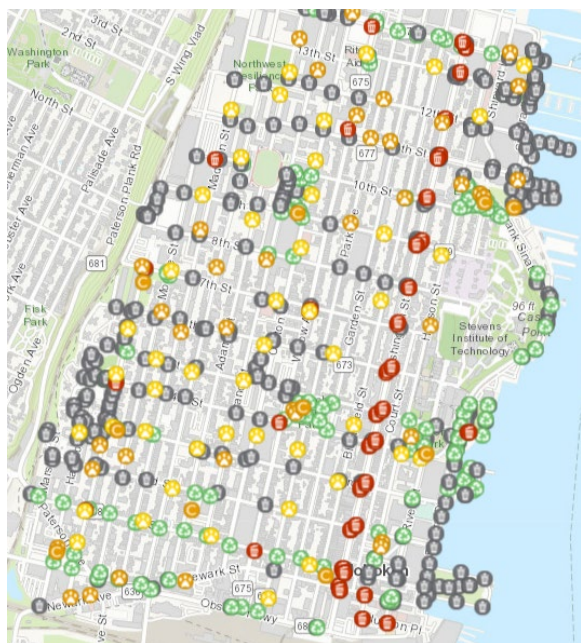
A.1.3 Public Space Recycling

Hoboken provides garbage and recycling bins in its public areas, as seen in Figure 24, which are serviced by a private hauler. The City has 500+ public waste cans to properly dispose of trash and comingled recycling, as well as pet waste.

Figure 24: Public Space Bins



Figure 25: Map of Public Space Bins Across Hoboken



A.1.4 Household Hazardous Waste Drop-Off Days

The City of Hoboken hosts and lends support to household hazardous waste collection days organized by the Hudson County Improvement Authority. At these events, hazardous items such as non-latex paint, varnish, turpentine, pesticide, etc. are collected for proper disposal.

A.1.5 Litter Management and Street Cleaning

Both the City and private businesses have litter programs. The City has manual clean up of litter from 6am to 4pm. The litter collector uses a picker and 32-gallon wheeled bin. The Hoboken Business Alliance uses a sweeper after 2pm to collect litter as well.

A.1.6 Communications and Outreach

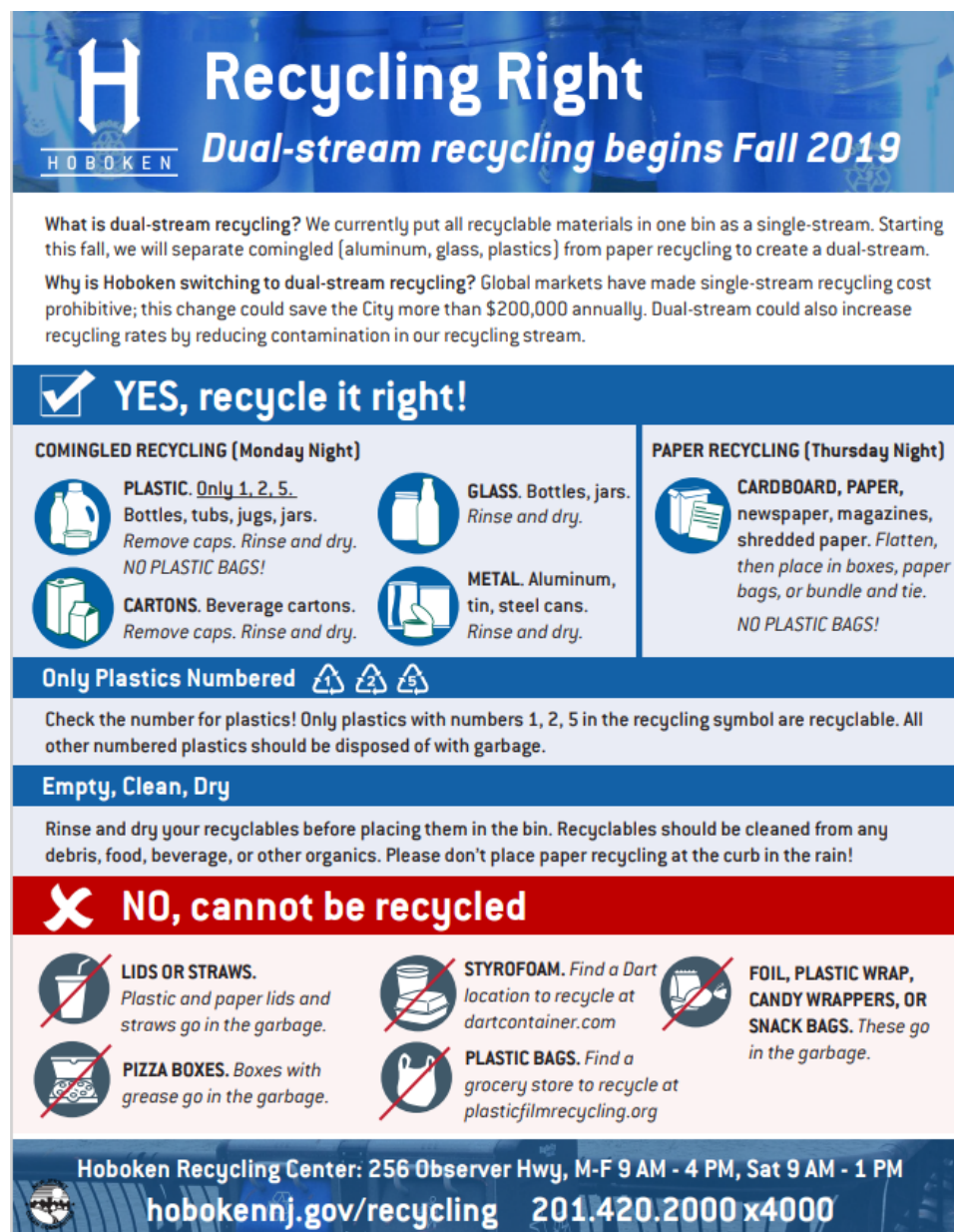
All communications and education around waste and recycling undertaken by the City is performed in-house and included in staff time for Environmental services employees. In addition, volunteers sometimes supplement educational efforts arounds the City's waste management initiatives, most notably the Green Team.

The Green Team was created in August 2011 through a resolution passed by the Mayor and City Council and as part of the requirements of the City's participation in the Sustainable Jersey certification program. Sustainable Jersey is a nonprofit organization that provides tools, training and financial incentives to support communities as they pursue sustainability programs. All communities participating in the Sustainable Jersey program must establish a Green Team to provide the leadership to develop plans, implement programs and assist with educational opportunities that support the creation of a sustainable community. The Hoboken Green Team is comprised of volunteers who meet monthly to focus on completing actions required for

Sustainable Jersey certification, as well as other volunteer initiatives to promote environmental sustainability in our community.

During the transition from single-stream to dual-stream recycling in Hoboken a large educational effort was undertaken to promote the change. Environmental Services employees educated residents on the details of the change at City events such as the Fall Arts & Music Festival and weekly Farmers' Markets and met with property managers throughout town. Volunteers, including Green Team members, Stevens University students and Hoboken Girl Scouts staffed information tables in the lobbies of large residential building and the Stevens University library and placed "OOPS!" and "Violation" stickers on recycling bins around town that were incorrectly sorted. When the contracted hauler saw the sticker on their route, they do not pick it up. The property owner could then correct the issue and know how to recycle correctly moving forward. To aid residents in their recycling methods, the City of Hoboken publishes the flyer below.

Figure 26: City of Hoboken Recycling Right Flyer









Hoboken Recycling Right
Dual-stream recycling begins Fall 2019

What is dual-stream recycling? We currently put all recyclable materials in one bin as a single-stream. Starting this fall, we will separate comingled (aluminum, glass, plastics) from paper recycling to create a dual-stream.

Why is Hoboken switching to dual-stream recycling? Global markets have made single-stream recycling cost prohibitive; this change could save the City more than \$200,000 annually. Dual-stream could also increase recycling rates by reducing contamination in our recycling stream.

✓ YES, recycle it right!

COMINGLED RECYCLING (Monday Night)		PAPER RECYCLING (Thursday Night)
 PLASTIC. Only 1, 2, 5. Bottles, tubs, jugs, jars. Remove caps. Rinse and dry. NO PLASTIC BAGS!	 GLASS. Bottles, jars. Rinse and dry.	 CARDBOARD, PAPER, newspaper, magazines, shredded paper. Flatten, then place in boxes, paper bags, or bundle and tie. NO PLASTIC BAGS!
 CARTONS. Beverage cartons. Remove caps. Rinse and dry.	 METAL. Aluminum, tin, steel cans. Rinse and dry.	






Only Plastics Numbered 

Check the number for plastics! Only plastics with numbers 1, 2, 5 in the recycling symbol are recyclable. All other numbered plastics should be disposed of with garbage.

Empty, Clean, Dry

Rinse and dry your recyclables before placing them in the bin. Recyclables should be cleaned from any debris, food, beverage, or other organics. Please don't place paper recycling at the curb in the rain!

✗ NO, cannot be recycled

 LIDS OR STRAWS. Plastic and paper lids and straws go in the garbage.	 STYROFOAM. Find a Dart location to recycle at dartcontainer.com	 FOIL, PLASTIC WRAP, CANDY WRAPPERS, OR SNACK BAGS. These go in the garbage.
 PIZZA BOXES. Boxes with grease go in the garbage.	 PLASTIC BAGS. Find a grocery store to recycle at plasticfilmrecycling.org	

Hoboken Recycling Center: 256 Observer Hwy, M-F 9 AM - 4 PM, Sat 9 AM - 1 PM
hobokennj.gov/recycling 201.420.2000 x4000

A.1.7 Enforcement

The City of Hoboken will issue fines for incorrectly set out recycling. The fines get progressively larger as the number of infractions increases. The fine for the first offense is \$250, then \$500 and \$1000 for the second and third offenses. The Hoboken Municipal Court is responsible for enforcing the payment of fines. Challenges to enforcement include determining the instance of offenses (i.e., first versus second versus third), ensuring payment of fines, and receiving payment from property management companies in multi-family complexes rather than from the residents within the complexes.

A.2.0 Waste Characterization Appendix

A.2.1 Collection and Sorting

To undertake the waste characterization, Eunomia coordinated the collection and sort with the City of Hoboken, Cali Carting (Cali, Hoboken's contracted waste hauler), and GRG Analysis (GRG, the sorting team). The waste sort was conducted from September 19-23, 2022, at a City-owned lot in Hoboken.

Waste for the characterization was collected over three nights to ensure that the sample covered waste from three different waste producing areas: Limited Business Area (LBA); Single Family and Small Multi-family; and Large Multi-family. The approximate numbers of bags collected from each waste generation area is shown in Table 16.

Table 16: Waste Collection Schedule for Waste Characterization Study

Day	Area	Street	Approximate Number of Bags Collected	Label
Sunday	LBA	Washington St & 1 st St, going north up Washington, pull 3-4 bags from each building on each side of the street until they collect the desired # of bags. Collectors to make note of final address (i.e., how far up Washington street bags were collected).	100 bags	Pink
	Single Family and Small Multi-family	Park and Garden between 12 th and 13 th Street (both sides of street) or comparable residential block in North of City –continue going south down Garden Street if there are not enough bags on this block. Collectors to make note of blocks collected from.	100 bags	Yellow
	Large MF	Hudson Tea Residences, The Rivington Apartments, The Clock Tower Apartments, 7 Seventy House or comparable large multifamily residences: pull ~20 bags from each complex Collectors to make note of buildings collected from.	100 bags	Green
Tuesday	LBA	Washington St & 1 st St, going west down 1 st street, pull 3-4 bags from each building on each side of the street until they collect the desired # of bags.	500 bags	Pink

		Collectors to make note of final address (i.e., how far up Washington street bags were collected).		
Wednesday	Single Family and Small Multi-family	Garden and Bloomfield between 6 th and 7 th (both sides of street) or comparable residential block in South of City – continue collecting until required number of bags are collected. Collectors to make note of blocks collected from.	400 bags	Yellow
	Large Multi-Family	333 River Street Apartments, 77 Park, Avenue Apartments, 5 Church Tower or comparable large multifamily residences: pull ~20 bags from each complex Collectors to make note of buildings collected from.	100 bags	Green
		Approximate Total Bags Collected	1300 bags	

Over three different nights, the waste collectors from Cali collected bags of garbage left on the curb, deposited bags into a rack truck, transported to the sort site, tagged bags with one of the three colored labels and unloaded into the pre-sort container for storage. The three colored labels (yellow, green, pink) aligned with a particular address type (e.g., commercial, large multifamily, and other residences).

Over five days, the GRG team then separated the waste collected by Cali into samples ranging from less than 0.1 – 52.7 lbs. Once the waste was sorted into different categories, the GRG team weighed and recorded the weights for each waste component category in a unique bin. The list of 48 waste component categories and the corresponding seven major waste fractions were recorded on data sheets. The weights of the bins for each category were measured at the beginning of the sort and removed from the calculations of the weights of each sample.

A.2.2 Data Analysis

Once GRG Analysis had finished the waste sort and recorded all data, the information from the data sheets was input into Excel and the relevant bin weights were subtracted for each waste component category. Then, the weights of all samples for each waste component category were added together to provide the total weights. This data was then analyzed in three distinct ways:

- Overall weights and percentages of the total sample
- Weights and percentages by waste generation areas (Limited Business Area, Large Multi-family, and Single Family and Small Multi-family)
- Sub-sorts of the top three waste fractions (organics, paper, plastic).

The fines/dirt waste category was defined as fines smaller than ½ inch, gathered by sorting the waste for all samples atop a mesh screen and collecting the waste that fell through. Much of this waste was identified as other waste categories, such as food waste, animal by-products, plastic mixed rigids, and glass bottles and

jars. Percentages estimated by the GRG Analysis team for these waste types were factored into the appropriate waste streams and subtracted from the fines/dirt category as necessary.

Once all results for the three waste sample categories were completed, the team used these results to calculate the waste composition for the whole city. To do so, estimates were needed for the proportion of the city that each waste generation area represented.

Since waste from the Limited Business Area is collected six times a week and from the rest of the city only twice a week, the average nightly tonnage collected from the LBA was subtracted from the average tonnage on nights of collection across the city and those two figures were compared to provide a proportional breakdown for the proportional amount of waste generated from the LBA on an annual basis.

Once the contribution from the LBA was removed, determining the split between the Large Multi-family and the Single Family and Small Multi-family sample categories was completed. This was done by using U.S. census data to determine the number of households in the City of Hoboken in buildings containing 1-4 units per building and 5+ units per building and comparing proportionately. According to a [2020 study from The Recycling partnership](#), households in multi-family produce, on average, only 0.75 lbs. of garbage for every pound produced by single family households. This statistic was applied to the City of Hoboken waste disposal tonnage data from 2021 along with the proportional split of households from the census data to determine the estimated proportion of waste generated from the Large Multi-family waste generation area versus the Single Family and Small Multi-family waste generation area.

Additionally, as the LBA waste collection route is not restricted to commercial properties, an additional check was done to ensure that one of the residential categories (large multi-family or single family and small multi-family) were not being overrepresented in the non-LBA tonnage. Using Hoboken tax records, the number of housing units that are located on the LBA streets were calculated separately for Large Multi-family or Single Family and Small Multi-family households. These households were then subtracted for the total number of Large Multi-family or Single Family and Small Multi-family households that are in Hoboken according to census data. Just over 2,000 large multi-family units were subtracted from the Large Multi-family census total, and over 140 single-family households were subtracted from the Single Family and Small Multi-family total. The same analysis as described in the paragraph above was then carried out on the new household numbers, and the estimated split between the generation areas was within a few percentage points of the estimated from the method in the paragraph above, indicating that the split is logical.

The calculated estimated percentage of overall waste disposed by waste generation area is provided in Table 17 below.

Table 17: Estimated Split of Contribution to Total Disposed Material in Hoboken Across the Three Waste Generation Areas

	Limited Business Area (LBA)	Large Multi-Family	Single Family and Small Multi-family
% of Disposal Stream	33%	48%	20%

These percentages were then applied to the waste tonnage data from 2021 and used to extrapolate the composition of the total waste generated in the City of Hoboken for a citywide waste composition.

It should be noted that the waste characterization conducted for this study was a point-in-time analysis using a relatively small sample size. For a city waste characterization to be considered more accurate and

applicable to annual averages, multiple samples taken at different points in the year are used, usually at least four to account for seasonal variations in the waste stream. However, this study provides a useful indication of the composition of Hoboken's garbage stream for the purposes of planning zero waste strategies.

A.2.3 Results

Each of the waste samples from the three City of Hoboken sample categories were analyzed to provide a breakdown of the waste component categories and their proportional share, by weight.

Table 18 provides the average weights of the top waste component categories in the LBA waste sample along with the average percentages per sample.

Table 18: Average Waste per Sample in LBA

Waste fraction	waste component category	Average weight (lbs.) per sample	Average % per sample
Organics	Food waste	54.36	27.6%
Paper	Compostable paper	31.18	15.8%
Paper	Mixed low-grade paper	15.54	7.9%
Organics	Diapers / sanitary products	10.25	5.2%
Plastic	Other film	9.84	5.0%
Organics	Fines / dirt	9.08	4.6%
Plastic	Mixed rigids	7.53	3.8%
Organics	Animal By-Products	6.28	3.2%
Glass	Glass bottles and jars	5.93	3.0%
Paper	OCC/Kraft paper	5.05	2.6%
Organics	Textiles: Non-Clothing	4.78	2.4%
Plastic	Other plastics	4.70	2.4%
Plastic	Garbage bags	4.23	2.1%
Organics	Textiles	3.14	1.6%
Organics	Shoes / rubber / leather	3.08	1.6%
Paper	Other unrecyclable paper	2.55	1.3%

Waste fraction	waste component category	Average weight (lbs.) per sample	Average % per sample
Paper	High grade paper	2.30	1.2%
Other	Miscellaneous Inorganics	2.11	1.1%
Other	Construction debris (concrete, bricks, rock, composite wood, gypsum)	2.06	1.0%
Plastic	#1 PET Bottles/Jars	1.69	0.9%
Metals	Other non-ferrous	1.68	0.8%
Organics	Yard waste	1.58	0.8%
Plastic	#2 HDPE Bottles/Jars	1.20	0.6%
Special Waste	Electronics / TVs / computers	0.84	0.4%
Paper	Poly-coated paper / aseptic containers	0.81	0.4%
Metals	Ferrous containers / tin cans	0.71	0.4%
Metals	Aluminum cans	0.68	0.3%
Glass	Other glass	0.59	0.3%
Metals	Other metal / mixed metal	0.58	0.3%
Plastic	Film / grocery bags / retail bags	0.43	0.2%
Metals	Empty aerosol cans	0.40	0.2%
Special Waste	Treated/Contaminated Wood	0.39	0.2%
Paper	Newspaper	0.30	0.2%
Plastic	Bulky rigids	0.30	0.2%
Special Waste	Batteries	0.28	0.1%
Plastic	Expanded Polystyrene #6	0.25	0.1%
Metals	White goods / appliances	0.25	0.1%
Organics	Non-C&D wood	0.23	0.1%
Special Waste	Fluorescent tubes / bulbs / CFLs	0.06	0.0%

Waste fraction	waste component category	Average weight (lbs.) per sample	Average % per sample
Metals	Other ferrous	0.04	0.0%
Metals	Aluminum other	0.04	0.0%
Plastic	Other Plastic Bottles/Jars	0.00	0.0%
Organics	Carpet / padding	0.00	0.0%
Special Waste	Paint	0.00	0.0%
Special Waste	Pesticides / herbicides / rodenticides	0.00	0.0%
Special Waste	Mercury-Laden Wastes	0.00	0.0%
Special Waste	Other Potential Harmful Wastes	0.00	0.0%
Special Waste	Water-Based Adhesives / Glues	0.00	0.0%

Table 19 displays the average weights of the top waste component categories in the large multi-family waste sample along with the average percentages per sample. This table provides more detail on the results than the tables in the main body.

Table 19: Average Disposed Waste per Sample for Multi-Family

Waste fraction	Waste component category	Average weight (lbs.) per sample	Average % per sample
Organics	Food waste	54.20	26.1%
Paper	Compostable paper	27.24	13.1%
Paper	Mixed low-grade paper	19.05	9.2%
Paper	OCC/Kraft paper	14.24	6.9%
Other	Miscellaneous Inorganics	8.76	4.2%
Plastic	Other film	8.23	4.0%
Plastic	Mixed rigids	7.54	3.6%
Organics	Diapers / sanitary products	7.41	3.6%
Organics	Fines / dirt	6.61	3.2%
Glass	Glass bottles and jars	6.51	3.1%

Waste fraction	Waste component category	Average weight (lbs.) per sample	Average % per sample
Plastic	Garbage bags	5.30	2.6%
Paper	Other unrecyclable paper	4.84	2.3%
Paper	Newspaper	4.19	2.0%
Plastic	Other plastics	3.44	1.7%
Organics	Textiles	3.44	1.7%
Plastic	#1 PET Bottles/Jars	3.27	1.6%
Metals	Other ferrous	2.41	1.2%
Paper	High grade paper	2.30	1.1%
Paper	Poly-coated paper / aseptic containers	2.17	1.0%
Organics	Textiles: Non-Clothing	1.89	0.9%
Organics	Animal By-Products	1.89	0.9%
Glass	Other glass	1.54	0.7%
Plastic	#2 HDPE Bottles/Jars	1.39	0.7%
Plastic	Film / grocery bags / retail bags	1.06	0.5%
Metals	Aluminum cans	1.06	0.5%
Metals	Other non-ferrous	1.01	0.5%
Organics	Yard waste	0.94	0.5%
Organics	Shoes / rubber / leather	0.90	0.4%
Metals	Other metal / mixed metal	0.71	0.3%
Metals	Ferrous containers / tin cans	0.56	0.3%
Organics	Non-C&D wood	0.56	0.3%
Special Waste	Electronics / TVs / computers	0.47	0.2%
Plastic	Bulky rigids	0.43	0.2%
Special Waste	Batteries	0.29	0.1%

Waste fraction	Waste component category	Average weight (lbs.) per sample	Average % per sample
Metals	Empty aerosol cans	0.27	0.1%
Plastic	Expanded Polystyrene #6	0.26	0.1%
Plastic	Other Plastic Bottles/Jars	0.24	0.1%
Metals	White goods / appliances	0.20	0.1%
Metals	Aluminum other	0.19	0.1%
Special Waste	Other Potential Harmful Wastes	0.16	0.1%
Special Waste	Treated/Contaminated Wood	0.13	0.1%
Special Waste	Fluorescent tubes / bulbs / CFLs	0.07	0.0%
Special Waste	Paint	0.03	0.0%
Organics	Carpet / padding	0.00	0.0%
Special Waste	Pesticides / herbicides / rodenticides	0.00	0.0%
Special Waste	Mercury-Laden Wastes	0.00	0.0%
Special Waste	Water-Based Adhesives / Glues	0.00	0.0%
Other	Construction debris (concrete, bricks, rock, composite wood, gypsum)	0.00	0.0%

Table 20 displays the average weights of the top waste component categories in the Single Family and Small Multi-family waste sample along with the average percentages per sample.

Table 20: Average Disposed Waste per Sample in Single-Family and Small Multi-Family

Waste Fraction	Waste Component Category	Average weight (lbs.) per sample	Average % per sample
Organics	Food waste	77.72	35.6%
Paper	Compostable paper	31.23	14.3%
Glass	Glass bottles and jars	17.37	7.9%
Plastic	Mixed rigids	9.30	4.3%

Waste Fraction	Waste Component Category	Average weight (lbs.) per sample	Average % per sample
Paper	Mixed low-grade paper	9.00	4.1%
Plastic	Other film	8.34	3.8%
Paper	OCC/Kraft paper	7.87	3.6%
Organics	Fines / dirt	6.70	3.1%
Plastic	Garbage bags	5.83	2.7%
Organics	Diapers / sanitary products	5.18	2.4%
Plastic	Other plastics	3.59	1.6%
Plastic	#1 PET Bottles/Jars	3.09	1.4%
Other	Miscellaneous Inorganics	2.90	1.3%
Paper	Poly-coated paper / aseptic containers	2.84	1.3%
Organics	Animal By-Products	2.46	1.1%
Organics	Shoes / rubber / leather	2.05	0.9%
Metals	Aluminum cans	2.01	0.9%
Organics	Textiles: Non-Clothing	2.00	0.9%
Metals	Ferrous containers / tin cans	1.97	0.9%
Paper	High grade paper	1.90	0.9%
Paper	Other unrecyclable paper	1.83	0.8%
Plastic	Bulky rigids	1.74	0.8%
Plastic	#2 HDPE Bottles/Jars	1.63	0.7%
Organics	Yard waste	1.53	0.7%
Plastic	Expanded Polystyrene #6	1.23	0.6%
Organics	Textiles	1.11	0.5%
Metals	Other non-ferrous	1.09	0.5%
Glass	Other glass	0.93	0.4%

Waste Fraction	Waste Component Category	Average weight (lbs.) per sample	Average % per sample
Paper	Newspaper	0.71	0.3%
Metals	Other metal / mixed metal	0.51	0.2%
Other	Construction debris (concrete, bricks, rock, composite wood, gypsum)	0.48	0.2%
Metals	Other ferrous	0.36	0.2%
Plastic	Other Plastic Bottles/Jars	0.30	0.1%
Organics	Carpet / padding	0.27	0.1%
Plastic	Film / grocery bags / retail bags	0.26	0.1%
Metals	White goods / appliances	0.23	0.1%
Metals	Empty aerosol cans	0.23	0.1%
Organics	Non-C&D wood	0.20	0.1%
Special Waste	Batteries	0.15	0.1%
Special Waste	Electronics / TVs / computers	0.13	0.1%
Special Waste	Other Potential Harmful Wastes	0.10	0.0%
Special Waste	Fluorescent tubes / bulbs / CFLs	0.06	0.0%
Special Waste	Treated/Contaminated Wood	0.06	0.0%
Metals	Aluminum other	0.04	0.0%
Special Waste	Paint	0.03	0.0%
Special Waste	Pesticides / herbicides / rodenticides	0.00	0.0%
Special Waste	Mercury-Laden Wastes	0.00	0.0%
Special Waste	Water-Based Adhesives / Glues	0.00	0.0%

Once the three waste sample categories were analyzed, results for the whole city were calculated, based on the method described in section A.2.2. Table 21 provides a summary of the total weights and

percentages of each waste component category for the whole city and the estimates weights of each, according to the disposed waste tonnages from 2021.

Table 21: Hoboken Waste Characterization - All Waste (2021)

Waste Fraction	Waste Component Category	% of Disposal Stream	Tonnage Disposed 2021
All Paper & Cardboard		31%	9,014
	OCC/kraft paper	5.0%	1,450
	High grade paper	1.0%	302
	Mixed low-grade paper	7.3%	2,110
	Newspaper	1.1%	325
	Poly-coated paper / aseptic containers	1.0%	293
	Compostable paper	14.0%	4,056
	Other unrecyclable paper	1.7%	479
All Plastic		15.4%	4,474
	#1 PET Bottles/jars	1.4%	403
	#2 HDPE Bottles/jars	0.7%	198
	Other Plastic Bottles/jars	0.1%	30
	Expanded polystyrene #6	0.3%	78
	Mixed rigids	3.9%	1,123
	Bulky rigids	0.4%	113
	Other plastics	1.8%	518
	Film / grocery bags / retail bags	0.3%	95
	Garbage bags	2.5%	729
	Other film	4.1%	1,189
All Metals		2.9%	835
	Aluminum cans	0.6%	178
	Aluminum other	0.1%	16

Waste Fraction	Waste Component Category	% of Disposal Stream	Tonnage Disposed 2021
	Ferrous containers / tin cans	0.5%	143
	Other non-ferrous	0.6%	161
	Empty aerosol cans	0.1%	39
	Other ferrous	0.6%	182
	Other metal / mixed metal	0.3%	87
	White goods / appliances	0.1%	30
All Glass		5.3%	1,523
	Glass bottles and jars	4.7%	1,362
	Other glass	0.6%	161
All Organics		42%	12,115
	Yard waste	0.6%	173
	Food waste	31.9%	9,249
	Non-C&D wood	0.2%	53
	Diapers / sanitary products	3.5%	1,008
	Textiles	1.3%	368
	Textiles: non-clothing	1.2%	344
	Shoes / rubber / leather	0.8%	233
	Carpet / padding	0.0%	12
	Animal by-products	1.6%	469
	Fines / dirt	0.7%	207
All Special Waste		0.5%	143
	Electronics / TVs / computers	0.2%	61
	Batteries	0.1%	33
	Fluorescent tubes / bulbs / CFLs	0.0%	9
	Paint	0.0%	3

Waste Fraction	Waste Component Category	% of Disposal Stream	Tonnage Disposed 2021
	Pesticides / herbicides / rodenticides	0.0%	0
	Mercury-laden wastes	0.0%	0
	Other potential harmful wastes	0.1%	15
	Treated/contaminated wood	0.1%	22
	Water-based adhesives / glues	0.0%	0
All Other		3.0%	857
	Miscellaneous Inorganics	2.7%	780
	Construction debris (concrete, bricks, rock, composite wood, gypsum)	0.3%	76
Total	Total Waste Disposed	100%	28,961

The categories that can be recycled or composted through Hoboken's range of materials are indicated in Table 22.

Table 22: Current Waste Generation in Hoboken in Tons (2021)

Material	Total Generation	Disposed Total	Disposed - Non-Recyclable in a Municipal Collection	Disposed - Recyclable in a Municipal Collection	Currently Collected for Recycling	Disposed – Recyclable in a Municipal Collection + Currently collected for recycling
Paper & Cardboard	12,209	8,992	475	8,517	3,216	11,733
Metals, Glass, Plastic	9,095	6,828	2,837	3,991	2,267	6,258
Organics	12,248	12,147	2,720	9,428	101	9,529
Special Waste	144	144	144	0	0	0
Other	849	849	849	0	0	0
Total	34,545	28,960	7,024	21,936	5,585	27,521

Material	Total Generation	Disposed Total	Disposed - Non-Recyclable in a Municipal Collection	Disposed - Recyclable in a Municipal Collection	Currently Collected for Recycling	Disposed – Recyclable in a Municipal Collection + Currently collected for recycling
Percentage of All Generation	100%	83.8%	20.3%	63.5%	16.1%	79.7%

A.2.4 Waste Fractions and Waste Component Categories and Examples

The 48 waste component categories and the eight waste fractions used in the sort, align with their descriptions, are provided in Table 23.

Table 23: Waste Characterization Categories

Major Waste Fractions	Waste Component Categories	Key Examples
Paper	OCC/Kraft Paper	Brown paper bags, cardboard
	High grade paper	Office paper, envelopes
	Mixed low-grade paper	Junk mail, magazines, books
	Newspaper	Newsprint
	Poly-coated paper / aseptic containers	Milk cartons, juice boxes
	Compostable paper	Soiled paper towels, paper plates, wax paper
	Other unrecyclable paper	Ice cream containers, spiral notebooks, photographs
Plastic	#1 PET bottles/jars	#1 plastic water bottles, soda bottles
	#2 HDPE bottles/jars	#2 plastic milk jugs, laundry detergent bottles

Major Waste Fractions	Waste Component Categories	Key Examples
	Other plastic bottles/jars	Plastic bottles or jars other than #1 or 2 plastics, bioplastic, motor oil bottles
	Expanded polystyrene #6	#6 Styrofoam™ - meat and vegetable packaging, egg trays, plates, but excludes Styrofoam cups
	Mixed rigids	Non-bottle rigid plastic - trays, to-go boxes, white plumbing pipe, bottle caps, pill bottles, yogurt and sour cream containers, CD cases
	Bulky rigids	Bulky rigid plastic items larger than a breadbox - plastic furniture, toys, crates, 5-gal buckets
	Other plastics	Pens, lighters, small toys, toothbrushes, CD/DVDs
	Film / grocery bags / retail bags	Plastic carry-out bags, dry cleaner bags, newspaper bags
	Garbage bags	Garbage bags
	Other film	Baggies, Ziploc bags, plastic wraps, potato chip bags, drink pouches
Metals	Aluminum cans	Aluminum beverage and food cans
	Aluminum other	Containers, trays, foil, scrap
	Ferrous containers / tin cans	Steel food containers and lids
	Other non-ferrous	Copper, brass, lead, stainless steel, zinc
	Empty aerosol cans	Empty metal aerosol cans
	Other ferrous	Ferrous scrap, beer caps
	Other metal / mixed metal	Motors, insulated wire, small metal items

Major Waste Fractions	Waste Component Categories	Key Examples
	White goods / appliance	Large and small electric appliances - washers, stoves, refrigerators, toasters, power tools, curling irons, light fixtures
Glass	Glass bottles and jars	Glass bottles and jars greater than 2" x 2"
	Other glass	Broken glass under 2" x 2", glass shards, window glass, mirrors, light bulbs, vases, drinking glasses
Organics	Yard waste	Grass clippings, leaves, weeds, tree limbs, cut flowers
	Food waste	Food wastes and scraps, bones, shells, husks, rinds
	Non-construction % demolition (C&D) wood	Furniture, popsicle sticks, chopsticks, wooden spoons
	Diapers / sanitary products	Disposable baby diapers, adult protective undergarments, feminine hygiene products
	Textiles	Clothing textiles
	Textiles: non-clothing	Cloth handbags, linens, draperies, tablecloths, nylon rope
	Shoes / rubber / leather	Inner tubes, rubber hoses, tire pieces, latex gloves, Leather jackets, belts, bags, purses, shoes, sneakers
	Carpet / padding	Cloth flooring applications, traditional mattresses
	Animal by-products	Animal carcasses not from food preparation, animal wastes, kitty litter
	Fines / dirt	Fines smaller than 1/2-inch screen
Special Waste	Electronics / TVs / computers	Televisions, computers, laptops, radios, cameras, GPS devices, cell phones, DVD players, video game consoles, keyboards, cords, and cables
	Batteries	Car batteries, household batteries. cell phone batteries

Major Waste Fractions	Waste Component Categories	Key Examples
	Fluorescent tubs / bulbs / CFLs	Fluorescent light tubes and compact fluorescent light bulbs (CFL)
	Paint	Latex, solvent or oil-based paint, varnishes, paint strippers
	Pesticides / herbicides / rodenticides	Pesticides, herbicides, rodenticides
	Mercury-laden wastes	Thermostats, thermometers
	Other potentially harmful wastes	Household disinfectants, pool chemicals, gasoline, smoke detectors, explosives, medical waste
	Treated/contaminated wood	Painted and chemically treated lumber, plywood, particleboard
	Water-based adhesives/glues	Epoxy, rubber cement, glues and sealers, auto body fillers
Other	Miscellaneous inorganics	Ceramics, fabric softener sheets, Brita filters
	Construction debris (concrete, bricks, rock, composite wood, gypsum)	Gypsum drywall, fiberglass insulation, rock/concrete/bricks

A.3.0 Hoboken Community Survey on Current Services

A.3.1 Resident Results

Almost half (48.2%) of residents live in a building with 10 or more units. The breakdown of resident respondents' living arrangements are provided in Table 24.

Table 24: Resident Respondents' Living Arrangements

Answers	Count	Percentage
I live in a single-family home (detached)	10	2.1%
I live in a single-family home (attached)	61	12.6%
I live in a building with 2 units	29	6.0%
I live in a building with 3 or 4	68	14.1%
I live in a building with 5 to 9 units	78	16.2%
I live in a building with 10 or more units	233	48.2%
I live in a mobile home or other type of housing	0	0.0%

Most resident respondents are aged 31-50; most respondents identify as female.

Table 25: Age of Resident Respondents

Age	Count	Percentage
18-30	46	9.8%
31-50	253	53.9%

51-70	146	31.1%
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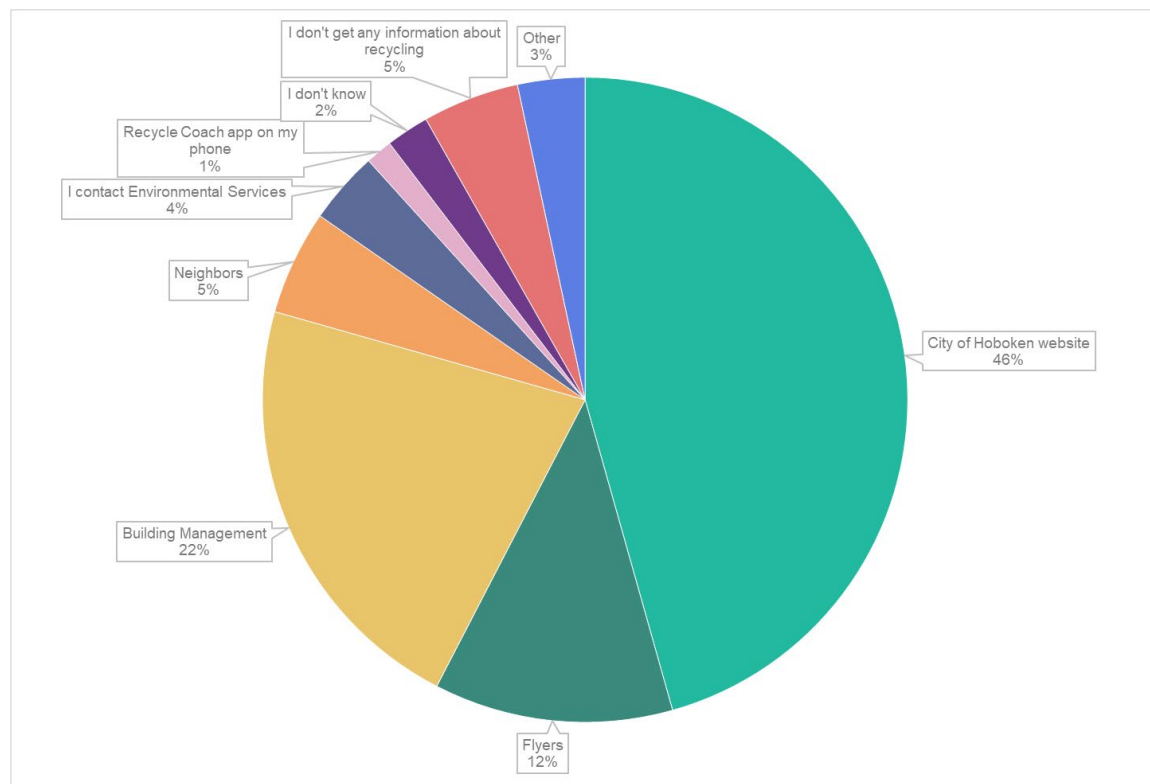
70+	24	5.1%
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Table 26: Gender of Resident Respondents

Gender	Count	Percentage
Female	293	62.6%
Male	157	33.6%
Nonbinary	2	0.4%
Prefer not to say	11	2.4%
Other	5	1.1%

Most residents reported that they receive information about recycling from the City's website or their building management. Other sources include City emails, social media (e.g., Hoboken Girl Facebook), and third-party websites such as Google and Nixle.

Figure 27: How Residents Receive Information on Recycling

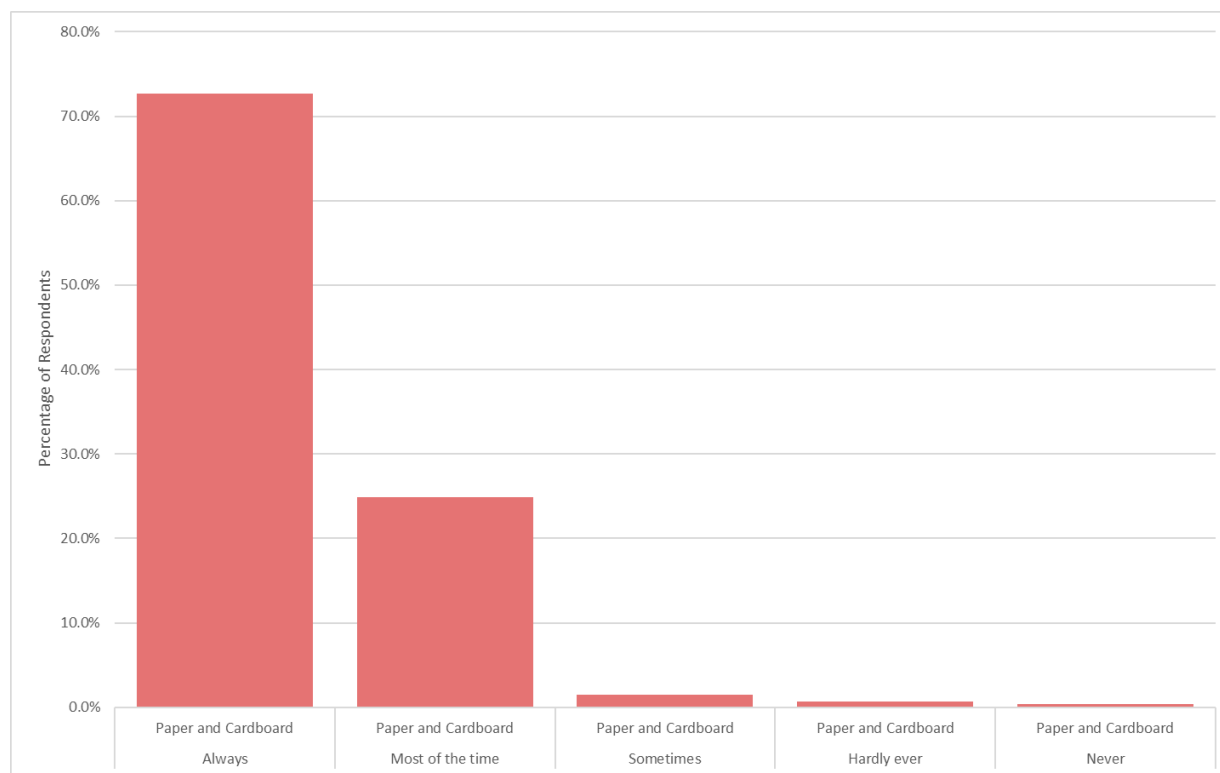


Likelihood of Recycling: Residents

Residents reported that their likelihood to recycle a material varies based on waste category. Cardboard and paper, and commingled recycling are being recycled the most; electronics and bulky products are not more or less likely to be recycled; organics are not likely to be composted.

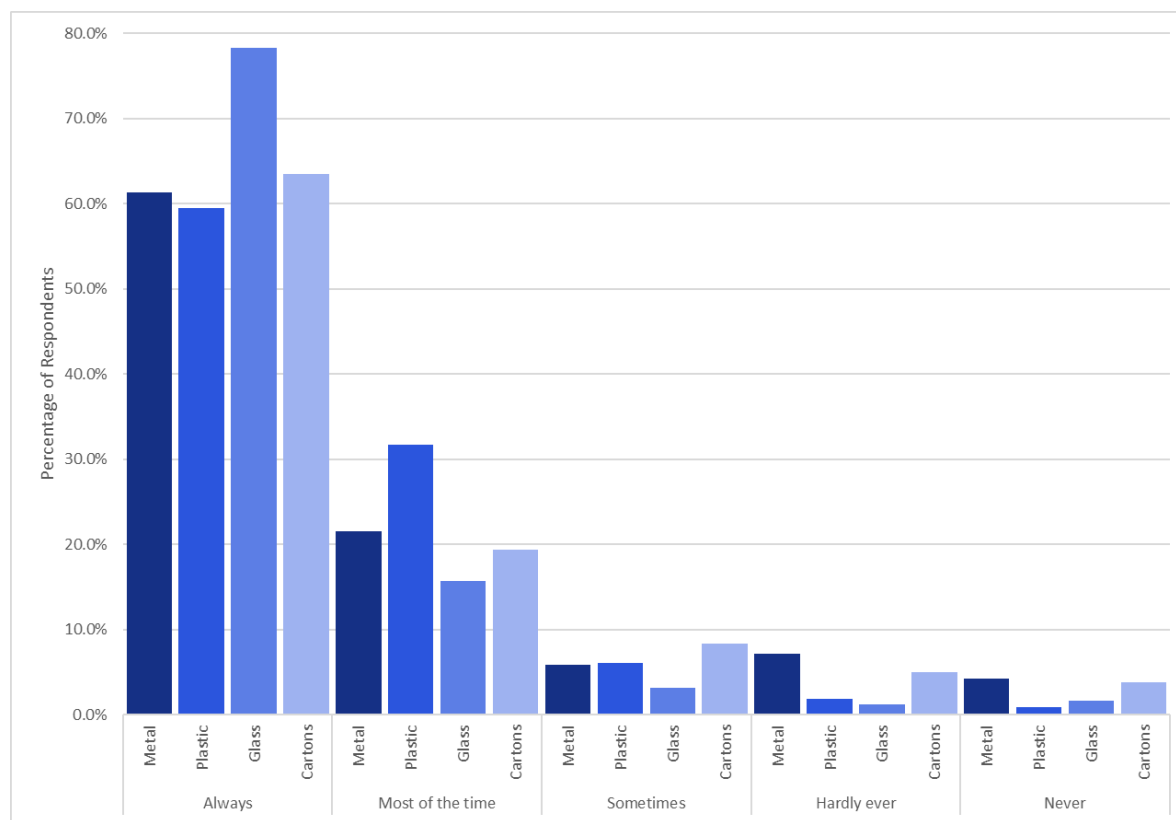
97.5% of respondents reported that they always or most of the time recycle paper and cardboard. Very few respondents (0.4%) are never recycling cardboard and paper materials.

Figure 28: Likelihood of Cardboard and Paper Recycling



For commingled recycling (metal, plastic, glass, cartons), most respondents reported that they always recycle these materials. Glass, in particular, was reported to always be recycled by 78.3% of respondents and always or most of the time be recycled by 94.0%. Plastic is reported to be recycled always or most of the time by 91.2% of respondents, metal by 82.9%, and cartons by 82.9%. Although a higher percentage of respondents indicated always or most of the time recycling plastic (91.2%) compared to metal (82.9%), the percentage of respondents indicating that they always recycle metal is higher than those reporting that they always recycle plastic.

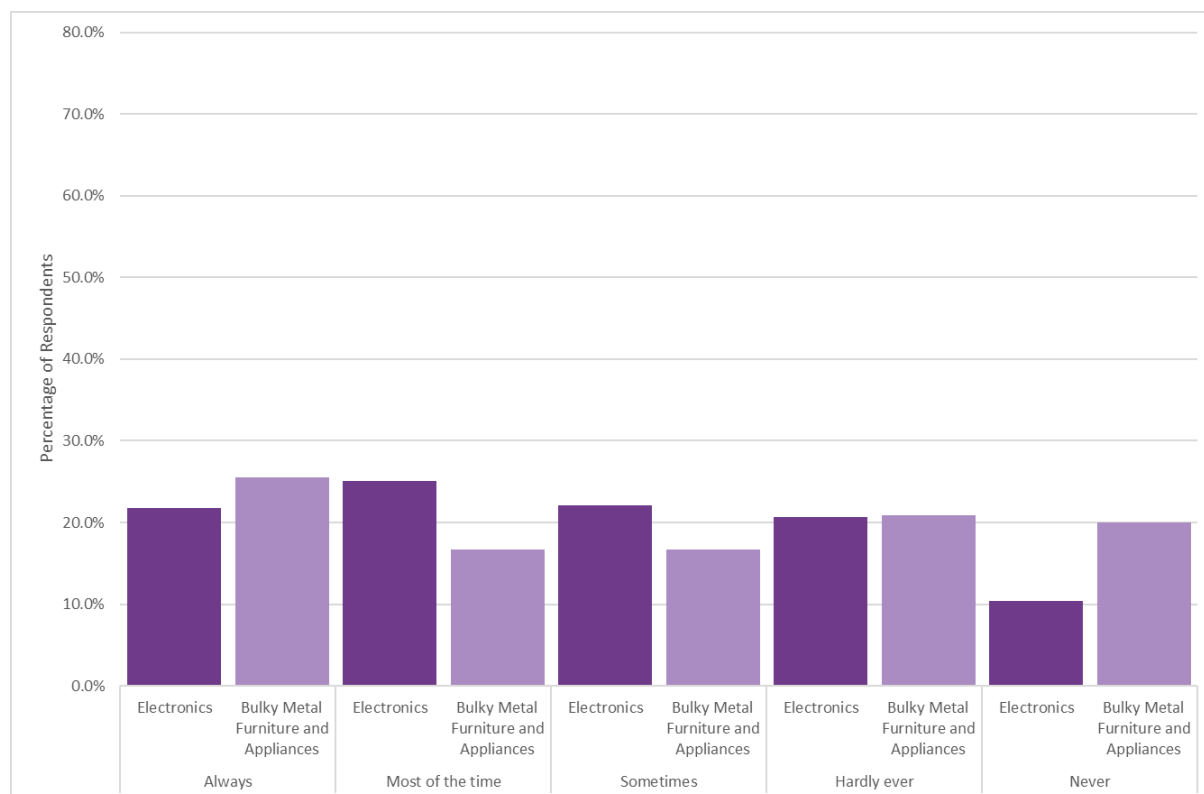
Figure 29: Likelihood of Commingled Recycling



Very few respondents (4.2% for metal, 0.8% for plastic, 1.7% for glass, 3.8% for cartons) indicated that they never recycle commingled recycling materials. The percentage of respondents indicating that they sometimes, hardly ever, or never recycle cartons (17.1%) and metal (17.1%) is about 10% higher than that of plastic (8.8%) and glass (6.1%).

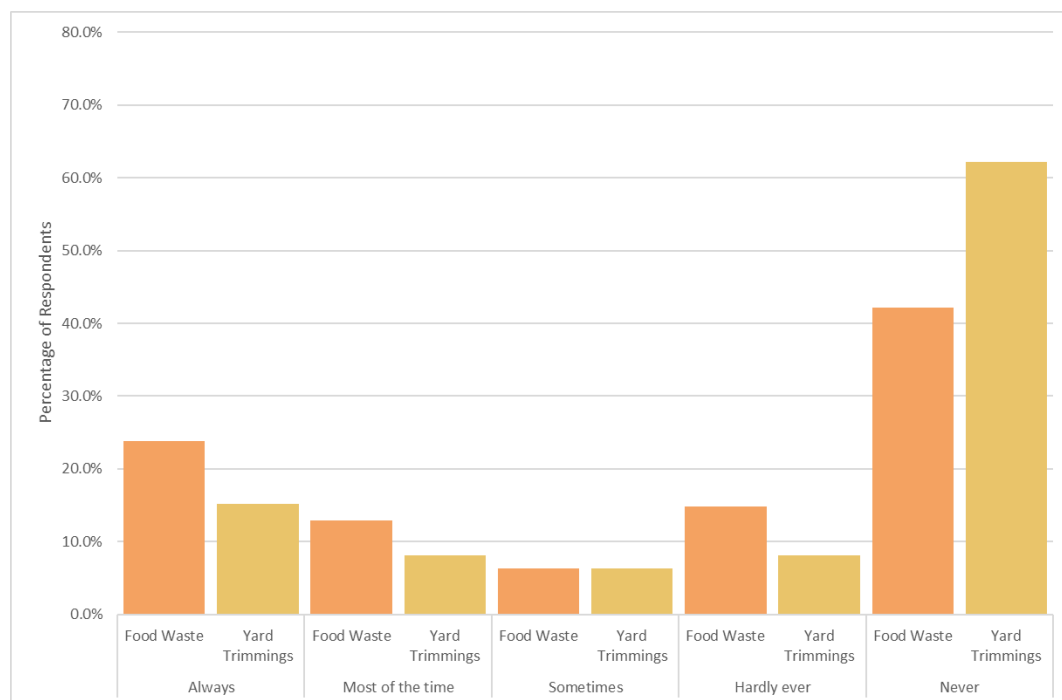
The special waste category included electronics, and bulky metal, furniture, and appliances. Responses indicate that recycling habits vary greatly person-to-person for these materials with a fairly even dispersion from always recycling to never recycling. Special waste had the lowest percentage of residents indicating that they recycled it always or most of the time of all materials (46.8% for electronics and 42.2% for bulky materials), which is about 49.5% lower than the number that indicate they recycle glass (the most reported recycled material) always or some of the time (94.0%). Residents are more likely to never recycle bulky materials compared to electronics. Since there is no curbside recycling program for these materials, the extra effort to recycle could be indicative of the lower recycling rates for special waste.

Figure 30: Likelihood of Special Waste Recycling



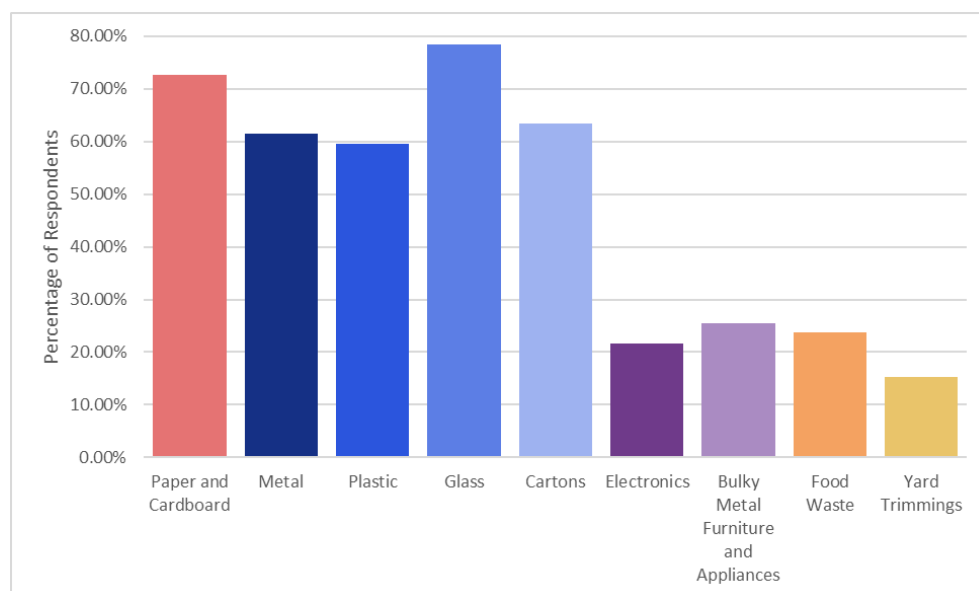
Most residents are not recycling organics. 70.4% of residents never or hardly ever recycle yard trimmings, and 57.0% of residents never or hardly ever recycle food waste. Different from the other waste categories, residents tend to always recycle organics or never recycle organics, indicating that they participate in Hoboken's composting program or not, which is expected for an opt-in program. 23.8% of respondents are committed to always recycling food waste, and 15.2% for yard trimmings.

Figure 31: Likelihood of Organics Recycling



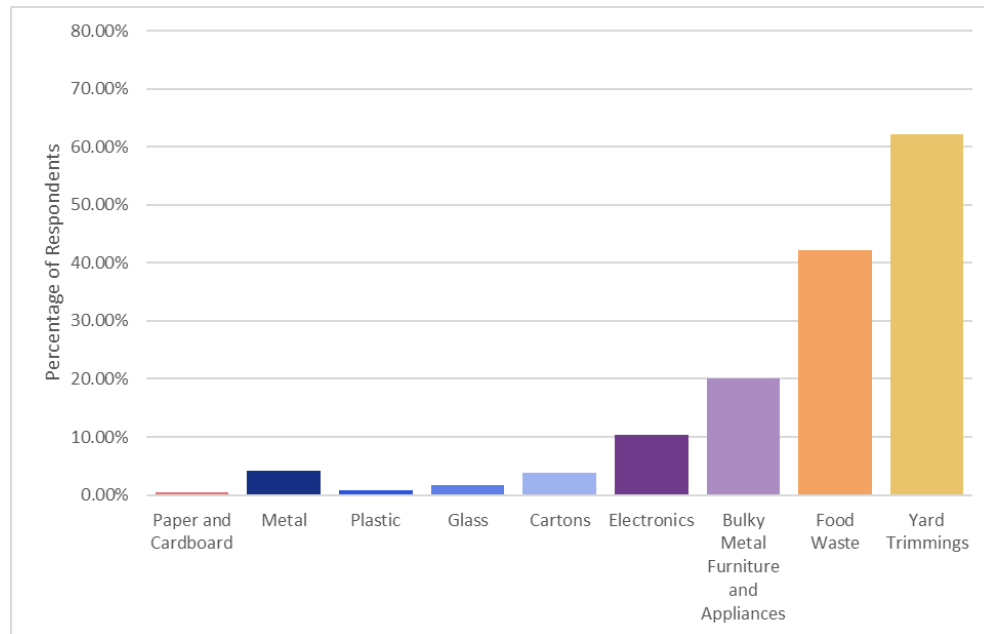
To compare across material types more directly, Figure 32 below displays the percentage of respondents who indicated they always recycle these materials. Consistent with the findings above, respondents indicated that paper and cardboard along with commingled recyclables are much more likely to always be recycled compared to special waste and organics.

Figure 32: Likelihood of Always Being Recycling, by material



The percentage of respondents who indicated they never recycle was also compared across material types. Consistent with the findings above, very few residents indicated never recycling paper and cardboard or commingled recyclables; these percentages are slightly higher for metal and cartons compared to paper and cardboard, plastic, and glass. On average, special waste is more than twice as likely to never be recycled compared to paper and cardboard and commingled, and bulky materials are twice as likely to never be recycled compared to electronics. Finally, about half of residents are never recycling organics, which is significantly more than any other material types, with yard trimmings being less likely to be recycled than food waste.

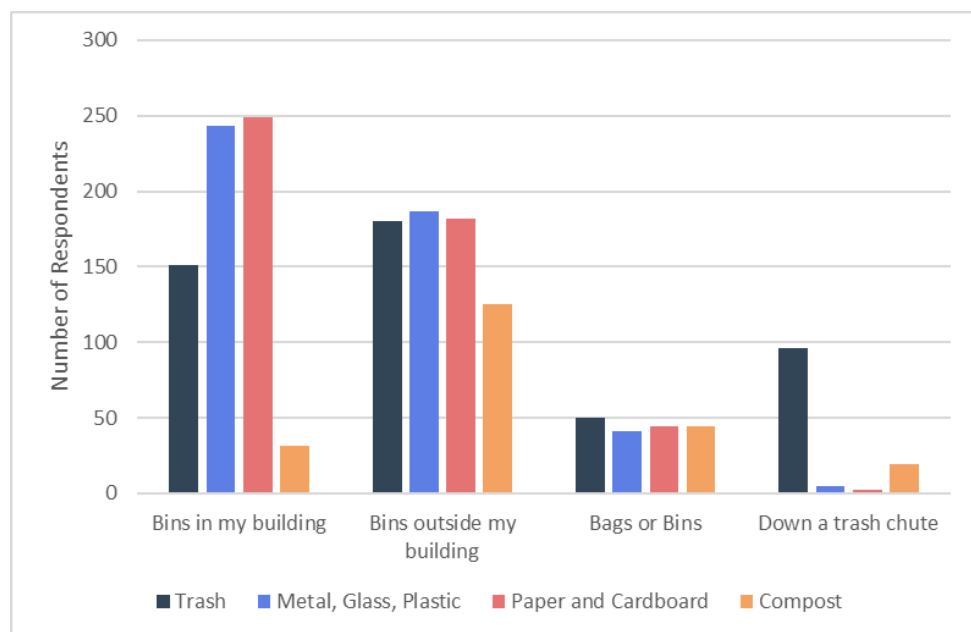
Figure 33: Likelihood of Never Being Recycled, by material



Who, Where, How of Residents' Recycling

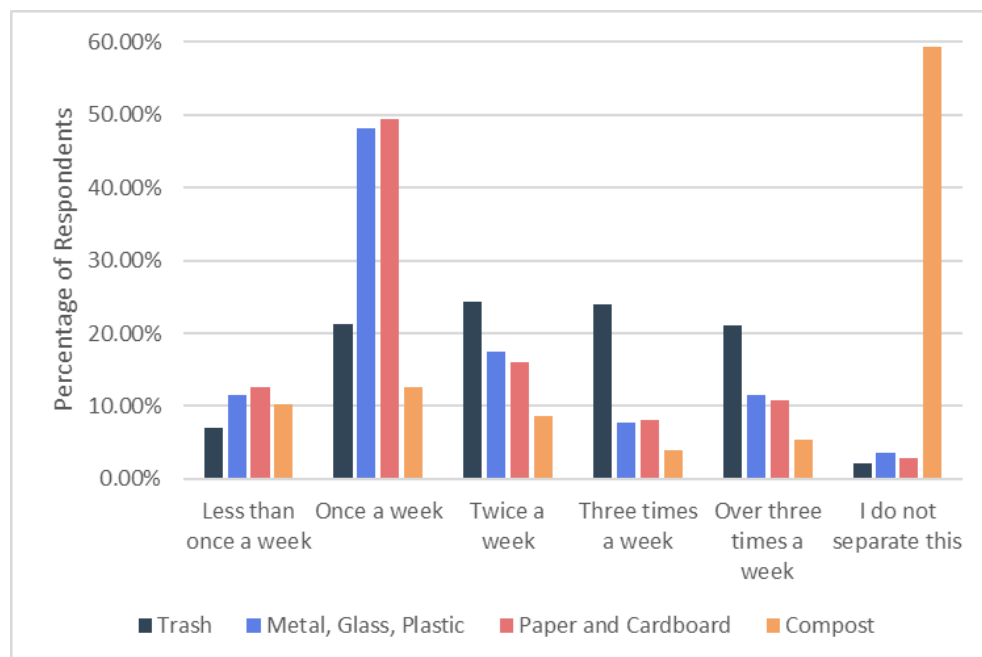
The majority of respondents (63.6%) have their trash taken care of by their superintendent or property manager; 31.9% of respondents personally put out their trash and recycling out on collection day. Given that most respondents live in multi-unit buildings, it follows that most respondents have a superintendent or property manager that manage their waste. Additionally, it follows that most respondents dispose of trash, recycling, and compost in bins in/outside their buildings. No respondents said they do not dispose of that material stream for any of the four categories below.

Figure 34: Disposal Locations by Waste Category



Most respondents reported that they recycle once a week, dispose of garbage 1-3 times a week, and do not separate out compost.

Figure 35: Frequency of Disposal by Waste Category



Residents' Likes and Dislikes

Respondents noted a few key areas for waste management improvement in Hoboken including: storage and convenience, communication and education, specific materials, cleanliness/experience, and enforcement.

Specific materials that residents request increased services for include compost, HHW, electronics, and textiles. For compost, respondents suggested more locations or pick-up and would like to see industrial composting.

Respondents also mentioned struggling with inconsistent rules between apartment buildings and having a desire for better communication about how to properly recycle various materials, specifically for hard to get rid of materials such as electronics and bulky appliances. Many respondents mentioned their own confusion or witnessing confusion and apathy of others regarding recycling, suggesting that an educational campaign could be useful. Two other specific suggestions are to mail fridge magnets to every resident with the collection schedule and recycling rules, as well as providing color coded bins. Some respondents would also like to see large companies and buildings face financial penalty for not complying with recycling.

Many residents requested bin usage for general containerization and cleanliness as well as storage, referencing that rodents are a concern. Containerization could also ease residents' concern that after pick up there is mess from trash being blown around and left on the streets. Noise complaints about the pickup process being loud in the middle of the night were also mentioned by multiple residents.

Respondents would like to see more frequent and consistent pickups to aid with storage issues. Specifically, some respondents mentioned going back to single or dual stream, and/or back to collection twice a week due to challenges with having enough space to store recycling in between pickups.

When asked about this more specifically, most respondents (67.7%) reported that there is sufficient storage or space in their bins to store trash and recycling between collection. 5% said other and mentioned concerns about there being enough storage space for cardboard and paper, as well as storage options to keep recycling dry, difficulties with sharing communal or non-communal bins and the unpredictability of waste amounts.

While respondents would like to see improvement with frequency of collection and increased options for composting and other materials, these are also areas that residents are currently happy with. Many residents appreciate the frequency of collection (especially with garbage) and are happy that a composting service is being provided. Residents are also happy to see Hoboken adding more public waste bins and feel that Hoboken's waste management is reliable. Lastly, respondents mentioned it is positive that garbage trucks are not blocking traffic during the day, despite there being many complaints about the noise in the middle of the night.

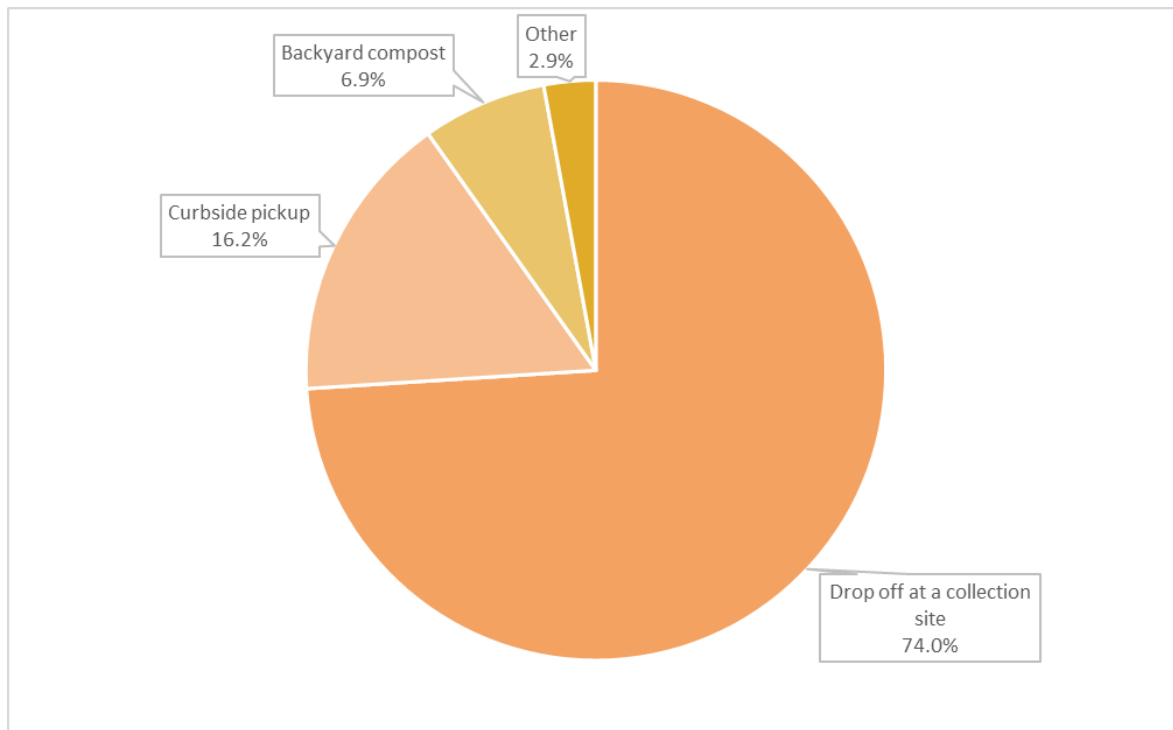
Residents' Composting

Most respondents (63.4%) indicated that they do not compost, which aligns with the 57-70% of respondents who said they never or hardly ever recycle organics (food waste and yard trimmings). However, of the 63.4% that do not currently compost, the vast majority (68.0%) said they would compost if it were convenient. Including those who already compost, survey results indicate that nearly 80% of Hoboken residents would compost if it were convenient.

Of the 35.8% of respondents who are currently composting, most of them are dropping off food waste at a collection site. Most respondents who compost (71.1%) are only composting food waste, not yard clippings.

Following drop-off at a collection site (74.0%), curbside pickup is the second most common compost location (16.2%), and only 6.9% reported that they do backyard composting.

Figure 36: Compost Locations

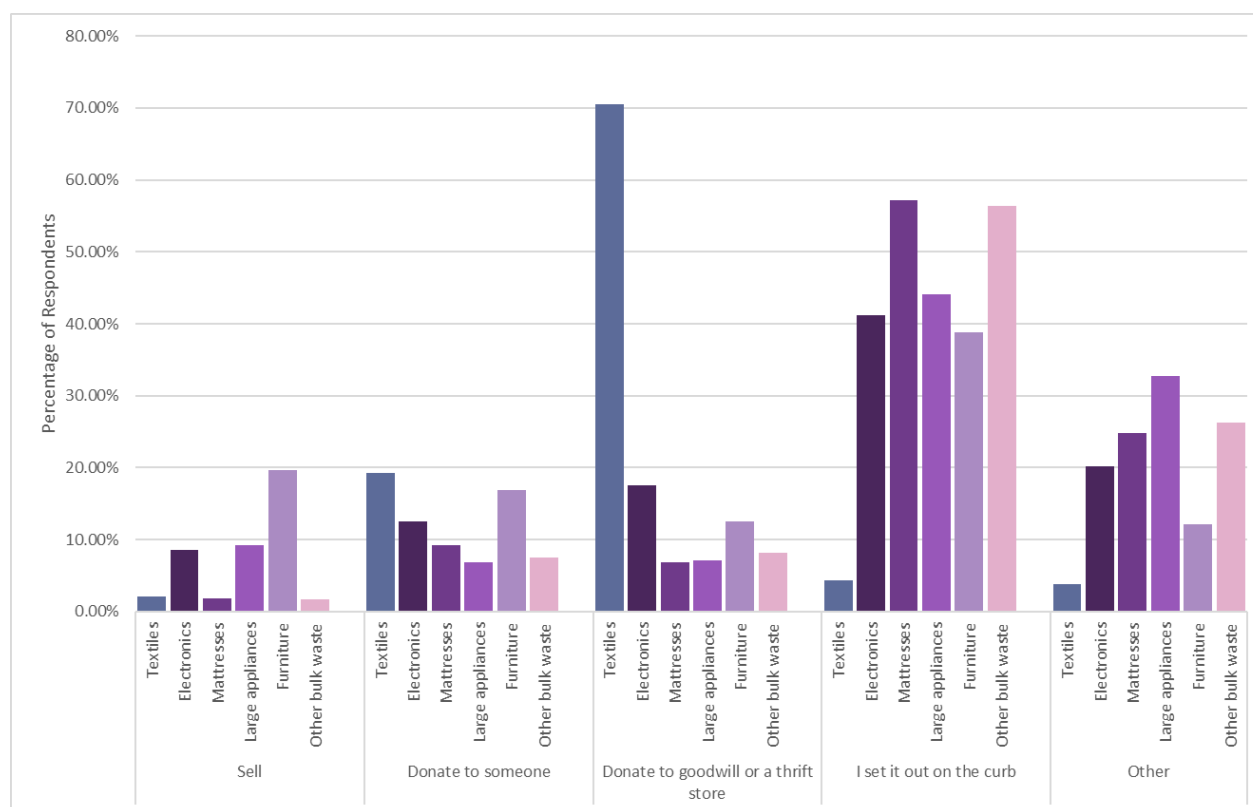


Of those who do not compost, concerns mentioned include that it is inconvenient to separate out multiple streams due to storage, rodent/pest and smell concerns, and compostable bags not being allowed (impacts convenience).

Hard to Get Rid of Materials: Residents

Respondents were asked how they currently dispose of materials that are difficult to get rid of including textiles, electronics, mattresses, appliances, furniture, and other bulk waste. Responses indicated that most residents are currently setting these items out on the curb. However, textiles are more often donated to goodwill or a thrift store.

Figure 37: Disposal Methods for Hard to Get Rid of Materials



It is also noteworthy that 20% of residents selected “other” for these materials.

A.3.2 Business Results

Of the 18 businesses that responded to the survey, most of them operate on the weekends (Saturday and Sunday); more of them operate on Monday, Tuesday, or flexible days than on Wednesday, Thursday, and Friday. Most of these businesses categorize themselves as professional services (6); food, drink, and grocery (3); other (3); and health, wellness, and fitness (2).

Table 27: Types of Business Respondents

Type of Business	Count	Percentage
Professional Services	6	33.3%
Food, Drink, and Grocery	3	16.7%
Other	3	16.7%

Health, Wellness, and Fitness	2	11.1%
Retail	1	5.6%
Beauty Shops	1	5.6%
Arts, Culture, and Entertainment	1	5.6%
Educational Facilities and Schools	1	5.6%
Parking Services	0	0%
Hotel	0	0%

The three businesses in the food, drink, and grocery category are the only businesses that responded who serve food/drink. These three businesses are also the only respondents with a streater, parklet, or outdoor sidewalk dining, and all three have an outdoor sidewalk dining space. Two of these businesses reported providing washable food and drinkware for in-house dining and not providing serviceware/takeout. The third business provides disposable plastic and paper serviceware for in-house dining, but compostable serviceware for takeout and outdoor dining.

Most of the 18 businesses that responded indicated that they receive trash and recycling pickup services from the city. One business reported that they coordinate with a private hauler for these services.

Table 28: How Business Respondents Handle Waste

	Trash	Plastic, Metal, Glass	Cardboard	Compost
City of Hoboken	14	12	13	4
My business does not receive this service	2	4	3	14
Private hauler	2	2	2	0

The most popular days that these businesses are setting out trash are Wednesday and Friday. Half of the businesses set out commingled recycling on Monday and half do not separate out this waste stream. Most businesses set out cardboard on Thursday. 83.3% of business respondents do not separate out composting, and 77.8% do not separate out electronics or bulk items.

Businesses were also asked where they set out trash and recycling. They were asked about plastic, glass, cartons, metal; cardboard and paper; food waste and organics; electronics; and bulk items. Options for responses included to bins outside the building; in bags on the curb on collection day; and other. For each of the waste categories, responses were split nearly evenly across the three options. Written in responses

mainly reference building management taking care of waste, or intermediary storage options such as in the hallway or trash rooms prior to collection day. Most of the business respondents reported that they put trash on the curb between 5-9pm. One respondent specified that they put trash out after dark. When asked if they store waste in bins outside their business, the most common response was no. Besides other, the second most common response was in waste bins in a private area or backyard, and the next most common was in waste bins on the sidewalk out front.

Nearly half of the business respondents indicated that food scraps, fat, oil, or grease are other waste streams that they produce. Other waste streams reported include real estate office garbage that is not recyclable. Estimates for what their businesses' non-recyclable waste mostly consists of include bathroom trash, paper towels/tissue/paper cups, shredded paper, food, dirty napkins, dirty food containers, and salon items that must be disposable for sanitation purposes.

About half of business respondents stated that they do not proactively reduce waste. Waste prevention activities that were highlighted include donating sheets to the shelter, going paperless, using paper plates as opposed to plastic, reusing plastic trash bags, and not printing paper receipts.

Business respondents estimated a wide range for the amount of waste their businesses produce. Nine businesses were unsure or unable to answer this question. The remaining nine's responses ranged from "a bag a day" to "we have hundreds of yard of garbage from each job". Other responses included, "1 large trash bin 3x week. 1 recycle bin 1x week", "2 bags of trash & 5-6 cardboard boxes per week", "5 bags/week", "700 to 800 lbs. per week. Cardboard separate.", and "8 gallon bag three times per month of trash".

Business respondents indicated similar likes and dislikes about the city's current waste management practices as residents. Business respondents mentioned areas of improvement including more frequent collection and proper storage/bins, as well as the need for further instructions/education on how to dispose of difficult materials, such as lightbulbs. Respondents also mentioned that Saturday pickup and dedicated bins could help with sanitation concerns, and that they would like to see the city provide sidewalk spray cleaning services, especially on main streets. Businesses would also like to see recycling provided for shredded materials and more offices involved with recycling and composting. When asked about sidewalk set out, most businesses said this is fine, three businesses said it interferes or very much interferes with their business, and three businesses said that bulk items are a concern.

A.4.0 City Budget Documents for 2021

Figure 38: City Budget FY21 With Anticipated Revenue

USER FRIENDLY BUDGET SECTION - ANTICIPATED REVENUE SUMMARY (ALL OPERATING FUNDS)

PCOA		% Difference Current vs. Prior Year	\$ Difference Current vs. Prior Year	Total Realized Revenue (Prior Year)	Total Anticipated Revenue (Current Year)	General Budget	Open Space Budget	Arts and Culture Trust Fund	Parking Utility	Water Utility	Utility	Utility	Utility
08	Surplus	-4.86%	(\$525,000.00)	\$10,800,000.00	\$10,275,000.00	\$8,500,000.00			\$1,500,000.00	\$275,000.00			
08	Local Revenue	2.88%	\$1,312,537.26	\$45,565,328.74	\$46,877,866.00	\$22,999,000.00			\$15,410,000.00	\$8,468,866.00			
09	State Aid (without offsetting appropriation)	0.00%	\$0.00	\$11,113,035.00	\$11,113,035.00	\$11,113,035.00							
08	Uniform Construction Code Fees	11.71%	\$136,312.00	\$1,163,688.00	\$1,300,000.00	\$1,300,000.00							
Special Revenue Items w/ Prior Written Consent													
11	Shared Services Agreements	#DIV/0!	\$0.00		\$0.00								
08	Additional Revenue Offset by Appropriations	#DIV/0!	\$0.00		\$0.00								
10	Public and Private Revenue	-54.76%	(\$2,967,231.22)	\$4,581,579.93	\$1,614,348.71	\$1,614,348.71							
08	Other Special Items	290.41%	\$11,051,138.90	\$3,805,296.10	\$14,856,435.00	\$13,352,207.00			\$1,504,228.00				
15	Receipts from Delinquent Taxes	7.46%	\$83,308.91	\$1,116,691.09	\$1,200,000.00	\$1,200,000.00							
Amount to be raised by taxation													
07	Local Tax for Municipal Purposes	-5.28%	(\$3,289,759.25)	\$62,274,399.50	\$58,984,640.25	\$58,984,640.25							
07	Minimum Library Tax	-0.53%	(\$31,260.00)	\$5,846,247.00	\$5,814,987.00	\$5,814,987.00							
54	Open Space Levy Tax	0.51%	\$17,935.45	\$3,539,920.00	\$3,557,855.45		\$3,557,855.45						
56	Arts and Cultural Levy Tax	#DIV/0!	\$0.00		\$0.00								
07	Addition to Local District School Tax	#DIV/0!	\$0.00		\$0.00								
08	Deficit General Budget	#DIV/0!	\$0.00		\$0.00								
	Total	3.86%	\$5,787,982.05	\$149,806,185.36	\$155,594,167.41	\$124,878,217.96	\$3,557,855.45	\$0.00	\$18,414,228.00	\$8,743,866.00	\$0.00	\$0.00	\$0.00

Sheet UFB-2

Figure 39: Budget Appropriations Summary

USER FRIENDLY BUDGET SECTION - APPROPRIATIONS SUMMARY (ALL OPERATING FUNDS)

FCOA	Budgeted Full-Time	Positions Part-Time	% Difference Current v. Prior Year	\$ Difference Current v. Prior Year	Total Modified Appropriation for Service Type (Prior Year)	Total Appropriation for Service Type (Current Year)	General Budget	Public&Private Offsets	Open Space Budget	Arts and Culture Trust Fund	Parking Utility	Water Utility	Utility	Utility	Utility
20 General Government	129.00	21.00	5.17%	\$1,391,554.12	\$26,900,727.00	\$28,292,281.12	\$7,402,335.00	\$40,000.00	\$3,557,855.45		\$9,767,500.00	\$7,524,590.67			
21 Land-Use Administration	4.00		0.29%	\$2,290.00	\$788,804.00	\$791,094.00	791,094.00								
22 Uniform Construction Code	9.00	2.00	4.56%	\$44,010.00	\$964,745.00	\$1,008,755.00	1,008,755.00								
23 Insurance			3.84%	\$891,000.00	\$23,181,000.00	\$24,072,000.00	24,072,000.00								
25 Public Safety	295.00	56.00	3.84%	\$1,388,479.73	\$36,115,314.27	\$37,503,794.00	\$36,803,094.00	\$700,700.00							
26 Public Works	29.00	3.00	4.23%	\$148,330.21	\$3,503,130.79	\$3,651,461.00	\$2,841,887.00	\$809,574.00							
27 Health and Human Services	19.00	4.00	6.07%	\$97,484.50	\$1,604,824.15	\$1,702,308.65	\$1,659,692.00	\$42,616.65							
28 Parks and Recreation	16.00	9.00	-21.00%	(\$374,518.00)	\$1,783,716.00	\$1,409,198.00	1,409,198.00								
29 Education (including Library)			-0.53%	(\$31,260.00)	\$5,846,247.00	\$5,814,987.00	5,814,987.00								
30 Unclassified			15.14%	\$586,000.00	\$3,871,050.00	\$4,457,050.00	4,457,050.00								
31 Utilities and Bulk Purchases			1.59%	\$30,000.00	\$1,885,000.00	\$1,915,000.00	1,915,000.00								
32 Landfill / Solid Waste Disposal	16.00	8.00	1.06%	\$64,548.81	\$6,116,776.50	\$6,181,325.31	\$6,103,716.00	\$77,609.31							
35 Contingency			#DIV/0!	\$0.00	\$0.00	\$0.00									
36 Statutory Expenditures			11.47%	\$1,580,419.00	\$13,781,292.00	\$15,361,711.00	14,050,441.00				\$1,295,000.00	\$16,270.00			
37 Judgments			0.00%	\$0.00	\$10,900.00	\$10,000.00	10,000.00								
42 Shared Services			#DIV/0!	\$0.00	\$0.00	\$0.00									
43 Court and Public Defender	23.00		2.83%	\$40,559.00	\$1,432,338.00	\$1,472,897.00	1,472,897.00								
44 Capital			3.17%	\$18,437.00	\$581,563.00	\$600,000.00	600,000.00								
45 Debt			1.09%	\$134,302.00	\$12,285,870.00	\$12,420,172.00	9,193,000.00				\$2,232,500.00	\$994,672.00			
46 Deferred Charges			11.11%	\$51,099.63	\$459,805.76	\$510,905.33	302,572.00					\$208,333.33			
48 Debt - Type 1 School District			#DIV/0!	\$0.00	\$0.00	\$0.00									
50 Reserve for Uncollected Taxes			0.00%	\$0.00	\$3,300,000.00	\$3,300,000.00	3,300,000.00								
55 Surplus General Budget			416.76%	\$4,128,594.00	\$990,634.00	\$5,119,228.00					\$5,119,228.00				
Total	540.00	103.00	7.01%	\$10,191,330.00	\$145,402,837.41	\$155,594,167.41	\$123,207,718.00	\$1,670,499.96	\$3,557,855.45	\$0.00	\$18,414,228.00	\$8,743,866.00	\$0.00	\$0.00	\$0.00

Sheet UFB-3

A.5.0 Cost of Service Review Findings

Residential

Main takeaway: Most residential customers pay close to the cost for waste management services.

The average amount assessed for residential properties from Table 3 in Hoboken for waste management services is \$1,818.92 per month. How does this compare to the cost of service? Waste disposal is \$11.54, equal to 219 pounds of garbage at the \$105.59 per ton the City paid.³ The average household of four people will set out between 150 to 200 pounds of trash and recycling every month; therefore, the \$11.54 assessed for waste disposal is a little higher than the average.

Residential collection is assessed at \$7.38 per month or \$1.70 per week. Residential waste is collected three times a week (Sunday, Wednesday, and Friday), and recycling is collected twice a week (Monday and Thursday). Therefore, residents have the opportunity to set out waste five times a week. Assuming a resident sets out trash or recycling every night possible, the amount assessed in the rates for each set out is \$0.34 per event ($\$1.70 / 5$).

The City is currently contracting with Cali Carting for waste and recycling collection at a favorable rate of \$175,833 per month, which is approximately \$185 per hour for the truck and the three-man collection crew. It takes the Cali crew about 12 to 15 minutes to pick up the garbage for a typical Hoboken residential block. If a block has 40 homes and requires 12 minutes to pick up the garbage, the crews spend 18 seconds per home. In the garbage industry, that is extremely fast and efficient. The cost of that 18 seconds to pick up garbage is \$0.925. Multiply the five weekly opportunities to set out trash and recycling by the average number of weeks per month, and the amount of service delivered to residential customers is \$20.03.⁴ Combining both collection (\$20.03) and disposal costs (\$11.00) is \$31.03; however, the average resident is paying \$18.92 for waste management services.

Most residents will not place garbage and recycling out at every opportunity; therefore, the cost previously calculated is high. Assuming residents set out waste and recycling twice a week, the monthly collection costs drop to \$8.01 ($\$0.925 \times 2 \times 4.33$).

Commercial

Main Takeaway: Businesses that generate heavy waste and require frequent collection subsidize businesses that generate low waste volumes.

The cost of providing waste management services to commercial customers varies on the amount of waste generated and collection frequency. In areas that invoice customers based on the level of service offered, restaurants are the highest, and office buildings are the lowest. Why? Restaurants require frequent service due to the putrescible nature of the waste generated and the weight. Food waste is comprised of about 70% water, which is the reason for its heavy weight. A cubic yard of food waste weighs about 396 pounds.⁵ Office buildings require less service when compared to restaurants because the waste generated is lower and lighter. The trash generated by an office is dry and weighs under 100 pounds per cubic yard. The tipping fee paid by the City in 2021 was \$105.59; therefore, a cubic yard of food waste has a disposal cost of \$20.91, and the cost of an office building with an average weight of 95 pounds per cubic yard costs \$5.02.

³ Disposal Calculation: ($\$11.00$ assessment / $\$105.59$ disposal fee) \times 2,000 pounds per ton

⁴ Collection Cost Calculation $\$173 / 60$ minutes = $\$2.88 \times (18 \text{ seconds} / 60 \text{ seconds}) = \0.864×5 weekly pickups \times 4.33 pickups per month

⁵ <https://www.epa.gov/smm/volume-weight-conversion-factors-solid-waste>

Area 5 has eight restaurants along Washington Street. Assuming each of those eight restaurants generates only one cubic yard of food waste each week, the annual cost of food waste disposal for Area 5 is \$8,697.⁶ The total waste management assessment for commercial properties in Area 5 (Table 6) is \$11,703, which leaves only \$3,006 (\$11,703 - \$8,697) for collection. Waste and recycling collection for Area 5 is six days a week.

Comparing the services and assessment from Area 5 to the amount assessed for the office building in Area 4, the difference in the annual assessment is \$121,642 (\$133,345 - \$11,703). Therefore, the probability that the office building requires \$121,642 of waste management services is doubtful.

The W-Hotel is assessed \$75,214 by the City for waste management services. However, the hotel building was designed to accommodate a roll-off compactor inside and doesn't use City contracted waste management services. Therefore, the \$75,214 paid by the W Hotel is subsidizing other city businesses.

⁶ Calculation: 8 restaurants x 396 pounds per yard x 52 weeks / 2,000 pounds per ton = 82.37 annual tons x \$105.59 per ton for disposal

A.6.0 System Scenarios & Assessment

Costs were modelled for a series of scenarios that combined various key opportunities (outlined in Section 3.2). The tables below outline the potential diversion and cost savings from each scenario.

Scenario A: Significant Service Change, Limited Containerization

Op. #	Service Change	Additional Diversion (tons)	Gross Cost of New Programs (\$)	Additional Cost or Savings (negative is savings, \$)	% Increase or Decrease in Solid Waste Management Costs
1	Franchise waste collection to businesses and 20+ unit residential properties	N/A	N/A	-3,600,000	-69%
8	Require all food serving businesses over an agreed size to contract for a separate organics collection	1,554	N/A	Included in above	N/A
7	Require all 20+ unit residential properties to contract for a separate organics collection	741	N/A	Included in above	N/A
5	Mandate and implement food scrap collections via a caddy swap program for all residential properties with ≤19 units	622	377,000	310,000	6%
2	Decrease garbage collection frequency to 2 days a week for residential properties with ≤19 units	N/A	N/A	-326,000	-6%
	Additional Public Works staff	N/A	85,000	85,000	2%
	Total	2,917	462,000	-3,531,000	-68%

Scenario B: Medium Service Change, Limited Containerization

Op. #	Service Change	Additional Diversion (tons)	Gross Cost of New Programs (\$)	Additional Cost or Savings (negative is savings, \$)	% Increase or Decrease in Current Total Solid Waste Management Costs
3	Reduce garbage collections in LBA by one or two days a week	N/A	N/A	-77000 to -154000	1-2%
8	Require all food serving businesses over an agreed size to contract for a separate organics collection	1,554	N/A	-170,000	-3%
4	Mandate and implement organics collections to all residential properties (SF and MF)	2,157	762,000	535,000	10%
2	Decrease garbage collection frequency to 2 days a week for residential properties with ≤19 units	N/A	N/A	-326,000	-6%
	Additional Public Works staff	N/A	85,000	85,000	2%
	Total	3,711	847,000	235,000-305,000	5-8%

Scenario C: Minimal Service Change, Limited Containerization

Op. #	Service Change	Additional Diversion (tons)	Gross Cost of New Programs (\$)	Additional Cost or Savings (negative is savings, \$)	% Increase or Decrease in Current Total Solid Waste Management Costs
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-	No change to services in LBA	N/A	N/A	N/A	N/A
8	Require all food serving businesses over an agreed size to contract for a separate organics collection	1,554	N/A	-170,000	-3%
4	Mandate and implement food scrap collections to all residential properties (SF and MF)	2,157	762,000	535,000	10%
2	Decrease garbage collection frequency to 2 days a week for residential properties with ≤19 units	N/A	N/A	-326,000	-6%
	Additional Public Works staff	N/A	85,000	85,000	2%
	Total	3,711	847,000	124,000	2%

Scenario D: Significant Service Change, Significant Containerization

Op. #	Service Change	Additional Diversion (tons)	Gross Cost of New Programs (\$)	Additional Cost or Savings (negative is savings, \$)	% Increase or Decrease in Current Total Solid Waste Management Costs
1	Franchise waste collection to businesses and 20+ unit residential properties	N/A	N/A	-3,600,000	-69%

8	Require all food serving businesses over an agreed size to contract for a separate organics collection	1,554	N/A	-170,000	-3%
7	Require all 20+ unit properties to contract for a separate organics collection	741	N/A	See line 1 above	N/A
5	Mandate and implement food scrap collections to all properties ≤19 units through localized drop off	see shared containers below	see shared containers below	see shared containers below	see shared containers below
12	Shared containers for residential, garbage, recycling, and organics (as stated above)	9,022	3,980,000	107,000	2%
	Additional Public Works staff	N/A	85,000	85,000	2%
	Total	11,317	4,065,000	-3,578,000	-69%

Scenario E: Medium Service Change, Significant Containerization

Op. #	Service Change	Additional Diversion (tons)	Gross Cost of New Programs (\$)	Additional Cost or Savings (negative is savings, \$)	% Increase or Decrease in Current Total Solid Waste Management Costs
3	Reduce garbage collections in LBA by one or two day a week	N/A	N/A	-77000 to -154000	1-2%

8	Require all food serving businesses over an agreed size to contract for a separate organics collection	1,554	N/A	-170,000	-3%
4	Mandate and implement organics collections to all residential properties	2,157	762,000	535,000	10%
12	Shared containers for residential, garbage, recycling, and organics	6,864	3,980,000	220,000	4%
	Additional Public Works staff	N/A	85,000	85,000	2%
	Total	10,576	4,742,000	516,000-593,000	10-11%

Scenario F: Minimal Service Change, Significant Containerization

Op. #	Service Change	Additional Diversion (tons)	Gross Cost of New Programs (\$)	Additional Cost or Savings (negative is savings, \$)	% Increase or Decrease in Current Total Solid Waste Management Costs
-	No change to services in LBA	N/A	N/A	N/A	N/A
8	Require all food serving businesses over an agreed size to contract for a separate organics collection	1,554	N/A	-170,000	-3%

4	Mandate and implement food scrap collections to all residential properties	2,157	762,000	535,000	10%
12	Shared containers for residential, garbage, recycling, and organics	6,864	3,980,000	220,000	4%
	Additional Public Works staff	N/A	85,000	85,000	2%
	Total	10,576	4,827,000	670,000	13%

A.7.0 Existing Policy, Plans, Codes, and Legislation

Waste management in the City of Hoboken is bound by municipal, county, and state legislation. Understanding the waste policy framework the City operates under is crucial to building Hoboken's Zero Waste Plan. This section provides a summary of relevant legislation and planning documents to inform how Hoboken can change its waste management system without contradicting county and state requirements.

A.7.1.1 New Jersey

A.7.1.1.1 New Jersey Administrative Code Title 5⁷

Chapter 10: Maintenance of Hotels and Multiple Dwellings

This chapter sets requirements to ensure the safety and sanitation of hotels and multiple dwelling sin New Jersey. Multiple dwellings are defined as a building or structure with three or more dwelling units occupied or intended to be occupied by three or more persons living independently. The chapter requires multiple dwellings to have impervious and noncombustible receptacles with tight fitting covers and handles, sufficient in size and number to contain waste accumulated in a building with multiple units. Receptacles must be kept in an area designated for storage and be made accessible to collectors. The chapter also requires inorganic waste that is likely to be scattered (such as newspapers, wrapping paper, etc.) to be secured to prevent littering.

Takeaway: Multifamily buildings must have receptacles to store waste between collection. Receptacles must be kept in a designated area between collections, which the City of Hoboken requires in its code as well. However, receptacles often do not have designated spaces or are not returned to these spaces. Moreover, cardboard is rarely baled and secured, often put directly on the sidewalk where it becomes a litter-prone item.

Chapter 23: Uniform Construction Building Code⁸

The Uniform Construction Building outlines the permitting requirement for buildings. It states that the Department of Community Affairs is the sole plan review agency for solid waste disposal plants. The chapter also places permitting requirements for certain renovations, alterations, reconstructions, and changes of use for buildings. Addition to, or alteration, replacement, or relocation of waste (also water supply, sewer, drainage, gas, soil, vent, or similar piping) does not count as ordinary maintenance or repair and therefore requires a permit application or giving notice to the construction official. Furthermore, changing the character or use of a building to a food establishment that produces grease or oil laden waste, requires the placement of interceptors, in accordance with the plumbing subcode. Asbestos abatement permits must include the scope of the proposed work; the type and percentage of the asbestos; the total amount of square and/or linear footage of asbestos-containing material to be abated. Specifications of the route of travel for removing asbestos waste from the area, the DEP-registered waste haulers, and a DEP-registered landfill where the asbestos waste will be deposited.

Takeaway: The NJDEP oversees building permitting for solid waste plants in the state and the treatment of hazardous waste from construction and demolition, including asbestos.

Chapter 28: New Jersey State Housing Code

⁷ [New Jersey Administrative Code | Title 5 - COMMUNITY AFFAIRS | Casetext](#)

⁸ [NJ Department of Community Affairs](#)

The chapter sets standards of habitability. The code requires occupants of buildings and dwellings to store garbage and organic waste in watertight receptacles with tight fitting covers. One receptacle must be provided for each dwelling unit. Recyclable materials must be stored separately from non-recyclable materials.

Takeaway: The Housing Code requires one waste receptacle for each dwelling unit. This is transposed in Chapter 110 of Hoboken's Municipal Code. The application of this rule to multifamily buildings would be very difficult to achieve due to space restrictions.

A.7.1.1.2 New Jersey Administrative Code Title 7⁹

Chapter 26: Solid waste

Chapter 26 chapter lays out the rules governing solid waste management in the state. The Department of Environmental Protection (DEP) must approve the registration, operation, maintenance, and closure of sanitary landfills and other solid waste facilities in the State of New Jersey. DEP oversees of registration, operation, and maintenance of solid waste transporting operations and facilities in the State. The chapter also sets the procedures to prepare solid waste management plans for every solid waste management district and the approval, modification, or rejection of such a solid waste management plan that are approved by DEP. The chapter outlines the appropriations from the Resource Recovery and Solid Waste Disposal Facility Fund to be used for loans to local government units for the construction and operation of resource recovery facilities and environmentally sound sanitary landfill facilities or other approved solid waste facilities which are identified and included in a district solid waste management plan and the grants and loans to local government pursuant to the Recycling Act.

Chapter 26A: Recycling Rules

Chapter 26a establishes the rules for recycling programs and the responsibilities of each level of government, including counties and municipalities.

Rules governing municipalities:

- Each municipality must appoint at least one recycling coordinator who will maintain and report recycling tonnage data.
- A municipality must establish a recycling program sufficient to achieve the target recovery set in district solid waste plans. A recycling program must require all individuals generating municipal solid waste within the municipal boundaries to source separate from the municipal solid waste stream. Moreover, this program must cover at least recyclable materials designated in the district solid waste plan and can designate additional recyclable materials for which markets have been secured
- Municipal ordinances must provide for a collection system for leaves generated from residential premises and shall require that resident's source separate leaves from solid waste. Alternatively, a municipality can prohibit the placement of leaves for collection or disposal as solid waste, and specify that all residents shall mulch or compost the leaves
- Municipalities must set standards for all new multi-family housing developments that require subdivision or site plan approval, to include collection or storage facilities which allow for the placement and temporary storage of all recyclable materials required by the municipal ordinance.
- At least once every six months, a municipality must notify all occupants of residential, commercial, and institutional premises within its municipal boundaries of local recycling opportunities, and the source separation requirements of the ordinance.

Rules governing counties:

⁹ [NJDEP Solid & Hazardous Waste: N.J.A.C. 7:26 Rules \(state.nj.us\)](https://www.state.nj.us/dep/njdwp/njdwp.htm)

- Counties must designate a department, unit, or committee of the county government to supervise the implementation of the district solid waste management plan, including the county recycling plan. This entity must maintain an inventory of solid waste generated within the district for a 10-year period from the adoption of a solid waste management plan and an inventory solid waste and recycling facilities including approved waste types and amounts, hours of operation and approved truck routes.
- County waste plans must outline the solid waste disposal strategy to be utilized by the district for a 10-year period and a procedure for including solid waste and recycling facilities in the plan.
- Each county recycling plan shall include the designation of currently mandated recyclable materials and additional materials to be source separated, entities providing collection, processing, and marketing services for each recyclable material, communication programs to inform generators of source separation requirements for recyclable materials, enforcement requirements, and anticipated gains in recycling from small businesses, multi-family housing developments, schools and other institutions by material tonnage and by sector.
- The recycling plan must include a strategy for the collection, marketing and disposition of designated source separated recyclable materials in each municipality. The county agency in charge can solicit proposals from, review the qualifications of, and enter into contracts or agreements on behalf of municipalities with persons providing recycling services or operating recycling centers for the collection, storage, processing, and disposition of recyclable materials if such services are not otherwise provided.
 - The strategy must include the designation of recovery targets in each municipality to achieve the maximum feasible recovery of recyclable materials from the municipal solid waste stream.

The chapter also requires the establishment of a recycling system for the safe and environmentally sound management of covered electronic devices and components, including televisions, and establishes requirements for manufacturers and retailers of these covered electronic devices. Manufacturers must submit a collection plan to DEP that provides for the collection, transportation, and recycling of covered products. Retailers receive from the department information describing the location and way a consumer can recycle electronic devices and must provide this to customers through a toll-free number, a document included in the packaging for the device, or a document provided at the point of sale.

Takeaway: Updates to Hoboken's municipal code must be in accordance with Hudson County's solid waste plan. Hudson County has not updated its solid waste plan since 2010 and a review is in the early stages of development.

Hoboken is in compliance with state requirements to appoint a municipal recycling coordinator and establish a recycling program that requires source separation. Hoboken also requires new multi-family housing developments to have sufficient container space and a designated area to store recycling containers.

Hoboken's municipal code indicates that there are designated days for curbside yard waste collection and that residents are also allowed to backyard compost their yard. Hoboken has yard waste pickup on Fridays; collected yard waste is transported to Nature's Choice composting. This follows state requirements to provide for yard waste collection.

The City of Hoboken does not have a municipal requirement to notify occupants of residential, commercial, and institutional premises of local recycling opportunities and the source separation requirements of the ordinance every six months.

Chapter 26G: Hazardous Waste

Chapter 26G establishes the rule of the DEP that govern the registration, operation, closure, and post-closure maintenance of hazardous waste facilities in New Jersey. This includes the registration, operation, and

maintenance of hazardous waste transporting operations and facilities in the State of New Jersey; and a fee schedule for services provided by the department to hazardous waste facilities, generators, and transporters. The chapter notes that hazardous waste facilities are exempt from district solid waste plans.

Transporters of hazardous waste must register with the DEP and must be approved. Transporters must also comply with US Department of Transportation rules. Inspection is carried out by DEP. Hazardous waste facilities must be operated by licensed hazardous waste transporter. Operators must maintain at the transfer facility a written operating log documenting the movement of hazardous waste into and out of the hazardous waste facility and any hazardous waste transfers occurring at the facility. Operators of hazardous waste treatment, storage, and disposal facilities are bound by federal regulations.

Chapter 26H: Solid Waste Utility Regulations

The chapter establishes the rules solid waste utilities must abide by. Entities engaged in solid waste collection and disposal are subject to state regulations. No person can bid for a solid waste contract for collection or disposal unless the DEP has ensured they are registered and licensed and subsequently issued them a certificate. DEP can require utilities to make adjustments to their service fees if they are found to be unreasonable, meaning that they exceed market-based rates.

Utilities are required to submit annual reports summarizing ownership, financial condition, contractual arrangements, and operations for the preceding calendar year, unless it is a privately-owned sanitary landfill. Such reports shall also contain a statement of income and expenses for a calendar year period. Utilities must also keep books, records, and accounts in accordance with generally accepted accounting principles that are available for examination by DEP.

Takeaway: The management of hazardous waste and solid waste utilities across the state is overseen by DEP.

A.7.1.1.3 Ban on single-use plastic carryout bags, single-use paper carryout bags, polystyrene foam food service products, and single-use plastic straws

Since May 2022, stores and food businesses in New Jersey cannot sell or provide single-use plastic and paper carryout bag. Individuals and food service businesses are prohibited from selling polystyrene foam food service products. Some polystyrene products are exempt from the ban for a period of two years until May 2024, including disposable, long-handled polystyrene foam soda spoons when required and used for thick drinks, portion cups of two ounces or less if used for hot foods or foods requiring lids, meat and fish trays for raw or butchered meat, including poultry, or fish that is sold from a refrigerator or similar retail appliance, and any food product pre-packaged by the manufacturer with a polystyrene foam food service product. DEP may extend these exemptions for periods of one year if decided that there is not cost-effective and readily available alternative. Moreover, a person or food service business may apply for a waiver from these bans for a period of one year if there is no cost-effective and readily available alternative or if that applicant has less than \$500,000 in gross annual income.

Since November 2021, food-service businesses may provide single-use plastic straws to a customer only upon request.

Takeaway: These bans aim to eliminate hard to recycle items from the waste stream. However, bans can lead to a direct substitution to single-use items that have a similar or greater environmental impact. For a ban on single-use items such as expanded polystyrene (EPS) food packaging to be successful, a suitable

replacement material must be available that perform the function of the banned item. Appropriate enforcement and penalties need to be in place to deter non-compliance. Additionally, reusable items but be encouraged and promoted to meaningfully contribute to source reduction.

A.7.1.1.4 Food waste recycling for large generators

In N.J.S.A. 13:1E-99.122, the State of New Jersey requires food wholesaler, distributor, industrial food processor, supermarket, resort, conference center, banquet hall, restaurant, educational or religious institution, military installation, prison, hospital, medical facility, or casino that produces at least 52 tons per year of food waste to separate and recycle food waste. The legislation was passed in April 2020; covered generators had to comply by October 2021.

Food waste is defined as “food processing vegetative waste, food processing residue generated from processing and packaging operations, overripe produce, trimmings from food, food product over-runs from food processing, soiled and unrecyclable paper generated from food processing, and used cooking fats, oil, and grease”. Food that is donated for human consumption is not considered food waste. Large food waste generators can perform enclosed on-site composting, or anaerobic or aerobic digestion of separated food waste.

If a covered large food waste generator is not located within 25 miles of an authorized food waste recycling facility, or the authorized food waste recycling facility will not accept the generator's food waste, the large food waste generator may send food waste for disposal at a solid waste facility. A large food waste generator may petition the DEP for a waiver if the cost of transporting the food waste plus the fee charged by an authorized food waste recycling facility located within 25 road miles of the large food waste generator is at least 10 percent more than the cost of transporting the food waste for disposal as solid waste plus the disposal fee charged for solid waste disposal in the State for noncontract commercial waste by a properly licensed transfer station, sanitary landfill facility, incinerator, or resource recovery facility located within 25 road miles of the large food waste generator.

Takeaway: In Hoboken, three businesses fall under the definition of large food waste generator set forth in the NJ code. These are Trader Joe's, McDonald's, and ShopRite. The New Jersey DEP working on implementation and helping covered generators comply with the requirements through technical assistance. According to NJDEP, two facilities are authorized food waste recycling facilities: Waste Management CORE in Elizabeth, NJ and Trenton renewable Power in Trenton, NJ. Large generators in Hoboken are within 25 miles of Waste Management CORE and will be required to transport food waste to that facility. The limited number of authorized food waste recycling facilities in the State will impact the capacity and efficiency of these facilities.

A.7.1.2 Hudson County

A.7.1.2.1 Solid Waste Management Plan

The Hudson County Solid Waste Management Plan provides an inventory of waste generated in the county, solid waste and recycling facilities, the procedure for processing applications for inclusion of solid waste and recycling facilities in the plan, a strategy to meet the State's recycling goal of 50%, and the list of mandated recyclable materials and entities providing for collection, processing, and marketing services. The plan also outlines the Solid Waste Disposal Strategy, community outreach program outlining generators' responsibilities, enforcement programs, and the adoption of a county-wide uniform municipal recycling ordinance. However, the Plan was released in 2010 and an updated version is in the early stages of development.

Source separation and recycling is required for the following materials in residential waste: aluminum, food and beverage containers, antifreeze, brush/tree parts, concrete/asphalt and masonry/paving material, corrugated cardboard, glass food and beverage containers, heavy iron, leaves, mixed office paper, newspaper, non-ferrous and aluminum scrap, other paper/magazines/junk mail, plastic containers, rechargeable batteries, steel cans, tires, used motor oil, white goods, and light iron

Additional materials that are required to be separated and recycled for commercial, industrial, institutional, and government properties as well as office parks include electronics, fluorescent bulbs, plastic film (for warehouses, retail establishment, supermarkets with 25 or more employees), and wood scraps (in new construction sites).

Recommended items for recycling include aseptic containers, car/truck batteries, food waste, grass clippings, motor oil filters, household batteries, other plastic (film, polystyrene), poly-coated food and beverage containers, textiles, toner cartridge, tree trunks and stumps, and untreated/unpainted wood, including demolition debris.

The plan sets a goal of achieving a 50% municipal recycling rate and 60% total recycling rate but does not set a date by which to meet it.

The plan discusses programs provided by the Hudson County Improvement Association, which cities can participate in, including:

- Phone, computer, electronics, printer cartridge recycling programs
- Household hazardous waste collection days (four days per year)
- Compost bin sales

Outreach led by HCIA to residents takes the form of quarterly newsletter, presentations for multiple audiences such as teachers and students, nonprofits, community groups, and businesses, environmental resource center at HCIA HQs, contests, information packets, hotline, website, participation at community events, and Earth Day celebration.

HCIA also organizes outreach activities destined for solid waste and recycling officials. This includes the Solid Waste Advisory Committee's (SWAC) quarterly meeting, the municipal recycling coordinators' quarterly meeting, the advertisement of special events, the distribution of recycling stickers and promotional material, and available training programs.

In multi-family units, management is required to annually report the tonnage of material recycled unless the municipality provides recycling collection services

Takeaway: The Hudson County Solid Waste Management Plan provides a list of required materials and additional recommended materials for recycling. Each city in the county, including Hoboken, is required to implement a solid waste program that complies with these requirements. HCIA is a resource on which cities can draw to supplement their programs and receive education and potential funding. This plan also sets a goal of achieving a 50% municipal recycling rate and 60% total recycling rate, but this target is non-binding and does not have a target date.

A.7.1.3 City of Hoboken

A.7.1.3.1 City of Hoboken Master Plan: Green Building and Environmental Sustainability Element¹⁰

The City of Hoboken Master Plan provides policy recommendations to promote sustainability and achieve its vision of an environmentally, socially, and economically healthy community. This plan was prepared by the City of Hoboken and adopted in December 2017.

The plan includes a section on waste outlining strategies to increase the diversion of organic waste and recyclable waste and limit non-recyclable or problematic waste. It also includes strategies to improve the efficiency of the waste management system and modify the cost structure.

The recommendations seek to improve cleanliness to benefit public health and quality of life, help the City become zero-waste by diverting food waste and recyclables from the waste stream, and reduce overall waste by increasing product efficiency and effectiveness while limiting the use of non-reusable and non-recyclable items. Table 21 lists the policy recommendations.¹¹

Since the publication of this plan, Hoboken has successfully transitioned from single stream to dual-stream recycling, one of the top recommendations. Many of the other recommendations related to waste have yet to be implemented.

Table 29: Policy Recommendations from the City of Hoboken's Master Plan

Strategy & Action	Implemented? Y/N
Improve waste management operations	
Launch a "Keep Hoboken Clean" campaign to educate residents, businesses, and community organizations about the importance of anti-littering and pet waste removal on streets and public open spaces and parks, including semi-annual, community-wide cleanups and annual green fair.	Y
Increase enforcement for littering (Chapters 110, 168) and pet waste removal (Chapter 93)	Y
Educate students, residents, businesses, and community organizations to reduce public litter and overflow of receptacles in high traffic areas, especially during weekends and holidays.	N
Increase use of the digital monitoring system provided by the smart waste receptacles.	N

¹⁰ [Sustainability-Element_Final_2017_lowres.pdf - Google Drive](#)

¹¹ The table omits the recommendations on abandoning single stream recycling, since the City has already successfully transitioned to dual-stream recycling.

Expand the smart trash and recycling program to add to the existing solar powered trash and recycling receptacles in municipal parks, adjacent to municipal buildings, and along municipal commercial corridors using receptacles.	Y
Optimize solid waste collection routes, crew size, and shifts.	Y
Reduce the distance that solid waste is transported for disposal.	N
Explore PAYT	
Conduct a cost-benefit analysis for enacting a pay-as-you-throw program.	N
Develop a process for how a pay-as-you-throw program could work, including consideration of methods to minimize the impact upon residents and businesses for ease of implementation.	N
If feasible, implement a pay-as-you-throw program	N
Increase diversion of recycling	
Educate students, residents, businesses, and community organizations about mandatory recycling, available e-waste recycling, the Hoboken Recycling center, and the need to reduce glass consumption.	N
Continue to provide free recycling bins to Hoboken residents	Y
Launch a campaign to reduce glass consumption at bars and restaurants.	N
Continue to participate in prescription drug safety and disposal events	Y
Continue to host community paper shredding days	Y
Become an EPA WasteWise Partner, which provides resources to reduce waste	N
Develop and implement a strategy to improve enforcement of the municipal recycling ordinance (Chapter 151).	N

Create permanent household hazardous waste (HHW) collection programs for two or more materials (e.g., anti-freeze, batteries, consumer electronics, compact fluorescent light bulbs, paint, pesticides and herbicides, motor oil)	N – But drop offs are available by County
Implement recycling initiatives that target materials that are not currently designated as mandatory recyclable items as per state law, or the Hudson County recycling plan (e.g., carpet and foam padding, shrink wrap, plastic bags, aluminum foil, textiles, cooking oil).	N
Adopt a policy for construction and demolition waste recycling to divert it from landfill disposal.	Y
Increase the diversion of food waste	
Educate students, residents, businesses, and community organizations about the benefits of composting to increase enrollment in the City's residential composting pickup program.	N
Host a compost drop off location at the City Recycling Center	N – But drop offs are available
Launch a commercial composting pilot program for the largest producers of food waste.	Y (state)
Conduct a resident and business survey to gauge interest and willingness to participate in curbside food waste pickup program. Of those interested, determine baseline for amount of food waste generated.	Y
Conduct a cost-benefit analysis for enacting a curbside composting program.	Y
Identify businesses that generate food waste oil to facilitate food oil recycling as well as converting waste oil into energy.	N
Advocate for New Jersey Department of Environmental Protection to increase capacity or number of licensed composting facilities in New Jersey.	N

Develop a process for how a curbside composting program could work, including consideration of methods to minimize the impact upon residents and businesses for ease of implementation.	Y
Provide free compost bins to residents and businesses who compost.	N
Implement a free, mandatory curbside composting program.	N
Limit the use of non-recyclable items	
Educate students, residents, businesses, and community organizations about the benefits of using reusable bags rather than single-use bags.	Y
Install a plastic bag recycling depository at City Hall	N – but drop offs are available at retailers
Implement a mandatory plastic bag ban or fee program	Y
Implement a green purchasing policy for municipal facilities to reduce the use of non-recyclable or non-reusable items.	Y
Conduct a cost-benefit analysis on alternatives for limiting glass in the waste stream, such as glass ban or fee programs.	N
Implement a mandatory Styrofoam ban or fee program.	Y

Takeaway: The Master Plan lays out strategies that seek to address many of the City's current issues and that most of these issues have not been remedied since its publication. Therefore, the Master Plan provides support for actions in the Zero Waste Plan that will seek to address these issues. This plan was a non-binding strategy. To achieve zero waste, further strategies will be needed, especially those that more directly address waste reduction, such as waste reduction.

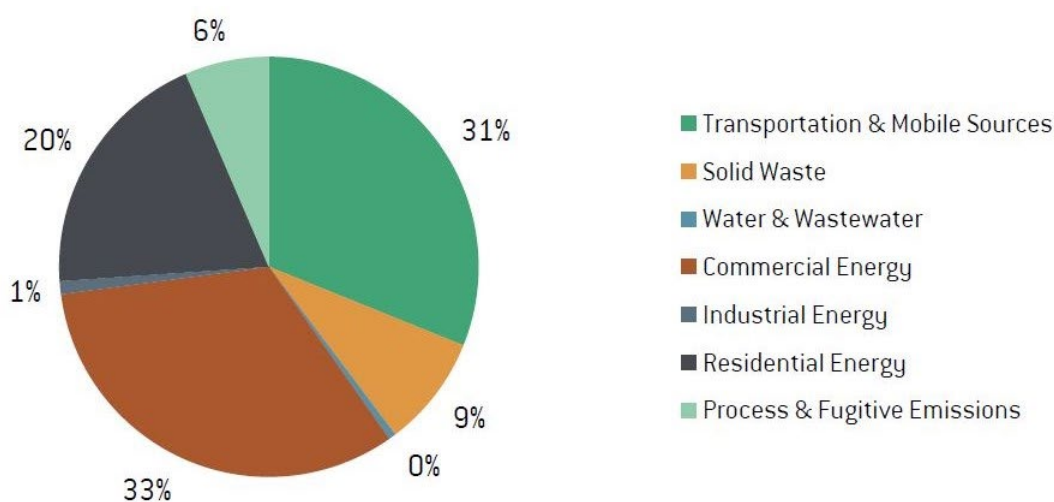
A.7.1.3.2 Hoboken Climate Action Plan

The Hoboken Climate Action Plan was published in 2019 and is currently serving as the main strategy document related to climate initiatives in the City of Hoboken. The Hoboken Climate Action Plan lays out strategies to reduce GHG emissions and to achieve the goals of net zero energy by 2030 and carbon neutrality by 2050. Hoboken's climate action plan does not focus significantly on GHG emission from waste.

Waste management offers cities a significant opportunity to align zero waste and climate action plans to accelerate the transition to a low carbon and circular economy.

Solid waste disposal in Hoboken represents 38,314 tons of CO₂ emissions (approximately 9% of total) and 1,368 tons of methane. Hoboken's scope 3 emissions are calculated based on the waste generated in the city and disposed outside of it. Scope 3 emissions do not account for emissions from collection and transportation and do not include single stream recycled waste.

Figure 40: Greenhouse Gas Emissions by Sector in Hoboken



Source: City of Hoboken Climate Action Plan, 2019

Hoboken's climate action plan sets a target of keeping GHG emission from solid waste constant through 2030. The volume of solid waste is expected to increase with population growth. To prevent emissions from rising, the mitigation measures suggested are increasing diversion from landfill, collecting organic waste separately, and capturing or destroying GHG emissions through methane flaring or conversion into energy.

Takeaway: This Climate Action Plan provides a roadmap for the city of Hoboken, which is currently working towards its implementation. The goals of this plan are re-evaluated every five years. The Climate Action Plan's most relevant aspect related to waste is the target of keeping GHG emission from solid waste constant through 2030, despite any increases in waste generation or population growth. Hoboken's climate action plan does not focus significantly on GHG emission from waste. Waste management offers cities a significant opportunity to align zero waste and climate action plans to accelerate the transition to a low carbon and circular economy.

A.7.1.3.3 City of Hoboken Municipal Code

The Hoboken Municipal Code lays out the rules for development in the city and municipal services. Chapter 58 specifically outlines the role of the Department of Parks, Recreation, and Public Works in the City of Hoboken, which oversees waste management for the city. Chapters 110 and 151 focus on rules for garbage and recycling, respectively. Chapter 196 establishes zoning rules and businesses that require solid waste plans.

Chapter 58: Department of Parks, Recreation, and Public Works

Within PRPW, the Division of Sanitation is responsible for the collection and disposal of solid waste and recycling. Recycling programs and procedures will be implemented in accordance with contracting rules outlined in New Jersey Revised Statutes 40A:11-1 and Chapter 151 of Hoboken's municipal code.

The chapter also outlines rules in parks and public property. It prohibits littering in the park as well as the dumping of household garbage, refuse, or waste in park garbage receptacles and lays out fines for violations. The article requires concessionaire within Pier A to provide a waste receptacle and concessionaires operating cooking and refrigeration devices cannot dispose of their waste in a City trash receptacle.

Takeaway: This chapter outlines the roles and responsibilities of PRPW and specifies the Division of Sanitation is responsible for waste management. Any changes to waste collection and contracting need to be reflected in the City Code. It also outlines the penalties for littering in public spaces and the requirements for seafront concessionaires to provide receptacles.

Chapter 110: Garbage, Rubbish, and Litter

Chapter 110 regulates the management of solid waste in the city, from how residents must separate their waste to penalties for violations of the chapter. Table 30: Pre-Collection Practices summarizes the requirements pre-collection practice for waste that necessitates pre-collection treatment.

Table 30: Pre-Collection Practices

Material	Pre-collection requirement
Ashes	Soaked in water and placed in a receptacle separate from garbage
Liquids	Wet rubbish and garbage must be drained of all liquids and wrapped in paper before being placed in receptacle for collection
Odd and large-shaped items	Items that do not fit into a container are to be placed out for collection at a time and place designated by appointment with the Department of Public Works
Tree trimmings	Should not exceed 4 feet in length and should be securely tied in a bundle less than 2 feet thick
Fluorescent and mercury lamps	Securely and completely wrapped in cardboard or heavy wrapping paper with "fluorescent lamp" written in clean, large letters

Article 4 of this chapter provides guidelines for receptacles and bags approved for collection. Each premise must have disposable plastic bags or receptacles that can contain waste between collection. Plastic bags need to be waterproof and capable of holding waste without leaking, tearing, or spilling. Solid waste containers are required to be between 10 and 32 gallons and must have handles to be suitable for collection by one person. Owners of multi-dwelling housing must provide each family with one container of 30-to-32-gallon containers.

Containers should be stored in a designated area between collections, which cannot be on the sidewalk in front of buildings or houses. Containers must be placed adjacent to the curb for collection no earlier than 7:30pm (except for addresses on Washington street which place containers no earlier than 9pm) and no later than midnight on the day before waste collection. Containers have to be returned no later than 7:00am.

Article 5 states that it is unlawful to accumulate more than 72 hours of refuse for a person. Apartment buildings, commercial premises, industrial buildings, and government buildings using dumpsters may accumulate a maximum of 240 hours of refuse. Restaurants and businesses selling food for consumption on premise may not accumulate more than 24 hours of swill.

Hazardous waste cannot be placed in waste receptacles for regular collection. Hazardous waste must be disposed of in accordance with state law. Dead animals, clothing, bedding, and other refuse from places with infectious or contagious diseases must be removed under the supervision of the City Health Officer. Ammunition, military ordinance, firearms, and dangerous weaponry must be referred to the Director of Public Safety for direction to dispose.

Demolition containers and dumpsters cannot be placed on a public street or sidewalk without a demolition container permit from the Department of Transportation and Parking. This includes a dumpster remaining after the expiration date of a permit previously issued. A copy of the permit must be displayed and made visible at all times on the dumpster or demolition container. Containers are not permitted on public streets or sidewalks after 5:00pm on Fridays and before 10:00am on Mondays without the permission of the Director of the Department of Transportation and Parking.

Violations of chapter 58 are subject to a fine between \$500 and \$1,000, imprisonment for up to 90days, or both. Each day a violation continues constitutes a separate violation. A second convictions within one calendar year constitutes a repeat offense and a fine will be calculated separately from the previous one.

Takeaway: The code requires waste containers to be in a designated area between collections, which cannot be on the sidewalk in front of buildings or houses. In practice, many waste containers do not have designated spaces or are not returned to those spaces. This point should be clarified or changed as containers are often stored in front of buildings. The code also requires one garbage container per unit for multi-family buildings. This is consistent with New Jersey Administrative Code Title 5 Chapter 28. This requirement may have been appropriate before recycling was introduced, but now seems unnecessary. This chapter also summarizes requirements for residents and businesses on how to separate and set out waste. Any changes to these topics will need to be reflected and changed in this chapter of the Code.

Chapter 151: Recycling

Chapter 151 establishes source separation for recyclables and dual stream recycling, the timetable for placement of recyclables curbside, the materials that are collected curbside, and container requirements. Hoboken imposes mandatory source separation for owners, tenants, and occupants of households, business, commercial and/or industrial establishments, and public and governmental institutions and facilities. Commingled recycling must be separated from cardboard and paper recycling, as dual-stream recycling. All private recycling receptacles must have a lid to prevent recyclables from being contaminated.

Curbside collection for materials identified in Table 23 below is planned according to a schedule published by the City. Placement for collection must be no earlier than 9:00 p.m. in the limited business area and 7:30 p.m. outside of the limited business area on scheduled collection days. Drop off of designated recyclable material at the Hoboken Recycling Center is available during normal business hours.

Table 31: Recycling Collection and Drop-off

Material that must be source-separated*	Curbside Collection	Drop Off	Other
Commingled recycling	X	X	
Cardboard and Paper Recycling	X	X	
Leaves	X On designated days		Backyard compost or authorized composting container
Yard Waste	X On designated days		Backyard compost or authorized composting container
White Goods	X On designated days, with locking doors removed from appliances	X	
Electronic waste	X On designated days	X	Can be delivered to an electronic recycling center
Ferrous metal		X	
Lead Acid Batteries		X	Can be delivered to a lead acid battery recycling center
Tires		X	
Untreated Wood		X	

Masonry			Must be disposed in accordance with state and federal regulation
Used Motor Oils and Motor Oil Filters (including antifreeze)		X	Can be delivered to an authorized motor oil or antifreeze recycling center

** This list may be amended and increased as markets develop for other materials in the municipal solid waste stream or as required by the State of New Jersey or Hudson County.*

The City may use municipal personnel to collect recyclable materials curbside and/or at collection or pickup sites or can enter into agreements to have authorized entities collect recyclable materials. The City also has the right to enter into agreements with persons, partnerships, corporations, or other businesses to authorize collection of recyclable materials at curbside collection or pickup sites. The City has the right to sell these recyclable materials.

PRPW can issue permits to people or organizations to authorize drop off collection points for the aggregation of certain specific recyclable materials. The Mayor can enter into contracts for collection, composting, or marketing of designated recyclable materials or to place out a bid.

Recyclable materials are the property of the City once they are placed at collection or pickup sites. Unauthorized collection is illegal and punishable. The DES and/or Recycling Coordinator can issue permits to authorize individuals and organizations to pick up recyclable materials on designated days.

Any resident, public or private institution, commercial or industrial establishment may donate or sell recyclable materials. Anyone in Hoboken participating in a recycling program not operated by the City must report yearly tonnages and markets of materials recycled, submitted to the Recycling Coordinator

Collection schedule and sites are designated by the Director of Parks, Recreation, and Public Works and/or Recycling Coordinator. Notification of the schedule and collection/pickup sites must be published in the official newspapers and/or media sources for at least six days, a minimum of 10 days prior to first collection/pickup date. The City may also mail brochures/newsletters to attached to property tax bills.

Property owners are responsible for informing all occupants of designated collection regulations and provisions. Each property owner must provide:

- adequate storage containers with lids (min. 20 gallon capacity; max 48 gallon capacity or 50 lbs.) for storing commingled recycling and cardboard and paper recycling.
- storage containers with two "Hoboken Recycles" decals, one on the lid and one on the container side. Alternatively, the City may provide storage containers with the Hoboken Recycles symbol at the Recycling Center.
- at least eight gallons of storage space for each residential unit
- accessible recyclable storage containers for occupants to dispose of commingled recycling

Property owners are responsible for placing recyclable storage containers at curbside for collection on designated days and times. Management or property owners of multifamily/high-rise housing developments are responsible for setting up and maintaining the recycling system, including collection and placement at

curbside on designated days and times. Management must issue notification and collection rules to new tenants when they arrive and every six months during their occupancy.

Commercial, institutional, or industrial property owners or their designee are responsible for arranging the collection of recyclables. Properties that provide outdoor litter receptacles and disposal service must also provide receptacles for commingled recycling as well as cardboard and paper recycling. Property owners responsible for setting up the service, including collection and placement at curbside on designated days.

Every business, institution, or industrial facility must report annually on recycling activities at its premises, including the amount of recycled material, by material type, which is collected and recycled and the vendor/s providing recycling service. In addition, all food service establishments are also required to recycle grease created in the processing of food and maintain records that can be inspected by a code enforcement officer.

An application to the Planning Board for construction approval for new multifamily dwellings of 3+ units or commercial, institutional, or industrial developments of 1,000+ square feet of land must include a recycling plan. The plan must contain an analysis of expected composition and amounts of solid waste and recyclables generated as well as locations on the site plan that provide for convenient recycling opportunities for owners, tenants, and occupants. Prior to issuance of a certificate of occupancy, the owner must provide a copy of a contract with a hauling company for waste and recycling collection.

Any entity, including private haulers, which picks up waste is required to separate leaves for composting and recyclables for recycling. The tonnages and markets of designated materials must be reported yearly to the Recycling Coordinator.

The collection of waste mixed with recyclable materials is prohibited. It is the responsibility of the property owner to segregate uncollected waste for proper disposal or recycling. The property owner or registered agent is responsible for properly segregating the uncollected waste. Allowing unseparated waste to accumulate is a violation of this chapter and local sanitary code.

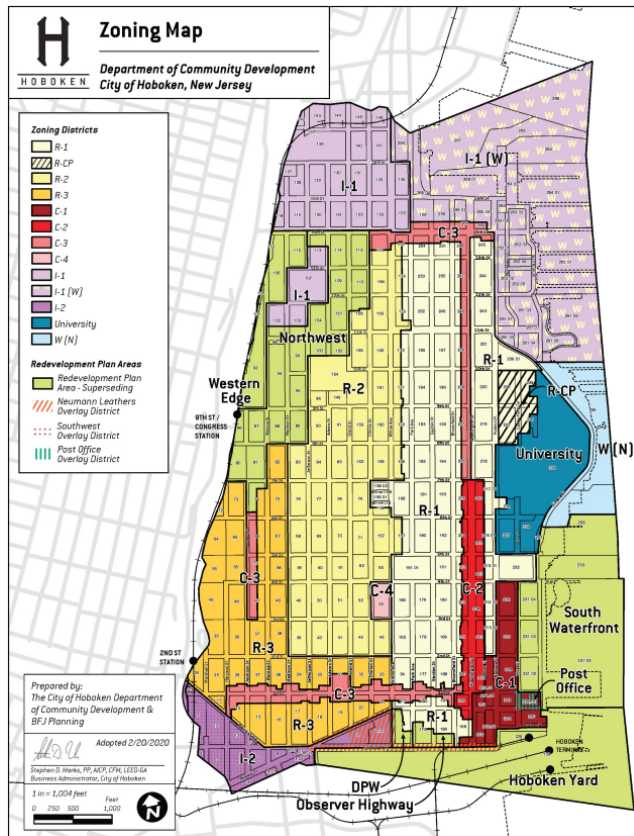
Enforcement is authorized to the Police Division, Environmental Service's Sanitation Inspectors and Code Enforcement Officials, the Recycling Coordinator, the Housing Officer, Hudson Regional Health Commission, and the Hudson County Improvement Authority. Enforcing officials may post warning notice stickers, mail notices of violation, or issue summons for any offense, after sight or sound inspection. Any person in violation of the code and found guilty in the Municipal Court of Hoboken or other competent court shall face a fine of not less than \$250. Each day's failure constitutes a separate and distinct offense.

Takeaway: The city of Hoboken requires separation at source and dual stream recycling. The Code provides the ability to drop-off recyclable materials at the Hoboken Recycling Center. This requirement should be updated to reflect current drop-off locations. Commercial developments of over 1,000 square feet and multifamily buildings of three or more units are required to submit a recycling plan with an analysis of expected composition and amounts of solid waste and recyclables generated. However, there is no guidance on solid waste quantities. Existing plans only relate to commercial properties and focus only on recycling. Furthermore, the estimated standard generation rates by material provided in the code are ill-equipped to capture the variability of generation from different businesses and multifamily properties. These estimated rates should be revised and simplified. Guidance should be included for architects to use these rates and submit more robust solid waste and recycling plans. The addition of organics as a separate stream should be considered as well. The chapter additionally requires businesses to submit a copy of a contract with a hauling company for waste and recycling collection to receive their certificate of occupancy. However, this does not seem to match the current system, in which the City contracts with a hauler to pick up all waste from businesses and residences across Hoboken.

Chapter 196: Zoning

Chapter 196 discusses the different zones of the city and what kind of development can happen within each.

Figure 41: Hoboken Zoning Districts



Zoning Districts	
R-1	Residence District (Conservation)
R-CP	Residential Castle Point District
R-2	Residence District (Stabilization)
R-3	Residence District (Redevelopment)
I-1	Industrial District (Light Manufacturing)
I-1(W)	Waterfront Subdistrict
I-2	Industrial District (Mixed Use)
C-1	Commercial - Hoboken Terminal District
C-2	Commercial - Central Business District
C-3	Commercial - Neighborhood Business District
W(RDV)	Waterfront Redevelopment Subdistrict (Special Review)
W(H)	Historic Subdistrict (Waterfront)
W(N)	Castle Point Subdistrict
U	University District

Commercial District Waste Plans

The following businesses are required to have a refuse storage and disposal plan that describes where waste, recycling, and hazardous waste (where applicable) will be stored on the premises, removed, and the entity in charge of removal:

- Animal, veterinary services (specifically, hazardous and animal waste)
- Arcade and gaming facilities
- Artist studios and workspaces (specifically, if generating liquid by-products that require disposal, plumbing services, waste line upgrades, or other measures)
- Bakeries
- Bars: Class I and II
- Billiards/pool halls
- Bowling centers
- Catering

- Childcare facilities
- Child recreational facilities and services
- Clinics, laboratories, and diagnostic imaging centers (specifically, medical waste)
- Commercial buildings
- Commercial uses in C-3 District exceeding 1,200 square feet
- Confectionary stores
- Event spaces, meetings, and convention facilities
- Food stores: Convenience Stores, Fruit and Vegetable Markets, and similar
- Food stores: supermarkets
- Furniture and upholstery repair (specifically if any work by-products)
- Hospitals (specifically, any medical or chemical waste)
- Hotels
- Indoor fitness facilities: courts (e.g., tennis, basketball), pools, climbing gyms, batting cages, mini-golf, golf simulators, and similar
- Medical and dental offices (specifically, medical waste)
- Movie and performing arts theaters
- Nursing homes
- Private membership clubs
- Private schools
- Rehabilitation centers
- Residential buildings in the C-2 District
- Restaurants: Class I, II, III, and IV
- Vocational and trade schools and other instructional and training facilities
- University District (including medical waste and chemical waste from health services and laboratories)

Storage Standards

Residential development must have sufficient storage for a week's worth of recyclables within each dwelling unit. A multi-family building shall also have a common area storage space as specified below.

- Size: sufficient for eight gallons of storage in each unit; three square feet for each three-tier stack unit or for three to four gallons buckets.
- Location: Multifamily: under kitchen sink or in closet of each dwelling unit as well as in a common area near the refuse receptacle or a laundry room (preferably on each floor); a central storage area should be located so as to facilitate pick-up. Single-family homes: same as for apartment or in laundry room, basement, or garage.

Commercial and industrial development must have sufficient storage space for a week's worth of recyclables.

- Size: if development generates a large volume of recyclables, the loading dock area shall be of a sufficient size to hold small dumpsters, 55-gallon containers or four feet by four feet by four feet

Gaylord containers or hampers which can be picked up by a forklift. If a nonresidential use is not large enough to require a loading dock under the provisions of the Zoning Ordinance, the recycling plan shall provide for pick-up times frequent enough to make large storage areas unnecessary.

- Location: storage shall be provided indoors or, if outside, it shall be screened by a shed-like enclosure.

Takeaway: Storage size for residential recyclables should be examined to ensure eight gallons of storage is sufficient. Storage size for commercial generators includes types of containers such as hampers that are picked up by forklift, which are not covered by Cali and imply private hauling. This could be clarified by the code. There needs to be storage areas required for trash and food scraps as well as recycling, and more guidance for central area storage requirements. Calculations should also allow for a reduction in area for compaction equipment. Guidance should be given to development teams to make it easy to calculate storage areas required.

Commercial waste plans do not require consideration for organic waste. In October 2021, New Jersey enacted an organic waste ban for large generators producing over 52 tons of waste per year. The city of Hoboken could consider requiring waste plans for commercial generators to address organic waste. Zoning relates to waste collection services and waste storage requirements. This chapter should be consulted to determine what is required for each. Waste storage requirements for different types of buildings and developments are laid out here.

A.7.1.3.4 City Ordinances

Plastic Bag Ban¹²

The city of Hoboken passed an ordinance banning single-use plastic carry out bags at retail and food establishments starting in January 2019. Paper bags can be sold for a fee ranging from \$0.10 to \$0.25. The ordinance was amended to no longer permit the sale of reusable plastic bags. The ordinance aims to encourage customers to bring their own bags.

Polystyrene Ban¹³

Starting March 2020, retail and food establishments cannot sell or offer single-use cups, containers, lids, closures, trays, plates, utensils, and wrapping made of expanded polystyrene (EPS). The ordinance also bans the sale polystyrene loose fill packaging ("packing peanuts").

Takeaway: These city ordinances banning single-use products have been preempted and superseded by the state of New Jersey's bans on single-use plastic items and plastic and paper carryout bags.

¹² [5d5c6f928e68dd179418a0a3_Plastic_Bags_Revised.pdf \(website-files.com\)](#)

¹³ [5d5c6f928e68dd179418a0a3_Plastic_Bags_Revised.pdf \(website-files.com\)](#)

Figure 42: Ordinances Banning Single-Use Plastic Bags and EPS packaging

Hoboken Plastic Bag Ban

✗ Plastic carry-out bags are banned at all retail and food establishments

✓ These plastic bags are still allowed for free

- Produce bags (fruits and vegetables)
- Product bags (packaging)
- Bags used to contain frozen foods, meat, fish, flowers, plants, or baked goods
- Pharmacy prescription bags
- Newspaper bags
- Laundry or dry-cleaning bags
- Packages of multiple bags (food storage bags, garbage bags, pet waste bags)

Carry-out Bag Options

www.hobokennj.gov/plasticbags

Hoboken Polystyrene Ban

Begins March 8, 2020

✗ Single service articles made of expanded polystyrene (EPS) will be banned

- No retail or food establishment shall possess, sell, or offer for use single service articles that consist of EPS including cups, containers, lids, closures, trays, plates, utensils, napkins, wrapping, etc. Straws are not included.
- No retail establishment shall sell or offer for sale polystyrene loose fill packaging (aka "packing peanuts").

✓ These EPS articles are still allowed

- EPS containers used for pre-packaged food or products that have been filled and sealed outside of Hoboken prior to receipt by the establishment.
- EPS containers used to store raw meat, pork, fish, seafood or poultry.

Carry-out Bag Options

www.hobokennj.gov/plasticbags

A.8.0 Hoboken Community Survey on Proposed Actions

A.8.1 Resident Survey Results

Around 58% of respondents live in a building with five or more units. The breakdown of resident respondents' living arrangements are provided in Table 32.

Table 32: Where do you live?

Answers	Count	Percentage
I live in a single-family home (detached)	5	2%
I live in a single-family home (attached)	32	12.9%
I live in a building with 2 units	18	7.2%
I live in a building with 3 or 4	44	17.7%
I live in a building with 5 to 9 units	48	19.3%
I live in a building with 10 or more units	97	38.9%
I live in another type of home	0	0%

Approximately 48% of residents express willingness to take household waste and recyclables to shared containers, with around 24% being very willing and another 24% somewhat willing (Table 33). However, 42% of residents express varying degrees of unwillingness, with 31% very unwilling and 11% somewhat unwilling (Table 33). Residents are somewhat evenly split on this. Table 34 suggests that those who expressed unwillingness attributed it to mainly to concerns about hygiene, congestion, and aesthetics.

Table 33: Would you be willing to take your household waste and recyclables to shared containers located within a block of your residence?

Answers	Count	Percentage
Very Willing	60	24.1%
Somewhat Willing	60	24.1%
Neutral / Undecided	19	7.6%
Somewhat Unwilling	28	11.2%
Very Unwilling	77	30.9%

Table 34: Please indicate up to two reasons that best describe your reason for selecting unwilling or very unwilling.

Answers	Count	Percentage
Hygiene or odor concerns	44	17.7%

Impact on congestion and clutter on streets	36	14.5%
Negative impact on the neighborhood aesthetics	30	12.1%
Belief that the cost of implementing shared containers would be too high and the resources would be better spent on other initiatives	12	4.8%
Concern about potential loss of parking spots	25	10%
Other	37	14.9%

Table 35 shows surveyed residents' attitudes toward using lidded bins instead of bags for waste disposal, with a substantial majority expressing support for this change. Approximately 78% of residents are either very supportive (62%) or somewhat supportive (16%), suggesting a significant willingness to adopt this measure. Conversely, a smaller proportion expresses unsupportiveness, with 9% being very unsupportive and 4% somewhat unsupportive.

Table 36 provides insights into the reasons behind residents' unsupportiveness. Limited storage space for bins is the most frequently cited reason (9%), followed by hygiene or odor concerns (3%) and concerns about the impact on congestion and clutter on streets (3%).

Table 35: Would you be willing to set out your waste in lidded bins rather than bags if it led to a reduction in rodents?

Answers	Count	Percentage
Very Supportive	154	61.9%
Somewhat Supportive	41	16.5%
Neutral / Undecided	15	6%
Somewhat Unsupportive	11	4.4%
Very Unsupportive	23	9.2%

Table 36: Please indicate up to two reasons that best describe your reason for selecting somewhat unsupportive or very unsupportive.

Answers	Count	Percentage
Limited storage space for bins	22	8.8%
Hygiene or odor concerns	7	2.8%
Impact on congestion and clutter on streets	7	2.8%
Negative impact on aesthetic of neighborhood	5	2%
I do not believe that there is a rodent problem	3	1%
Other	15	6%

Table 37 shows that most residents are willing to participate (60%) in the separation of food waste for composting, when offered for free by the City. An additional 20% responded "maybe", with Table 38 showing that those respondents would be encouraged to participate if there was curbside collection of food waste (12%), city-provided caddies/containers for storing food waste (12%), and closer drop-off locations for food waste (6%).

Table 37: Would you separate your food waste/compost, which accounts for over 40% of the waste stream, for composting if the service was offered for free by the City?

Answers	Count	Percentage
Yes	150	60.2%
Maybe	51	20.5%
No	43	17.3%

Table 38: For those who selected maybe, please indicate what would encourage you to participate.

Answers	Count	Percentage
Closer drop-off locations for food waste	15	6%
Curbside collection of food waste	30	12.1%
City-provided caddies/containers for storing food waste	31	12.5%
Information about what kinds of waste can be composted	17	6.8%
Other	7	2.8%

Table 39 shows residents' willingness to bring food waste/compost to a drop-off location. The responses indicate a varied spectrum, with approximately 47% expressing some degree of willingness (29% very willing and 19% somewhat willing), while around 45% show varying degrees of unwillingness (27% very unwilling and 19% somewhat unwilling). Table 40 provides insights into the reasons behind residents' unwillingness. Limited space to separate food waste at home is the most frequently cited reason (25%), followed closely by not having enough time to separate or transport food waste to drop-off locations (24%).

Table 39: How willing would you be to bring your food waste/compost to one of the City's compost drop-off locations, separate from your general garbage?

Answers	Count	Percentage
Very Willing	71	28.5%
Somewhat Willing	46	18.5%
Neutral / Undecided	14	5.6%
Somewhat Unwilling	46	18.5%
Very Unwilling	67	26.9%

Table 40: Please indicate up to two reasons that best describe your reason for selecting somewhat unwilling or very unwilling.

Answers	Count	Percentage
Not interested/motivated	27	10.8%

Limited space to separate my food waste from garbage in my home	62	24.9%
Do not have time to separate my food waste or transport it to a drop-off location	60	24.1%
Do not know where the compost drop-off sites are located	8	3.2%
Other	29	11.7%

Table 41 shows residents' willingness to bring their food waste to rodent-proof containers at their building, regularly collected by the City. A significant majority (67%) expresses a positive inclination, with 55% stating they are very willing and an additional 13% indicating they are somewhat willing. However, a notable portion (25%) expresses some degree of unwillingness, with 16% being very unwilling and 8% somewhat unwilling. Table 42 provides insights into the reasons behind residents' unwillingness. Limited space to separate food waste at home is the most frequently cited reason, followed by not having enough time to separate food waste.

Table 41: How willing would you be to bring your food waste/compost to rodent-proof containers at your building that are regularly collected by the City?

Answers	Count	Percentage
Very Willing	136	54.6%
Somewhat Willing	32	12.9%
Neutral / Undecided	15	6.0%
Somewhat Unwilling	21	8.4%
Very Unwilling	40	16.1%

Table 42: Please indicate up to two reasons that best describe your reason for selecting somewhat unwilling or very unwilling.

Answers	Count	Percentage
Not interested/motivated	13	5.2%
Limited space to separate my food waste from my other garbage in my home	41	16.5%
Do not have time to separate my food waste	21	8.4%
Other	20	8.0%

Table 43 shows residents of single-family buildings willingness to set out food waste/compost in rodent-proof bins to be collected by the city. Approximately 51% express some degree of willingness, with 26% being very willing and 9% somewhat willing. However, around 23% indicate varying degrees of unwillingness, with 5% very unwilling and 3% somewhat unwilling. Table 44 provides insights into the reasons behind residents' unwillingness. The most common factors include limited storage space for bins, not being interested or motivated, and not having enough time to separate food waste.

Table 43: If you live at a single-family property, would you be willing to set out your food waste/compost in rodent-proof bins for curbside collection by the City?

Answers	Count	Percentage
Very Willing	64	25.7%
Somewhat Willing	23	9.2%
Neutral / Undecided	41	16.5%
Somewhat Unwilling	7	2.8%
Very Unwilling	12	4.8%

Table 44: Please indicate up to two reasons that best describe your reason for selecting somewhat unwilling or very unwilling.

Answers	Count	Percentage
Not interested/motivated	6	2.4%
Limited storage space for bins	9	3.6%
Do not have time to separate my food waste	4	1.6%
Other	8	3.2%

In Table 45, residents were asked about their willingness to set out their food waste/compost in rodent-proof bins for curbside collection, specifically if a fee were involved. The responses indicate that 76% are not willing to incur an additional fee for this service, while 18% express a willingness to pay for rodent-proof bins for curbside collection.

Table 45: Would you be willing to set out your food waste/compost in rodent-proof bins for curbside collection for a fee?

Answers	Count	Percentage
Yes, I would	45	18.1%
No, I would not like to incur an additional fee	189	75.9%
Other	13	5.2%

Table 46 indicates residents' willingness to have less frequent garbage collection at their building to enable cost reductions. Approximately 29% of residents express some degree of willingness, with 12% being very willing and 17% somewhat willing. In contrast, around 57% indicate varying degrees of unwillingness, with 36% being very unwilling and 22% somewhat unwilling. Approximately 12% of respondents remain neutral or undecided on this matter. Table 47 shows the most common reason is limited storage space for waste between collections.

Table 46: Would you be willing to have less frequent garbage collection at your building to enable cost reductions?

Answers	Count	Percentage
Very Willing	30	12.1%

Somewhat Willing	42	16.9%
Neutral / Undecided	29	11.7%
Somewhat Unwilling	54	21.7%
Very Unwilling	89	35.7%

Table 47: Please describe your reason for selecting somewhat unwilling or very unwilling.

Answers	Count	Percentage
Limited storage space for waste between collections	122	49%
Other	42	16.9%

Table 48 indicates residents' willingness to receive less frequent garbage collection at their building if the City expands food waste/compost collection and/or drop-off options to compensate for some/all of the garbage collection dates. Approximately 47% of residents express some degree of willingness, with 25% being very willing and 22% somewhat willing. Conversely, around 42% indicate varying degrees of unwillingness, with 29% being very unwilling and 12% somewhat unwilling. Approximately 10% of respondents remain neutral or undecided on this matter. Table 49 show that the main reason behind residents' unwillingness is limited storage space for waste between collections. Compared to the tables above, residents appear to be more inclined to accept less frequent garbage collection if it is accompanied by an expansion of collection or drop-off options for food waste/compost, rather than receiving less garbage collection for a lower cost.

Table 48: Would you be willing to receive less frequent garbage collection at your building if the City also expanded food waste/compost collection and/or drop-off options to make up for some/all of the garbage collection dates?

Answers	Count	Percentage
Very Willing	63	25.3%
Somewhat Willing	54	21.7%
Neutral / Undecided	26	10.4%
Somewhat Unwilling	29	11.7%
Very Unwilling	72	28.9%

Table 49: Please describe your reason for selecting somewhat unwilling or very unwilling.

Answers	Count	Percentage
Limited storage space for waste between collections	73	29.3%
Other	28	11.2%

Table 50 reflects residents' willingness to participate in events promoting the reuse of items instead of discarding them. A significant majority express a positive inclination, with approximately 38% stating they are very likely to participate and an additional 33% indicating they are somewhat likely. Only a small

percentage (12%) express an unwillingness to participate. Residents who chose "somewhat unlikely" and "very unlikely" expressed concerns about the city incurring unnecessary costs, hygiene issues, inconvenience, and redundancy with existing platforms like Facebook Marketplace.

Table 50: Would you participate in events to reuse rather than discard items?

Answers	Count	Percentage
Very Likely	95	38.2%
Somewhat Likely	81	32.5%
Neutral / Undecided	38	15.3%
Somewhat Unlikely	14	5.6%
Very Unlikely	16	6.4%

Table 51 similarly assesses residents' attitudes toward participating in programs that focus on repairing household items rather than discarding them. The responses show a similar trend, with 38% expressing a high likelihood (very likely) and 28% indicating a moderate likelihood (somewhat likely). A substantial portion (20%) remains neutral or undecided, while 13% expresses some level of unwillingness. Residents who expressed unwillingness cited concerns about the cost to taxpayers, inefficiency compared to existing repair options, preference for purchasing new items, and lack of time or interest in participating in such repair initiatives.

Table 51: Would you participate in programs to repair rather than discard household items?

Answers	Count	Percentage
Very Likely	95	38.2%
Somewhat Likely	69	27.7%
Neutral / Undecided	49	19.7%
Somewhat Unlikely	12	4.8%
Very Unlikely	19	7.6%

A.8.2 Property Manager Survey Results

Of the three property managers that responded to this survey, one manages a building with three to four units, one manages a building with five to nine units, and one manages a building with more than 10 units.

When asked, "Would you support the City requiring residents to take their household waste and recyclables to shared containers located within a block of their residence?", two property managers indicated they would be very supportive and one indicated somewhat unsupportive.

When asked, "Would you be willing to set out waste from your building in lidded bins rather than bags curbside, if it led to a reduction in rodents?" all three property managers indicated very unwilling. They cited concerns about space constraints and storing bins within my building's property and belief that bins would increase congestion and clutter on the streets as reasons why they are unwilling.

When asked, "For your building(s), would you be willing to set out your residents' food waste/compost in bins for curbside collection by the City?" all three property managers indicated very unwilling. They cited the below concerns as reasons for their unwillingness:

- Not enough space to accommodate separate bins.
- Not enough time or resources to ensure proper organic waste separation among residents.
- Concerned about the costs associated with implementing organic waste separation and signage.
- Concerned about the potential odors and pests associated with organic waste separation.

When asked, "For your building(s), would you be willing to set out your food waste/compost in rodent-proof bins for curbside collection for a fee?", one property manager said no and two said "other." One respondent explained, "The volume of garbage would be impossible to use bins, we have garbage chutes and compactors and utilize tubing for waste to be brought to the curb."

When asked, "Would you be willing to receive less frequent garbage collection at your building to enable cost reductions?", two property managers said very unwilling and one said very willing.

When asked, "Would you be willing to receive less frequent garbage collection at your building if the City also expanded food waste collection and/or drop off options?", two property managers said very unwilling and one said undecided

A.8.3 Business Survey Results

Only two businesses responded to the business survey. Both identified their business type as “Retail & Shop” that do not sell food.

When asked, “Would you be willing to bring your business's waste and recyclables to shared containers within a block of your business?”, one business responded undecided and one very unwilling. When asked why, they listed hygiene/odor and potential loss of parking spots as potential concerns.

When asked, “Would you be willing to set out your business's waste in lidded bins rather than bags, if it led to a reduction in rodents?”, one business responded very willing and one responded somewhat unwilling. When asked why, they cited space constraints for storing bins and concern that bins would increase congestion and clutter on the streets.

When asked, “If garbage and recycling was charged based on how often you need waste collection rather than through property taxes, would you support this?”, one business responded very supportive and one responded very unsupportive.

When asked, “If more frequent waste collection is required for your business, are you in support of an additional fee per level of service or volume of waste?”, one business responded undecided and one responded very unsupportive.

When asked, “If the City provided an option for waste to be set out earlier than 7:30pm for an additional fee, would you be in support of the option?”, one business responded undecided and one responded very unsupportive.

As no food-generating businesses responded to the survey, respondents did not provide answers to questions around business food waste collection, food donation programs, or reusable food serviceware. These questions were:

- Would you be willing to separate your business's food waste/compost and set it out in bins for curbside collection by the City?
- Would you support the City providing uniform signage for your business's garbage, recycling, and food waste/compost containers?
- Would you participate in a food donation program?
- Would you be willing to participate in programs to use reusable food service ware for dining in your restaurant?
- Would you be willing to participate in programs to use reusable food service ware for delivery?

