

# Appendices

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1. **Waste Characterization Study Results;** Conducted April 2025 by Diversion Designers, LLC for the City of Worcester; presentation dated September 2025.

## **C. Analyses of the Community Surveys:**

1. **Residential Drop-Off Center for Waste Disposal Community Survey;** Conducted November 2024-February 2025; developed by DSR; presentation dated April 2025.
2. **Zero Waste Master Plan Community Survey; Spring 2025**
3. **Zero Waste Master Plan Community Survey; Fall 2025**

## **Appendix A:**

# **Key Takeaways from Studies that Informed the Plan**

## Studies and Surveys That Informed the Zero Waste Master Plan: Summary of Key Findings

Developing the Zero Waste Master Plan was a collaborative, community-driven process that ran from December 2024 through June 2026. The effort was led by the City's Department of Sustainability and Resilience in partnership with the Department of Public Works and supported by Zero Waste Associates. To ground the plan in local data and community input, the City conducted a Waste Characterization Study and three community surveys throughout the planning process. This document summarizes the key findings from each of those studies and surveys. For a full overview of how the plan was developed, see *Chapter 5: Plan Development Process*.

### Waste Characterization Study, April 2025

To better understand what Worcester residents, businesses, and schools throw away, the City conducted its first comprehensive Waste Characterization Study in April 2025. The study examined materials across multiple sectors of the waste stream to identify diversion opportunities. The full report is available in *Appendix B* of the Zero Waste Master Plan. Key findings include:

#### Organics & Yard Waste

- *High Organics Across Sectors:* Food scraps, soiled paper, and compostables made up a large share of waste, showing strong diversion potential.
- *Schools Highest in Organics:* 68.7% of school waste was organics, and 79% of that was edible food scraps.
- *Minimal Yard Waste Overall:* PAYT households had very low levels (0.12%), while larger residential buildings (7+ units, not on curbside collection) showed significantly more yard debris (4.46%)

## Recyclables

- Recyclable materials (paper, plastic, metal, and glass) were present throughout waste samples, but glass and metal were very low in all sectors.
- In municipal trash, paper accounted for nearly 27% (largest of all sectors), including 19% from corrugated cardboard and mixed recyclable paper.
- Plastics made up 15% of municipal trash (largest of all sectors), with nearly one-fifth coming from PET (#1) containers.
- Multi-family recycling was dominated by paper (47.1%), primarily corrugated cardboard and mixed recyclable paper (44.6%).

## Curbside Collection Programs Divert More Waste – PAYT Success

- Significantly more divertible materials were found in residential 7+ unit building trash not serviced by the City's curbside collection programs which demonstrates targeted collection programs achieve significant diversion when properly implemented

## Community Survey: Residential Drop-Off Center for Waste Disposal, Fall 2024

The Department of Sustainability and Resilience conducted a survey to gather community feedback on the Residential Drop-Off Center before the Zero Waste Master Plan development process began. A total of 509 responses were collected between November 8, 2024 and February 2, 2025, primarily in English, with two responses in Spanish and Portuguese. A detailed summary of results is available in *Appendix C-1*. Key findings include:

## Community Satisfaction

- 79% of respondents reported being satisfied or very satisfied with the services offered.
- Less than 10% of respondents weren't satisfied.
- Younger residents (under 50) report less satisfaction than older residents.

### **Drop-Off Survey Hours**

- Weekends, specifically Saturday mornings and afternoons are the most convenient days and times to use the drop-off center.
- Bulk Waste is offered only on Wednesdays and Saturdays – restricting the most common use of the center.

### **Community Feedback**

- 335 residents commented on the drop-off center services.
- Half of comments were positive, praising the center. One third of comments were negative or mixed.
- Positive comments focused on friendly staff and ease of use. While negative comments focused on the need to make an appointment and inconvenient hours.
- Some residents gave positive satisfaction ratings, but left negative comments, implying even those who like the center, see room for improvement.

### **Community Survey: Zero Waste Master Plan, Spring 2025**

Zero Waste Associates conducted a citywide survey in Spring 2025 to gather community perspectives on waste management in Worcester. A total of 1,820 responses were collected between April 4 and May 29, 2025. Key findings include:

- Respondents are interested in wheeled carts for recycling and trash
- Some would like curbside collection of food scraps and yard trimmings
- There is a preference for keeping the collection services weekly
- There are concerns about litter and recycling bin quality
- Respondents appreciated timely collection, friendly hard-working staff, and communication about service changes

## Community Survey: Zero Waste Master Plan, Fall 2025

A follow-up survey was conducted in Fall 2025 to gather community input on prioritizing the draft strategies for the Zero Waste Master Plan. A total of 749 responses were collected between November 19 and December 9, 2025. Key findings include:

- There is strong support for transitioning to wheeled carts for recycling and wheeled carts for trash
  - 58% of respondents listed recycling carts in the top 3 near-term strategies
  - 49% of respondents listed trash carts in the top 3 mid-term strategies.
- There is support for strategies that reduce litter and illegal dumping
  - Systemic cleanup 45%, Plastic reduction ordinance 26%, Expand "WooBins" 38%, Drop-off for residential trash 53%, Single use foodware ordinance 35%

Timeline specific findings include:

### Near-Term Strategies

Near-term Strategies – alignment of the top 3 strategies among all groups (homeowners, renters, non-participants of PAYT)

- Edible Food Recovery and Donation
- Wheeled Carts for Recycling
- Semi-Annual Systemic Citywide Cleanup

### Mid-Term Strategies

Mid-term Strategies – alignment for PAYT participants of the top 3 strategies:

- Wheeled Carts for Trash (combined)
- Residential Drop-Off Center Expansion
- Increase the number of "WooBins"

Not surprisingly – different priorities for the non-participants of the PAYT:

- Increase the number of “WooBins”
- Single-Use Plastics Reduction
- Require Property Owners/Haulers to Provide Recycling Collection
- Residential Drop-Off Center Expansion

### **Long-Term Strategies**

Long-term Strategies – alignment of the top 3 strategies among all groups (homeowners, renters, non-participants of PAYT)

- Drop-off Sites for Residential Trash
- Expand Library of Things
- Reduce Single-Use Foodware and Litter

# **Appendix B:**

## **Local Waste Research**

### **Waste Characterization Study Results**

Conducted April 2025 by Diversion Designers, LLC for the City of Worcester; presentation dated September 2025.



The City of  
Worcester



# Waste Characterization Study Results

September 2025

W O R C E S T E R

# Waste Characterization Study Overview

- Worcester hired Diversion Designers, LLC. to conduct a comprehensive waste characterization study in April 2025 to provide baseline data for its Zero Waste Master Plan (ZWMP).
- Diversion Designers collected 111 samples weighing over 22,000 pounds total from 103 locations across six sectors: residential (1-6 units, serviced by the City's curbside collection programs), multi-family residential (7+ units, not serviced by the City's curbside collection programs), Worcester Public Schools, commercial businesses, municipal buildings, and illegal dump sites
- Materials were sorted into 50 categories using stratified random sampling to achieve 90% confidence level statistical significance.



# Samples Collected & Studied

| Sector                              | Refuse Samples | Recycling Samples | Locations                      |
|-------------------------------------|----------------|-------------------|--------------------------------|
| Residential (1-6 units)             | 25             | -                 | 5 routes over 5 days           |
| Multi-family Residential (7+ units) | 15             | 3 <sup>1</sup>    | 4 typologies                   |
| Commercial                          | 40             | 5                 | 10 typologies                  |
| Schools                             | 9              | -                 | 3 elementary, 3 middle, 3 high |
| Municipal Buildings                 | 8              | -                 | 7 facilities                   |
| Illegal Dump Sites                  | 4 <sup>2</sup> | -                 | 4 locations                    |
| <b>Total</b>                        | <b>103</b>     | <b>8</b>          | <b>103 locations</b>           |

1. Intended to collect more recycling samples from multi-family buildings; however, random sampling revealed that many buildings did not have recycling dumpsters available
2. Intended to sample five sites; however, one site was found to be clean at the time of sampling.

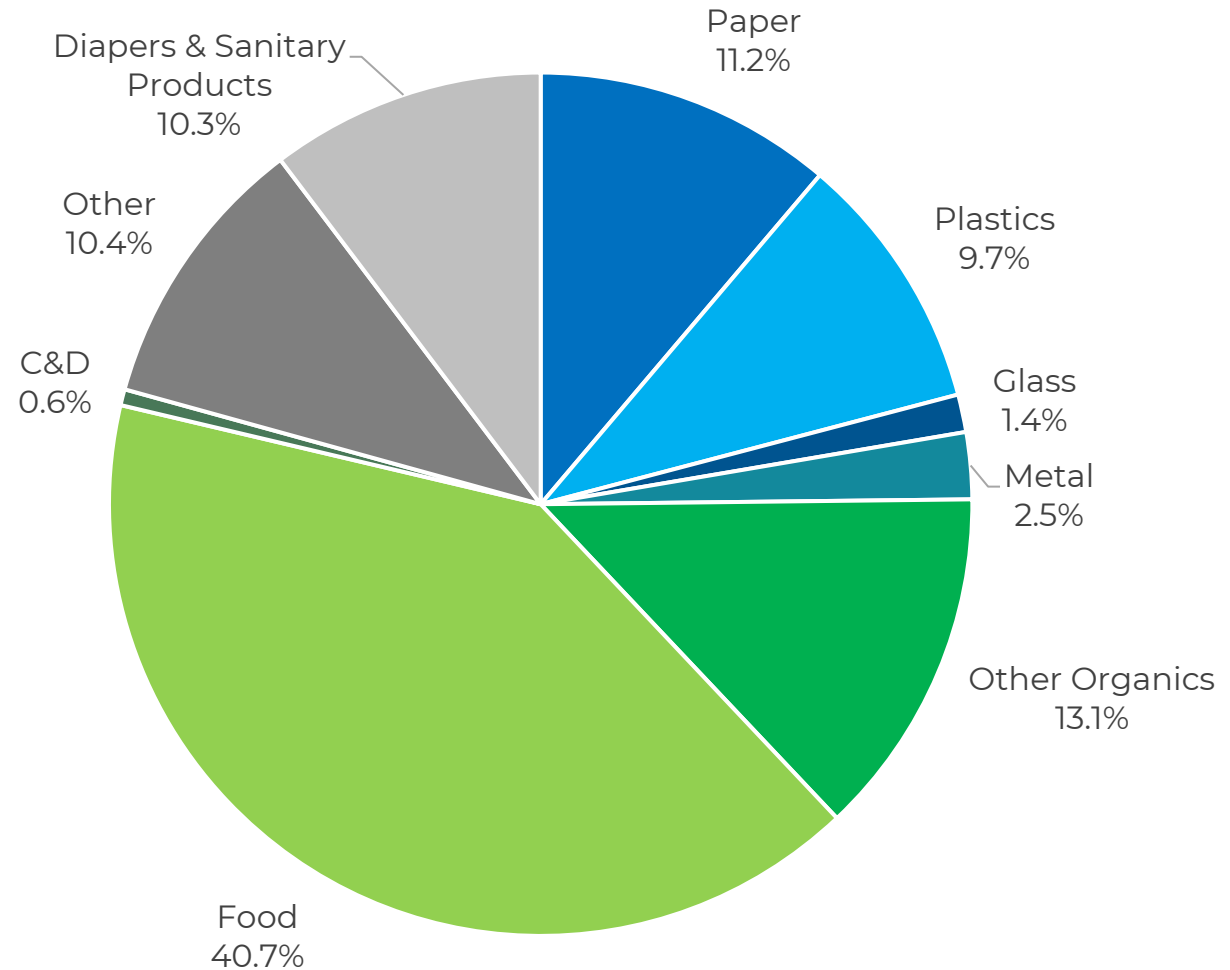


# STUDY RESULTS BY SECTOR

# Residential Trash (1-6 units)

## Sample:

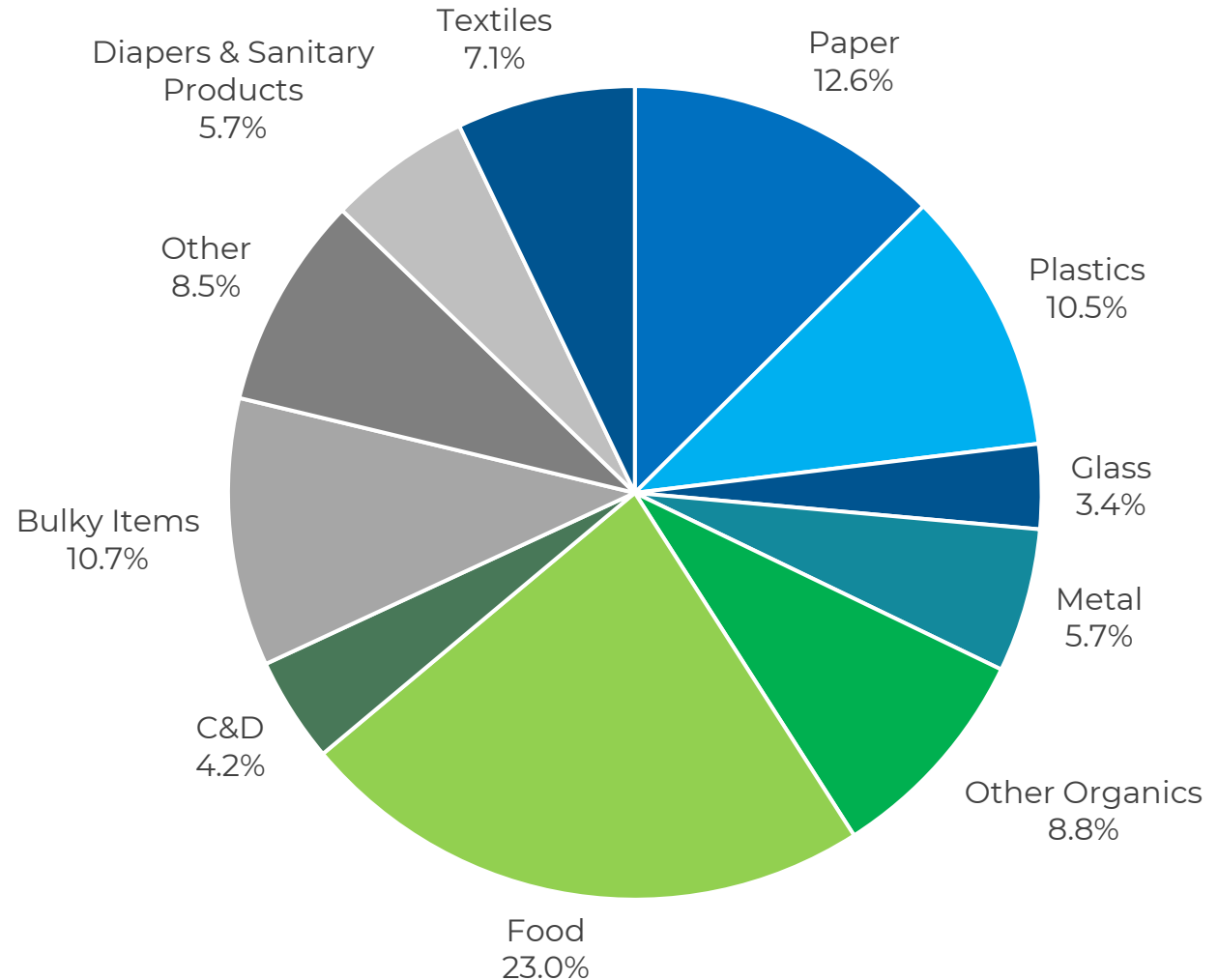
- Collected from all five collection routes over five weekdays during normal collection hours.
- Houses randomly selected using a random number generator to determine skip intervals.
- Multiple residences combined to produce 200+ pound samples.



# Residential Trash (7+ units)

## Sample:

- Used quadrant-based mobile collection with random number generator determining sampling sequence
- Mid-rise apartments (4-7 stories)
- Garden-style apartments (1-3 stories)
- Mixed-use buildings
- Converted warehouses/lofts.

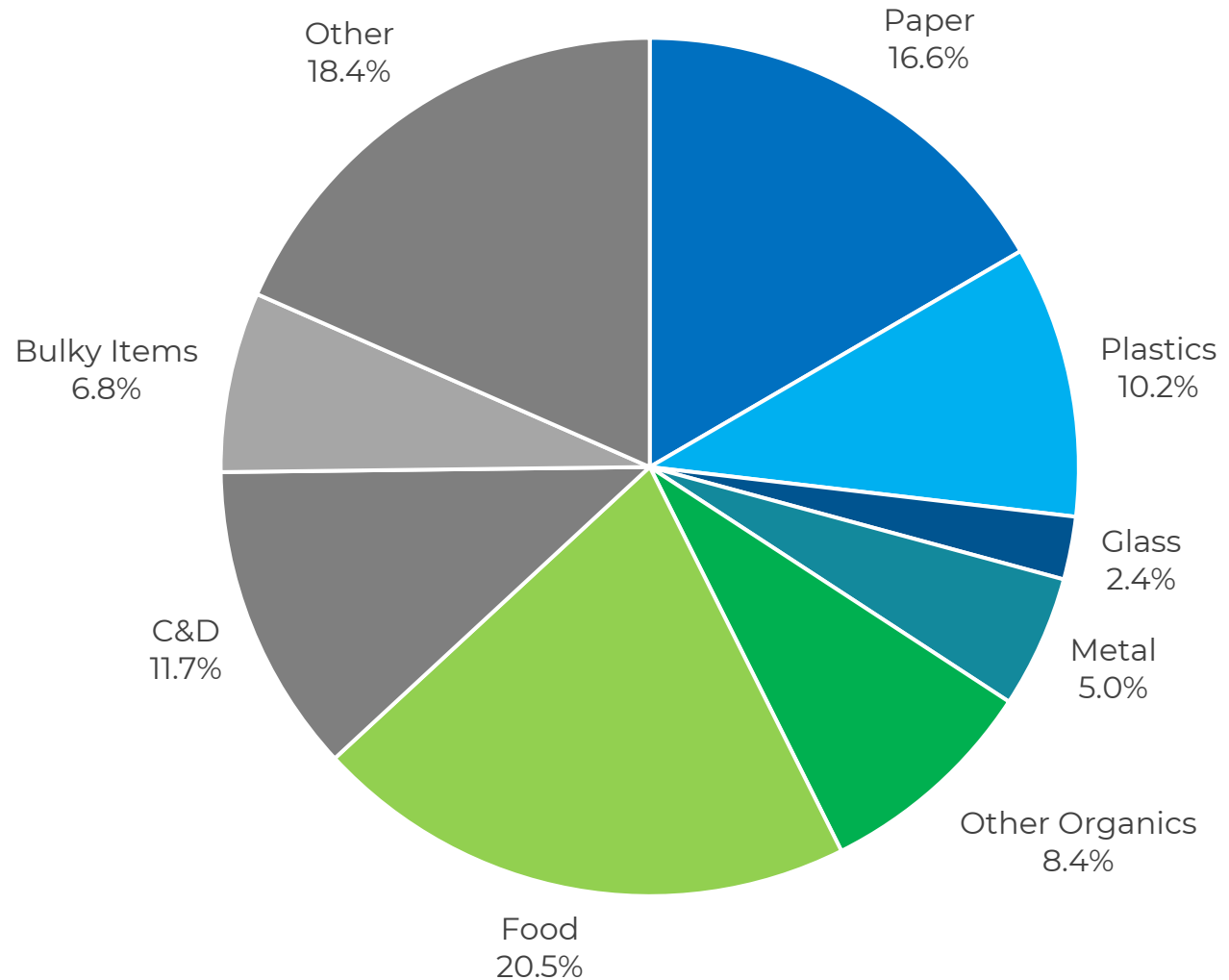


# Commercial Trash

## Sample:

40 businesses across 10 typologies using post-stratification random sampling. Business types included:

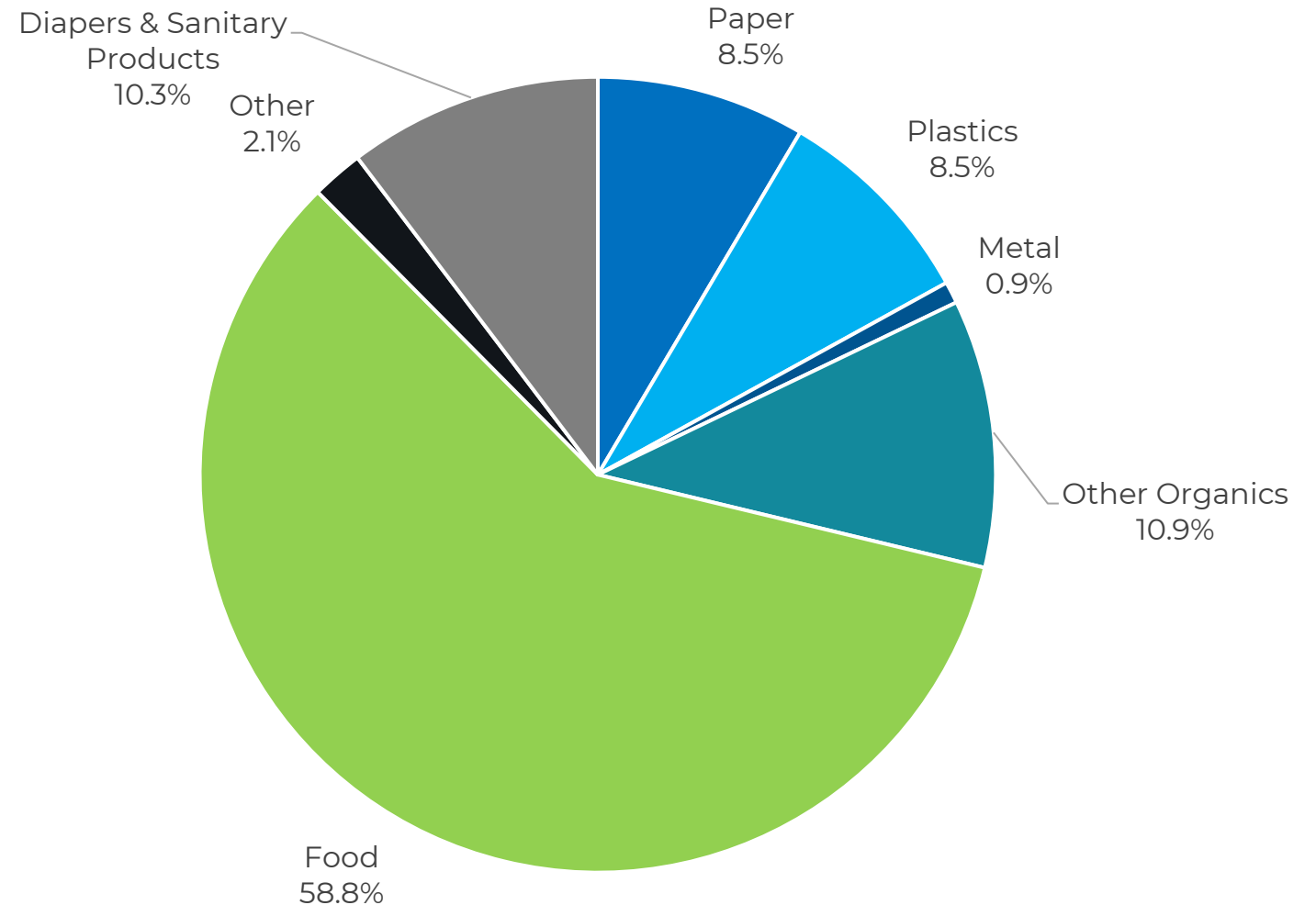
- Food Service & Hospitality
- General Retail
- Healthcare Facilities
- Educational Institutions
- Office and Professional Services
- Manufacturing and Industrial
- Personal Services
- Freight and Logistics



# Worcester Public Schools

## Sample:

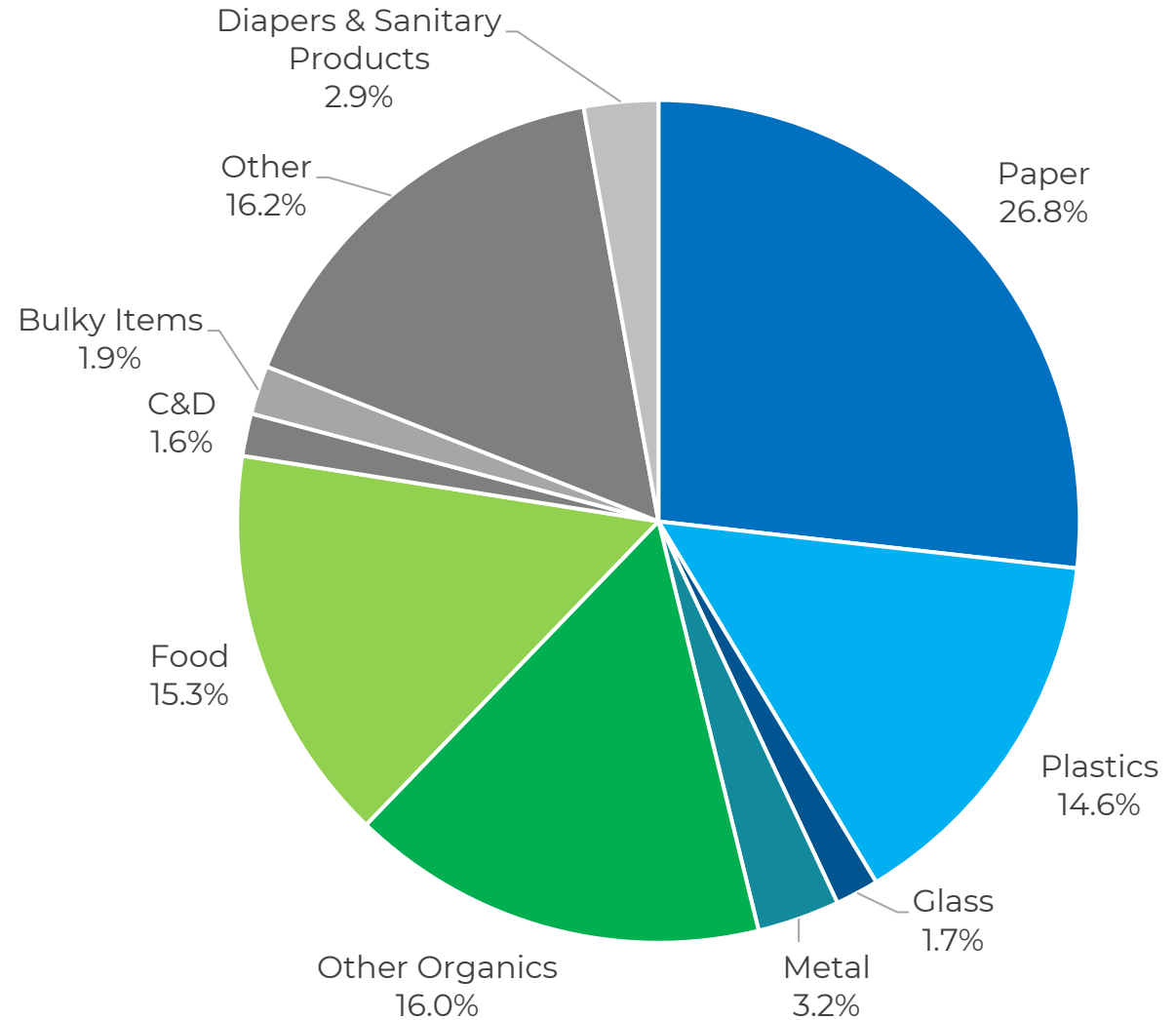
- Three schools per level (elementary, middle, high) selected for geographic and socioeconomic diversity.
- Sampling during the regular school year from aggregated cafeteria, classroom, and administrative waste.



# Municipal Buildings

## Sample:

1. Inspectional Services
2. Worcester Public Library (main)
3. City Hall
4. Emergency Management Headquarters
5. Worcester Senior Center
6. Fire Department Headquarters
7. Police Headquarters

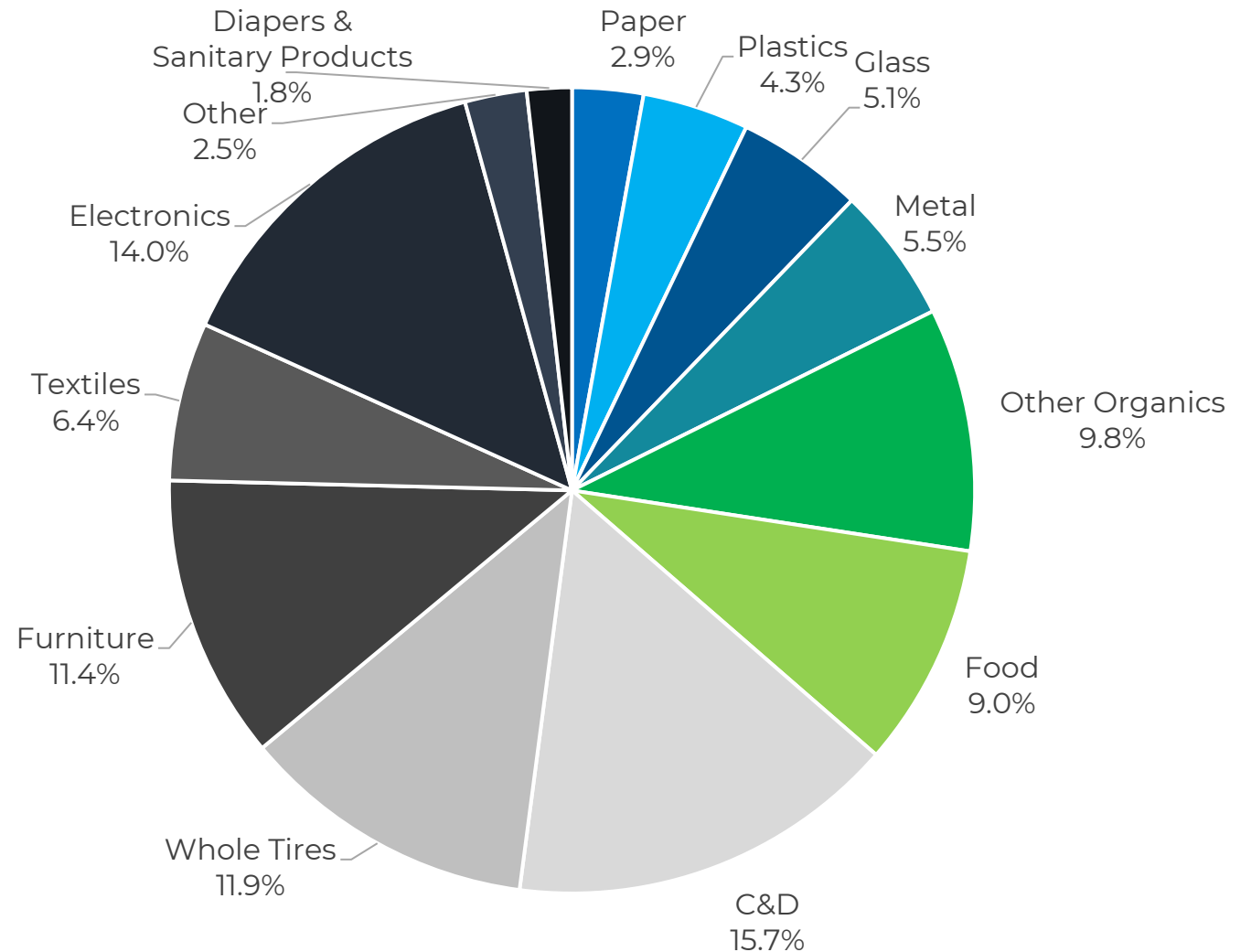


# Illegal Dump Sites

## Sample:

Five locations were selected as sampling sites based on high-litter areas identified through Quality of Life Team coordination:

- Granite St.
- Bluff St.
- Walpole St.
- Mayfield St.
- Eastern Ave. was also identified but contained no refuse at the time of sampling.



# Material Composition by Sector

| Material | Resi.<br>(1-6) | Resi.<br>(7+) | Comm.  | Schools | Muni.  | Illegal<br>Dumps | Recycl<br>e (7+) | Recycle<br>Comm |
|----------|----------------|---------------|--------|---------|--------|------------------|------------------|-----------------|
| Paper    | 11.20%         | 12.55%        | 16.61% | 8.49%   | 26.78% | 2.85%            | 47.10%           | 93.80%          |
| Plastics | 9.71%          | 10.52%        | 10.24% | 8.49%   | 14.58% | 4.27%            | 12.18%           | 1.36%           |
| Glass    | 1.41%          | 3.36%         | 2.37%  | 0.02%   | 1.66%  | 5.09%            | 3.81%            | 2.58%           |
| Metal    | 2.50%          | 5.72%         | 4.99%  | 0.88%   | 3.16%  | 5.45%            | 2.70%            | 0.67%           |
| Organics | 53.87%         | 31.76%        | 28.91% | 69.69%  | 31.32% | 18.72%           | 5.62%            | 0.49%           |
| C&D      | 0.60%          | 4.18%         | 11.69% | 0.02%   | 1.63%  | 15.69%           | 0.13%            | 0.00%           |
| Bulky    | 0.00%          | 10.66%        | 6.79%  | 0.00%   | 1.87%  | 23.31%           | 16.91%           | 0.00%           |
| Other    | 20.71%         | 21.25%        | 18.40% | 12.42%  | 19.01% | 24.61%           | 11.53%           | 1.11%           |



# KEY FINDINGS

# Organics & Yard Waste

- **High Organics Across Sectors:** Food scraps, soiled paper, and compostables made up a large share of waste, showing strong diversion potential.
- **Schools Highest in Organics:** 68.7% of school waste was organics, and 79% of that was edible food scraps.
- **Minimal Yard Waste Overall:** PAYT households had very low levels (0.12%), while larger residential buildings (7+ units, not on curbside collection) showed significantly more yard debris (4.46%).

| Sector                   | Organics | Yard Waste |
|--------------------------|----------|------------|
| Residential (1-6 units)  | 53.75%   | 0.12%      |
| Residential (7+ units)   | 27.30%   | 4.46%      |
| Commercial               | 27.58%   | 2.33%      |
| Worcester Public Schools | 68.73%   | 0.96%      |
| Municipal Buildings      | 30.75%   | 0.57%      |
| Illegal Dump Sites       | 12.01%   | 6.71%      |



# Recyclables

- Recyclable materials (paper, plastic, metal, and glass) were present throughout waste samples, but glass and metal were very low in all sectors.
- In municipal trash, paper accounted for nearly 27% (largest of all sectors), including 19% from corrugated cardboard and mixed recyclable paper.
- Plastics made up 15% of municipal trash (largest of all sectors), with nearly one-fifth coming from PET (#1) containers.
- Multi-family recycling was dominated by paper (47.1%), primarily corrugated cardboard and mixed recyclable paper (44.6%).



# Curbside Collection Programs Divert More Waste – PAYT Success

- Significantly more divertible materials were found in residential 7+ unit building trash not serviced by the City's curbside collection programs which demonstrates targeted collection programs achieve significant diversion when properly implemented

| Material    | Residential (1-6 units) | Residential (7+ units) |
|-------------|-------------------------|------------------------|
| Yard debris | 0.12%                   | 4.46%                  |
| Bulky waste | 0%                      | 10.66%                 |
| C&D         | 0.60%                   | 4.18%                  |
| Recyclables | 24.82%                  | 32.15%                 |

# Other Observations

- Illegal dumpsites had the highest rates of glass (5.1%), construction & demolition debris (15.7%), and bulky items (23.3%), along with high levels of metal (5.5%) and electronics (14%).
- Diapers and sanitary products were most prevalent in residential waste – 7+ units (5.7%) and 1-6 units (10.3%).



# LEARN MORE

Read the full report and learn more about Worcester's Zero Waste Program at:  
[WorcesterMA.gov/DSR](http://WorcesterMA.gov/DSR)

Contact us at:  
[ZeroWaste@worcesterma.gov](mailto:ZeroWaste@worcesterma.gov)



# **Appendix C:**

## **Analyses of the Community Surveys**

### **Residential Drop-Off Center for Waste Disposal Community Survey**

Conducted November 2024-February 2025; developed by DSR; presentation dated April 2025.

### **Zero Waste Master Plan Community Survey, Spring 2025**

### **Zero Waste Master Plan Community Survey, Fall 2025**

# Analysis Summary of the Worcester Community Survey Results

## *Residential Drop-Off Center for Waste Disposal*

Developed by the Dept of Sustainability and Resilience

April 2025

1



2

## Introduction and Objectives

- The City of Worcester has a drop-off center at 1065 Millbury Street and two satellite drop-off centers on Chandler Street and Clark Street.
  - These centers allow Worcester residents to dispose of hazardous waste, bulk items, yard waste, E-waste, recycling, and more.
  - The centers are open from April to November and closed during the winter months.
- In Fall of 2024, the City created a community survey to explore whether the drop-off center's hours are adequate and if residents satisfied with the services offered.
- The implementation of the survey was at the request of the City manager in response to complaints that the center hours aren't convenient.



3

## Methodology

- In November of 2024, DSR released a community survey asking resident's opinions of the drop-off center services offered by the city.
  - The survey was released via Microsoft forms and offered the questions in English, Spanish, Portuguese, and Vietnamese.
  - DSR promoted the survey through:
    - Social media posts on the City's Instagram and Facebook pages
    - The DSR newsletter
    - Advertisements on a local Spanish newspaper's website (Vocero)
    - Drop-off center appointment confirmations emails
- 509 responses were collected between November 8, 2024, and February 2, 2025.
  - Responses were primarily in English, only two respondents replied in a different language, Spanish and Portuguese.

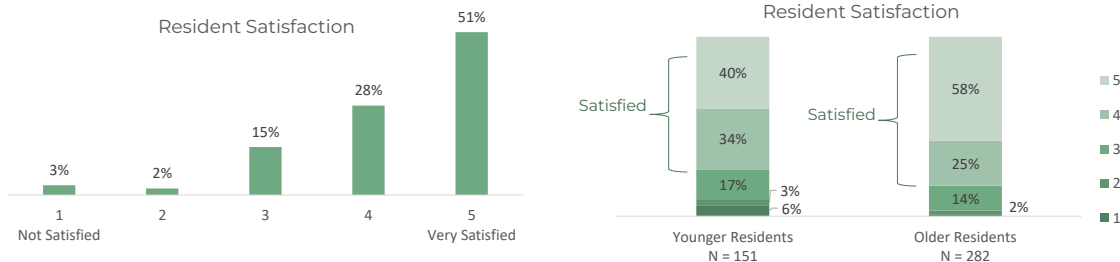
NOTE: Due to the self-selection nature of filling out the survey, certain demographics are underrepresented.



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## Key Conclusions: Community Satisfaction

- 79% of respondents reported being satisfied or very satisfied with the services offered.
- Less than 10% of respondents weren't satisfied.
- Younger residents (under 50) report less satisfaction than older residents.

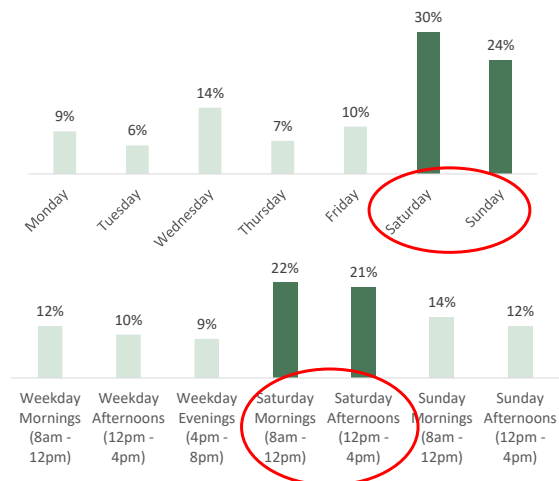


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## Key Conclusions: Drop-Off Survey Hours

Weekends, specifically Saturday mornings and afternoons are the most convenient days and times to use the drop-off center.

Bulk Waste is offered only on Wednesdays and Saturdays – restricting the most common use of the center.



Which days would be most convenient for you to use the Drop-Off Center? (Select up to four) N = 1478

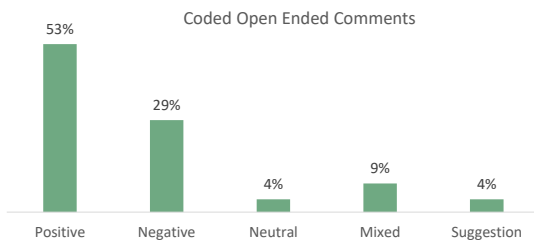
What time of day would be most convenient for you to use the Drop-Off Center? (Select up to three) N = 1311



6

## Key Conclusions: Community Feedback

- 335 residents commented on the drop-off center services.
- Half of comments were positive, praising the center. One third of comments were negative or mixed.
- Positive comments focused on friendly staff and ease of use. While negative comments focused on the need to make an appointment and inconvenient hours.
- Some residents gave positive satisfaction ratings, but left negative comments, implying even those who like the center, see room for improvement.



"Always friendly workers, easily accessible and always well maintained."

"Frustrating to remember the service hours and to book in advance for some drop offs."

Please explain your answer. [What is your level of satisfaction with the services at the Drop-Off Center?] N = 335



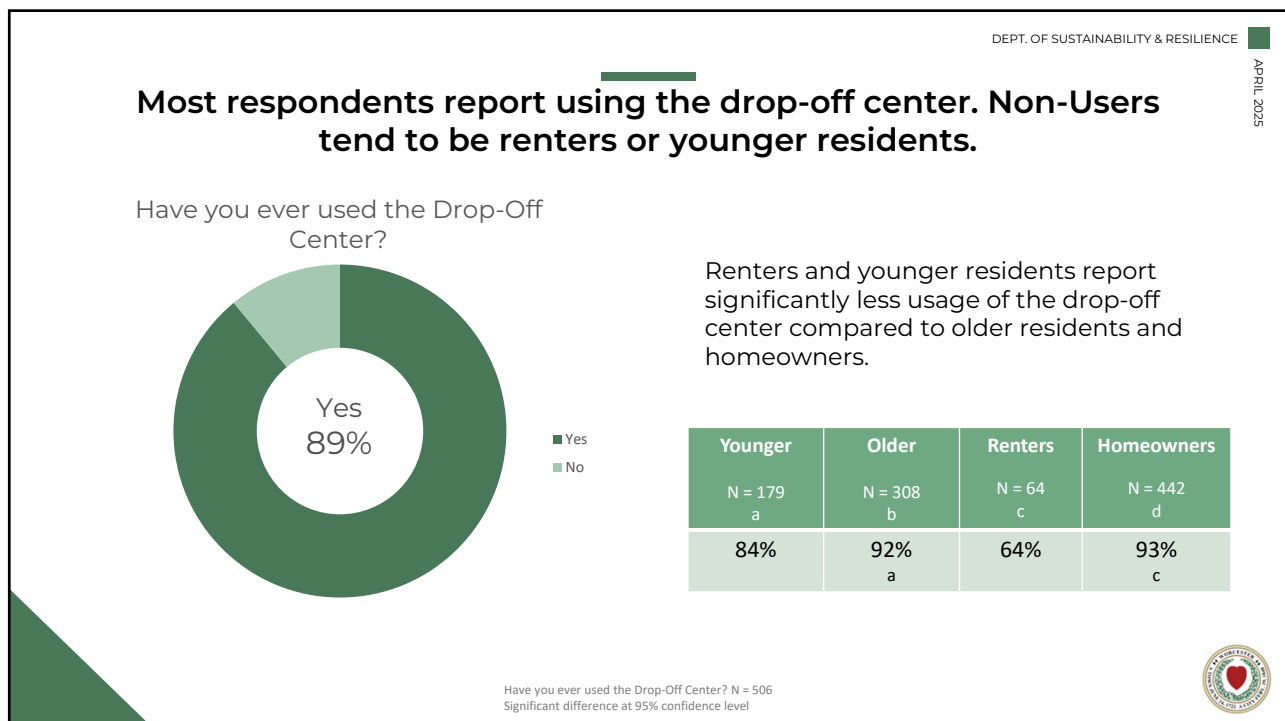
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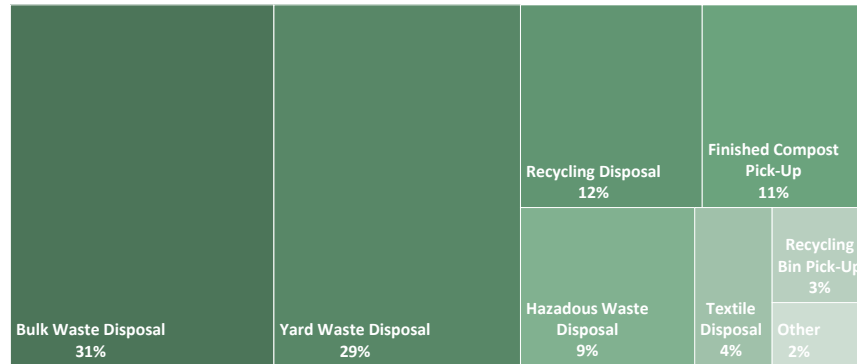


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## Bulk Waste and Yard Waste Disposal were the most used services.

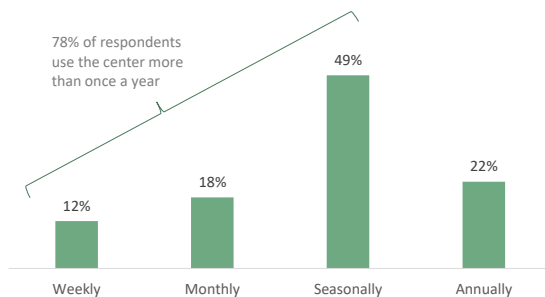


What services have you used at the Drop-Off Center in the last year? (Select all that apply) N = 1011



11

## Over 75% of residents use the center at least twice a year. The frequency of usage corresponds with what services resident's use.

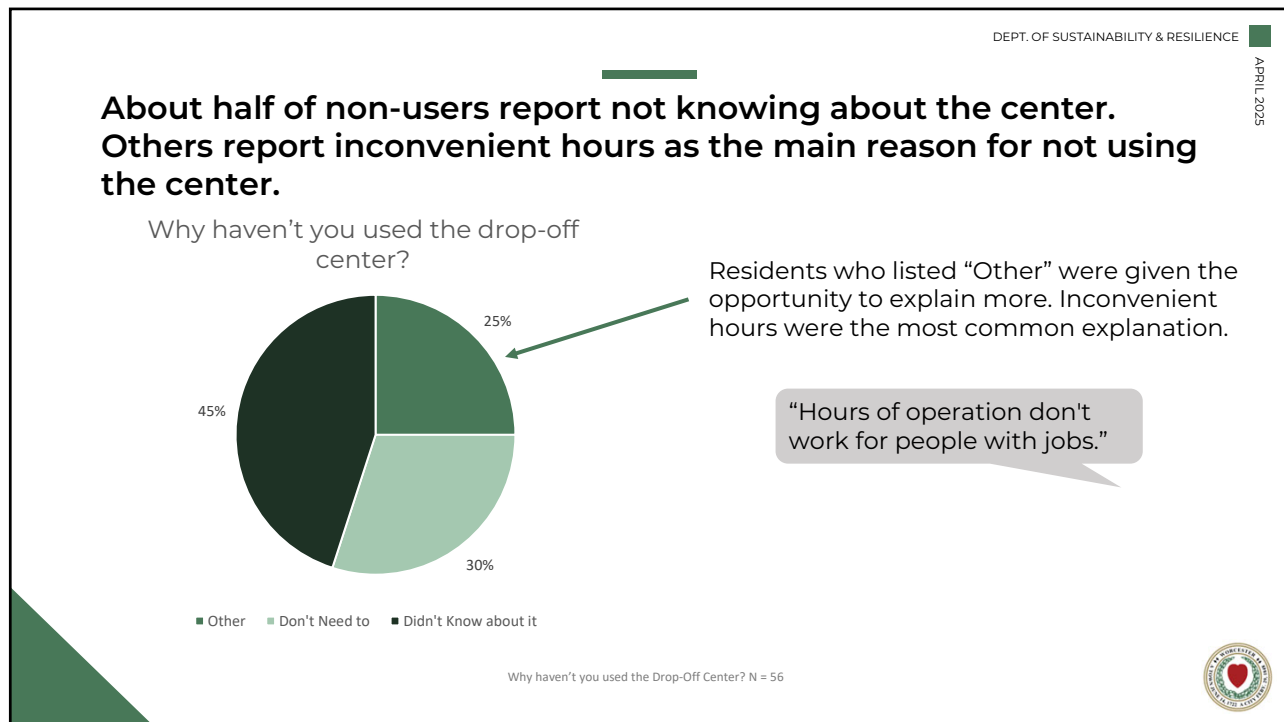


- **Weekly and monthly users** use the center, similarly, disposing of **recyclables and yard waste**.
- **Seasonal users** primarily use the center for **bulk-waste and yard waste**. They are less likely to use the center for recyclables.
- **Annual users** are primarily using the center for **bulk-waste** and are more likely to use the center for hazardous waste and less for yard-waste than other users.

How often do you use the services at the Drop-Off Center? N = 450  
What services have you used at the drop-off center in the last year?



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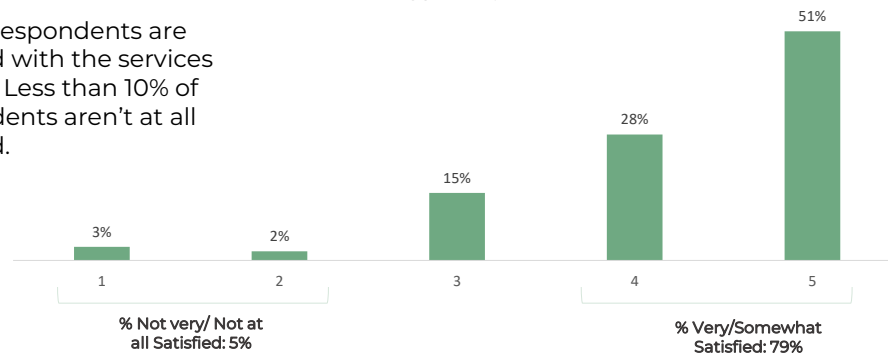
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## Residents are generally satisfied with the drop-off center.

### Resident Satisfaction

Mean = 4.2

79% of respondents are satisfied with the services offered. Less than 10% of respondents aren't at all satisfied.



What is your level of satisfaction with the services at the Drop-Off Center? N = 506



15

## Younger Residents are less satisfied with the drop-off center than Older Residents.

### Resident Satisfaction



While both younger and older residents report high levels of satisfaction with the drop-off center, older residents report statistically significant higher levels of satisfaction.

What is your level of satisfaction with the services at the Drop-Off Center?  
 Younger Residents N=151; Older Residents N = 282  
 Significant difference at 95% confidence level



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## Younger Residents noted that inconvenient hours of operation were why they lowered their rating.

"Very easy and convenient to drop off yard waste. Friendly and helpful staff. Hard to plan around limited weekend hours."

"It's fine, pretty basic. just hours aren't great for some things"



"Hours and location decrease rating"

"I feel that there should be more options other than 2 days/week"

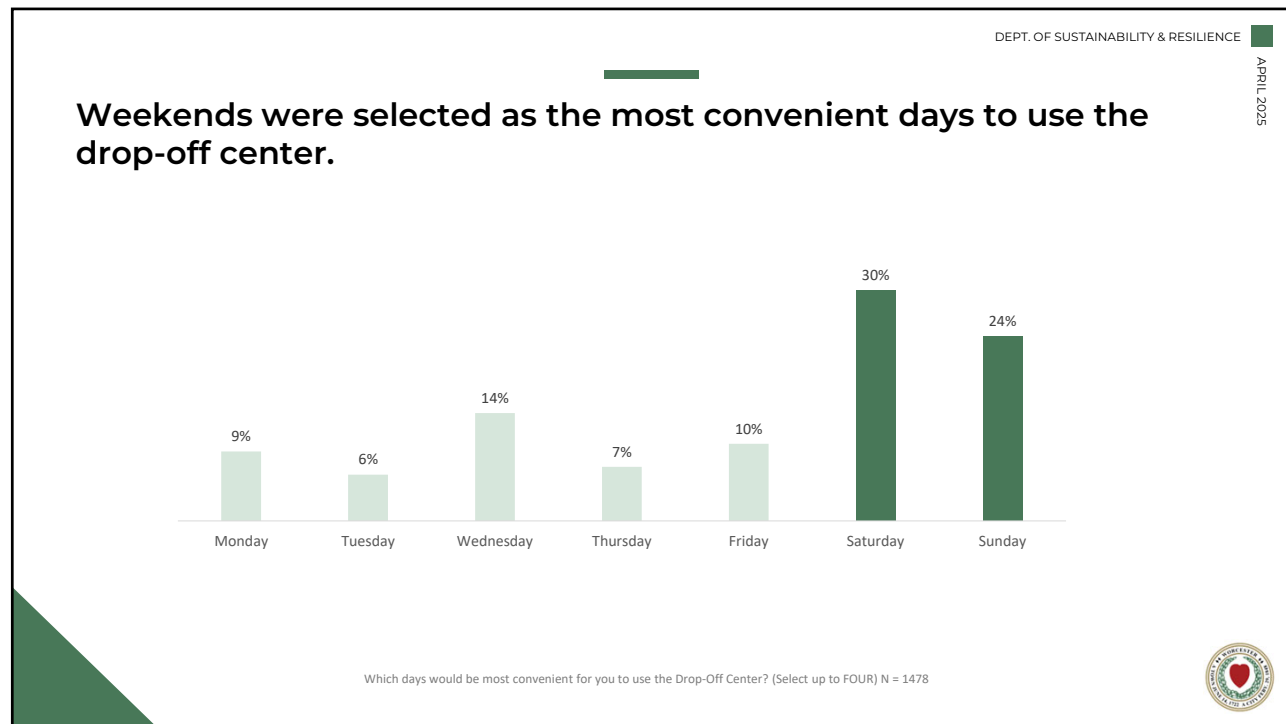
Please explain your ranking. N = 102



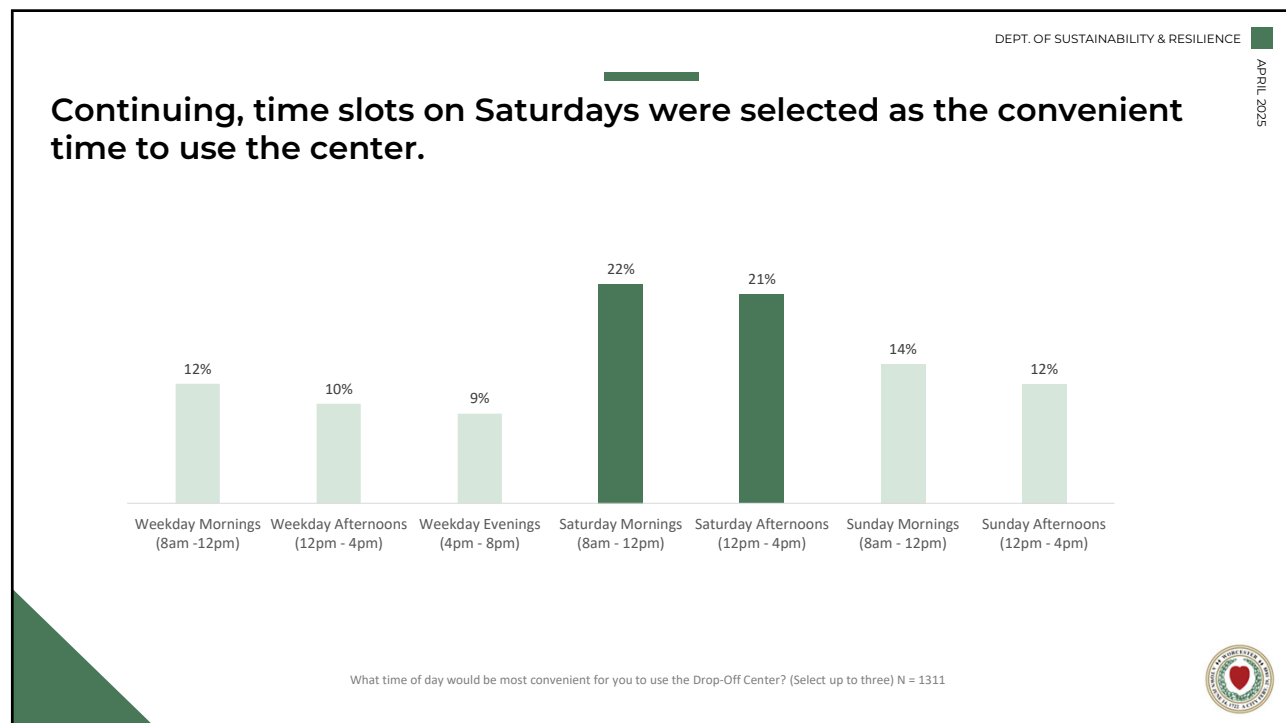
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## Older and Younger residents both listed Saturday times as the most convenient, however their secondary choices differed.

- Younger residents tended to prefer non-working hours.
- Older residents preferred morning times.

| Ranking | Younger Residents<br>N = 485<br>a | Older Residents<br>N=775<br>b  |
|---------|-----------------------------------|--------------------------------|
| 1       | Saturday Afternoons<br>22%        | Saturday Mornings<br>22%       |
| 2       | Saturday Mornings<br>22%          | Saturday Afternoons<br>21%     |
| 3       | Sunday Mornings<br>17%<br>b       | Weekday Mornings<br>16%<br>a   |
| 4       | Weekday Evenings<br>14%<br>b      | Sunday Mornings<br>13%         |
| 5       | Sunday Afternoons<br>14%          | Weekday Afternoons<br>12%<br>a |

What time of day would be most convenient for you to use the Drop-Off Center? (Select up to three)  
Significant difference at 95% confidence level



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## The center's current hours seem to align with resident's preferred hours of operation, however not all services are available during these times and hours of operation vary depending on source.

### The Center's Current Hours

Monday 8:30am – 3pm  
 Tuesday 8:30am – 3pm  
 Wednesday 8:30am – 7pm  
 Thursday 8:30am – 3pm  
 Friday 8:30am – 3pm  
 Saturday 9am – 4:30pm  
 Sunday 9am – 4:30pm

- Saturday, Sunday, and Wednesday are resident's overall most convenient day.
- However Bulk Waste, the most used center service, is only available two days a week- Saturday and Wednesday .
- Similarly, Yard Waste, the second most used service, is only available Wednesdays, Fridays, and on the Weekends.

What time of day would be most convenient for you to use the Drop-Off Center? (Select up to three) N = 1311



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DEPT. OF SUSTAINABILITY & RESILIENCE  
 APRIL 2025

**Some respondents noted that they would like the drop-off center to be open more in the offseason.**

"Wished it opened earlier in Spring."

"...we suggest adding more days per week for yard waste and expanding hazardous waste disposal days to at least once per month."

"I believe they should be open year-round or at least during the winter months once a month."

"... Only complaint is that it was closed for a while last winter, so I had to keep stuff around for a few months. Can we keep this open all year round?"

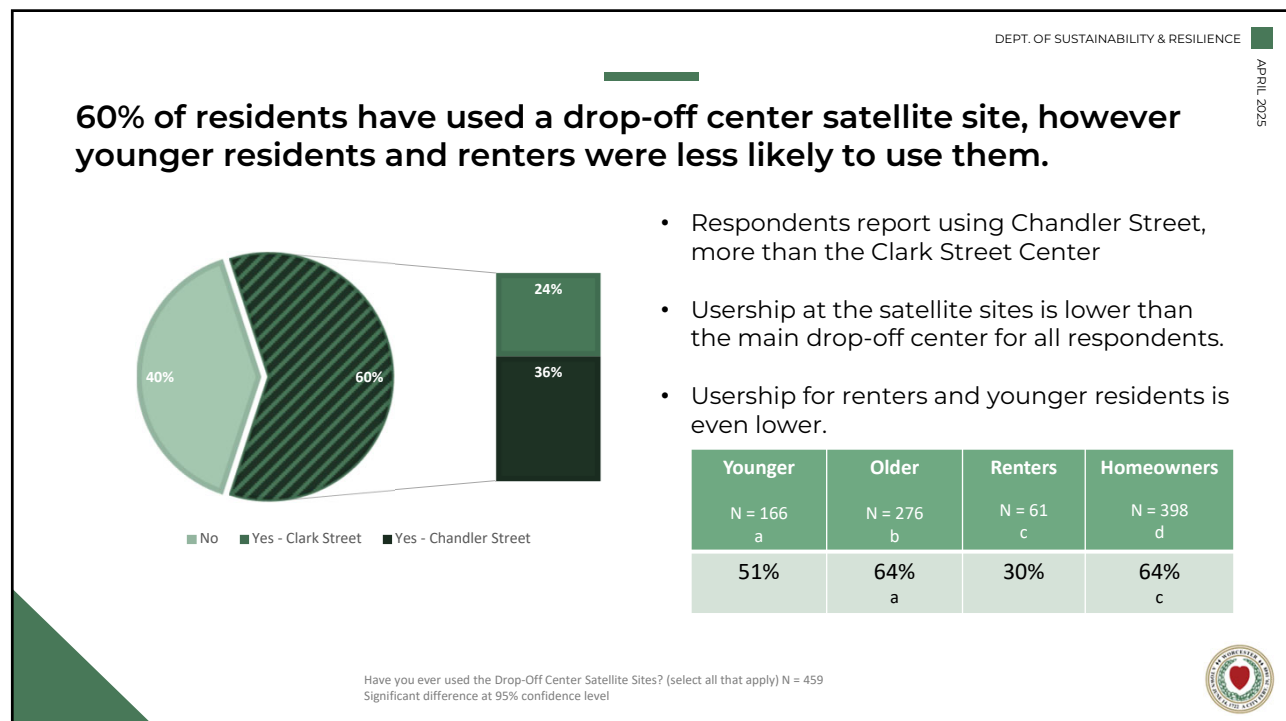
"...Would be helpful to have more days open during spring and fall clean up seasons for yard waste."



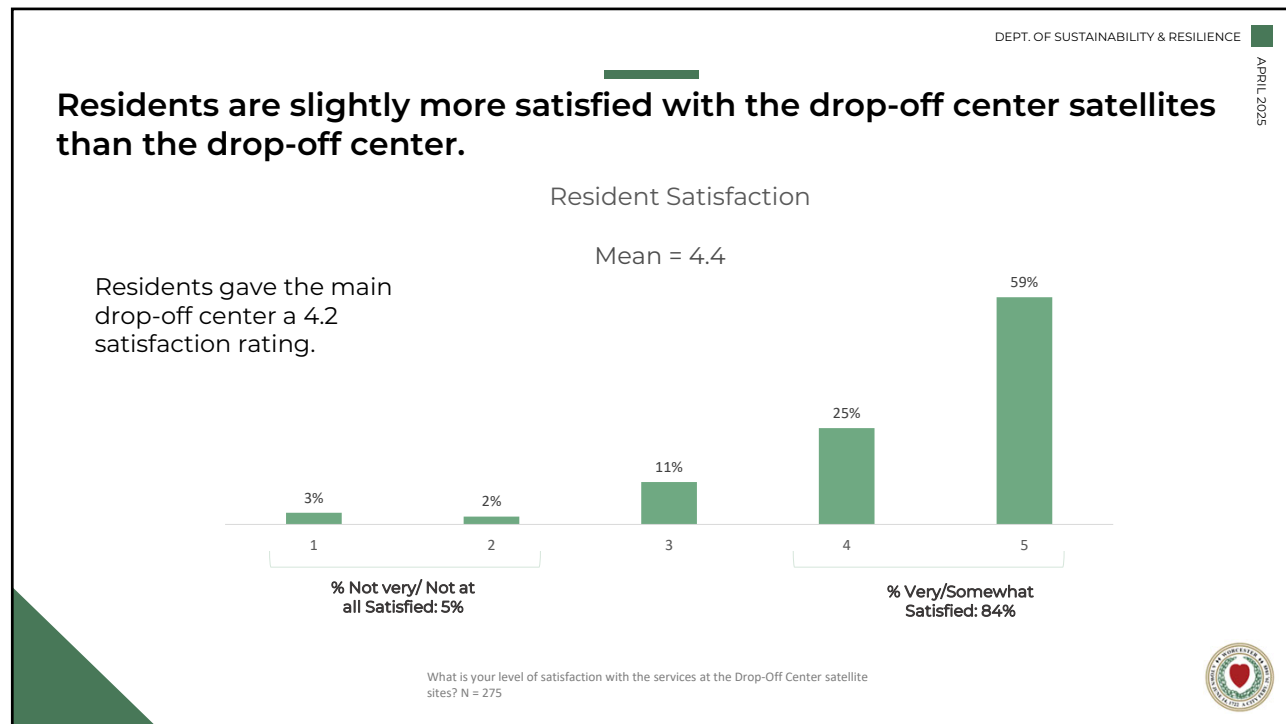
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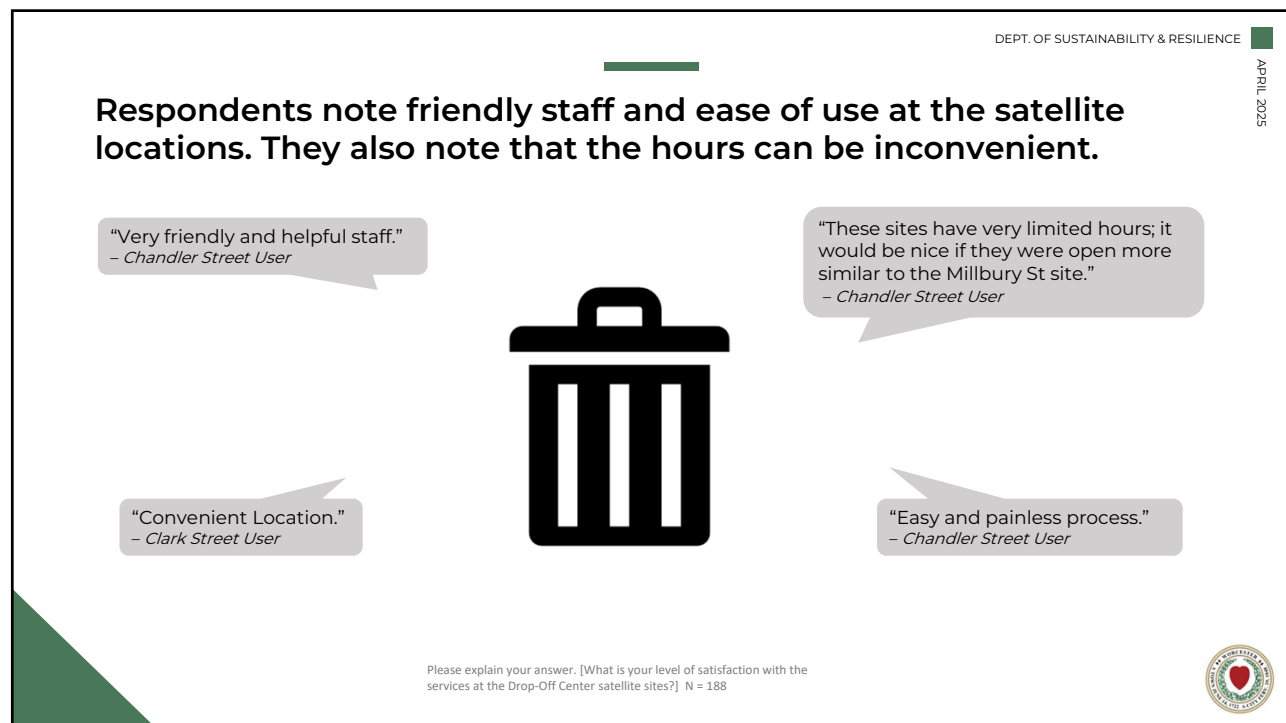
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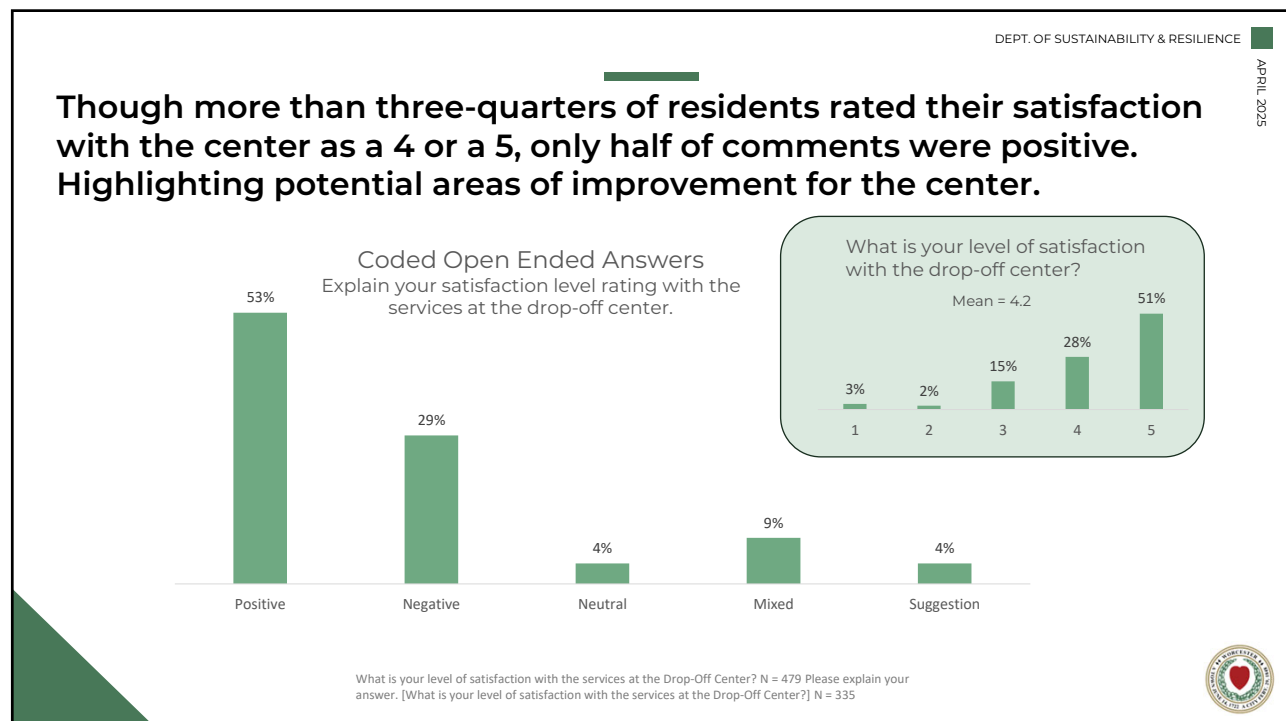
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[illegible]

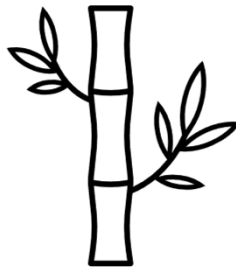
"Very convenient, staff is helpful."

"Frustrating to remember the service hours and to book in advance for some drop offs."

[illegible]

Many commenters noted that there are invasives and plastic waste in the compost, severely impacting the quality of our fertilizer and spreading invasives across Worcester.

"The compost pile is encircled by invasive knotweed."



"Finished compost surrounded by knotweed. Some knotweed growing in the compost. I have photos."

"There was a lot of small pieces of garbage (pieces of plastic, etc.) in the compost. I wouldn't use it again for my vegetable garden!"

"Very satisfied but there is knotweed growing out of the compost pile, so we have stopped using it..."

Please explain your answer. [What is your level of satisfaction with the services at the Drop-Off Center?]



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## Initial Recommendations

### Expand Service Availability

- Expand bulk waste disposal to Sundays
- Open the drop-off center monthly during the winter season

### Improve the Appointment System

- Increase number of available bulk waste disposal appointments on Saturdays
- Audit the appointment system to find potential areas for improvement (e.g. analyzing the number of no shows)
- Allow adjustments to bulk item declarations



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## Initial Recommendations

### Offer Clearer Communication about Drop-Off Center Hours

- Ensure the hours of operation listed is consistent across different platforms
- Advertise the availability of the drop-off center on Saturdays

### Improve Compost Services to Remove Invasives

- Create BMPs for residents bringing yard waste with invasives
- Remove Japanese Knotweed from in and around current compost pile
- Train staff to identify invasives and follow BMPs for removal

### Increase Outreach to Non-Users

- Create an outreach program for renters to increase awareness



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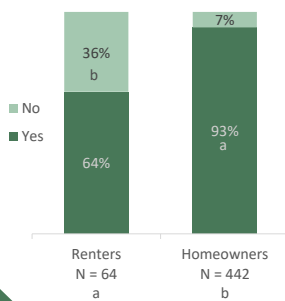
37



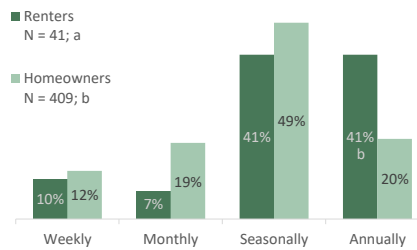
38

## Renters, compared to homeowners, are less likely to use the drop-off center, use it less frequently, and are less likely to use it for yard-waste disposal.

Have you ever used the drop-off center?



How often do you use the services at the drop-off center?



What services have you used at the drop-off center in the last year?

|                       | Renters<br>N = 81<br>a | Owners<br>N = 917<br>b |
|-----------------------|------------------------|------------------------|
| Bulk Waste Disposal   | 36%                    | 31%                    |
| Yard Waste Disposal   | 16%                    | 31% a                  |
| Hazardous Waste       | 7%                     | 9%                     |
| Textile Disposal      | 7%                     | 3%                     |
| Recycling Disposal    | 15%                    | 12%                    |
| Finished Compost      | 9%                     | 11%                    |
| Recycling Bin Pick-Up | 6%                     | 3%                     |



39

## Older residents report higher level of satisfaction with the drop-off center satellites.

Resident Satisfaction

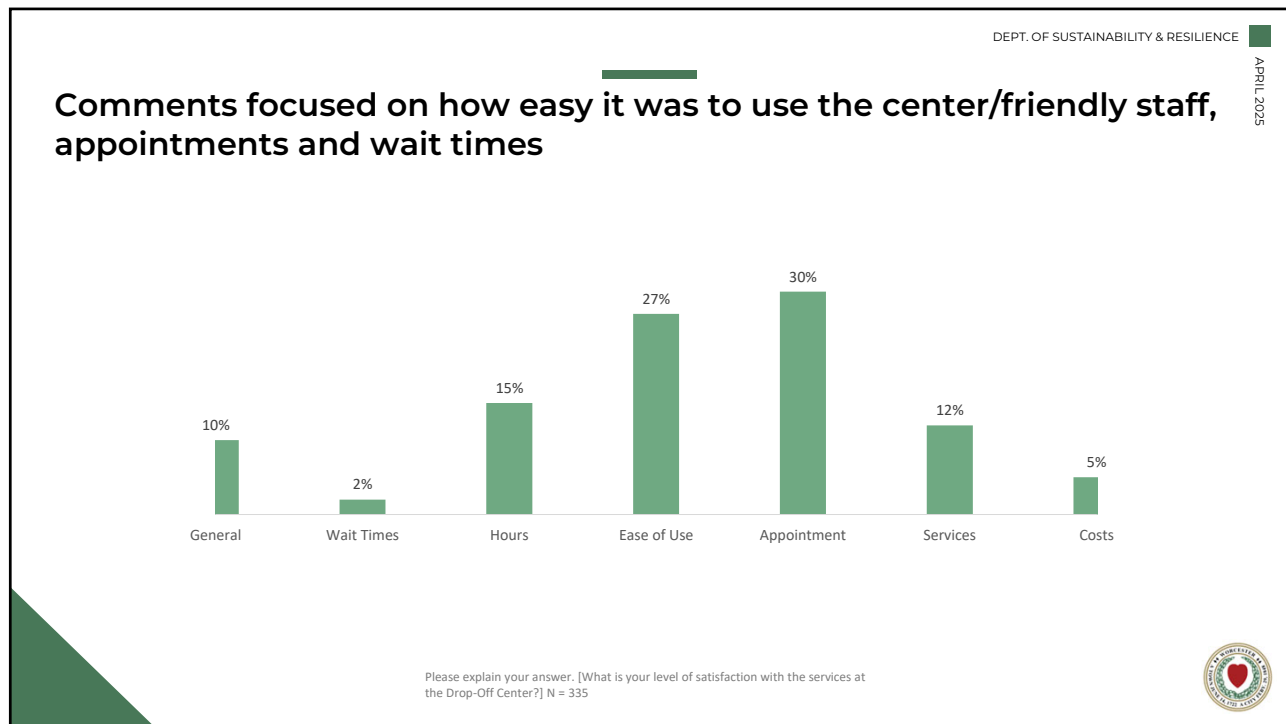


While both younger and older residents report high levels of satisfaction with the drop-off center, older residents report statistically significant higher levels of satisfaction.

What is your level of satisfaction with the services at the Drop-Off Center satellite sites? Younger Residents N=87; Older Residents N = 175  
Significant difference at 95% confidence level



40



41



42

## Due to self selection nature of the survey, respondents were not representative of Worcester as a whole.

Compared to the general Worcester population, respondents were more likely to be:

- Homeowners (87% vs 42%)
- Older than 50 (60% vs 31%)
- Live in wealthier zip codes (60% of respondents came from districts 01602, 01604, 01606)
- Speak English (only 2 respondents filled out the survey in a language other than English)

Do you own a home? N = 506; Please select your age. N = 487



43

## Despite extensive efforts to reach non-English speakers, the survey only captured two non-English responses, missing a large Worcester demographic.

- 39.2% Of Worcester residents speak a language other than English at home
- Extra efforts were put into making the survey accessible to non-English speakers
  - Survey was published in Spanish, Vietnamese, and Portuguese.
  - Advertisements were published in a local Spanish newspaper's website (Vocero)
  - Survey deadline was extended to capture non-English speaking residents.
  - Social media posts were run in English and Spanish
- Two residents filled out our survey in a language other than English. (One in Portuguese and one in Spanish)

[S1601: Language Spoken at Home - Census Bureau Table](#)



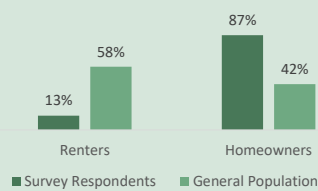
44

## Due to self selection nature of the survey, respondents were not representative of Worcester as a whole.

Respondents were more likely to be homeowners and older than the general population.

Only 42% of Residents are homeowners, but 87% of respondents reported owning their home.

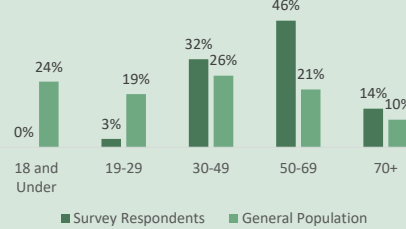
Reported Homeownership Rates vs General Population



[U.S. Census Bureau QuickFacts: Worcester city, Massachusetts](#)

The median age in Worcester is 33.9. Only 3% of our respondents reported being younger than 30.

Respondent Age vs General Population



[S0101: Age and Sex - Census Bureau Table](#)

Do you own a home? N = 506; Please select your age. N = 487



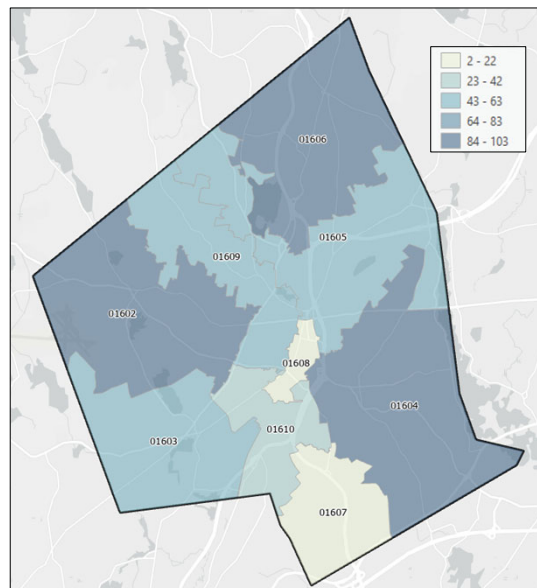
45

## Respondents tended to be from wealthier areas of the city.

- 60% of our respondents live within zip codes 01604, 01606, 01602.
  - These zip codes have the highest median household income in the city.
- Zip codes 01610, 01608, and 01607 had the fewest number of respondents.
  - This roughly correlates to the Green Island and Main South Neighborhoods.
  - These zip codes have some of the lowest median household incomes.

[Ranking by Median Household Income - Zip Codes in Worcester County - Place Rankings - Data Commons](#)

What is your zip code? N = 506



46

**There is a natural divide between residents under 50 (younger residents) and residents over 50 (older residents).**

#### **Younger Residents (under 50)**

- Tend to be newer to Worcester
  - 40% have been here less than 10 years
- Tend to rent more than older residents
  - 80% own their homes and 20% are renters

#### **Older Residents (50 and older)**

- Tend to be more established in Worcester
  - 89% have lived in Worcester more than 10 years
- Tend to own their homes more than younger residents
  - 91% own their homes and 9% are renters

Note: Younger and older residents are distributed similarly around the city.





1

## INTRODUCTION

The City of Worcester has embarked on a Zero Waste Master Plan process to support the goals of the Green Worcester Plan.

This survey was circulated to obtain views on waste management in Worcester.

1,820 responses were collected between April 4 and May 29, 2025.

Responses received were in English, no respondents replied in the other languages that were offered: Spanish, Portuguese or Vietnamese.

2

## 5 MAIN TAKEAWAYS

1. Respondents are interested in wheeled carts for recycling and trash
2. Some would like curbside collection of food scraps and yard trimmings
3. There is a preference for keeping the collection services weekly
4. There are concerns about litter and recycling bin quality
5. Respondents appreciated timely collection, friendly hard-working staff, and communication about service changes

3

## WHO RESPONDED TO THE SURVEY?

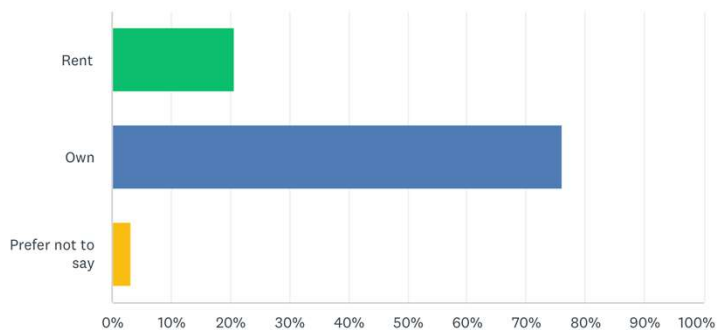
Do you rent or own your home?

Answered: 1,775 Skipped: 45

Survey Respondents

U.S. Census:  
43.7% renters  
56.3% homeowners

Survey respondents:  
20.7% renters  
76.2% homeowners  
3.2% prefer not to say



4

## WHO RESPONDED TO THE SURVEY?

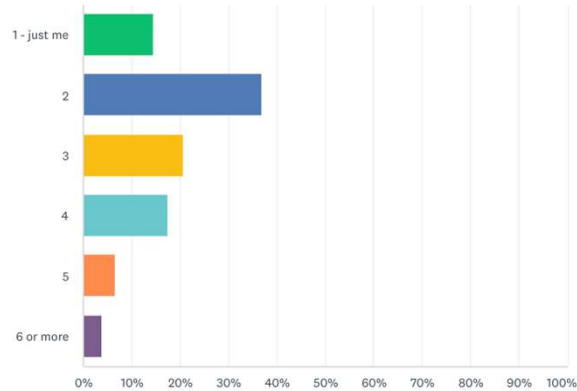
How many people live in your household? (including yourself)

Answered: 1,775 Skipped: 45

### Survey Respondents

U.S. Census:  
Average household  
size in Worcester is  
2.36 people

Survey respondents:  
Average household  
was 2.76 people



5

## WHO RESPONDED TO THE SURVEY?

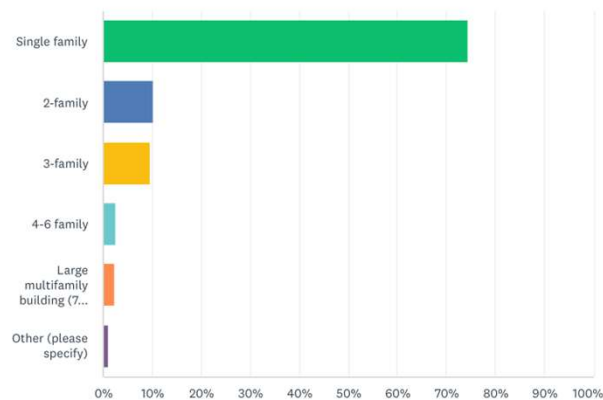
What type of house do you live in?

Answered: 1,487 Skipped: 333

### Survey Respondents

U.S. Census:  
38.5% single-family  
19.6% large multifamily

Survey respondents:  
74.5% single-family  
2.4% large multifamily



6

## WHO RESPONDED TO THE SURVEY?

What is your zip code?

Answered: 1,775 Skipped: 45



Distribution of respondents was similar to distribution of population by zip code

7

## WHO RESPONDED TO THE SURVEY?

Which of the following best describes your total household income before taxes?

Answered: 1,374 Skipped: 446



U.S. Census:  
Median household income in Worcester is \$69,262

Survey respondents:  
Median household income was between \$100,000 and \$149,999

8

## WHAT WORCESTER DOES WELL

What do you think Worcester does well with waste management?

Answered: 1,185 Skipped: 635

[Open-ended question]

Timely, reliable  
collection service 20%

Like the yellow bag PAYT  
program 5%

Low cost 4%

Covers the basics 18%

No sort recycling 5%

Friendly  
hard-working staff 2%

Weekly Collection 8%

Good communication 5%

New public refuse bins 1%

Drop-off center 6%

Yard waste drop-off 4%

Nothing/Not sure 8%

9

## WHAT COULD BE BETTER, WHAT DO YOU NEED?

If you have experienced a problem with any aspect of waste disposal in Worcester, what resources do you need that are not currently available to you?

[Open-ended question]

Answered: 1,060 Skipped: 760

Do not like the  
recycling bins  
(size, quality) 27%

Would like  
bulk waste collection 9%

Would like more  
litter cleanup 4%

Do not like the  
yellow bags  
(cost, quality) 16%

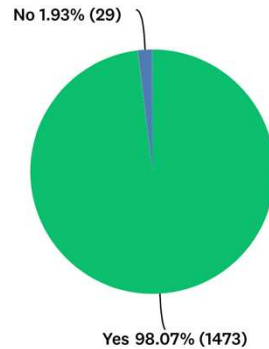
Concerned about wind debris  
and waste containment 6%

Would like compost  
collection service 4%

10

## DOES YOUR HOUSEHOLD RECYCLE?

Answered: 1,502 Skipped: 318

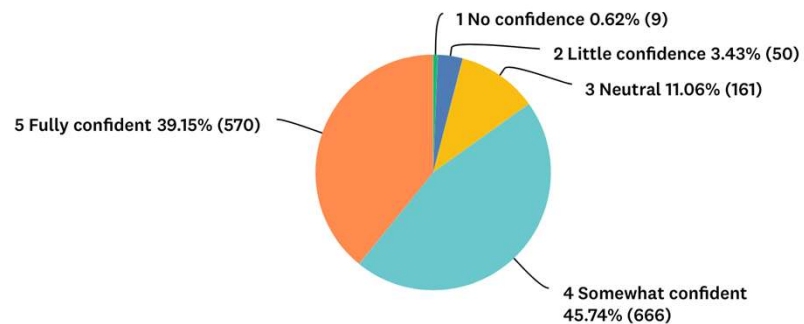


11

## DO YOU RECYCLE RIGHT?

How confident are you that you are recycling correctly?  
On a scale of 1 to 5 with 5 being complete confidence

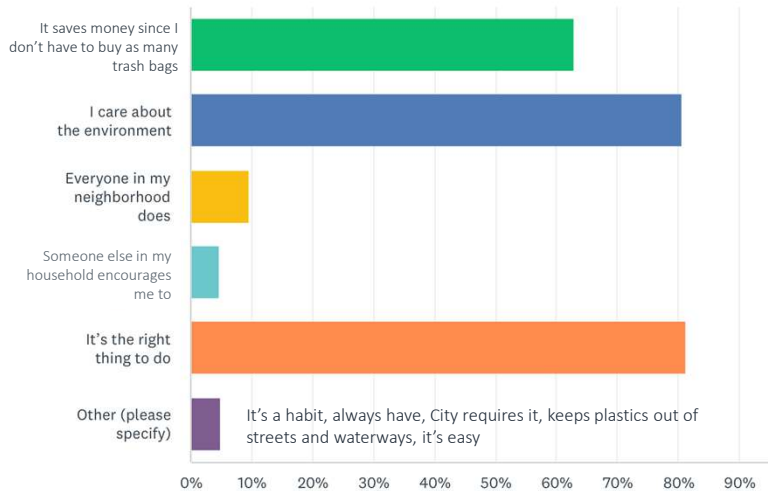
Answered: 1,456 Skipped: 364



12

## WHY DO YOU RECYCLE?

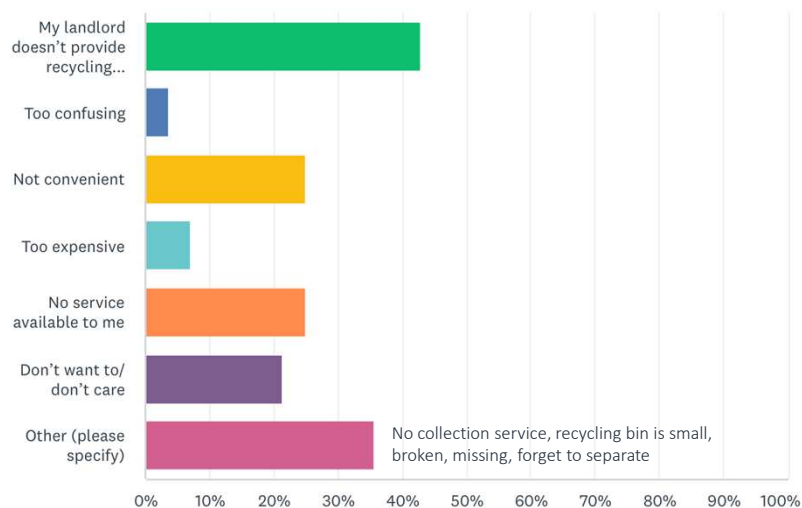
Answered: 1,455 Skipped: 365



13

## IF YOU DON'T RECYCLE, WHY NOT?

Answered: 28 Skipped: 1,792

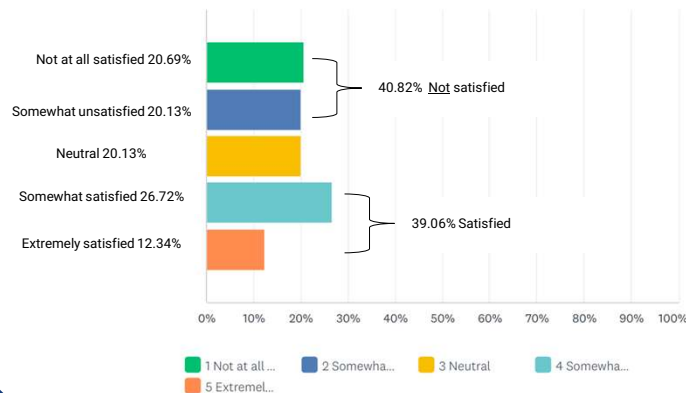


14

## PAY AS YOU THROW PROGRAM

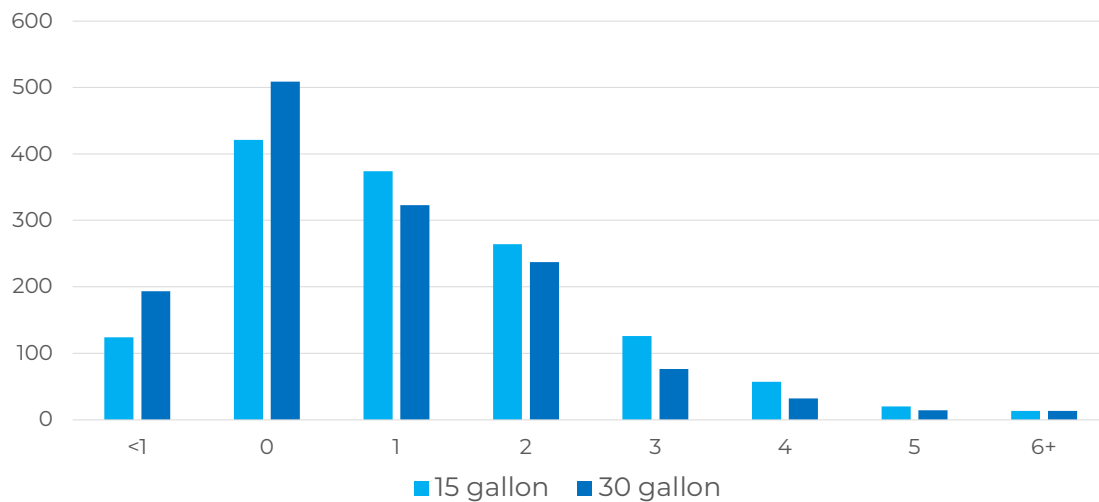
How satisfied are you with Worcester's curbside trash collection program (also known as the yellow-bag or Pay-As-You-Throw program)?  
Rank 1-5 with 5 being extremely satisfied

Answered: 1,426 Skipped: 394



15

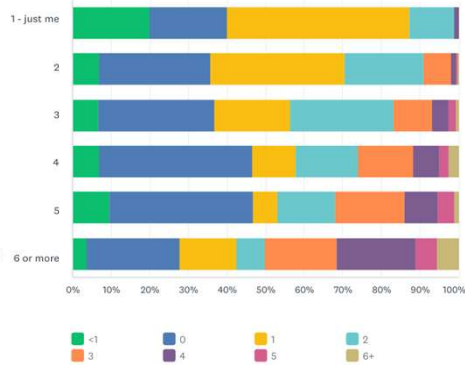
## HOW MANY BAGS DOES YOUR HOUSEHOLD SET OUT EVERY WEEK?



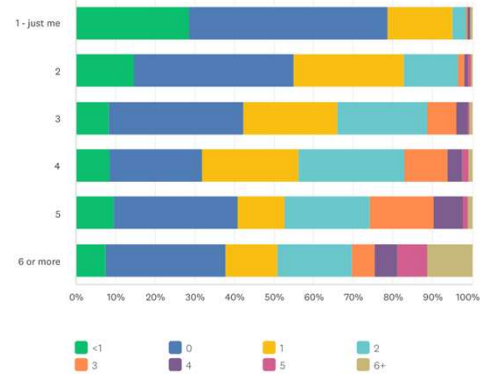
16

## HOW MANY BAGS DOES YOUR HOUSEHOLD SET OUT EVERY WEEK? – HOUSEHOLD SIZE

On average, how many **small (15 gallon) yellow trash bags** does your household set out on the curb every week?



On average, how many **large (30 gallon) yellow trash bags** does your household set out on the curb every week?



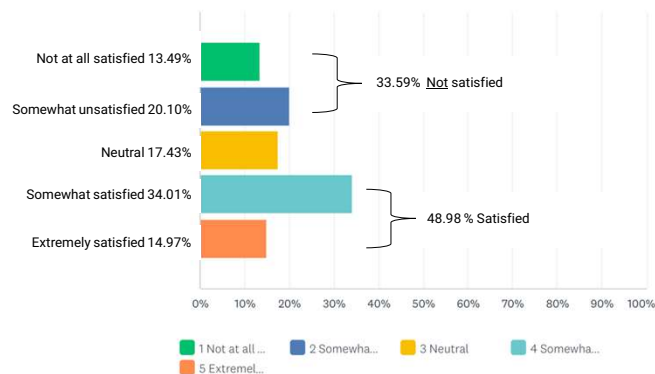
Larger households set out more bags than smaller households

17

## CURBSIDE RECYCLING

How satisfied are you with Worcester's curbside recycling collection program?  
Rank 1-5 with 5 being extremely satisfied

Answered: 1,423 Skipped: 397

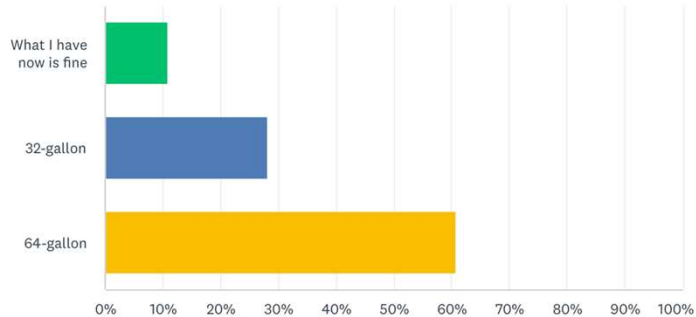


18

## WHEELED CARTS

Currently Worcester provides 22-gallon, green recycling carts. If the City were to offer 32-gallon and 64-gallon wheeled carts, which would you prefer?

Answered: 1,423 Skipped: 397

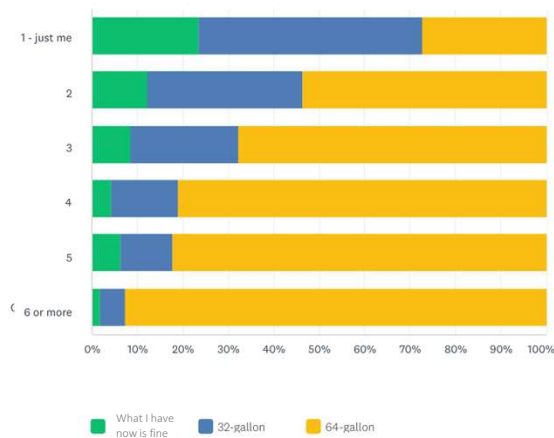


19

## WHEELED CARTS – HOUSEHOLD SIZE

Currently Worcester provides 22-gallon, green recycling carts. If the City were to offer 32-gallon and 64-gallon wheeled carts, which would you prefer?

Answered: 1,423 Skipped: 352

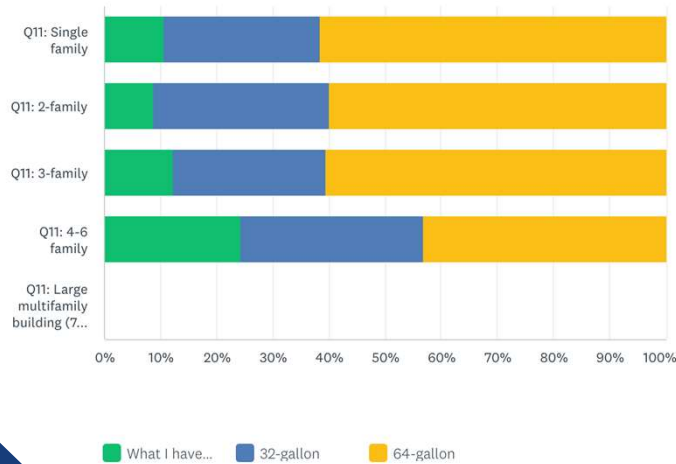


Larger households prefer larger recycling carts

20

## WHEELED CARTS – BUILDING TYPE

Currently Worcester provides 22-gallon, green recycling carts. If the City were to offer 32-gallon and 64-gallon wheeled carts, which would you prefer?



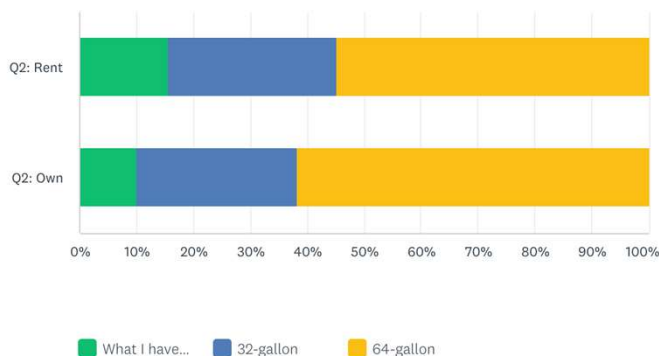
Residents of buildings with 1-3 units prefer larger recycling carts

Residents of buildings with 4-6 units are somewhat more evenly split

21

## WHEELED CARTS – RENTERS AND OWNERS

Currently Worcester provides 22-gallon, green recycling carts. If the City were to offer 32-gallon and 64-gallon wheeled carts, which would you prefer?



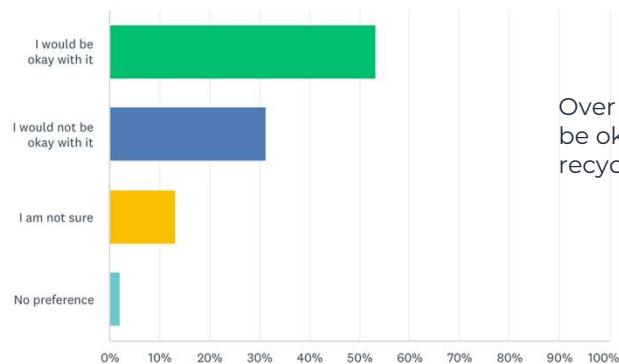
Both Renters and owners prefer larger recycling carts

22

## EVERY OTHER WEEK RECYCLING

If the City provided a 64-gallon wheeled bin for every household in the curbside trash/recycling program, how would you feel about the City collecting recycling every other week, instead of once a week (with trash pick-up remaining at the once per week schedule)?

Answered: 1,424 Skipped: 396



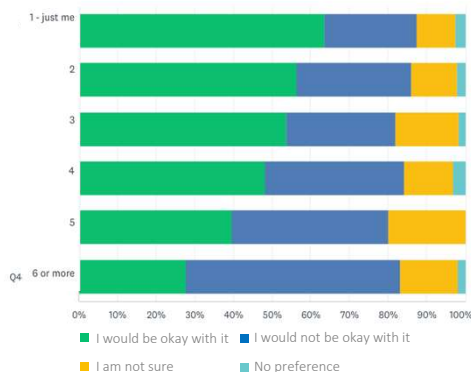
Over 50% of respondents would be okay with every other week recycling collection

23

## EVERY OTHER WEEK RECYCLING – HOUSEHOLD SIZE

If the City provided a 64-gallon wheeled bin for every household in the curbside trash/recycling program, how would you feel about the City collecting recycling every other week, instead of once a week (with trash pick-up remaining at the once per week schedule)?

Answered: 1,424 Skipped: 351

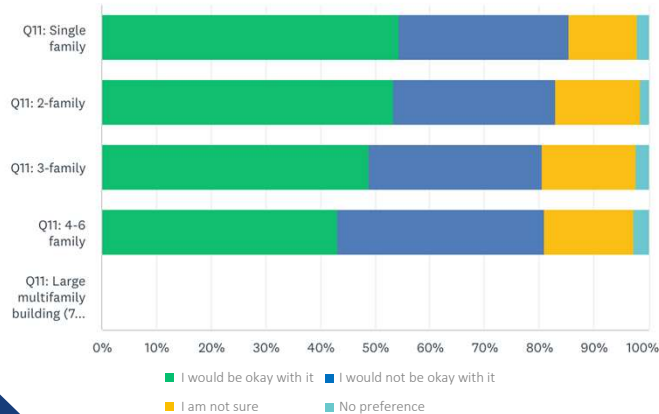


Larger households are less likely to be okay with every other week recycling collection

24

## EVERY OTHER WEEK RECYCLING – BUILDING TYPE

If the City provided a 64-gallon wheeled bin for every household in the curbside trash/recycling program, how would you feel about the City collecting recycling every other week, instead of once a week (with trash pick-up remaining at the once per week schedule)?



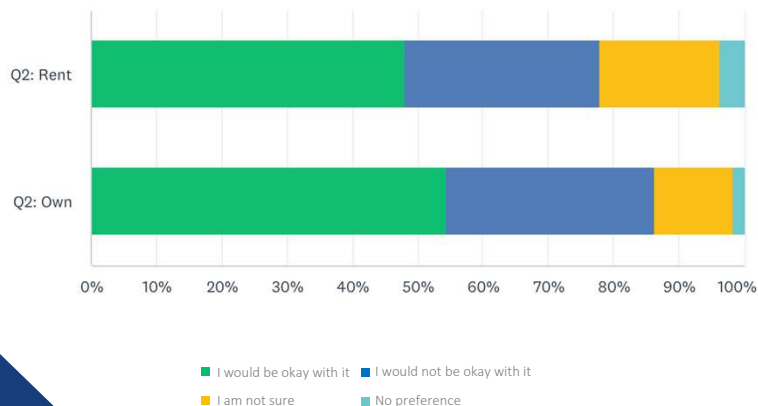
Over 50% of residents of buildings with 1-2 units would be okay with every other week recycling collection

Less than 50% of residents of buildings with 3-6 units would be okay with it

25

## EVERY OTHER WEEK RECYCLING – RENTERS AND OWNERS

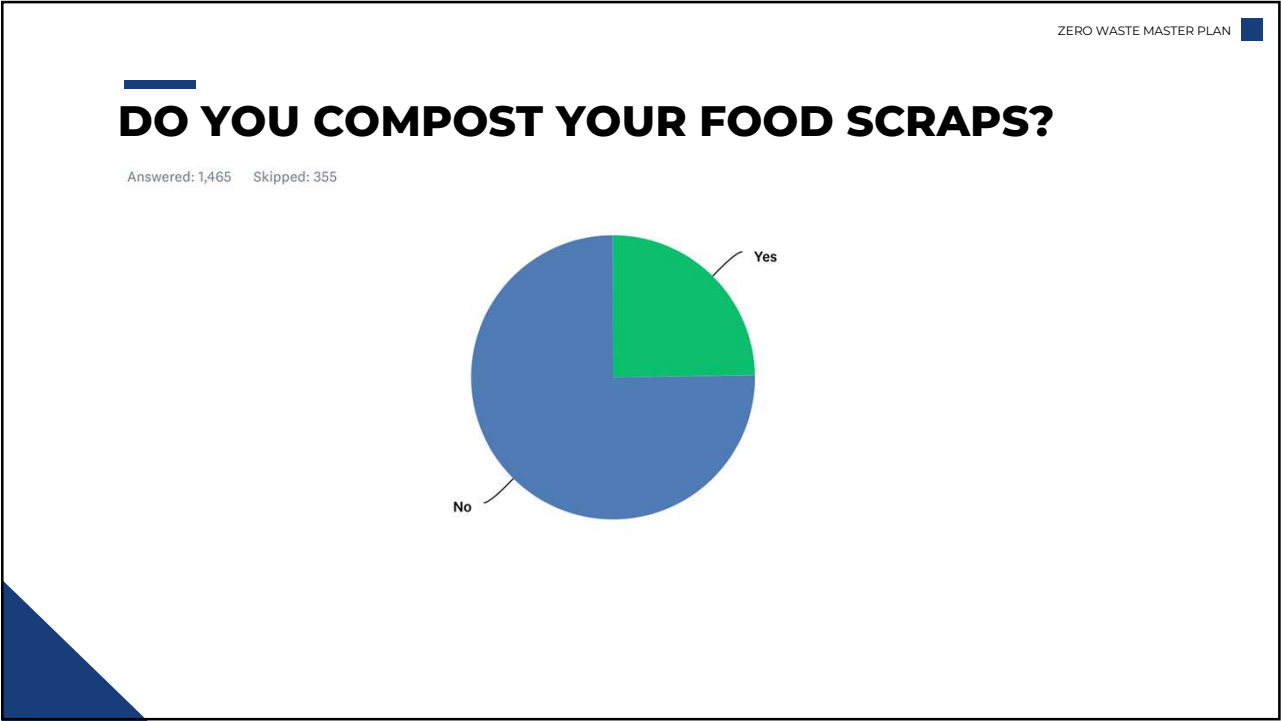
If the City provided a 64-gallon wheeled bin for every household in the curbside trash/recycling program, how would you feel about the City collecting recycling every other week, instead of once a week (with trash pick-up remaining at the once per week schedule)?



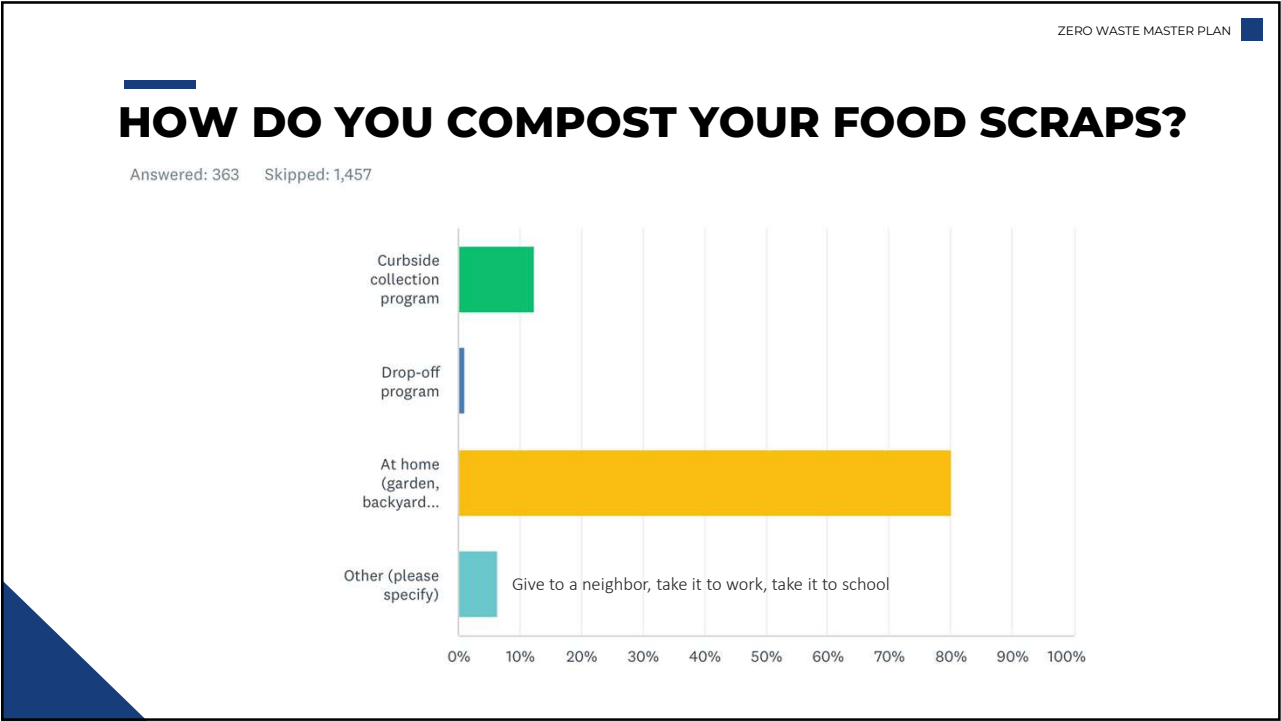
Less than 50% of renters would be okay with every other week recycling collection

Over 50% of owners would be okay with it

26



27

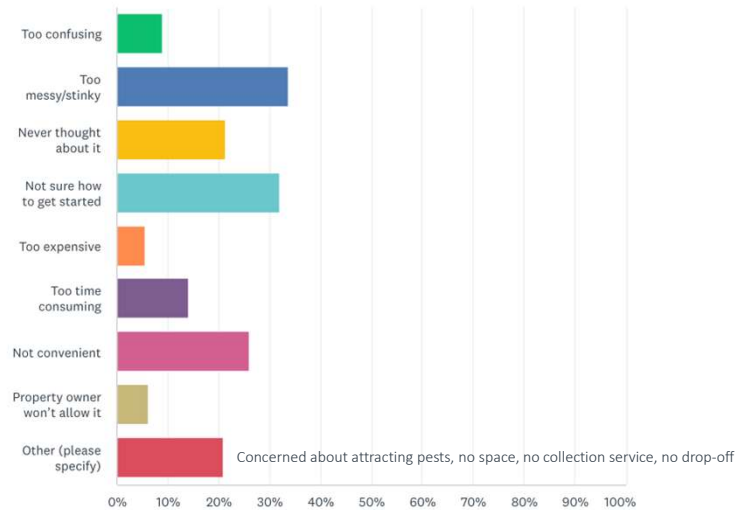


28

ZERO WASTE MASTER PLAN

## IF YOU DON'T COMPOST, WHY NOT?

Answered: 1,076 Skipped: 744

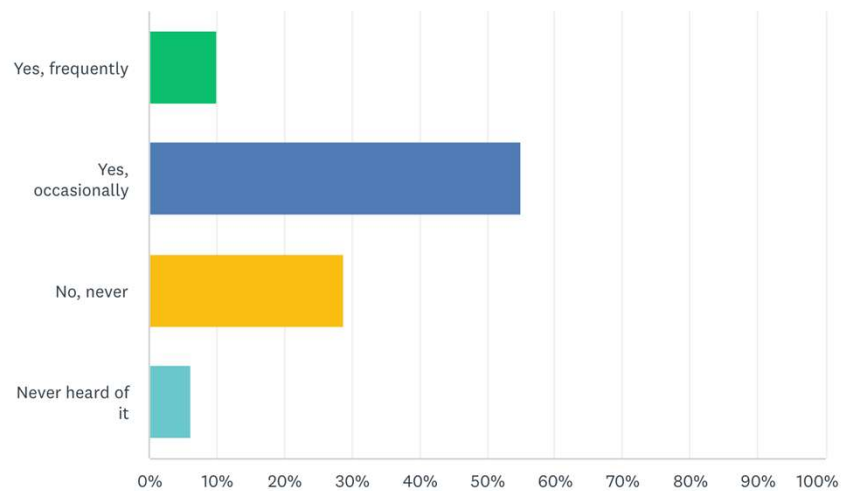


29

ZERO WASTE MASTER PLAN

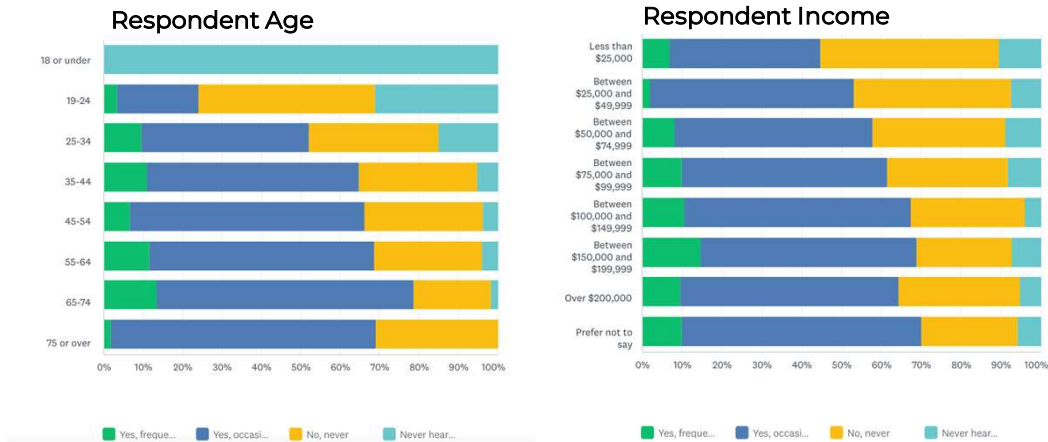
## DO YOU USE THE DROP-OFF CENTER?

Answered: 1,402 Skipped: 418



30

## DO YOU USE THE DROP-OFF CENTER?



Older residents are somewhat more likely to use the drop-off center

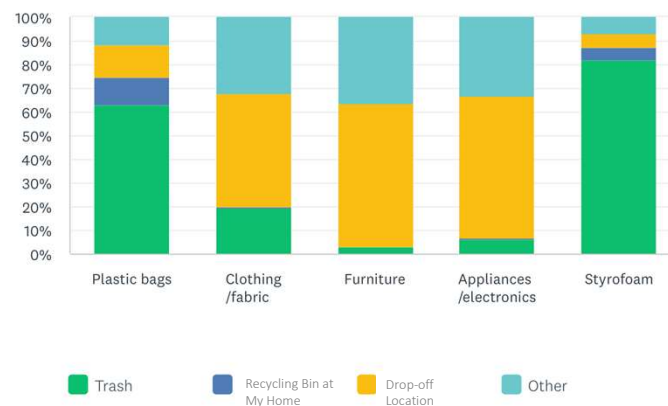
Less affluent residents are somewhat less likely to use the drop-off center

31

## HARD TO HANDLE ITEMS

Where would you get rid of each of the following items when you don't need them anymore?

Answered: 1,396 Skipped: 424

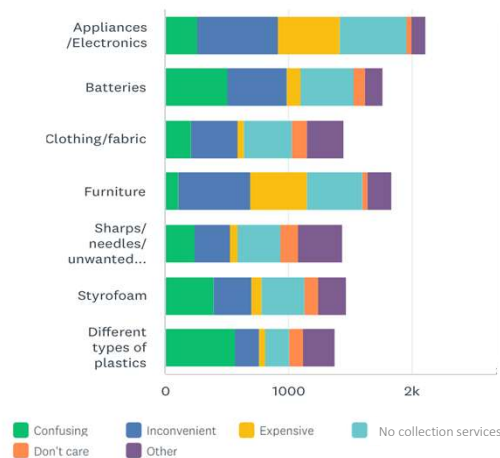


32

## HARD TO HANDLE ITEMS

What are the main challenges you face when wanting to correctly throw away each of the following materials?

Answered: 1,355 Skipped: 465



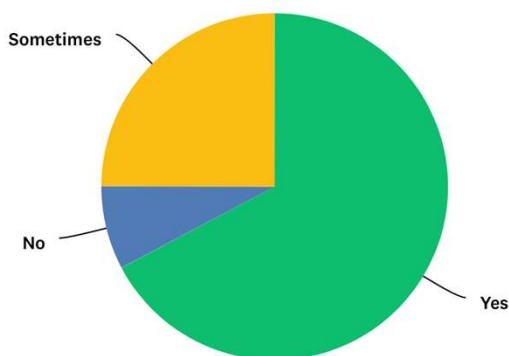
33

ZERO WASTE MASTER PLAN

## REUSABLE GROCERY BAGS

Do you bring your own reusable bags to the grocery store?

Answered: 1,402 Skipped: 418

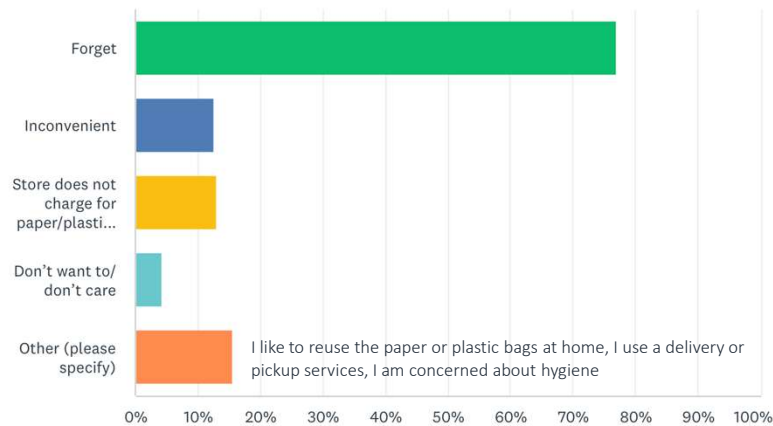


34

## REUSABLE GROCERY BAGS

If you don't bring your own bags, why not?

Answered: 647 Skipped: 1,173

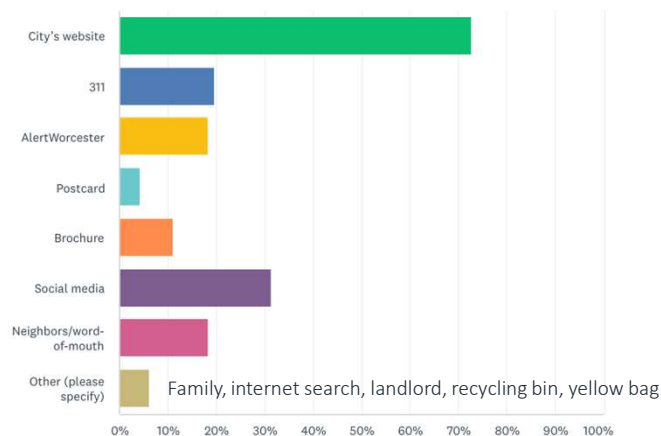


35

## HOW DO YOU GET YOUR INFORMATION?

Where do you get your information about trash, recycling, reuse, and composting in Worcester?

Answered: 1,402 Skipped: 418

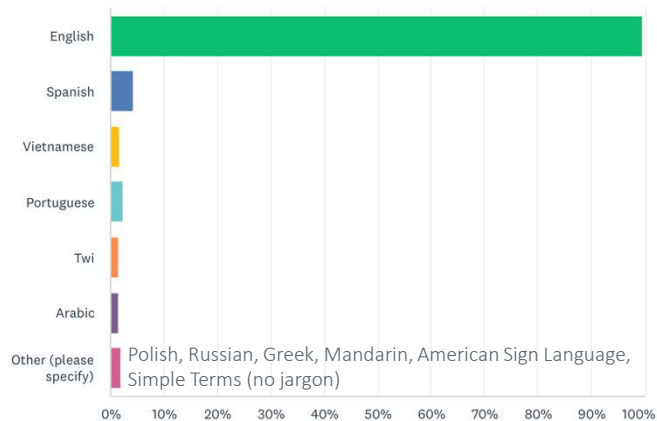


36

## WHAT LANGUAGES WOULD YOU PREFER?

In what languages would you prefer to receive information from the City about the waste programs?

Answered: 1,375 Skipped: 445



37

## IS THERE ANYTHING ELSE YOU'D LIKE TO SHARE ABOUT WASTE MANAGEMENT IN WORCESTER??

"[Provide] a list of places that recycle things on the city page"

"Please make this a priority - it is one of the biggest challenges facing perceptions of the City."

"Providing bins for trash and recycling while eliminating the yellow bags would increase cleanliness of the city."

"we love the 311 program for city info, fantastic resource for newcomers"

"Keep it weekly and free"

38



1

ZERO WASTE MASTER PLAN

## INTRODUCTION AND OBJECTIVE

The City of Worcester circulated the first Zero Waste Master Plan community survey in Spring 2025 to obtain views on waste management in Worcester.

This follow up survey was circulated to get community input to help prioritize strategies for the Zero Waste Master Plan.

749 responses were collected between November 19 and December 9, 2025.

2

## Key Conclusions – Near-Term Strategies

Near-term Strategies – alignment of the top 3 strategies among all groups (homeowners, renters, non- participants of PAYT)

- Edible Food Recovery and Donation
- Wheeled Carts for Recycling
- Semi-Annual Systemic Citywide Cleanup

3

## Key Conclusions – Mid-Term Strategies

Mid-term Strategies – alignment for PAYT participants of the top 3 strategies:

- Wheeled Carts for Trash (combined)
- Residential Drop-Off Center Expansion
- Increase the number of “WooBins”

Not surprisingly – different priorities for the non-participants of the PAYT:

- Increase the number of “WooBins”
- Single-Use Plastics Reduction
- Require Property Owners/Haulers to Provide Recycling Collection
- Residential Drop-Off Center Expansion

4

## Key Conclusions – Long-Term Strategies

Long-term Strategies – alignment of the top 3 strategies among all groups (homeowners, renters, non- participants of PAYT)

- Drop-off Sites for Residential Trash
- Expand Library of Things
- Reduce Single-Use Foodware and Litter

5

## MAIN TAKEAWAYS

### 1. There is strong support for transitioning to wheeled carts for recycling and wheeled carts for trash

- 58% of respondents listed recycling carts in the top 3 near-term strategies
- 49% of respondents listed trash carts in the top 3 mid-term strategies.

### 2. There is support for strategies that reduce litter and illegal dumping

- Systemic cleanup 45%, Plastic reduction ordinance 26%, Expand "WooBins" 38%, Drop-off for residential trash 53%, Single use foodware ordinance 35%

6

## WHO RESPONDED TO THE SURVEY?

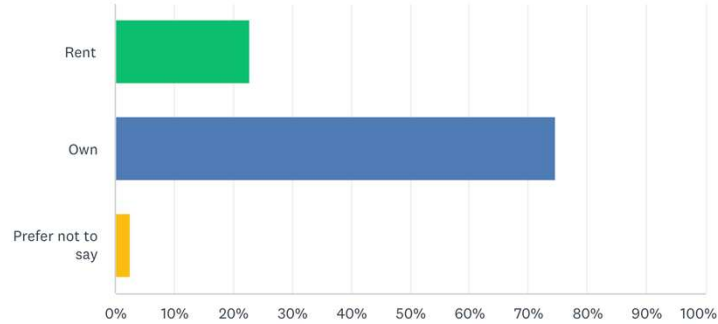
Do you rent or own your home?

Answered: 687 Skipped: 62

Survey Respondents

U.S. Census:  
43.7% renters  
56.3% homeowners

Survey respondents:  
22.9% renters  
74.5% homeowners  
2.6% prefer not to say



7

## WHO RESPONDED TO THE SURVEY?

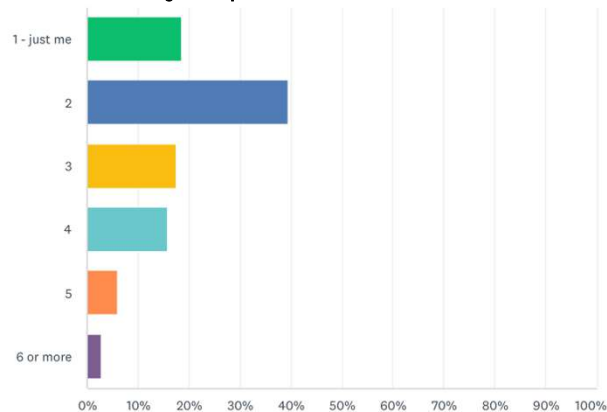
How many people live in your household? (including yourself)

Answered: 687 Skipped: 62

Survey Respondents

U.S. Census:  
Average household  
size in Worcester is  
2.36 people

Survey respondents:  
Average household  
was 2.59 people



8

## WHO RESPONDED TO THE SURVEY?

What is your zip code?

Answered: 687 Skipped: 62



Good distribution of respondents based on population by zip code

9

## WHO RESPONDED TO THE SURVEY?

Which of the following best describes your total household income before taxes?

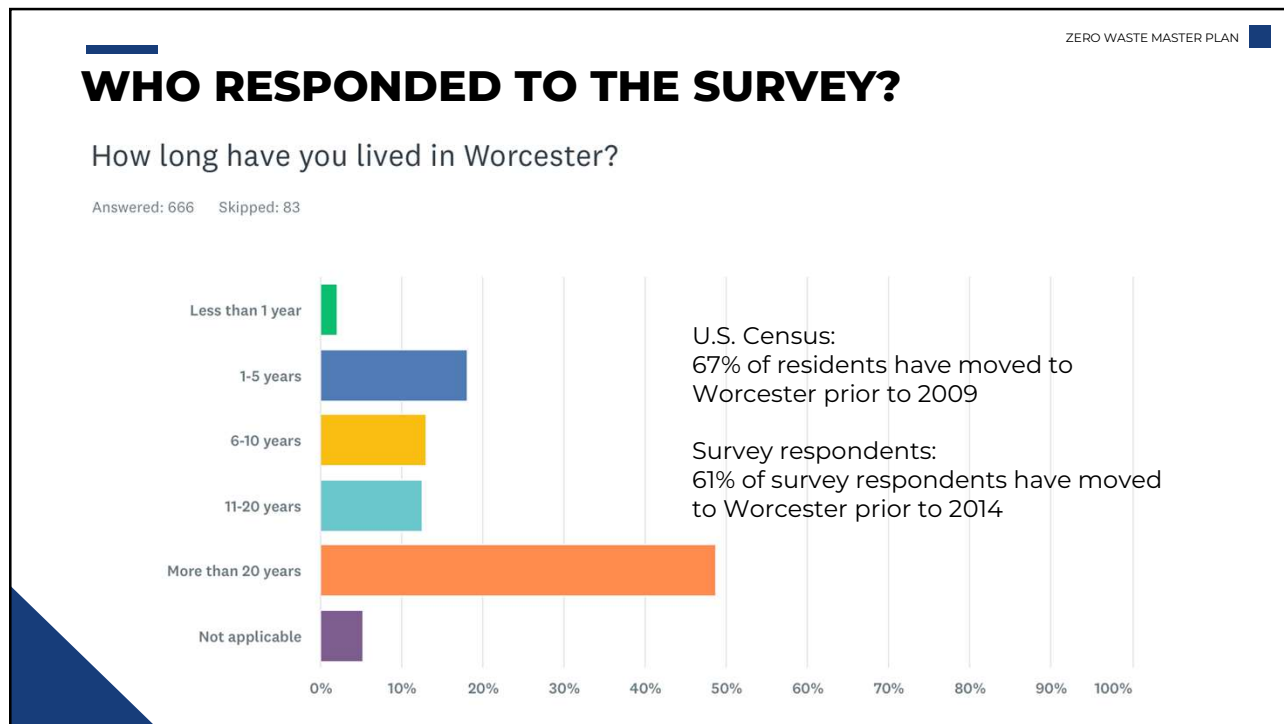
Answered: 659 Skipped: 90



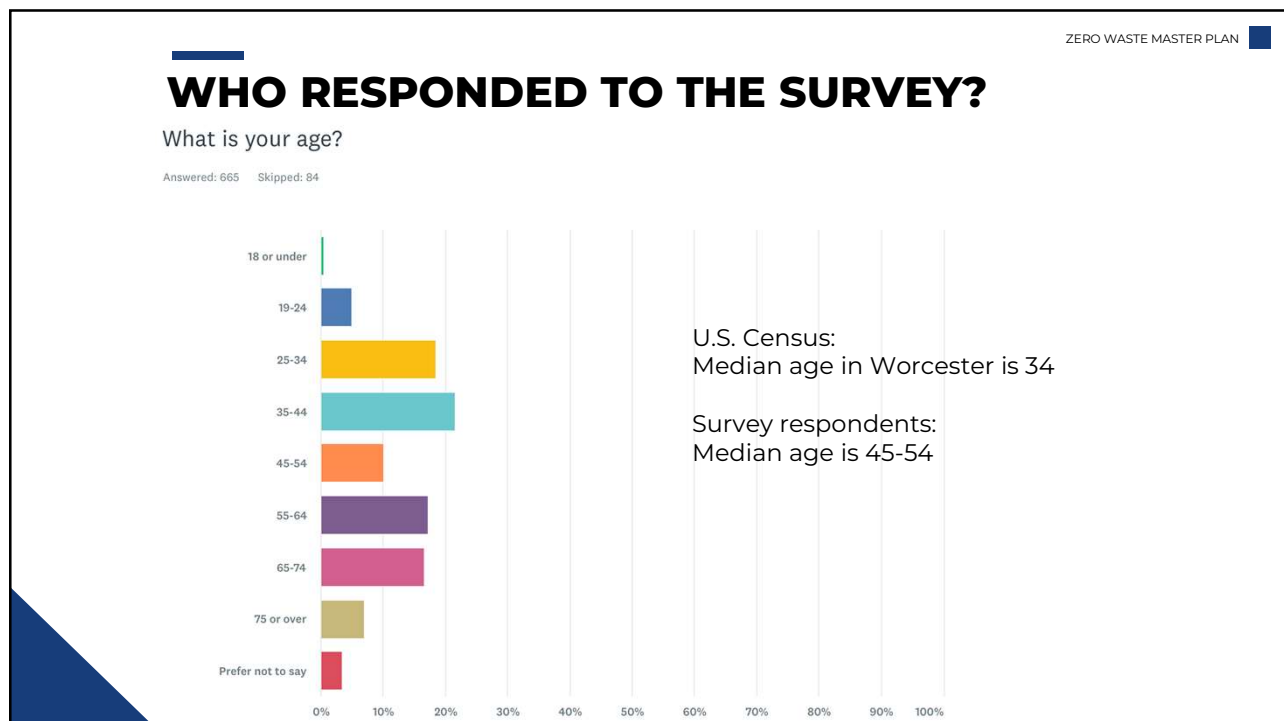
U.S. Census:  
Median household income in  
Worcester is \$69,262

Survey respondents:  
Median household income was  
between \$100,000 and \$149,999

10



11



12

## WHO RESPONDED TO THE SURVEY?

### Findings:

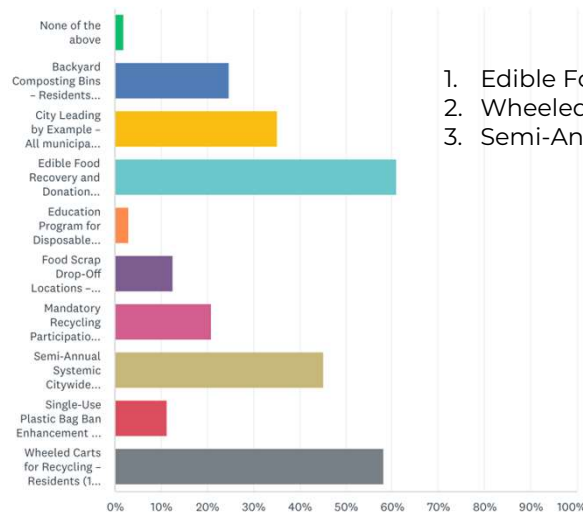
- Homeowners were over-represented in the survey  
74.5% of survey respondents were homeowners  
However, homeowners comprise 56.3% of total households in Worcester
- Average household size of survey respondents (2.59 people) was comparable to the average household size in Worcester (2.36 people)
- There was a good distribution of survey respondents based on population by zip code
- Lower income residents were under-represented in the survey  
Median household income in Worcester is \$69,262  
Median household income of survey respondents was between \$100,000 and \$149,999
- There was a good distribution of survey respondents based on years of residency in Worcester
- Median age of survey respondents is 45-54 compared to median age of Worcester residents is 34

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## TOP 3 NEAR-TERM STRATEGIES | 1-3 YEARS

### ALL RESPONDENTS

Answered: 707 Skipped: 42



1. Edible Food Recovery and Donation – 61%
2. Wheeled Carts for Recycling – 58%
3. Semi-Annual Systemic Citywide Cleanup – 45%

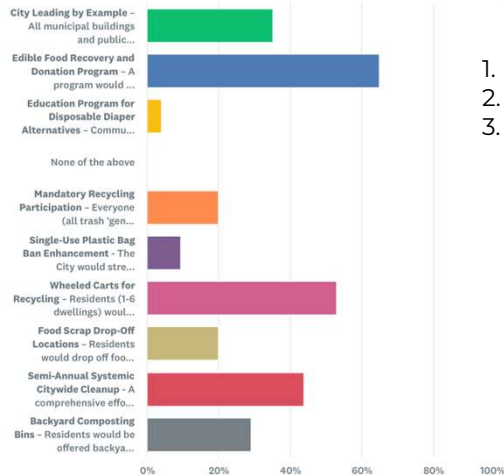
14

ZERO WASTE MASTER PLAN

## TOP 3 NEAR-TERM STRATEGIES | 1-3 YEARS

### SIMILAR RESULTS FOR RENTERS

Answered: 151 Skipped: 6



1. Edible Food Recovery and Donation – 65%
2. Wheeled Carts for Recycling – 53%
3. Semi-Annual Systemic Citywide Cleanup – 43%

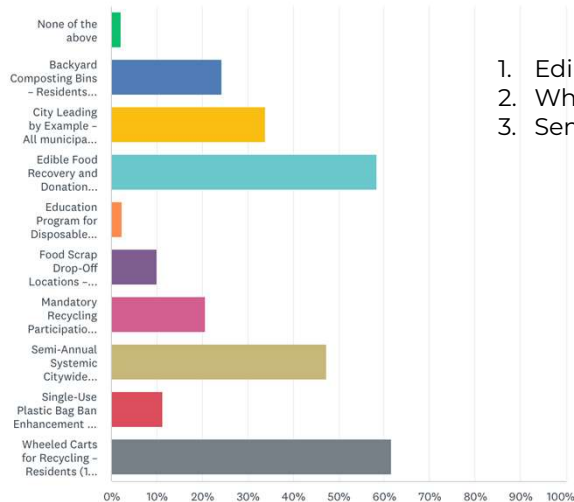
15

ZERO WASTE MASTER PLAN

## TOP 3 NEAR-TERM STRATEGIES | 1-3 YEARS

### SIMILAR RESULTS FOR HOMEOWNERS

Answered: 494 Skipped: 18

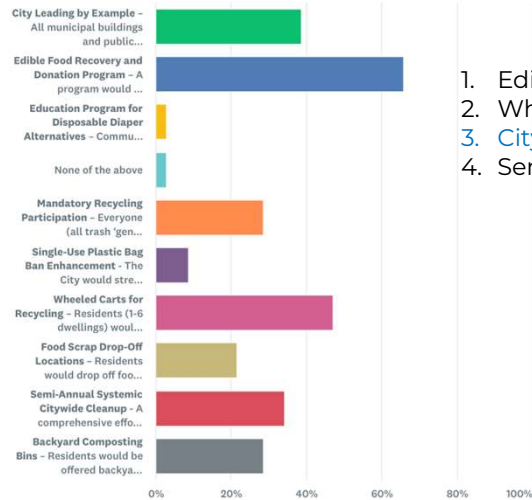


1. Edible Food Recovery and Donation – 59%
2. Wheeled Carts for Recycling – 62%
3. Semi-Annual Systemic Citywide Cleanup – 47%

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## TOP 3 NEAR-TERM STRATEGIES | 1-3 YEARS

### SIMILAR RESULTS FOR NON-PAYT Answered: 70 Skipped: 4

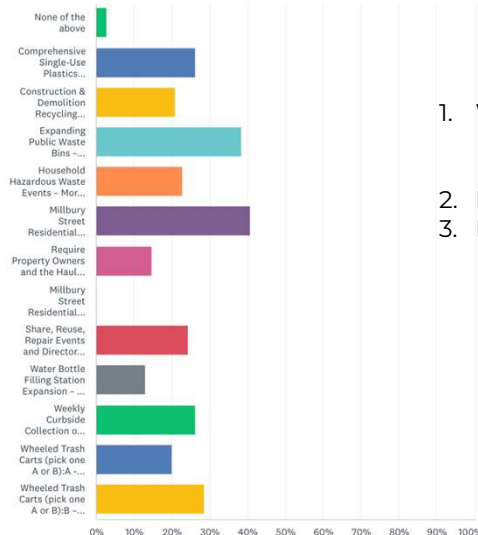


1. Edible Food Recovery and Donation – 66%
2. Wheeled Carts for Recycling – 47%
3. [City Leading by Example](#) – 38%
4. Semi-Annual Systemic Citywide Cleanup – 34%

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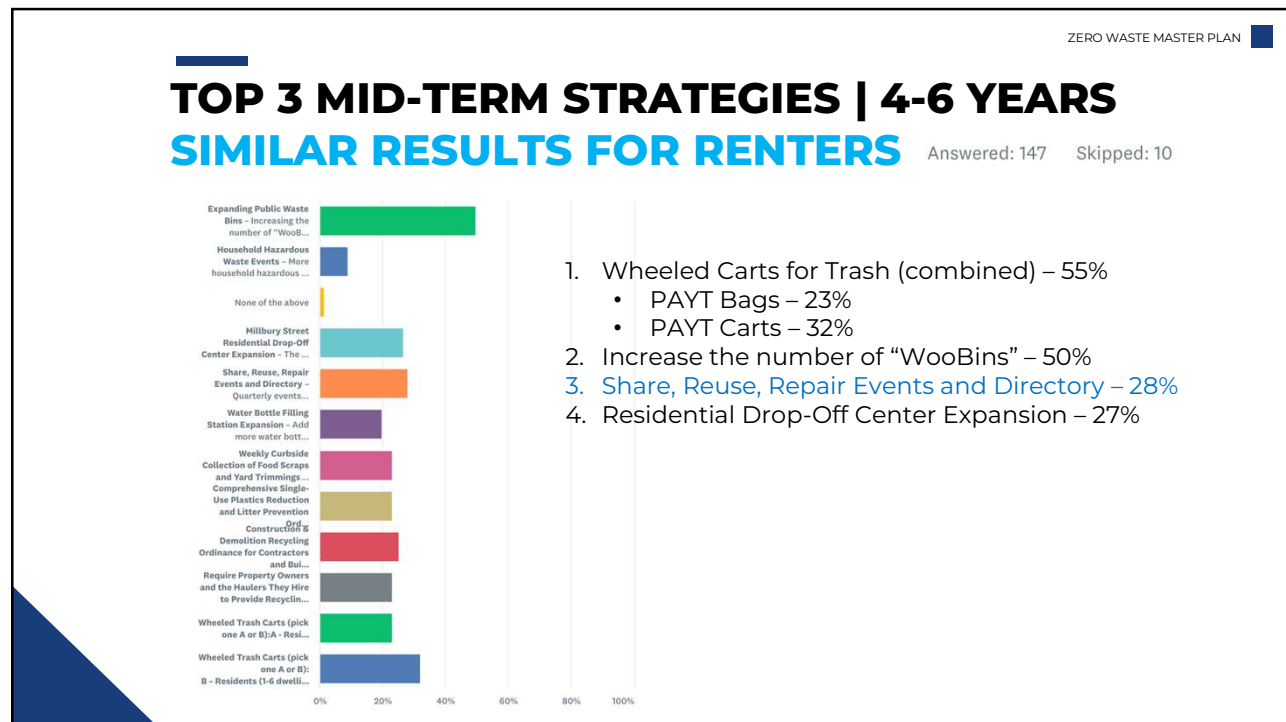
## TOP 3 MID-TERM STRATEGIES | 4-6 YEARS

### ALL RESPONDENTS Answered: 681 Skipped: 68

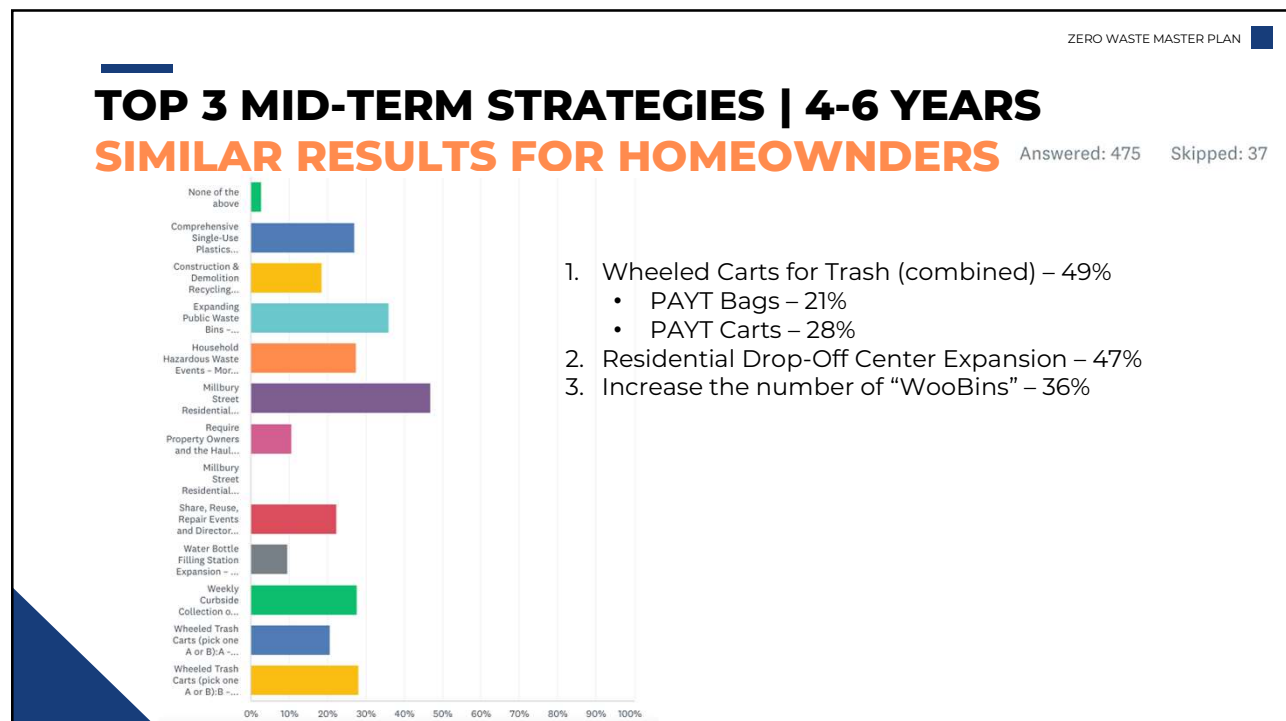


1. Wheeled Carts for Trash (combined) – 49%
  - PAYT Bags – 20%
  - PAYT Carts – 29%
2. Residential Drop-Off Center Expansion – 41%
3. Increase the number of "WooBins" – 39%

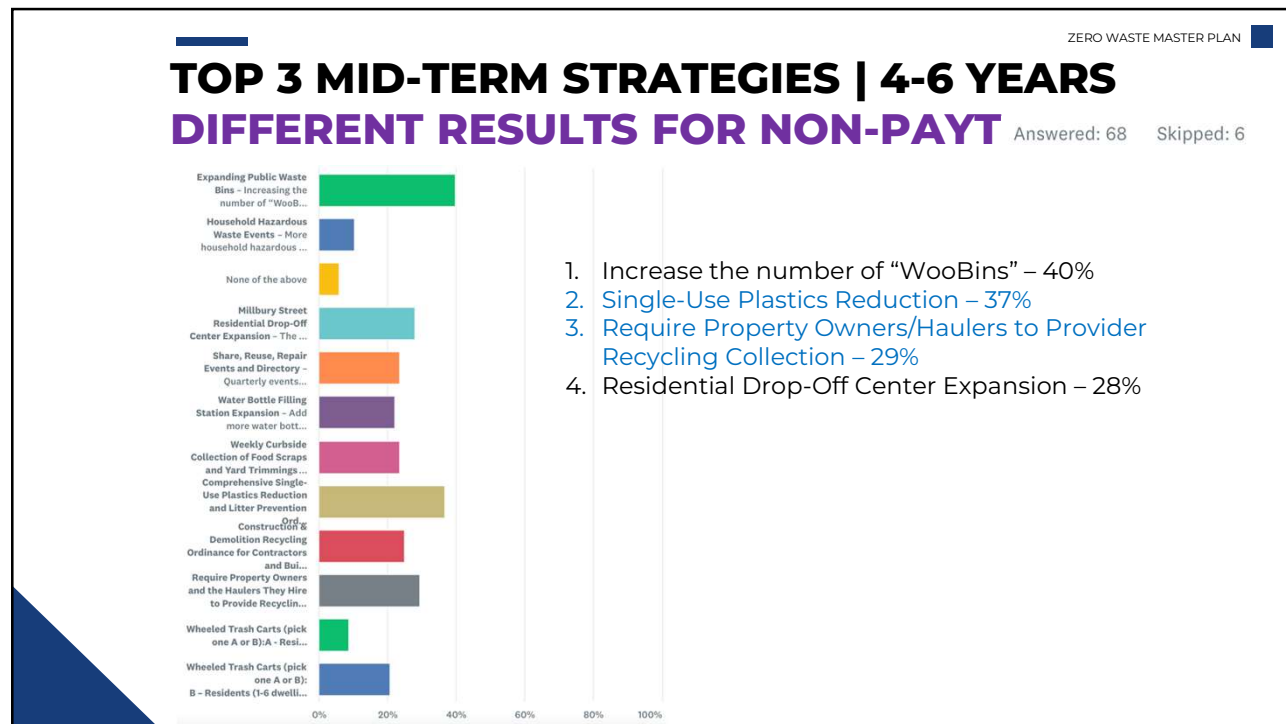
18



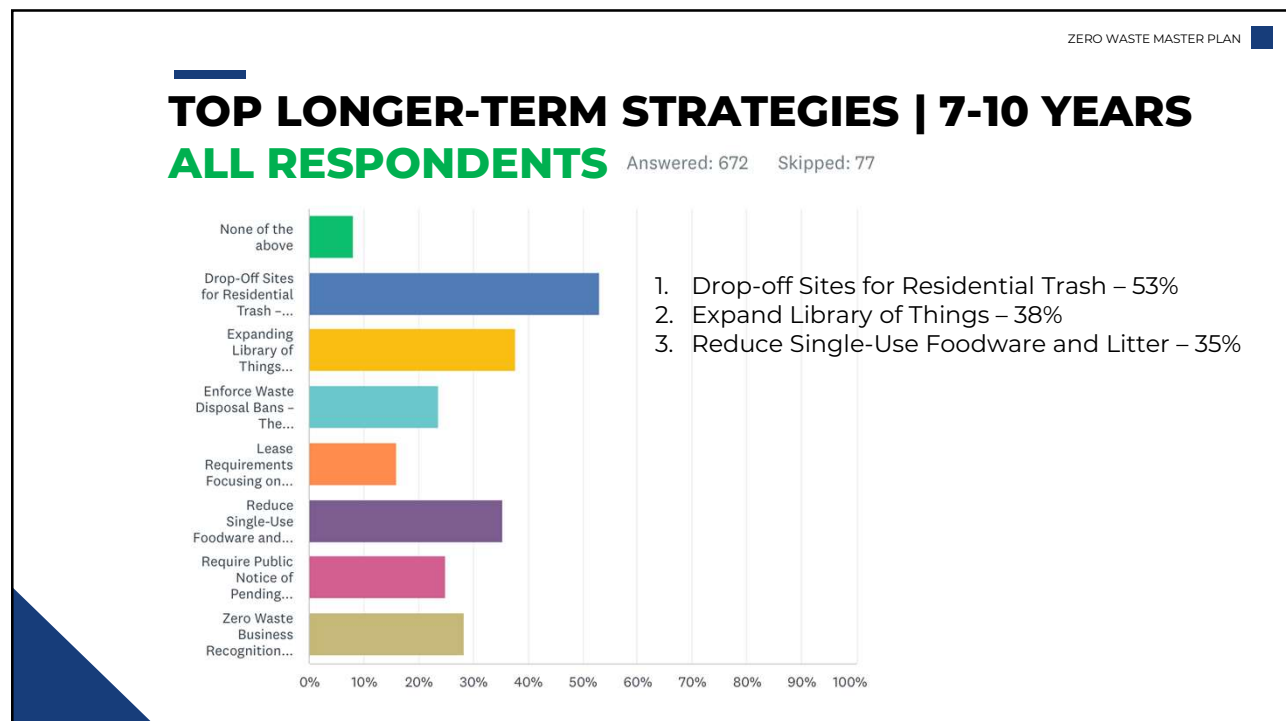
19



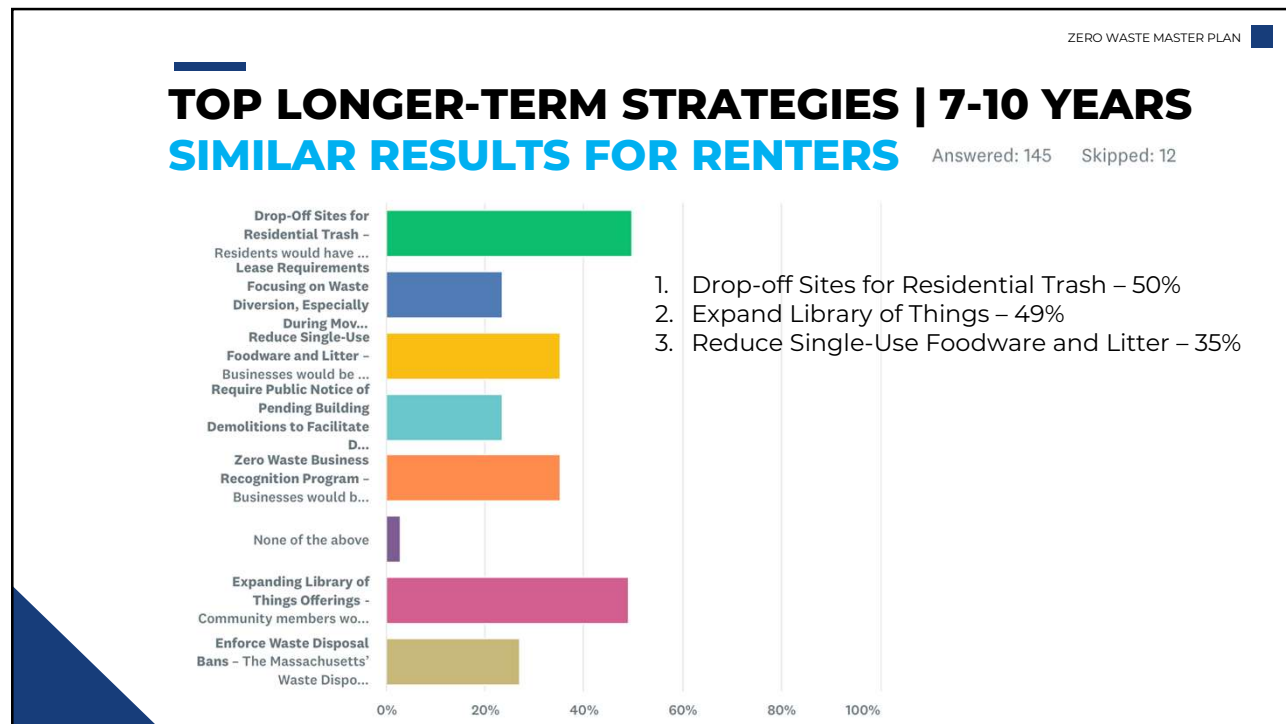
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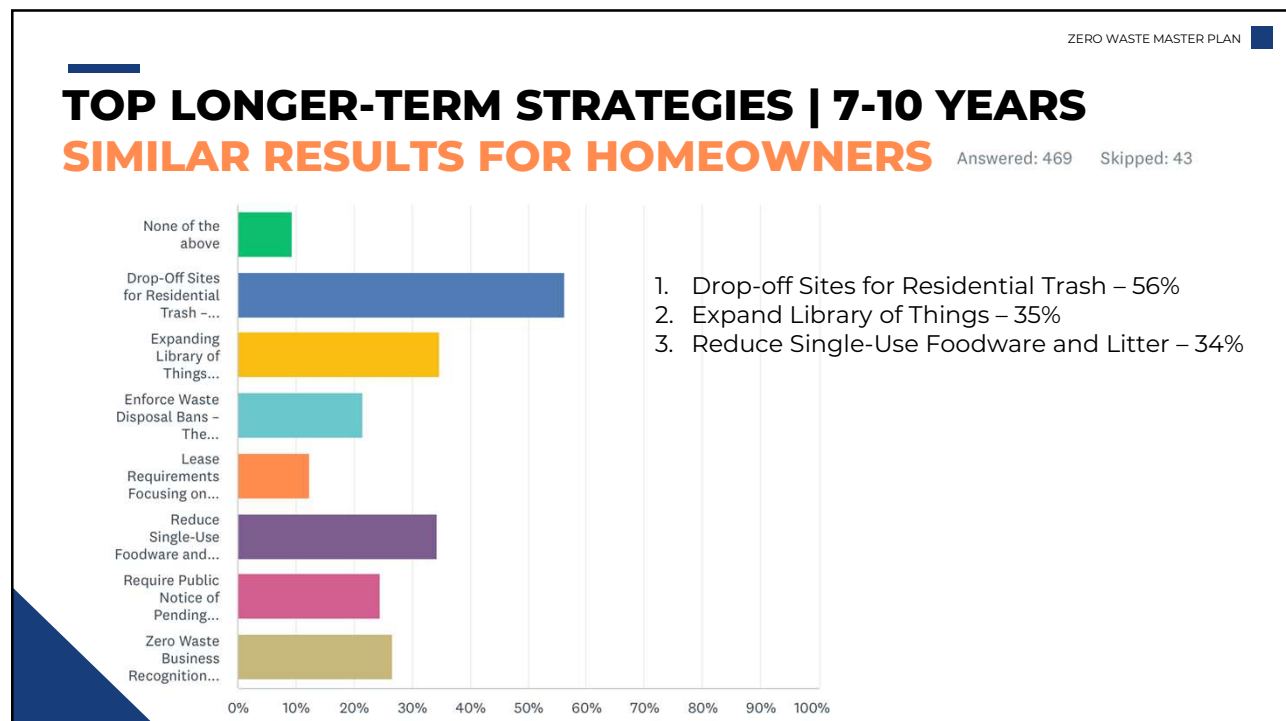
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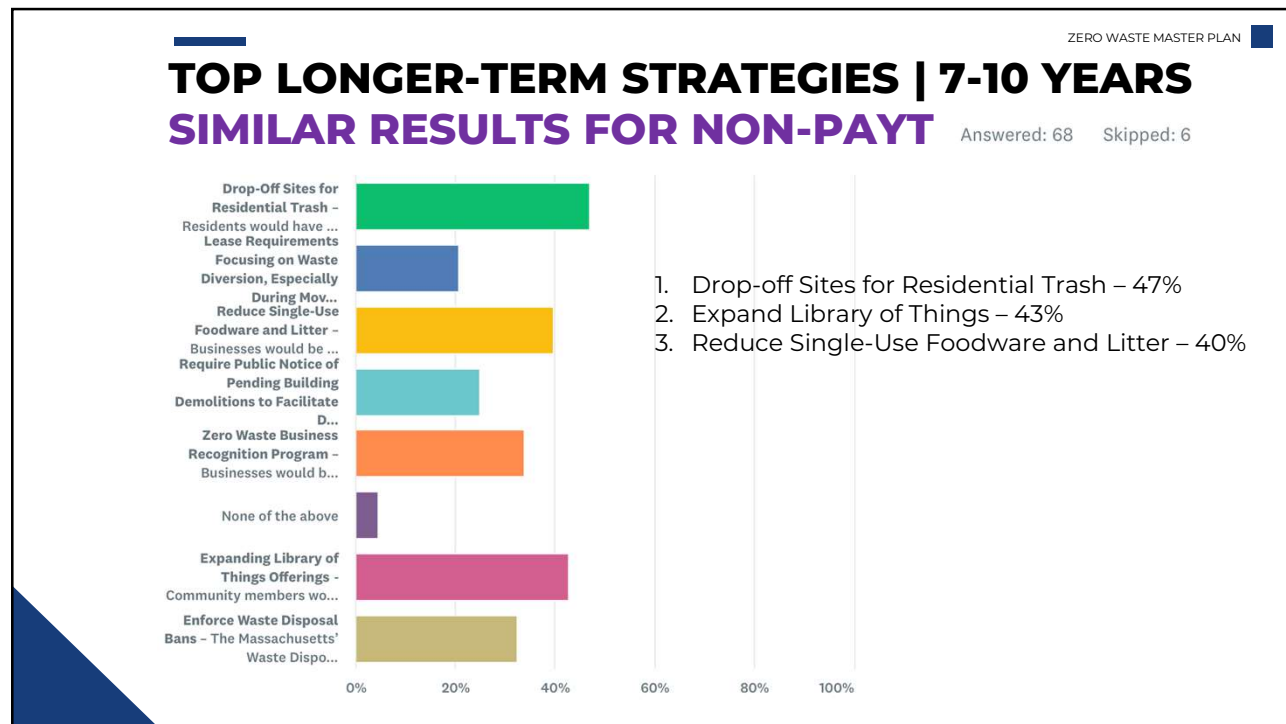
22



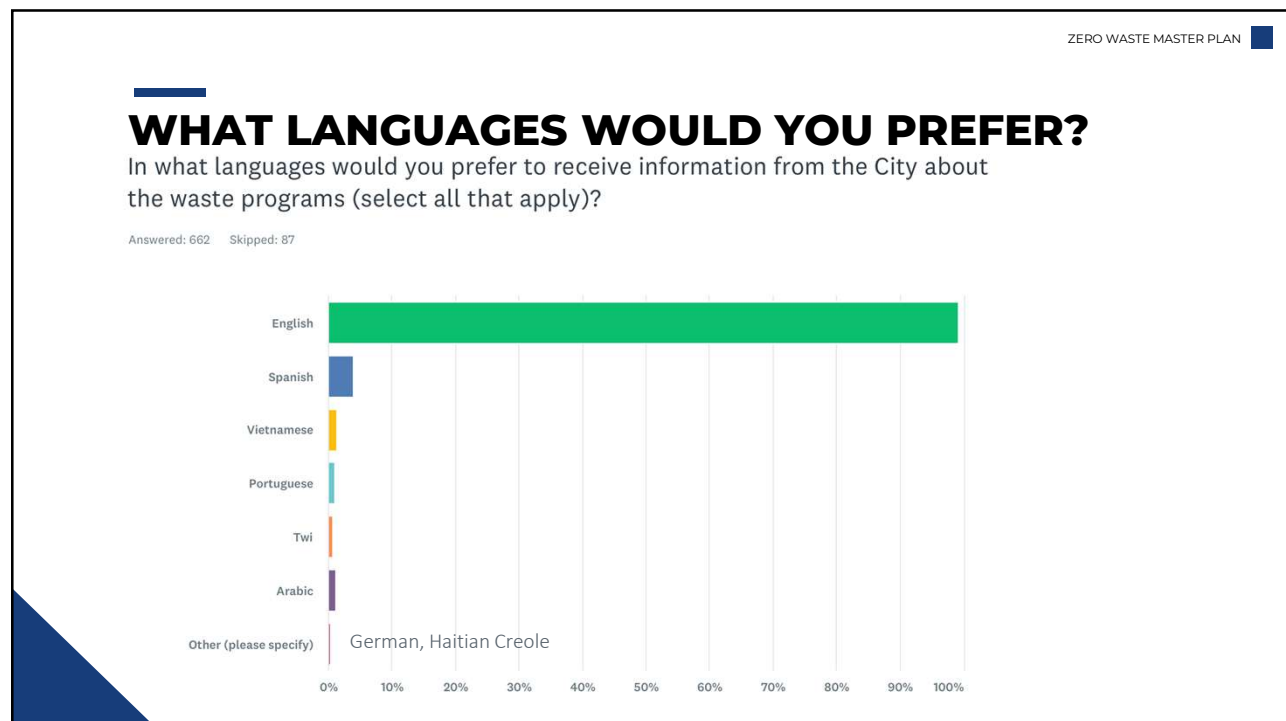
23



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## **Is there anything else you'd like to share that will inform the strategies in the plan?**

"I'm grateful for Worcester's Green Initiatives & Commitments"

"I am new to my condo complex and horrified to know they don't recycle. Can't wait for the day it's required for all of us."

"We need large wheeled, quality lidded bins for both trash and recycling. The towns around us do it, and we need to too."

"Reducing food waste while also promoting food access and justice is very important to me. I'd love to see support for and expansion of the free fridges."