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Multifamily Garbage and Recycling Service Study

March 2022

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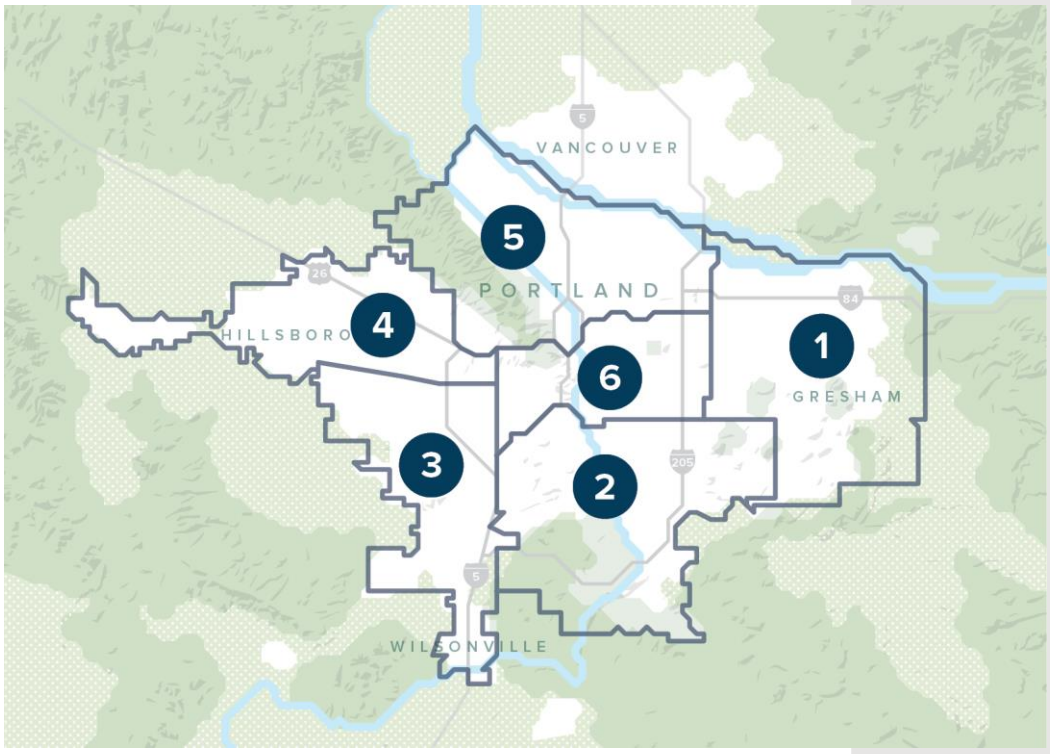

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SECTION 1: INTRODUCTION

More than 300,000 people in the Portland metropolitan area live in an apartment or a condominium. People living in multifamily homes have historically faced higher barriers to accessing garbage and recycling services, and services they receive tend to not meet their needs. The 2030 Regional Waste Plan prioritizes improving multifamily collection services as a way to ensure equitable service for all the region's residents, especially low-income residents and residents of color, who are more likely to rent their homes.

In spring 2021, Metro completed analysis of the Multifamily Garbage and Recycling Service Study to evaluate container volumes and collection frequency for garbage, recycling, and glass at multifamily properties across the Metro region.

The information gathered through this study establishes the baseline for one of the key indicators of the 2030 Regional Waste Plan, 'share of multifamily properties with adequate collection service.' For this study, adequate service was defined as meeting the Multifamily Regional Service Standard (RSS), which was updated in 2020 for the first time since it was established almost 30 years ago. The study also establishes a baseline on service levels prior to the implementation of the updated RSS. Study findings will be used to track progress on implementing the updated service standards for multifamily properties as the RSS components go into effect over the next eight years.

Background

In 2017, Metro and local governments developed a shared body of knowledge and data on multifamily garbage and recycling in the region. The work in 2017 included a waste characterization study and a waste generation study to establish a baseline for amount of waste generated by multifamily households and the contamination in the recycling stream from the sector.

Metro's 2017 Multifamily Recycling Project Study found that:

- Many multifamily sites have inadequate access to mixed recycling and glass recycling service.

- Capacity, or volume, of garbage, mixed recycling, and glass recycling collection containers is inconsistent from site to site.
- Less than weekly service of glass recycling or mixed recycling is problematic.
- The current collection equipment is inconsistent and confusing to those who use it.

The 2017 study findings informed the development of the regional service standard updates. Metro Council adopted the updates to the Regional Service Standard (RSS) for multifamily properties in December 2020.

Updated Regional Service Standards

The updated standards aim to create improved and more consistent garbage and recycling collection for multifamily residents, with consistent bin colors, signage, and clear instructions from building to building. Consistency between multifamily sites is an important consideration to address recycling contamination, as half of renters move each year.

The updated Regional Service Standard (RSS) established prescriptive language for:

- The amount and frequency of garbage and recycling collection (effective 2020)
- Signage on bins and in multifamily collection areas (effective 2023)
- Regularly occurring collection of large items (effective 2025), and
- A bin color standard (effective 2028).

The updated RSS includes four components, which will be phased in between 2020 and 2028. In order to measure the progress of implementation across the region, it is necessary to measure what the baseline service level was before the first new standards first went into effect.

Results from the Multifamily Indicator Study discussed in this report serve as the baseline for the first component of the updated RSS: *the amount and frequency of garbage and recycling collection* at multifamily properties. The updated RSS requires properties to provide:

- Garbage service of at least 20 gallons per unit per week
- Recycling of at least 20 gallons per unit per week
- Glass recycling of at least 1 gallon per unit per week

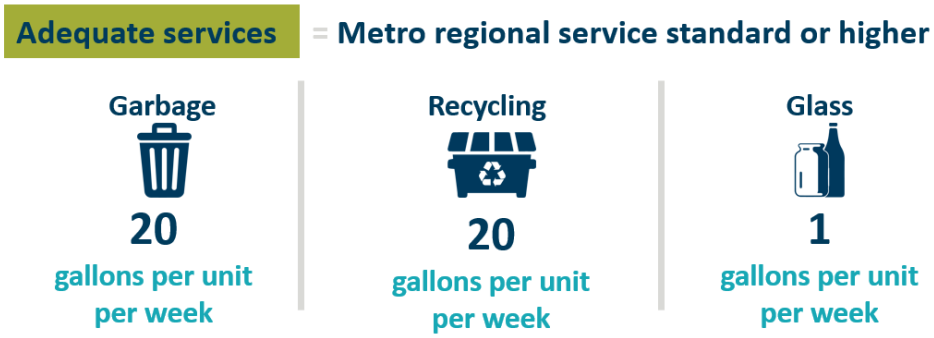
Recycling

In the Metro region, acceptable recyclable materials such as recyclable paper, cardboard, plastic and metal are mixed together in a recycling collection bin. Glass is separated and collected in its own designated bin.

This component of the RSS focuses on providing multifamily residents with enough garbage and recycling bin space and weekly pick-up to support cleaner and safer collection areas. The updated RSS is policy which directly supports Goal 10 of the 2030 Regional Waste Plan, *provide regionally consistent services for garbage, recyclables and other priority materials that meet the needs of all users*. The related key indicator of the Regional Waste Plan, *share of multifamily properties with adequate collection service*, is also directly tied to the new RSS because the definition of adequate service is determined by the current stage of RSS

implementation. The definition of adequate service will expand as the additional RSS requirements go into effect.

Figure 1. Adequate Service on a per unit basis (for 2020 study)



Metro continues to coordinate with local governments and collection companies on implementing the other components of the updated RSS and will further evaluate different elements of the standard in future studies.

SECTION 2: STUDY METHODOLOGY

The goal of this study was to measure container volume and collection frequency for garbage, commingle recycling, and glass recycling among a representative sample of multifamily properties across the Metro region to identify how many met the updated RSS. For this study, multifamily properties were defined as apartment and condominium properties of five or more units with shared garbage and recycling services. This definition is consistent with the definition used for the 2017 multifamily study carried out by Metro and local governments as these properties are most likely to have shared garbage and recycling services. At the time of sample planning, the estimated number of multifamily properties in the region was 5,889 (May 2020).

A representative sample of apartment and condominium properties in the Metro region was selected at random from Metro's Regional Multifamily Housing Inventory, part of the Regional Land Information System (RLIS) database maintained by Metro's Data Research Center. Site sampling targets were set for five jurisdictions: Portland, Gresham/Troutdale, Beaverton, Clackamas County, and Washington County. Targets for each jurisdiction were proportionate to the share of multifamily properties in each jurisdiction in the database, in total and by property size (number of units). The sample targets were a goal and not a requirement. Variation in samples was assumed to be similar to the 2017 multifamily study. See tables 1 and 2 for a breakdown of the samples.

Definition of Multifamily Properties

Apartment and condominium buildings with five or more units; may also include mixed-use buildings, retirement communities and mobile home parks. This report focuses on multifamily sites with shared garbage and recycling collection service.

In total, 361 sites were selected for the sample from the multifamily database; this target was set to provide a statistically valid sample with a confidence level of 95% and a margin of error of 5%. After removing non-viable sites discovered during fieldwork (see additional discussion below), garbage, recycling, and glass collection volume and frequency was recorded at 308 multifamily properties in the Metro region. An external statistician reviewed the final sample and found that overall, despite the smaller sample size, it was proportionately representative and sufficiently robust to support confidence in the results.

Table 1. Sites sampled by jurisdiction

Jurisdiction	Number of sites
City of Beaverton	20
City of Gresham	29
City of Portland	175
Clackamas County	38
Washington County	46
Total	**308**

Table 2. Sites sampled by property size (# of units)

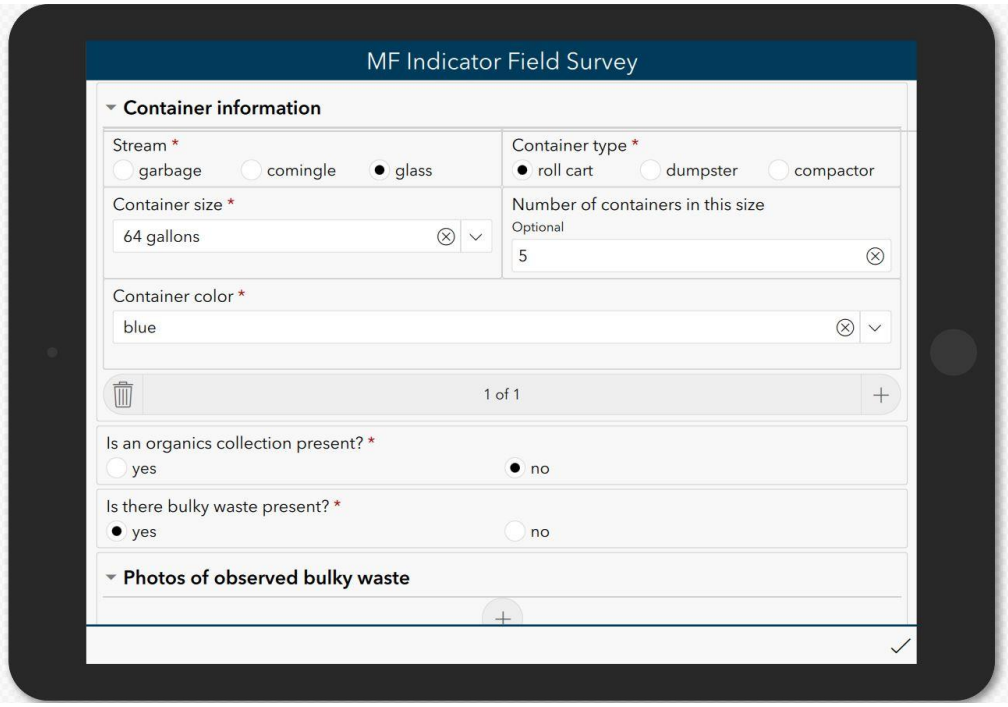
Property size (# of units)	Number of sites
5 to 19	155
20 to 39	57
40 to 64	31
65 to 104	24
105 to 159	18
More than 160	23
Total	**308**

Data Collection

Container volume and frequency of collection were the two key data points collected for each site. The study was organized by Metro, with assistance from cities, counties and garbage collection companies. Metro's contractor, Portland State University's Community Environmental Services (CES) department, planned and conducted all data collection fieldwork between October 2020 and April 2021. The garbage collection companies provided Metro with the frequency of service for the sites visited by CES between April and June 2021.

Metro's Research Center staff built a custom web-based data collection application for this study. ESRI's ArcGIS Survey123 tool was used to create the survey which was administered on iPads supplied by Metro (see Picture 1). The use of web-based technology improves the accuracy of the data because the project manager and technical support team can monitor and troubleshoot data collection in real time.

Picture 1. Survey123 form used to collect on-site container volume data



Container volume data

The first piece of information needed to establish the baseline of service at multifamily properties is the total volume of all bins for each waste stream (garbage, commingle recycling, glass recycling) at a site. This requires recording the total number of containers by type (e.g., roll cart, dumpster, compactor) and the sizes of all bins (e.g., 32 gallons, 3 yards).

The contractor, CES, planned, routed, and scheduled student workers' field data collection activities. Facing unprecedented fieldwork safety concerns due to COVID, CES implemented measures to keep student workers safe while conducting the visits. This included wearing protective equipment such as masks and gloves and conducting site visits independently in order to avoid requiring students to travel in the same car.

Because the types of sites across the region ranged in size and accessibility, both local government employees and CES workers attempted to make contact with property managers prior to visiting sites to describe the study and, if necessary, arrange a time to visit if the enclosures at the site were locked. These calls sometimes revealed that the proposed site did not have shared garbage and recycling service, making it ineligible for this study. If, for example, a block of townhouses had individual residential service for each townhouse instead of shared collection service, it was not a multifamily property and was removed. Also, if multiple unsuccessful attempts had been made to

contact a property manager to gain access to a locked enclosure, it was removed from the study. Sites that were removed from the sample for these types of reasons were replaced with other randomly selected sites of the same property size and jurisdiction. As a result, CES staff visited a total of 416 properties and collected bin volume data for 361 of these.

At each qualifying property, CES staff visited all garbage and recycling areas and enclosures located onsite. They recorded the bin types, colors, and sizes of all garbage, recycling, and glass bins present in the enclosures. Volume was measured and recorded in yards for compactors and dumpsters and in gallons for roll carts. After data collection was complete, Mero staff used Microsoft Power BI to convert the total volume of all bins present for each stream in gallons.

Bins

In this report, the word "bins" is used to refer to all receptacles used to collect garbage, recycling and glass. For multifamily properties, bin types vary and can include roll carts, dumpsters, and compactors.

CES staff also recorded the presence of any large household items, sometimes called bulky waste, in the enclosures. Bulky waste refers to large items that do not fit in carts or containers, such as sofas, bookcases and mattresses. CES staff also recorded the presence of any organics collection. Though not required under the RSS, some multifamily properties in the region offer organics collection services for the disposal of yard debris, food scraps, or yard debris mixed with food scraps. These additional questions about presence of other waste materials were included in the study to better understand the range of services at multifamily properties across the region.

Frequency of collection data

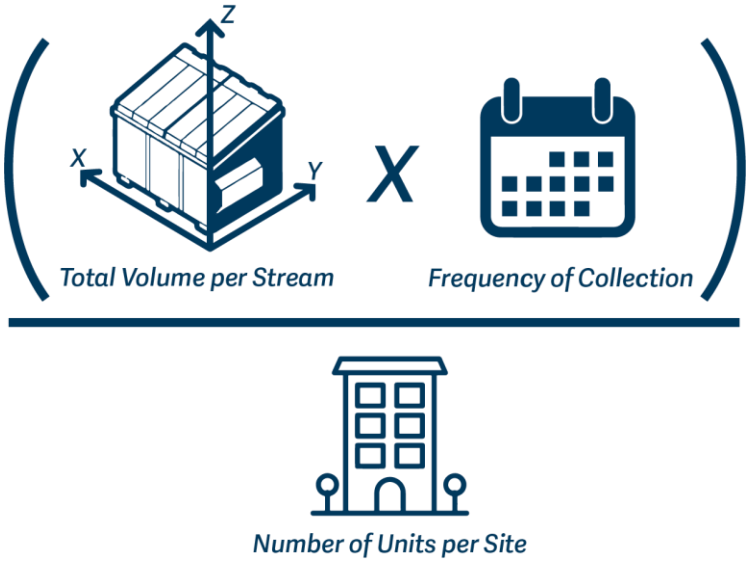
The second piece of information needed to establish the baseline of service at multifamily properties is the frequency of garbage, recycling and glass pick-up by collection companies. Metro staff created a separate online data collection form for collection companies to report the number of pick-ups per week for each stream by bin type. For example, if both a roll cart and a 3-yard container were used to collect mixed recyclables on a site, and the two containers types had different collection frequencies, collection companies would specify collection frequency of each.

Metro identified the collectors serving each multifamily site and sent them the collection frequency form to complete for each of their sites in the sample. Collection companies were often identified based on their franchise areas, which are set by contract with the governing jurisdiction. The exception to this is the City of Portland, which licenses haulers instead of using franchise agreements for commercial and multifamily collection. In addition to Metro's garbage hauler franchise area data, collection companies were identified through information present on bins recorded by CES during fieldwork and by City of Portland staff. Despite significant effort by

CES, Metro, and the City of Portland to identify collection companies, some sites in Portland could not be linked to a collection company and were removed from the study. Of the 361 sites with field data on collection volume, collection frequency was captured for 308 sites, and these sites served as the final study sample.

The target values (the minimum requirement to meet the definition of adequate service, or first component of updated RSS) for garbage, recycling and glass are measured in gallons per unit per week. To calculate this, staff summed the volumes of all containers measured onsite for each waste stream. Collection companies provided the frequency of collection for each container type, by stream, at each site. The number of units per property came from Metro's multifamily housing inventory. The target value was calculated by multiplying the total volume in gallons per waste stream with the frequency of collection (pick-ups per week), then dividing the total by the number of units at a site.

Figure 2. Formula used to calculate target value at each site

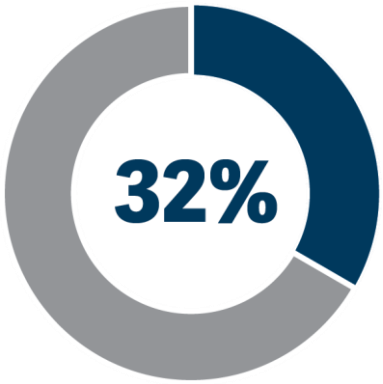


SECTION 3. ANALYSIS AND RESULTS

Share of properties meeting standard

The study found that 32% of multifamily properties surveyed had service that met the RSS for all three streams, meaning that at least 20 gallons of garbage, 20 gallons of recycling, and 1 gallon of glass collection space was available per unit in the property, and was collected at least once a week.

Figure 3. Percent of Multifamily properties meeting standard for all three streams

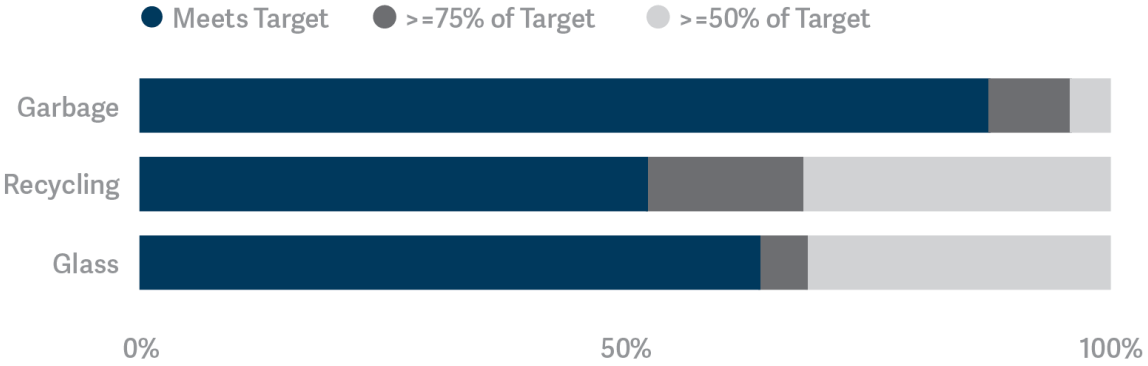


Picture 2. Example property meeting target collection volume and frequency for garbage, recycling, glass collection

Properties meeting the standard for individual streams

Figure 4 below shows the share of properties that met the regional multifamily service standards for garbage, recycling and glass in 2021.

Figure 4. Percentage of properties meeting target by individual stream



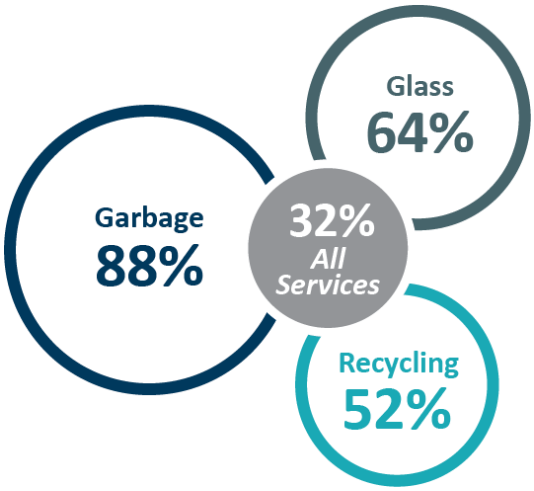
88% of properties met the target for garbage service

52% of properties met the target for commingle recycling service

64% of properties met the target for glass service

The values for properties meeting the individual targets for garbage, commingle recycling and glass service are higher than the 32% of properties that met all three service standards. This indicates that many apartment and condominium homes had one or two services at or above target, but only 32% met all three service standards.

Figure 5. Percent of properties meeting the RSS target overall (all three streams) and those meeting individual targets



Future RSS components

Besides providing the baseline data for the first component of the RSS, this study collected information on other aspects of multifamily collection services. These results will help implement future elements of the Multifamily Regional Service Standard that will require multifamily properties to have approved regional signage on bins (2023), regular collection of large items (effective 2025) and follow a bin color standard (effective 2028).

Approved regional signage on bins

Metro is currently coordinating efforts to remove old garbage and recycling decals from bins at 6,000+ multifamily properties and replace them with redesigned, regionally consistent decals by December 31, 2023.

New garbage and recycling decals and signs were developed in partnership with local government staff. Their designs were informed through consultation and user testing with community partners in five languages, user testing by multifamily property residents, recent recycling behavior research by Metro, and additional research and consultation from Recycling Partnership. The decals are color-coded to make finding the right bins easier.

Picture 3. Redesigned, regionally consistent decals

Large household items

Beginning in July of 2025, multifamily properties will be required to have regular collection of large items. The study results show that large household items, often called bulky waste, were found at 25% of the multifamily properties surveyed. Large items include couches, mattresses, and other furniture that does not fit in carts or containers.

Figure 7. Percent of properties with large household items in or around garbage bins

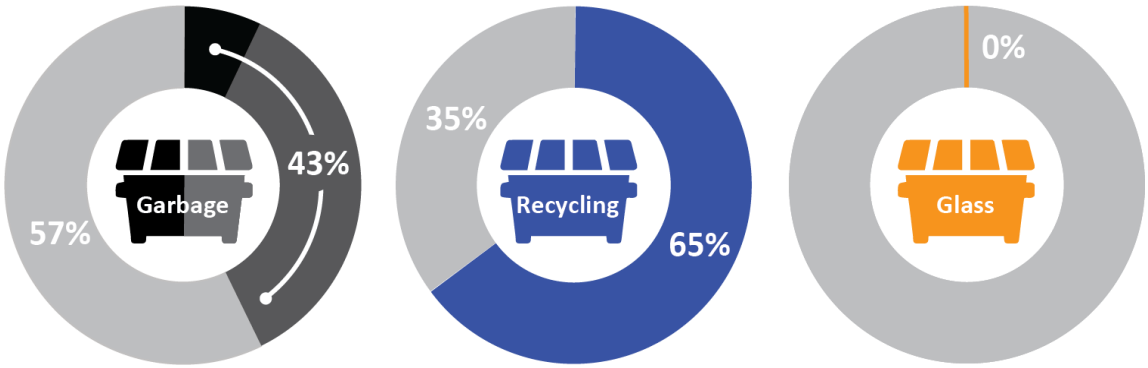
Pictures 3 and 4. Examples of large household items present near enclosures or collection areas

Bin colors and standards

The 2028 RSS bin color standards are:

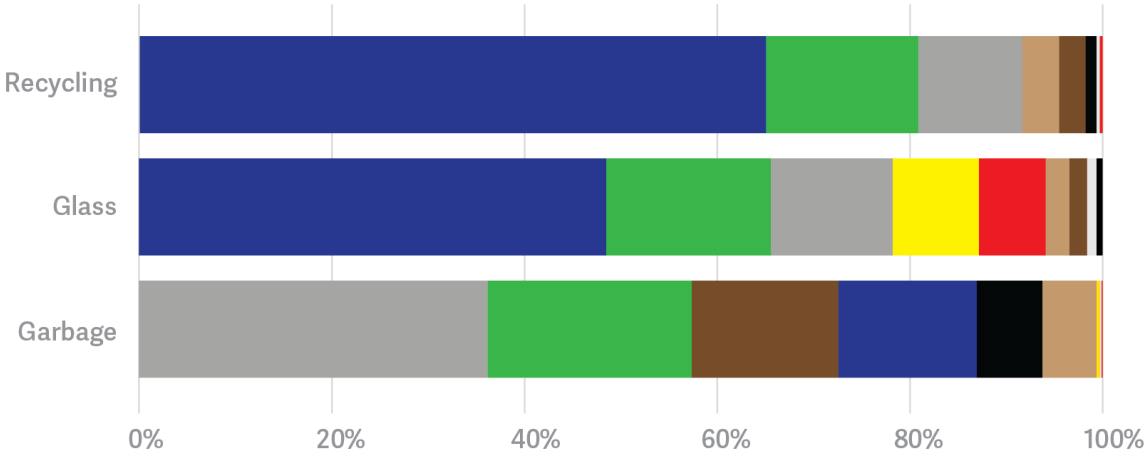
- garbage bins must be gray or black,
- recycling bins must be blue, and
- glass recycling bins must be orange.

Figure 8. Percent of bins meeting future color standard of the RSS



As seen in Figure 8, the study results show that currently, an estimated 43% of garbage bins are black or gray and 65% of recycling bins are blue. The study did not find, and did not expect to find, any orange glass recycling bins at the multifamily properties visited. As part of the new RSS development process, Metro, local government and collection companies agreed on orange as the new color standard for glass, effective 2028. The most common color for glass recycling bins found in this study was blue (48% of bins). Figure 9 below shows the distribution of bin colors currently in use for all three streams.

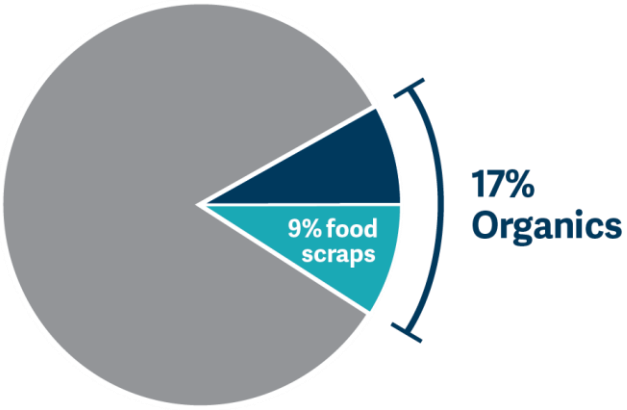
Figure 9. Colors currently in use for garbage, recycling, glass streams



Organics collection service

Although not required as part of the updated RSS, some multifamily properties in the Metro region do provide collection services for organic waste. This service can be for food scraps, yard debris, or food and yard debris mixed together. Metro collected data on the presence of organics collection at multifamily properties to understand how widespread the collection type was across the region.

Figure 10. Percent of properties with any type of organics collection service



As shown in Figure 10, organics collection services were present at 17% of multifamily properties. This includes 9% of sites that have food scraps collection of some sort: either collection of food scraps only or food scraps and yard debris mixed.

SECTION 4: SUMMARY OF CONCLUSIONS

Future studies are needed to assess progress in implementing the updated RSS. Metro, local government partners and collection companies are working to implement the updates to the RSS as they go into effect over the next six years. Repeat studies to measure progress against this baseline will be needed to understand how progress is being made on implementation.

Increased access to commingle recycling and glass recycling service is needed. This study showed that only 32% of properties currently provide adequate collection services to residents., Since 88% of sites surveyed meet the target for garbage service, efforts to provide sufficiently large containers with increased frequency of collection for commingle and glass recycling should be prioritized.

Implementing future phases of the RSS will make the system easier to understand. Many enclosures that were observed during site visits had limited or no signage, and bin colors varied widely. Two components of the updated RSS – the regional signage on bins and in multifamily

collection areas (effective 2023) and a bin color standard (effective 2028) – will address these problems and help residents of multifamily properties understand and use the system.

Additional work is needed to understand and address the large household item collection needs of multifamily residents. The presence of bulky waste at 25% of multifamily properties sampled demonstrates a need for large item collection service. Large items are being discarded inappropriately, creating safety problems and impeding access to garbage and recycling bins. Current cross-jurisdictional work to develop a comprehensive, regional bulky waste strategy will provide increased and consistent access to large item disposal options.

Looking Ahead

Working together, Metro and its local government partners, contractors, and private sector service providers will use this study, along with other information, to inform the development and implementation of policy, education and technical strategies to help increase access to garbage and recycling services at multifamily properties in the Metro region.

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