

GARBAGE AND RECYCLING SYSTEM FACILITIES PLAN

Facility gaps assessment summary report

Introduction

Driven by the need to modernize Metro's aging garbage and recycling facilities, and to meet regional goals to improve access to services and reduce the human health and environmental impacts of products, Metro is developing a Garbage and Recycling System Facilities Plan. The planning process is taking a broad look at the network of private, non-profit and public facilities that are part of the region's reuse, recycling and garbage system to identify potential gaps in services and infrastructure. The goal is to identify the facility investments needed to improve access to services across the region and to reduce the negative health and environmental impacts of products by reusing and recycling more materials and sending less garbage to landfills.

Approach to identifying facility gaps

Between September 2022 and June 2023, Metro used a combination of engagement activities and technical research to identify facility gaps in the regional reuse, recycling and garbage system.

Engagement

The engagement work focused on outreach to diverse audiences, including community members and local government officials from across the three counties in the region, as well as representatives from the garbage and recycling industry and the reuse and repair sector. The project team also engaged Metro Council and different Metro Council advisory groups to review the feedback received and solicit their input. A summary report of the engagement work and the gaps found can be found on the project's website.¹

Technical analysis

To complement and expand on the engagement work, Metro assessed facility gaps in the region by analyzing 14 groups of facilities, organized by material stream accepted and the type of customers served. The material streams analyzed include mattresses, electronics, building materials, paint, mixed recycling, food waste, yard debris, household hazardous waste and garbage. This report focuses on the technical analysis of facility gaps.

¹ Metro (2023). *Metro Garbage and Recycling System Facilities Plan: Phase 2 Engagement Summary Report* (January 2023). Available online at: https://www.oregonmetro.gov/sites/default/files/2023/01/24/Garbage-and-recycling-system-facilities-plan-phase-2-engagement-summary-report.pdf

Technical analysis of facility gaps

The technical analysis summarized in this report focuses on facilities in what is commonly known as the transfer sector: facilities that accept materials from the public or from garbage and recycling companies that collect materials from people's homes and from businesses under authorization by a city or county. Transfer facilities typically serve as places where materials are collected and consolidated into larger loads for transporting to facilities that process those materials for reuse, recycling, composting, landfilling or energy recovery.

The technical analysis did not thoroughly assess gaps in processing facilities. Metro has historically been more active in the transfer sector as a facility operator and the region has relied more on the private and non-profit sectors for processing materials for reuse, recycling, composting and landfilling.² However, through engagement and research, the project team is collecting information on potential gaps in processing facilities for materials such as food waste, yard debris and special waste.

The analysis focused on a limited subset of material streams due to limited time and staffing resources. The 12 material streams included in the analysis were prioritized due to one or more of the following reasons:

- **High negative impacts on the environment and human health** products that are associated with higher levels of emissions of greenhouse gases and other pollutants throughout their lifecycle, from manufacturing to disposal. Examples: electronics, food.
- **Prioritized through engagement** material streams that have been repeatedly discussed by different audiences as not having enough facilities that accept them at affordable prices through this and previous Metro projects. Examples: household hazardous waste, mixed garbage from the public.
- **Low number of facilities** materials that were known to be accepted by fewer than 10 facilities. Examples: mixed garbage and dry waste from the public, business food waste (commercial organics) from haulers.
- Subject to established and new extended producer responsibility programs material streams that are subject to extended producer/product stewardship programs, or that will soon be subject to such programs due to recently approved laws by the state legislature. Examples: electronics, paint, mattresses.

Each group of facilities included in the analysis was assessed in terms of three main areas: access, cost differences and disaster resilience. The analysis reflects the conditions that existed

² The main exception is MetroPaint, which is a Metro owned and operated facility that has processed used latex paint into a recycled paint product sold at paint stores and other establishments since 1991.

between January and May 2023 in terms of the number of facilities, the materials they accept, how much they charge for accepting different types of materials and other factors. It is likely that one or more of these factors has changed since then, given that the region's reuse, recycling and garbage system is constantly evolving.

Access

Access to facilities was mainly evaluated by looking at the estimated driving times to the nearest facility from different parts of the greater Portland region using geospatial analysis, as well as how close each facility is to public transit stops and walking and biking infrastructure. Longer driving times and longer distances to public transit and walking and biking infrastructure were considered indicators that a group of facilities faces gaps in access.

Cost differences

The cost faced by customers for dropping off various types of materials was assessed as the difference between the lowest and highest fees charged by any private or public facility within each group for each material analyzed. The analysis was based on the fees posted by facilities at their locations or online between January and May 2023. Facility groups with large differences between the lowest and highest fees were considered to have cost gaps, as this reflects inconsistent costs across the region.

Disaster resilience

Resilience to disasters was evaluated by identifying the number of facilities within each group that were outside areas with the highest risk of flooding and earthquake damage. Groups that had zero or more facilities in only one of the three counties in the region outside these high-risk areas were considered to have disaster resilience gaps. On the other hand, groups that had at least one facility in each county outside of high-risk areas were considered to have a low resilience gap.

The technical facility gap analysis focused on access, cost differences and disaster resilience for customers that live within the Metro jurisdictional boundary, which covers 24 cities and urban unincorporated areas in Clackamas, Multnomah and Washington counties. Most of the facilities in the analysis are physically located within the Metro boundary, but in some cases, there are facilities located just outside the Metro boundary – including in Clark County, Washington – that are used by customers in the region. Appendix A lists all facilities in each group analyzed.

Scoring methodology overview

Each of the 14 facility groups analyzed was given a score of low, medium or high under each of the three areas described above. Facilities that scored medium or high in one or more areas were considered to have important gaps that could be addressed by the Garbage and Recycling System Facilities Plan. The scoring rubric used to assess each facility group is described in the table below.

Gap level scoring rubric

Score	LOW	MEDIUM	HIGH
ACCESS	Less than 5% of the population/region is over 20 minutes away by car from the nearest facility open to the public/commercial haulers.	5 - 25% of the population/region is over 20 minutes away by car from the nearest facility open to the public/commercial haulers.	More than 25% of the population/region is over 20 minutes away by car from the nearest facility open to the public/commercial haulers.
COST DIFFERENCES	Less than 5% difference between lowest and highest fees.	• 5 - 15% difference between lowest and highest fees.	More than 15% difference between lowest and highest fees.
	At least 1 facility in each of the 3 counties are:	At least 1 facility in each of 2 counties are:	Zero or more facilities in only county are:
DISASTER RESILIENCE	 More than 500 feet away from a very high landslide hazard zone and more than 500 feet away from a high liquefaction zone (earthquake hazard); AND 	 More than 500 feet away from a very high landslide hazard zone and more than 500 feet away from a high liquefaction zone (earthquake hazard); AND 	 More than 500 feet away from a very high landslide hazard zone and more than 500 feet away from a high liquefaction zone (earthquake hazard); AND
	 Less than 50% within a floodplain (flood hazard). 	 Less than 50% within a floodplain (flood hazard). 	 Less than 50% within a floodplain (flood hazard).

Summary of facility gaps

The table below summarizes the gaps identified through both the engagement and technical analysis work done during phase 2 of the Garbage and Recycling Facilities Plan project. The list includes all six primary gap areas identified through engagement and 14 facility groups from the technical analysis. In total, the list includes 17 facility gaps because of some overlap between the gaps identified through engagement and those that resulted from the technical analysis. A summary report of the engagement work and the gaps found can be found on the project's website, which has more information on all the gaps and observations noted by different audiences.³

In the summary table, only the facility groups assessed through the technical work have gap level ratings in terms of the access, cost differences and disaster resilience criteria described in previous sections. The table is followed by individual summaries of each of the 14 facility groups included in the technical analysis. These summaries explain in more detail the rationale behind the gap level ratings.

Summary of facility gaps in the regional reuse, recycling and garbage system

Material	Customer	Gaps identified through	Gaps from technical analysis	Gap level		اد	
stream	type	engagement	Gaps from technical analysis	Access	Cost	Resilience	
Reuse processing	Reuse organizations & businesses	Need for centralized locations with adequate warehouse space for sorting and storing reuse and repair items.	Group not assessed through the technical analysis. No warehousing facilities that are used by multiple reuse organizations or businesses for processing materials were found in the region.				
Large household items for reuse	General public	Need for centralized locations with adequate space to drop-off large household items (furniture, appliances) and other items for reuse and repair.	Not assessed as a group. Mattresses for reuse were assessed separately and the facilities included in that group accept furniture and other large household items for reuse. The facilities included in the building materials reuse group also accept large household items for reuse, including appliances and furniture.				

³ Metro (2023). *Metro Garbage and Recycling System Facilities Plan: Phase 2 Engagement Summary Report* (January 2023). Available online at: https://www.oregonmetro.gov/sites/default/files/2023/01/24/Garbage-and-recycling-system-facilities-plan-phase-2-engagement-summary-report.pdf

Material	Customer	Gaps identified through	Gaps from technical analysis		Gap level	
stream	type	engagement Gaps from technical analysis	Gaps from technical analysis	Access	Cost	Resilience
Mattresses for reuse	General public		Medium access gap with approximately 31% of people in the region more than 20 minutes by car from the nearest facility, particularly in western Washington County and some areas of urban Clackamas County. High disaster resilience gap with only 2 facilities in Multnomah County outside high flood and earthquake hazard zones.	MEDIUM	LOW	HIGH
Electronics reuse & recycling	General public		Low gap levels found in terms of access, cost and disaster resilience.	LOW	LOW	LOW
Building materials reuse	General public		Medium access gap with approximately 6.5% of people in the region more than 20 minutes away by car from the nearest facility, particularly in parts of Clackamas County around Lake Oswego, West Linn and east of Wilsonville and in areas of Washington County around Sherwood and Tualatin. Medium disaster resilience gap with facilities in Clackamas and Multnomah counties outside high flood and earthquake hazard zones, but none in Washington County.	MEDIUM	Low	MEDIUM
Paint recycling	General public		Low level of gaps found in terms of access, cost and disaster resilience.	Low	LOW	LOW
Mixed recycling	Commercial haulers		Medium access gap with approximately 24% of the region facing driving times of more than 20 minutes to the nearest facility. Medium disaster resilience gap: Clackamas and Multnomah counties each have at least one facility outside high flood and earthquake hazard zones, but Washington County has none.	MEDIUM	N/A	MEDIUM

Material	Customer	Gaps identified through	Gaps from technical analysis		Gap level	
stream	type	engagement	daps from technical analysis	Access	Cost	Resilience
Separated recycling	General public		Medium access gap: approximately 14.5% of the region's population with driving times of more than 20 minutes to the nearest facility, particularly in east Multnomah County (Fairview, Gresham, Troutdale, Wood Village) and portions of east, north, southwest and northwest Portland. Medium disaster resilience gap: Clackamas and Washington counties each have at least one facility outside high flood and earthquake hazard zones, but Multnomah County has none.	MEDIUM	LOW	MEDIUM
Hard-to- recycle materials	General public	Need for more places throughout the Metro region to take hard-to-recycle items, such as old clothes, medicines, sharps, construction waste.	Not assessed as a group, but many hard-to-recycle materials are included in other groups. For example, medicines and sharps are included in the group of facilities that accept household hazardous waste from the public. Construction materials are included in the group of facilities that accept dry waste from the public. Many of the facilities in the group that accept separated recycling materials from the public also accept certain hard-to-recycle materials, such as Styrofoam, plastic clamshell containers and car batteries.			
Food waste	Commercial haulers		High access gap: an estimated 61% of the region has driving times of more than 20 minutes to the nearest facility, particularly in most of Clackamas and Multnomah counties east of the Willamette River and most of western Washington County. High cost gap with a difference of more than 38% between the lowest and highest fees charged. High disaster resilience gap: only Washington County has one facility outside high flood and earthquake hazard zones; Clackamas and Multnomah counties have none.	HIGH	HIGH	HIGH

Material	Customer	Gaps identified through	Gaps from technical analysis		Gap level	
stream	type	engagement	Gaps Ironi technical analysis	Access	Cost	Resilience
Mixed food waste & yard debris	Commercial haulers		Medium access gap with approximately 6.5% of the region more than a 20-minute drive from the nearest facility. Areas with the longest driving times are around Beaverton and Aloha in Washington County and parts of southwest and southeast Portland. High cost gap with a difference between the lowest and highest fee of 98%. High disaster resilience gap: Only Washington County has one facility that is outside high flood and earthquake hazard zones.	MEDIUM	HIGH	HIGH
Yard debris	Commercial haulers		High cost gap: difference between lowest and highest fees is 296% for facilities that charge weight-based fees (per cubic yard) and 92.3% for those that charge weight-based fees (per ton).	Low	HIGH	Low
Household hazardous waste	General public	Need for more places throughout the Metro region that collect household hazardous waste.	High access gap: around 60.4% of the region's population is more than 20 minutes away by car from the nearest facility. Areas with longest driving times include large portions of Washington County, large portions of east Multnomah County, and parts of Clackamas County between east Happy Valley and Boring. High disaster resilience gap: none of the three counties in the region have a household hazardous waste facility that is outside high flood and earthquake hazard zones.	HIGH	LOW	HIGH
Mixed dry waste for recycling, energy recovery or landfilling	Commercial haulers		High cost gap: difference between lowest and highest fees charged is 52%.	Low	HIGH	LOW

Material	Customer	Gaps identified through	Gaps from technical analysis	Gap level		
stream	type	engagement	Gaps from technical analysis	Access	Cost	Resilience
Dry waste for recycling, energy recovery or landfilling	General public	Need for more places throughout the Metro region for self-haul household waste.	Medium access gap: driving time to the nearest facility is more than 20 minutes for approximately 16% of the region, including areas between Sherwood, King City and Tigard in Washington County and southwest Portland, and unincorporated areas around Boring in Clackamas County and Orient in Multnomah County. High cost gap: difference between lowest and highest fees charged is 287%. Medium disaster resilience gap: Multnomah and Washington counties have at least one facility outside high flood and earthquake zones; Clackamas County has none.	MEDIUM	HIGH	MEDIUM
Mixed garbage	General public	Need for more places throughout the Metro region for self-haul household waste.	High access gap: approximately 53.3% of the region's population is more than 20 minutes away by car from the nearest facility. Areas most affected by long driving times include large portions of Multnomah and Washington counties and part of Clackamas County between east Happy Valley and Boring. High cost gap, with difference between the lowest minimum fee for mixed garbage loads (\$35) and highest (\$70 or more) is at least 100%. High disaster None of the three counties in the region has a facility that accept mixed garbage from the public and is outside of high flood and earthquake hazard areas.	HIGH	HIGH	HIGH
Mixed garbage	Commercial haulers		Medium access gap, as 13.4% of the region with driving times of more than 20 minutes from the nearest facility, particularly in some parts of Washington County between Hillsboro and Beaverton. High cost gap: 32.4% difference between the lowest and highest fees charged. Medium disaster resilience gap: only Multnomah and Washington counties have at least one facility outside high flood and earthquake zones.	MEDIUM	HIGH	MEDIUM

Infrastructure gap analysis		
Mattresses for reuse		
Customer type	General public	

There are currently three facilities that accept mattresses from the general public for reuse. These are Community Warehouse's Gresham, Portland and Tualatin locations (see Appendix Table A1). Community Warehouse is a furniture bank that operates as a non-profit organization. The organization accepts donated used items from the public and runs used furniture stores at its three locations. In addition to mattresses, Community Warehouse accepts other furniture items like sofas, desks and dining tables, as well as kitchenware, small appliances, linens and furnishing items.

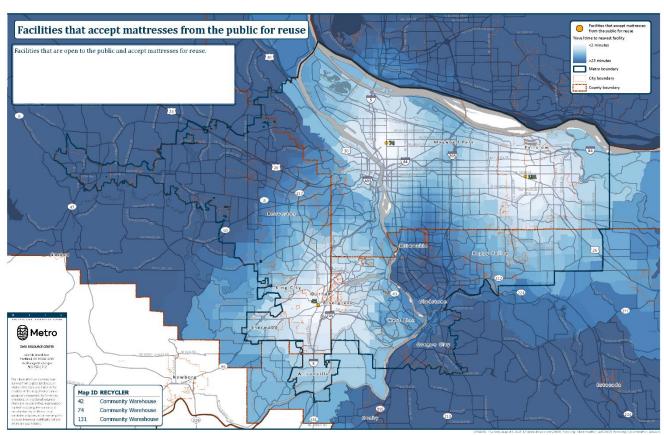
In 2022, the Oregon legislature passed a law establishing a statewide mattress recycling program (Senate Bill 1576) that requires mattress manufacturers to share responsibility for developing and implementing a statewide system for collecting and managing discarded mattresses. This collection program will likely begin in 2024. Mattresses collected will be processed for renovation, reuse or recycling, as appropriate. The law also creates requirements for reducing Illegal dumping of unwanted mattresses and establishing recycling goals.

The mattress stewardship program will be funded by a small assessment collected from customers when they buy mattresses. The amount will be based on the cost to run the program, including environmentally sound management and disposal.⁴

Criteria	Assessment summary	Gap level
ACCESS	Driving times Average driving time to the nearest facility that accepts mattresses from the public for reuse is 16 minutes. About 31% of the population in the greater Portland region is more than a 20-minute car trip from the nearest facility. Map 1 (below) shows the areas with longer driving times in dark blue, which include: • Most of western Washington County – from Forest Grove to parts of Beaverton, • Areas of Clackamas County, including Milwaukie, Gladstone and Oregon City and unincorporated areas around those cities, and • Some portions of southeast Portland. Highway and public transit access Two Community Warehouse locations are within one mile of an interstate or other major highway and the third one is within 1.5 miles. All three locations are less than 1,000 feet away from the nearest public transit stop. Walking and biking access All Community Warehouse locations are connected to surrounding neighborhoods via sidewalks, multiuse trails and biking infrastructure,	MEDIUM

⁴ For additional information, see the Oregon Department of Environmental Quality's (DEQ) *Mattress Recycling Program* website [last accessed on 8/4/2023]: https://www.oregon.gov/deq/recycling/pages/mattress-recycling.aspx

Criteria	Assessment summary	Gap level
	although Martin Luther King Jr. Blvd. has a "bike with caution" designation due to higher traffic, higher speeds, narrow lanes and/or sharp curves.	
COST DIFFERENCES	All Community Warehouse locations accept mattresses free of charge. Community Warehouse offers the option of scheduled pickups for an \$80 fee for standard pickups.	LOW
DISASTER RESILIENCE	Flood hazard Of the three facilities in this group, only the Community Warehouse location in Tualatin (Washington County) is 100% within a FEMA 100-year flood plain. Earthquake hazard All three facilities in this group are more than 500 feet from areas that have experienced landslides in the past and are therefore have a very high landslide hazard. The Community Warehouse Tualatin facility is in a high liquefaction zone. Overall assessment The region has two facilities that accept mattresses for reuse and that are in low flood and earthquake hazard zones. Both facilities are located in the same county (Multnomah County). Therefore, this facility group is considered to have a high disaster resilience gap.	HIGH



Infrastructure gap analysis		
Material stream	Material stream Electronics reuse and recycling	
Customer type	General public	

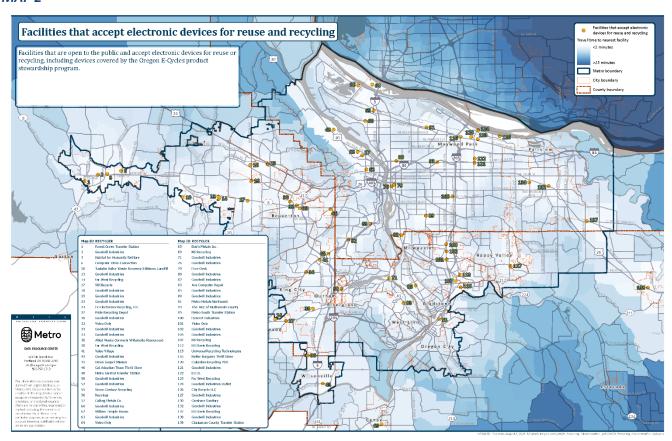
There are 65 facilities in the greater Portland area where people can drop off electronic devices for reuse or recycling. Of these facilities, 45 locations also accept electronic devices covered by the Oregon E-Cycles program for recycling (see Appendix Table A2). The materials covered by Oregon E-Cycles for recycling include desktop and laptop computers, printers, TVs and monitors, keyboards and mice. Facilities that participate in Oregon E-Cycles, including Metro's two transfer stations, receive compensation from product manufacturers for collecting covered electronic devices from the public.

Oregon E-Cycles
A statewide
product
stewardship
program, partially
funded by
manufacturers,
that provides
recycling
opportunities for
televisions,
computers,
monitor, printers,
keyboards and
mice.

Most of the facilities in this group (36 facilities) resell some of the used devices they collect if they are in good condition or after refurbishing them, and they process the rest of the devices collected for recycling. The other facilities in the group (29 facilities) only process the devices they receive from the public for recycling. This group is also dominated by non-profit organizations, including 26 Goodwill thrift stores and donation centers. Only 3 facilities are owned by a government agency: Metro's two transfer stations and the Clackamas County Transfer Station in Sandy.

Criteria	Assessment summary	Gap level
ACCESS	Average driving time to the nearest Oregon E-Cycles facility in the region that accepts electronics for recycling is approximately 5 minutes, and for reuse is 5.6 minutes. No community in the greater Portland region is more than 20 minutes away by car to the nearest facility that accepts electronic devices for recycling or reuse (see Map 2). Highway and public transit access Almost 80% of all facilities in this group are less than one mile away from an interstate or major highway. More than 80% are within 1/4 mile (1,320 feet) of a public transit stop, and about a third are less than 1/2 mile from a light or commuter rail station. Walking and biking access Many facilities in this group are located near commercial areas or in shopping centers that tend to be connected to walking and biking infrastructure.	Low
COST	All facilities included in this assessment accept up to seven electronic devices covered by the Oregon E-Cycles program per person free of charge. Certain locations may accept other electronic items for recycling or reuse, such as DVD players, VCRs, video game consoles, scanners, fax machines, and cell phones, but may charge a fee.	Low

Criteria	Assessment summary	Gap level
DISASTER RESILIENCE	Flood hazard Of the 66 facilities in this group, 60 are more than 50% outside of FEMA 100- year flood plains: 15 in Clackamas County, 27 in Multnomah County and 18 in Washington County. Earthquake hazard A total of 34 facilities in this group are outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones): 10 in Clackamas County, 18 in Multnomah County and 6 in Washington County.	rom
	Overall assessment The region has multiple facilities that accept electronic devices for reuse or recycling in each county that are outsize high flood and earthquake hazard zones. This facility group was assigned a low disaster resilience gap level.	



Infrastructure gap analysis	
Material stream	Building materials for reuse
Customer type	General public

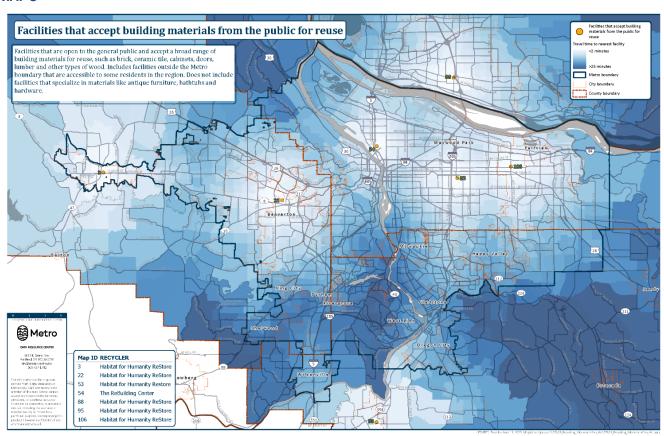
There are seven facilities in or near the greater Portland region that accept a broad range of reusable building materials from the public (see <u>Appendix Table A3</u>). All the facilities in this group are used building materials stores operated by two non-profit organizations.

These facilities are open to the public and accept a broad range of building materials for reuse, such as brick, ceramic tile, cabinets, doors, lumber and other types of wood. Apart from building materials, these facilities also accept and resell other used items such as appliances, furniture and home goods.

The assessment of this group of facilities includes facilities outside the Metro boundary that are accessible to some residents in the region. This group does not include facilities that specialize in certain types of materials such as antique furniture, bathtubs and hardware.

Criteria	Assessment summary	Gap level
ACCESS	The average driving time to the nearest facility that accepts building materials from the public for reuse is 10.6 minutes. An estimated 6.5% of the population in the region is more than 20 minutes away by car from the nearest facility. As Map 3 shows, areas with longer than a 20-minute drive include: • Portions of Lake Oswego, West Linn and unincorporated areas of Clackamas County east of Wilsonville, • Parts of Sherwood and Tualatin in Washington County. Highway and public transit access All facilities in this group are within one mile of a major or interstate highway. Except for the Habitat for Humanity Restore in Canby, all facilities in this group are within 1/4 mile (1,320 feet) of the nearest transit stop. The Canby Restore is 1/2 mile away from the nearest bus stop and there is no light or commuter rail service in that area. Walking and biking access All facilities in this group within the Metro boundary are connected to surrounding communities via sidewalks, multi-use trails and bike lanes, with varying degrees of connectivity. The two facilities outside the Metro boundary (the Habitat Restores in Canby, Oregon and Vancouver, Washington) are more isolated and have limited walking and biking connectivity to surrounding areas.	MEDIUM
COST DIFFERENCES	All building material reuse stores in this facility group are run by non-profit organizations and accept items as donations from the public at no charge. Habitat for Humanity requests a \$15 donation for material pickups to cover fuel costs. The ReBuilding Center has a similar policy and charges \$20 per pickup.	Low

Criteria	Assessment summary	Gap level
DISASTER RESILIENCE	Flood hazard Of the 7 facilities in this group, 6 are more than 50% outside of FEMA 100-year flood plains: 1 in Clackamas County, 3 in Multnomah County and 2 in Washington County. Earthquake hazard Four of the seven facilities in this group are outside high earthquake hazard zones (more than 500 away from high landslide and liquefaction hazard zones): 1 in Clackamas County and 4 in Multnomah County.	MEDIUM
	Overall assessment The region has at least one facility in Clackamas and Multnomah counties that accepts building materials for reuse from the public that are outside high flood and earthquake hazard zones, but none in Washington County. Based on the scoring rubric used in this analysis, this facility group was assigned a medium disaster resilience gap rating.	



Infrastructure gap analysis	
Material stream	Paint recycling
Customer type	General public

There are 44 locations in the greater Portland region that accept paint from the public for recycling as part of Oregon's paint stewardship program (see <u>Appendix Table A4</u>). Under the program, paint retailers collect a fee from consumers for each container of paint sold in Oregon. These fees pay for the program and are managed by PaintCare, an organization set up by paint manufacturers to meet the requirements of the program in state law. PaintCare manages the collection of paint and provides outreach and education to consumers.

Almost all the facilities that accept paint for recycling are paint retailers or hardware stores (36 facilities). The rest include the five Habitat for Humanity ReStore locations in the tri-county area, as well as three Metro facilities: two household hazardous waste facilities and the MetroPaint recycling facility in north Portland.

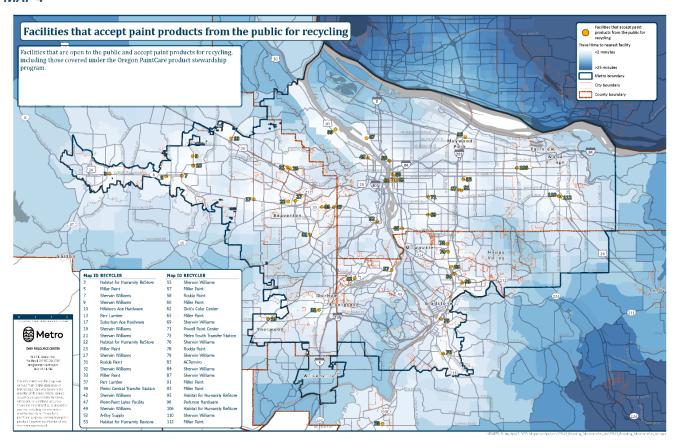
Of all the paint received from residents at these facilities, most of it is taken to processing facilities for recycling, including MetroPaint, while some is reused: either sold or given away by reuse organizations in the original containers. The rest is sent to landfills for final disposal or to waste-to-energy facilities or cement kilns to burn for energy recovery. According to PaintCare, the program collected 632,286 gallons of latex and oil-based paint in Oregon in 2022, of which 5% was processed for reuse, 58% for recycling and 37% for landfilling or incineration.⁵

Criteria	Assessment summary	Gap level
ACCESS	Driving times The average driving time to the nearest facility that accepts paint from residents within the greater Portland region for recycling is 5.3 minutes. There are no areas of the region where residents have to drive more than 20 minutes to reach the nearest paint drop-off location (see Map 4). Highway and public transit access More than 90% of all facilities in this group (40 facilities) are within one mile of an interstate or major highway and within 1/4 mile (1,320 feet) from the nearest public transit stop. Almost half of the locations that accept paint from the public (20 facilities) are located less than 1/2 mile away from a MAX light rail or WES commuter rail station.	Low
	Walking and biking access	
	Paint drop-off locations are typically located in commercially zoned areas surrounded by residential and mixed use residential/commercial areas. Walking and biking infrastructure to these facilities varies and is representative	

⁵ PaintCare (2023). *Oregon Paint Stewardship Program: 2022 Annual Report* (April 17, 2023). Available online at: https://www.paintcare.org/wp-content/uploads/docs/or-annual-report-2022.pdf

Criteria	Assessment summary	Gap level
	of the existing infrastructure in each of the areas across the greater Portland region where they are located.	
COST DIFFERENCES	When residents buy latex or oil paint in Oregon, retailers add fees to the total price they charge based on the size of the paint containers customers bought. As of May 1, 2023, the fees charged by all paint retailers are: \$0.00 for half pint containers or smaller \$0.45 per container larger than half pint but less than 1 gallon \$0.95 per containers between 1 and 2 gallons \$1.95 per container larger than 2 gallons and up to 5 gallons According to PaintCare, retailers are not required to show these fees on receipts, but most stores do show them to explain the price increase to their customers. PaintCare also encourages retailers to show the fee to increase awareness of the program. Because the fees charged by the facilities in this group for accepting paint from the public are the same, this group is considered to have a low gap in terms of cost differences.	LOW
DISASTER RESILIENCE	Flood hazard Of the 44 facilities in this group, 42 are more than 50% outside of FEMA 100- year flood plains: 8 in Clackamas County, 21 in Multnomah County and 13 in Washington County. Earthquake hazard Of all the facilities in this group, 20 are outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones): 3 in Clackamas County, 12 in Multnomah County and 5 in Washington County. Overall assessment The region has multiple facilities that accept paint for recycling in each of the three counties and that are outside high flood and earthquake hazard zones. Based on these results, this group is considered to have a low disaster resilience gap level.	LOW

⁶ PaintCare. Oregon Paint Stewardship Program: How Does the Oregon Paint Stewardship Program Affect Paint Retailers (January 2023). Available online at: https://www.paintcare.org/wp-content/uploads/docs/or-factsheet-retailer-info.pdf.



Infrastructure gap analysis	
Material stream	Mixed recycling
Customer type	Commercial haulers

There are six material recovery facilities that accept and process mixed recycling within the greater Portland region (see Appendix Table A5). All six facilities are privately owned and operated and serve commercial haulers that are franchised or licensed by a city or county to provide curbside/on-route recycling collection services to residential and commercial customers. All six facilities also accept source separated recyclable materials like cardboard and metal from commercial haulers, and in some cases, from contractors, businesses and the public. The source separated materials accepted are not consistent across all six facilities.

Mixed recycling Refers to the recyclable materials that are mixed together or commingled in the recycling carts that are picked up by collection companies from homes and businesses.

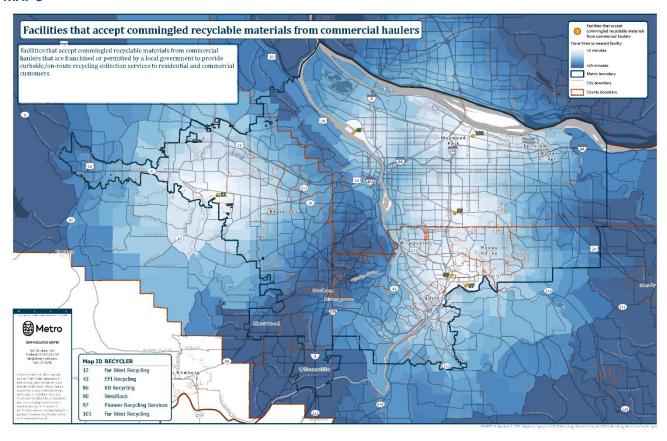
Haulers typically take the mixed recycling they collect directly to a material recovery facility, but in some cases, they take the materials to a transfer station, where the mixed recycling materials are consolidated into larger loads that are then "reloaded" or transported to a material recovery facility. The six private transfer stations located within the Metro boundary are authorized by Metro to accept mixed recyclable materials for transporting to a material recovery facility, but only some do. Transfer stations acting as "reload" facilities for mixed recycling were not included in this gap assessment.

The materials received by material recovery facilities are sorted and separated using a combination of manual labor and machinery into different categories such as cardboard, paper, metal and plastic. The separated materials are then baled and sold to companies that turn those materials into new products or to material brokers that sell those bales to other companies in the United States and across the world.

With passage of the Plastic Pollution and Recycling Modernization Act by the Oregon legislature in 2021, the region's mixed recycling facilities are expected to receive funding from producers of packaged items to upgrade their sorting equipment and ensure workers are paid living wages and benefits. The new law also aims to reduce the fees charged by material recovery facilities to commercial haulers, which should lead to lower garbage and recycling collection bills for residents and businesses.

Criteria	Assessment summary	Gap level
ACCESS	Driving times The average driving time to the nearest mixed recycling facility is 14.4 minutes. An estimated 24% of the area within the greater Portland region is more than 20 minutes away from the nearest facility (see Map 5). The areas with the longest driving times to the nearest facility include: • Washington County around Sherwood, King City, Tualatin and Tigard • Significant portions of Lake Oswego and southwest Portland. • Areas in the eastern part of the region, from Troutdale in Multnomah County south to Damascus in Clackamas County. Highway and public transit access Four of the six facilities in this group are less than one mile from an interstate or major highway. The other two (EFI Recycling and Far West Northeast Portland) are less than 2 miles from an interstate highway. Half of the six mixed recycling facilities are less than 1/4 from a public transit stop and all of them are more than 1/2 mile from a light or commuter rail station. Walking and biking access All facilities in this group are in industrial areas that tend to be relatively isolated from residential neighborhoods. Four of the six facilities are connected to walking infrastructure via sidewalks, while five are on or near streets with some dedicated bike lanes but close to barriers like rivers and interstate highways.	MEDIUM
COST DIFFERENCES	Mixed recycling facilities were not individually assessed in terms of cost. These facilities do not typically make their pricing information available online or elsewhere. The Plastic Pollution and Recycling Modernization Act sets a future target of \$0 per ton for the fees charged by material recovery facilities to commercial haulers. This will likely lead to haulers facing not only significantly lower charges for mixed recycling loads, but also fees that are the same or similar across all facilities in the region.	N/A

Criteria	Assessment summary	Gap level
	Flood hazard Five of the six facilities in this group are more than 50% outside FEMA 100-year flood plains: 2 in Clackamas County, 2 in Multnomah County and 1 in Washington County.	
DISASTER RESILIENCE	Earthquake hazard Of the 6 facilities in this group, 4 are outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones): 2 in Clackamas County and 2 in Multnomah County.	MEDIUM
	Overall assessment	
	Clackamas and Multnomah counties each have more than one facility that accept mixed recycling from haulers and that are outside high flood and earthquake hazard zones. None of the facilities in Washington County are outside these high hazard areas. Based on the scoring rubric used in this assessment, this group was assigned a medium disaster resilience gap rating.	



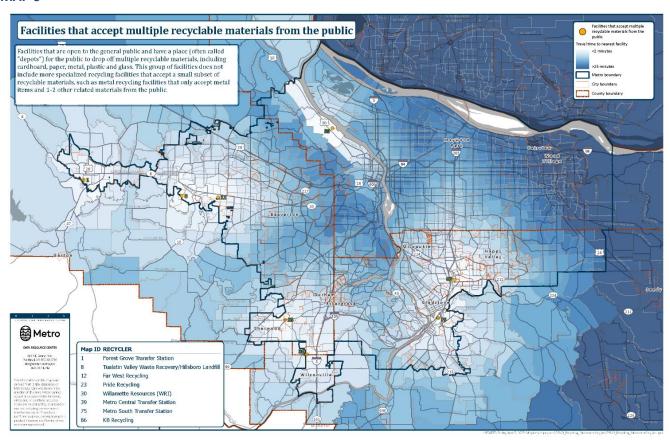
Infrastructure gap analysis	
Material stream	Separated recycling
Customer type	General public

There are eight facilities in the region that accept a wide range of recyclable materials from the public (see <u>Appendix Table A6</u>). These facilities are often called "recycling depots" and have separate bins for people place materials for recycling. Recycling depots tend to be located inside or adjacent to garbage and recycling facilities such as transfer stations and material recovery facilities, both private and public.

Although there are many facilities in the region that accept recyclable materials from residents, only a few provide one-stop locations where people can take multiple types of materials. Based on feedback received by Metro during phase 2 of this project and past projects, people in the region value the convenience of having single places that accept multiple items for recycling. For this reason, this assessment focuses on the eight facilities in the region that have a place for the public to take all of the following most common types of household recycling materials: cardboard, paper, metal, glass, and some types of plastic items. These depots generally accept these recyclable materials for free, but may charge for others, including hard-to-recycle and hazardous items like batteries, sharps, fluorescent light tubes and expanded polystyrene plastic (also known by its trademarked name, Styrofoam).

Criteria	Assessment summary	Gap level
ACCESS	Driving times Average driving time to the nearest recycling depot is 13.4 minutes. Approximately 14.5% of the region's residents are more than 20 minutes away from the nearest recycling depot by car. The areas with the longest driving times to the nearest depot (over 25 minutes) are Fairview, Troutdale, Wood Village and parts of Gresham in east Multnomah County (see Map 6, below). Other areas with longer driving times (more than 20 minutes but less than 25 minutes) include some portions of east, north, southwest and northwest Portland. Highway and public transit access All eight facilities in this group are within one mile of an interstate or major highway. Two facilities are less than 1/4 mile (1,320 feet) of the nearest public transit stop and the rest within 1/2 mile, with the exception of Tualatin Valley Waste Recovery, which is over one mile away from the nearest transit stop. All eight recycling depots are more than 1/2 mile away from a light or commuter rail station. Walking and biking access More than half of the facilities in this group are connected to walking and biking infrastructure, although in many cases, bike lanes are designated as 'bike with caution' and most of the facilities are in industrial areas that are relatively isolated from residential neighborhoods.	MEDIUM
COST DIFFERENCES	The materials accepted at no charge are relatively consistent across all eight recycling depots in the region, but not the same. All facilities accept cardboard,	

Criteria	Assessment summary	Gap level
	paper, metal, container glass, and plastic bottles and tubs at no cost. Most facilities also accept items like electronics and motor oil at no charge.	LOW
	The items and materials accepted for a fee are similar, but not the same and the fees vary across facilities.	
	Flood hazard Of the 8 facilities in this group, 7 are more than 50% outside FEMA 100-year flood plains: 1 in Clackamas County, 1 in Multnomah County and 5 in Washington County. Earthquake hazard	
DISASTER RESILIENCE	There are 3 out of 8 facilities in this group outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones): 1 in Clackamas County; 2 in Washington County.	MEDIUM
	Overall assessment There is at least one facility per county in Clackamas and Washington counties that accept separated recyclables from the public and that are outside high flood and earthquake hazard zones, but none in Multnomah County. Based on these results, this group was assigned a medium disaster resilience gap rating.	



Infrastructure gap analysis

Material stream Food waste (commercial organics)

Customer type Commercial haulers

OVERVIEW

Three facilities in the greater Portland region currently accept business food waste from commercial haulers: Pride Recycling Company, Metro Central Transfer Station, and Willamette Resources (WRI) (see Appendix Table A7). These facilities accept food waste collected by commercial haulers that are franchised or permitted by a local government to provide collection services to food-generating business and institutions like restaurants, grocery stores, hospitals and schools. The food waste received at these facilities is sent on to other locations for composting (currently Recology Organics in Aumsville, Oregon, Republic's Pacific Region Compost in Corvallis, Oregon, and Dirt Huggers, Dallesport, WA).

Commercial organics An industry term for the food scraps collected by haulers from businesses.

Following a policy adopted by Metro Council, certain businesses are being required to separate their food scraps by September 2024 and keep them out of the landfill.

A portion of the food waste generated by businesses in the region (mainly grocery stores) is sent directly to processing facilities. Approximately 80% of the region's grocery stores send food waste to Divert's processing facility in Albany, Oregon. Divert then sends the processed material to Stahlbush Island Farms' anaerobic digestion facility in Corvallis, Oregon, which converts the food waste into fertilizers and biogas used to generate renewable electricity. Organix Recycling and other companies collect food waste and deliver it to local farms or processing facilities for livestock feed. In December 2022, Metro authorized COR Transfer Station to take food waste from the MODA Center directly to the Annen Brothers compost facility in Mt. Angel, Oregon.

To expand processing capabilities and improve system resiliency, Metro has partnered with the City of Portland Bureau of Environmental Services to evaluate options to pre-process food waste into a slurry that can be used in the anaerobic digesters at Portland's Columbia Boulevard Wastewater Treatment Plant. Gresham's Wastewater Plant has studied potential options for accepting business food waste. Divert is planning to expand capacity in the Pacific Northwest and build and operate an anaerobic digestion facility in Longview, Washington.

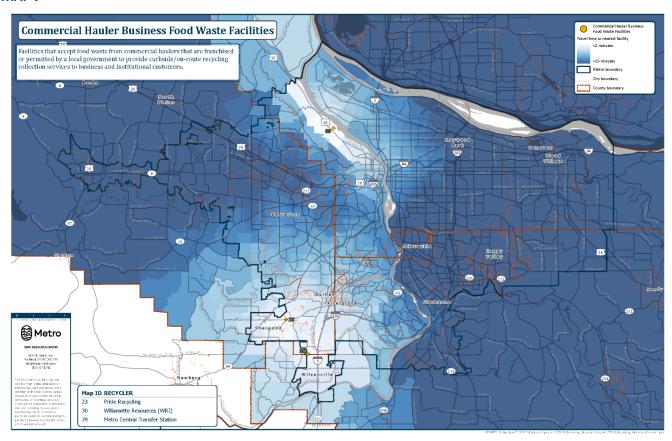
In July 2018, Metro Council adopted the Business Food Waste Policy requiring certain businesses to separate food scraps from garbage. Originally set to begin in March 2020, the mandatory program was delayed due to the impacts of COVID-19 on the region's residents and businesses. Implementation of the requirement began in March 2022 and all businesses generating more than one 60-gallon roll cart of food scraps per week will need to be in compliance by September 2024. Metro estimates that the policy will increase recovery of food waste for composting by 52,000 tons per year. Approximately 21,000 tons per year are currently being collected and sent to either direct processing or a composting facility.

The stability of the mandatory food scraps program relies on access to multiple composting, anaerobic digestion and other end markets that can process the material into valuable products. These products are used on lawns, gardens, and agricultural fields and the process of anaerobic digestion creates renewable energy as a secondary benefit. When inorganic material such as plastic packaging contaminates the finished product, it impacts the product's value and poses risks to environmental and human health.

Most facilities processing food scraps in the region cannot effectively remove contaminants. Despite Metro's food-only collection standard, a recent food scraps composition study indicates an 11% contamination rate. This contamination impacts the ability of end markets to utilize the material and poses a risk to the stability of the region's food waste recovery system. This risk can be mitigated by installing pre-processing equipment that can effectively remove contaminants at transfer stations that accept commercial food scraps. The ability to create clean food scraps supports access to multiple end markets and helps ensure program stability.

Criteria	Assessment summary	Gap level
	Driving times The average driving time to the nearest facility that accepts business food waste from commercial haulers is 25.5 minutes. Approximately 61% of the region is more than 20 minutes away by car from the nearest business food waste facility. As Map 7 shows, the areas where commercial haulers face the longest driving times include most of the areas within the Metro boundary east of the Willamette River in Clackamas and Multnomah counties, as well as most of western Washington County, from Forest Grove to Beaverton.	
ACCESS	Highway and public transit access All three facilities in this group are within one mile of an interstate or major highway. One facility (Pride Recycling) is within 1/8 mile (660 feet) of the nearest public transit stop, while the other two are within 1/3 mile (1,800 feet). All three facilities are more than 1.5 miles away from either a MAX light rail or WES commuter rail station. Walking and biking access	HIGH
	All facilities in this group are in industrial areas and relatively isolated from residential neighborhoods. Pride Recycling and Willamette Resources (WRI) are connected to walking and bikeway infrastructure. Metro Central is accessible by roads with fewer sidewalks and no dedicated bike lanes. Between July 1, 2022 and June 30, 2023, the total charge for 6 tons of business food waste brought by commercial haulers that use Metro Central's automated scales was \$71.51 per ton (\$73.80 for haulers that do not use the	
COST DIFFERENCES	automated scales). As of March 2023, the total charge for 6 tons of business food waste brought by commercial haulers to Willamette Resources (WRI) was \$102.05, based on the facility's posted fees. Pride Recycling is authorized and open to receiving business food waste from	HIGH
	commercial haulers. However, as of March 2023, the facility has not reported receiving any business food waste. The difference between the lowest and the highest fees charged by facilities in this group to commercial haulers for a 6-ton load of business food waste was 38.3%. Since this difference is more than 15%, this group was assigned a high cost difference gap level rating.	

Criteria	Assessment summary	Gap level
DISASTER RESILIENCE	Flood hazard All 3 facilities in this group are more than 50% outside of any FEMA 100-year flood plain: 1 in Multnomah County and 2 in Washington County. Clackamas County does not have any facilities that accept business food waste from commercial haulers. Earthquake hazard Of the 3 facilities in this group, 1 facility in Washington County is outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones). Clackamas County does not have any	HIGH
	facilities that accept commercial organics from commercial haulers. Overall assessment Only Washington County has one facility that accepts business food waste from commercial haulers and that is outside of high flood and earthquake hazard zones. Based on these results, this group is determined to have a high disaster resilience gap level.	



Infrastructure	gap ana	lysis
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Material stream Mixed food waste and yard debris (residential organics)

Customer type Commercial haulers

OVERVIEW

There are seven facilities in the greater Portland region that currently accept mixed food waste and yard debris – also referred to as 'residential organics' – collected by commercial haulers that are franchised or permitted to provide curbside collection services to homes (see Appendix Table A8). At present, 12 out of 24 cities within the Metro jurisdictional boundary have residential organics programs for single family residents as part of their regular garbage and recycling curbside collection service. These programs allow single family residents to place food waste in their yard debris containers. As of April 1, 2023, the jurisdictions with residential organics programs include the cities of Beaverton, Cornelius, Durham, Forest Grove, Hillsboro, King City, Lake Oswego, Milwaukie, Portland, Sherwood, Tigard and Wilsonville.

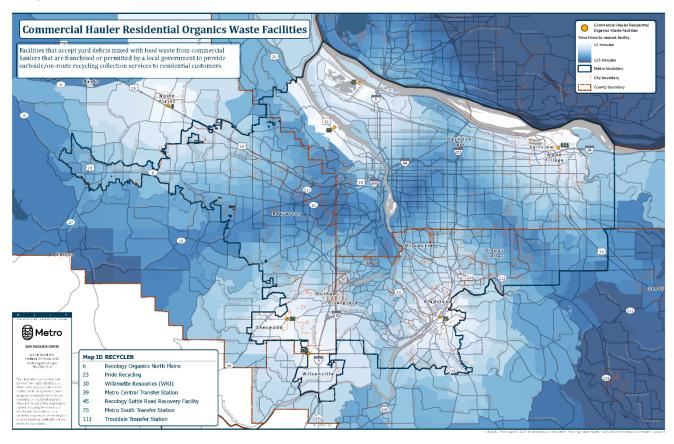
organics
An industry term for the material collected by haulers in cities and counties that offer people in single family homes the option of placing food waste in their yard debris collection bins.

Residential

Five of the facilities that accept mixed food waste and yard debris from commercial haulers are privately owned and operated. The other two facilities (Metro Central and Metro South) are owned by Metro and operated by a contractor. Most facilities in this group are transfer stations and one is a material recovery facility, where the mixed food waste and yard debris brought in by commercial haulers is aggregated and then transferred to a composting or anaerobic digestion facility. One facility (Recology Organics North Plains) is a composting facility and is located outside the Metro boundary in the city of North Plains in Washington County.

Criteria	Assessment summary	Gap level
ACCESS	Driving times The average driving time to the nearest facility that accepts mixed food waste and yard debris in the greater Portland region is approximately 13.5 minutes. An estimated 6.5% of the greater Portland region is more than a 20-minute drive from the nearest facility. The areas most affected by longer driving times are around Beaverton and Aloha in Washington County, and southwest and southeast Portland (see Map 8). Highway and public transit access Most facilities in this group are within a mile of an interstate or major highway. The exception is Suttle Road Recovery Facility, which is 1.5 miles west of I-5 in an industrial area of north Portland near Hayden Island. Three of the seven facilities are less than 1/4 from a public transit stop and all are more than 1/2 mile from the nearest light or commuter rail station.	MEDIUM
	Walking and biking access All facilities in this group are in industrial or rural areas and relatively isolated from residential neighborhoods. Most facilities are connected to walking and bikeway infrastructure, but with barriers nearby such as highways and rivers.	

Criteria	Assessment summary	Gap level
COST DIFFERENCES	Between July 1, 2022 and June 30, 2023, the total charge for 6 tons of residential food waste mixed with yard debris brought by commercial haulers that use automated scales at Metro transfer stations is \$84.09 per ton (\$86.36 per ton for haulers that do not use the automated scales). Between January and May 2023, the total fees charged at private facilities for 6 tons of residential organic waste brought in by commercial haulers ranged between \$51 and \$101 per ton (a 98% difference), based on posted pricing information. Given that this difference is more than 15%, this group was assigned a high cost difference gap level rating.	HIGH
DISASTER RESILIENCE	Flood hazard Of the 7 residential organic waste facilities in the region, 4 are more than 50% outside any FEMA 100-Year flood plain: 2 in Multnomah County and 2 in Washington County. Earthquake hazard Only 1 of the facilities in this group in Washington County is outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones). Overall assessment Only Washington County has one facility that is outside high flood and earthquake hazard zones. Based on these results, this group was assigned a	HIGH



Infrastructure gap analysis		
Material stream	Yard debris	
Customer type	Commercial haulers	

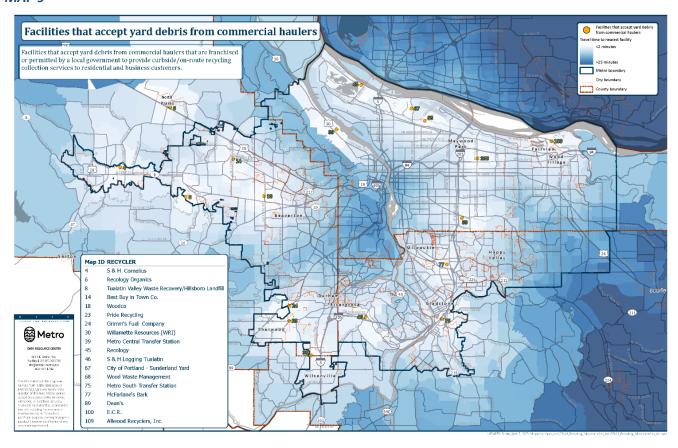
There are 18 facilities in the greater Portland region that accept yard debris from commercial haulers that are franchised or permitted by a city or county to provide curbside collection services to residential and business customers (see <u>Appendix Table A9</u>). All private transfer stations and most material recovery facilities regulated by Metro are authorized (by Metro) to accept yard debris from anyone, including haulers, for processing or reload, but not all facilities choose to accept yard debris.

Yard debris
Includes all nonfood material
that grows in
backyards and
other landscaped
areas such as
leaves, weeds,
grass clippings,
and small
branches.

Most of the facilities are transfer stations, material recovery facilities or reload facilities where yard debris is accepted from commercial haulers and then consolidated into larger loads that are then taken to composting facilities in the greater Portland region or to composting facilities outside the region such as Recology Organics in Aumsville, Oregon, southeast of Salem. Three of the yard debris facilities in this group are publicly owned, including the Metro's two transfer stations (Metro Central and Metro South) and the City of Portland's Sunderland Recycling Facility near the Portland International Airport. The Sunderland Recycling Facility only accepts leaves collected under the City of Portland's Leaf Day collection program and is not open to all commercial haulers.

Criteria	Assessment summary	Gap level
	Driving times Average driving time to the nearest facility that accepts mixed food waste and yard debris in the greater Portland region is approximately 8.5 minutes. An estimated 0.3% of the region is more than a 20-minute drive from the nearest facility, in unincorporated areas of Clackamas County around Boring (see Map 9).	
ACCESS	Highway and public transit access All but three of the facilities in this group are within one mile of an interstate or major highway. The exceptions are Allwood Recyclers in Fairview (1.5 miles north of I-84), Best Buy in Town in Hillsboro (1.2 miles south of highway 26) and Suttle Road Recovery Facility in north Portland (1.4 miles west of I-5). Seven of the 18 yard debris facilities are less than 1/4 mile from a public transit stop, and none are within 1/2 mile of a light or commuter rail station.	LOW
	Walking and biking access Only three of the 18 facilities in this group are within 1/4 mile of a multiuse trail, and about two thirds are on or near streets with dedicated bike lanes.	

Criteria	Assessment summary	Gap level
COST DIFFERENCES	Between July 1, 2022 and June 30, 2023, the total charge for 6 tons of yard debris brought by commercial haulers that use automated scales at Metro transfer stations is \$56.71 per ton (\$59 per ton for haulers that do not use the automated scales). Most facilities in this group do not have scales to weigh customer vehicles and therefore charge in terms of volume, in dollars per cubic yard of yard debris. Only 6 of these facilities charge weight-based fees, in dollars per ton of material brought in. Among facilities with weight-based fees, the difference between the lowest fee (\$51 per ton for a 6-ton load) and the highest (\$202 per ton for a 6-ton load) was 296% between January and May 2023, based on pricing information posted by these facilities at their gates and/or online. During the same period, among facilities that charge volume-based fees, the difference between the lowest fee (\$13 per cubic yard) and the highest (\$38 per cubic yard) was 92.3%, based on pricing information posted at the facilities' gates or online. Given these differences, this group was assigned a high cost difference gap	HIGH
DISASTER RESILIENCE	Flood hazard Of the 18 facilities in this group, 12 are more than 50% outside any FEMA 100- year flood plain: 1 in Clackamas County, 4 in Multnomah County and 7 in Washington County. Earthquake hazard Of the 18 facilities in this group, 8 are outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones): 2 in Clackamas County, 2 in Multnomah County and 4 in Washington County. Overall assessment Each of the three counties in the region has at least one facility that accepts yard debris from commercial haulers and outside of high flood and earthquake hazard zones. Based on this results, this group was assigned a low disaster resilience gap level rating.	LOW



Infrastructure gap analysis		
Material stream	Household hazardous waste	
Customer type	General public	

There are two household hazardous waste facilities in the greater Portland region co-located with Metro Central Transfer Station in north Portland and Metro South Transfer Station in Oregon City (see <u>Appendix Table A10</u>). Both facilities are owned and operated by Metro.

Metro provides additional collection of household hazardous waste through free, neighborhood collection events across the region during spring and fall. Collection events are usually well attended and highly rated by customers. Feedback from residents has also pointed out that collection events are not frequent enough,

Household
hazardous waste
Unwanted
chemical materials
or products that
are or may be
hazardous or toxic
to the people or
the environment
and are commonly
used at home,
such as solvents,
pesticides,
cleaners and
paints.

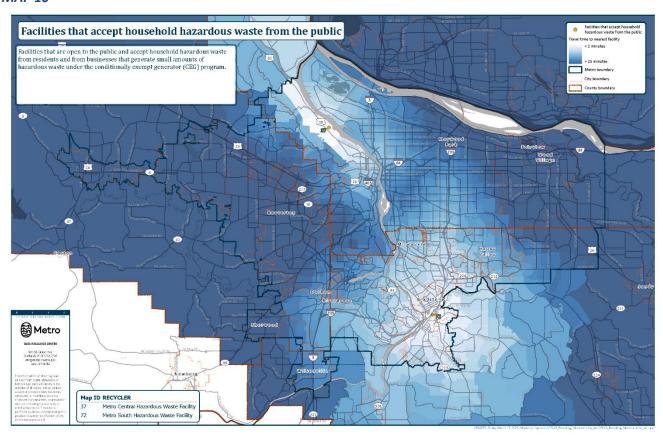
locations vary, hours are limited, tend to have long wait times, and overall, do not provide the same level of access as permanent facilities.

Metro is required by state law to establish permanent facilities to receive household hazardous waste across the region that are located and conveniently designed to serve the general public. State law also requires Metro to have a promotion program to encourage people to use those facilities.⁷

Criteria	Assessment summary	Gap level
ACCESS	 Driving times The average driving time to the nearest household hazardous waste facility is 22.2 minutes. Around 60.4% of the population in the region is more than 20 minutes away by car from the nearest facility (see Map 10). Areas with the longest driving times include: Large portions of Washington County from Forest Grove to Beaverton and Tigard, East Multnomah County including parts of east Portland, Gresham, Fairview, Troutdale and Wood Village, Parts of Clackamas County in east Happy Valley and the Damascus-Boring area, Some parts of southwest Portland. Highway and public transit access Metro Central is in a heavy industrial zone within one mile of highway 30, while Metro South is off I-205 at the junction with highway 30. Metro Central is approximately 1/3 mile from a public transit stop and more than 3.5 miles from the nearest MAX light rail station. Metro South is less than 1/10 mile of a public transit stop and more than 4.5 miles away from a MAX light rail station. 	HIGH

⁷ Oregon Revised Statutes (ORS) (2021 Edition) 459.413. Available online at: https://www.oregonlegislature.gov/bills_laws/ors/ors459.html

Criteria	Assessment summary	Gap level
	Walking and biking access	
	Metro Central is not immediately connected to streets with sidewalks or dedicated bike lanes. Its location in an isolated industrial area and barriers like highway 30 decrease access to the facility. Metro South is connected to streets with sidewalks and bike lanes, but there are barriers like the I-205 freeway, major highways and the Willamette River that make walking and biking to the facility harder.	
COST DIFFERENCES	Household hazardous waste disposal is free for residents at the two Metro facilities, while small quantity generating businesses can apply for reduced disposal fees.	Low
	Flood hazard	
	Of the two facilities in this group, only Metro South in Clackamas County is more than 50% within a FEMA 100-year flood plain and has experienced flood damage before (in 1996).	
	Earthquake hazard	
DISASTER RESILIENCE	Both Metro Central (Multnomah County) and Metro South (Clackamas County) are within high earthquake hazard zones (defined as being within 500 feet of high landslide and liquefaction hazard zones).	HIGH
	Overall assessment	
	None of the three counties in the region have a household hazardous waste facility that is outside high flood and earthquake hazard zones. Based on this result, this group is considered to have a high disaster resilience gap level.	



Infrastructure gap analysis		
Material stream	aterial stream Mixed dry waste for recycling, energy recovery or	
	landfilling	
Customer type	Commercial haulers	

The greater Portland region has a total of 12 facilities that accept and process mixed dry waste from commercial haulers that are franchised or licensed by cities and counties to collect such waste from homes and businesses (see Appendix Table A11). This list includes public and privately owned facilities.

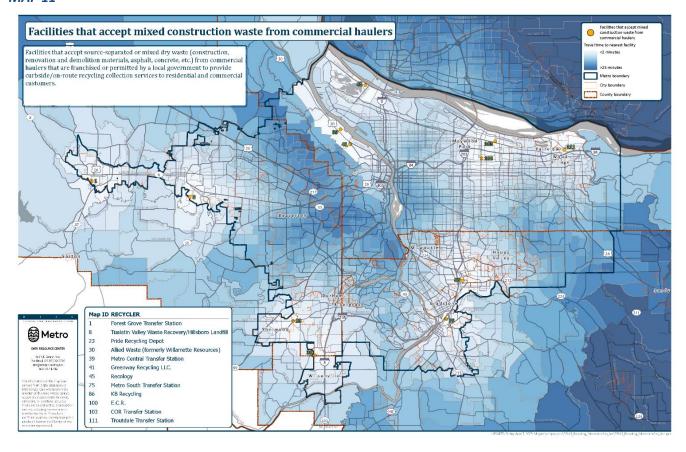
As required under Metro's Enhanced Dry Waste Recovery Program (EDWRP), all mixed dry waste – which includes construction and demolition waste – generated within the region must be transported to an authorized material recovery facility before it can be taken to a landfill for final disposal. Because of this requirement, commercial haulers take mixed construction waste directly to an authorized facility

Mixed dry waste An industry term for mixed loads of waste that typically contain mixed paper, metals, plastics, yard debris, wood, concrete, dry asphalt, construction and demolition wastes, land clearing debris, and/or gypsum wallboard (also called drywall).

or to a transfer station, where the waste is consolidated and then taken to one of the authorized facilities. At the authorized material recovery facilities, workers and machinery go through the waste and separate some materials for recycling like metals, plastics and paper. In the case of wood, the material that is separated from the mixed dry waste is typically turned into hog fuel, which is a mix of coarse chips of wood that is burned as fuel in industrial boilers to generate heat and electricity.

Criteria	Assessment summary	Gap level
ACCESS	Driving times The average driving time to the nearest facility that accepts mixed construction waste from commercial haulers in the greater Portland region is 10.4 minutes. Approximately 2.5% of the region faces driving times of more than 20 minutes to the nearest facility (see Map 11). Longer driving times are found particularly in: • Some areas east of Beaverton (Raleigh Hills), • Between Cedar Mill in unincorporated Washington County and Forest Park in northwest Portland, • Areas around Damascus and Boring in Clackamas County. Highway and public transit access	Low
	All 12 mixed dry waste facilities in this group are within one mile of an interstate or major highway. Five facilities are less than 1/4 mile from a public transit stop and all are more than 1/2 mile away from the nearest light or commuter rail station. Walking and biking access Most facilities in this group are connected to sidewalks and trails and are adjacent to or near streets with bike lanes. However, all facilities are in	
	industrial areas that are relatively isolated from residential neighborhoods and	

Criteria	Assessment summary	Gap level
	where walking and biking access is made more difficult by barriers such as interstate and/or state highways and rivers.	
COST DIFFERENCES	Between July 1, 2022 and June 30, 2023, the total charge for 6 tons of mixed dry waste brought by commercial haulers that use automated scales at Metro transfer stations was \$124.16 per ton (\$126.45 per ton for haulers that do not use the automated scales).	
	Between January and May 2023 and based on pricing information posted at facility gates or online for 10 out of 12 of the facilities in this group, the fees charged to commercial haulers for 6 tons of mixed dry waste ranged from \$120.70 to \$184.03 per ton – a difference of 52%. Given that this difference is more than 15%, this group is considered to have a high cost difference gap level.	HIGH
DISASTER RESILIENCE	Flood hazard Of the 12 facilities in this group, 10 are outside any FEMA 100-year flood plain: 1 in Clackamas County, 5 in Multnomah County and 4 in Washington County.	
	Earthquake hazard Of the 12 facilities in this group, 4 are outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones): 1 in Clackamas County, 1 in Multnomah County and 2 in Washington County.	Low
	Overall assessment The region has at least one facility in each of the three counties that accept mixed dry waste from commercial haulers and that are located outside high flood and earthquake hazard zones. Based on this result, this group was assigned a low disaster resilience gap level.	



Infrastructure gap analysis						
Material stream	Material stream Dry waste for recycling, energy recovery or landfilling					
Customer type	General public					

OVERVIEW

There are five facilities in the greater Portland region that accept mixed or separated dry waste from the public: Environmentally Conscious Recycling, Metro Central Transfer Station, Metro South Transfer Station, Tualatin Valley Waste Recovery, and Forest Grove Transfer Station (see Appendix Table A12). These facilities accept dry waste materials from individuals, businesses or institutions, such as:

- Mixed waste from home repair projects brought in by homeowners in pickup trucks
- Asphalt shingles from roofing jobs hauled by contractors in dump trucks
- Separated wood, metal, concrete and drywall from construction projects brought in by contractors in trailers pulled by pickup trucks

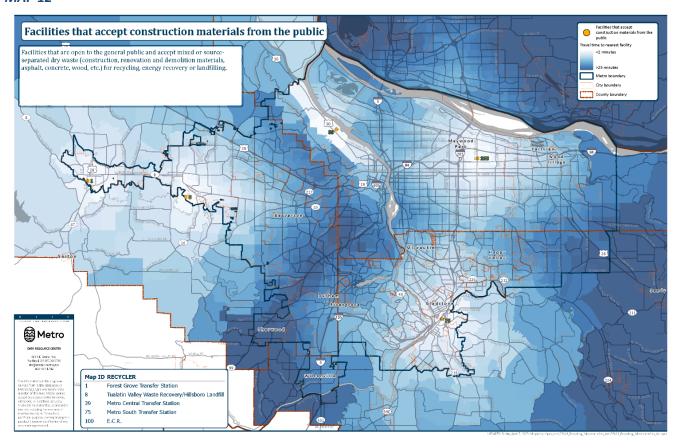
The dry waste materials accepted from the public by these facilities are either separated for recycling, to burn for energy recovery in the case of most clean wood, or transported to a landfill.

Criteria **Assessment summary** Gap level **Driving times** Average driving time to the nearest facility that accepts dry waste from the public for recycling, energy recovery or landfilling is 13.7 minutes. Approximately 16% of the population in the region is more than 20 minutes away by car from the nearest facility. The areas most affected by longer driving times include: The corridor between Sherwood, King City and Tigard in Washington County and southwest Portland Unincorporated areas around Boring in Clackamas County and Orient in Multnomah County. **ACCESS MEDIUM** Highway and public transit access All facilities in this group are within one mile of an interstate or major highway. Two of the five facilities are less than 1/4 mile (1,320 feet) away from the nearest public transit stop, while the rest are 1/3 mile (1,760 feet) or more away. All facilities are more than 1/2 mile away from the nearest light or commuter rail station. Walking and biking access Most facilities in this group are connected to sidewalks and trails and are adjacent to or near streets with bike lanes. However, all facilities are in

Dry waste

An industry term for waste that typically contains paper, metals, plastics, yard debris, wood, concrete, dry asphalt, construction and demolition wastes, land clearing debris, and/or gypsum wallboard (also called drywall).

Criteria	Assessment summary	Gap level
	industrial areas where walking and biking access is made more difficult by barriers such as interstate and/or state highways and rivers.	
	Between July 1, 2022 and June 30, 2023, the minimum charge for loads of up to 300 pounds brought by the public to a Metro transfer station was \$35.	
COST DIFFERENCES	Between January and May 2023 and based on pricing information posted at facility gates or online, the minimum fees charged to public customers for one load of mixed dry waste at all private and public facilities in this group ranged from \$33 to \$128 per load – a difference of 287%. Given that this difference is more than 15%, this group is considered to have a high gap level in terms of cost differences.	HIGH
DISASTER RESILIENCE	Flood hazard Of the 5 facilities in this group, only Metro South in Clackamas County is more than 50% within a FEMA 100-year flood plain and has experienced flood damage before (in 1996).	
	Earthquake hazard Of the 5 facilities in this group, 2 are in high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones): 1 in Multnomah County and 1 in Washington County.	MEDIUM
	Overall assessment Given that only Multnomah and Washington counties each have at least one facility that accepts dry waste from the public and is outside high flood and earthquake hazard zones, this group was assigned a medium disaster resilience gap level rating.	



Infrastructure gap analysis				
Material stream	Mixed garbage			
Customer type	General public			

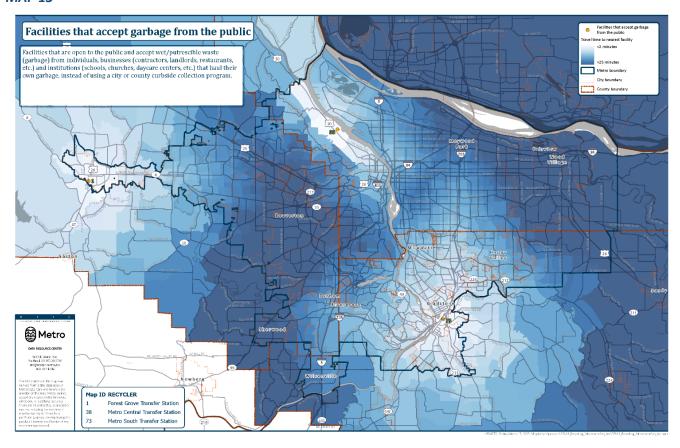
OVERVIEW

There are three facilities in the region that currently accept mixed garbage from individuals, businesses and institutions: Forest Grove Transfer Station owned by Waste Management, Metro Central Transfer Station in north Portland and Metro South Transfer Station in Oregon City (see Appendix Table A13). These facilities are often called self-haul transfer stations because they serve customers who haul their own waste and consolidate such waste in large trucks before transferring to landfills.

Mixed garbage
Also called
putrescible or
wet waste.
Refers to
garbage that
contains organic
material that can
give rise to
offensive odors
and attract
rodents and flies.

Criteria	Assessment summary	Gap level
	Driving times	
	The average driving time to the nearest facility that accepts mixed garbage from the public is 20 minutes. Approximately 53.3% of the region's population must drive more than 20 minutes to the nearest mixed garbage facility. As Map 13 shows, areas with the longest driving times include: Large portions of Washington County between Hillsboro and 	
	Sherwood,	
	 East Multnomah County from Maywood Park and parts of east and southeast Portland, to areas around Fairview, Gresham, Troutdale and Wood Village, 	
	 Parts of Clackamas County in east Happy Valley and unincorporated areas around Boring and Damascus. 	
	Highway and public transit access	
CCESS	The Metro Central facility is in a heavy industrial zone within one mile of highway 30, Metro South is off I-205 at the junction with highway 30, and Forest Grove Transfer Station is 3/4 mile north of highway 47. Metro Central is approximately 1/3 mile from a public transit stop and more than 3.5 miles from the nearest MAX light rail station. Metro South is less than 1/10 mile of a public transit stop and more than 4.5 miles away from a MAX light rail station. Forest Grove Transfer Station is 1/3 mile from a public transit stop and more than 6 miles from the nearest light or commuter rail station.	HIGH
	Walking and biking access	
	Metro Central is not immediately connected to streets with sidewalks or dedicated bike lanes. Its location in an isolated industrial area and barriers like highway 30 decrease access to the facility. Metro South is connected to streets with sidewalks and bike lanes, but there are barriers like the I-205 freeway, major highways and the Willamette River that make walking and biking to the facility harder. Forest Grove Transfer Station is in a heavy industrial area, but connected to walking and biking infrastructure like sidewalks and a multi-use	

Criteria	Assessment summary	Gap level
	trail (B Street Trail). The facility is less than 1.5 miles from a residential neighborhood.	
COST DIFFERENCES	Between July 1, 2022 and June 30, 2023, the minimum charge for up to 300 pounds of mixed garbage brought by the public to a Metro transfer station was \$35. Between January and May 2023, Forest Grove Transfer Station charged flat fees for mixed garbage loads that ranged from \$70 for cars, small trucks or SUVs, to \$335 for vehicles pulling a three-axle trailer. The difference between the minimum fee at Metro transfer stations (\$35) and the lowest flat fee at Forest Grove Transfer Station (\$70) is 100%. Given that this difference is more than 15%, this group is considered to have a high gap level in terms of cost differences.	HIGH
DISASTER RESILIENCE	Flood hazard Of the 3 facilities in this group, only Metro South in Clackamas County is more than 50% within a FEMA 100-year flood plain and has experienced flood damage before (in 1996). Earthquake hazard All three facilities in this group are in high earthquake hazard zones (defined as being 500 feet or less away from high landslide and liquefaction hazard zones). Overall assessment None of the three counties in the region has a facility that accept mixed garbage from the public and is outside of high flood and earthquake hazard areas. Based on this result, this group is considered to have a high disaster resilience gap level.	HIGH



Infrastructure gap analysis					
Material stream	Mixed garbage				
Customer type	Commercial haulers				

OVERVIEW

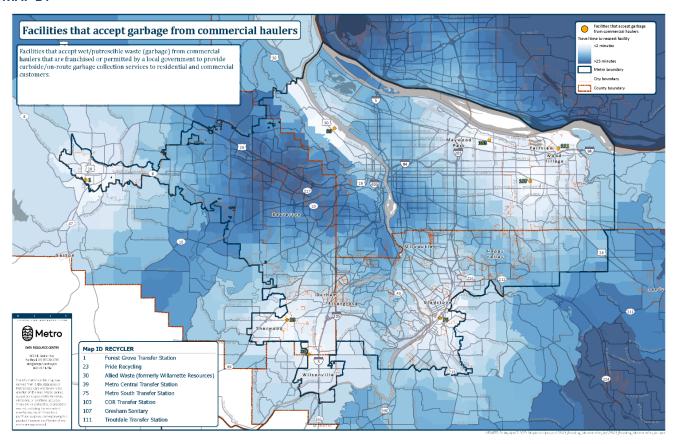
There are currently eight transfer stations in the greater Portland region that accept mixed garbage from commercial haulers that are franchised or permitted by cities and counties to provide curbside collection services to homes and businesses (see Appendix Table A14). Six of these facilities are privately owned and operated.⁸ The other two transfer stations (Metro Central and Metro South) are owned by Metro and operated by a contractor.

Mixed garbage
Also called
putrescible or
wet waste.
Refers to
garbage that
contains organic
material that can
cause give rise to
offensive odors
and can attract
rodents and flies.

Criteria	Assessment summary	Gap level
ACCESS	Driving times The average driving time to the nearest mixed garbage transfer station for commercial haulers in the region is 12.6 minutes. Approximately 13.4% of the region faces driving times of more than 20 minutes to the nearest facility, particularly in some parts of Washington County between Hillsboro and Beaverton (around Bethany, Cedar Mill and Aloha) (see Map 14). Highway and public transit access All transfer stations that accept mixed garbage from commercial haulers are within 1 mile from an interstate or major highway. Two of the eight facilities are within a 1/4 mile of a public transit stop, while the rest are more than 1/3 mile away. Seven of the eight facilities are more than 1/2 mile from the nearest light or commuter rail station. Walking and biking access Most facilities in this group are connected to sidewalks and/or trails and are adjacent to or near streets with bike lanes. However, all facilities are in industrial areas that are relatively isolated from residential neighborhoods and where walking and biking access is made more difficult by barriers such as interstate and/or state highways and rivers.	MEDIUM
COST DIFFERENCES	Between July 1, 2022 and June 30, 2023, the total charge for 6 tons of mixed dry waste brought by commercial haulers that use automated scales at Metro transfer stations was \$124.16 per ton (\$126.45 per ton for haulers that do not use the automated scales). Between January and May 2023 and based on pricing information posted at facility gates or online, the difference between the lowest fee charged to commercial haulers for 6 tons of mixed garbage (\$123.80) and the highest fee	HIGH

⁸ Canby Transfer & Recycling is also a transfer station that accepts mixed garbage from the region. However, this facility is authorized by Metro to accept only mixed garbage collected within franchised collection areas located within the Metro jurisdictional boundary served by waste collection companies affiliated with Kahut Waste Services, Inc. (acquired by Waste Connections in 2021). For this reason, Canby Transfer & Recycling was excluded from the gap assessment.

Criteria	Assessment summary	Gap level
	(\$163.85) was 32.4%. Given this difference is more than 15%, this group is considered to have a high gap level in terms of cost differences.	
	Flood hazard	
	Of the 8 facilities in this group, only Metro South in Clackamas County is more than 50% within a FEMA 100-year flood plain and has experienced flood damage before (in 1996).	
DISASTER RESILIENCE	Earthquake hazard Of the 8 facilities in this group, 2 are outside high earthquake hazard zones (defined as being more than 500 feet away from high landslide and liquefaction hazard zones): 1 in Multnomah County and 1 in Washington County.	MEDIUM
	Overall assessment Given that only Multnomah and Washington counties have at least one facility that accepts mixed garbage from commercial haulers and is outside of high flood and earthquake areas, this group is considered to have a medium disaster resilience gap level.	



Appendix A: Facilities by material stream and customer type

Appendix A contains the full list of facilities in the 14 groups assessed for facility gaps in the technical analysis described in this report. The lists were developed by the Garbage and Recycling System Facilities Plan project's team of consultants (Jacobs, Start Consulting) and Metro staff with the best available information at the time (January-May 2023) from a variety of sources, including:

- The list of solid waste facilities regulated by Metro;
- Facilities that accept materials from the public in Metro's Find-a-Recycler database;
- Metro's Solid Waste Information System (SWIS); and
- The Re-TRAC database maintained by local governments in the tri-county area for haulers to submit tonnage data.

Some facilities may be missing because they were not included in the primary sources listed above or because they began operations or accepting materials on or after June 1, 2023. It is also possible that some facilities stopped accepting certain materials after this report was finalized.

TABLE A1Facilities that accept mattresses from the public for reuse

			Ownership	In Metro				
Facility Name	Facility Type	Owner	Туре	Boundary?	Address	City	State	ZIP
Community Warehouse-Gresham	Furniture bank	Community Warehouse	Non-profit	Yes	819 SE 202nd Ave.	Gresham	OR	97233
Community Warehouse-Portland	Furniture bank	Community Warehouse	Non-profit	Yes	3969 NE Martin Luther King Jr. Blvd.	Portland	OR	97212
Community Warehouse-Tualatin	Furniture bank	Community Warehouse	Non-profit	Yes	8380 SW Nyberg St.	Tualatin	OR	97062

Link to main report section

TABLE A2Facilities that accept Oregon E-Cycles and other electronic devices from the public for recycling or reuse

		Ownership	In Metro	Does				
Facility Name	Facility Type	Туре	Boundary?	Reuse?	Address	City	State	ZIP
Better Bargains Thrift Store	Thrift store	Non-profit	Yes	Yes	10209 NE Sandy Blvd.	Portland	OR	97220
Bob's Metals Inc.	Recycling facility	Private	Yes	No	9000 N Denver Ave.	Portland	OR	97217
Calbag Metals Co.	Recycling facility	Private	Yes	No	2495 NW Nicolai St.	Portland	OR	97210
Canby Transfer Station	Transfer Station	Private	Yes	No	1600 SE 4th Ave.	Canby	OR	97013

Facility Name	Facility Type	Ownership Type	In Metro Boundary?	Does Reuse?	Address	City	State	ZIP
CAT Thrift Store	Thrift store	Non-profit	Yes	Yes	4838 SW Scholls Ferry Rd.	Portland	OR	97225
City Recycle	Recycling facility	Private	No	No	15933 NE Cameron Blvd.	Portland	OR	97230
Clackamas County Transfer Station	Transfer Station	Public	No	No	19600 Canyon Valley Rd.	Sandy	OR	97055
Computer Drive Connection	Recycling facility	Private	Yes	Yes	909 N Freemont Ln.	Cornelius	OR	97113
Deseret Industries	Thrift store	Non-profit	Yes	Yes	10330 SE 82nd Ave.	Happy Valley	OR	97266
Environmentally Conscious Recycling	Material Recovery Facility	Private	Yes	No	12409 NE San Rafael St.	Portland	OR	97294
Far West Recycling - Hillsboro	Material Recovery Facility	Private	Yes	No	6440 SE Alexander St.	Hillsboro	OR	97123
Far West Recycling - Northeast Portland	Material Recovery Facility	Private	Yes	No	12820 NE Marx St.	Portland	OR	97230
Far West Recycling - Tualatin	Material Recovery Facility	Private	Yes	No	9665 SW Tualatin- Sherwood Rd.	Tualatin	OR	97062
Forest Grove Transfer Station	Transfer Station	Private	Yes	No	1525 B St.	Forest Grove	OR	97116
Free Geek	Electronics reuse organization	Non-profit	Yes	Yes	1731 SE 10th Ave.	Portland	OR	97214
Goodwill - Airport Way	Thrift store	Non-profit	Yes	Yes	5950 NE 122nd Ave.	Portland	OR	97230
Goodwill - Barbur Blvd Donation Express	Thrift store	Non-profit	Yes	Yes	7635 SW Barbur Blvd.	Portland	OR	97219
Goodwill - Baseline Store	Thrift store	Non-profit	Yes	Yes	775 SW 185th Ave.	Hillsboro	OR	97006
Goodwill - Beaverton	Thrift store	Non-profit	Yes	Yes	4700 SW Griffith Dr.	Beaverton	OR	97005
Goodwill - Broadway East Store	Thrift store	Non-profit	Yes	Yes	1231 NE Broadway St.	Portland	OR	97232
Goodwill - Bronson Creek Donation Express	Thrift store	Non-profit	Yes	Yes	18638 NE Eider Ct.	Hillsboro	OR	97006
Goodwill - Capital Corner Donation Express	Thrift store	Non-profit	Yes	Yes	10075 SW Barbur Blvd.	Portland	OR	97219
Goodwill - Cedar Hills	Thrift store	Non-profit	Yes	Yes	12975 SW Westgate Dr.	Beaverton	OR	97005
Goodwill - Clackamas Store	Thrift store	Non-profit	Yes	Yes	9999 SE 82nd Ave.	Clackamas	OR	97086
Goodwill - Cornell Rd	Thrift store	Non-profit	Yes	Yes	16157 NW Cornell Rd.	Beaverton	OR	97006
Goodwill - Forest Grove	Thrift store	Non-profit	Yes	Yes	2903 Pacific Ave.	Forest Grove	OR	97116

		Ownership	In Metro	Does				
Facility Name	Facility Type	Туре	Boundary?	Reuse?	Address	City	State	ZIP
Goodwill - Gresham	Thrift store	Non-profit	Yes	Yes	413 NE Burnside Rd.	Gresham	OR	97030
Goodwill - Happy Valley	Thrift store	Non-profit	Yes	Yes	17366 SE Sunnyside Rd.	Happy Valley	OR	97089
Goodwill - Lake Oswego Donation Express	Thrift store	Non-profit	Yes	Yes	401 S State St.	Lake Oswego	OR	97034
Goodwill - Lombard Store	Thrift store	Non-profit	Yes	Yes	3134 N Lombard St.	Portland	OR	97217
Goodwill - Lower Boones Ferry	Thrift store	Non-profit	Yes	Yes	17150 Lower Boones Ferry Rd.	Lake Oswego	OR	97035
Goodwill - NE Halsey	Thrift store	Non-profit	Yes	Yes	12250 NE Halsey St.	Portland	OR	97230
Goodwill - Oak Grove	Thrift store	Non-profit	Yes	Yes	16255 SE McLoughlin Blvd.	Milwaukie	OR	97267
Goodwill - Portland Outlet	Thrift store	Non-profit	Yes	Yes	1740 SE Ochoco St.	Portland	OR	97222
Goodwill - Portland Store	Thrift store	Non-profit	Yes	Yes	1943 SE 6th Ave.	Portland	OR	97214
Goodwill - Powell Store	Thrift store	Non-profit	Yes	Yes	9015 SE Powell Blvd.	Portland	OR	97266
Goodwill - Sandy Store	Thrift store	Non-profit	Yes	Yes	37201 Hwy 26	Sandy	OR	97055
Goodwill - Tigard	Thrift store	Non-profit	Yes	Yes	13920 SW Pacific Hwy.	Tigard	OR	97223
Goodwill - Westside Outlet Hillsboro	Thrift store	Non-profit	Yes	Yes	2920 SE Century Blvd.	Hillsboro	OR	97123
Goodwill - Wilsonville	Thrift store	Non-profit	Yes	Yes	8275 SW Wilsonville Rd.	Wilsonville	OR	97070
Goodwill - Woodstock	Thrift store	Non-profit	Yes	Yes	6152 SE 52nd Ave.	Portland	OR	97206
Green Century Electronics Recycling	Recycling facility	Private	Yes	Yes	2950 NW 29th Ave.	Portland	OR	97210
GSS Transfer LLC	Transfer Station	Private	Yes	No	2131 NW Birdsdale Ave.	Gresham	OR	97030
Habitat for Humanity ReStore- Forest Grove	Used building materials store	Non-profit	Yes	No	3731 Pacific Ave.	Forest Grove	OR	97116
KB Recycling - Clackamas	Material Recovery Facility	Private	Yes	No	9602 SE Clackamas Rd.	Clackamas	OR	97015
LV Electronics Recycling, LLC	Recycling facility	Private	Yes	Yes	20746 SW Olds Pl.	Sherwood	OR	97140
Metro Central Transfer Station	Transfer Station	Public	Yes	No	6161 NW 61st Ave.	Portland	OR	97210
Metro Metals Northwest	Recycling facility	Private	Yes	No	5611 NE Columbia Blvd.	Portland	OR	97218
Metro South Transfer Station	Transfer Station	Public	Yes	No	2001 Washington St.	Oregon City	OR	97045
Pride Recycling Company	Transfer Station	Private	Yes	No	13910 SW Tualatin- Sherwood Rd.	Sherwood	OR	97140

Facility Name	Facility Type	Ownership Type	In Metro Boundary?	Does Reuse?	Address	City	State	ZIP
RS Davis Recycling - Clackamas	Recycling facility	Private	No	No	10105 SE Mather Rd.	Clackamas	OR	97015
RS Davis Recycling - Gresham	Recycling facility	Private	Yes	No	28425 SE Orient Dr.	Gresham	OR	97081
SBCRecycle	Recycling facility	Private	Yes	No	19040 SW Shaw St.	Beaverton	OR	97078
Suttle Road Recovery Facility	Material Recovery Facility	Private	Yes	No	4044 N Suttle Rd.	Portland	OR	97217
Technology Conservation Group	Recycling facility	Private	Yes	No	11749 NE Marx St.	Portland	OR	97220
The Arc Thrift Store	Thrift store	Non-profit	Yes	Yes	6929 NE Halsey St.	Portland	OR	97213
Tualatin Valley Waste Recovery/Hillsboro Landfill	Material Recovery Facility/Landfill	Private	No	No	3205 SE Minter Bridge Rd.	Hillsboro	OR	97123
Union Gospel Mission	Thrift store	Non-profit	Yes	Yes	11611 SW Pacific Hwy.	Tigard	OR	97223
Universal Recycling Technologies	Recycling facility	Private	Yes	No	10151 SE Jennifer St.	Clackamas	OR	97015
Value Village - Tigard	Thrift store	Private	Yes	No	12060 SW Main St.	Tigard	OR	97223
Video Only - Beaverton	Electronics store	Private	No	No	12000 SW Canyon Rd.	Beaverton	OR	97005
Video Only - Clackamas	Electronics store	Private	No	No	8200 SE Sunnyside Rd.	Clackamas	OR	97015
Video Only - Portland	Electronics store	Private	No	No	12365 N Starlight Ave.	Portland	OR	97217
Willamette Resources (WRI)	Transfer Station	Private	Yes	No	10295 SW Ridder Rd.	Wilsonville	OR	97070
William Temple House	Thrift store	Non-profit	Yes	Yes	2230 NW Glisan St.	Portland	OR	97210

Link to main report section

TABLE A3Facilities that accept building materials from the public for reuse

			Ownership	In Metro				
Facility Name	Facility Type	Owner	Туре	Boundary?	Address	City	State	ZIP
Habitat for Humanity Restore-	Used building	Habitat for	Non profit	No	411 S Redwood St.	Canby	OR	97013
Canby	materials store	Humanity	Non-profit	NO	411 3 Keuwoou St.	Cariby	OK	9/013
Habitat for Humanity ReStore-	Used building	Habitat for	Non mustis	N	10011 CE 2md Ct	Van 22	١٨/٨	00004
Clark County	materials store	Humanity	Non-profit	No	10811 SE 2nd St.	Vancouver	WA	98664
Habitat for Humanity ReStore-	Used building	Habitat for	Non profit	Vos	3731 Pacific Ave.	Forest Grove	OB	07116
Forest Grove	materials store	Humanity	Non-profit Y	Yes	3731 Pacific Ave.	Forest Grove	OR	97116
Habitat for Humanity ReStore-	Used building	Habitat for	Nan nastis	Voc	C10 NF 101 at Avia	Cuashava	OD	07220
Gresham	materials store	Humanity	Non-profit	Yes	610 NE 181st Ave.	Gresham	OR	97230
Habitat for Humanity ReStore-	Used building	Habitat for	Nan nastis	Voc	10445 SE Cherry	Dantland	OD	07216
Portland	materials store	Humanity	Non-profit	Yes	Blossom Dr.	Portland	OR	97216
Habitat for Humanity ReStore-	Used building	Habitat for	Nan nastis	Voc	13475 SW Millikan	Dagwartan	OD	07005
Washington County	materials store	Humanity	Non-profit	Yes	Way	Beaverton	OR	97005
The Depuilding Contest	Used building	The ReBuilding	Nan nafit	Voc	3625 N Mississippi	Dantland	OD	07227
The ReBuilding Center	materials store	Center	Non-profit	Yes	Ave.	Portland	OR	97227
The later of the second control of the secon								

TABLE A4Facilities that accept paint from the public for recycling

Facility Name	Facility Type	Ownership Type	In Metro Boundary?	Address	City	State	ZIP
A-Boy Supply	Hardware store	Private	Yes	7365 SW Barbur Blvd.	Portland	OR	97219
ACTenviro	Hazardous waste management company	Private	Yes	13600 SE Ambler Rd.	Clackamas	OR	97015
Dick's Color Center	Paint retail store	Private	Yes	909 SE Salmon St.	Portland	OR	97214
Habitat for Humanity ReStore-Portland	Used building materials store	Non-profit	Yes	10445 SE Cherry Blossom Dr.	Portland	OR	97216
Habitat for Humanity ReStore-Forest Grove	Used building materials store	Non-profit	Yes	3731 Pacific Ave.	Forest Grove	OR	97116
Habitat for Humanity ReStore- Washington County	Used building materials store	Non-profit	Yes	13475 SW Millikan Way	Beaverton	OR	97005
Habitat for Humanity Restore-Canby	Used building materials store	Non-profit	No	411 S Redwood St.	Canby	OR	97013
Habitat for Humanity ReStore-Gresham	Used building materials store	Non-profit	Yes	610 NE 181st Ave.	Gresham	OR	97230

- W. A.		Ownership	In Metro			a:	
Facility Name	Facility Type	Туре	Boundary?	Address	City	State	ZIP
Hillsboro Ace Hardware	Hardware store	Private	Yes	881 NE 25th Ave.	Hillsboro	OR	97124
Metro Central Transfer Station	Transfer station	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210
Metro South Transfer Station	Transfer station	Public	Yes	2001 Washington St.	Oregon City	OR	97045
MetroPaint Latex Facility	Recycling facility	Public	Yes	4825 N Basin Ave.	Portland	OR	97217
Miller Paint-Lake Oswego	Paint retail store	Private	Yes	544 N State St.	Lake Oswego	OR	97034
Miller Paint-Clackamas	Paint retail store	Private	Yes	10210 Hwy. 212	Clackamas	OR	97015
Miller Paint-Beaverton-Hillsdale Hwy	Paint retail store	Private	Yes	8703 SW Beaverton- Hillsdale Hwy.	Portland	OR	97229
Miller Paint-Murray	Paint retail store	Private	Yes	1040 NW Murray Rd.	Portland	OR	97229
Miller Paint-Division	Paint retail store	Private	Yes	10114 SE Division St.	Portland	OR	97266
Miller Paint-Grand Avenue	Paint retail store	Private	Yes	317 SE Grand Ave.	Portland	OR	97214
Miller Paint-Sellwood	Paint retail store	Private	Yes	8073 SE 17th Ave.	Portland	OR	97202
Miller Paint-Hillsboro	Paint retail store	Private	Yes	646 SW Oak St.	Hillsboro	OR	97123
Miller Paint-Gresham	Paint retail store	Private	Yes	1831 E Powell Blvd.	Gresham	OR	97080
Parkrose Hardware	Hardware store	Private	Yes	10625 NE Sandy Blvd.	Portland	OR	97220
Parr Lumber-Hillsboro	Lumber yard	Private	Yes	21700 NW Wagon Way	Hillsboro	OR	97124
Parr Lumber-Beaverton	Lumber yard	Private	Yes	4605 SW Scholls Ferry Rd.	Portland	OR	97225
Powell Paint Center	Paint retail store	Private	Yes	5205 SE Powell Blvd.	Portland	OR	97206
Rodda Paint-Hall Blvd	Paint retail store	Private	Yes	8614 SW Hall Blvd.	Beaverton	OR	97008
Rodda Paint-SE Taylor	Paint retail store	Private	Yes	321 SE Taylor St.	Portland	OR	97214
Rodda Paint-Happy Valley	Paint retail store	Private	Yes	10309 SE 82nd Ave.	Happy Valley	OR	97086
Sherwin Williams-Tualatin	Paint retail store	Private	Yes	19390 SW 90th Ct.	Tualatin	OR	97062
Sherwin Williams-NW Portland	Paint retail store	Private	Yes	2246 NW Roosevelt St.	Portland	OR	97210
Sherwin Williams-Lake Oswego	Paint retail store	Private	Yes	15659 Boones Ferry Rd.	Lake Oswego	OR	97035
Sherwin Williams- Oregon City	Paint retail store	Private	Yes	1617 S Beavercreek Rd.	Oregon City	OR	97045
Sherwin Williams-Gresham	Paint retail store	Private	Yes	1740 E Powell Blvd.	Gresham	OR	97030
Sherwin Williams-SE 82nd Ave	Paint retail store	Private	Yes	11475 SE 82Nd Ave.	Portland	OR	97086
Sherwin Williams-Division	Paint retail store	Private	Yes	9745 SE Division St.	Portland	OR	97266
Sherwin Williams-Woodstock	Paint retail store	Private	Yes	5128 SE Woodstock Blvd.	Portland	OR	97206

Facility Name	Facility Type	Ownership Type	In Metro Boundary?	Address	City	State	ZIP
Sherwin Williams-Center St	Paint retail store	Private	Yes	12480 SW Center St.	Beaverton	OR	97005
Sherwin Williams-Hillsboro-10th Ave	Paint retail store	Private	Yes	348 SE 10Th Ave.	Hillsboro	OR	97123
Sherwin Williams-Cornell Rd	Paint retail store	Private	Yes	13555 NW Cornell Rd.	Beaverton	OR	97229
Sherwin Williams-Sherwood	Paint retail store	Private	Yes	20673 SW Roy Rogers Rd.	Sherwood	OR	97140
Sherwin Williams-NE Broadway	Paint retail store	Private	Yes	30 NE Broadway St.	Portland	OR	97232
Sherwin Williams-Hillsboro-Griffin Oaks St	Paint retail store	Private	Yes	2460 NE Griffin Oaks St.	Hillsboro	OR	97124
Sherwin Williams-Clackamas	Paint retail store	Private	Yes	14652 SE 82nd Ave.	Clackamas	OR	97015
Suburban Ace Hardware-Aloha	Hardware store	Private	Yes	3470 SW 185th Ave.	Aloha	OR	97003

TABLE A5Mixed recycling facilities for commercial haulers

Facility Name	Facility Type	Owner	Ownership Type	In Metro Boundary?	Address	City	State	ZIP
EFI Recycling	Material Recovery Facility	Environmental Fibers International	Private	Yes	4325 N Commerce St.	Portland	OR	97217
Far West Recycling-Hillsboro	Material Recovery Facility	Far West Recycling	Private	Yes	6440 SE Alexander St.	Hillsboro	OR	97123
Far West Recycling-Northeast Portland	Material Recovery Facility	Far West Recycling	Private	Yes	12820 NE Marx St.	Portland	OR	97230
Pioneer Recycling Clackamas	Material Recovery Facility	Pioneer Recycling Services Inc	Private	Yes	16810 SE 120th Ave.	Clackamas	OR	97015
WestRock Portland Recycle	Material Recovery Facility	WestRock CP LLC	Private	Yes	6328 SE 100th Ave.	Portland	OR	97266
KB Recycling	Material Recovery Facility	Waste Connections	Private	Yes	9602 SE Clackamas Rd.	Clackamas	OR	97015

TABLE A6Recycling depots open to the public

Facility Name	Facility Type	Owner	Ownership Type	In Metro Boundary?	Address	City	State	ZIP
KB Recycling	Material Recovery Facility	Waste Connections	Private	Yes	9602 SE Clackamas Rd.	Clackamas	OR	97015
Metro Central Transfer Station	Transfer Station	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210
Metro South Transfer Station	Transfer Station	Metro	Public	Yes	2001 Washington St.	Oregon City	OR	97045
Pride Recycling Company	Transfer Station	Pride Recycling Company	Private	Yes	13910 SW Tualatin- Sherwood Rd.	Sherwood	OR	97140
Tualatin Valley Waste Recovery/Hillsboro Landfill	Material Recovery Facility/Landfill	Waste Management	Private	No	3205 SE Minter Bridge Rd.	Hillsboro	OR	97123
Willamette Resources (WRI)	Transfer Station	Willamette Resources Inc	Private	Yes	10295 SW Ridder Rd.	Wilsonville	OR	97070
Forest Grove Transfer Station	Transfer Station	Waste Management	Private	Yes	1525 B St.	Forest Grove	OR	97116
Far West Recycling-Hillsboro	Material Recovery Facility	Far West Recycling	Private	Yes	6440 SE Alexander St.	Hillsboro	OR	97123

TABLE A7Facilities that accept food waste from commercial haulers

			Ownership	In Metro				
Facility Name	Facility Type	Owner	Type	Boundary?	Address	City	State	ZIP
Willamette Resources (WRI)	Transfer Station	Willamette Resources Inc	Private	Yes	10295 SW Ridder Rd.	Wilsonville	OR	97070
Pride Recycling Company	Transfer Station	Pride Recycling Company	Private	Yes	13910 SW Tualatin- Sherwood Rd.	Sherwood	OR	97140
Metro Central Transfer Station	Transfer Station	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210

TABLE A8Facilities that accept mixed food waste and yard debris from commercial haulers

			Ownership	In Metro				
Facility Name	Facility Type	Owner	Туре	Boundary?	Address	City	State	ZIP
	Composting							
Recology Organics North Plains	facility	Recology	Private	No	9570 NW 307th Ave.	North Plains	OR	97133
	Material							
Suttle Road Recovery Facility	Recovery Facility	Recology	Private	Yes	4044 N Suttle Rd.	Portland	OR	97217
		Waste						
Troutdale Transfer Station	Transfer Station	Management	Private	Yes	869 NW Eastwind Dr.	Troutdale	OR	97060
		Willamette						
Willamette Resources (WRI)	Transfer Station	Resources Inc	Private	Yes	10295 SW Ridder Rd.	Wilsonville	OR	97070
		Pride Recycling			13910 SW Tualatin-			
Pride Recycling Company	Transfer Station	Company	Private	Yes	Sherwood Rd.	Sherwood	OR	97140
Metro South Transfer Station	Transfer Station	Metro	Public	Yes	2001 Washington St.	Oregon City	OR	97045
Metro Central Transfer Station	Transfer Station	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210
Link to costion in main report								

TABLE A9Facilities that accept yard debris from commercial haulers

			Ownership	In Metro				
Facility Name	Facility Type	Owner	Туре	Boundary?	Address	City	State	ZIP
	Composting	Allwood						
Allwood Recyclers	facility	Recyclers Inc	Private	Yes	23001 NE Marine Dr.	Fairview	OR	97024
		Best Buy In			2200 NE Cornelius			
Best Buy In Town	Reload facility	Town Inc	Private	Yes	Pass Rd.	Hillsboro	OR	97124
		Dean						
Dean Innovations	Reload facility	Innovations	Private	Yes	6400 SE 101st Ave.	Portland	OR	97266
		Environmentally						
Environmentally Conscious	Material	Conscious			12409 NE San Rafael			
Recycling	Recovery Facility	Recycling	Private	Yes	St.	Portland	OR	97294
	Composting	Grimm's Fuel						
Grimm's Fuel	facility	Company Inc	Private	Yes	18850 SW Cipole Rd.	Tualatin	OR	97062
	Composting	McFarlane's						
McFarlane's Bark	facility	Bark Inc	Private	Yes	13345 SE Johnson Rd.	Milwaukie	OR	97222
Metro Central Transfer Station	Transfer Station	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210
Metro South Transfer Station	Transfer Station	Metro	Public	Yes	2001 Washington St.	Oregon City	OR	97045

		Pride Recycling			13910 SW Tualatin-			
Pride Recycling Company	Transfer Station	Company	Private	Yes	Sherwood Rd.	Sherwood	OR	97140
	Composting							
Recology Organics North Plains	facility	Recology	Private	No	9570 NW 307th Ave.	North Plains	OR	97133
	Composting	S&H Logging Co						
S & H Cornelius	facility	Inc	Private	Yes	1045 N 4th Ave.	Cornelius	OR	97113
					20200 SW Stafford			
S & H Logging Tualatin	Reload facility	S&H Logging Inc	Private	Yes	Rd.	Tualatin	OR	97062
	Composting				9325 NE Sunderland			
Sunderland Recycling Facility	facility	City of Portland	Public	Yes	Ave.	Portland	OR	97211
	Material							
Suttle Road Recovery Facility	Recovery Facility	Recology	Private	Yes	4044 N Suttle Rd.	Portland	OR	97217
	Material							
Tualatin Valley Waste	Recovery	Waste			3205 SE Minter			
Recovery/Hillsboro Landfill	Facility/Landfill	Management	Private	No	Bridge Rd.	Hillsboro	OR	97123
		Willamette						
Willamette Resources (WRI)	Transfer Station	Resources Inc	Private	Yes	10295 SW Ridder Rd.	Wilsonville	OR	97070
		Wood Waste						
		Management						
Wood Waste Management	Reload facility	LLC	Private	Yes	7315 NE 47th Ave.	Portland	OR	97218
Woodco	Reload facility	Woodco	Private	Yes	3011 SW 170th Ave.	Aloha	OR	97006

TABLE A10Household hazardous waste facilities open to the public

Facility Name	Facility Type	Owner	Ownership Type	In Metro Boundary?	Address	City	State	ZIP
Metro South Hazardous Waste Facility	Hazardous Waste Facility	Metro	Public	Yes	2001 Washington St.	Oregon City	OR	97045
Metro Central Hazardous Waste Facility	Hazardous Waste Facility	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210

TABLE A11Facilities that accept mixed dry waste from commercial haulers for recycling, energy recovery or landfilling

Facility Name	Facility Type	Owner	Ownership Type	In Metro Boundary?	Address	City	State	ZIP
COR Transfer Station	Transfer Station	City of Roses Disposal & Recycling Inc	Private	Yes	4530 NE 138th Ave.	Portland	OR	97230
Environmentally Conscious Recycling	Material Recovery Facility	Environmentally Conscious Recycling	Private	Yes	12409 NE San Rafael St.	Portland	OR	97294
GreenWay Recycling	Material Recovery Facility	Greenway Recycling LLC	Private	Yes	4135 NW St Helens Rd.	Portland	OR	97210
KB Recycling	Material Recovery Facility	Waste Connections	Private	Yes	9602 SE Clackamas Rd.	Clackamas	OR	97015
Metro Central Transfer Station	Transfer Station	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210
Metro South Transfer Station	Transfer Station	Metro	Public	Yes	2001 Washington St.	Oregon City	OR	97045
Pride Recycling Company	Transfer Station	Pride Recycling Company	Private	Yes	13910 SW Tualatin- Sherwood Rd.	Sherwood	OR	97140
Suttle Road Recovery Facility	Material Recovery Facility	Recology	Private	Yes	4044 N Suttle Rd.	Portland	OR	97217
Tualatin Valley Waste Recovery/Hillsboro Landfill	Material Recovery Facility/Landfill	Waste Management	Private	No	3205 SE Minter Bridge Rd.	Hillsboro	OR	97123
Willamette Resources (WRI)	Transfer Station	Republic Services	Private	Yes	10295 SW Ridder Rd.	Wilsonville	OR	97070
Forest Grove Transfer Station	Transfer Station	Waste Management	Private	Yes	1525 B St.	Forest Grove	OR	97116
Troutdale Transfer Station	Transfer Station	Waste Management	Private	Yes	869 NW Eastwind Dr.	Troutdale	OR	97060

TABLE A12Facilities that accept dry waste from the public for recycling, energy recovery or landfilling

Facility Name	Facility Type	Owner	Ownership Type	In Metro Boundary?	Address	City	State	ZIP
Environmentally Conscious Recycling	Material Recovery Facility	Environmentally Conscious Recycling	Private	Yes	12409 NE San Rafael St.	Portland	OR	97294
Metro Central Transfer Station	Transfer Station	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210
Metro South Transfer Station	Transfer Station	Metro	Public	Yes	2001 Washington St.	Oregon City	OR	97045
Tualatin Valley Waste Recovery/Hillsboro Landfill	Material Recovery Facility/Landfill	Waste Management	Private	No	3205 SE Minter Bridge Rd.	Hillsboro	OR	97123
Forest Grove Transfer Station	Transfer Station	Waste Management	Private	Yes	1525 B St.	Forest Grove	OR	97116

TABLE A13Mixed garbage (putrescible waste) facilities open to the public

Facility Name	Facility Type	Owner	Ownership Type	In Metro Boundary?	Address	City	State	ZIP
Forest Grove Transfer Station	Transfer Station	Waste Management	Private	Yes	1525 B St.	Forest Grove	OR	97116
Metro South Transfer Station	Transfer Station	Metro	Public	Yes	2001 Washington St.	Oregon City	OR	97045
Metro Central Transfer Station	Transfer Station	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210

TABLE A14Facilities that accept mixed garbage from commercial haulers

			Ownership	In Metro				
Facility Name	Facility Type	Owner	Type	Boundary?	Address	City	State	ZIP
		Waste						
Canby Transfer & Recycling ¹	Transfer Station	Connections	Private	No	1600 SE 4th Ave.	Canby	OR	97013
		City of Roses						
		Disposal &						
COR Transfer Station	Transfer Station	Recycling Inc	Private	Yes	4530 NE 138th Ave.	Portland	OR	97230
		Waste						
Forest Grove Transfer Station	Transfer Station	Management	Private	Yes	1525 B St.	Forest Grove	OR	97116
Metro Central Transfer Station	Transfer Station	Metro	Public	Yes	6161 NW 61st Ave.	Portland	OR	97210

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¹ Canby Transfer & Recycling is authorized by Metro to receive limited amounts of mixed garbage ("wet waste") from commercial haulers that serve specific areas within the Metro boundary. For these reasons, the facility was excluded from the gap assessment, but is show in Table A6 for completeness.