BASIS OF NEED FOR A NEW METRO SOUTH FACILITY

July 9, 2021

Table of Contents

Executive Summary

This report summarizes and documents the basis and need for a new solid waste facility in northern Clackamas County, to move some or all of the services currently provided at the Metro South Transfer Station ("Metro South") in Oregon City, to a new location. It articulates how Metro South is used now, the customers and materials that flow through the facility, the challenges with the current site, and the projected growth of the Metro South customer area. It also summarizes relevant conclusions from past studies on Metro South and the approach Metro has taken to find a possible site for which to move services ("new facility").

This report articulates the need and reasons for acquiring land to expand and improve garbage and recycling services in the South part of the Metro region. It is intended to provide Metro Councilors with information to inform their decision on property acquisition and future site development, as well as to help in communicating the business need of this project to stakeholders.

This will be part of the package of information – that will also include site-specific property investigation work and community engagement work – to be discussed with Metro Council before they are asked to decide to acquire any property for a new facility in this part of the region. This work was driven and informed by the recently adopted Metro 2030 Regional Waste Plan.

Key findings in this report include:

- Metro South is a critical part of the region's solid waste infrastructure receiving over 330,000 loads (customer visits) in 2020;
- Metro South receives almost 20 percent of the region's garbage tonnage (over 268,000 tons in 2020), more than any other facility in the region;
- Metro South provides services not offered at private stations, including serving nearly 40,000 household hazardous waste customers and over 293,000 self-haul customers in 2020;
- Metro South provides a backstop to the privately owned facilities if/when they are or closed for repairs or extreme weather conditions;
- The existing site location is highly vulnerable to natural disasters, including floods and earthquakes;
- Metro South has a backlog of expensive capital repairs and improvements; at 40 years old, the existing facility is at high risk for critical systems failure such as electrical, fire suppression, scale systems;
- Based on a variety of findings Metro has concluded that retrofitting the current Metro South, while continuing operations, is not physically or economically viable;
- Metro South is at critical capacity resulting in unsafe conditions for customers and staff; space constraints result in operational inefficiencies and heavy traffic impacts;
- Demand for services at Metro South continues to rise (in 2012 the average customers per day was 435; in 2021 that average is 730);
- The Metro South customer base area is expected to see significant population and employment growth resulting in significantly more customers, especially self-haul customers (for garbage, loads in the customer base area are projected to grow 60 percent by 2050, potentially increasing peak daily customer visits from 1,100 in 2020-2021 to almost 1,800 per day by 2050);
- 2030 Regional Waste Plan goals and objectives (such as food waste and increased recycling options) cannot be realized at Metro South due to space and capacity constraints.

I. Introduction and background

Since opening in 1983 as a place to bring garbage for transfer to a landfill, Metro South, located at 2001 Washington Street in Oregon City, Oregon, has evolved to provide a multitude of services, including handling garbage and other materials from large commercial trucks, individual households, small businesses, as well as accepting recyclables and household hazardous waste. Metro South is owned by Metro and is located on an 11.5-acre parcel of land zoned for industrial use, of which only about 9.5 acres are usable for transfer operations.

Metro South was initially envisioned by the Metropolitan Service District (a precursor to Metro) to be developed as an energy recovery (garbage burning) facility. However, in 1982 Oregon City adopted a charter amendment that banned garbage burning plants. The site was then developed into a pit-type transfer station with a household hazardous waste facility to address disposal needs. Over the years the facility has adapted from its original operational intent, which focused on the efficient consolidation and transport of garbage to the landfill for disposal, into a facility that processes many additional material types, including construction debris, yard debris and recyclables, with a focus on recovering more materials. The infrastructure at Metro South is aging, and the site is physically constrained, with no further room to grow or add functions within the existing buildings.

The need to improve operations at Metro South, to safely accommodate both commercial and self-haul customers and address future needs, has been recognized by Metro staff, stakeholders, customers and consultants since at least 2008. Metro Central is the only other full service transfer station in the region and that is 20 miles away in northwest Portland. It is increasingly challenging to continue to provide the full set of services that Metro South customers need. Metro has made both infrastructure and operational changes at Metro South over the last 35 years to address the changing waste streams and processing technologies. However, the physical site constraints significantly limit options for future expansion or modifications. The existing facility offers just 48,800 square feet (sq. ft.) for material processing and handling, while modern transfer stations that handle similar volumes of garbage and customers offer 60 - 90,000 sq. ft. of processing space.

In 2020, with the onset of the COVID-19 pandemic, Metro's two transfer stations experienced an increase in self-haul customers, as people remained at home and embarked on home improvements, construction projects and home clean-outs. The number of self-haul customers at Metro South increased by 35 percent in the first quarter of 2021 (January-March) compared to the same period in 2020, amplifying the traffic and safety concerns at the already over-burdened facility. We expect usage levels to stay at high levels as the economy recovers over the next couple of years.

Our regional solid waste system

The Metro Charter, the Oregon Constitution, and Oregon statutes grant Metro broad authority for planning, overseeing, and participating in the regional garbage and recycling system. Metro and local governments work together to manage the system that collects and transports to final destinations all the things that residents and businesses of greater Portland throw away – some 2.4 million tons every year of garbage, food scraps, yard trimmings, recyclable materials, and household hazardous waste. Even if in the future there are lasting changes in consumer purchasing behaviors and in making products

and packaging lighter, we can expect this number to stay steady or grow due to the region's projected population and business growth.

Metro's role in the region's solid waste system includes owning two full-service solid waste transfer stations and regulating dozens of specialized waste facilities owned by private companies, including six waste transfer stations. This public-private hybrid system is unique across the country. The public-private regional waste system is made up of garbage collectors, transfer station operators and other waste handling facilities such as material recovery facilities for mixed or source-separated recyclables and, together, operates as a critical utility for the region.

Metro's transfer facilities receive mixed waste collected from homes and businesses by commercial collection companies or delivered directly by hundreds of thousands of "self-haul" customers, recover some materials, accept mixed yard debris and food scraps from residential customers, and have dedicated facilities to safely accept household hazardous waste as required by state law. Private transfer stations also accept commercially-delivered mixed waste, but few accept (relatively minimal numbers of) self-haul loads (customer visits) and Metro facilities offer the most affordable rates for self-haul services in the region. None of the private facilities accept household hazardous waste, but some do receive source-separated commercial food scraps, like Metro Central, but unlike South.

In March 2016, Metro Council confirmed that the transfer system should be managed to provide the following public benefits: protect people's health; protect the environment; maintain a commitment to the solid waste hierarchy as set forth in state law; maintain a system that is flexible and adaptable to changing needs and circumstances; ensure adequate and reliable services are available to all customers; recognize prior and future public and private investment; ensure sustainable finances; and minimize long-term life cycle cost of providing transfer services.

The Metro Council also confirmed that Metro should continue its public transfer station operations to achieve multiple objectives, including: provide a rate benchmark for local government collection rate-setters; provide enhanced services, such as household hazardous waste collection, long operating hours and days, and enhanced employee benefits; provide a public disposal option for any and all haulers (keeps level playing field for small businesses and the public because facilities are open to all); and provide flexibility to pursue new services or technologies, consistent with the waste management hierarchy.

2030 Regional Waste Plan

The 2030 Regional Waste Plan (adopted by Metro Council in 2019) is both a vision for greater Portland's garbage and recycling system and a blueprint for achieving that vision. It contains a set of values, principles, goals and actions to guide how improvements will be made and managed. The plan includes things that Metro and local governments are already doing and also adds new areas of work, particularly around waste reduction, extended producer responsibility, environmental health, racial equity and providing equitable services to communities in the region.

The 2030 Regional Waste Plan included a specific goal and action related to Metro South and expanding services:

> Goal 16: *Maintain a system of facilities, from smaller recycling drop-off depots to larger full service stations to ensure equitable distribution and access to services*.

Action 16.6: *Expand and improve access to services provided at Metro South Transfer Station.*

There are a number of other Regional Waste Plan goals and action items that are expected to be achieved or help guide the Metro South new facility project (see Appendix A).

There is further guidance for the Metro South new facility project included in the Metro Waste Prevention & Environmental Services Department's Diversity Equity and Inclusion Work plan (2018):

Strategy 3: *Provide services equitably, with a priority on communities of color.*

Action 3.1.5: *Utilize racial equity tools for siting a solid waste facility near Metro South.*

Based on this guidance, Metro, with input from the community, customers and stakeholders, will plan a new, modern, state of the art Metro South facility that will provide space for some or all of the services provided at the current facility. Beyond basic services, this project is an opportunity to realize other goals in the Regional Waste Plan and provide expanded recycling, reuse, repair and other services to be identified in partnership with the community.

Metro's community engagement work for the new South facility is intentionally elevating voices and input from people that are traditionally left out of government-led, planning projects. Through a community advisory group and other equity focused engagement efforts, the project is bringing people together to identify services by using a racial equity lens that centers the needs of black, indigenous, people of color.

Solid Waste System Facilities Plan

Regional Waste Plan Goal 16 calls for maintaining a "system of facilities, from smaller recycling drop-off depots to larger full-service stations, to ensure equitable distribution of and access to services." Due to the time-critical need to address demand at the current Metro South, this project is being conducted in parallel to a broader, regional Solid Waste System Facilities Plan that Metro will develop in 2021-22.

That plan will aim to identify the complete suite of facility-based services necessary for achieving the goals of the 2030 Regional Waste Plan and determine the current and anticipated gaps in achieving those services through private or public facilities. The plan is expected to lay out alternative pathways for filling, locating and financing those gaps over the next 15-20 years. This plan may find that building additional full-service stations or depots in other parts of the Metro region is necessary based on projected growth and/or service needs. Additional facilities could help meet equity and environmental goals by potentially improving customer travel times and access to solid waste services.

It should be noted, however, that making progress on a new Metro South facility is imperative as this facility is a critical component of the overall solid waste system in the region. A new Metro South facility will be included in the broader facilities system plan for context, but will not be portrayed as an optional system improvement.

II. Current Conditions

Since opening in 1983, Metro South has evolved to handle a variety of materials and to provide services to different customers, from large commercial trucks to individual households and small businesses. Today, the facility is serving an increasing number of customers with aging infrastructure and has no more space to grow or be reconfigured.

Metro South is also the most heavily used facility in the region, especially in terms of the number of self-haul customers it serves. In 2020, Metro South received and processed over 310,000 tons of materials from more than 330,000 loads delivered by customers, more than any other facility that accepts waste from the tri-county region. In relative terms, Metro South accounted for almost 20 percent of the region's overall tonnage and about 35 percent of all loads.

Despite the challenges at the site, Metro South customers continue to visit the facility in increasing numbers. In part, this is due to high levels of customer satisfaction with the quality and range of services provided at Metro South, as expressed in customer surveys throughout the years. Another reason why Metro South is heavily used is the lack of other convenient or affordable options for customers. Some customers report driving long distances to Metro South because they could not find another place to take certain items, especially household hazardous waste.

This section focuses on current conditions at Metro South and is divided into smaller subsections. The first subsections below describe the types of customers Metro South serves and the flow of materials those customers typically bring. This is followed by a summary of the major modifications made to the facility's infrastructure and operations since 1983 to accommodate a growing number of customers and to remain flexible to different service needs and materials over the years. The last two subsections describe the challenges Metro South faces today and the cost pressures these challenges create.

Customers

Between 2015 and 2020, Metro South has served an average of 285,000 customers per year and over 330,000 in 2020. The facility accepts waste from four types of customers:

Commercial haulers
Commercial garbage haulers are private companies that collect waste at homes and businesses from their respective franchised hauling areas within Clackamas County, including many local cities such as Oregon City, Milwaukie, Gladstone, Happy Valley, West Linn and other haulers that bring waste to Metro South, where it is compacted for transport to the landfill. Haulers also bring woody and yard debris and residential food waste to Metro South to be transferred to other facilities for composting.

Commercial haulers make up between 11 and 14 percent of all customer visits at Metro South each year, or about 34,000-37,000 annual visits in the past five years.

Residential self-haul customers
Residential customers are individuals who use Metro South to get rid of materials from their homes such as garbage, household hazardous waste, construction debris, recyclable items and large household appliances. The majority of these customers live or work in northern Clackamas County,

but many customers travel from other parts of the region (see Figure 3.1 below for a map of self-haul customers by zip code from a recent survey). Workers try to recover as many materials as feasible before the rest is compacted and transported to landfills. Residential self-haul customers typically bring their materials to Metro South infrequently (once or twice per year), in vehicles such as cars, vans, pickup trucks and trailers attached to small vehicles.

Residential self-haul customers represent approximately 80-84 percent of the total annual inbound traffic at Metro South, or over 230,000 per year since 2018. Self-haul customer visits increased significantly in 2020 (to more than 275,000) and 2021, as discussed below.

Business self-haul customers
Like residential customers, these customers also self-haul materials to Metro South, but they bring those materials as part of their work or their business and typically are frequent repeat customers. Business self-haul customers are employees, contractors or business owners that bring waste materials from places such as construction sites and landscaping jobs. They typically arrive at Metro South in medium-sized vehicles such as pickup trucks with trailers, utility vans and box trucks. Some also bring small quantities of hazardous waste.

Within the last six years, business self-haul customers have accounted for 5 to 7 percent of all customer visits at Metro South each year, or 17,000 to 20,000 visits annually.

Household hazardous waste customers
Metro South has a dedicated facility that accepts small amounts of household hazardous waste from residential and small business customers in cars and pickup trucks. More than 30,000 customers bring their household hazardous waste to this facility each year. That number has steadily increased in the last five years, and in 2020, it jumped to 39,000 customers.

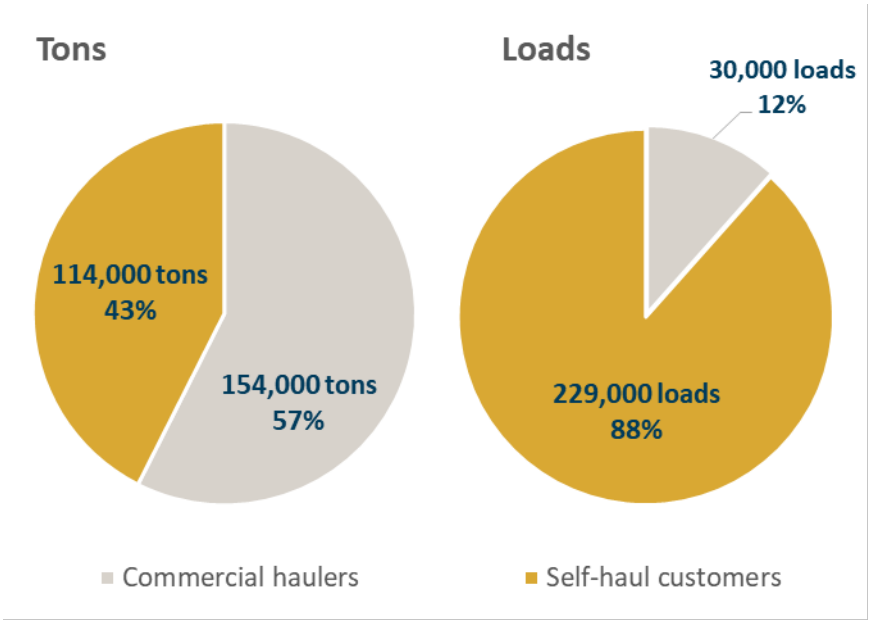
According to a 2019 customer survey, approximately 60 percent of Metro South household hazardous waste customers also bring other materials to drop them off at the main transfer station. The other 40 percent only visit the household hazardous waste facility. Household hazardous waste materials received at Metro South are safely consolidated and shipped to other locations for further processing such as used paint being remanufactured by MetroPaint, and some household hazardous waste materials being returned to the community for reuse, or for safe disposal.

While most of the tons of garbage received at Metro South are brought in by commercial garbage haulers (about 57%), the vast majority of loads of garbage are delivered by self-haul customers (about 88%), especially residential customers. **Figure 2.1** below shows the difference between tons and loads of garbage brought in by these two types of customers. However **Figure 2.1** does not account for the additional loads of other materials (yard debris, wood and recycling-only) that self-haul customers bring to the facility, which in 2020 added approximately 46,000 loads (for a total of 275,000 loads as detailed above).

FIGURE 2.1

Metro South

Tons and loads of garbage received in 2020, by customer type

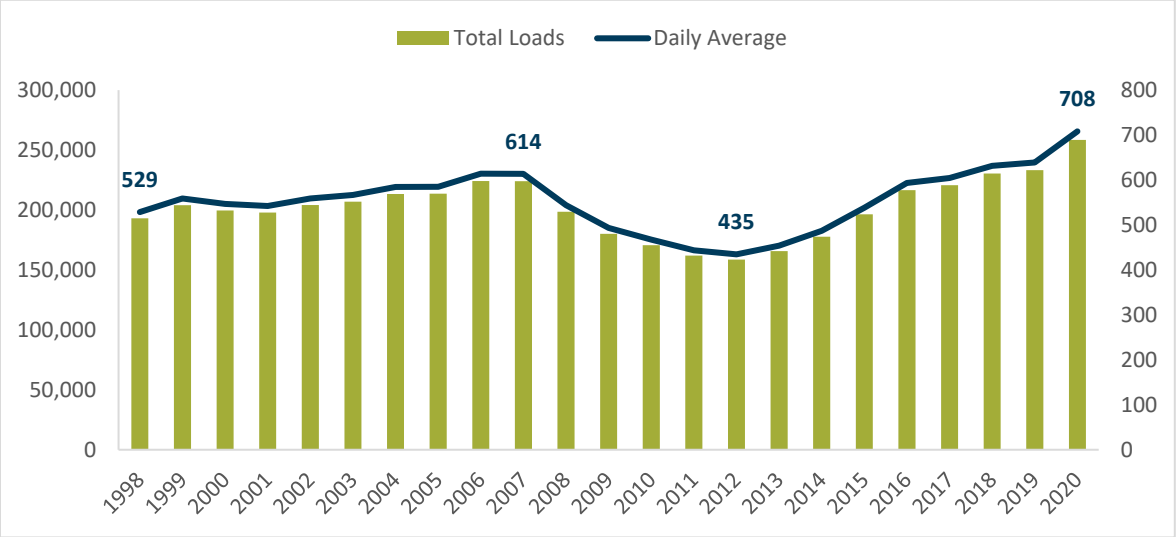


Customer visits to Metro South have grown over the last eight years. As **Figure 2.2** shows, the average number of incoming garbage loads per day at Metro South has steadily increased from 435 loads in 2012 to 708 in 2020. This is also higher than the previous peak of 614 loads per day reached in 2007, prior to the last economic recession. In the first three months of 2021, garbage loads have increased to an average of 730 loads per day. This represents a 28 percent jump compared to the same period in 2020, when the daily average was 572 loads.

FIGURE 2.2

Metro South

Annual loads of garbage received (total and daily average)



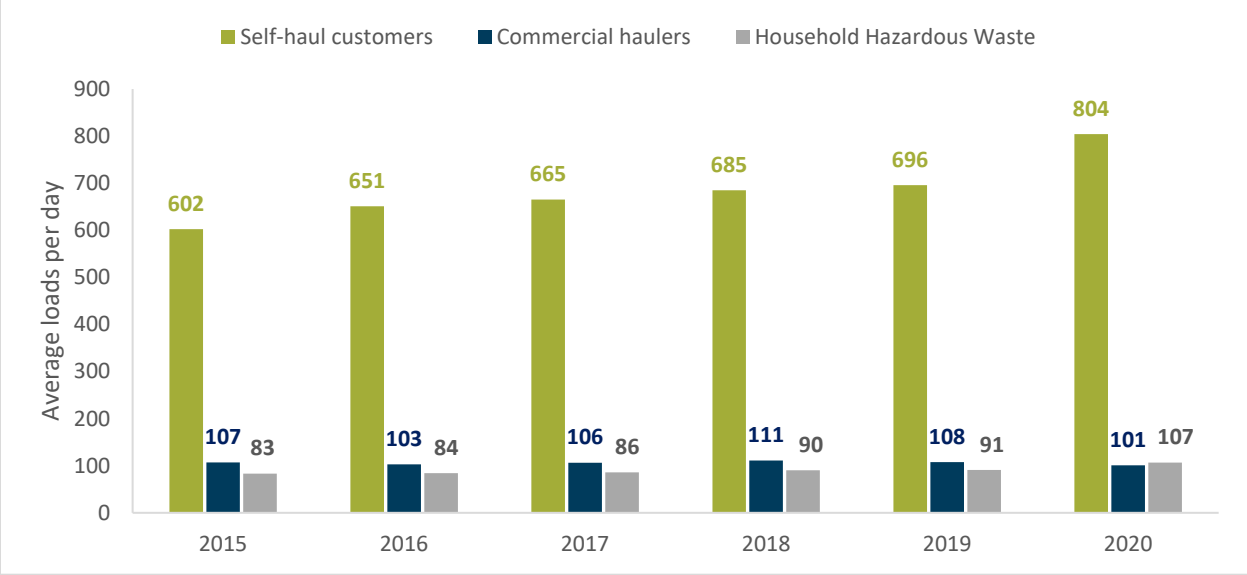
While Figure 2.2 focuses on garbage loads, **Figure 2.3** (below) looks at average daily incoming loads of all types of materials by customer type since 2015. The largest increase has been in self-haul customer loads, from an average 602 loads per day in 2015 to 804 loads per day in 2020. In the first three months of 2021, Metro South received an average of 840 loads per day, up 35 percent from 624 loads per day in the first three months of 2020.

Visits to the household hazardous waste facility have also increased since 2015, from an average of 83 loads per day to a peak of 107 loads in 2020. Average daily loads have grown even as the household hazardous waste facility increased service from six to seven days per week in September 2019, when it began opening on Sundays. By contrast, loads from commercial haulers have fluctuated between 101 and 111 loads per day during this period.

FIGURE 2.3

Metro South

Annual loads received (average loads per day)



Materials

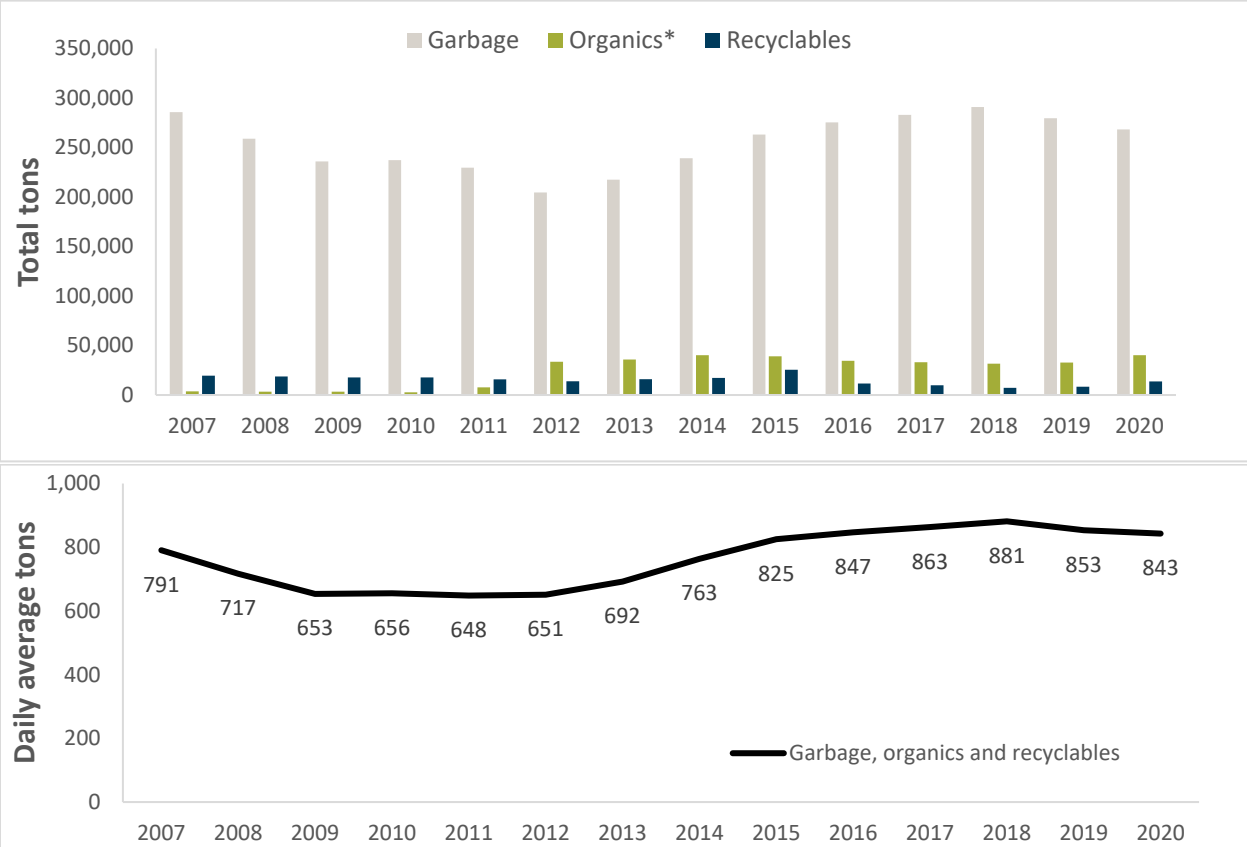
Metro South accepts the following types of materials for processing and disposal or recycling:

- Garbage from households and businesses, often referred to as municipal solid waste (MSW)
- Yard and woody debris
- Clean wood
- Residential organics - a term used for food waste mixed with yard debris collected from homes
- Separated recyclables (cardboard, wood, scrap metal, plastic, glass bottles/jars)
- Household hazardous waste such as paints, solvents and other chemicals brought in by residential self-haul customers and approved small businesses

FIGURE 2.4

Metro South

Waste materials received (in total and daily average tons)



* Organics refers to the sum of yard debris and residential food waste mixed with yard debris.

Figure 2.4 shows the total amounts of garbage, organics and recyclables received at Metro South since 2007. Garbage represents the largest waste stream, accounting for 80-93 percent of all incoming tons.

Organics is a category that includes yard debris and residential food waste. This type of waste increased significantly since 2011, when Metro South began accepting materials from the City of Portland's program to collect food waste mixed with yard debris from single family homes. Since then, other jurisdictions have added similar programs and send organics to Metro South.

The recyclables category includes materials dropped off by customers in separate containers at the facility and materials recovered from the garbage stream by workers at the facility for recycling or energy recovery. Separated recyclables make up a small fraction of all the materials received at Metro South because most recyclables are collected by commercial haulers and delivered directly to material recovery facilities. Recyclable materials have decreased from 19,600 tons in 2007 to 13,700 in 2020, primarily due to reduced demand for wood chips for use as fuel in paper – a form of energy recovery.

Figure 2.4 (bottom chart) also shows a decline in the average tons of all materials received each day at Metro South during the economic recession in 2007-2009. Since then, there was a steady increase to a peak of 881 tons per day in 2018. In the first quarter of 2021, Metro South received an average of more than 920 tons per day.

Adapting to growth over the years

As described by a consultant in a recent report of Metro South, the facility is "an adaptation success story – It was never intended to be a material recovery facility or do everything it is now doing."[1] This description speaks to the long history of investments and operational improvements Metro has made to expand Metro South's capacity to accept more and different types of waste materials.

In 1983, Metro South opened its doors to commercial haulers and the general public as a facility designed to receive and transfer 400-500 tons of garbage on an average day (up to 700 tons per day during peak times) and to accommodate daily traffic of about 80 commercial and 200 non-commercial vehicles. It was a simple operation, intended for haulers and the public to dump their waste in a pit, and the waste would then be pushed into compactors for transport. Throughout the decades since, Metro invested in modifications to the station's infrastructure and operational improvements to expand its waste transfer capacity and ability to accept materials other than garbage. To some extent, investing in these modifications has been at the expense of maintaining and upgrading the basic infrastructure of the facility. Processing multiple material streams also decreased the efficiency of the facility's original pit-style operation and increased the need for more space to store and handle materials. Today, Metro South is a multi-purpose transfer and recovery facility that handles garbage, construction waste, yard and food waste, household hazardous waste and recyclables, and serves an average of over 100 commercial and more than 800 non-commercial vehicles on a daily basis.

The types of improvements made to Metro South over the decades include:

- Construction of new transfer buildings and expansion of existing ones
- Installation of garbage compactors, scales and scalehouses
- Addition of a truck wash, a household hazardous waste facility and a latex paint processing facility (the latter was moved to its current location on Swan Island in North Portland in 2005 and is currently known as MetroPaint)
- Increasing the number of traffic control staff to reduce wait times and help alleviate safety concerns from cross-traffic, especially between garbage trucks and light vehicles
- Increasing the number of spotters to help customers in and out of tipping lanes and (prior to COVID) assist customers with unloading to reduce customer time on site
- Increasing hours of operation to partially flatten demand at peak times

A more detailed timeline of physical and operational changes at Metro South is included in Appendix B.

[1] HDR (2016). Metro South Station Assessment. Final Report (revised: December 5, 2016).

Current challenges

It is not feasible to continue providing the full set of services that Metro South's customers need, much less add others that the community wants, due to the facility's aging infrastructure, a growing number of customers, and limited space to expand operations. The main challenges Metro South faces are grouped into four categories and described below.

1) Site constraints limit services

For years, customers, local government partners and Metro staff have identified the need for additional space to improve and expand services at Metro South. The current facility has no more room to expand, with all usable acreage in active use to provide basic solid waste services or move customers through the site. Due to space limitations, the three types of customers (commercial haulers, residential and business self-haulers, and household hazardous waste customers) have to "compete" for access to different parts of the facility and to provide more services to one set of customers would require a reduction (or restriction) of services to another set of customers.

Insufficient space is the main factor that limits Metro's ability to provide additional services and advance many of the reuse and recycling goals in the 2030 Regional Waste Plan (refer to Appendix A for specific goals and actions). Constrained and insufficient space creates the following challenges:

Unsafe and unwelcoming conditions for self-haul customers (largest customer base)
Space constraints limit what Metro can do to improve self-haul receiving areas and separation between customers and heavy equipment, and there is no space to increase the number or depth of stalls for self-haul customer unloading. In addition, the current self-haul bays require customers to drive in/out through the same access point, requiring them to make tight turns and close quarters to exit.

No space to accept and process food waste/organics
In July 2018, the Metro Council adopted new code requiring the largest food service businesses in the region to separate their food scraps from other garbage. There is currently no location in the southeast Metro region where commercial haulers can take food scraps for off-loading and processing, so haulers will need to travel to Metro Central until a location can be identified.

Insufficient space to accept and sort recyclable materials
There is not enough space for customers to drop off recyclable materials such as scrap metal, cardboard, plastic, glass, electronics, and household appliances. While there are some recycling bins that line the walls of Bays 2 and 3, these are not safe for customers to access and the amount of traffic bringing in materials and the limited amount of floor space does not leave enough room to effectively sort and separate materials for recycling. In addition, available recyclable (recoverable) material value is significantly reduced by having to pile and move the material out of the way prior to sorting.

Having a dedicated area for customers to drop off reusable and recyclable items prior to going through the scale plaza – as well as an area for containment, loading, weighing and staging recyclables for transport - would save time and money, reduce congestion on site, and help advance 2030 Regional Waste Plan reuse and recycling goals.

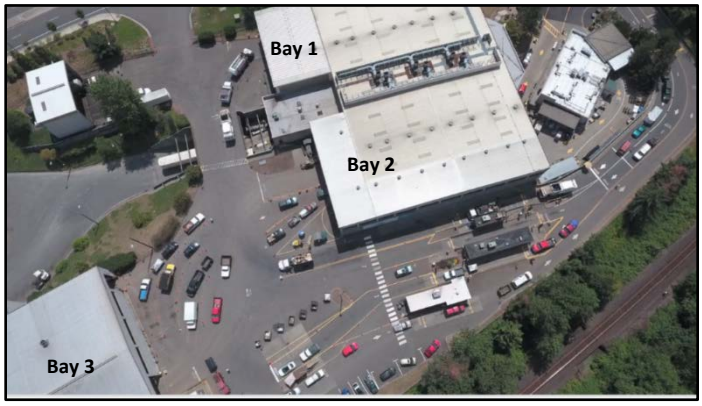
No space to recover materials for reuse, repair, resale
The facility has no room to support reuse and repair activities such as customer-friendly areas for the collection, repair or sale of reusable items, compost sales or art studio space. This is another priority in the 2030 Regional Waste Plan and of high interest to customers and community members, as determined through surveying and focus groups in 2020-21.

No space to provide education on solid waste system, environmental stewardship or host tours
With a high volume of traffic and space constraints, Metro South staff do not have the ability to safely offer enough tours to school groups and others who frequently request them. Limited tours are provided at Metro Central, but tours for Clackamas County students (often requested) are rarely possible at the current site. The ability to provide more of these tours would help advance Regional Waste Plan goals aimed at reducing the environmental impacts of products and waste through education.

Major site reconfiguration is impractical and expensive
Any addition of services to the current site would necessitate a major and expensive reconfiguration to make room for new services – or the reduction of an existing service. For example, currently, Metro faces the decision to close the truck wash to be able to accommodate a new administrative building to fulfill basic staff and operational needs. In addition, any major reconfiguration of the site would have high construction costs due to the existing elevation changes and the added operational costs from stopping or temporarily moving certain services to another location during construction.

2.) Customer and workplace safety

Too many competing uses and users in a limited space create potential safety risks within the facility, including:



High risk for vehicle accidents on the site
In the area just beyond the scales, multiple passenger vehicles, garbage trucks and transfer trailers cross paths with each other on a daily basis, creating a risk of accidents. Complicated queuing areas inside the facility are confusing for customers and increase risk of vehicle accidents and life safety risks for employees.

Customers in close proximity to heavy equipment and open garbage pit
Inside transfer buildings, small vehicles and customers unloading their materials are in close proximity to heavy equipment used to clear the floor and move materials out of buildings, and the space is not well-configured for hard-to-maneuver larger self-haul vehicles and trailers. The garbage pit design in Bays 1 and 2 is very efficient for receiving and transferring compacted waste, but it is risky to self-haul customers unloading above and into it since there isn't a rail or barrier. To reduce the injury risks, self-haul customers unload onto the floor in front of the pit and transfer station workers load the materials

into the pit with a fork excavator. This necessary use of a fork excavator also results in reduced access time to the tipping stalls for customers.

3.) Risks with the current location

At its current location, the Metro South site faces risks related to natural disasters, future high-density development in the surrounding area, and the facility's aging infrastructure.

Flooding risk

The existing site is vulnerable to flooding events. Low elevation portions are within flood hazard areas identified in Federal Emergency Management Agency (FEMA) maps. In February 1996, when high floodwater from the Willamette and Clackamas rivers inundated much of Oregon City, the station was closed briefly while a temporary sandbag wall was constructed along the west entrance road and the household hazardous waste facility was substantially submerged, causing extensive damage and months of closure for cleanup and repair. Metro constructed a permanent flood protection wall along the west entrance road in 1997 to delay flood waters from entering the lower levels of the site, however the entire site remains in the flood plain.

Metro South household hazardous waste facility submerged in water during February 1996 flood.

Hazard	Rating	Description
Cascadia earthquake expected shaking	**Severe**	Amount of shaking expected from a magnitude 9.0 Cascadia Subduction Zone earthquake. Severe is the second highest of six categories.
Expected earthquake shaking	**Severe**	Amount of shaking expected from major earthquakes other than a Cascadia earthquake, based on the type of soil below the surface. Severe is the second highest of six categories.
Earthquake liquefaction (soft soil) hazard	**High**	Deposits of loose sand or silt that are saturated with water commonly liquefy when shaken strongly or repeatedly by an earthquake. In many large earthquakes, much of the severe damage that occurs is due to liquefaction. High is the highest of three categories.
Landslide hazard	**Moderate** (landslide possible)	Based on a map that identifies general areas that may be at risk for future landslides, where more detailed landslide mapping is needed. Moderate is the second lowest of four categories.

Earthquake and landslide risk

Maps developed by the Oregon Department of Geology and Mineral Industries (DOGAMI),[2] locate the Metro South site in the severe earthquake shaking zone, the high earthquake liquefaction zone and the moderate landslide hazard zone.

Other natural disaster risk

In addition, ice storms, wind storms, harsh winter weather and wildfires are all risks that affect the region and, in turn, the Metro South facility. After the wildfires in September 2020, Metro South had to be closed for nearly a week due to wildfire risk in the area and the hazardous air quality for employees.

[2] Oregon Department of Geology and Mineral Industries. Oregon HazVu: Statewide Geohazards Viewer. Online at: https://www.oregongeology.org/hazvu/.

The region is likely to experience more of these types of events in the future as a result of climate change and the current Metro South is ill-equipped to accept a huge increase of debris from events like ice storms or wildfires.

Compatibility with other land uses

The use of the site as a transfer station is becoming less compatible with other land uses, as more commercial, retail and mixed use development activities increase in the surrounding area, which, in turn, will increase traffic in the area. Oregon City rezoned much of the land surrounding Metro South to "mixed-use development" in 2010, setting the vision for future development (high-density, mixed-use, mixed-income) of this "gateway area" into downtown Oregon City. Currently there is a proposal to redevelop the old Rossman landfill site across from Metro South into a dense, mixed-use neighborhood with hundreds of new residential units, 4-5 story mixed-use commercial/office buildings, and 3,800 parking spaces.

Aging infrastructure

Metro South was built almost 40 years ago. Despite investments in maintenance and upgrades, the facility's age increases the risks associated with critical failure of aging or obsolete systems and infrastructure that cannot be replaced easily, at low cost or without having to shut down operations. Examples include electrical, fire suppression and point of sale systems, scales and structural upgrades to infrastructure.

Stormwater management risk

Moving materials in and out of buildings multiple times, due to space constraints and building layout, increases fuel use and surface contamination leading to potential stormwater management issues. In addition there is no wheel wash for transport trailers exiting the site onto local roadways which can cause track out of residual contaminants, including trace metals, hydrocarbons, road salts if in use, trash and debris from vehicle traffic especially during wet weather conditions.

4.) Operational inefficiencies

Due to space constraints, high traffic volumes and the need to unevenly adapt the original facility infrastructure over time to offer additional services, Metro South is facing a series of operational challenges that negatively impact customers and staff, including:

Long wait times for customers

Customers often experience long wait times during peak periods. The facility has no room to add stalls for self-haul customers to unload their materials or to expand queuing space to improve traffic flow and help prevent backup onto the roadways. This situation is likely to worsen over time as traffic increases in the area.

Small customer areas and congestion lead to tight maneuvering spaces

Difficult maneuvering for customers

Many of the customer areas are smaller than what is necessary for the volume of traffic and materials currently managed, creating tight maneuvering spaces for customers and the need to back in and out of unload spaces, rather than dropping off materials and driving through the facility. This results in longer time spent on site for customers and ultimately less efficient overall operations.

Compliance with DEQ Asbestos regulations

Recently adopted requirements for load checking for potentially asbestos contaminated loads, and identified material handling procedures if asbestos is suspected or confirmed, has added to the challenges staff face on site in a highly constricted and fast paced traffic environment. Asbestos monitoring and load management negatively impacts traffic flow and causes additional delays in an already challenging environment.

Customer confusion with facility layout

The site's configuration makes it difficult to improve way-finding (clear markings or signage throughout the facility that help customers find where to unload materials). In past surveys, customers have noted the setup of the facility is complicated and difficult to navigate, especially for infrequent or first time customers. In addition, the need to vary traffic patterns for self-haul customers between weekdays and weekends – as well as sometimes within the same day - causes confusion and longer wait times for customers. Having to change traffic patterns makes it difficult to provide helpful signage.

Inefficiencies in handling and sorting materials for staff

Staff needs to handle materials multiple times or spend time and additional resources storing and processing materials. For example, recyclables are tipped by customers in multiple areas and then moved from Bay 2 to Bay 3 for processing and storage. The residuals are then brought back to Bay 1 for disposal and some recycling materials need to be stored outside Bay 3 prior to load-out.

Yard debris, clean wood and residential organics are accepted all day in Bay 3, but have to be held there because loading them out for transport requires stopping traffic. At times, customer traffic through the site needs to be halted because waste has to be pushed into taller piles in the bays until reload can happen after hours. These materials are staged all day and then moved to the pit after hours, forcing increased staffing to handle the work.

In addition, the materials that are unloaded by customers on the floor are typically pushed and piled before sorting to make room for more material. This process tends to lower the recycling and reuse potential of those materials, and customers see less value in separating their materials because they only see a single pile.

Limited space for storage creates conflict of uses

Limited space for storage increases the frequency of supply deliveries, such as drums and other equipment used at the household hazardous waste facility. In addition, storage areas for household hazardous waste supplies are at the opposite end of the site causing movement of drums and cages back and forth from that area to the household hazardous waste building, intersecting with customer traffic.

Another example is that Bay 3 houses the recycling sort line and is also used for customer unloading of recyclables, loose waste and yard debris and food waste. This limits sort line operations to after hours and results in the floor in Bay 3 not being cleared during the day. Volumes of waste on the floor in Bay 3 also limits the ability to have more than one top loading waste container in the bay.

Multiple, small buildings (not originally built for transfer station customer use) create inefficiencies

Separate buildings on site require having multiple pieces of equipment so that each building can be serviced. This reduces the efficient use of resources in terms of staffing and equipment. In addition, two of the three bays in both buildings have only one way to go in and out and this causes significant safety and operational delays as customers have to turn around in tight spaces, rather than being able to drive through the facility.

Trailer maneuvering in tight spaces near load-out ports in Bay 3

Limited site access and circulation

With limited access points into and out of the site and space constraints, maneuvering is very tight and causes the need for dedicated staff to direct traffic and handle other challenges.

Transfer trailer drivers have to slowly and precisely maneuver when backing into the load-out ports in Bay 3 and accessing the haul scale. This is time consuming for drivers and adds to early pavement and tire wear and can complicate stormwater management practices.

Customer traffic must be stopped as transport vehicles enter and exit the site through the main traffic way, as there is no other way for them to access the facility. In addition, some outgoing transport loads need to be handled on the customer scales because they don't fit on the transport scale, further complicating traffic flow.

Loading household hazardous waste out of the facility requires backing large shipping trucks into a receiving bay and completely blocking the facility's entrance. To exit, drivers need to carefully maneuver out into Washington Street. This process is difficult, and, because of the risks it poses, has to occur when the site is closed to the public.

Increasing operational costs

Operating the Metro South station at the current level of service requires increasing numbers of staff and significant operating and maintenance expenses. With the existing site, the costs of operating and maintaining the facility are only going to increase as population and the number of customers grow. At some point in the near future, Metro South station will not be able to absorb additional growth in customer counts, regardless of how much additional operating revenue is made available. Additional staff have been added in recent years to manage increasing traffic volumes, and to comply with asbestos monitoring and management requirements established by DEQ, but the facility is no longer able to accommodate more staff, or more traffic. Said another way, Metro cannot staff or buy its way out of the growing challenges of the facility at its current location.

Metro South costs tend to be higher due to the limitations of the site discussed above, the facility's aging equipment and infrastructure, and the high volume of traffic. In terms of staffing, modern facilities that offer comparable services to Metro South tend to have considerably fewer staff on site. For example, the Factoria transfer station in King County, Washington which is comparable in terms of services provided, operates with approximately 11 FTE, handles almost 140,000 tons and has over 104,000 customers per year, compared to 100 FTE at Metro South, with 278,500 tons and more than 274,600 customers in 2020. Though the two facilities are not identical in terms of services provided, both provide commercial and residential self-haul, household hazardous waste, recycling drop off, and green waste services. Larger buildings with increased floor space, with intentional traffic flow design, including adequate queuing, wayfinding, and signage, would translate into more efficient use of staff resources.

In recent years, consultants and Metro staff have identified large capital investments that would be required to continue to operate Metro South safely at current levels and without major service disruptions, including:

- Updating electrical systems
- Making improvements to ventilation systems
- Installing better signage and way-finding systems that are flexible and changeable
- Creating a second access point to more safely manage outbound trucks (may not be possible due to state and local regulations that limit access points to the site)
- Comprehensively inspecting and repairing the garbage pit in Bays 1 and 2, especially the walls
- Adding sufficient parking space (may be unachievable without removing something else)
- Replacing the roof and some structural elements due to corrosion
- Replacing three scales and adding an additional mobile scale for disaster response and operational flexibility
- Making modifications to ensure compliance with the American with Disabilities Act

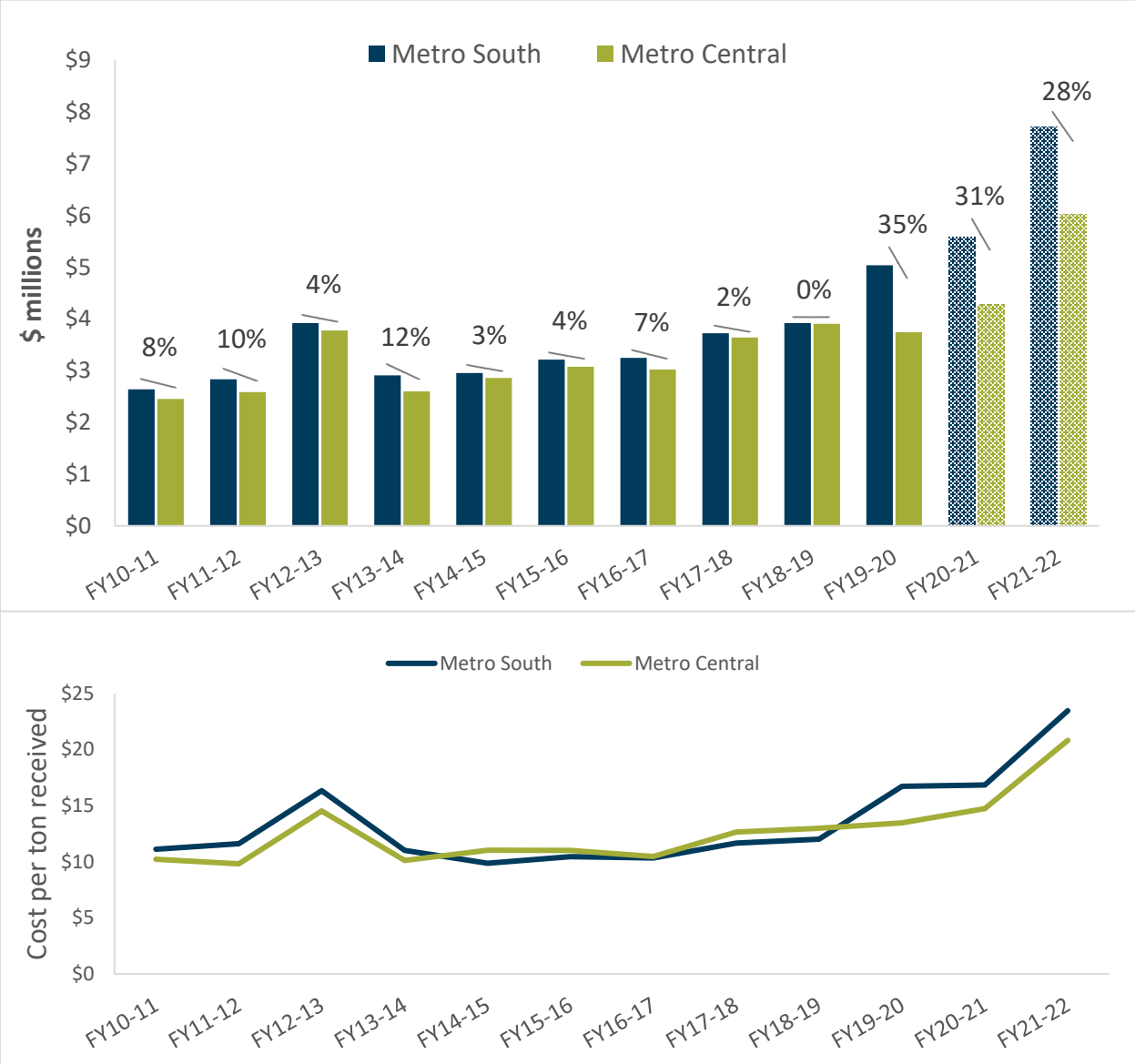
- Adding areas for employee showers, staff meetings and gathering points for tours and education efforts

Operating costs for Metro South have been trending up even without the needed investments identified above. Figure 2.5 compares the operating costs of Metro South and Central during the last decade to budgeted amounts for fiscal year 2020-21 and 2021-22. These costs include items such as employee wages and payments to contractors to operate the facilities and electricity and water utility expenses. The operating costs shown in Figure 2.5 exclude charges for transporting and disposing waste materials at landfills, composting sites and other facilities and expenses related to capital or large infrastructure improvements like adding new buildings or replacing garbage compactors.

FIGURE 2.5

Metro South and Metro Central

Operating costs by fiscal year



As the graph shows, operating costs for both Metro South and Central have increased over time. However, Metro South costs started increasing at a faster rate since fiscal year 2019-20. Between fiscal years 2010-11 and 2018-19, both transfer stations had similar operating costs, ranging from $2.5 million to $3.9 million. The difference in costs – expressed as Metro South costs minus Metro Central costs – ranged between zero and ten percent during that period.

This is to be expected given that both transfer stations handled similar amounts of materials. In fact, as shown on Figure 2.5, the operating costs per ton received at Metro South were almost the same or lower than at Metro Central. This trend was reversed in fiscal year 2019-20 when the operating costs per ton at Metro South increased to $16.70, more than $3 above the operating costs per ton at Metro Central.

For fiscal years 2020-21 and 2021-22, the cost per ton numbers in Figure 2.5 are based on budgeted costs and forecasted tons. The difference in total budgeted costs is significant – 28-31 percent, or between $1.3 and $1.7 million and a cost per ton difference of $2 to $2.65. The cost differences are driven largely by the recent addition of staff at Metro South to help reduce wait times and improve safety and check loads for asbestos.

III. Future growth in the Metro South customer base area

Increases in population and economic activity have historically been followed by increases in the amounts of garbage, yard debris, recyclables and other materials discarded by households and businesses. In the coming decades, as population and economic activity rise in the Metro region, Metro South will likely see increases in customers and tons of materials received.

Methodology

To get a sense of the potential growth in the Metro South customer base area, Metro staff developed estimates of customer loads and garbage tonnage between 2020 and 2050. The analysis focuses on the landfill-bound garbage typically thrown away by households and businesses, from kitchen garbage to construction debris. Households and businesses generate other types of materials such as yard debris and recyclables, however, garbage generation can be forecast with greater accuracy.

The estimates presented here are based on MetroScope projections of population and employment. MetroScope is a set of analytical tools used by Metro to model changes economic, demographic, land use and transportation activity within the Portland metropolitan area. To forecast waste generation, Metro staff combined MetroScope projections with data on garbage generation by households and businesses.

Defining the Metro South customer base area

Metro South accepts waste materials from commercial haulers and self-haul customers from many different parts of the region. Past customer surveys show instances of customers driving to Metro South from as far away as Troutdale in east Multnomah County and Beaverton in Washington County.

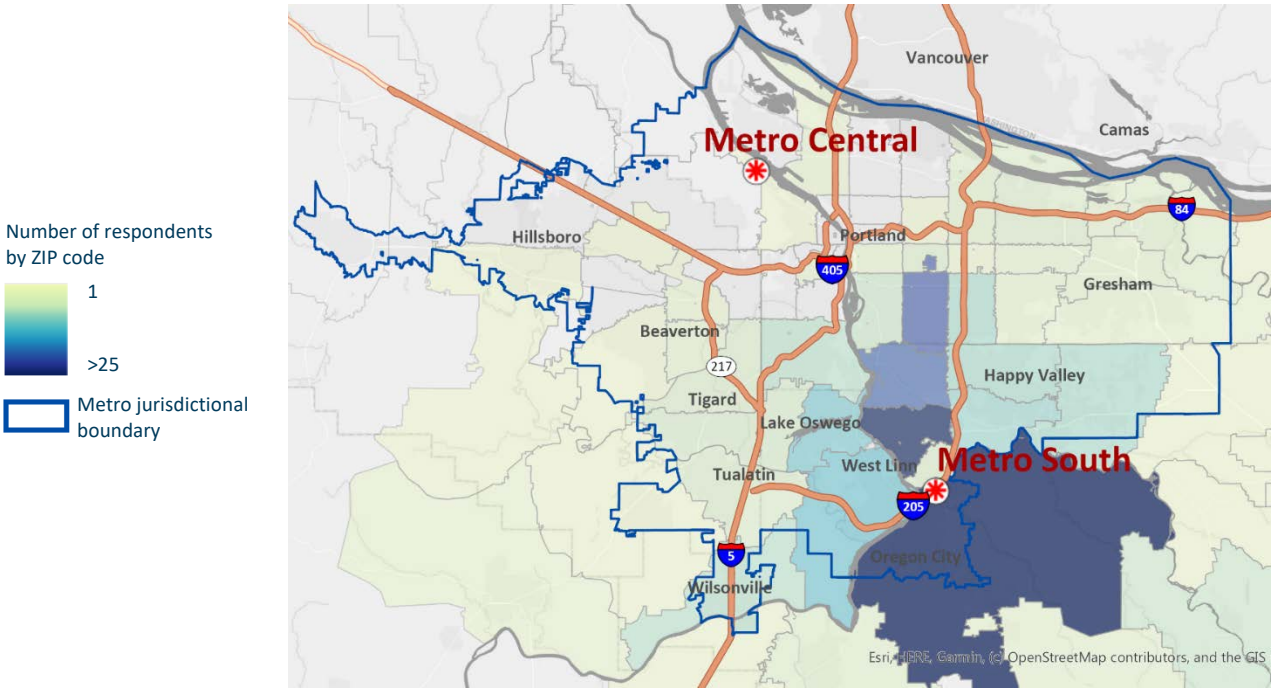
While Metro South provides services to a variety of customers across the region, the analysis presented in this section focuses on a narrower customer base area. This area was defined by the ZIP codes where most self-haul customer trips originate and areas within a 15-minute drive time from Metro South. The customer area was constructed using two data sources. The first one is a 2019 survey of self-haul customers conducted for Metro and the second is Metro's travel demand model and travel time data.

Figure 3.1 shows a map with the results of the 2019 self-haul customer survey for Metro South. The darker areas are ZIP codes with higher number of respondents. ZIP codes 97045 in Oregon City and 97267 in the Oak Grove-Jennings Lodge areas have the highest percentage of responses (14 percent and 10 percent, respectively). Past surveys of Metro South customers reveal similar patterns to the one in Figure 3.1. The Metro South customer base area was initially defined by the ZIP codes with more than 2.5% of total responses. Because the 2019 customer survey was based on a relatively small sample of customers and only focused on self-haul customers, the survey data was complemented with Metro's travel time data by adding areas within a 15-minute drive time from Metro South to arrive at the final Metro South customer base area, shown on Figure 3.3 (below).

FIGURE 3.1

2019 survey of self-haul customers at Metro transfer stations

Metro South responses by ZIP code



For the purposes of the analysis presented in this section, a Metro South customer base area was roughly defined by the ZIP codes with higher responses in Figure 3.1 and by proximity to the facility. The Metro South customer base area covers the following areas:

- Cities and unincorporated areas in North Clackamas County within the Metro boundary, including Gladstone, Happy Valley, Johnson City, Lake Oswego, Milwaukie, Oregon City, Rivergrove, West Linn and Wilsonville
- Some portions of unincorporated Clackamas County immediately south of Oregon City
- Portions of Southeast Portland (south of SE Division Street and near the I-205 freeway)

Main results

The overall projections of loads and tons of garbage generated by households and businesses in the Metro South customer base area are shown in Figure 3.2. It is important to highlight that these projections focus on the Metro South customer base area, which is more narrowly defined than the total area where Metro South customers have historically come from. Using this narrowly defined area avoids overstating the tonnage and customers that may flow to Metro South in the future. However, this means the projections understate the actual number of tons and loads of garbage received at Metro South in 2020 and in future years. For instance, the projections show a total of 130,000 customer visits and 244,000 tons of garbage generated within the Metro South customer base area in 2020, compared to 258,521 customer visits and 268,220 tons of garbage actually received at the facility that year.

The largest increase in loads in the Metro South customer base area is expected to be from residential self-haul customers delivering garbage – from 78,000 loads in 2020 to 124,000 loads by 2050.

Commercial haulers are projected to generate 23,000 more loads per year by 2050, with 8,000 more from business self-haul customers.

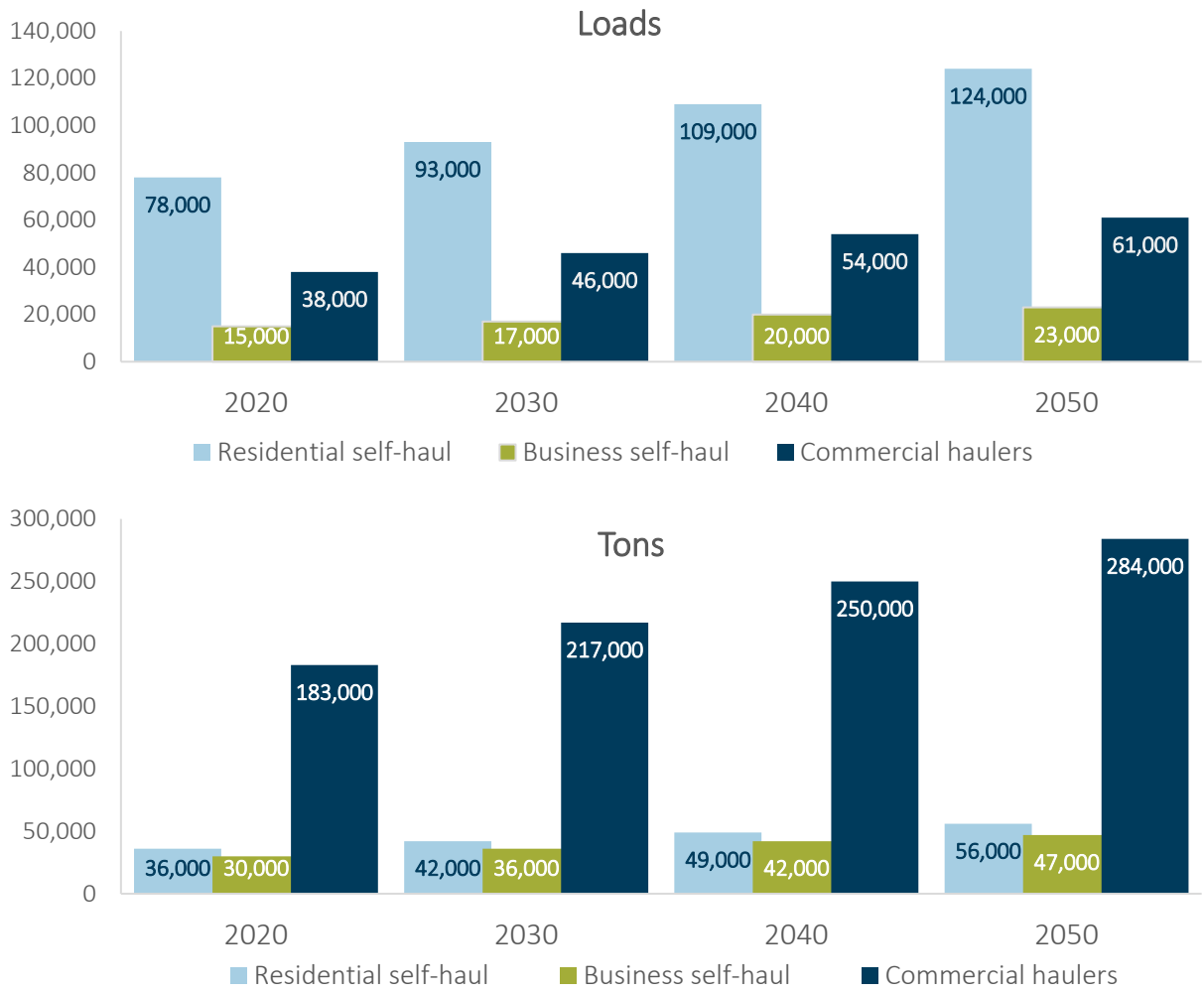
In general, total garbage loads in the whole Metro South customer base area are projected to grow by 60 percent between 2020 and 2050. Assuming Metro South experiences the same increase in total loads during that period, this would mean peak daily customer visits rising from an average of 1,100 in the past 12 months (May 2020-April 2021) to 1,760 customers per day by 2050, a completely unmanageable number given the challenges noted earlier.

When it comes to the projected amounts of garbage generated in the Metro South customer base area, the results for residential self-haul customers and commercial haulers are reversed. The largest increase in tons is expected to be from commercial haulers– an increase of 106,000 tons per year by 2050. Residential self-haul amounts are projected to increase by 21,000 tons per year by 2050, and those for business self-haul customers by 17,000 tons per year.

FIGURE 3.2

Metro South customer base area

Projected number of annual loads and tons of garbage, 2020-2050



Growth hotspots

The results shown above are for the Metro South customer base area as a whole. However, the increase in garbage generation within and around that area is uneven, with pockets or hotspots of higher growth in places where more housing and higher employment are expected to crop up.

The map in Figure 3.3 below, shows the variation in projected garbage generation across different parts of the Metro South customer base area. The map shows the estimated increase in the loads of garbage generated by households and businesses within each transportation analysis zone (TAZ) between 2020 and 2050. TAZs are geographic units used by Metro mainly in transportation planning and modelling, but are also useful for other types of analysis.

Each circle on the map is centered on a TAZ. Larger circles represent hotspots of growth in garbage generation and the largest ones indicate increases of more than 2,000 loads of garbage.

While circle size is tied to the magnitude of changes in garbage tons in each TAZ, the different colors convey the relative change in tons in percentage terms. For example, the dark blue-green circles represent increases of more than 500 percent. Lighter colors indicate smaller percent increases, with yellow circles representing the lowest increase in loads per TAZ, of less than 10 percent.

Areas with large increases in both absolute and relative terms tend to have less population density and/or fewer businesses today. As population and economic activity increase, these are areas that have space for, and where we are more likely to see, new housing, commercial and industrial development.

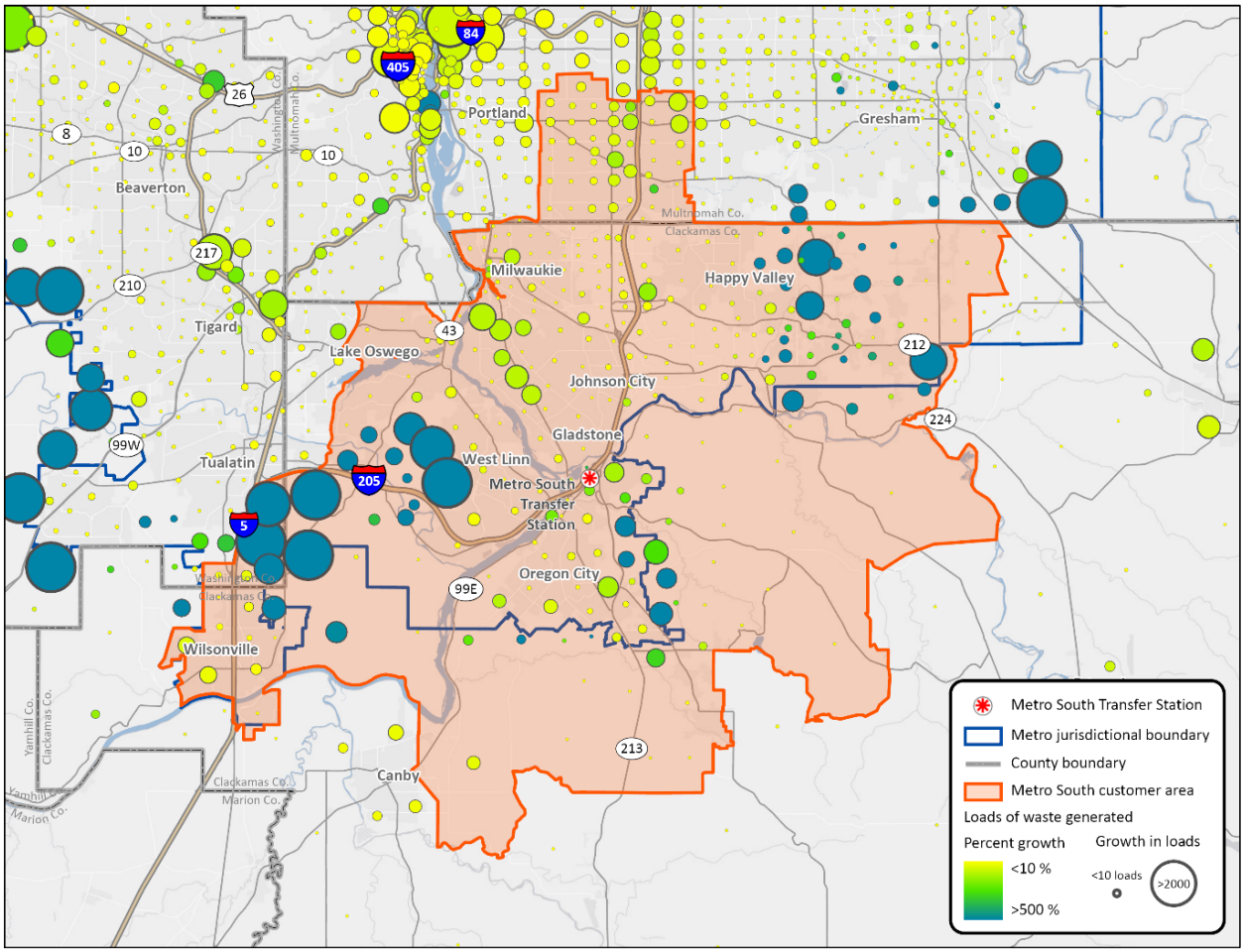
On the other hand, areas with a higher housing and business density today, already tend to generate larger volumes of garbage and are likely to continue doing so in the future. On the map in Figure 3.3, these areas tend to show large absolute increases in projected garbage generation between 2020 and 2050, but relatively small percentage changes.

As the map shows, large increases in absolute and relative terms are expected to happen in the outer areas of the Metro boundary, particularly around Tigard, Tualatin and Sherwood and along I-205 between Wilsonville, Tualatin and West Linn. Other hotspots in both absolute and relative terms are projected in Clackamas County, in the area between Happy Valley, Damascus and southeast of Gresham (around Kelly Creek) and in some parts south of the Metro South transfer station in Oregon City, along highway 213.

FIGURE 3.3

Growth hotspots in the Metro South customer base area*

Projected increase in loads of garbage generated by transportation analysis zone (TAZ), 2020-2050



* Defined by ZIP codes with high percentages of self-haul customers and areas within a 15-minute drive time from Metro South (see pages 21-22).

The projections on the map also show other TAZs in the Metro South customer base area with large absolute increases in garbage generation, but small in percentage terms (yellow circles), along Southeast McLoughlin Boulevard between downtown Milwaukie and Jennings Lodge and along Southeast 82nd Avenue, north of Highway 224.

It is important to note that the growth projections presented in this section are for the entire Metro South customer base area. Some of the future tons and loads estimated for this area will not necessarily flow to Metro South. Commercial haulers can take waste to other transfer stations in the region. On the other hand, the options for self-haul customers are more limited.

IV. Previous plans and studies

The need to improve operations at Metro South, safely accommodate both commercial and self-haul customers and address service needs has been well documented and recognized by Metro staff, stakeholders, customers and consultants since at least 2001. This section presents the main conclusions and results of five major plans and studies assessing Metro South operations over the last two decades. Appendix C includes a more detailed overview of each of these documents.

Metro South plans and studies since 2001

2001	Master Plan for Solid Waste Facilities at Metro South Station and Metro Central Station (URS)
2008	Metro 2008 Facilities Master Plan Update (URS)
2009	Impact of Self-Haul Customers on the Regional Solid Waste System (Metro)
2012	Preassessment report (Red Fender)
2016	Metro South Station Assessment (HDR)

There are three major observations about Metro South shared across all plans and studies. These are:

Site constraints limit expansion opportunities
Size, risks from flooding and other hazards, and the increasing commercial and mixed use development in the surrounding area limit the options to accommodate growing waste and traffic volumes at Metro South.

The facility is beyond vehicle capacity
Metro South can handle large amounts of waste materials, especially garbage, but it has exceeded its maximum vehicle capacity.

Low recovery of materials for recycling
The high volume of traffic and lack of space limits the transfer station's ability to recover materials from construction waste.

To address the challenges faced at Metro South and meet service needs, the different plans and reports discuss a variety of approaches based on technical assessments and input from stakeholders. These approaches range from conducting major renovations to the existing facility, to relocating some or all of the services currently provided to a new facility, to reducing the number of self-haul customers through a variety of incentives and disincentives.

Since October 2019, Metro Council has expressed support for moving all services from the current location, if a suitable property is available and can be acquired. At the same time, Metro Council has guided staff to remain flexible and consider multiple options.

V. Envisioning and siting a new facility

As evidenced above, maintaining current levels of service at Metro South is not possible given upward trends in usage and no capacity to add the additional services desired by customers and local governments. A new facility based on modern best practices would be designed to alleviate many of the challenges outlined in this report and Metro staff has looked for guidance and inspiration from new and modern transfer stations that have been built across the U.S. and world. These centers incorporate design and technology features to minimize odor, noise and dust, litter and other potential negative impacts on neighbors. These centers make it easier for people to recycle and donate items for reuse and repair and allow customers to buy used or repaired goods; a few nearby examples follow.

The **Seattle North Transfer Station** sits on a 5-acre site in the middle of two urban neighborhoods – Fremont and Wallingford. Rebuilt in 2016, this facility serves residential and business self-haul customers, as well as commercial garbage and recycling trucks. Separate traffic lanes and entrances keep self-haul vehicles away from large garbage and recycling trucks, increasing customer safety. A separate building on the site serves as a drive-through recycling depot where customers can leave recyclable or reusable materials for free. Long queuing lanes and a large tipping floor help to keep traffic within the site instead of impacting the nearby neighborhood. All operations occur within enclosed buildings with automatic doors and ventilation systems to reduce noise and odor impacts. The main building has a misting system to reduce dust. More than an acre of open space buffers neighbors from the facility and offers a play area for children, a sports court, an open lawn, walkways and exercise stations. The Education Room allows visitors to view the facility tipping floor and offers interactive education about recycling, compost and other topics. In 2018, the facility received 109,873 tons of materials and 123,564 customer visits.[3]

The **Factoria Recycling and Transfer Station** in King County, Washington was completed in 2017 on the same site as the old facility. The station has see-through wall panels, skylights, and solar tubes - making natural daylight the primary light source and decreasing energy use. Water saving features include rainwater tanks, low-flow fixtures

[3] Seattle Public Utilities. 2018 Incoming Trips and Tons Report. Available online: https://www.seattle.gov/utilities/about/reports/solid-waste-reports#station.

and drought tolerant landscaping. The main transfer building is enclosed to help reduce noise, dust, and odors. The facility was built with five large doors to provide flexibility in traffic patterns. This accommodates more self-haul customers in stalls on the tipping floor on the weekend, while reducing the number of self-haul stalls during the week. In 2018, the facility received 138,802 tons of materials and 104,283 customer visits.[4]

King County is also in the process of designing a new recycling and garbage transfer station, the **South County Recycling and Transfer Station**, to be built to replace the 1960s-era Algona Transfer Station. The new station, almost fully designed and planned to open in 2024, will offer a full array of recycling services, hazardous waste disposal for households and qualifying business, sustainable building features, offsite wetlands improvements, on-site creek enhancements, public art, and other community benefits. King County will keep the existing Algona Transfer Station open throughout construction of the new facility. Set to be completed by 2024, this project is seeking Petal Certification through the Living Building Challenge. Public art will be incorporated at the new station – the Muckleshoot Indian Tribe has been commissioned to create site-responsive and integrated permanent artwork. Evan Blackwell, an artist in residency who focused on repurposing mass-produced and discarded products, will create a body of artwork over three years to be installed at the site and at other Solid Waste Division facilities. In 2018, the existing Algona Transfer Station received 153,349 tons of materials and 140,734 customer visits.[5]

Project phasing and site search approach

This is a long-term project, expected to take at least five years to locate land, design, engineer, permit and construct a new facility. The project is being approached in three phases. Phase I began in 2019 with establishing a geographic area of focus and identifying a specific site to acquire to construct a new facility. This current phase includes laying the groundwork for the project and building relationships and a common understanding of the need for the project with local government partners, project stakeholders and a community advisory group.

Metro staff established a siting area for the new facility in late 2019 which follows major transportation and zoning corridors that allow for the development of a transfer station. Staff developed a set of criteria to search for and assess possible sites, including “base” and “functional” criteria. Staff identified 160 possible sites that aligned with project goals using these criteria, though only one of these sites was actually on-the market for-sale in 2019. Staff reached out to owners of the top 20 ranked sites to determine their interest in potentially selling for the project use. It should be noted that the availability of suitably sized and zoned industrial lands within the siting area is extremely limited, and in fact during the past two years only one potential industrial site has been listed on the market, and that site proved to be unsuitable for Metro’s purposes.

This technical information, paired with input from a local community advisory group, guided staff in its initial consideration of possible sites and locations. In addition, staff developed a Racial Equity Analysis for the project siting area to understand the demographics of who lives, works and worships in the area, and for guidance on how to meaningfully engage the most impacted people, including communities of

[4] King County Solid Waste Division. Factoria Recycling and Transfer Station Factsheet. Available online: https://kingcounty.gov/~/media/depts/dnrp/solid-waste/facilities/documents/factsheet-Factoria.ashx?la=en.
[5] King County Solid Waste Division. Algona Transfer Station Factsheet. Available online: https://kingcounty.gov/~/media/depts/dnrp/solid-waste/facilities/documents/factsheet-Algona.ashx?la=en.

color. Metro established a relationship with Unite Oregon, a community-based organization, to help connect community members with the project and broaden their understanding of the regional solid waste system.

While Metro entered into a Purchase and Sale Agreement in November 2020 for a specific property and has been conducting due diligence work at the site, staff continues to track the other top sites and will research these sites for opportunities if/when they arise. A site's location, size and access from roads and highways are all factors that will be part of determining the ultimate set of services and programming at a future facility. It should be noted that in late 2019, Metro Council directed staff to look for and assess sites that were *large enough to accommodate all of the services currently offered at Metro South* – and with room to add new services to implement and realize goals in the 2030 Regional Waste Plan, including providing enhanced recycling, education related to waste, recycling and the environment, and community amenities.

A final decision to purchase a site will be made by Metro Council, informed by the results of technical due diligence, input from community members and stakeholders, and the negotiated price. Phase II will begin when a site is approved for acquisition by Metro Council and Council directs staff to begin this phase of work. Phase II will focus on developing a detailed program and facility design and led by a design/engineering team to be selected thru a request for proposal process. Facility operations staff will be key stakeholder in this phase of the project, as will public and private sector solid waste stakeholders. Phase III will include land use approval, entitlements, construction permits and construction of the facility.

Throughout each phase of the project, and guided by Metro's *Strategic plan to advance racial equity, diversity and inclusion* (2016), Metro will engage communities that could be impacted or benefit from the project to contribute their ideas and ask questions about the project. Metro expects to develop a good neighbor and community benefits agreement to outline expectations for ongoing operations and management of the new facility.

Financing a new facility

Metro will finance the acquisition of the site for a new facility with solid waste reserve funds included in the proposed FY22-23 Metro budget. Future design and construction of the facility is expected to be paid for by issuing construction bonds that would be repaid over 20 years.

Repayment of construction bonds could be accomplished through an increase in the solid waste operations tip fees, which would place the burden of repayment primarily on the users of the two Metro owned stations, or repayment could be accomplished through an increase to the Regional System Fee which is a fee assessed on all Metro region generated solid waste tons transferred through the public and private facilities for disposal, or a combination of both approaches.

The difference in approaches is essentially either localizing repayment costs only to users of the Metro owned stations or spreading the cost of building a new facility across all system users. This will be a policy decision for Metro Council to consider. While there are many drivers for keeping rates as low as possible while still safely and efficiently delivering needed services, there is evidence that higher disposal costs can effectively send economic and pricing signals that promote increased waste reduction, minimization, recycling and recovery by consumers (and our customers).

Whatever approach Metro takes to repay the design and construction costs of a new Metro South Station, there will likely be an impact on the rates customers pay at the curb for their garbage and recycling services. For the most common curbside customer who has 35 gallon weekly garbage service plus recycling and yard debris service, the combined Metro tip fee, including excise taxes, transaction fees, and the Regional System Fee accounts for approximately 20% of their monthly bill. It should be noted that Metro only sets the tip fees, excise taxes, transaction fees at the transfer stations, as well as the Regional System Fee. Local governments then include these transfer costs in the local rate making process. The decision to pass on any increases in the Metro tip fee is entirely up the local government, though most do view tips fees as a pass through cost in their rate making process.

Distributing the repayment costs across a broader base (all system users) would result in lower impacts to average customer rates; consolidating the repayment costs on a smaller group of users (Metro transfer station customers only through an increased tip fee) would result in higher rate impacts for customers who use Metro transfer stations, or whose commercial hauler delivers their route loads to one of the two Metro stations.

Should Metro acquire a parcel for a new Metro South Station, and prior to initiating design and construction of a new facility, Metro will establish a financing plan that more clearly articulates design and construction costs, and outlines the approach Metro will use for paying for a new station.

VI. Conclusion

As described in this report, the existing Metro South facility is a critical part of the region's solid waste system, but is incapable of meeting the future needs of its customers. Even at current service and usage levels it is costly to operate, highly vulnerable to natural disasters, and is at risk of critical system failures due to its age.

To meet the needs of residents in Clackamas County and nearby areas, Metro needs a new facility for some or all of the current services provided at Metro South, and the new location should be designed for maximum flexibility to accommodate population growth and a range of current, planned and to be envisioned services in the future as detailed in the 2030 Regional Waste Plan. The new location would also need to provide a home for all services currently located at Metro South, at least for a period of time, to allow for redevelopment or remodeling of the current Metro South facility (should Metro Council elect to continue to provide some services at that location).

Appendix A: 2030 Regional Waste Plan Related Goals & Actions

The following table lists the goals and actions that most closely relate to the future planning, design, programming, construction and operation of a new Metro South facility.

RWP Goal	RWP Actions	MS Project Relevancy
Goal 1: Increase engagement of youth and adults historically marginalized from garbage and recycling decision-making by enhancing civic engagement and leadership opportunities.	1.1: Increase representation of historically marginalized community members, including youth, on advisory committees, such as Metro and local government solid waste advisory committees.	**Metro South Community Advisory Group membership and structure**
Goal 2: Increase the percentage of garbage and recycling system revenue that benefits local communities and companies owned by people of color and other historically marginalized groups.	2.3: Utilize grant programs to invest in businesses and non-profit organizations to strengthen regional efforts around reducing waste, making better use of the waste that is produced and helping foster economic opportunities for communities of color and others who have historically been left out of the garbage and recycling system.	**Future Community Enhancement Grant Program for new facility**
Goal 3: Ensure that all jobs in the garbage and recycling industry pay living wages and include good benefits.	3.5 Evaluate the use of Metro employees to fully operate Metro-owned transfer stations.	**Future Metro South operations**
Goal 6: Reduce product environmental impacts and waste through educational and behavioral practices related to prevention and better purchasing choices	6.2 Provide culturally responsive community education and assistance about the connections between consumer products, people and nature.	**Future Metro South programming**
Goal 8: Increase the reuse, repair and donation of materials and consumer products	8.2 Implement strategies to increase the salvage of building materials for reuse, without increasing exposure to toxics. 8.4 Expand the collection of reusable items at public and private transfer stations, in partnership with reuse and repair organizations. 8.5 Invest in neighborhood-scale reuse and repair services and infrastructure.	**Future Metro South programming**
Goal 9: Increase knowledge among community members about garbage, recycling and reuse services	9.1: Provide culturally responsive education and assistance for garbage, recycling and reuse service to residents and businesses	**Future Metro South programming**

Goal 10: Provide regionally consistent services for garbage, recyclables and other priority materials that meet the needs of all users	10.4: Provide convenient, accessible and equitable collection of hazardous waste from households and Conditionally Exempt Generators, prioritizing communities with greatest need.	**Future Metro South programming**
Goal 12: Manage all garbage and recycling operations to reduce their nuisance, safety and environmental impacts on workers and the public	12.1 Minimize the health and safety impacts of solid waste operations on employees, customers and neighboring communities, with particular focus on low-income communities and communities of color, and identify methods for repairing past harm. 12.4 Implement sustainability practices in the operation of public and private solid waste facilities to reduce energy use, utilize renewable energy, reduce equipment emissions, maximize the use of safe alternatives to toxic materials and achieve other environmental objectives. 12.7 Require post-collection material recovery for marketable materials that will advance progress toward achieving this plan's goals and targets.	**Future Metro South operations**
Goal 13: Invest in communities that receive garbage and recyclables from Metro regions so that those communities regard solid waste facilities as assets.	13.1 Expand the host community enhancement program to: include all solid-waste-handling facilities that impact neighboring communities; increase funding and prioritize diversity, equity and inclusion elements in grant funding criteria. 13.2 Implement annual volunteer projects and collection/recycling events in neighborhoods affected by solid waste facilities. 13.3 Require each solid waste facility to work toward a good neighbor agreement with its host community. 13.4 Evaluate Community Benefit Agreements as a potential tool for garbage and recycling facilities to invest in host communities.	**Future Metro South programming**
Goal 14: Adopt rates for all services that are reasonable, responsive to user economic needs, regionally consistent and well understood.	14.2: Implement transparent and consistent annual rate-setting processes for all facilities. 14.5 Evaluate alternative models for collection, processing and transfer services to identify which would deliver the best environmental, financial, efficiency and equity outcomes.	**Future Metro South programming**

Goal 15: Improve the systems for recovering recyclables, food scraps and yard debris to make them resilient to changing markets and evolving community needs.	15.1 Implement regionally consistent contamination reduction efforts to improve material quality, including education, sorting instructions, collection equipment changes, and customer feedback methods.	**Future Metro South programming**
Goal 16: Maintain a system of facilities, from smaller recycling drop-off depots to larger full service stations to ensure equitable distribution and access to services.	16.1 Locate garbage transfer stations and allocate material tonnage to them in a way that benefits the public, emphasizing geographic equity, access to service and a reduction in environmental and human health impacts. 16.2 Locate recycling and food scraps transfer and recovery facilities to best benefit the public relative to geographic equity and access to service, and to reduce environmental and human health impacts. 16.3 Improve interagency and community collaboration on siting and authorizing proposed solid waste facilities to reduce potential impacts on neighboring communities. 16.4 Maintain public ownership of facilities to ensure that a range of services are accessible to residents at equitable and affordable rates. **16.6 Expand and improve access to services provided at Metro South Transfer Station.**	**System planning project**
Goal 18: Ensure routine garbage and recycling collection, processing, transport and disposal operations can be restored quickly following a system disruption.	18.4 Develop disaster resiliency standards for the design and construction of new facilities or when existing facilities are renovated. 18.5 Develop engineering and financing strategies to facilitate the seismic retrofit of existing public and private solid waste infrastructure. 18.6 Conduct periodic assessments of solid waste system facilities for vulnerabilities to different hazards.	**Future Metro South planning and design**

Appendix B: Timeline of improvements at Metro South since 1983

1980s	1983 - Metro South begins operations as a commercial and public transfer station with a 30,000 square feet transfer building and a 12 feet deep surge pit running across the length of the building that separated commercial trucks from the general public. Mid 1980s - Metro installs a 3-bay truck wash and associated wash water collection and treatment facilities. 1988 - In preparation for the closure of the St. John's landfill, Metro executes a 20 year contract for the disposal of 90% of the region's waste at the Columbia Ridge landfill, located about 150 miles east of Portland in Arlington, Oregon (Gilliam County). - Metro issues a request for bids to transport compacted waste to the Columbia Ridge landfill from the region. 1989 - The first waste compactor is added in the original loading tunnel to compact and load waste into trailers for transfer to the St. Johns landfill. The compactor is added to increase the amount of waste the station could receive and transfer, to lower transport costs and in preparation for the closure of the St. Johns landfill. - Metro executes a contract for long haul by truck to Columbia Ridge (CRLF).
1990s	1990 - To further increase capacity, the pit is extended and a two-compactor area is built to relocate the existing compactor and add a new one. This modification also included a new control room. - To accommodate the transportation contractor's transfer trailers, a 5-acre paved staging area is built on the east end of the site to allow for the storage of over 100 loaded and unloaded trailers, plus enough space for the trailers and tractors to travel to and from the compactor area. - A second scale house and a third scale are installed to accommodate separation of commercial and public traffic. - A ramp is added in the transfer building to create access to the compactor area for transfer trailers. 1991 - The St. John landfills closes and Metro fully switches to sending all compacted waste from the station to the Columbia Ridge landfill in Arlington, Oregon. - A new 4,000 square feet household hazardous waste (HHW) facility with a latex paint processing system is built in the west end of the transfer building. 1996-2000 - A wider entrance roadway is built and a different traffic pattern implemented to

	accommodate two inbound lanes that begin at the site entrance. - A new scalehouse and new scale are installed, resulting in two site entrances and two exit scales, increased scalehouse capacity and separated commercial and public vehicles. - Metro repairs the damages to the facility due to the 1996 flood, including the installation of a flood protection wall along the west side of the main entrance road to provide additional time before flood waters enter the site. - A new 5,000 square foot latex processing building is added in the site's northeast corner. The new latex building opens in 1999. - A new truck wash with an oil-water separator system is built. - A 4,000 square feet addition to the main transfer building at the southeast side is built to improve operations.
2000-2010s	2001 - A second 28,000 square feet building (Bay 3) is added to the site to create Bay 3, used to stage and sort through mixed waste and to stage and reload woody and yard debris, plus residential and household appliances. - A new transfer trailer scale (east end) and an automated weighing system are installed. 2004 - Metro adds 4,000 square feet to the main transfer building. 2005 - Metro moves the latex paint processing operation to a North Portland site on Swan Island in 2005. The existing building is then used as a maintenance shop for the operations contractor. 2007 - Sidewalk improvements are made along Washington street. 2011 – The facility's electricity generator is replaced. 2012 - By-pass lane is added next to the scalehouse north of the main transfer building.
2020s	2021 - Added traffic control staff to reduce wait times and help alleviate safety concerns from cross-traffic, especially between garbage trucks and light vehicles. - Added spotters to help customers in and out of tipping lanes, and—prior to COVID—to assist customers with unloading to reduce customer time on site.

Appendix C: Summary of Metro South plans and studies since 2001

2001
Master Plan for Solid Waste Facilities at Metro South Station and Metro Central Station (URS)

This plan was developed for Metro by URS Corporation, an engineering, design and construction firm. The plan emphasized the small site size and flood risk as major factors that limited the options to further develop the facility and expand its capacity to handle more waste and vehicle traffic.

The plan projected Metro South would see a 4.5 percent increase in incoming waste from about 372,000 tons in 1993 to 388,500 tons by 2010. For traffic, the plan projected a much larger increase during the same period of 46 percent, from almost 176,000 vehicles in 1993 to 256,700 by 2010.

Given these projections, the plan concluded Metro South had enough capacity to process the amount of waste projected for the next 10-15 years, but traffic growth from public vehicles was projected to exceed the facility's hourly capacity by 2010. The plan concluded the difference between projected traffic and capacity was small and would likely result only in minimal queuing and waiting times.

For this plan, the consultant also conducted a facility needs assessment and presented nine recommended improvements to meet the needs identified through that assessment. The total cost of the proposed improvements was $5.7 million, which is equivalent to approximately $8.5 million today, after adjusting for inflation.

2008
Metro 2008 Facilities Master Plan Update (URS)

Also developed by URS Corporation, this plan was an update of the 2001 master facilities plan. In seven years, the plan noted Metro South had experienced a substantial increase in traffic and associated challenges with managing the site as result of growth in the region and the additional services provided at the facility.

The plan noted Metro South had enough transfer processing capacity for the next 15 year or so. Compared to a processing capacity of 400,000 tons per year, the forecasted annual waste volumes for Metro South in the report's Appendix E start to exceed that amount in 2020, when the facility was projected to receive a total of 403,502 tons.

Unlike the 2001 plan, however, the 2008 plan update concluded Metro South had reached its maximum site use capacity due to the increase in vehicle traffic, mainly self-haul customers. In particular, the consultant noted:

- This issue of site capacity has created safety and traffic flow concerns at what has become a congested facility. URS has made specific recommendations for site and facility modifications, which should improve traffic flow and some capacity issues on the site.
- These recommendations, however, provide only a temporary facility solution. The best solution for Metro is an additional regional transfer station. This facility could be designed and built to

serve only commercial customers, while Metro maintains the current facility for public use only. A new facility could also serve both commercial and public use.

- Because Metro South is operating at its maximum vehicle capacity with a queue that flows onto Washington Street during peak use periods, Metro needs to decide whether or not to improve the facility and at what cost.

The plan identified a set of options Metro could consider to improve operations at Metro South, including increasing fees for self-haul customers, expanding the facility as much as possible and operating it until it reached full capacity, and relocating public self-haul use, commercial use or both, to a new facility.

The plan noted that if Metro were to site a new facility, the process would take at least five years, depending on the desired site size and levels of service. For a facility serving only commercial customers, the plan suggested a 6-acre site may be required. If the facility serves commercial and public vehicles, it may require a 12- to 15-acre site, or 20 acres if the site also includes a household hazardous waste facility and container storage.

Site constraints

Similar to the 2001 plan, the 2008 plan update highlighted the Metro South site's vulnerability to flood events, particularly in low-elevation areas, including the household hazardous waste facility, the compactors and some service utilities.

At various points throughout the plan, the consultant also describes an emerging constraint on Metro South related to the changing land uses around the site. The plan described Metro South as a facility with no immediate, contiguous neighbors in a relatively isolated industrial site. As such, the site's location offered a buffer against issues of noise odor and other nuisances. However, the plan noted that land uses around the site were changing. In 1983, the facility's immediate neighbor was the former Rossman Landfill. By 2008, the facility's new neighbors included a Home Depot store across the street. The plan also highlights Oregon City's emerging plans for future development in the area.

2009
Impact of Self-Haul Customers on the Regional Solid Waste System (Metro)

This study looked at the impact of self-haul customers on the regional solid waste system and explored a set of alternatives for managing the demand and supply of disposal and recycling services for self-haul customers, particularly at the Metro South Station.

Among other things, the study noted:

- While there is still sufficient capacity for tonnage, Metro South has reached its maximum site-use capacity as a result of the increase in vehicle traffic, specifically self-haul traffic.
- Previous recommendations for future facilities recognized the uncertainty of the existing Metro South site remaining a transfer station. There have been prior discussions as to whether the site should be converted to a different use, given changes in surrounding land uses and increases in population. Until this decision has been made, it is difficult to determine whether a replacement site or sites would be needed for self-haul, or commercial, or both.

- The operational impacts of increased self-haul activity at Metro South include:
    - **Limited staging space:** Customers often dump their material on top of other material to the degree that transfer station workers are not able to pull out recoverable material before the material must be transferred out of the building and into the pit for compaction.
    - **Reduced ability to recover material:** When traffic is heavy, transfer station staff often do not have time to direct highly recoverable loads to designated areas and the waste must be disposed in order to make room for additional customers.
    - **Customer safety and worker safety:** Increased vehicle traffic, more people on the floor near their vehicles, and people tossing material from the back of pick-up trucks or trailers creates the potential for injury.
    - **Wait time:** The number of self-hauler customers bringing small loads in small vehicles creates long lines during peak days and hours. Sometimes the line at Metro South backs up onto Washington Street. The volume of public self-haul can impede entrance into the facility by business self-haul and commercial haulers. Long wait times also affect the level of customer satisfaction.

The suggested alternatives involving expansion of self-haul services included:

- Building an additional site or sites to accommodate future demand, as recommended in the 2008 Master Facilities Plan
- Expanding self-haul services at other solid waste facilities in the region, including private transfer stations, material recovery facilities and limited-purpose landfills
- Banning self-haul customers or selected types of waste loads at transfer stations, while ensuring disposal alternatives are available before any ban is implemented
- Expansion of bulky waste collection and neighborhood cleanup events
- Expanding redemption centers to accept not only Bottle Bill items, but also other recyclables (similar to the recycling depot concept)

2012
Preassessment report (Red Fender)

This report summarizes the results of the work conducted for Metro by Red Fender Consulting as the first step in a needs assessment project to assess the adequacy of services for the Metro South Station service area and to determine what changed needed to be made in order to address any needs.

In the introduction, the report observed that Metro South was already near its full capacity, "exacerbated by self-help clientele (self-haul makes up approximately 70 percent of the trips made to MSS but generates only 25 percent of the waste delivered to the facility)," and struggling to meet the needs of its customer base. The consultant noted that the site had traffic circulation issues that compromised safety and was not well-configured to meet waste recovery targets. The report also concluded that Metro needed to plan for the long-term needs of the station.

One of the main objectives of the preassessment conducted by Red Fender was to identify the main performance issues confronting Metro South prior to continuing with the full needs assessment. The consultant identified a set of 19 performance issues based on meetings with Metro staff and other stakeholders, which were grouped into the following categories:

- **Space and capacity constraints:** Despite best efforts at configuring the site, space to perform material recovery and store recovered material for transfer remains constrained
- **Shortcomings in material recovery capability:** Metro South is struggling to meet its current recovery goals. There are also concerns on how to achieve higher recovery targets in the future.
- **Impact of self-haul customers on the facility workflow:** Metro South is very popular with self-haul customers. However, their use of the facility brings circulation and efficiency issues that must be addressed during the assessment phase of the project.
- **Physical traffic flow and safety—onsite and in/out of the facility:** Even with recent infrastructure improvements around Metro South, there are still safety concerns surrounding the amount of vehicular traffic entering, circulating within, and exiting the facility.
- **Public perceptions:** Challenges associated with a general attitude that recycling is "free" and the custom of taking waste to the transfer station as previous generations did.
- **Political and financial considerations:** For example, the impact of development in surrounding areas and the potential increase in disposal costs at the expiration of the disposal contract in 2019.

2016
Metro South Station Assessment (HDR)

This report summarizes the work by HDR Engineering and Metro staff to assess service needs at Metro South and develop options to address them. Between 2012 and 2016, HDR and Metro staff conducted a series of interviews, discussion groups and workshops with a wide variety of stakeholders, including Metro and local government staff, and surveys of Metro South customers.

As the report highlights, the main feedback obtained through stakeholder and public engagement included:

Metro South is highly valued

- The majority of stakeholders articulated a clear need for Metro South, especially for self-haul customers. People appreciate and highly value the "one stop shop" service offerings they receive on site, such as recycling, organics and household hazardous waste.
- A vast majority of self-haul customers consider Metro South to be convenient, better able to receive their non-curbside materials, and cheaper than other options available. Many other facilities cannot or will not the time required to work with them.
- Many have been coming to Metro South for so long that they simply do not consider other options.
- The location is extremely well suited for the greater South Portland metro area, and the facility's long history makes it a familiar location for community members and businesses with self-haul needs.

- The household hazardous waste facility is absolutely essential for the region, according to some stakeholders. Metro South also serves as a key cog, at this point, in handling organics. Currently 40% of Portland's residential organics flows through Metro South.

Service, operational and safety improvements are needed

- Additional space for receiving organics and household hazardous waste, and material recovery were the top needs identified by customers and operations staff alike.
- Also of interest was increasing safety and operational efficiency by separating commercial and self-haul traffic and providing more consistency in how various areas within Metro South were used. Drivers who visit the MSS frequently preferred not to share the same space with the slower, less frequent customers who take more time.
- More flexible, adaptable space, a better sort line, and more options for self-sorting recyclables would be valued improvements.

Views about the future of Metro South

- Stakeholders indicated more interest in maintaining the Metro South waste collection and recycling facility at its existing location.
- Opinions about which services might be relocated, if any, varied according to who was being asked.
- The high level of overall satisfaction with the facility (approaching rates of 90%) suggests maintaining the current or similar location and most current services was preferred by stakeholders.

Based on the input obtained from stakeholders and customers and HDR's needs assessment of Metro South, the report develops a set of options for retrofitting the facility. Some of the options considered early in the process involved only operational modifications to the existing facility. However, these options were deemed insufficient to accommodate future needs and dismissed because, "there simply is not enough space on-site to reconfigure operations to gain enough efficiency in diversion and recovery to rely on operational changes alone."

Of the final three options developed by HDR, two focused on major renovations of Metro South, with either construction of new buildings or expansion of existing ones. The focus of these options were to improve operations and increase material recovery at the existing site. The third option involved building a new facility for self-haul customers at a new location and making improvements to the current facility to serve commercial customers only.