



Final Report

METRO SOUTH STATION ASSESSMENT

Portland, Oregon

February 23, 2015



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¹ This report was produced by a third party consultant to assist in scoping the project.

ACRONYMS AND ABBREVIATIONS

Allied	Allied Waste, Inc.
C&D	Construction and demolition
CEG	Conditionally exempt generators
DB	Drop box
HDR	HDR Engineering, Inc.
HHW	Household hazardous waste
MCS	Metro Central Station
Metro	Oregon Metro
MRF	Material recycling facility
MSS	Metro South Station
MSW	Municipal solid waste
O&M	Operations and maintenance
PRC	Pacific Region Compost
SF, sf	Square foot, square feet
tpd	Tons per day
tpy	Tons per year

Executive Summary

Background

Built in 1983, Metro's South Station (MSS) in Oregon City is the most heavily-trafficked transfer station in the region for self-haul (general public) traffic and commercial traffic in delivering both municipal solid waste (MSW) and yard debris.

Operation of the MSS facility, like many older transfer stations, has been adapted from a focus on collecting and transporting garbage to a landfill for disposal into a facility that processes the materials being discarded including yard debris and recyclables to divert materials from landfill disposal with a goal of maximizing the amount of materials diverted. The facility currently serves commercial haulers along with the general public (self-haul) customers who bring the following types of materials for processing, recycling, recovery or disposal:

- MSW
- Yard debris
- Residential organics
- Recyclables (cardboard, scrap metal, plastic, glass)
- Recoverables (clean wood, tires)
- Household hazardous waste (HHW) – for self-haul and conditionally exempt generators (CEG); approved small businesses only

Metro has made both infrastructure and operational changes at MSS throughout the years to address the changing waste streams and processing technologies. However, the MSS site is physically constrained with limited options for future expansion or modifications. The existing facility offers 48,800 square feet (sf) for material processing and handling. Facility space requirements show additional space will be required. Creating this additional space with safe, efficient traffic movement on the existing site footprint will be a challenge.

For this project, HDR and the project team involved stakeholders in a discussion about future needs for the facility and how those needs might be best accommodated. From extensive outreach involving interviews, discussion groups, workshops, and surveys with a wide variety of project stakeholders, the project team found that 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 MSS to be convenient, better able to receive their non-curbside materials, and cheaper than other options available. Many have been coming to the MSS for so long that they simply don't consider other options.

Additional space for receiving organics, household hazardous waste (HHW) 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 MSS 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.

Stakeholders indicated much interest in maintaining the MSS 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%) would suggest maintaining the location and most current services of the MSS was preferred by stakeholders.

Through continued work with the Metro staff, project stakeholders and with information from facility users and operators, the project team developed and refined three approaches to improve diversion activities at the MSS for discussion and consideration.

1. Operational modifications only
2. Facility retrofit (on-site only)
3. Facility retrofit with off-site improvements

Findings

None of the “operational modifications only” options (approach category 1) were deemed sufficient to accommodate future needs. 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. Therefore, this category was dismissed from further consideration as a stand-alone option.

Several options were developed and discussed for an on-site facility retrofit (approach category 2).

Option 1 proposes major earthwork to allow the construction of an approximate 45,000 sf expansion on the northeast side of the existing Bay 3/4 Building. The pit in the Bay 1/ 2 building would be filled in to create flat floor for flexibility and ample storage. Separate commercial and self-haul unloading areas would be established to separate wet waste for transfer and dry waste for sorting. A limited reuse area would be provided for recovery and storage of reusable materials. A process line could be located near the dry waste storage area for efficient handling, and a push wall would be located between the process line and storage area to stack waste and maximize the amount of dry waste stored on floor. Option 1 provides adequate space for commercial MSW sorting, if desired.

Option 2 includes an approximate 27,000 sf expansion of the existing Bay 3/4 Building on columns to the southeast over the transfer trailer load out area. In Option 2, organics (yard debris and food waste) would be processed in Bay 2. The existing pit would remain for receipt and load out of commercial wet waste. A dry waste processing line would be located in the corner of the Bay 3/4 Building, though the sort line with a 90 degree turn due to the limited floor plan is less efficient than a straight sort line as proposed in Option 1. A limited reuse area would be provided for recovery and storage of reusable materials.

The final approach (approach category 3) for facility development includes the development of a new off-site facility in conjunction with on-site improvements to the existing MSS.

Option 3 includes an off-site location (property yet to be determined) for self-haul customers only that would provide waste disposal, processing and transfer, reuse drop-off (with potential

resale), HHW, and recyclables drop off at the new location. Commercial MSW customers, packer trucks with residential and commercial organics, and drop-boxes would continue to use the existing MSS station. Option 3 offers a focus on material separation by the customer and includes the following considerations for the estimation of diversion potential. The new self-haul building would provide enough space for material receipt, storage and a material processing line to recover a variety of materials and efficient load-out of organics and MSW directly into open top containers from a flat floor. Recycling would be offered at a location ahead of the scales to provide a convenient customer separation opportunity. A large, separate building for reuse on-site (up to 20,000 sf) would provide flexible space for material unloading, separation, storage and possibly resale. It was recognized, that the development of new site for public customers would present a notable political challenge associated with siting a new facility.

Option 1 with a 45,000 SF expansion of Bays 3/4 Building and Option 3 with an off-site location for public customers and corresponding services were generally preferred among staff and stakeholders to meet identified future needs for MSS.

1.0 Introduction and Background

Metro owns the Metro South Station (MSS) solid waste transfer station facility, located in Oregon City, Oregon, southeast of Portland. The facility was built in 1983 and has been adapted from its original operational intent, which focused on the efficient collection and transport of garbage to the landfill for disposal, into a facility that processes many additional material types, including drop boxes, yard debris and recyclables with a focus on diverting more materials from the landfill. The MSS infrastructure is aging and the site is physically constrained with no further room to grow or change operations within the existing buildings. Metro wants to make major modifications to the MSS site and infrastructure to better accommodate changing waste streams and a growing customer base.

As one of the six key projects under Metro's Solid Waste Roadmap program, established to develop a direction for the growth and management of Metro's solid waste programs and facilities, HDR Engineering, Inc., (HDR) has worked with Metro to systematically assess the adequacy of services offered at the Metro South Station (MSS) solid waste transfer facility and the future role of the facility in Metro's solid waste program. Specifically, this project was conducted to identify challenges and needs of the existing site operations and infrastructure to increase diversion of materials from the landfill.

This report summarizes the findings of the existing facility conditions, documents the stakeholder outreach process, discusses the facility infrastructure and operating scenario options development, and assesses the various options to support Metro in continuing to adapt to changing waste streams and customer bases.

2.0 Existing Metro South Station

Built in 1983, the MSS site was initially envisioned by Metropolitan Service District (a precursor to Metro) to be developed as an energy recovery facility. However, in 1982 a charter amendment was adopted by the jurisdiction in which the site is located 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. The MSS is located at 2001 Washington Street in Oregon City, Oregon, southeast of Portland, just off Interstate 205.

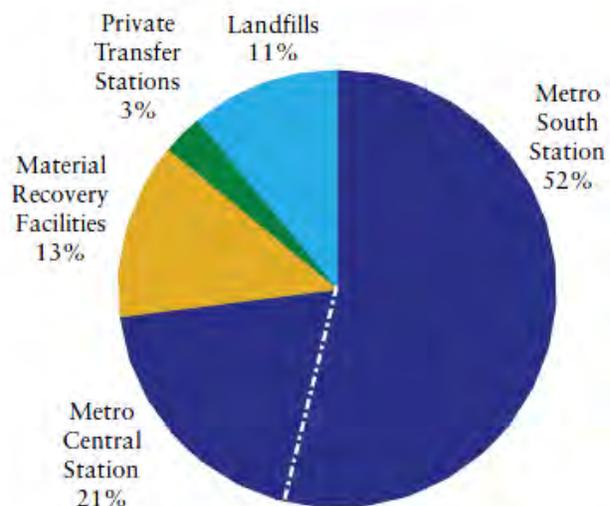
The MSS solid waste and material recovery operations are contracted by Metro to Allied Waste while the scalehouse and HHW operations are conducted by Metro staff. Waste hauling is contracted to Walsh Trucking Co. The transfer station is open seven days per week with slight variations in the operating hours by season. In the summer (March 1 through September 30), the site is open Monday through Friday from 7 a.m. to 7 p.m. Winter hours (October 1 through February 29) are from 7 a.m. to 6 p.m. The facility operates with extended hours for commercial haulers using automated scales. The automated commercial hours are Monday through Saturday from 4 a.m. to closure and the same station hours as the general public on Sundays. The HHW hours are Monday through Saturday (closed Sunday) from 9 a.m. to 4 p.m. year-round.

2.1 Customers and Materials

The facility serves commercial waste haulers that collect MSW and residential organics, including yard debris and food waste from Portland and source-separated yard debris from other jurisdictions, and from regional homes. Additionally, the facility is the most heavily-trafficked transfer station in the region for self-haul traffic (general public) for both MSW and yard debris. Commercial organics, defined as food waste only from business sources, is not currently accepted at MSS.

Facility staff sort and reclaim part of the waste stream for recycling and reuse, primarily dry waste from drop boxes, before the remainder is transported to a landfill. MSS also provides a household hazardous waste (HHW) collection facility on-site for safe processing of household cleaners, paints, and other hazardous materials.

The MSS facility, like many older transfer stations, has had to adapt from an operating scenario that previously focused on collecting and transporting garbage efficiently to a landfill into a



2009 Regional Public Self-Haul Load Drop-off Location¹

¹ Source: *Impact of Self-Haul Customers on the Regional Solid Waste System; Metro, January 2009*

facility that processes various materials including yard debris and recyclables with the goal of diverting materials from the landfill. Metro has made both infrastructure and operational changes throughout the years to address the changing waste streams and processing technologies. However, the MSS site is physically constrained with no further room to grow or change operations within the existing building footprints. On-site challenges with respect to traffic, safety, and material processing efficiency are driving the need to evaluate future options for facility operations.

The facility receives commercial haulers and general public (self-haul) waste customers bringing the following types of materials for processing and disposal or recycling:

- MSW
- Yard debris
- Residential organics
- Recyclables (cardboard, wood, scrap metal, plastic, glass bottles/jars)
- Reusable items
- HHW (self-haul and approved small businesses who are conditionally exempt generators only)

Commercial organics are not currently accepted at the MSS, though staff would like to add this stream in the future to MSS, if possible.

The MSS includes the services/operations shown in Table 1. A site map that identifies facility infrastructure and location of operations is included as Exhibit 1.

Table 1. MSS Operations

OPERATION	LOCATION
Weigh in/out	Scale plaza with four weigh scales, southwest end of site
MSW processing and storage	Bays 1 and 2
Dry waste, yard debris, wood waste and residential organics	Bays 3 and 4
Recoverables storage/sorting	Bays 1 through 4
Outdoor recoverables storage	Covered, paved storage east of Bay 3
HHW processing and storage	HHW building near site entrance
HHW staging	North corner of site, near maintenance
Reuse	Paved storage outside Bay 4
Recyclables drop boxes	Past scale plaza (also inside Bays 1, 2, 3)
Trailer parking	East of Bay 3
Haul scale	South of Bay 4
Truck wash	South of haul scale
Maintenance	North corner of site

A summary of historical material acceptance data is provided in Table 2.

Table 2. Historical MSS Site Tonnage

Year	MSW		Wood & Yard Debris		Recyclables & Reuse	
	(tons)	%	(tons)	%	(tons)	%
2007	285,748	92.5%	3,668	1.2%	19,559	6.3%
2008	258,896	92.2%	3,385	1.2%	18,655	6.6%
2009	235,854	91.8%	3,317	1.3%	17,685	6.9%
2010	237,242	92.1%	2,729	1.1%	17,691	6.9%
2011	229,587	90.7%	7,673 ¹	3.0%	15,770	6.2%
2012	204,628	81.2%	33,568 ¹	13.3%	13,898	5.5%

¹ MSS began acceptance of material from City of Portland's residential organics program in 2011.

As with many solid waste handling facilities, 2007 was a peak year for MSS prior to the economic slowdown. The MSW tonnage dropped by over 80,000 tons, or 28%, since 2007 while the organics tonnage has increased by nearly 30,000 tons, or about nine times, during this period. This is largely due to the acceptance of organics from contracted haulers beginning in 2011 and greatly increasing in 2012 as a result of the City of Portland's residential organics program. The percentage of other materials diverted as recyclables, or reusable from the incoming waste streams has remained fairly flat since 2007.

2.2 Site Traffic

Customers enter the facility from the main entrance off Washington Street and pass over the weigh scales into the site. Commercial haulers with known tare weights exit via the back gate located east of the main site entrance from Washington Street. All other customers exit over the scale plaza and leave the site via the main gate.

Loads with potentially recoverable materials are directed to Bay 3, including self-haul and commercial customers. During the week, self-haul traffic is directed to Bay 3 for MSW loads including dry waste (e.g., construction and demolition [C&D] waste, clean wood) or yard debris. Once Bay 3 is full either with traffic or materials on the floor, self-haul customers with MSW loads are then directed to Bay 2. Self-haul customers with yard debris continue to go to Bay 3. Commercial customers with MSW are directed to Bay 1 and those with dry waste or yard debris are directed to Bays 3 or 4. Transfer trailers for hauling waste to the landfill use a separate site entrance to reduce mixing with customer traffic. Typical weekday traffic patterns are shown in Exhibit 2.

During the weekend, traffic patterns are modified based on the varying customer patterns shown in Table 3. Based on 2012 data, self-haul customers increase from an average of 321 vehicles per day during the week to 447 vehicles per day on the weekend, while commercial customers drop from an average of 189 trucks per day during the week to 44 trucks per day on the weekend. Self-haul customers enter and exit from different scales on the weekend, and Bay 1 is opened up to self-haulers to provide additional MSW unloading stalls based on the increased customers.

The 2012 average daily trip counts are summarized in Table 3 by customer type (self-haul and commercial) and major waste type (MSW, organics, and recyclables). The facility currently receives approximately 500 total customers per day, though back in the peak year of 2007, MSS received over 1,000 customers per day on busy days.

Table 3. 2012 Average Daily Site Trips¹

	MSW		Organics		Recyclables		Total	
	Weekday	Weekend	Weekday	Weekday	Weekday	Weekend	Weekday	Weekend
Self-haul	275	386	14	28	33	33	321	447
Commercial	164	41	21	1	4	2	189	44
CUSTOMER TOTAL	439	427	35	29	37	35	511	491
Outbound (transfer trailers, other)	22	0	5	1	6	1	33	2

¹ Data is based on scale transactions and does not include customer trips for HHW only.

One of the major site challenges is the central drive area between the Bay 1/2 and Bay 3/4 buildings where a variety of vehicles have the potential to cross. This traffic hazard area is identified in Exhibit 2. A MSS staff person is typically stationed in this location to direct customers from the scale plaza to the proper unloading bay. As seen in Exhibit 2, this area experiences inbound and outbound traffic from all customers and contractors – self-haul, commercial, and transfer trucks – with striping, cones and staff as the traffic controls.



Example of Facility Signage at Bay 2 Entrance

The interaction between the bypass lane on the north side of scale 4 and outbound customers has not been a conflict to date, however a potential for conflict between exiting customers exists. Customers exiting off of scale 4 typically proceed toward the site exit

without knowing to look back over their right shoulder for traffic that might be using the bypass lane. The bypass lane traffic needs to yield to the scale traffic since they are in a potential blind spot.

Facility traffic patterns are routinely revised during the weekends to accommodate the varying customer patterns as shown in Table 3. Because of the heavier self-haul traffic, the general public has access to most of the unloading areas on-site on the weekends. Additionally, customers are directed to a different inbound scale on the weekend than during the week because the scalehouses are staffed differently on the weekends. Once past the scales, some self-haul customers are routed over to Bay 1, which is only for commercial customers during the week, so it can cause hesitation by customers in the busy central traffic area described above. Facility staff noted that the varying traffic patterns for self-haul customers between the weekday and weekend causes confusion for customers.

Another traffic issue is customer confusion due to the inadequacy of the existing facility signage. Signs are small with lots of text so many customers do not take the time to read them. Additionally, with the varying weekday/weekend traffic patterns, it's hard to provide signage that is meaningful but also flexible. Additionally, differing hours for waste and HHW collection as well as the HHW fee rate structure leads to customer confusion and customers leaving HHW in Bay 2

In general, facility traffic patterns are constrained and require numerous crossings of customer and vehicle types. This is a function of a physically limited facility that has been gradually modified throughout the years to provide numerous waste management services.

2.3 Material Processing and Flow



Organics Storage in Bay 3

MSW from commercial haulers is directed to Bay 1 where it is dumped directly into the pit that divides Bay 1 and 2. Five to seven commercial trucks can be arranged in Bay 1 for unloading (the unloading bays were originally sized for nine stalls but this number was reduced for safety reasons). The MSW unloaded in Bay 1 is wet waste and is not processed. The material dumped in the pit is not accessible for processing after it has been unloaded by collection trucks. All material in the pit must be loaded out through one of two compactors. The material is pushed from the pit into the compactors for off-site disposal.

Self-haul customers unload their waste onto the floor in Bay 2 where Allied floor sorters have the opportunity to collect recoverable and recyclable materials into bins. These recovered materials are then brought over to Bays 3 and 4 where they are combined with similar materials pulled from the sort line and sent to market. Bay 2 is currently configured with seven unloading stalls for self-haul customers. Dry waste from commercial drop boxes along with self-haul yard

debris, residential organics and wood waste are unloaded in Bays 3 and 4 for as long as there is adequate floor space available. The floor space fills up during the day as the dry waste is processed through a small sort line only after the facility closes to the public.

Materials recovered from Bays 3 and 4 are generally hauled out via open top trailers or drop boxes with some exceptions for appliances and other specific materials. Residuals (remaining MSW that is not recoverable) are loaded into an open top trailer and transported back to Bay 1 and dumped into the pit.

Self-haul and commercial customers with organics are directed to Bay 3 where the material is dumped onto the floor and then pushed into an open top trailer by Metro staff.

A site map showing the facility storage areas and material transport flows is included as Exhibit 3. A flow chart showing the process for managing various materials at the MSS is included as Exhibit 4. These figures illustrate the complex logistics and inefficiencies in handling numerous materials within a constrained site.

The site currently receives approximately 234,000 tons per year (tpy) of total waste and organics, or an average of 560 tons per day (tpd) of MSW and 100 tpd of organics (see Table 4). Approximately 28% of the total tonnage processed by the facility comes from self-haul customers, who comprise 70% of the total trips to the site. Commercial customers account for approximately 72% of the facility tonnage with only 30% of the total trips. The self haul material and the commercial drop boxes are targeted for processing to recover recyclables.

Table 4. 2012 Facility Tonnage

	MSW	%	Drop Boxes¹	Wood, Yard Debris & Residential Organics	%	HHW¹	TOTAL	
Self Haul	56,212	27.5%	0	4,620	5.3%	464	56,212	24.1%
Commercial	148,416	72.5%	19,745	28,948	94.7%	-	177,364	75.9%
Totals	204,628	100%	19,745	33,568	100%	464	233,576	100%
	Disposal to Landfill						192,493	80.2%
	Diverted (Compost/Recyclables/Reuse)						47,466	19.8%

¹ Totals do not include Drop Boxes or HHW, which are a subset of other waste categories

The 2012 average weekday and weekend tonnage breakdown by material and customer type is shown in Table 5. Many of the materials targeted for recovery from the dry waste stream may not be a marketable product (in that a facility would pay for the materials), but there is an alternate facility that will utilize the materials if they are provided with a fee or donated. Examples of this type of material may include carpet or tires. The transfer station operational contract terms drive the operator's approach to focus on any material diversion from the landfill (not just market value), because they are compensated for the cost of recovery and transport.

Table 5. 2012 Average Tonnage by Day of Week

	MSW		Organics		Total	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Self-haul	108	114	4	7	112	122
Commercial	608	62	128	1	736	63
TOTAL	715	176	132	8	847	184

There are a number of materials at MSS that are currently handled multiple times or otherwise not stored and processed in the most efficient manner because of site and infrastructure limitations due to the adaptation from the original facility infrastructure in order to offer the variety of current services and increased diversion opportunities. Examples of these inefficiencies include:

- Movement of recyclables from Bay 2 to Bay 3 for processing and storage, with the residuals then brought back to Bay 1 for disposal and some recycling material storage outside Bay 3 prior to load-out.
- Storage of empty HHW material cages in the northeast corner of the site near the trailer storage.

Additionally, many of the customer maneuvering and material storage and processing areas are too small for the volume of customers and materials currently managed which leads to very constrained conditions.

Examples of these areas include:

- Bay 2 self-haul MSW unloading and materials recovery.
- Bays 3 and 4 for recycling storage, dry waste and organics storage and load-out, and the recycling sort line. This limits sort line operations (as well as its size) to after hours and results in the floor in Bay 3 not being cleared during the day.



Congested Unloading and Maneuvering in Bay 2

2.4 Challenges and Project Needs

2.4.1 Space and Access Needs

The current MSS operator, Allied Waste, has incentives to maximize recovery, however the recovery rate at MSS has been stagnant, averaging 13-16% of dry waste (or approximately 6% of total), whereas the Metro Central Station (MCS) is averaging over 37% dry waste recovery rate. The challenges with recovering more materials, both in quantity and types, are that processing materials requires much more space and a more efficient configuration than that required for simply transferring waste. Each material type needs to be kept separate, either from receipt (the moment it is unloaded on the floor) or physically separated through a sorting process on-site, through storage and load-out into containers, trucks or trailers for delivery to a vendor's site.

The main transfer building at MSS, which includes Bays 1 and 2, is a pit operation and is very efficient for:

- 1) receiving a large number of vehicles of any type;
- 2) storing a large quantity of material in a central pit which minimizes floor space needs; and
- 3) final load-out through one of two compactors which maximizes the payload in the waste trailers.

The pit is not useful when trying to separate materials by type and directing materials for additional processing. Once the material is in the pit, it has to be loaded out via the compactors. Commercial loads of wet waste are directed to Bay 1, and the overflow for self-haul waste from Bay 3 is directed to Bay 2 when Bay 3 is congested which is most weekdays. For safety reasons, the self-haul customers unload onto the floor in front of the pit and the operator loads the materials into the pit after minimal recovery. This does allow for thorough material recovery through floor sorts of the self-haul materials. However sorting is limited due to space constraints due to space requirements for maneuvering and material storage.

A second building was added to the site in 2001 and includes Bays 3 and 4. This building has a 27,000 square foot (SF) flat floor where dry materials are separated through floor sorting or through a small processing line on the third shift (after main operating hours). The rejects are loaded out into open top trailers in a corner of the building. This building helps provide space for sorting of the materials. However with the amount of traffic bringing dry materials and the amount of residential organics from the City of Portland, there is not adequate space in this building for traffic maneuvering, unloading, source separating some materials, material storage and adequate processing to maximize diversion.

2.4.2 Material Storage and Handling

A number of materials at MSS are handled multiple times or otherwise not efficiently stored and processed due to the adaptation from the original facility infrastructure to offer the variety of current services. Examples of these inefficiencies include:

- Material recovered from self-haul customers from bins in Bay 2 are transferred to Bay 3 for processing and storage, with the residuals then brought back to Bay 1 for disposal. Some recyclable materials are placed into containers and then relocated for storage outside the far (north) door Bay 3 awaiting load-out.
- Storage of empty HHW material cages in the northeast corner of the site near the trailer storage which is across the entire site from the HHW building, located on the south side, making accessibility time consuming and requiring crossing the site traffic.

2.4.3 Material Transport

Transfer trailers and commercial haulers with known tare weights exit the site via the back gate located east of the main site entrance from Washington Street. This separate access point helps prevent backup across the scales and is generally safe and efficient, keeping the larger vehicle types separate from smaller self-haul customers. This separated traffic approach should be maintained if modifications are made to the site.

Transfer trailer maneuvering around the site is very tight. It is especially constrained when backing into the Bays 3 and 4 load-out ports and accessing the haul scale. The slow, precise maneuvering required is time consuming and could be improved with wider roadways and turns if space allows in the future modifications.

HHW load-out, which occurs before or after the site is closed to the public, is difficult for large transfer trailers and requires maneuvering out into Washington Street because the facility is located so near to the site entrance.



Trailer Maneuvering and Parking Area for Bay 3/4 Load-out

3.0 Outreach

The project team, which included Metro staff, public engagement facilitators, and design engineers, conducted an extensive outreach program that allowed stakeholders to provide meaningful input into this project's approach and outcomes.

This section summarizes the many stakeholder conversations, staff discussions and other feedback collected during this project to date. The results from the stakeholder feedback helped inform the needs assessment of the facility, which was the basis for developing potential scenarios and conceptual designs to improve future operations. During the options development phase of the project, the team continued to engage key stakeholders through workshops and discussions to help evaluate and prioritize the range of options developed for improvements to the MSS.

From January 2013 through March 2014, an outreach program was implemented that was focused on six primary stakeholder groups with varying interests in the facility:

1. Commercial waste haulers
2. Residential and business self-haul customers
3. Local government staff
4. Metro staff (Solid Waste and Sustainability)
5. MSS operations staff (Allied and Metro)
6. Other (miscellaneous stakeholders and interest groups)

Initial outreach was conducted through a series of stakeholder interviews. Questions asked of the stakeholders varied according to the group. In general, the questions followed these lines of inquiry concerning the MSS:

- Interest in facility and frequency of use (where applicable)
- Types of materials discarded and/or recycled
- Reasons for facility use relative to other sites/services available
- Satisfaction level of operations and customer service
- What could be improved upon
- What's working well/what not to change

Most stakeholders were interviewed in person, either individually or in small group settings, though some interviews were conducted over the phone. Additionally, two rounds of on-site intercept surveys were conducted in spring 2013 to obtain feedback from existing MSS self-haul customers. Facility operations staff (Metro and Allied) were engaged during two small group meetings held on site. A roundtable discussion held in March 2013 collected feedback from Metro Solid Waste and Sustainability staff members. Presentations were also made to the Solid waste Advisory Committee and Clackamas County Refuse and Recycling Association.

Methods for reaching the stakeholders included the following approaches:

Table 6. Project Outreach Matrix

Stakeholders	Outreach Method				
	Phone interviews	Individual meetings	Group meetings	On-site surveys	Email surveys
Commercial haulers	X	X	X		X
Self-haul customers	X			X	X
Local governments	X	X	X		X
Internal Metro staff		X	X		
Operations staff (Allied and Metro)			X		X
Other (miscellaneous)	X		X		X

Summaries of the outreach methods are included in the Appendices A through G and in the *Stakeholder Assessment Summary* report by HDR from November 2013.

Key takeaways from the cumulative stakeholder feedback Included:

MSS is highly valued – The majority of stakeholders articulated a clear need for Metro South, especially for self-haul customers. The public self-haul services that Metro South provides is somewhat unique as a service to the region because many other facilities can’t or won’t take the time required to work with them. 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 facility receives very high marks for customer service from users. It’s well known and easy to visit. It also provides convenient hours and needed consistency in the time required to get both commercial and residential customers in and out (usually under 10 minutes.)

- 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 percent of Portland’s residential organics flows through Metro South.
- Several stakeholders noted the need for the transfer station as a gauge for public and private rate setting. Without it, the market, especially for self haulers and small private companies, might not be as stable.
- For commercial haulers, the facility is considered a strategic asset in the Metro solid waste system (although there are conflicting views about Metro’s role in continuing to provide for self-haul customers). While most commercial operators do not want to see the facility go away, many are interested in optimizing its value for private industry.
- A vast majority of self-haul customers choose to visit MSS even though they have home garbage and recycling services and are aware that other disposal options are available to them; they do so because they consider MSS to be convenient, better able to receive their

non-curbside materials, and cheaper than other options available. Many have been coming to MSS for so long that they simply do not consider other options.

- **What can be improved?** – Additional space for receiving organics, HHW, and material recovery were the top needs identified by customers and operations staff alike. Also of interest is increasing safety and operational efficiency by separating commercial and self-haul traffic and providing more consistency in how various areas within MSS are used. Drivers who visit daily or frequently prefer 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.
- **What should not change?** – There appears to be much interest in maintaining an MSS waste collection and recycling facility at its existing location. Opinions about what services might be relocated, if any, varied according to who was being asked. If some services are relocated elsewhere, a common but inconclusive suggestion was to leave MSS as a facility for self-haul customers and direct the commercial haulers to other site(s).. The optimum outcome might appear to be reconfiguring the facility to better accommodate all existing uses since MSS’s services, location and convenience are so appreciated by all users. The high level of overall satisfaction with the facility (approaching rates of 90%) would suggest maintaining the location and most current services of MSS.

Key takeaways from the Metro staff discussions included:

- **MSS is an adaptation success story** – It was never intended to be a material recovery facility or do everything it is now doing. Operations staff members have been very creative in reconfiguring the site over time. MSS has evolved from a garbage transfer station into a multi-purpose recovery facility that now handles household hazardous waste, residential organics, material recovery and recyclables. It is a one-stop shop that gets high marks for customer service. The facility has high rates of use and material transfer for its relatively small footprint (9.5 useable acres). The small size and current configuration limit the recovery rates, however.
- **The location is important to its success** – People are aware of its location and know how to find it. Some customers actually live closer to the MCS but use the MSS instead. It would be difficult to find an alternative, more convenient location for the facility since close-in industrial parcels of sufficient size near major roads are hard to come by and nearby residents often oppose the development of a new transfer station. It would probably be cheaper and more politically feasible to redesign MSS than to move the facility elsewhere.

3.1 Workshops

As a key part of the outreach process, the project team held six workshops, three with Metro staff and three with a wide range of industry, public agency, and advocacy interest representatives, to develop a range of reasonable site alternatives for on- and off-site improvements to MSS.

At the first set of workshops, internal and external stakeholder feedback was collected on the values and needs identified for the facility. The objectives were to explore and prioritize identified needs for the MSS facility and evaluate such needs based on Metro Solid Waste Roadmap values.

The project team involved the Metro staff to explore options for facility “needs” by using a polling exercise.

The stakeholder assessments and the discussions from the first workshop series were used in developing options for potential on- and off-site improvements to MSS. The second workshop series presented these options to stakeholders for discussion. Three general approaches for improvement to the facility were presented to the group:

- Operational modifications only
- Facility retrofit (on-site only)
- Facility retrofit with off-site improvements

Preliminary site plan concepts were presented for the on-site and off-site retrofit approaches. Feedback from the second set of workshops and other outreach related to the three approaches were then used to refine the options and develop new options for the third set of workshops. At the final workshops, stakeholders offered additional refinement suggestions and provided preferences among the options based on criteria established in the first workshops and the objectives of the Metro Roadmap program.

The development and preferences among the site concepts developed for MSS improvement are further detailed in Sections 4.0 and 5.0.

4.0 Future Development

4.1 Facility Projections

The approach to estimate quantities and types of materials for potential diversion was originally based on a 2009 regional material sort. However, with changes in the operators' contracts, the material sorts are no longer valid for MSS. The approach to estimate future tonnages processed at MSS was revised to use historical information and quantities for materials recovered at both MSS and MCS, and potential tonnages in specific areas based on programs that have been implemented. Both facilities target dry waste streams for material recovery which is delivered in loose drop boxes by commercial customers and deliveries by the self-haul customers. MCS also receives commercial organics (restaurant or food waste) which is stored separately on the tipping floor, and loaded out separately. Both facilities receive residential organics (primarily yard waste with a small fraction of food waste) which are stored separately, and loaded out separately from the commercial organics as each goes to a different processor.

The materials received (by vehicle group) and materials diverted at MSS from 2007 to 2012 and a projection in 2019 are identified in the tables below. The 2019 projections are based on the spreadsheet "Project 2 – Tonnage Scenarios for Metro South," developed by Metro, using Scenario 2: Low Economic Growth and Status Quo Policies on Tonnage Caps and Food Waste Diversion. The projections through 2019 were based on Metro's Long Run Macro Model. The 20-year projections, through 2033, are still under development. In reviewing the project, year 2019 was determined to be the peak year and was used as the basis for the following MSS sizing and needs analysis.

Table 7. MSS Inbound Tons

Vehicle Group	2007	2008	2009	2010	2011	2012	2019
Front Loader	49,691	48,595	45,869	52,073	44,364	39,500	38,958
Rear Loader	24,419	21,491	19,073	19,233	16,710	16,187	72,828
Side Loader	57,768	56,916	51,770	52,502	60,641	51,790	Included above
Compacted DB ¹	31,157	29,503	26,700	25,560	23,545	21,193	22,089
Loose DB ¹	35,274	25,593	22,818	19,083	21,902	18,245	25,267
Self-haul Vehicles	84,725	74,598	66,850	64,723	59,440	56,212	59,261
Other Types	2,713	2,202	2,775	4,069	2,985	1,500	Included above
Residential Organics			Included above	Included above	Included above	28,948	50,688

Vehicle Group	2007	2008	2009	2010	2011	2012	2019
Commercial Organics							12,688
Total	285,748	258,896	235,854	237,242	229,587	233,576	281,778

¹ Drop Box

Projections of the various material types received at MSS, including an estimate of potential divertible materials, were based on the historical tonnages for the dry waste stream received at MSS. Dry waste is considered to be the primarily non-organic fraction of waste including items such as paper, metal, plastics, and glass. The historical tons for self-haul customers, which are part of the dry waste stream and could be sorted if there was adequate space, along with the commercial loose drop box stream were used as the basis for estimating recoverable tonnages (see Figure 1). The organic streams were also assumed to be separated for diversion. The wet solid waste streams were assumed to be transferred only, no processing.

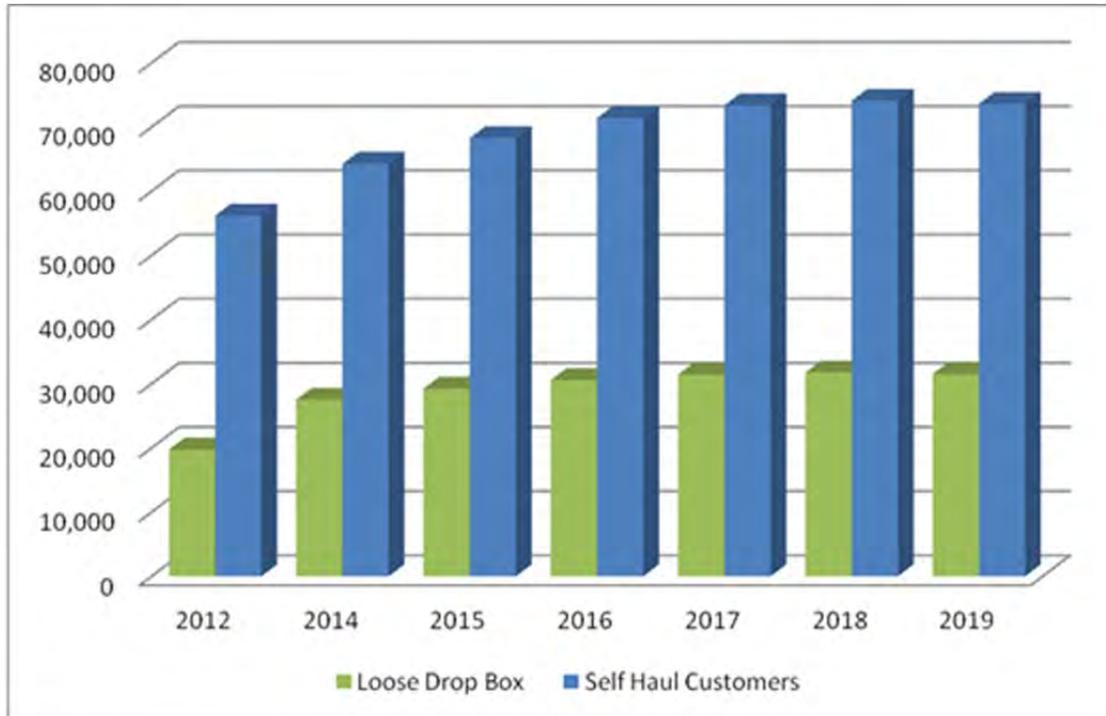
The projections shown in Table 8 and Figure 5 were based on Scenario 2: Low Economic Growth and Status Quo on the Policies.

Table 8. MSS Historical and Projected Tons by Streams

Year	2012	2014	2015	2016	2017	2018	2019
Wet Waste	128,671	123,505	126,155	128,244	131,781	134,256	133,875
Loose DB¹	19,745	27,530	29,235	30,585	31,446	31,744	31,520
Self-haul Customers	56,212	64,274	68,283	71,405	73,381	74,091	73,613
Residential Organics	28,948	34,298	37,888	39,756	44,265	49,238	50,688
Commercial Organics		7,520	9,397	10,407	10,872	11,352	12,688
Total	233,576	249,492	259,100	264,702	273,787	281,269	281,778

¹ Drop Box

Figure 1. MSS Dry Waste Historical and Projected Tons



The year 2019 is projected to have the highest total materials available for processing so that was used as the planning year for the sizing analysis for this project. Projections through the year 2019 were assumed to have little change in the current waste programs. After 2020, Metro may introduce new programs into the system, so the material projections were not considered as reliable going beyond 2019.

Historical waste composition data and projected tonnage information were used to develop the potential material types and quantities recovered at MSS in the year 2019, as shown in Table 9. This table shows a sort by the material type, as determined by querying the “material destination” in the “*Project 2 – Tonnage Scenarios for Metro South*” and the “*Projections and Recovery Tonnages*” spreadsheets provided by Metro. The future projections assume the same materials as currently diverted will be targeted with the assumption that more of those materials exist in the current waste stream but facility space constraints limit additional recovery. Based on the diversion materials and quantities at MCS for comparison it was conservatively estimated that twice as much material could potentially be diverted at MSS if increased processing was performed.

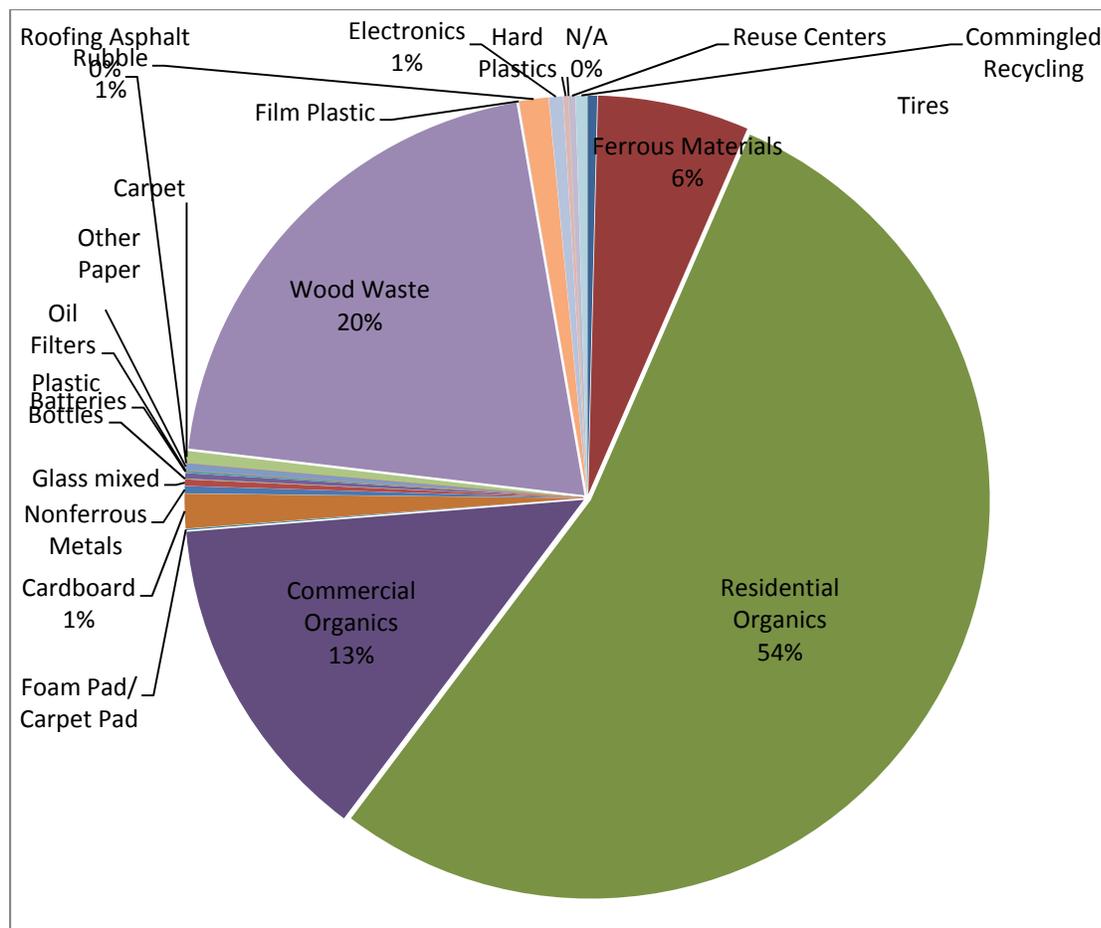
Table 9. MSS Diverted Tons and Projected Diverted Tons

Material Type	2007	2008	2009	2010	2011	2012	2019
Tires	268	247	207	205	179	166	370
Ferrous Materials	4,334	3,574	3,750	3,363	2,531	2,002	5,788
Residential Organics	-	-	630	1,572	7,673	4,620	50,688
Commercial Organics	-	-	-	-	-	-	12,688
Foam Pad/ Carpet Pad	63	-	-	16	36	7	48
Cardboard	742	854	735	684	672	676	1,324
Nonferrous Metals	142	110	140	153	217	141	279
Glass, Mixed	125	144	130	179	124	110	248
Plastic Bottles	34	30	23	18	1		29
Oil and Antifreeze	105	109	114	129	125	118	210
Batteries	97	71	54	33	42	34	93
Oil Filters	1	1	3	1	-	-	2
Other Paper	298	274	286	126	-	-	272
Roofing Asphalt	-	-	-	124	-	-	-
Carpet	-	-	-	-	271	107	460
Wood Waste	12,666	12,617	10,216	9,668	9,966	8,927	19,235
Film Plastic	6	5	10	8	11	10	16
Rubble	334	452	421	795	831	678	1,113
Electronics	83	66	302	405	422	374	539
Hard Plastics	-	-	-	-	-	93	207
N/A	173	111	4	2	-	-	-
Reuse Centers	87	91	165	85	85	175	260
Commingled Recycling	-	-	-	1245	257	280	444
Total	19,559	18,655	17,685	17,691	23,443	18,518	92,221

The projected 2019 material diversion tonnages provided in Table 9 were developed by determining the historical ratio of material type to total waste tonnage per the source stream - loose drop box, self-haul vehicles, or a combination (i.e., ferrous metal is on average 3% of the combined loose drop box and self-haul vehicle tonnage received at MSS). This ratio was applied to the new tonnage projections for 2019 to develop estimated quantities for the various material types.

Currently, Metro’s contractor diverts approximately 6% of the total waste received at MSS on average, or 13-16% of dry waste. One of Metro’s objectives is to achieve at least double the potential recovery in the future based on the current diversion rate of approximately 37% achieved at MCS. Table 9 shows the projected tonnages of the various divertible materials assuming this goal will be achieved by 2019 (i.e., ferrous metals are projected to be 5,788 tons or 6% of the divertible material received at MSS). The estimated materials available for recovery in 2019 are depicted in Figure 2.

Figure 2. 2019 Estimated Materials for Diversion¹



¹ Percentages for material types less than 1% not shown for clarity.

Figure 6 shows that residential organics are projected to comprise the highest percentage of divertible material received at the MSS in 2019 with 54%, or 50,688 tons. This is followed by wood waste at 20%, commercial organics at 13%, ferrous metals at 6%, and the remaining materials at 1% or less.

4.3 Market Analysis

The majority of the materials currently being recovered at both MSS and MCS do not have a high market value but are items that can be diverted from the landfill for use as a feedstock or for further processing at a local vendor for a cost. MSS is not a typical “dirty MRF” (material recycling facility) whose objective is to recover the highest market value for any materials. Many valuable materials

have already been diverted upstream of MSS through existing recovery programs. The objective of additional processing at MSS is to divert materials from the landfill, even if there is a fee associated with the marketing of the materials.

Because the majority of the material diverted is not a high value commodity, the commodity value is often not adequate to recover the cost of separating and transporting the material. The goal of the transfer station operation is to maximize diversion of materials from the landfill, which they are compensated for, regardless of the market value. A large portion of the material being diverted at MSS and MCS is wood waste – mill wood or hog fuel (chipped wood waste). However in 2013 there was a surplus of this wood material in the area, so it has become more difficult to find a market for it locally. In the future, this may require shipping out of the region to find a potential market, which is assumed to still be more beneficial than shipping to the landfill.

The other significant portion of the material from MCS is organics (green waste). The organic materials go to different processors depending on the stream. MSS is currently diverting residential organics and yard waste. Some compost facilities in the area are having problems operating within code compliance. The organics from MSS are transported to Pacific Region Compost (PRC), located near Corvallis, Oregon, about 80 miles south of Portland. PRC is owned by Republic Services and opened in 1992 to process wood waste. PRC began servicing other communities in the region with yard trimmings collection and composting. PRC's growth has been exponential. In 2010, PRC processed approximately 45,000 tons, and then in 2011 processed close to 90,000 tons. The bulk of organics received are yard trimmings along with growing volumes of residential and commercial food waste. PRC was permitted in May 2010 as a Type 3 composting facility - the first in the state to be permitted under the revised rules. Type 3 facilities can receive meat and source separated mixed food waste and industrially-produced non-vegetative food waste along with other materials. In 2011, PRC processed about 2,000 tons of commercial food waste.

JC Biomethane, in Junction City, Oregon, came online in August 2013 and is receiving the commercial organics (food waste stream) from MCS. Biogas is biologically produced using an enclosed anaerobic digestion process which is a common secondary treatment process in municipal wastewater treatment plants. The biogas is utilized to generate electrical power on-site which will be supplied to the local power grid. The facility also produces organic-based fertilizer products. Despite some issues with waxy cardboard and compostable utensils clumping or other contaminants interfering with the processing, this process appears to be a viable option for organics.

Other materials diverted at MSS for further processing or reuse are shown in Table 10. This table identifies the current market for each type of material recovered. Continued assessment of the material markets is necessary as the processing facilities operate with a limited capacity and the material quantities from MSS are projected to increase.

Table 10. MSS Materials and Markets

Material	Type	Market
Paper Fiber	News Print Magazines Cardboard Paper Board Scrap Board	SP Recycling
Metal	Steel Cans Aluminum Misc. Non Ferrous Ferrous Scrap White Goods	Rivergate / CALBAG St. Vincent//Rivergate
Wood	Painted Lumber Unpainted Lumber Yard Debris Pallets	St. Vincent/ReBuilding Center/SP Newsprint McFarlanes
Plastic	Bottles Plastic Film Miscellaneous Rigids	SP Recycling/St. Vincent/Garten Service
Porcelain	Toilets Sinks	St.Vincent/ReBuilding Center
Miscellaneous	Brick Concrete Roofing Tires Bottles Window Glass Car Batteries Carpet Padding Carpet Mattresses Motor Oil Oil Filters Anti Freeze Freon Gas Lawn Mowers Electric Lawn Mowers Fire Extinguishers Latex Paint Cans Aerosol Cans Covered Electronic Devices CED Textiles	ReBuilding Center/East County Recycling East County Recycling Pacific Land Clearing RB Recycling Owens Brockway/Strategic/SP Recycling St. Vincent/ReBuilding Center/Strategic NW Batteries St. Vincent/ ReBuilding/ Consolidated Pad St. Vincent/ ReBuilding/ Consolidated Pad St. Vincent/ Thermo Fluids Thermo Fluids Thermo Fluids St. Vincent Rivergate/Rivergate St. Vincent/Rivergate Rivergate/Rivergate Rivergate/Rivergate Rivergate/Rivergate Rivergate/Rivergate MRM/CDC/St.Vincent St. Vincent
Re-Use	Miscellaneous	St.Vincent/ReBuilding Center

5.0 Facility Options

MSS currently provides many more services than it was originally designed to manage. Specific site challenges include traffic congestion and material management inefficiency due to the layout of the facility requiring multiple material processing and handling and inadequate space for the separation of materials and storage. Despite these challenges, MSS remains a highly popular and well-used facility, particularly for the self-haul clientele. To improve on the facility needs identified earlier in this report, this section details various approaches for development of improvements for the existing MSS or for a new facility.

5.1 Criteria and Needs

A list of prioritized facility needs was developed based on the stakeholder outreach activities as described in Section 3.0 that incorporated staff needs and customer values for a newly developed or updated facility. This list of nine prioritized needs was comprised of site-specific opportunities for improvements and Metro values established from the Solid Waste Roadmap. Through the workshop process, the project needs were prioritized as follows:

- 1) Household Hazardous Waste
- 2) Receive Commercial Organics
- 3) Receive Residential Organics and Yard Waste
- 4) Receive Self-haul Waste
- 5) Receive Commercial Waste Deliveries
- 6) Recover Recyclables, & Divertible Materials Sorting
- 7) Provide Customer Education
- 8) Minimize Queue Times & Wayfinding
- 9) Source Separated Recyclables

The second set of workshops involved a review of MSS facility needs as well as narrowing down the list of proposed options for further development. Table 11 describes a list of the existing space available as compared to the anticipated space required to manage the 2019 material projections organized by the prioritized facility needs.

Table 11. MSS Needs Space Assessment

Rank	Need	Space Needed for Unloading, Processing and Storage	Space Available for Unloading, Processing and Storage
1	Household Hazardous Waste	Current HHW building with some additional storage outside building and drive	Current location
2	Receive Commercial Organics	4,000 SF	Bay 3 – shares with the 21,500 SF with Need 6
3	Receive Residential Organics and Yard Waste	11,000 SF	Bay 3 - shares with the 21,500 SF with Need 6

Rank	Need	Space Needed for Unloading, Processing and Storage	Space Available for Unloading, Processing and Storage
4	Receive Self-haul Waste	Need 11 stalls in Bay 2 or 11,000 SF for unloading and 4,000 SF for material storage on floor, and pit for material storage of 150 tons requires 2,000 SF of pit	Bay 2 has 10,500 SF for unloading and floor storage, only space for 7 vehicles to unload at once, so queue of 4 vehicles. Pit shares with Need 5
5	Receive Commercial Waste Deliveries	Need 4 stalls in Bay 1 5,000 SF for unloading and pit for material storage of 560 tons or 5,000 SF of pit	Bay 1 has 10,800 SF for unloading. Pit has 4,800 SF or 550 tons
6	Recover Recyclables, & Divertible Materials Sorting	To unload all SH vehicles in Bays 3 and 4 requires 19 stalls, or a 266-ft-long building. Assume 8 stalls in Bays 3 & 4 and 40% of SH materials, rest to Bay 2. For Loose DB need 2 stalls 18,000 SF for material receipt & storage plus 10,000 SF for simple processing line requires 30,000 SF	Building is 175 ft long which limits unloading capacity. 27,000 SF in building, less 3,500 SF for access aisle through building and 2,000 SF for load-out ports for 21,500 SF
7	Provide Customer Education	No additional space needs	Throughout, viewing signs – no activity area
8	Minimize Queue Times & Wayfinding	No additional space needs	Added signage, provide more unloading bays for SH customers
9	Source Separated Recyclables	2,000 SF	Inside – into bins or bunkers Outside – into bins 2,000 SF
	Total Space	60,00 SF – 80,000 SF Needed	48,800 SF Available
Legend:			
Processes assumed to occur in Bays #1 or #2			
Processes assumed to occur in Bays #3 and #4			

As depicted in Figure 2, residential organics is projected to grow to 54% of total volume, followed by wood waste at 20% and commercial organics at 13%. There is presently very little room to separate, store, and process these materials on site. Total tonnage collected (all material) is anticipated to climb from 204,628 tons in 2012 to 281,778 tons in 2019. This is based on a conservative growth estimate for the region, which planners feel is most likely.

The existing facility offers 48,800 square feet for material processing and handling. Facility space requirements show that between 60,000 to 80,000 square feet of space will be needed in the future to handle expected volumes of waste, or another 12,000 to 32,000 of new space will be required.

Creating this additional space with efficient traffic movement on the existing site footprint is a challenge.

5.2 Preliminary Site Concepts

Through continued work with the staff and project stakeholders and with information from facility users and operators, the project team developed and refined three approaches for discussion and consideration:

- 1) Operational Modifications Only
- 2) On-site Facility Retrofit
- 3) Facility Retrofit with Off-site Improvements

The conceptual site and facility options developed under each approach were developed and evaluated with respect to its ability to address the project's purpose and needs and its potential impacts to existing operations.

5.2.1 Approach 1 – Operation Modifications Only

Option 1A – Receive Commercial and Residential Organics in Bay 3

The commercial organics, which are mostly wet food waste, need to be kept separate from the residential organics which are mostly yard waste, as they both go to different locations for final processing. The operators will also want to load out the commercial organics frequently, as soon as a full trailer load is available, as it is very wet, odorous waste.

In Bay 3, commercial and residential organics could be stored adjacent to each other on the flat floor with a temporary wall between them. The temporary wall could be built with ecology blocks or jersey barriers which would maintain separation and reduce the floor space needs by confining the materials. The organics could be loaded out through the same open top hopper at different times. The pit in Bays 1 and 2 is only practical for direct transfer of materials that could be combined in the pit, so receiving and transferring organics in that building would not work.

The wet MSW from commercial customers would still be directed to Bay 1 and loaded in the pit for transfer. Some of the dry waste from self-haul customers could be unloaded in Bay 4 and some materials could be diverted using a floor sort. However, there is not adequate space to add a simple, mechanical processing line to maximize recovery of additional materials. Once Bays 3 and 4 were full, the self-haul customers would then unload in Bay 2.

This scenario would maximize diversion of organics and transfer of MSW to the landfill but not allow for increased recovery from the dry waste streams.

Option 1B – Process Dry Waste Off-site

The dry waste (self-haul MSW and commercial loose drop boxes) could be received in Bay 3 and loaded out immediately into transfer trailers for transport to an off-site material recovery processing facility. If the material is loaded out during the day and not stored for an extended period, there would be additional space available in Bay 3 to process more dry waste and organics through the same building.

Bays 1 and 2 would continue to receive and focus on the transfer of MSW (wet waste) as well as relieve the traffic into Bays 3 and 4 on busy day as a back up for the dry waste. Floor sorting of targeted materials could still occur when the self-haul customers overflow into Bay 2 and unload onto the floor.

This approach could dramatically increase the recovery of materials and still allow for the receipt and transfer of organics. However, any additional handling of materials adds cost, and with the low market value of the recovered materials, this additional cost may not be sustainable. Also, it may be more difficult to accurately track the material that was recovered from the MSS stream, or rejects sent to the landfill from the dry waste processing facility as these facilities typically process materials from numerous sources.

Option 1C – Incentivize Customers to use Metro Central Station

To serve a high volume of self-haul customers requires much more space than commercial customers as they bring in smaller volumes in many more vehicles, are slower to unload, and require more space inside the buildings to unload their materials. The existing buildings at MSS do not provide enough unloading bays to handle the projected peak day self-haul traffic without vehicles queuing on site. This option proposes encouraging the self-haul customers to use the MCS facility to open up more space at MSS. MCS already has more space and can better handle an increase in self-haul customers.

The incentive may be in the form of a discount for self-haul customers who use the MCS or a coupon at MSS for a reduced price if they try using MCS the next time. This could be done over a trial period to determine what it would take to encourage customers to change their disposal patterns and if it results in an actual shift in traffic and self-haul tons. The challenge would be that a number of current MSS customers are coming from the south and southwest so they would have a longer drive to MCS. Additionally, the roadway in and out of MCS is limited to one road with heavy truck traffic through an industrial zone. MSS is in a much more accessible and convenient location that allows customers to do some shopping while they're in the area (e.g., Home Depot). A price discount may not be enough to overcome the convenience factor.

None of the operational modifications-only options were determined to be sufficient to accommodate future needs. There simply is not enough space on-site to reconfigure operations to gain enough efficiency in diversion and recovery to rely on this approach alone. Therefore, this category was dismissed from further consideration as a stand-alone option.

5.2.2 Approach 2 – Facility Retrofit

The second set of options assumes MSS is modified to provide additional space on-site to receive the different material streams while increasing recovery of materials. The conceptual site plans that were developed for these preliminary options are included in Appendix H.

Option 2A - Add Wood Grinder

Adding a wood grinder was briefly considered and dismissed. The wood waste as a recovered commodity tends to be bulky and take considerable floor space. However, grinding it will take additional processing space and will not have a significant impact on freeing up floor space for other functions. No site plan was developed for this option.

Option 2B – Extend Building with Bays 3 & 4 One Direction

To increase the processing capacity of Bays 3 and 4, this option proposes adding a covered unloading area to the northeast side of the building, Option 2B in Appendix H. This would allow self-haul customers to back in and unload in the building extension and provide more space inside the building for material storage and a simple, mechanical processing line. The vehicles dropping off organics would need to deliver in and out the southwest side of the building to minimize impact with self-haul customers and the dry waste. The extension should be as large as possible, though with the existing building and site constraints it appears to be limited to 100 ft long (along the existing wall) and 50 ft deep.

This arrangement would infringe on the existing trailer parking. This modification would only provide up to seven stalls for self-haul customers, so the majority of the self customers would need to tip in Bay 2. The commercial loose drop boxes would need to drop in the same area inside the Bay 3 and 4 building as the self-haul customers. The processing line would probably be located in the center of the building. Organics could be delivered in and out the southwest side of the building, but they would need to be pushed across the floor to the opposite side of the building to the load-out ports.

From an operating standpoint this option does not provide a great improvement in receiving or processing capabilities.

Option 2C – Extend Building with Bays 3 & 4 Two Directions

In this option, the existing Bay 3 and 4 building would be used for receiving and processing dry waste. The building would be extended to the northwest by about 25 ft x 175 ft, or 4,375 sf, see Option 2C in Appendix H. The self-haul customers would use the door on the southwest to enter and exit the building. The building extension would give the customers room to pull forward and back up while maintaining an access aisle. This would provide 12 stalls for self-haul customers to unload so it could handle more materials and traffic. This would free up more of the building space for material storage and possibly bunkers between the columns.

Another building extension would be added to the northeast for receiving and storing the organics. This expansion is estimated to be 75 ft by 60 ft, or 4,500 sf. The residential organics are projected to require more space than this expansion would provide, so the material would need to be loaded out throughout the day as there is not space to store a full day of material in the expansion. The commercial organics will not require as much space and could be stored to one side of the building. This layout assumes the vehicles would turn and back in from outside the building. The organics could be pushed through a new hole in the wall near the existing open top hopper.

It was additionally considered if a separate load-out port could be added to serve the organics stream, but the slope at the load-out level is too steep along the building and would not be practical for backing a trailer into another load-out port.

Challenges with this approach include:

- Self-haul customers using the same door to enter and exit can create a bottleneck and cause traffic crossing inside the building. Using more translucent panels to increase natural daylighting would help increase visibility.
- The access road on the west side would be tight for two-way traffic.

- Would create a traffic challenge for the other commercial trucks access the facility like the loose drop boxes trying to enter where commercial organics are maneuvering.
- Storage space outside the building would be lost and need to be relocated.

Though there are a number of challenges with this option, these modifications may have the potential to dramatically increase recovery.

Option 2D – Extend Building with Bays 3 & 4 over the Trailer Maneuvering Area

The Bay 3/ 4 building could be expanded over the trailer maneuvering area to cover the existing load-out level; see Option 2D site plan in Appendix G. A bridge would be added to allow vehicles to access the far corner of the expansion, and maximize the number of unloading stalls. This offers a potential expansion of approximately 100 ft x 250 ft, or 25,000 sf, though the actual wall configuration may need to be adjusted to reduce structural beam spans. There are 19 feet of grade separation between the lower level and tipping floor, which would likely allow adequate clearance for a substantial structure to potentially span the lower transfer trailer drive area. The challenge will be in minimizing structural columns or locating them to limit interference with the required trailer maneuvers. Additionally, large spans require deep beams and are generally more difficult to control cracking in the elevated slab.

This option would potentially provide 14 self-haul unloading stalls which would meet the self-haul needs for unloading space. The commercial and residential organics could be received and stored on the opposite side of the building, with commercial dry loads possibly dropped in the center of the building to be combined with the self-haul loads. Space would be available for a processing line. The floor layout would need to be evaluated to determine the best configuration to minimize extra handling.

Option 2E – Add Recycling Depot or Replace the HHW Facility

This option proposes adding a new facility where the stormwater pond is currently located, south of the main entrance to the facility. The building size would be approximately 100 ft x 100 ft, or 10,000 sf; see Option 2E in Appendix H. This facility could either be used as a new HHW Facility or as a Recycling Depot.

This option would require an evaluation to determine if the facility could feasibly be modified to utilize underground stormwater management instead of the existing pond. This alternate stormwater management approach would need to be confirmed if it is acceptable to the permitting agencies.

If the HHW Facility was relocated south of the existing site entrance, it would improve the traffic flow and congestion that the current location experiences. The building could be sized to meet their storage needs so materials can be stored in one location. This would also free up space at the entrance that may be better for staff or visitor parking.

If the new building were to be used as a Recycling Depot, this would pull out some of the self-haul customers prior to the scales, freeing up more space on site. The customers would need to sort their own materials. If they bring MSW, with the quantities projected, they would still need to be directed across the scales to Bay 2 for disposal. The effectiveness of this approach for increasing diversion is not yet known at this conceptual stage. The space for development is limited, so the

building cannot be sized large enough to handle the majority of the self-haul traffic. This would add more handling of the materials to combine them with the materials recovered in Bays 3 and 4. However this location is in the floodplain so there may be restrictions on new construction or uses.

5.2.3 Approach 3 – Facility Retrofit with Off-site Improvements

The third set of options assumes some of the current customers at MSS are directed to a new location to free up space at the existing facility. Figures were not developed for this approach because it does not involve major infrastructure modifications.

Option 3A – Relocate Commercial Wet Waste

By relocating the commercial wet waste deliveries to a new location, Bay 1 would be free for other uses. However, with the pit between Bay 1 and 2, this approach alone would not increase diversion. It would still be very difficult to sort any materials that are unloaded in those bays with the limited floor space. If the pit was filled and a flat floor developed in these bays, there could be space for a mechanical processing line. It would be harder on the compactors because there would be an additional 12-foot drop to them from the new tipping floor level. This would need to be further investigated.

Commercial customers may be easier to redirect to a new location (easiest group to re-educate) than the self-haulers from the perspective of education and revising their waste disposal patterns.

This option would then require dry waste processing at two locations, one for the dry commercial waste and one for the self-haul waste.

3B – Relocate Self-Haul

By relocating the self-haul services to a new site, the new facility could be sized to meet the anticipated growth in these streams, and a more robust sort line could be designed into the facility.

Because the majority of these customers are also users of the HHW facility the HHW facility may need to be relocated as well. It would be a challenge to educate customers about going to a new site. This is likely the most expensive option from a capital cost and an operating cost perspective. It is also difficult for a public agency to site a new solid waste facility. Once the facility was established other dry waste such as loose drop box material could be added as well. The site selection and design process would have to anticipate this eventuality.

3C – Relocate Organics

The commercial and residential organics could be directed to a new or existing facility off-site. However, this action alone will not help increase the recovery of materials at MSS unless some of the modifications described above are also performed to better handle the dry waste stream.

5.3 Updated Site Concepts

Stakeholder input was received at the second set of workshops on the preliminary site concepts with regard to preferred options and modifications to the preliminary site plans. Based on this feedback, a prioritized, updated group of site concepts was developed. The purpose of these second workshops was to review updated options for the MSS improvements. The project team was looking for feedback from the group regarding the options presented, including updated versions of the concepts shown at the previous workshop.

The design team narrowed down the number of site concepts to two improved versions of the preliminary options, Options 2C (now called Option 1) and 2D (now called Option 2), and a new Option 3 that developed a conceptual plan for a new off-site facility.

Option 1 – All Functions at Grade:

Option 1 proposes major earthwork to allow the construction of an approximate 45,300 sf expansion onto northeast side of the existing Bay 3/4 building, see Exhibit 5 and Appendix I. Option 1 includes the following elements that are considered in the estimation of diversion potential:

- Bay 1/2 building pit filled in to create flat floor for flexibility and ample storage. Organics (yard debris and food waste) would be processed in this building. With a flat floor, the use of the building is flexible and operating practices may be modified as waste composition and processing evolves.
- Could install tamping crane for better density of organics load out in trailers during dry months (wet material achieves optimum densities). If a mobile tamping crane was used, it could also be used in other areas of the site for load-out of additional materials for further processing pending future markets or facilities.
- Separate commercial and self-haul unloading areas to separate wet waste for transfer and dry waste for sorting.
- The space along the northeast wall of commercial building would provide for storage and separation of material from drop boxes.
- Process line is located near dry waste storage for efficient handling. Push wall is located between process line and storage area to stack waste and maximize amount of dry waste stored on floor.
- Process line rejects are located near compactor conveyor for efficient load out.
- Adequate space for commercial municipal solid waste (MSW) sorting, if desired.
- Limited reuse area available for the recovery and storage of materials. Materials could be pulled off the floor by staff or items could be directly unloaded to this area by the customer. With insufficient space and access for retail sale of recovered reusables, materials would need to be processed and shipped off-site to reuse markets.
- Provides outdoor space for customer separated recyclables, though not ahead of scales.

Option 2 – Elevated Processing Line:

Option 2 includes an approximate 27,000 sf expansion of the existing Bay 3/4 building to the southeast over the transfer trailer load out area, see Exhibit 6 and Appendix I. Option 2 includes the following considerations that are included in the estimation of diversion potential:

- All organics (yard debris, food waste) would be processed in Bay 2 so unloading and load out may be less efficient than Option 1.
- Existing pit remains for load out of commercial wet waste so there's no opportunity for further sorting.
- Dry waste processing line located in corner of building with angled conveyors, which is less efficient.

- Long, narrow dry waste pile provides less room for material movement, with awkward access to process line infeed conveyor.
- Process line rejects are located near compactor hopper for efficient load out.
- Large area available for drop box unloading and storage with potential separate entrance for efficient access.
- Dead space in southern corner of the building is not usable for unloading or separation due to configuration.
- Smaller reuse area available than in Option 1 for the recovery and storage of materials. With insufficient space and access for retail sale of recovered reusables, materials would need to be processed and shipped off-site to reuse markets.
- Provides outdoor space for customer separated recyclables, though not ahead of scales.

Option 3 – Off-site Self-haul:

Option 3 is an off-site location (property yet to be determined) for only self-haul customers that provides waste disposal/transfer, reuse drop-off (with potential resale), HHW, and recycling on one site. Commercial MSW customers, packer trucks with residential and commercial organics, and drop-boxes would be routed to the existing MSS station. Option 3, shown in Exhibit 7 and Appendix I, offers a focus on material separation by the customer and includes the following considerations for the estimation of diversion potential:

- Recycling offered in front of scales to provide a convenient customer separation opportunity.
- Large, separate building for reuse on-site (up to 20,000 sf) to provide flexible space for material unloading, separation and processing, storage, and retail, as well as space to consolidate and ship some materials to off-site reuse markets. Materials could be separated from incoming loads at the transfer station by staff and brought to the reuse building and customers could unload directly in this building. Reuse could be managed by Metro or a third party contractor.
- Large space for storage and a material processing line to recover a variety of materials.
- Efficient load out of organics and MSW directly into open top containers from flat floor.
- Drop boxes would be processed at the old MSS site so two dry waste sort lines would be required.

5.4 Potential for Material Diversion

With one of the primary objectives of the proposed facility redevelopment being to increase material diversion, this section looks at the diversion potential for the three proposed facility options.

Option 1 – All Functions at Grade

Option 1 includes the following elements that are considered in the estimation of diversion potential:

- Bay 1 and 2 building pit filled in to create flat floor for flexibility and ample storage. All organics (yard debris, food waste) would be processed in this building. With a flat floor, the use of this building is flexible and operating practices may be modified as waste composition and processing evolves.
- Could install tamping crane for better density of organics load out in trailers during dry months (wet material achieves optimum densities). If a mobile tamping crane was used, it could also be used in other areas of the site for load-out of additional materials for further processing pending future markets or facilities.
- Separate commercial and self-haul unloading areas to separate wet waste for transfer and dry waste for sorting.
- The space along the northeast wall of commercial building would provide for storage and separation of material from drop boxes.
- Process line is located near dry waste storage for efficient handling. Push wall is located between process line and storage area to stack waste and maximize amount of dry waste stored on floor.
- Process line rejects are located near compactor conveyor for efficient load out.
- Adequate space for commercial municipal solid waste (MSW) sorting, if desired.
- Limited reuse area available for the recovery and storage of materials. Materials could be pulled off the floor by staff or items could be directly unloaded to this area by the customer. With insufficient space and access for retail sale of recovered reusables, materials would need to be processed and shipped off-site to reuse markets.
- Provides outdoor space for customer separated recyclables, though not ahead of scales.

Option 2 – Elevated Processing Line

Option 2 includes the following considerations that are included in the estimation of diversion potential:

- Option 2 includes an approximate 27,000 sf expansion of the existing Bay 3/4 building. Organics (yard debris and food waste) would be processed in Bay 2 so unloading and load out may be less efficient than Option 1.
- Existing pit remains for load out of commercial wet waste so no opportunity for further sorting.
- Dry waste processing line located in corner of building with angled 90 degree turn in the conveyors, which is less efficient.
- Long, narrow dry waste pile provides less room for material movement, awkward access to process line infeed conveyor.
- Process line rejects are located near compactor hopper for efficient load out.
- Large area available for drop box unloading and storage with potential separate entrance for efficient access.
- Dead space in southern corner of the building is not usable for unloading or separation due to configuration.

- Smaller reuse area available than in Option 1 for the recovery and storage of materials. With insufficient space and access for retail sale of recovered reusables, materials would need to be processed and shipped

Option 3 – Off-site Self-haul

Option 3 offers a focus on material separation by the self-haul customer and includes the following considerations for the estimation of diversion potential:

- Recycling offered in front of scales to provide a convenient customer separation opportunity.
- Large, separate building for reuse on-site (up to 20,000 sf) to provide flexible space for material unloading, separation and processing, storage, and retail as well as space to consolidate and ship some materials to off-site reuse markets. Materials could be separated from incoming loads at the transfer station by staff and brought to the reuse building and customers could unload directly in this building. Reuse could be managed by Metro or a third party contractor.
- Large space for storage and a material processing line to recover a variety of materials.
- Efficient load out of organics and MSW directly into open top containers from flat floor.
- Drop boxes would be processed at the old MSS site so two dry waste sort lines would be required.

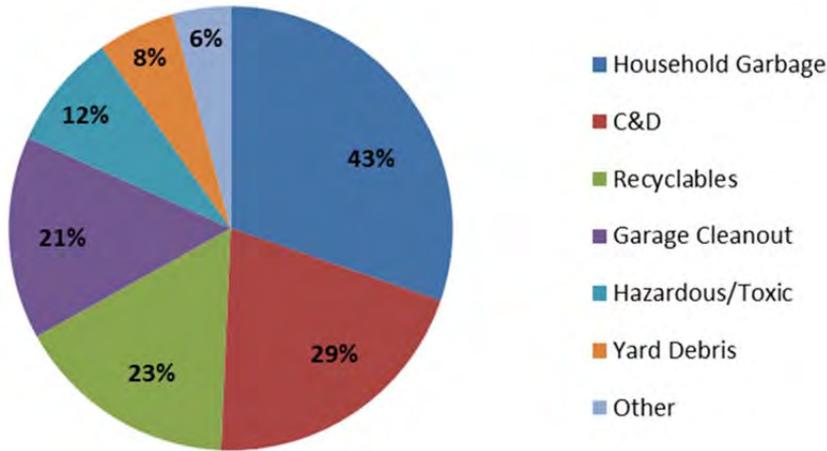
Table 12 presents the estimated diversion potential of the three conceptual options based on the elements described above as well as the following assumptions regarding the MSS customer base and waste streams.

- The portion of the 2019 waste stream that is available for diversion is 52%, comprised of the loose drop boxes (9%), self-haul waste (21%), residential organics (18%), and commercial organics (5%), respectively.
- The loose drop box waste is assumed to largely be comprised of C&D waste available for separation.
- The commercial and residential organics are assumed to be delivered separately, and then stored and loaded out separately. No additional sorting is required to achieve complete diversion of those materials.
- The self-haul waste stream is brought to the site by residential self-haul customers (i.e., general public) and business self-haul customers (i.e., small contractors, landscapers). The estimated breakdown of these two customer types across the Metro region is 44% residential and 56% business based on Metro's January 2009 report titled *Impact of Self-Haul Customers on the Regional Solid Waste System*. Furthermore, the residential and business self-haul waste streams at MSS are assumed to have approximate compositions shown in Figure 3 based on the results of an on-site self-haul customer survey conducted in March 2013 as part of this project.

- The recyclables and hazardous/toxic materials identified in Figure 3 are assumed to be brought to the site pre-sorted and are not assumed to be part of the general self-haul waste stream available for diversion.

Figure 3. MSS Self-Haul Waste Composition – Residential and Business Customers

Residential



Business

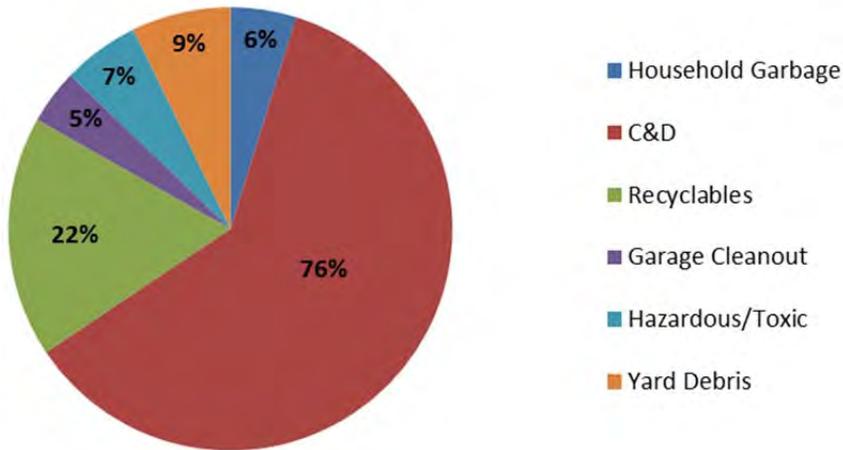


Table 12. MSS Projected Diversion Potential by Material Stream

				Existing MSS			Option 1			Option 2			Option 3		
Waste Type	Waste Stream	Projected 2019 Tonnage	% of Total Waste	2014 Tons Diverted	% of Stream Captured	% of Total Waste	2019 Tons Diverted	% of Stream Captured	% of Total Waste	2019 Tons Diverted	% of Stream Captured	% of Total Waste	2019 Tons Diverted	% of Stream Captured	% of Total Waste
Wet Waste	Wet Waste	133,875	48%				0	0%	0.0%	0	0%	0.0%	0	0%	0.0%
Dry Waste	Loose Drop Boxes	25,267	9%	4,032	16%	1.6%	10,107	40%	3.6%	10,107	40%	3.6%	15,160	60%	5.4%
	Self-haul Customers	59,261	21%	9,435	16%	3.8%	37,000	62%	13.1%	27,400	46%	9.7%	41,898	71%	14.9%
	Reuse ¹			<700	<1.2%	<0.25%	704	1.2%	0.25%	<700	<1.2%	<0.25%	1,409	2.4%	0.5%
Dry Waste Subtotal				13,467		16%	47,811		57%	37,506		44%	58,468		69%
Organics	Residential Organics	50,688	18%				50,688	100%	18.0%	50,688	100%	18.0%	50,688	100%	18.0%
	Commercial Organics	12,688	5%				12,688	100%	4.5%	12,688	100%	4.5%	12,688	100%	4.5%
Total		281,778	100%	47,765		16%	110,482		39%	100,882		36%	120,434		43%

¹ Reuse numbers are a subset of the self-haul customer tons and percentages. Reuse diversion percentages are estimated by Metro based on *Building Material Reuse Pilot Project - Troutdale Transfer Station* (Metro, April-June 2009).

The diversion potential for the three options varies only in the dry waste stream which comprises approximately 30% of the entire waste stream received at MSS. The three options developed each offer good opportunity for improvement of material diversion with estimated diversion rates of 39%, 36%, and 43% for Options 1, 2, and 3, respectively. Of the three options, Option 3 appears to offer slightly more diversion potential. This is due to higher estimated capture rates for the drop box stream (60%) and self-haul material stream (71%) because there is more space to focus on material diversion. Option 3 conceptually provides separate facilities for commercial and self-haul customers which allows for adequate space for material unloading and sorting, provides direct load out for disposal, encourages customer separation, and provides customer convenience. This is a preliminary, qualitative analysis with speculated diversion percentages applied based on approximate MSS material composition and diversion factors achieved at other facilities from similar sources (self-haul and drop boxes). These observations should not be considered without other project factors including operational efficiency, stakeholder input, and conceptual cost.

The following factors are offered for consideration by Metro to potentially increase diversion for future waste operations. These factors could be implemented program wide and are not specific to MSS or any of the conceptual options so they have not been factored into the estimated projections in this memo.

Commercial MSW Sorting

As the organics come out of the waste stream, the materials remaining will be more readily sorted and recovered while maintaining market value. Having a flexible layout that would allow for a more robust sort line to process mixed MSW would be beneficial. Metro is conducting a parallel project as part of the Solid Waste Roadmap program, of which this MSS assessment project is also a part; that considers expanding waste processing beyond the dry waste stream. Creating flexible space supports this long-term materials management project by providing the potential to perform advanced materials recovery for wet waste received at the facility as well. Additionally, open, flexible space may allow for the preparation of such materials for subsequent processing at new facilities such as gasification or anaerobic digestion. Because Option 2 still relies on the pit for transfer of wet MSW, additional processing of this material is not possible on this option. Option 1 assumes the pit is filled in so the material could be further processed and sorted in that building. In Option 3, the existing Bay 3/4 building would need to be modified to add a more robust processing line.

Multiple Rates for Separated Materials

With additional space on-site for material storage, financial incentives may encourage the customers to separate their materials beyond what they currently do. This rate structure could be broken down into various prices for different waste categories (i.e., MSW, C&D, organics) or even further into specific commodities (i.e., metals, carpet, sheetrock), depending on the anticipated volume of materials, commodity market drivers, and desired level of staff labor required to track and monitor various waste streams.

5.4 Capital Cost Estimates

This section summarizes the capital cost estimates prepared for the proposed options for the redeveloped MSS facility. These preliminary capital cost estimates were developed to evaluate the cost-effectiveness of the various options, provide information for financial analysis, and aid in the selection process between the options.

A comparison table summarizing the conceptual level capital costs for the three alternatives is provided in Table 13, including categories for property acquisition, building construction site work, and equipment purchase. These estimates assume 25% contingency which is appropriate for this conceptual level of design as well as a contractor's fee (10%), engineering design fee (10%), and construction administration cost (8%). More detailed cost estimates for each of the three site options are included in Appendix J.

Table 13. Conceptual Level Capital Cost Estimate Comparison

ITEM DESCRIPTION	Option 1 - All Facilities at Grade	Option 2 - Processing Elevated	Option 3 – Self-haul Off-site
Property Acquisition	N/A	N/A	\$3,136,320
Buildings	\$13,320,000	\$11,660,000	\$18,200,000
Site Work	\$4,230,000	\$1,750,000	\$3,850,000
Equipment	\$7,700,000	\$5,030,000	\$2,560,000
TOTAL	\$25,250,000	\$18,440,000	\$27,746,320

¹ Costs listed for Option 3 assume a 12-acre parcel is required for site development. Original assumptions and capital costs for Option 3 included an 18-acre property. Option 3 costs include improvement to existing MSS for continued operations for commercial customers

Option 3 is the only option that requires purchase of a new parcel of land for development. Estimated property acquisition costs are based on an assumed 12-acre site at a representative price of \$6/sf based on research of industrial property sales in the Portland metro region.

Option 1 has a larger proposed building expansion than Option 2 (45,700 sf versus 27,000 sf) so the estimated building costs are higher. Option 3 includes infrastructure costs for a new transfer station, reuse building, administration building, HHW building, and scale facilities.

Option 1 includes a large amount of earthwork (fill) since the proposed building expansion is to be constructed at grade where the existing compactor tunnel is located. This item is estimated to be nearly \$1 million and largely contributes to the site work costs along with the associated roadways/parking. Option 3 is assumed to need all new roadways and utilities as well as grading for the load out tunnel so anticipated site work is significant.

5.5 Operations and Maintenance Cost Estimates

Table 14, below, compares a summary of the anticipated operations and maintenance (O&M) costs for operation of the three site options. These estimates as compared to existing operations (i.e., the “delta”) and do not comprise the entire cost. For example, Option 1 is

anticipated to require one additional wheel loader for material management as compared to current operations which uses three loaders. Therefore the equipment costs for Option 1 include one (additional) loader. The estimated O&M costs generally consist of labor, equipment, and other facility and site maintenance costs and include a 15% contingency. Detailed O&M costs and assumptions used in development of the estimates are included in Appendix J.

Table 14. Conceptual Level Operations and Maintenance Cost Estimate Comparison (Above Existing Operations)

ITEM DESCRIPTION	Option 1 - All Facilities at Grade	Option 2 - Processing Elevated	Option 3 – Self-haul Off-site ¹
Labor	\$ 657,300	\$ 642,700	\$873,600
Equipment O&M	\$ 72,400	\$ 132,200	\$219,600
Facilities, Other	\$ 421,000	\$ 306,800	\$477,700
TOTAL²	\$ 1,324,000	\$ 1,244,000	\$ 1,806,000

¹ Includes O&M for new off site facility (self-haul) and continued operation of existing MSS for commercial customers

² Includes 15% contingency

In general, Option 3 has the highest O&M costs for each of the major categories because it involves the operation of two separate facilities so equipment, labor, and other costs are duplicated. Option 1 and 2 have similar costs for anticipated labor though are both less than Option 3. Staff included under the labor category include positions currently provided by both Metro and Allied and include supervisors, spotter, sorters, mechanics, compactor operators, equipment operators, recycling, hazardous waste technicians, goat operators, scale attendants, and litter patrol. The equipment costs for Option 2 are slightly higher than Option 1 because Option 2 includes an additional waste compactor in the Bay 3/4 building and an additional shuttle goat for maneuvering containers from both buildings around the site. All three options include a material processing line with sizing dependent on the space available in each option. Option 1 has higher facility maintenance costs than Option 2 because it has a higher building square footage so the general maintenance, insurance, electricity, water usage, etc., are more, although again both costs are lower than Option 3.

5.6 Option Comparison

Table 15 presents a comparison matrix of the proposed site layouts based on the nine prioritized needs (see Section 5.1) and additional criteria determined to be important for the identification of a preferred site alternative(s). The needs and additional criteria were grouped into major categories A through J for comparing the various options. Each option was given “score” for each of the major criteria of a full circle, ¾ circle, ½ circle, ¼ circle, or empty circle based on how well the option was anticipated to perform in the category (full circle performing the best, empty circle indicating poor performance for the criteria). The scores were developed with input from the design team, Metro staff, and the project stakeholders. The workshop notes

included in Appendix G from the final staff and stakeholder workshops provide more detail as to how the “scoring” for each criteria was determined for the various options. The three options were compared to a scoring of the existing facility to identify if the proposed option was an improvement over current conditions.

Table 15. Site Option Comparison Matrix

CRITERIA / CATEGORY		SITE LAYOUT OPTIONS			
		Option 1 – All Functions at Grade	Option 2 – Elevated Processing Line	Option 3 – Off-Site Self-haul	Existing Facility
A	Residential (self-haul) <ul style="list-style-type: none"> • Waste • Organics & Yard Debris • Space • Access • Customer Education 				
B	Commercial Customers <ul style="list-style-type: none"> • Waste • Organics • Space • Access 				
C	Household Hazardous Waste <ul style="list-style-type: none"> • Space • Access 				
D	Site Operations <ul style="list-style-type: none"> • Safety • Efficiency • Flexibility 				
E	Recoverables Sorting <ul style="list-style-type: none"> • Tipping floor • Source-separated recyclables 				
F	General Site <ul style="list-style-type: none"> • Safety • Traffic separation • Minimal queuing • Wayfinding 				

		SITE LAYOUT OPTIONS			
CRITERIA / CATEGORY		Option 1 – All Functions at Grade	Option 2 – Elevated Processing Line	Option 3 – Off-Site Self-haul	Existing Facility
G	Cost <ul style="list-style-type: none"> • Capital • Operations 				
H	Sustainability				
I	Constructability <ul style="list-style-type: none"> • Construction methods • Impacts to operations 				N/A
J	Feasibility <ul style="list-style-type: none"> • Potential political and other challenges 				

Green Highlight – indicates criteria is identified as a Project Need

6.0 Assessment Summary

At the Metro Council Work Session on November 18, 2014, the Metro staff presented the MSS evaluation process to date including a summary of the outreach activities, conceptual design options and the three preferred site options. The key question remains as to how to use MSS as a strategic asset to best meet the service needs.

Staff recommended focusing evaluation on the two preferred options – Option 1 and Option 3 (without selecting a site at this time) to further investigate the design challenges, construction feasibility, identify potential siting criteria, and refine the anticipated estimates of construction costs and operating impacts. The staff would return to Council with recommendations in 12-18 months, as they will wait for input/progress on other Roadmap projects that may impact future development at MSS.

7.0 Next Steps and Recommendations

Identifying and achieving consensus on preliminary site layout options is a major milestone in the development of an improved MSS facility. To continue project momentum and progress, the activities listed below are recommended for implementation by Metro.

- **Maintain Stakeholder Involvement** through updates to the Solid Waste Advisory Council (SWAC) and MSS mailing list. It is important to not allow the progress that has been made to date become stagnant and to keep stakeholder interest and momentum moving forward in support of this project.
- **Conduct preliminary Siting Analysis Plan for Option 3.** Identify the approach for beginning the siting analysis, including considerations for site requirements and public involvement approaches, anticipated schedule and costs associated with siting analysis process.
- **Constructability Assessment.** For Option 1 determine the feasibility of maintaining operations during construction of the Option, with potential phasing and operating considerations.
- **Develop preliminary design for MSS.** For two preferred site options (Options 1 and 3) develop preliminary level design (15%) to gain better certainty in capital costs, operating costs, major design components and the approach for facility development prior to procurement for final design.
- **Consider viability of MSS as an Advanced MRF.** As related to a parallel Solid Waste Roadmap project assessing the options for long term regional waste disposal, Metro could look more specifically at how MSS could be operated as an advanced MRF facility. This advanced MRF concept for maximizing material diversion is an initial component of most long-term disposal options being considered.

MSS is only one piece—albeit an important one—of Metro’s solid waste program that includes waste collection, handling, processing (separation and compaction), hauling, disposal, and policy development. As Metro continues implementing its Solid Waste Roadmap projects that will determine the direction that Metro takes with its overall solid waste program and the role of the MSS, it is paramount that the timing of these activities and the overall project development should be closely coordinated with the other roadmap projects to ensure the facility plays the right role and provides the best long-term value in Metro’s comprehensive solid waste program.

Exhibits



SCALE: 1"=100'

BASEMAP SOURCE: 2013 IMAGE OF GOOGLE MAP



Site Plan

Oregon Metro South Station

DATE	September 2014
EXHIBIT	1



SCALE: 1"=100'

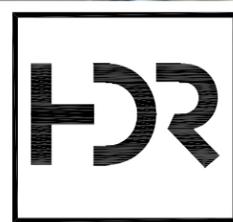
LEGEND:

- C— COMMERCIAL WET TRAFFIC
- - -C - - - COMMERCIAL DRY TRAFFIC
- SH— SELF-HAUL MSW TRAFFIC
- - -SH - - - SELF-HAUL ORGANICS/C&D TRAFFIC
- T— TRANSFER TRAILER TRAFFIC
- TRAFFIC HAZARD AREA

NOTES:

1. HOUSEHOLD HAZARDOUS WASTE (HHW) TRAFFIC NOT SHOWN FOR CLARITY.
2. TRAFFIC PATTERNS ARE SHOWN FOR TYPICAL WEEKDAYS. TRAFFIC IS OFTEN REVISED BASED ON WEEKEND TRAFFIC COUNTS.

BASEMAP SOURCE: 2013 IMAGE OF GOOGLE MAP



Site Traffic Patterns

Oregon Metro South Station

DATE	September 2014
EXHIBIT	2



SCALE: 1"=100'

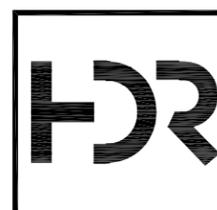
LEGEND:

- RECOVERABLES RECYCLING, C&D, TIRES, APPLIANCES, SCRAP METAL, REUSE
- MSW MUNICIPAL SOLID WASTE
- ORGANICS ORGANICS
- HHW HOUSEHOLD HAZARDOUS WASTE

NOTES:

* INDICATES FINAL LOCATION PRIOR TO LEAVING THE SITE.

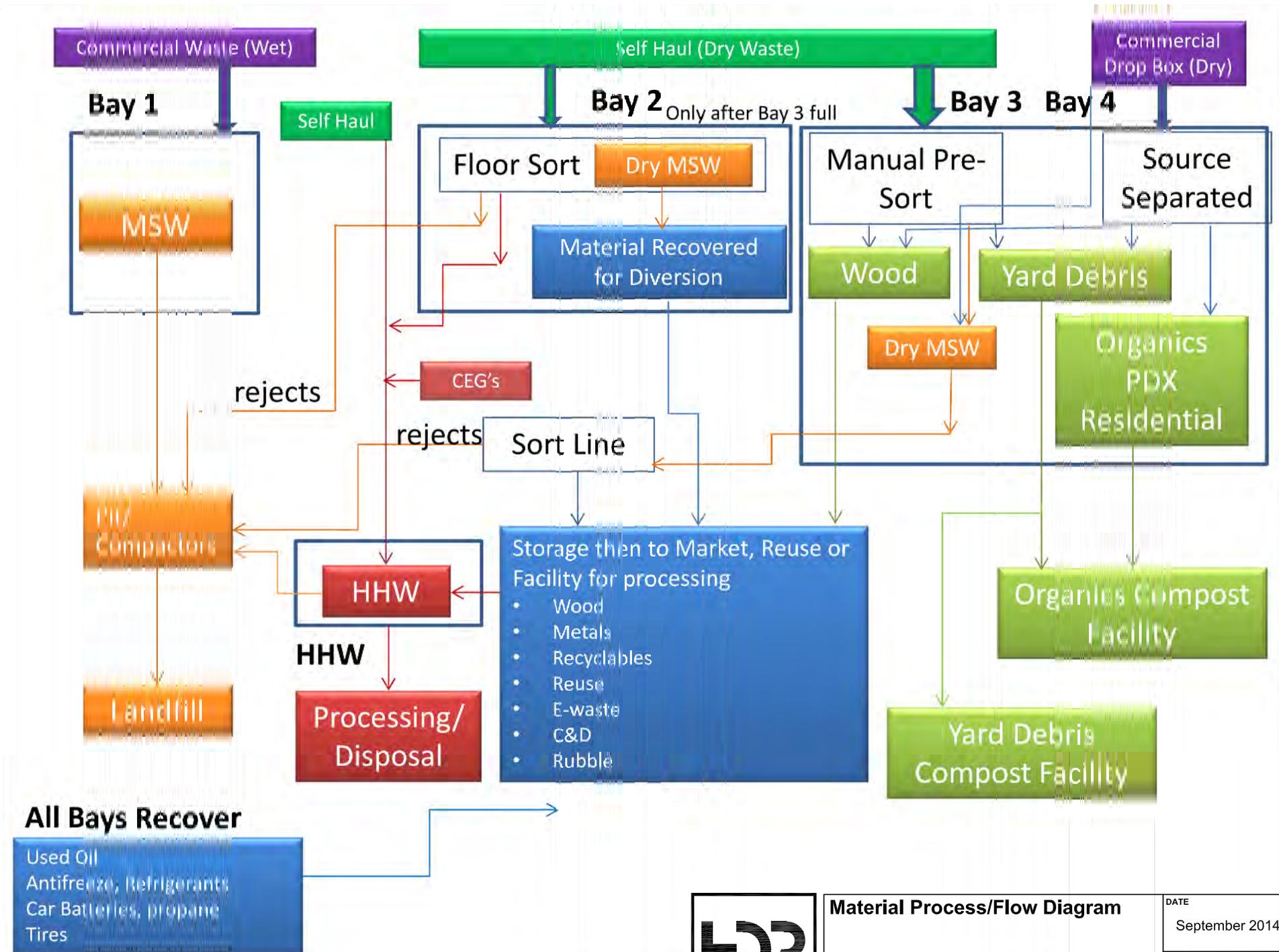
BASEMAP SOURCE: 2013 IMAGE OF GOOGLE MAP



Material Process/Flow Diagram

Oregon Metro South Station

DATE	September 2014
EXHIBIT	3



Material Process/Flow Diagram

Oregon Metro South Station

DATE
September 2014

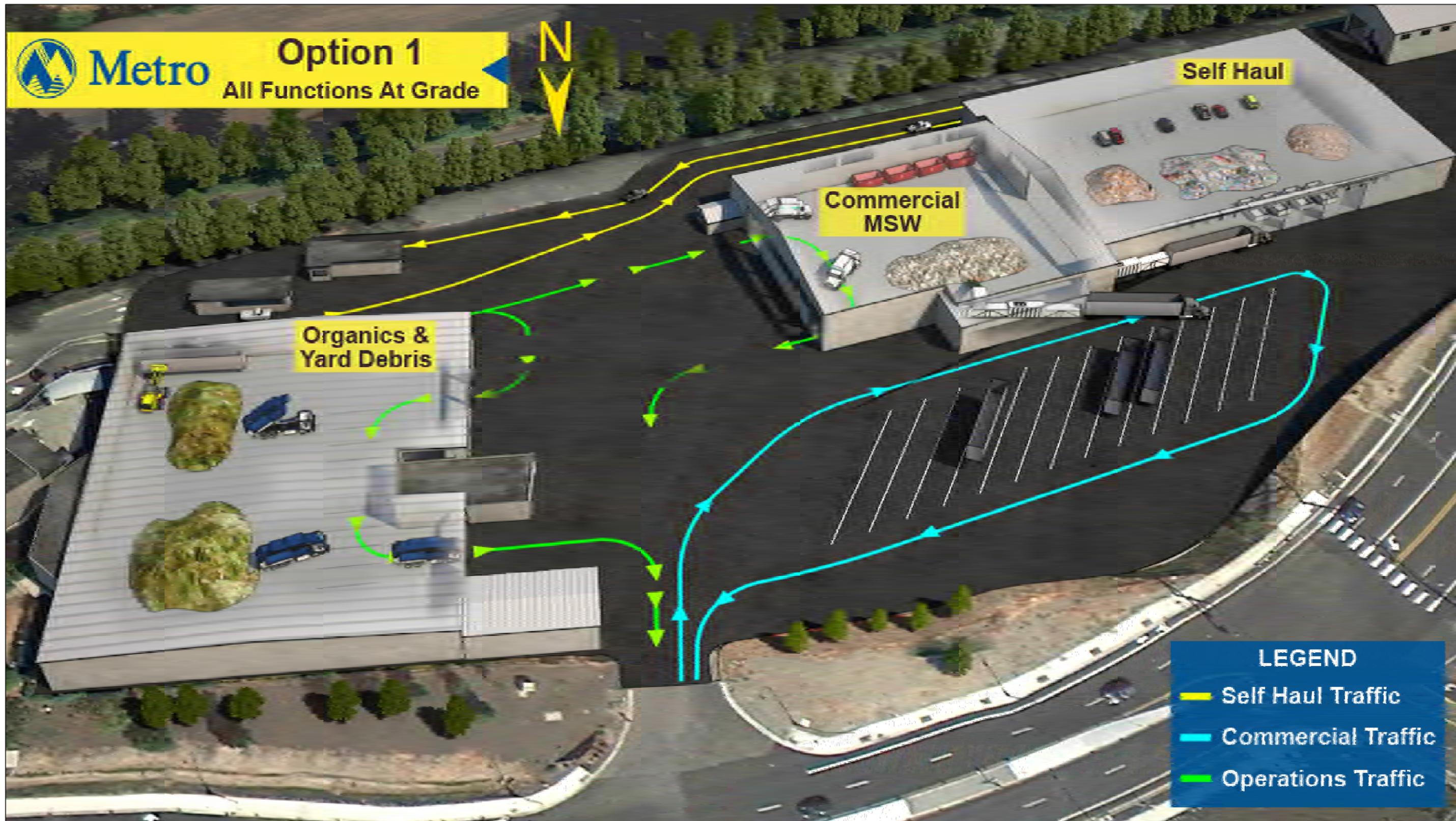
EXHIBIT
4



Metro

Option 1

All Functions At Grade



LEGEND

- Self Haul Traffic
- Commercial Traffic
- Operations Traffic



Option 1 All Functions At Grade

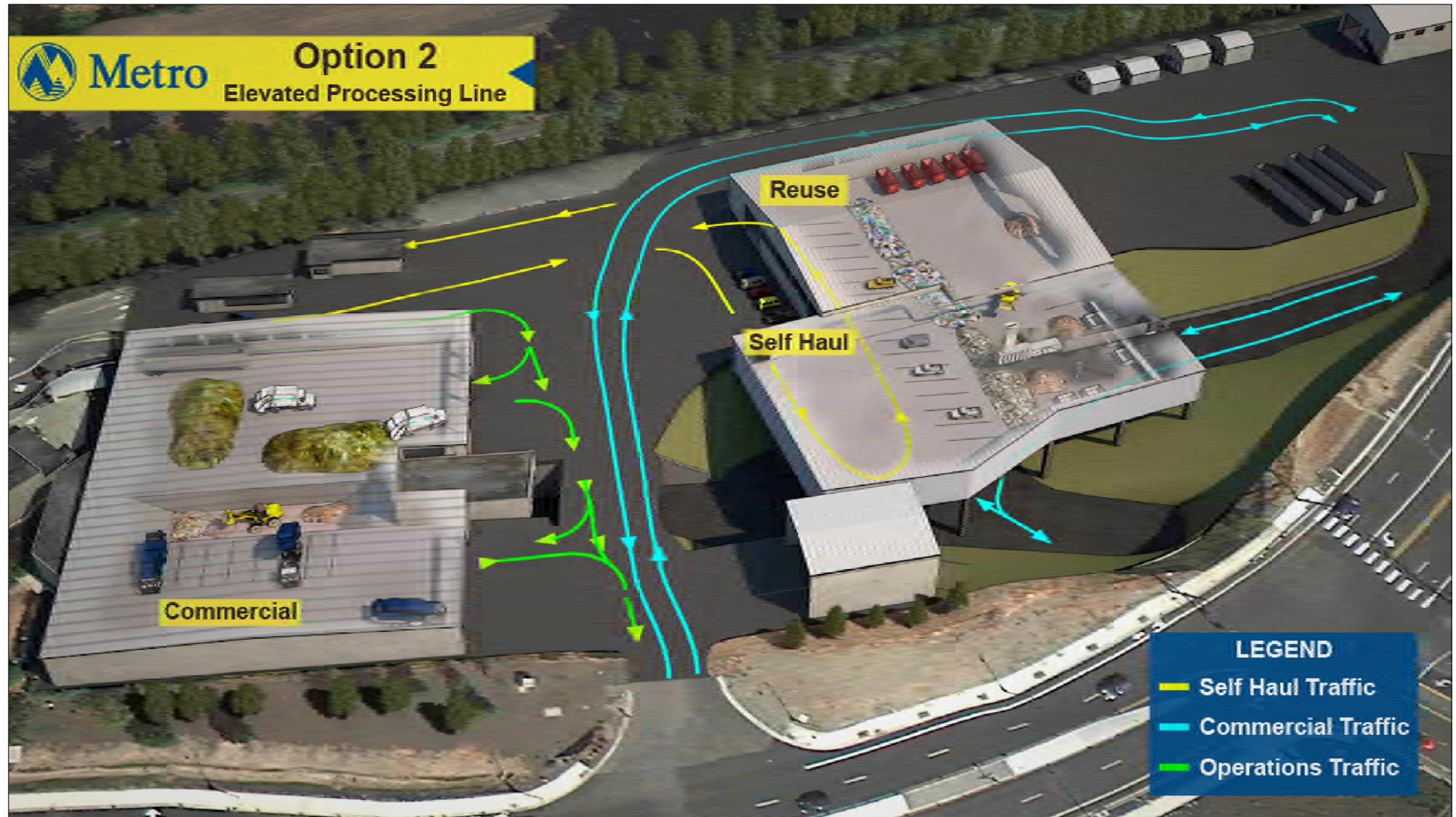
Oregon Metro South Station

DATE	September 2014
EXHIBIT	5



Metro

Option 2
Elevated Processing Line



LEGEND

- Self Haul Traffic
- Commercial Traffic
- Operations Traffic



Option 2 Elevated Processing Line

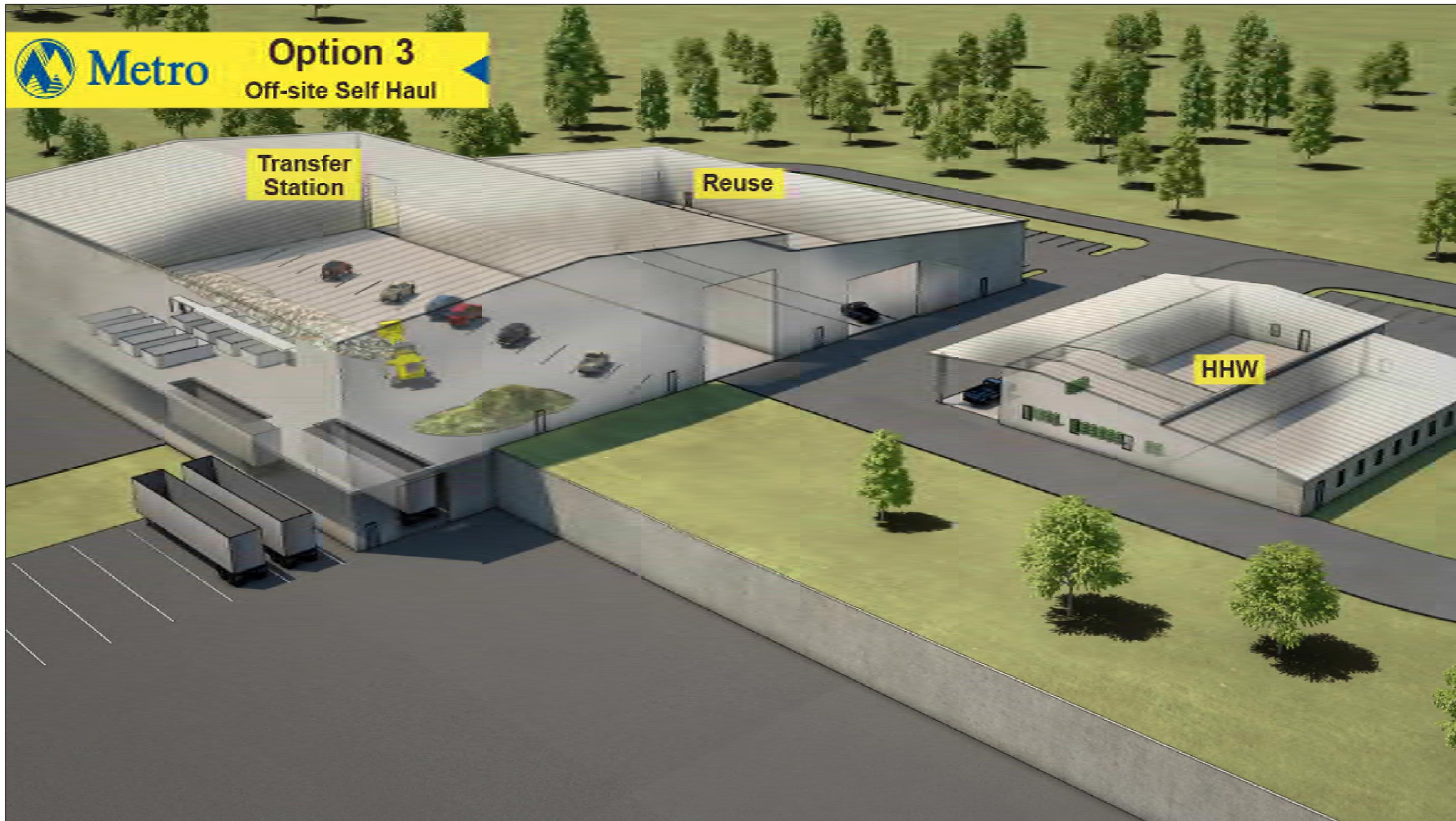
Oregon Metro South Station

DATE	September 2014
EXHIBIT	6



Metro

Option 3
Off-site Self Haul



Option 3 Off-Site Self Haul

Oregon Metro South Station

DATE	September 2014
EXHIBIT	7

Appendices

Appendix A

Stakeholder Interviews Summary

Interview Participants (listed alphabetically)

Organization	Name(s)
Allied / Republic	Steve Brum, Craig Holmes, Ray Phelps, Derek Ruckman
Clackamas County	Laurel Bates, Sherri Dow, Kevin Geinger, Rick Winterhalter
Clackamas County Refuse and Recycling Association	Dave White, members and their drivers
City of Oregon City	Tony Konkol, John Lewis, Martin Montalvo
City of Portland	Bruce Walker
Home Depot, Oregon City	Derek Jones, Randy Miller
Kahut/Hoodview Disposal	Andy Kahut
Metro Staff	Doug Anderson, Tom Chaimov, Paul Ehinger, Jennifer Erickson, Penny Erickson, Chuck Geyer, Pete Hillman, Bryce Jacobson, Scott Klag, Bill Metzler, Jim Quinn, Ken Ray, Joel Sherman, Paul Slyman, Rob Smoot
Metro South Station Operators	23 Metro and Allied staff members (see Appendix C)
Oak Grove Sanitation	Michael Borg
Oregon City Garbage	Allan Bushey
Pride	Mike Leichner
Sunset Disposal	Carla Schaeffer
Washington County	Theresa Koppang
Washington County Solid Waste Coordination Committee	Peter Brandom (City of Hillsboro), Amy Burns (City of Sherwood), Martha Debry (City of North Plains), Rob Drake (City of Cornelius), Kathy Kaatz (City of Tualatin), Scott Keller (City of Beaverton), Leslie Kochan (Oregon DEQ), Beverly Maughan (City of Forest Grove)
Waste Connections	Joe Wunderlick
Waste Management	Dean Kampfer

As part of the initial assessment of stakeholders for the Metro South Station study, HDR Engineering and Zenn Associates staff conducted interviews — both individual and small groups — with more than 15 key stakeholder groups. The list of stakeholders (above) included frequent facility users, affected government staff including other waste managers, facility operators, and waste management companies and drivers in the region.

The interviews examined Metro South’s perceived strengths and weaknesses surrounding the current operations of the facility and explored possible changes in the future — both short and long term.

The interviews were not intended as a scientifically-valid survey, but instead represent many viewpoints for consideration as the project moves forward and scenarios for Metro South are developed and analyzed. Moreover, the surveys identified those likely interested in topics that are assumed to be part of the project decision process.

What's working well at Metro South?

The majority of stakeholders articulated a clear need for Metro South, especially for self-haul customers. The public self-haul services that Metro South provides is somewhat unique as a service to the region because many other facilities can't or won't take the time required to work with them. 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 facility receives very high marks for customer service from users. It's well known and easy to visit. It also provides convenient hours and needed consistency in the time required to get both commercial and residential customers in and out (usually under 10 minutes.)

Several stakeholders noted the need for the transfer station as a gauge for public and private rate setting. Without it, the market, especially for self haulers and small private companies, might not be as stable.

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 percent of Portland's residential organics flows through Metro South.

At the local level, officials in Oregon City appreciate having the facility there and are open to opportunities to increase its value to the community.

What can be improved at Metro South and how?

The most frequent issue cited among stakeholders concerned the site's capacity and the related challenges associated with taking additional waste or handling existing flows. A number of stakeholders expressed concerns about future expansion of organics programs because of the lack of space at Metro South.

Related to this, several also expressed concerns about the ability to deal with organics' contaminants at Metro South because of the lack of space for adequate processing.

The design of Metro South, particularly the pit, makes identifying haulers that are dumping loads mixed with higher percentages of recoverables more difficult. This is a missed opportunity to provide useful feedback to these haulers so they can make adjustments or provide feedback to their customers.

Also, some stakeholders said the design gets in the way of a higher recovery rate (Only about 13 percent at South compared with 40 percent at Central).

Some interviewees also identified trends or ideas that might have an impact on the future of Metro South. Several stakeholders identified a changing waste stream and the need to anticipate possible effects such as:

- Where commercial organics collection will be over the next several years
- Whether the Columbia Biogas facility gets built

- Changes to the weight of the discard stream (likely to become much lighter)
- The possibility of more take-back systems initiated and underway (particularly for toxics)
- A significant change in materials to be transferred (less) versus discards that can be recovered from the waste stream that will need to be handled (more)

One stakeholder also suggested looking at the transfer truck parking area to ensure that it's the right space needed.

One stakeholder suggested that self haul is almost too well served, noting that the service provided doesn't convey the full impact of recovery from a cost-standpoint.

Metro South facility operators (Metro and Allied staff) provided additional, very specific observations and suggestions for improvement. The most frequently cited areas of staff concern are traffic patterns, room for materials storage, sorting and transport, confusing signage, conflicting demands from business and self haul customers, and the need for customer education. These issues and proposed solutions are discussed in a separate memo.

Commercial drivers visiting the facility requested cleaner floors in the bays as well as more separation from commercial and residential haulers. The wash bay is also used and appreciated by this group.

Suggestions for the future of Metro South

Several interviewees suggested getting a better understanding of the customer base and its changing habits and preferences to aid decisions about Metro South. Some suggested a further understanding of the self-haul market and what would work for them. For example, one suggested that a number of smaller, more local facilities and drop-off locations might work for self haul. Another suggested that home remodeling might be a niche (Home Depot-type development) for that area and contribute to trips to Metro South. This might be a consideration for future development of the area. Others suggested that anaerobic digesters and biogas facilities might become a "game changer" for the waste stream in the region.

Fuel costs and use were also mentioned as a significant consideration in future forecasting.

Some suggested long-term consideration of the policy side of the waste stream: will there be limits on what can be discarded? (Plastic bags or other bans, for example). Will there be different dry waste standards?

Most agreed that space will continue to be an issue if Metro South aims to expand or become a more efficient one-stop shop. However, several provided suggestions about space and use adjustments. One interviewee suggested exploring a tiered system for customers: one tier for those frequent users who know what they're doing (an express) and another for those less frequent who are uncertain about what they need to do. It might decrease in-and-out time. Another suggested exploring partnerships as possible business opportunities. Public/private partnerships could provide better sorting and more

state-of-the-art recovery and reuse. Another stakeholder suggested examining the northern-most land at the station to see if it could be better utilized.

If space were available, several suggested expansions of services in dry waste, hazardous waste, recycling and self-haul components. These are the more underserved areas in the region or provide the most service to non-commercial customers.

Some concerns were expressed about pursuing waste-to-energy options. The concerns centered around the materials left to be burned as the waste stream decreases in the future, and a concern about a burn facility's impact on the regional recovery efforts. Additionally, the siting process for a burn facility could be controversial and very difficult to accomplish in this region.

If some services are relocated elsewhere, the most popular suggestion was to leave Metro South as a facility for self-haul customers and direct the commercial haulers to other site(s). One stakeholder said the facility is absolutely essential for rural residents of Clackamas County, many of whom do not have garbage pick-up.

Some other suggestions included:

- Consider affect on recovery efforts along with any changes.
- Make sure industry is involved and has input to ensure fairness.
- Recognize issues with some of the related companies' time needs to change and adapt. It often can't happen quickly.
- Consider letting tonnage limits go and allow private facilities to take their waste to where they get the best deal. This could ease capacity issues.
- Consider regulations that work for businesses and have both financial and environmental benefits.
- Do not forget landfilling as a choice for non-recoverables. At this point, it is still the best option.

Appendix B

Intercept Survey Executive Summary

INTRODUCTION & METHODOLOGY

DHM Research conducted 306 in-person interviews with Metro South Station (MSS) customers. The surveys were conducted on site, by a team of trained interviewers. To ensure a representative sample and control for any seasonal effects, the interviews were conducted over two periods (March 23-30, 2013 & May 28-June 3, 2013). Of the customers interviewed, 240 were residential customers and 66 were business customers. The interviews took an average of five minutes. The purpose of the survey was to understand the profile of customers who use MSS, the material they dispose of, and their satisfaction with the service.

KEY FINDINGS

Distance traveled

- The median distance traveled by customers to MSS was 9.5 to 10 miles for residential and business customers respectively

Combined trips

- While unloading their garbage was the primary reason for visiting MSS for both residential (71%) and business customers (74%), about 3 in 10 users combined their visit to MSS with other stops
 - Home Depot and Fred Meyer were the most frequently mentioned stops customers combined with their trips to MSS

Home & business garbage service

- 87% of residential and 61% of business users have garbage and recycling service at their home or business
 - For residential users, the primary reasons for coming to MSS were that the items they hauled were too big for their cans at home (46%), remodeling (21%), and cleaning out their home (19%)
 - For business users, the primary reasons for visiting MSS were remodeling (39%), items too big for the can (27%), and other options are either too inconvenient (23%) or too expensive (21%)

Other options

- 83% of residential users did not look at other options before deciding to come to MSS, but of those, 75% were aware that other options, like putting out extra cans or renting a dumpster, were available

Types of garbage hauled

- The most common types of garbage hauled by residential users were typical “household garbage” (43%), followed by construction demolition (29%) and recyclables (23%)
- The most common types of garbage hauled by business users was primarily trash construction demolition (76%)
- About 21% of residential and 9% of business users visited the hazardous waste facility

Frequency of MSS visits

- 79% of residential customers use MSS 2-3 times per year or less
 - And 31% had used other transfer stations in the region
- 85% of business customers use MSS 1-2 times per month or more
 - And 59% had used other transfer stations in the region

Overall satisfaction with MSS

- MSS users are extremely satisfied with the level of service at the transfer station
 - 88% of residential users and 85% of business users were very satisfied with their visit
 - These are exceptionally high levels of satisfaction, a level which DHM Research rarely sees in other public or private sector customer research

Appendix C

Operations Staff Discussion Groups Summary

Attendees:

Operations Staff: Johnnie Walters, Dan Long, Dan Roan, Eric Johns, John Brandsberg, Mike Toole, Denise Hays, Matt Comstock, Ryan Haberlach, Chris Buchtel, Francisco Ramo, Justin Mathison, Shellie Moran, Stacy Dodson, Cheryl Staton, Michelle Rodriguez, Enrique Vargas, Terry Reopelle, Randy Claggett, Beverly Hatch, Kendall Walden, Ron Hall, Chuck Birdsong

Project Team: Alex Cousins (HDR), Olivia Williams (HDR), Doug Zenn (Zenn Associates), Penny Erickson (Metro), Chuck Geyer (Metro)

Summary:

Metro South Station (MSS) is well located and is well known throughout the region, especially for self-haul customers. The location along I-205 makes it popular and easy to find. Operations staff have been creative about adapting to the facility's constraints, making modifications as they can for increased storage capacity and better materials flow. The staff are justifiably proud of the work they do at MSS, operating a safe facility and providing much needed services to the region.

The most frequently cited areas of staff concern are safety issues from crossing traffic patterns, insufficient room for materials storage, sorting and transport (which are negatively affecting recovery and recycling rates), confusing signage, conflicting demands from commercial haulers and self haul customers, and the need for customer education.

On February 14, 2013, the HDR team held two discussion groups with 23 Metro and Allied staff who operate MSS to collect their feedback about what works well and what can be improved at the facility. For brevity, the notes from the two meetings have been combined in this document. The discussion notes have been broken into topical areas as follows.

EXISTING CONDITIONS:

- Facility open since 1983
- Site changes based on needs of the customers at the time
- Night work for dry waste recovery
- Lots of moving parts – facility morphs daily, even hourly
- Load types are asked by staff, then customers are assigned bays
- “Traffic 1” position at site entrance in front of scales and provides direction to open scale lanes
- Spotter in the parking lot (“Traffic 2”), then the rest are in bays, who assign the spaces:
 - Seven stalls for self-haul on floor (Bay 1). Customers dump onto floor where staff sorts through for recoverables. Waste is then pushed into the pit by a loader.
 - Bay 2 is commercial, 3-5 stalls (can also direct self-haul to Bay 2 during weekends, peak times). Commercial trucks dump over low rail directly into pit.
 - Bays 3 & 4, are commercial and self haul – recoverables and organics
- Recovery:

- Recover primary materials wood, metal, carpet, cardboard, plastic conducted by Allied staff in Bay 2. Collected in small bins and taken over to sort line.
- Sorting done at night (6 people, hand pick), into bins/trailers
- They try to keep the pile in Bay 3 but often there is not enough space
- Use push broom & magnets, sweeper for cleaning (off-hours)
- Sat./Sun. are busiest days for self-haul and household hazardous waste (HHW)
- Monday is very busy too with self haul left over from the weekend plus commercial
- Waste and wood is hauled by Walsh; Drop boxes hauled by Allied
- 25-30 transfer truck trips per day (at peak was 50)
- Staffing 12 full-time; 8 interns & temps (8 working usually; up to 12 on Saturdays)
- Scales – 4 staff in winter. 5 on Saturdays. Scalehouse C has best ergonomic design.
- Four scales and 3 scale houses – 1 in and 1 out on weekdays, 2 in and 2 out on weekends
- Two compactors for Bays 1, 2
- Bays 3,4 use top load (for wood, other)
- Scavenging is not allowed
- Recycling bins work well; out of the way enough. Curbside rather than going into the bays.
- Majority of customers are regulars who are familiar with the facility. Issues probably occur about 20% of the time, mostly with new/infrequent customers.
- Allied's contract goal is to recover 15% of dry waste. Typically get 16-18%
- Allied separates reusables (i.e. furniture) as time/space allows for St. Vincent DePaul. Hauled approximately 2/month.
- Staffing seems sufficient. Staffing numbers increase during busier times.
- Use "board" system for tracking customer load types throughout facility and assigning credits, if applicable
- Transaction count has dropped approximately 20% since 2008
- Hazmat staff on tipping floor (Bay 2) identifies and removes HHW that is placed in waste piles, then takes to HHW building.
- At HHW, Metro staff unloads materials (if accessible) and sorts out front. Full size trailer used to haul materials approx. 1/week in winter and 2/week in summer (during off-hours). Average \$5 fee charged to customers.

CHALLENGES:

Traffic:

- A lot of potential stopping/decision points once people arrive (Biggest question from customers is "Where do I go?")
- Some drive in too fast and miss HHW turn at site entrance
- Self haul customer numbers and slow unloading can take up space/time for commercial haulers
- Biggest traffic tie-ups are at the bays (1&2). Commercial outbound 2 crosses inbound and outbound public with poor visibility. Big safety concern.
- Vehicles must cross lanes to get on scales on weekdays.
- "Triangle of death" is just beyond scales where most crossings occur (both entering and exiting – haul trucks need better circulation with all of the public driving through.)
- Drivers must pay attention (commercial drivers have been asked to hit their horns upon entering)
- Queuing = backed up all the time – at any of the bays
 - Busiest on Saturday and Monday
 - Monday is a big commercial day; includes self haul leftover from weekend
- People can get confused that traffic patterns differ from weekends to weekdays. They will go to where they are used to going despite cones, directions, signs, etc. to the contrary. They get scared of the unknown or just used to a certain way.
- Confusion about two site entrances. First gate currently used only by transfer trucks and employees.
- The public/self haul customers outnumber the commercial garbage trucks by far.
- In Bays 3 & 4, the loader is in the way. Pinch points - people get too close to the wood piles, etc.
- Lots of one-way areas are being used bi-directionally

- Elderly or handicapped sometimes try to unload themselves and take a lot of time
- Convergence of Scale 4 and bypass lane is a big safety concern. People come through bypass lane too fast without looking to see if anyone is coming off scale.

Site/Tipping Buildings:

- Have converted break room into supervisors office
- No space for equipment
- Converted maintenance area
- Safety concern with mixing public and commercial organics customers
- Safety concern with rolling stock operating closely to customers
- Pit and pit dozer are expensive to maintain. Have had to replace walls inside pit
- Materials -
 - Too busy and not enough space for recoverables sorting in Bay 2
 - General space constraints. Have to move materials multiple times around site:
 - Recoverables bins – forklift over to drop boxes
 - Paint cages from HHW up near maintenance
 - Cardboard collected in multiple bays
 - Lightbulbs
 - Propane cylinders
 - Hazmat in self-haul
 - Cost (marketability); fluctuation on commodity pricing

Customer Education:

- Self haul customers get lots of questions about what's in their loads. Part of the problem because public outnumbered the garbage trucks.
- People don't clearly articulate what they are bringing in; miss HHW on the way in then have to go back
- People don't realize what's recyclable/recoverable in their own loads.
- People often don't know how to back up or manage their rig, some people don't like to listen to directions or they are on their cell phones
- Confusion in terminology between recycling and recoverable
- Green /red boards – people don't put them on the dashboard for staff to see them; They don't work well for scale house staff
- Not all staff have good communication skills; customers don't get direction, have to stop to ask what to do.
- Customers need to be educated why things must be done a certain way
- Customers tend to think all staff have the same jobs and we don't; they can get annoyed being asked the same questions by us
- Lots of questions from customers about whether their rig can fit around turns, through the canopy, etc.
- Confusion between "recyclables" and "recoverables" – recoverables aren't free

Signage:

- People can't read all the signs or the signage needs clarification. Penny noted that signage improvements will be made this year.
- "Do our signs even make a difference?"
- Signs are too busy, and too many of them. Need to be simplified.
- People get very literal when reading the signs.
- Signs probably worked better back when more people came through the facility and there were longer queues so people had more time to read the signs.
- Signs are not consistent with the traffic signs people know

Commercial Concerns:

- Not as problematic; Commercial easier to work with than the public. When busy, they might turn around and back in to Bay 1.
- Messy/slimy floor (residue actually eats the floor; has to be sealed periodically), rail gets dirty, skylights have helped a lot with visibility– used to be a cave.
- Truck wash is heavily used and not designed well. Too short. Drains out of the facility. Causes problems with Metro’s sewer discharge. Haulers feel wash is necessary at the site.

Odors:

- Some commercial loads really stink; hard to breathe
- Misting doesn’t help with the smell
- Really bad smells are usually temporary
- Many odor complaints are actually caused by offsite activities

Scale House:

- Scales are focused on self haul. Commercial and some small haulers are automated (RFID)
- Scale 3 is 80’ and the longest. Used by the big rigs. It creates a tight turn for them
- Staff get complaints when people want to move and they can’t
- People focus on the person talking to them; not everyone pays attention to the lights.
- Ergonomics not uniform or good for staff at all of the scale houses. Some visibility and sun glare challenges.

Household & Small Quantity Generator (SQG) Hazardous Waste:

- HHW not open on Sundays and much of the public expects them to be (repeated consistently during both meetings)
- People come in too fast and miss the sign. Dangerous when they try to back up. Traffic island is in the way. Or they have to go back around to unload. People have come close to getting hit.
- Drivers don’t always pay attention to the signs and arrows.
- Estimated 60/40 split between repeat and new customers. Sat. and Mon. are their busy days. 60% of HHW customers bring in other garbage (higher on Sat.).
- Customers can get annoyed when they have to go around and dump their garbage before unloading their HHW. Because HHW has different hours, it doesn’t work well for other staff.
- People want to leave their HHW loads when the collection point is not open.
- Metro policy differences cause challenges: If used oil comes to the bays, it’s no cost to leave; if it comes to HHW there is a fee. People try to game the system and hide HHW within their loads. (Opportunity to educate customers – people think they’re getting away with something and it’s cheaper to dump in the bay rather than pay the HHW fee when it’s not.)
- Hospital loads are a big issue (Sharps) when they come in via commercial loads and contain medical waste. Allied has to check and it can tie up a bay all day. Sharps are addressed through an HHW exchange program that is very popular.
- No emergency response abilities here if hot load is received.

POTENTIAL SOLUTIONS

- Idea previously considered: Have public dump everything in to one bin, take it offsite and sort it elsewhere. (Metro looked at this and determined it would be too expensive.)
- Could get rid of pit (extremely costly to run); install a flat floor
- More bins for self-sort and less recovery in the pile would be an improvement, however, takes more time. Staff want to get the public in/out quickly. Quicker for staff to sort.
- If there was space people could remove their own tarps as they're waiting in line vs. waiting until they are in the bay Inefficiencies in material handling, wish they had a baler for cardboard, wood gets handled several times
- Need more room for employee parking; available spaces have been taken for storage
- Need uniform signage with minimal text; also consider ESL issues
- Traffic lights above the scale houses (like toll booths), with an arm that lowers and raises
- HHW needs to stay with public self-haul. People don't want to drive to more than one place to dispose
- Need more storage; not enough storage in HHW area.
- HHW could use a traffic person on Saturdays
- HHW should have Sunday hours (this was a popular suggestion)
- Facility could use an additional traffic person on weekends
- Have the trucks that pick up the HHW come in through the commercial gate and swing around so they don't have to back up on to Washington St. as much. Would like more room on the backside of the building for greater access for forklifts. Removing the traffic island should help.
- Customers would like Styrofoam and carpet recycling.
- Buy an extra skidsteer for HHW transfer between buildings.
- Investing in staff education and communication skills is one way to improve efficiency of operations. Staff acknowledging customers when there are waits goes a long way.
- Everyone should get a cart; even when they say they're all trash, they still have wood, etc. There are not enough carts. There are better ways to streamline this facility. If there was more room, people could self-sort.
- Sort line does 90% of the recycling Staff see a lot of items they wish they could grab but they are busy, not enough time, not enough space, not safe, etc. Bay 2 not large enough for safe, efficient recovery. Consider sort line near pit.
- Better ingress and egress with all of the bays would be good to have. Separate in and out.
- Consider locating satellite sister sites for dropping off recyclables elsewhere. Make it convenient for people.
- Quick in/out for commercial trucks
- Traffic spotter by the scale houses on Saturdays would be very helpful
- Organics could go to a new site. Also commercial recycling and HHW.
- Commercial would probably be more easily relocated but we'd rather find a new place for the public because of the space problems
- Need space for tours and trainings; can't accommodate all of the requests received.
- Consider loadout via rail spur since site is adjacent to railroad.

Appendix D

Metro Staff Discussion Group Summary

Metro Staff: Chuck Geyer, Tom Chaimov, Bill Metzler, Scott Klag, Jennifer Erickson, Jim Quinn, Alex Cousins, Bryce Jacobson, Rob Smoot, Pete Hillman, Penny Erickson, Ken Ray

HDR Team: Alex Cousins, Doug Zenn

Date: March 5, 2013

Meeting objectives:

- Get the perspectives of non-management staff on considerations that will affect the future of the Metro South Station.
- The purpose of the meeting was to discuss issues identified by Metro internal stakeholders that should be addressed by the project.

Discussion:

- What is working well? (Can we/should we do more of this?)
 - Pete: The atmosphere is welcoming. They take care of the folks, get them through as quickly as they can. There can be long lines on weekends, though not most of the time. The scale house and contractor do a great job.
 - Bill: Agrees. It is customer-service friendly and staff is very customer service friendly and helpful.
 - Jim: It is great the public has one place for trash, recyclables and hazardous waste (one stop shop). More than half of customers come to both hazardous waste and scale house.
 - Tom: One of the best things is that people know where it is. It has easy access and close to Home Depot for dual purpose trips.
 - Jennifer: Has seen studies where people who live closer to Metro Central still prefer to go to Metro South (perception that Metro Central is harder to find).
 - Tom: The pit layout at South is very efficient for pushing waste.
 - Penny: Compaction and transport are working very well; Reload operation is very efficient. On average, we load 21, 34.25 tons loads per day, which is the highest landfill payload average that I am aware of.
- What can we improve on? (What needs to happen to do this?)
 - Rob: Can be a difficult turn out of hazardous waste into the lane for the scale house.
 - Jennifer: It's easier to get in and out of Central. The lines are shorter there and it is less imposing. Central is less confusing.
 - Rob: Top-loading out of bay 3 and bringing it up to bay 1 is an issue from a stormwater management perspective. Should bring in a compactor, though it would be very expensive to do so and we'd need to add more power.
 - Jennifer: Commercial organics!
 - Bill: How about residential organics? Penny: we have to move one item off the floor to make room for another item. It does not make for easy transportation and has material sitting on the floor for extended periods of time.
 - Chuck: Garbage is down, residential organics are up (new waste stream). Trend is more commercial organics. Wet and dry waste should stay together.

- Bill: What if residential food waste got relocated? Would that free up space? Penny: It could help but not solve long-term problems.
- Penny: Nobody ever intended for this to be a material recovery facility or do all the things it's doing now. We're doing some incredible things with the facility now. (It is a 11.5-acre site 9.5 usable.). One idea is to move self-haul to a new location with the idea that eventually commercial moves there too.
- Chuck: Replacing the site entirely is a \$50 million proposition at a minimum.
- Bryce: There is a two-story transfer station up in King County – Lakeshore. Got twice as much use out of limited amount of land. Could we go up two floors?
- Chuck: It would be cheaper to re-design than build elsewhere.
- What else should we consider? (What's stopping us from doing this, other than space?)
 - Bill: Could we move organics out and re-design the site to accommodate other needs?
 - Jennifer: You don't have self-haul of organics. It's a homogenous stream. It seems to make sense to find another location to handle commercial and residential organics. Looking to the future, there may be less municipal solid waste and more organics.
 - Bill: If you go to pyrolysis, you need more MRF capacity to get recoverable material out of the waste stream. Not sure if sending garbage to a burner changes the facility needs – you still need transfer and reload capacity.
 - Pete: the "triangle of death" plus the truck parking – we run forklifts with lots of materials, plus hauling drop boxes that tear up the pavement.
 - Jennifer: Adjoining parcel just to the southwest of the site – can we expand there that handles a separate stream from what is handled on the current Metro South site? (There is a wetland in between.) Rob: It's a small narrow site – may not be best location for handling separate material nor would Oregon City be thrilled with the prospect.
 - Penny: We need to offer a full suite of services, such as can be found at a "recovery park." Customers have said they would like to do more recycling themselves. Because of constraints on Metro South, we need to get customers in and out. We also need opportunities to put materials into other recycling markets (St. Vincent DePaul, Rebuilding Center, others).
 - Jim: There are lots of opportunities if space would afford us, we could do more with household hazardous waste.
 - Scott: This is an expensive site on a square-foot basis. If we want to do more things that take up more space but don't necessarily pay for themselves, should we be considering other less expensive locations for those services (such as household hazardous waste)? Believes the public supports having facilities close by that handle materials other than "wet stinky garbage."
 - Jennifer: You will be hard pressed to find an available industrial site in the region that is larger than 25 acres.
 - Scott: People can learn to take things elsewhere. We are handling lots of materials (electronics, paint, glass bottles, others) at different locations that the public has

grown accustomed to. The public can adapt if we direct materials to other locations. There is an opportunity to move items out of the waste stream to different locations.

- Bryce: Carpet can be recycled at the wholesaler rather than go through a dirty solid waste facility. Much of this comes from commercial sites, not homeowners, though we will get some do-it-yourself home remodelers needing this.
- Bryce: Source separated recovery will up our recycle rates. Customers would like to do more recycling at the site, particularly with metals and other source- separated materials. Same goes for building material reuse. We could get more of that material with good information and marketing. Lane County has a facility with stations where you drop off recycling and other reusable materials before you get to the scales. There's a small-scale facility in Manzanita that is more focused on reuse and recovery than on garbage. Recology has a couple facilities in the Bay Area.
- Scott asks about budget for improvements and whether we should constrain our thinking accordingly. (Chuck – there are no limits on what we can propose or consider right now.)
- Chuck: Last master facilities plan recommended moving the commercial haulers off-site.
- Jennifer: Had heard rumblings that Oregon City wants us off the property. Is that still an issue? (Chuck: the city has backed off and the city is interested in an increase in the community enhancement fee. Some of the per-ton charge – 50 cents – goes into the city's General Fund, in addition to the community enhancement grants.)
- Scott: It would be useful to see a list of major functions at the site and see links and connections between those functions.
- Anyone else we should talk to?
 - Scott: Talk with big transfer stations elsewhere (King County, for e.g.) to see to what extent that going with the extra height or with extra features has saved money
 - Chuck asks Bill if there are innovators in facilities we should talk with. Bill: Tualatin Valley Waste Recovery is new (a giant MRF) whereas Troutdale transfer station no longer does material recovery, so materials for recovery get transported to Tualatin Valley. Residential food waste reloads are popping up – Recology's Suttle Rd. facility (a MRF) and Foster Rd., though Recology has backed away temporarily from residential reload at that facility, probably due to money. Columbia Biogas may never get built and take commercial organics. Any new facility with "garbage in the name" will be difficult to site. It will be easier to re-do Metro South than try to site a new facility elsewhere.
- Next steps: Get this group back together when we are looking at all the pieces to the puzzle but before there are concrete options on the table.

Action items:

- Follow up with Scott Robinson on Council engagement:
 - Council liaisons should know who we're talking with and why on Metro South project. There will be a 1-hour meeting on March 13 with the Council liaisons, Stacey and Harrington.

- Need to connect with Councilor Collette on outreach with Oregon City officials and other stakeholders relative to Metro South
- Chuck: Get the Metro team out for another retreat at Edgefield for a follow-up discussion.
- HDR team to interview Dave White, Steve Schwab and Brian Heiberg.

Appendix E

Workshop 1a/ 1b Summaries

METRO SOUTH STATION WORKSHOP 1A NEEDS RANKING SUMMARY

August 9, 2013
9:00 – 11:00 AM

Attendees:

Metro Staff: Chuck Geyer, Penny Erickson, Elizabeth Cole, Megan Hutton (for Denise Hays), Matt Korot, Bill Metzler (for Roy Brower), Ken Ray, Paul Ehinger, Jennifer Erickson, Tom Chaimov

Project Team: Alex Cousins (HDR), Deb Frye (HDR), Doug Zenn (Zenn Associates),

Summary:

In order to develop a range of reasonable alternatives for on- and off-site improvements to Metro South Station, internal and external stakeholder feedback is being collected on the values and needs identified for the facility. Workshop 1A, a two-hour facilitated meeting, was held at Metro on August 9, 2013 to obtain staff input in a prioritization exercise. Using keypad polling as well as hard copy score sheets (two voting rounds), 10 Metro staff ranked the 12 needs based on six identified Metro values for handling the region's solid waste. This memorandum details those results.

The six Metro values are (in no particular order):

- Protecting people's health,
- Getting good value for public money,
- Keeping the commitment to highest and best use of materials,
- Being adaptable and responsive in managing materials,
- Ensuring services are accessible to all types of customers, and
- Protecting the environment

Using electronic polling in PowerPoint, staff registered their input to the following question:

"In 2020, it is (essential/helpful/unnecessary) for Metro South to [insert need] to [insert value]."

This required answering 72 individual questions (12 Needs x 6 Values).

Based on these, staff placed highest emphasis on **handling household hazardous waste, handling organics (both residential and commercial) and increasing space for sorting**. At the other end of the priorities were minimizing queue times, receiving yard debris and wood and providing source separated recyclables.

Needs ranked by Values (electronic polling – average score in parentheses):

- 1 Household Hazardous Waste (9.4)
- 2 Commercial Organics (tie 9.0)
- 3 Residential Organics (tie 9.0)
- 4 Space for Sorting (8.7)
- 5 Self Haul Waste (7.9)
- 6 Commercial Waste Deliveries (7.6)
- 7 Customer Safety (7.5)
- 8 Education/Wayfinding (7.1)
- 9 Wood Waste & Recyclables (6.7)
- 10 Minimize Queue Times (6.1)
- 11 Yard Debris & Wood (6.0)
- 12 Source Separated Recyclables (5.2)

After the voting exercises were concluded, several staff members agreed that perhaps the questions focusing entirely on Metro South are too limited and don't properly consider the facility's role in the *system*. "How should we serve the customers in the south Metro region?" could be the better question to be asking.

The group suggested some changes to pare down the needs list, removing *Safety* (since it applies to all needs), combining *Space for Sorting* with *Wood Waste and Recyclables*, combining *Residential Organics* and *Yard Debris*, pulling *Education* out as a separate category, and adding *Wayfinding* to *Minimize Queue Times*. This reduced the number of Needs from 12 to nine.

The revised Metro South Needs List is as follows:

1. Household Hazardous Waste
2. Commercial Organics
3. Residential Organics and Yard Debris
4. Self-haul Waste
5. Recoverables Sorting
6. Commercial Waste
7. Customer Education
8. Minimize Queue Times/Wayfinding
9. Source-Separated Recyclables

METRO SOUTH STATION WORKSHOP 1B NEEDS RANKING SUMMARY

Online Survey

2. What is your affiliation? (required - choose one of the following)

Affiliations						
Answer Options	Government Agency	Private Industry	Residential Self-Haul Customer	Commercial Self-Haul Customer	Other	Response Count
Select from the drop down menu	6	9	9	1	3	28

3. Metro South Station Needs - The above described needs are listed here in random order. Please tell us whether you think each need is a high, medium or low priority:

Answer Options	High	Medium	Low
Receive self-haul waste	16	8	4
Receive commercial waste	17	8	3
Receive residential organics and yard waste	16	8	3
Receive source separated commercial organics	13	9	5
Recover recyclables and divert-able materials from the mixed waste stream	20	6	1
Receive source separated recyclables	9	11	7
Receive household hazardous waste at the facility	19	7	1
Provide customer education	9	11	7
Minimize queue times	16	11	1

4. Is there a need associated with Metro South Station not on our list that you would like to add?

Answer Options	Response Count
	12

No.

Batteries

For safety and service for commercial customers you need to have a separate public drop area from commercial, i.e. trucks that dump to hand off load!

Wash rack for commercial vehicles is a high priority.

No

Provide opportunities for salvaging building supplies.

None

No

More Space to handle commodities, and organic materials.

No

No

5. Would you be interested in participating in an upcoming 2-3 hour workshop to consider specific on- and offsite improvements at Metro South Station?

Answer Options	Response Percent	Response Count
Yes	25.0%	7
No	42.9%	12
Perhaps (Ask Me Later)	32.1%	9

6. Anything else you'd like to tell us?

Answer Options	Response Count
	14

Metro South is a strategic facility of the Metro solid waste system and the long term plan needs to be resolved.

While I think this facility is a great resource to have close and convenient, its an unfortunate facility to have in the front yard of your community. I appreciate the Metro Management efforts to keep this facility as low an impact as possible. Yet its still a regional facility which Oregon City is burdened with and I think the community should see more usage proceeds (higher tipping fees) for more community enhancements.

i don't like going to the 'dump' as it's way across town but the people at the OC waste station are so terrific, it makes the trip pleasant and I come away with a smile. thanks!!

At any given day at any time my trucks can spend up to an hour in your facility do. Do people hand off loading in the commercial recyclable bays.

The site has been running very smoothly and effectively. The dump times have been good as we do not use the site on weekends except early before the public shows up.

I am familiar with operations at Central, but have only been to South once or twice and so may not be the best person to weigh in on specific on and off site improvements for that site.

No

I'm most interested in how the facility can be designed to maximize diversion of recoverable materials that can be reused.

Important to balance needs with rate impacts. For example, providing more customer education may have a cost which in turn may increase rates & ultimately could impact collection costs as well as disposal.

All of the Metro Station Needs are high priority, and worth doing. But if I had to rate any Needs as being "sacrificeable", then the Customer Education and Minimize Queue Times are (theoretically) slightly less important than the others. But only because they don't reduce "services available at the facility".

Reusable material (including lumber) sorting, education, staff training, and dedicated area

The facility was sited as a place for commercial and public customers to dispose of trash. I feel this needs to remain the focus of the site. It is not sized or designed to do it all.

Metro has played a critical role in receiving residential food scraps / yard debris and expanding to accept the commercial stream would greatly assist the expansion of those services throughout the region.

Appendix F

Workshop 2a/ 2b Summaries



METRO SOUTH STATION STAKEHOLDER WORKSHOP (WORKSHOP 2B PER HDR SCOPE) MEETING NOTES

December 12, 2013

11:00 AM – 2:00 PM

Metro, Room 301

Attendees:

Metro Staff: Chuck Geyer, Penny Erickson, Paul Ehinger

Project Team: Alex Cousins, Deb Frye, Olivia Williams, Doug Zenn

Stakeholders: Dan Blue, Dean Kampfer, Rick Winterhalter, Blaine Colvin, Shane Endicott, Amy Wilson, Dave White, Michael Leichner, Dan Walsh, Joe Connell, Theresa Koppang, Ray Kahut, Jim Winterbottom, Martin Montalvo, Bruce Walker

Overview:

Options for potential on- and off-site improvements to Metro South Station (MSS) were presented to a range of stakeholders at this facilitated, three-hour workshop on Dec. 12, 2013. Participants included commercial waste operators, government agencies, small businesses and not-for-profits. Based on input from Metro staff, a stakeholder survey and interviews, three general approaches for the facility were presented to the group:

- Operational modifications only
- Facility retrofit (onsite only)
- Facility retrofit with offsite improvements.

These notes detail the presentation and discussion that followed.

Doug Zenn called the meeting to order and stated that the purpose of the meeting was to review draft options for South Station improvements and narrow down the number of options for further development. The project team wants feedback from the group regarding the options presented. A diverse group of stakeholders was invited to ensure broad perspectives. The ultimate goal is to narrow down the options to a single facility concept for Metro Council consideration.

After a round of introductions, **Olivia Williams** with HDR reviewed the **existing facility and its operations**. MSS currently provides many more services than it was originally designed to manage. Specific site challenges include traffic congestion and flow from the mix of commercial and self-haul vehicles; inefficient material handling – the layout of the facility requires multiple material processing and handling; and inadequate space for the separation of materials and storage. Despite these challenges, MSS remains a highly popular and well-used facility, particularly for the self-haul clientele. Self-haul represents 70% of the MSS customer base but only 18% of the material received.

Alex Cousins of HDR then provided an overview of the **stakeholder outreach** that has been conducted to date. Stakeholders include commercial haulers, self-haul customers, local governments, Metro staff, operations staff from

Metro and Allied, facility neighbors, and a variety of other private and non-profit customers. Outreach methods included phone interviews, individual and small group meetings, on-site surveys and email surveys. People were asked about their frequency of facility use, the type of materials they bring, why they choose it relative to other options available, satisfaction with the services provided and whether they think anything on site should be changed.

Key takeaways from the outreach findings indicate that customers 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 choose to visit MSS even though they have home garbage and recycling services and are aware that other disposal options are available to them; they do so because they consider MSS to be convenient, better able to receive their non-curbside materials, and cheaper than other options available. Many have been coming to MSS for so long that they simply don’t consider other options.

Additional space for receiving organics, household hazardous waste (HHW) and material recovery were the top needs identified by customers and operations staff alike. Also of interest is increasing safety and operational efficiency by separating commercial and self-haul traffic and providing more consistency in how various areas within MSS are used. Drivers who visit daily/frequently prefer not to share the same space with 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.

There appears to be much interest in maintaining the MSS waste collection and recycling facility at its existing location. Opinions about what services might be relocated, if any, varied according to who was being asked. The optimum outcome might be to reconfigure the facility to better accommodate all existing uses since MSS’s services, location and convenience are appreciated by all users. The high level of overall satisfaction with the facility (approaching rates of 90%) would suggest maintaining the location and most current services of MSS.

Following a Metro staff workshop in August 2013, and a stakeholder survey in September, a list of nine prioritized **facility needs** was developed based on six established Metro values from the Solid Waste Roadmap. The needs are as follows in priority order:

1. Household Hazardous Waste
2. Commercial Organics
3. Residential Organics & Yard Debris
4. Self-Haul Waste
5. Space for sorting Recyclables & Wood Waste
6. Commercial Waste Deliveries
7. Customer Education
8. Minimize Queue Times & Provide Wayfinding
9. Source-Separated Recyclables

Deb Frye of HDR then reviewed a series of charts depicting **total tonnages** and **projected diverted materials** at MSS in 2018 and the space needs that will be required to handle them. Residential organics is projected to grow to 54% of total volume, followed by wood waste at 20% and commercial organics at 13%. There is presently very little room to separate, store and process these materials on site. Total tonnage collected (all material) is anticipated to climb from 204,628 tons in 2012 to 281,778 tons in 2019. This is based on a conservative growth estimate for the region, which planners feel is most likely.

The existing facility offers 48,800 square feet for material processing and handling. Facility space requirements show that 53,400 to 66,500 square feet of space will be needed in the future to handle expected volumes of waste, or another 4,600 to 17,700 of new space will be required. Creating this additional space with efficient traffic movement on the existing site footprint is a challenge.

Next, Olivia and Deb went over the **draft facility concepts**. Three categories were considered:

1. Operational modifications only
2. Facility retrofit (onsite only)
3. Facility retrofit with off-site improvements

For **Category 1**, none of the operational modifications-only options were deemed sufficient to accommodate future needs. There simply is not enough space on-site to reconfigure operations to gain enough efficiency in diversion and recovery to rely on that method alone. Therefore, this category was dismissed from further consideration as a standalone option.

Category 2 – Facility Retrofit

Option 1: Organics Storage adds 6,500 square feet of additional space for organics by extending Bays 3 and 4 to the north with a small building addition. Doing so would remove an existing storage shed and some trailer parking. This addition would serve residential customers. Minor traffic pattern adjustments would be needed.

Option 2: Additional Processing Line adds a 25,000 square foot addition to Bays 3 and 4 on the east side of the existing building. This would require extensive earth work and columns to support the tipping floor due to site topography. The addition essentially doubles the size of the facilities for self-haul customers and provides space for additional bays and a new processing line. The columns below the new addition would need to accommodate commercial trucks accessing the compactor in Bays 1 and 2. As with Option 1, minor traffic pattern adjustments would be needed.

Option 3: Full Build-out is an extensive site modification of the existing facility. Both Bays 3/4 and 1/2 would be connected with a new structure containing new bays, processing line and floor space for material separation and storage. The compactor would be removed and replaced with floor space in this scenario. Traffic patterns would change significantly, with transfer trailer traffic accessing the site from the existing Washington Street entrance to a new driveway to the north of the facility. Commercial traffic and self-haul customers would also be separated from each other using the existing Washington Street entrance to the south. Extensive modifications to Bays 3/4 and 1/2 would be required under this scenario.

Options 1 and 2 could be phased in to an Option 3 build-out, to maintain operation of the existing facility during construction.

Category 3 – Facility Retrofit with Offsite Improvements

Option 4: Offsite Self-Haul could be an addition to on-site facility improvements mentioned above. Under this scenario, self-haul activities would be relocated to a new, yet-to-be-determined location in the region.. Referred to as an “eco-depot,” the concept portrayed a 35,600 square foot structure for self-haul drop off, plus 3,800 square feet for recycling and additional space for HHW collection and administrative offices. This option assumes 10-15 acres of available industrial land would be needed for adequate space.

Stakeholder Questions & Comments

Project Background and Facility Concept Information:

Clarifying Questions / Comments

- **Comment:** 2009 figures show that 52 percent of self-haulers use MSS. Is that figure based on transaction or weight? **Response:** believe that is based on trip counts, but would have to double check the reports to verify.
- **Comment:** self-haul customers comprise 18 percent of tonnage received at the station. Commercial-haulers account for over 80 percent of tonnage received at the station. Customer base information is skewed a bit because Monday – Friday numbers would be higher for commercial-haulers and the weekend numbers would be higher for self-haulers. **Response:** Monday tends to be the busiest day for combined usage from self-haulers and commercial-haulers.
- **Comment:** does self-haul include contractors? **Response:** Yes – small vehicles.
- **Comment:** please give an explanation of what you mean by commercial customer. **Response:** commercial customers use the facility as a function of their business, rather than for personal reasons.
- **Comment:** Metro and regional values are being used to benchmark all Solid Waste Road Map Projects. They will be a part of Metro's guiding principles for MSS also.
- **Comment:** what is the difference between the values ranking and three stars from the online survey slide? **Response:** stars show the top three values selected during the stakeholder survey, which was a very small sample from six questions. The nine values were generated from a 2-hour discussion and polling exercise conducted with Metro.
- **Comment:** would re-usables be considered a part of space for sorting recyclables and wood waste? **Response:** Yes. That is anything you can divert, recycle or reuse.
- **Comment:** Metro does not currently take commercial organics at MSS. Tonnages shown were just a projection per Metro based on low economic growth recovery.
- **Comment:** City of Portland is pleased with the responsiveness of the Metro staff to open up facilities for the residential food scrap program. If other agencies looked to do a similar program, the current assumptions would be well short of what would actually be received. **Comment:** immediate modeling is based on current policies, which encourages commercial organics coming online before residential organics. That is what was taken into consideration for the projections provided.
- **Comment:** is residential organics coming from the City of Portland program? **Response:** there was some growth, but it would have to be a new program to cause a large increase.
- **Comment:** if new programs came online, would that reduce numbers of wet waste? **Response:** there could be more of a shift from wet waste to organics, yes.
- **Comment:** would it make more sense to build projections on high economic growth? The work being done no may not meet future needs. **Response:** Metro did not believe the other forecast of the medium and high economic growth models were viable. Metro felt that the figures derived from the low economic growth model are more realistic for what we can expect.
- **Comment:** the problem with self-haul is that it is hard to recover from and takes up a great deal of space. How does Metro's view of self-haul fit into this plan? **Response:** Every jurisdiction Metro has researched has similar issues with self-haul customers. It appears there will be a significant self haul

demand for quite some time that Metro needs to take care of. Metro needs to be able to respond to that customer base. The model being shared reflects what Metro believes needs to be addressed.

- **Comment:** Metro could look at pricing more realistically and self-haul numbers may change (decline) with education and outreach. **Response:** based on the revenue return per customer, it seems that self-haul is essentially paying their way.
- **Comment:** are they paying their way in regards to the planned improvements of the facility? **Response:** that will be something we will take a look at in the future.
- **Comment:** does Metro know the breakdown of who uses the facility? **Response:** yes, based on ZIP code, it comes from all over South Metro area and beyond. Clackamas County customers would seem to be first and it would be difficult to say after that.
- **Comment:** is the far end of the site the end of the property? Theoretically the building in Option 1 could be extended further if there was another site for trailer parking. **Response:** the site starts coming to a point which creates limited space to extend operations.
- **Comment:** the yellow addition in Option 1 is for residential only? **Response:** that is correct.
- **Comment:** any options for taking the exit out a different way? **Response:** yes, that is a part of the goal with Option 3. The self-haulers would have to re-weigh, so they would still have to use the current exit.
- **Comment:** there is limited green space; has the design team calculated what will happen with additional storm water run-off and how to accommodate that? **Response:** not at this stage. This will be considered if planning moves forward on a particular option.
- **Comment:** are you looking at the offsite station (Option 4) being in the same area? **Response:** somewhere in the general vicinity, but that has not been defined. Right now Metro is figuring out what makes sense to do. The hope would be to find a place that would be as easy to find as MSS. These options are to identify what some of the improvements might cost and the benefits they provide. Right now we are looking to figure out what types of things we can do that will make sense.

Discuss Concepts:

Option 1

- **Comment:** there are a lot of public and transfer trailers crossing each other – safety concerns in that situation. Also, it is important to have trailers parked on site for such reasons as fluctuation in waste and weather conditions.
- **Comment:** I agree that safety is an issue.
- **Comment:** it should be taken off the table, because it does not address the issues. As a piece of the solution it could work, but not as the primary option.
- **Comment:** is limited and would like to see much more robust approach. If it were coupled with a potential new site, that may work.
- **Comment:** the addition displaces something. Where would that existing storage shed be relocated to?

Option 2

- **Comment:** if we are taking out the pit, where would you store waste? There should be storage available for MSW. **Response:** MSW would be stored on the floor and removal of the pit would minimize residue.

- **Comment:** still want to have some storage available for MSW for weather and other various reasons. **Response:** the minimum amount of storage space would still be maintained for MSW.
- **Comment:** What type of constraints would pillars pose on truck access to the compactor? I do not see how that would work.
- **Response:** it depends on how far you are asking trucks to back up.
- **Comment:** this design would work if there is a compactor.
- **Comment:** I am concerned about increasing impervious area and there are storm water and water quality issues. There is also an environmentally sensitive area to the immediate south. It will probably be difficult to get any funding if that area is impacted. Ditto comments to Option 3.
- **Comment:** Options 2, 3 and 4 give great reuse and recovery options. And that should be looked at in a greater way. This is a direction we all need to go. There will be costs associated with reuse of materials and that needs to be passed on to self-haulers bringing materials. If it is separated, they could be provided reductions in their charges.
- **Comments:** I agree with previous comment.
- **Comment:** not convinced that organics separation is a good addition. It would be helpful to do a cost benefit analysis.
- **Comment:** likes Options 2 and 3 if there is room to move around.
- **Comment:** could you use a different surface – pervious pavement– that provides stormwater improvements? **Response:** it would not be used in an industrial area due to material durability and maintenance issues.
- **Comment:** Structural columns required would be expensive.
- **Comment:** There would likely not be funding available for anything that impacts environmentally sensitive areas.

Option 3

- **Comment:** every truck turning radius on these diagrams does not look like it will support truck turning. **Response:** when the options are narrowed down further, truck turning analysis would be done to accommodate the necessary turning radii.
- **Comment:** there is a need for storage space for trailers on site.
- **Comment:** any alterations to primary and secondary exits will impact traffic patterns on Washington St. Additional turn lanes would be required and that would bring concerns to Oregon City.
- **Comment:** make as much opportunity for trailers to maneuver. Feels like it maximizes the use of the facility and meets the needs.
- **Comment:** Options 3 and 4 provide the best waste diversion opportunity which should be more heavily weighted.
- **Comment:** Costs for increased diversion should be passed down to customers. Incentivize presorting materials.
- **Comment:** Make it as big as you can to maximize diversion.

Option 4

- **Comment:** I like this option.
- **Comment:** I like option 4. Would like to see how the existing MSS would be utilized/reconfigured with this Option. But I need some answers regarding proportional cost in order to really evaluate. Is

Option 3 about the same cost as Option 4 at the end of the day? **Response:** Costs have yet to be determined. Will be part of next stage of evaluation.

- **Comment:** is it even feasible politically?
- **Comment:** it makes sense to put the self-haulers at a different location. It provides greater opportunity for recovery and reuse.
- **Comment:** Metro is going to have a difficult time with the local community if they are trying to expand their footprint. If there was some option of trying to use the old landfill site that may be feasible, but using the old landfill site may not be easy because the driving range in that location has a 99-year lease that it will not likely just give up. **Question:** Would Oregon City care if Option 4 was located away from the community? **Response:** Probably not.
- **Comment:** it is important to look at county use.
- **Comment:** if the idea was campaigned around job creation, quality of life and thrift operations, siting a new facility will become part of the social fabric and people will begin to feel connected. Economic growth and environmental benefits may even help to see Metro bonds and taxes put towards the support of such an effort.
- **Comment:** I agree with the previous comment. It should be on the table and let the community get involved in the dreaming.
- **Comment:** Outside of political issues I have to deal with, I like Option 4.

Additional Conversations Regarding Options

- **Comment:** where do these options get you in meeting the needs/goals projected by 2019? **Response:** Option 3 gets Metro the closest to meeting the projected needs of 2019. Option 1 gives Metro a little more space, but does the least; however, it is also the least expensive. Option 2 helps with separation and processing, but still requires the operation of two facilities.
- **Comment:** why do you have options on the table that do not fully meet the goals? **Response:** to see how close we can get to our goals with a range of options.
- **Comment:** it would be helpful to have a percentage of goals that will be achieved with each option in relation to 2019 projections. This group is more technical, so the numbers would help. **Response:** that will be done in the next stage. This was intended to be a high level exercise with more detailed matrices and tables in the next meeting.
- **Comment:** like to see how issue of engaging commercial-haulers will be addressed. Would like to see an earned income stream incorporated with efforts. Residential-haulers can rent a vehicle that can be rented empty and dropped off loaded.
- **Comment:** People want to get in and get out quickly and safely. The site used to be a transfer station and is now a station that serves everyone. Whatever you do, it should be efficient and safe.
- **Comment:** several stakeholders in this meeting are involved in drafting a regional plan for Disaster Debris Management. What efforts does Metro have in place or is planning for an eventual disaster event? **Response:** Metro has looked at using the transfer station in the event of a disaster. Metro calculated how much could be stored and processed to get out. It really depends on what happens, but obviously this facility has its limitations. Metro is looking forward to the regional disaster plan.
- **Comment:** the committee for the disaster debris management should be made aware of plans to improve operational efficiency of this facility. **Response:** it really depends on the kind of disaster. The role for these facilities would be to provide capacity for normal waste streams because that must get back in service as soon as possible. On top of that, the facility could possibly handle some extra

waste, such as spoiled food, due to loss of power. The transfer facility could not handle a major event, though.

- **Comment:** I am on the disaster preparedness task force. The task force is asking Metro to identify sites for disaster staging.
- **Comment:** this goes back to Option 4 and goals. This is one more reason to build out the facilities.
- **Comment:** looking between Option 2 and 3, maybe there is a phase 2 ½ for the build out – something that could be phased.
- **Comment:** How about an Option 5 – have commercial traffic come in the entrance from left lane and turn Bays 3 and 4 into a transfer facility; fill the pit in Bays 1 and 2 and have that become the self-haul and recover materials? This would possibly isolate everyone by putting in a secondary exit on the north side by the ODOT right-of-way.
- **Comment:** agree that separating customers would help to ease confusion and congestion.
- **Comment:** what conversation has Metro had with ODOT to utilize ODOT right-of-way? **Response:** There have been no conversations to date. **Comment:** the trucks would not be able to make the turn if such an exit was put in place.
- **Comment:** Metro needs to keep public and commercial users on separate sides. This will create the least amount of problems.

Final Thoughts

Doug went around the table and asked each person to provide their final assessment of the options and if they have a favorite.

- **Comment:** outside of the political considerations, I'm in favor of Option 4 for public safety and efficiency. Do not believe the 2019 goals are achievable without separation of commercial and residential customers. Anything that is done on the existing property would not be a problem for us. Taking away the limited property we have available by siting a new facility would be a challenge.
- **Comment:** Option 5 was a great 'out of the box solution' because it separates commercial from residential. Not sure it could be done though. I like Option 4, but not sure if there are budget constraints.
- **Comment:** I like the sound of Option 5.
- **Comment:** not too excited about the first 3 options because they do not meet the needs. I feel Option 4 represents the ability to meet the long term capacity needs of the facility and regional customers. Would love to be involved in designing Option 4
- **Comment:** I think Option 4 presents better opportunities for separating customers.
- **Comment:** Metro is dealing with the wrong property to try to accomplish its goals. Option 4 is the best option.
- **Comment:** Option 4 gives best possibility of meeting needs and increasing recovery.
- **Comment:** I agree with the previous comment regarding Option 4 giving the best opportunity for reuse and recovery. I feel Option 3 is good also.
- **Comment:** I like Option 4, but I feel it is not politically feasible. I see the potential for Option 2 and 3, but it depends on building design and spacing. I feel Option 5 has a lot of merit too.
- **Comment:** Does Option 4 assume the existing facility becomes commercial only? **Response:** Yes. **Comment:** I feel like optimizing a site is best. I really like Option 3 for that reason. Option 4 would require a big lift on the politicians' part.
- **Response:** one of the thoughts on Option 4 is that by only dealing with small vehicles it will reduce the impact of the facility, thereby increasing the possibility of public acceptance. Everything would be

to people scale to include the building. Everything is done inside. Minimal impacts on the neighborhood.

- **Comment:** Option 4 is good but I have the same concerns mentioned regarding the likelihood of getting another local government to accept it, but it should be explored. The current site is so conveniently located; I would be surprised if Metro could find another location with the same level of convenience. However, I think it should be explored with the Metro Council to see if it is feasible. There needs to be recovery and reuse; they are a real strong driver. Option 5 was creative and addresses everyone's concerns about safety.
- **Comment:** I like Option 4. The statement regarding the new site being people scale makes it more feasible. It helps to make Option 4 more palatable. Haulers do not want the wash rack to be removed though!
- **Comment:** Going to have to find another location in order to accommodate the projected growth of the facility. That impact will have to be shared. I don't see how a new site is going to work long term without fragmenting the responsibilities.
- **Comment:** Option 4 will require more transport trucks. So it may not be getting the great safety value because transport truck and commodity mixers will have to mix with self-haulers at the new site to pick up waste.

Chuck Geyer noted that the feedback that was provided today will be digested by Metro and the team. This group will be invited back to help further refine the options that the design team comes back with. Paul added that the feedback was constructive and helpful. It will be taken into consideration.

Alex thanked everyone for coming to the workshop. The team will go to work refining the options further based on the discussion and will come back in February for another round. The goal will be to narrow down the options to a single, preferred concept that will be forwarded to the Metro Council for a decision later in the year.

Meeting adjourned at 1:50 p.m.

Appendix G

Workshop 3a/ 3b Summaries



METRO SOUTH STATION WORKSHOP #3A MEETING NOTES

February 5, 2014
9:00 AM – 11:30 AM
Metro, Room 501

Attendees:

Metro Staff: Chuck Geyer, Penny Erickson, Paul Ehinger, Bryce Jacobson, Tom Chaimov, Ken Ray, Jennifer Erikson, Courtland Benson, Bruce Philbrick, Matt Korot, Rob Smoot, Patrick Morgan, Roy Brower, Bill Metzler

Project Team: Alex Cousins, Olivia Williams, Doug Zenn

Overview:

Updated facility options for potential on- and off-site improvements to Metro South Station (MSS) were presented to Metro Staff based on feedback received from the previous Metro workshop and the subsequent workshop with external stakeholders. The objective of this meeting was to review the updated concepts, present new information (including conceptual costs), and to confirm feedback to determine which concepts and which elements of the options to present to the external stakeholders later this month.

These notes detail the presentation and discussion that followed.

Doug Zenn began the meeting and stated that the purpose of the meeting was to review updated options for the MSS improvements. The project team is looking for feedback from the group regarding the options presented including updated versions of the concepts shown at the last workshop as well as new information presented today. The project team would like to confirm which options and which elements of the concepts should be carried forward to the stakeholders at the next workshop later this month.

After a round of introductions, **Alex Cousins** of HDR then provided a brief overview of key takeaway messages from the last Metro staff workshop (2A, held Nov 20, 2013) and the external stakeholder workshop (held Dec 12, 2013). This information was incorporated into the revised facility concepts that are being presented today.

Highlights from Workshop 2A (Metro):

- Concurrence to remove 'On-site operational changes only' from further consideration
- Consider longer-term solutions and not just 'band-aid' approaches
- Tie the options to the Needs
- Moderate organics storage won't address needs
- Additional processing line up to full build out holds more promise to address needs
- Combination of options as a phased approach
- Added new concept: Offsite self-haul facility

Highlights from Stakeholder Workshop:

- Stakeholders would like to see robust approach to MSS upgrade, not limited solutions
- **"Whatever you do, it should be efficient and safe"**
- Focus on whatever best meets 2019 projections and beyond
- Sustainability and environmental sensitivity need to be considered

- Maximize the opportunities for waste diversion
- Want to see more details – e.g. costs, truck turning/parking
- Emphasize cost/benefits, economic growth and environmental benefits
- Reuse, reuse, reuse!
- Like offsite self-haul option but concerns about political acceptance
- Consider new Option 5: Bay 3/4 transfer and Bay 1/2 self-haul

Next, **Olivia Williams**, HDR, reviewed the project Needs that were identified in the first Metro workshop and reminded the group that these Needs served as a basis for the design work.

Option 1: All Functions at Grade:

Option 1 is a new concept developed since the previous workshop. It includes an approximate 42,000-square foot (sf) expansion to the existing Bay 3/4 building. Existing grade would be raised 20-25 feet to the finished floor elevation, which is estimated to be approximately 40,000 cubic yards of earthwork. Transfer trailers would use existing driveway from Washington Street and would make a circular pattern to access the east side of the building where the compactors would be located at-grade using side load style similar to what is used at Metro Central. This makes truck turning and parking much easier than some of the other options. All customers would continue to use the existing scales. Commercial trucks would exit on Washington Street and not go back over scales which would help to separate traffic types. Commercial customers would use south area of Bays 3 and 4. Self-haul would drive north to new entrance and use new building addition in Bays 3 and 4, unload, then exit back over the scales. Full separation for commercial and self-haul traffic is provided with separate scales and lanes. 16 unloading stalls are provided for self-haul. Processing and unloading requires two at-grade new, side loading compactors and conveyed material processing system. Storage for green waste is assumed in Bays 3 and 4. The pit in Bays 1 and 2 would be filled in to create a flat floor, offering flexible space for commercial organics or other needs. This concept is estimated to cost approximately \$24 million, including site work, building improvements, and equipment.

Q: Did you use the new property lines? N. corner of property was given to ODOT.

A: We used property lines based on available survey from Metro, need to check updated property lines. *(NOTE: follow up discussion with Metro confirmed that HDR should update property lines – existing survey file does not include area given to ODOT).*

Q: Has the truck wash has been moved to the south?

A: Yes.

Q: Where are the drop boxes?

A: Drop boxes could be located along the west wall of the existing Bay 3 and 4 building.

Q: How many transfer trailer parking spaces are provided?

A: 14 (this may be modified based on the property line revision).

Q: Can you talk about the flow of the drop boxes?

A: Material unloading and drop box loading to occur in Bay 3 and 4 where boxes are stored. Overhead roll up doors behind processing line allow access to bins beneath line from outside the building. Can also access from the tipping floors during off hours.

Q: Any changes to the scales?

A: Not to the customer scales, but transfer scale must be relocated. HDR assumed it can be re-used. *(NOTE: follow up discussion with Metro confirmed that HDR should assume a new trailer scale would be purchased).*

Q: What do you mean by “2019 capacity”?

A: This was discussed in more detail at previous workshops, but to summarize – the station is being conceptually design with the 2019 tonnage projections. After this time, major changes to regional waste flows could occur so projections were not considered to be accurate. We used that date for our projections and target sizing objectives

Comment: There are two organics programs – wood/yard debris and food waste. HDR noted that the drawings will be revised to clarify.

Q: Are you assuming Bays 1 and 2 could contain HHW?

A: Yes – storage of containers only, no materials. May not be used for processing.

Q: If self-haul moves offsite, does HHW go with it?

A: Yes – those two operations are assumed to remain together.

Q: Where is primary organics space? Bays 1 and 2.

A: Currently it is assumed to occur in Bay 3 and 4. However, based on feedback from today HDR will strike the green waste space in Bays 3 and 4 and show it all in Bays 1 and 2 for the stakeholder workshop.

Q: Can you recess the tipping floor to still access the existing compactor?

A: We could look at a partial recess, but with the grade change we cannot keep access to the existing compactor. This also limits vehicle movement inside the building.

Q: Can you keep MSS open through construction?

A: Yes, that is the working assumption for all options.

Q: How many self-haul customers can get into Bay 2 currently?

A: 5. This option would accommodate significantly more – estimated to be 16 stalls.

Comment: Largest concern is how to accommodate the commercial drop boxes, but believe we can resolve that challenge.

Olivia then walked through the **preliminary rating table**. The table includes various criteria that were grouped together including the **project Needs** as well as additional criteria, such as **cost, efficiency, and safety** that are important to the project. The actual project Needs are highlighted for clarity. If the group disagrees with the preliminary ratings for Option 1 by HDR, let's discuss and revise. The overall table for all three options will be reviewed relative to one another after the break. *(NOTE: See suggested revisions during the **matrix review** portion of these meeting notes and the scanned matrix edits attached).*

Revisions for Option #1:

- Check north property line
- Identify activities in Bays 1 and 2
- Change "Organics" to "Wood and Yard Debris"
- For "B" meeting, remove "Green Waste" from 3 and 4
- Consider lower recessed grade for loading
- Clarify traffic patterns after scale (separated)
- Note drop box location(s)
- Need to address drop box customer in and out (will it be fast enough)
- Talk about operations for 1, 2 and 3 (including disruptions)
 - Important which operations will be affected

Option 2: Elevated Processing Line:

Option 2 includes an approximate 27,000-sf building addition elevated over the existing transfer trailer access. This expansion would include a structural slab to extend the tipping floor on columns which would be an expensive construction method. Transfer trucks can maneuver below to access compactor. This option separates commercial and self-haul traffic; self-haul uses Bays 3 and 4 with new processing line. Commercial turns right and accesses Bays 1 and 2 – waste goes to Bay 2; organics goes to Bay 1. The pit remains in this option and separates the MSW and organics areas of the building. This option only requires purchasing one new compactor for Bays 3 and 4 (existing compactor in Bays 1 and 2 remains). Organic materials would be top loaded into trailers at grade, likely using a conveyor system. Processing line in 3 and 4 is oriented differently with two conveyors assumed. This is not necessarily a preferred option but is certainly feasible. A compactor and open top loadout port would be located under the north part of the tipping floor where the load outs for Bays 3 and 4 currently are. Drop boxes would need to be accessed from inside the building. Existing Bays 3 and 4 north entrance could be used for commercial access to drop boxes. Option 2 is estimated to cost about \$21 million.

Q: Where are the potential traffic conflicts?

A: Generally the same as the current configuration, but reduced by providing different exits for self-haul and commercial.

Q: Why not add more stalls west up to north wall in Bays 3 and 4?

A: You could but we show 17 stalls already, which are adequate for anticipated tonnages. Additionally, this would make maneuvering more challenging with exiting traffic facing one another.

Q: Do loose drop boxes have to cross residential traffic?

A: Yes, if the separate north entrance is used.

Comment: Operational concern about accessing the tipping area in Bay 2; limited to number of trucks accessing at one time. HDR to look into possibly switching proposed operations in Bays 1 and 2.

Q: Where do the transfer trailers park?

A: They would park in the same place as they do now; there are no changes to this area.

Q: Where is HHW storage space?

A: Assume same area now (near maintenance building).

Comment: This one doesn't seem to have as much flexible space for sorting re-usables.

Q: What are the column diameters?

A: Unsure currently, column spacing has been identified as 40-50' but column diameters haven't been designed yet.

Olivia then walked through the **preliminary rating table** for Option 2.

Revisions for Option #2:

- Show HHW storage area
- Identify places for reuse. Put with criteria for "E" relative top option 1, ¼ circle

Option 3: Offsite Self Haul:

No specific site has been identified for an offsite facility – this is conceptual only. HDR estimates needing an 18-acre site. Proposed costs include industrial property acquisition. At this time improvements to existing MSS, which would be re-purposed for commercial only, have not been included. The conceptual offsite self-haul option includes: source-separated recyclables area (ahead of

scales), entry scale plaza, drive-through HHW (4,000 sf building), 3,000-sf administration building, and reuse building. The concepts don't show anything specific, but there could be opportunities for public education incorporated. The site also includes a grade separated area for transfer trailer loadout and parking assuming a compactor located on a lower level of the transfer station. This cost for this option is \$36.8 million – the major difference is property acquisition.

Comment: Concerned about duplicating dry waste sorting at two different facilities; also redundancy in handling organics.

Q: Would a compactor make sense with the small tonnage?

A: It was included for costing purposes but could certainly be evaluated. *(NOTE: in a conversation with the Metro project team following the workshop, the group agreed that the compactor should be removed from Option 3.)*

Q: What is the concept for reuse facility?

A: 8,000-sf building for drop off and pickup operated by a 3rd party.

Q: Would that include retail or storage space?

A: Could be either. We'd look to the stakeholders drive that vision.

Q: What would it take to accommodate commercial drop boxes at this facility?

A: Hard to know at this point. Probably need a taller building. Note that this goes away from the current vision of separating commercial and self-haul customers.

Q: Can you make the footprint smaller than shown – there appears to be a lot of green space?

A: It's shown based on anticipated space needs. Actual layout would be confirmed once a site and desired services are determined.

Q: Would HHW customers have to loop back around to access the transfer station?

A: Yes, but could be reconfigured – this is just one concept. *(Note: There was quite a bit of discussion on the topic of how the HHW should be configured relative to the scales and transfer station for payment purposes. HDR to follow up with Metro team to confirm desired approach for Option 3).*

Q: Should we add a new category "J" and separate Political Challenges from Constructability?

A: Group agreed that this would make sense.

Comment: This option would signal Metro is willing to take on the private MRFs. This would be a big political lift for us, but popular with customers because of the one-stop shop opportunity.

Q: Does work to date address impacts to current operations and how we would address that?

A: Yes, conceptually, but no operational or staffing plan at this point.

Q: Scoring doesn't reflect that a perfect site can/cannot be found, correct?

A: Yes. We assume that a viable site could be found. Metro staff noted that Metro has industrial lands inventory but there isn't much there.

Comment: Seems like recovery opportunities for this concept would be much greater and would help offset costs. It was noted that this may help slightly, but increased diversion would be a larger driver than achieving commodity pricing for this option.

Q: This could become a regional resource that may also draw from Metro Central. Option 3 is sized to replace self-haul at South. How much more space would you need for a regional resource that would draw customers from all over the area?

A: It was discussed that MSS already receives the majority of self-haulers in the region so sizing for MSS customers is anticipated to be appropriate.

Q: Should scales be back further? Could provide better queuing.

A: Certainly could, however this is conceptual only. Adequate queuing provided between scales and transfer station.

Olivia then walked through the **preliminary rating table** for Option 3.

Revisions for Option #3:

- Remove compactor
- Confirm HHW location/configuration with Metro team
- Add costs for reuse building and improvements to existing MSS to cost estimate

Cost Comparison:

Olivia presented the **summary table of cost comparisons:**

Costs were grouped into four categories: Site acquisition (Option 3 only); Buildings; Site work; and Equipment.

Option 1 – \$24 million

Option 2 – \$21 million

Option 3 – \$37 million

Olivia noted that costs for a reuse building in Option 3 were currently assumed to be funded by others outside of this project. Metro felt that this should be added to the current cost estimate to make it comprehensive. It was requested that a column showing cost per sf be added to the table. Olivia noted that the construction cost estimates include 25% contingency, 10% design and 8% construction administration but do not include internal Metro costs or long-term O&M costs. Costs were also not included for any existing MSS building improvements for Option 3.

Comment: Metro has already budgeted for new compactors separate from this project cost. Metro would like to keep compactor costs in cost estimates for conceptual level discussions.

Q: Should we assume costs to a re-purposed MSS?

A: The group thought that that would be appropriate. HDR will add.

Q: Have projected staffing needs been identified for the various options?

A: Not yet. These kinds of considerations are what we would assume for the next phase.

Olivia noted that these costs are reasonable compared to building a brand new facility. For example, current costs for complete transfer station rebuild in Seattle and King County are currently \$50-75 million.

Comparison Matrix Review:

Recommended changes to the concept criteria ratings (also see scanned edits attached):

- Option 1. Criteria A – increase to full circle.
- Option 1. Criteria B – increase to $\frac{3}{4}$ circle assuming organics in Bays 1, 2.
- Option 2. Criteria B – reduce to $\frac{3}{4}$ circle due to access challenges for commercial drivers. Tighter turning radii and being alert to self-haul drivers.
- Option 2. Criteria E – reduce to $\frac{3}{4}$ circle.
- Strike efficiency from criteria F (duplicative from D), then review ratings for all options.

Comment: Would be important to compare the efficiencies with the disruptions to the existing operations during construction to get a true cost/benefit for Options 1 and 2. Separating constructability from political considerations should help us understand that distinction.

Comment: Ask Oregon City what would be the permit requirements or restrictions around the cut and fill for Option 1. Olivia noted that it would also be helpful to know the limitations or requirements for stormwater treatment with the environmentally sensitive area south of the site; an underground detention facility there has been assumed for costs.

Doug conducted a quick roundtable vote to determine the preferred option(s):

- Option 1: 11 votes
- Option 2: 0 votes
- Option 3: 2 votes

Final Thoughts:

- Rob: Nothing more to add.
- Ken: Looking at how we roll this out to Council. Personal preference is for Option 1. Do we present all to Council? Chuck: I expect all 4, including status quo.
- Tom: Didn't know that Metro dug the hole. We might have built Option 1 had we known.
- Patrick: Nothing additional.
- Bryce: Most excited about Option 3. Then 1 and 2 is least.
- Penny: Nothing additional.
- Matt: Nothing additional.
- Paul: Nothing additional.
- Corteland: Interested in this topic and participating further.
- Roy: Look at how this connects with other Roadmap projects and how we sequence the communications, especially how the private operators continue to exist in the system. Perhaps convey that this study gives a better understanding of capacity for flexibility so that the facility could meet a wide range of needs. Tie into the bigger picture. Option 3 opens up questions about the private sector view of this.
- Bruce: Nice work; excellent job presenting.
- Jennifer: We need to think about what we need for the long term so we're not here in 5 years having the same conversation.
- Bill: Nothing additional.

Chuck thanked everyone for the feedback that was provided today and Doug concluded the workshop.

METRO SOUTH STATION STAKEHOLDER WORKSHOP #2 (WORKSHOP #3B PER HDR SCOPE) MEETING NOTES

February 26, 2014
10:30 AM – 1:30 PM
Metro, Room 270

Attendees

Metro Staff: Chuck Geyer, Penny Erickson, Paul Ehinger, Jennifer Erikson

Stakeholders: Amy Wilson, Michael Leichner, Donny Andersen, Bruce Walker, Martin Montalvo, Ray Kahut, Blaine Colvin, Theresa Koppang, Dan Blue

Consultant Team: Alex Cousins, Olivia Williams, Doug Zenn

Overview:

Updated facility options for potential on- and off-site improvements to Metro South Station (MSS) were presented to stakeholders based on feedback received from the December 12, 2013 stakeholder workshop and the subsequent workshop with Metro staff. The objective of this meeting was to review the updated concepts, present new information (including conceptual costs), and to confirm feedback to determine which concepts and which elements of the options to advance for Metro Council consideration later this year.

These notes detail the presentation and discussion that followed.

Doug Zenn began the meeting and stated that the purpose of the meeting was to review updated options for the MSS improvements. The project team is looking for feedback from the group regarding the options and associated information presented today. The project team would like to confirm which options and which elements of the concepts should be carried forward.

After a round of introductions, **Alex Cousins** of HDR then provided a brief overview of key messages on the options that have been heard to date. This information was incorporated into the revised facility concepts that are being presented today.

Highlights from Stakeholder Workshop #1 (December 12, 2013):

- Ensure a robust approach to MSS upgrade, not limited solutions
- ***“Whatever you do, it should be efficient and safe”***
- Focus on whatever best meets 2019 projections and beyond
- Sustainability and environmental sensitivity need to be considered
 - Maximize the opportunities for waste diversion
 - Want to see more details – e.g. costs, truck turning/parking
- Emphasize cost/benefits, economic growth and environmental benefits
- Reuse, reuse, reuse!
- Like offsite self-haul option but concerns about political acceptance
- Consider new Option 5: Bay 3/4 transfer and Bay 1/2 self-haul

Next, **Olivia Williams**, HDR, reviewed the project Needs that were identified in the first Metro workshop and reminded the group that these Needs served as a basis for the design work. Olivia reminded the group that the Needs were determined by Metro based on Metro's Values and the services that the staff feels need to be provided in the South Metro region.

Option 1: All Functions at Grade:

Option 1 is a new concept developed since the previous workshop. It includes an approximate 45,000-square foot (sf) expansion to the existing Bay 3/4 building. Existing grade would be raised 20-25 feet to the finished floor elevation, which is estimated to be approximately 40,000 cubic yards of earthwork. Transfer trailers would use existing driveway from Washington Street and would make a circular loop to access the east side of the building where the compactors would be located at-grade using side load style similar to what is used at Metro Central. This makes truck turning and parking much easier than some of the other options. All customers would continue to use the existing scales. Commercial trucks would exit on Washington Street and not go back over scales which would help to separate traffic types. Commercial customers would use south area of Bays 3 and 4. Self-haul would drive north to new entrance and use new building addition in Bays 3 and 4, unload, and then exit back over the scales. Full separation for commercial and self-haul traffic is provided with separate scales and lanes. 16 unloading stalls are provided for self-haul. Processing and unloading requires two new, at-grade, side loading compactors and a conveyed material processing system. Storage for green waste is assumed in Bays 3 and 4. The pit in Bays 1 and 2 would be filled in to create a flat floor, offering flexible space for commercial organics or other needs. This concept is estimated to cost approximately \$25.3 million, including site work, building improvements, and equipment.

For all of these options, MSS would be expected to remain open in some capacity during construction. Operations could be impacted somewhat significantly for construction of this option with all the earthwork to bring the entire site to grade.

Q: Will roll-off trucks weigh in and out? (There was a concern that the trucks would have to exit the facility and return in order to weigh out)

A: Yes. Drop box trucks would need to weigh out before exiting the site.

Q: Is there a separate scale for commercial trucks?

A: Yes – separate inbound scale at the scale plaza. It is assumed for this option that the commercial trucks would use a tare system and not be required to weigh out before exiting.

Q: You show 16 bays for self-haul. How many are there now?

A: Can fit up to 10, though this is tight.

Q: This would only seem to modestly address long-term needs.

A: 16 stalls addressed the anticipated tonnages received based on the 2019 material projections used as a basis for this project.

Olivia then walked through the **preliminary rating table**. The table includes various criteria that were grouped together including the **project Needs** as well as additional criteria, such as **cost, efficiency, and safety** that are important to the project. The actual project Needs are highlighted **in orange** for clarity.

If the group disagrees with the preliminary ratings for Option 1 by HDR, we will discuss and revise. The overall table for all three options will be reviewed relative to one another after the break. (NOTE: See suggested revisions during the **matrix review** portion of these meeting notes and the scanned matrix edits attached).

Option 2: Elevated Processing Line:

Option 2 includes an approximate 27,000-sf building addition elevated over the existing transfer trailer access. This expansion would include a structural slab to extend the tipping floor on columns which would be an expensive construction method. Transfer trucks can maneuver below to access the compactor. This option separates commercial and self-haul traffic; self-haul uses Bays 3 and 4 with a new processing line. Commercial turns right and accesses Bays 1 and 2 – waste goes to Bay 2; organics goes to Bay 1. The pit remains in this option and separates the MSW and organics areas of the building. This option only requires purchasing one new compactor for Bays 3 and 4 (existing compactor in Bays 1/2 remains). Organic materials would be top loaded into trailers at grade, likely using a conveyor system. Processing line in 3 and 4 is oriented differently in an “L” shape with two conveyors assumed. This is not necessarily a preferred option but is certainly feasible. A compactor and open top load-out port would be located under the north part of the tipping floor where the load outs for Bays 3, 4 currently are. Drop boxes under the processing line would need to be accessed from inside the building. Existing Bays 3 and 4 north entrance could be used for commercial access to separate drop box area in northwest corner of building. Option 2 is estimated to cost \$18.4 million. Option 2 would likely be less impactful to customers during construction, but would make it more challenging for load out operations to occur as the columns and building expansion are being built.

This option is closest to the idea suggested at the last Stakeholder Workshop for a new Option 5: which was for Bay 3/4 dedicated to commercial traffic and Bay 1/2 dedicated to self-haul. This option would separate commercial and self-haul traffic into different areas but still requires a major structural addition to Bays 3/4 for needed capacity. Additionally, there were challenges with providing another access road for transfer trailers due to the turning radii required.

Q: Can you show where self-haul organics go, again?

A: Self-haul organics are dropped in Bay 4 and transferred to Bay 2 for load-out.

Q: Where are the loose drop boxes for commercial recovery located?

A: North corner of the self-haul flat floor in Bays 3/4.

Q: Do transfer trailers still have to cross through the entrance/exit for Bays 3/4 for self-haul?

A: Yes. the transfer trailer traffic pattern is generally the same as the current configuration.

Q: Seems like you also need to expand Bays 3/4. Is there enough space on the floor to dump and process the waste?

A: The addition essentially doubles the floor space. The sort line will run throughout the day which would continue to clear up floor space for unloading and processing.

Q: How do commercial drop box trucks (roll-offs) weigh out?

A: Drop boxes are the exception to the general traffic flow. Because they would need to access the scale plaza to weigh out, they would need to cross the central site traffic area to access the exit scales..

Olivia then walked through the **preliminary rating table** for Option 2. . (NOTE: See suggested revisions during the **matrix review** portion of these meeting notes and the scanned matrix edits attached).

Option 3: Offsite Self Haul:

This option has not changed much from what was shown previously. No specific site has been identified for an offsite facility – this is conceptual only. HDR estimates that “ideally” an 18-acre site would be needed for all services shown to be provided. Proposed costs include industrial property

acquisition. Improvements to the existing MSS, which would be re-purposed for commercial only, have been included in the total. The conceptual offsite self-haul option includes: source-separated recyclables area (ahead of scales), entry scale plaza, drive-through HHW (4,000 sf building), 3,000-sf administration building, and 8,000-sf reuse building. The concepts don't show anything specific, but there could be opportunities for public education incorporated. The site also includes a grade separated area for transfer trailer load-out and parking assuming a compactor is located on a lower level of the transfer station. This allows for complete separation of transfer trailers and customers. The cost for this option is \$38.1 million – the major difference is property acquisition.

Q: Offsite requires 18 acres? How big is the current site?

A: Approximately 11 acres.

Q: Why is this bigger than the current site?

A: Multiple reasons. There are safety considerations that a new site would need to accommodate (ex. separate driveways for customers and truck drivers). Basically, keeping more separation between the uses requires more space. Also, storm water runoff would be assumed to be treated via a surface pond on site and the reuse facility is a new element.

Q: Question for Paul – How many acres would you need just to load out the wet waste?

A: It would be similar to the Forest Grove facility. We could probably get by on 4-5 acres just to load out only.

Comment: It would be easier to move wet waste load out on a new 4-5 acre site elsewhere than to find a suitable 18 acre site.

A: Will we even have wet waste in the future? This is hard to predict.

Comment: 18 acres is the ideal site. We could work with something smaller if needed.

Q: Regarding your cost estimate, what improvements are assumed to the existing site?

A: Some building improvements, would be required as well as new equipment and scale facility upgrades are assumed to be required to convert the existing facility to a commercial-only operation.

Comment: Cost estimates include high-level capital costs only, not ongoing operations and maintenance (O&M).

Q: Can you include the O&M costs? This is needed for an apples-to-apples comparison between the options. For instance, the compactors will run less frequently at Option 3 and therefore the long-term O&M costs will be different there than at the current MSS facility.

A: O&M costs have not been included yet, but they would be considered as this project moves forward.

Q: Do your cost assumptions factor in things like your bonding capacity, tipping fees and rates?

A: No, but Metro has large reserves that can be tapped for this project. At this point we don't know how much to set aside for MSS relative to the other Roadmap projects. For truer costs, the next step for this project would be to develop a preliminary (approx 15%) design estimate on a preferred option.

Q: Does the 18-acre cost estimate presume any additional transportation improvements offsite that would be needed for better access to the facility? That will need to be considered.

A: At this point, no.

Q: Which of the costs for the three options is considered the most "risky"?

A: Perhaps Option 3 because it has the most unknowns, such as customer interest and involvement in advancing the concept further. Additionally, Options 1 and 2 also have risk associated with remodeling

an older facility. Remodels are always problematic because you never know what you might uncover that you have to deal with.

Q: What's the minimum acreage you would have to have for the ideal 18-acre option?

A: Unsure at this point. Probably 10-12 acres.

Comment: Equipment costs look to be essentially the same for Options 1 and 2.

Comment: It's just too early to guess at the O&M costs long term. It won't be cheaper.

Q: Does this assume rate increases at MSS for tonnage to pay for some of this? We (collection) would have to pass those costs along to our customers who would essentially be paying for self-haul.

A: Metro understands that.

Comment: Dave White couldn't be here today and he had definite thoughts about the subject of cost. We would direct you to his comments (included in this summary below).

From: David White [<mailto:davidw@orra.net>]
Sent: Wednesday, February 26, 2014 8:32 AM
To: Paul Ehinger; Chuck Geyer; Matt Korot
Cc: 'Mike Leichner'; dkampfer@wm.com
Subject: today's stakeholder meeting

Hello: I got up this morning and am not feeling well...and it does not seem to be getting any better. I don't think I will be able to attend today's meeting.

I had intended to ask a follow-up question regarding the following from the summary of the last workshop (at Page 5):

Comment: Metro could look at pricing more realistically and self-haul numbers may change (decline) with education and outreach.

Response: Based on the revenue return per customer, it seems that self-haul is essentially paying their way.

Comment: Are they paying their way in regards to the planned improvements of the facility?

Response: That will be something we will take a look at in the future.

The statement that it "seems that self-haul is essentially paying their way" is weak and unconvincing and apparently not based upon any real evidence. When I asked about this at the meeting (and again recently at the Metro SWAC) I was asking specifically if self-haul is paying the true COST of the service. If not, they should be. If Metro believes this service should be subsidized, that decision should be fully and openly discussed. I would like accurate and complete data on this included in the report to the Metro Council.

Sorry I likely will not be at the meeting. Thanks,

*Dave White
Regional Representative
Oregon Refuse & Recycling Association
(503) 690-3143*

Olivia then walked through the **preliminary rating table** for Option 3.

Cost Comparison:

Olivia presented the **summary table of cost comparisons:**

Costs were grouped into four categories: Site acquisition (Option 3 only); Buildings; Site work; and Equipment.

Total for Option 1 – \$25.3 million

Option 2 – \$18.4 million

Option 3 - \$38.1 million

Olivia noted that these costs are reasonable compared to building a brand new facility. Current costs for complete transfer station rebuild in Seattle and King County are currently \$50-75 million.

Comparison Matrix Review:

Recommended changes to the concept criteria ratings (also see scanned edits attached):

- Option 1. Criteria A – Decrease to a ¼ circle. Seems overrated. It doesn't do as much education as a brand new building.
- Option 2. Criteria F - Decrease to a ½ circle because traffic crossing patterns aren't greatly improved.
- Option 3. Criteria H – Increase to a ½ circle. A likely site for Option 3 would be a brownfield site, which would greatly increase the sustainability of the facility.

Comment: Consider re-labeling Criteria H (Sustainability) for greater clarity. It should include more than just infrastructure/capital development costs. Other "sustainable" aspects of the facility are equity, education and efficiency.

Response: We will note the wider impacts of that criterion.

Square Footage Comparison:

Olivia noted the total square footage of the new construction only for the facilities in the three options presented:

- Option 1: 45,300 sq. ft.
- Option 2: 27,000 sq. ft.
- Option 3: 58,500 sq. ft. (transfer station is 43,000 sq. ft.)

Final Thoughts:

- **Theresa:** #3 is a different animal and should be considered on its own. Comparing the others, I prefer #1. Having done this before in King County, we might as well go for 45,000 sq. ft. I like #3 but I'm also realistic. I think we should give it an empty circle for feasibility. I'm also still a bit fuzzy on what happens to South Station if #3 happens.
- **Dan:** #3 is a heavy lift, I agree. But it's another resource Metro would have in its suite of services 20 years out. It should get considered. There are not many large industrial plots remaining and it will be that much harder to find one in the future. I also think #3 is as presented is overbuilt and over-priced. Two smaller sites – one in East County and one in West County – could be identified and phased in over the years and that might be more feasible. Of the others, I prefer #1. I think we should get rid of Option #2.
- **Blaine:** Throw out #2. #3 is great if we lived in a perfect world. #1 is best. It has the lowest cost per square foot but still lets you do what you need to do. It is most feasible and cost efficient.
- **Ray:** I'm glad I don't have to make this decision. I don't like #2. The column placement and trailer maneuvering will be a huge challenge. I like both #1 and #3. I suggest we add a scale near the exit for Option 1 to capture drop box flow and eliminate crossing traffic.

- **Bruce:** I have learned a lot today. Excited to move ahead. I like #1 too. Same comments as the others. Regarding #3, 18-acres sounds really large. You should consider a couple smaller sites. The location on I-205 is a huge plus – I'm not as optimistic about access for future sites. You should at least look at 2 sites. Look at long-term costs – commercial operations at MSS could be greatly improved with #3.
- **Mike:** I agree with Ray. Too bad Walsh isn't here. #1 is good – like everything at the same level because it provides more flexibility in and out of the buildings. #3 is a costly move. I'm not sure about the cost feasibility in 10 years.
- **Martin:** The cost per square foot for #2 exceeds even #3. For that reason, #2 is non-viable to me. #1 achieves your long term goals. The community has accepted the location and Oregon City can live with it. Some view it as an asset. #3 would be great in a perfect world. There are too many intangibles. It could only work if there was a brownfield and 18 acres is way too big. Remaining ancillary questions need to be answered before determining a site. What is the minimum size? Finally, let's talk about the hosting fees!
- **Donny:** It's #1. Real simple. You're wishing about #3 and #2 is out. Trucks backing up are a bad thing. Finally, what about the property adjacent to the south – have you looked at that?
- **James:** #1 is best for operations. It will work well.
- **Amy:** #3 is such a great opportunity but I too have joined the "dark side" in feeling it's not really feasible. I agree with Theresa. I prefer it if a realistic site is identified before you go to Council. If not, I prefer #1. Stop considering #2. Does the pit get filled in with Option 3? (**A:** Not sure, but probably not).

Martin requested a 30-day advance notice to get on the Oregon City Council agenda after the Metro Council presentation.

Chuck thanked everyone for the feedback that was provided today and Doug concluded the workshop.

Appendix H

Preliminary Site Options



Extend building
65' x 100' = 6,500 SF
for SH back in unloading
stalls -- adds 6-7 stalls



Organics on one
side, Loose Drop
Box in center



Extend building
60' x 75' = 4,500 SF
for Residential and
Commercial Organics



Extend building
25' x 175' = 4,375 SF for
SH back in unloading
stalls - adds 12 stalls

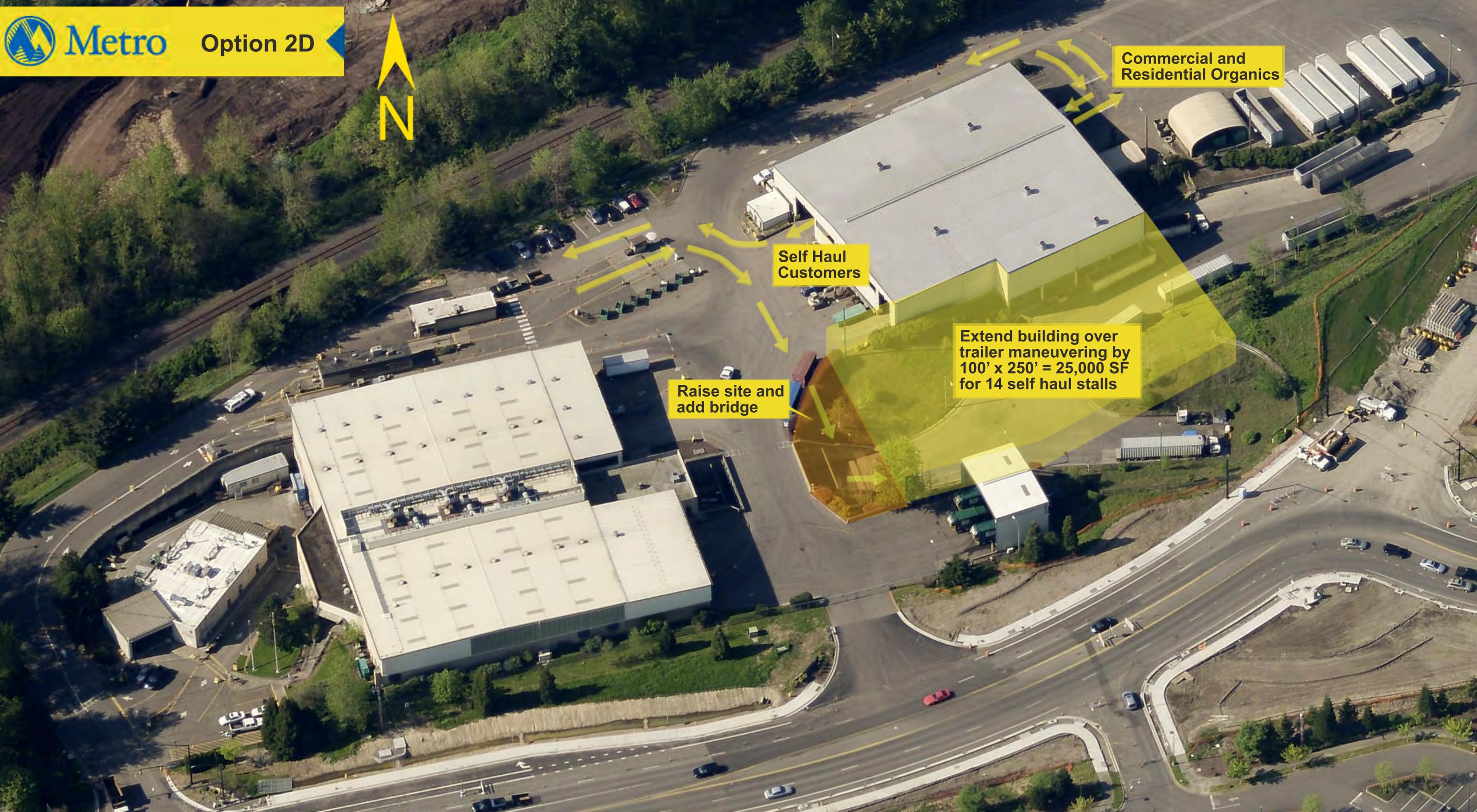


Commercial and Residential Organics

Self Haul Customers

Raise site and add bridge

Extend building over trailer maneuvering by 100' x 250' = 25,000 SF for 14 self haul stalls





Transfer Trailer Access,
Commercial Exit

Add new 180'x355' Building
for Self Haul customers,
Loose Roll-offs, and Organics

Demolish Existing
Building

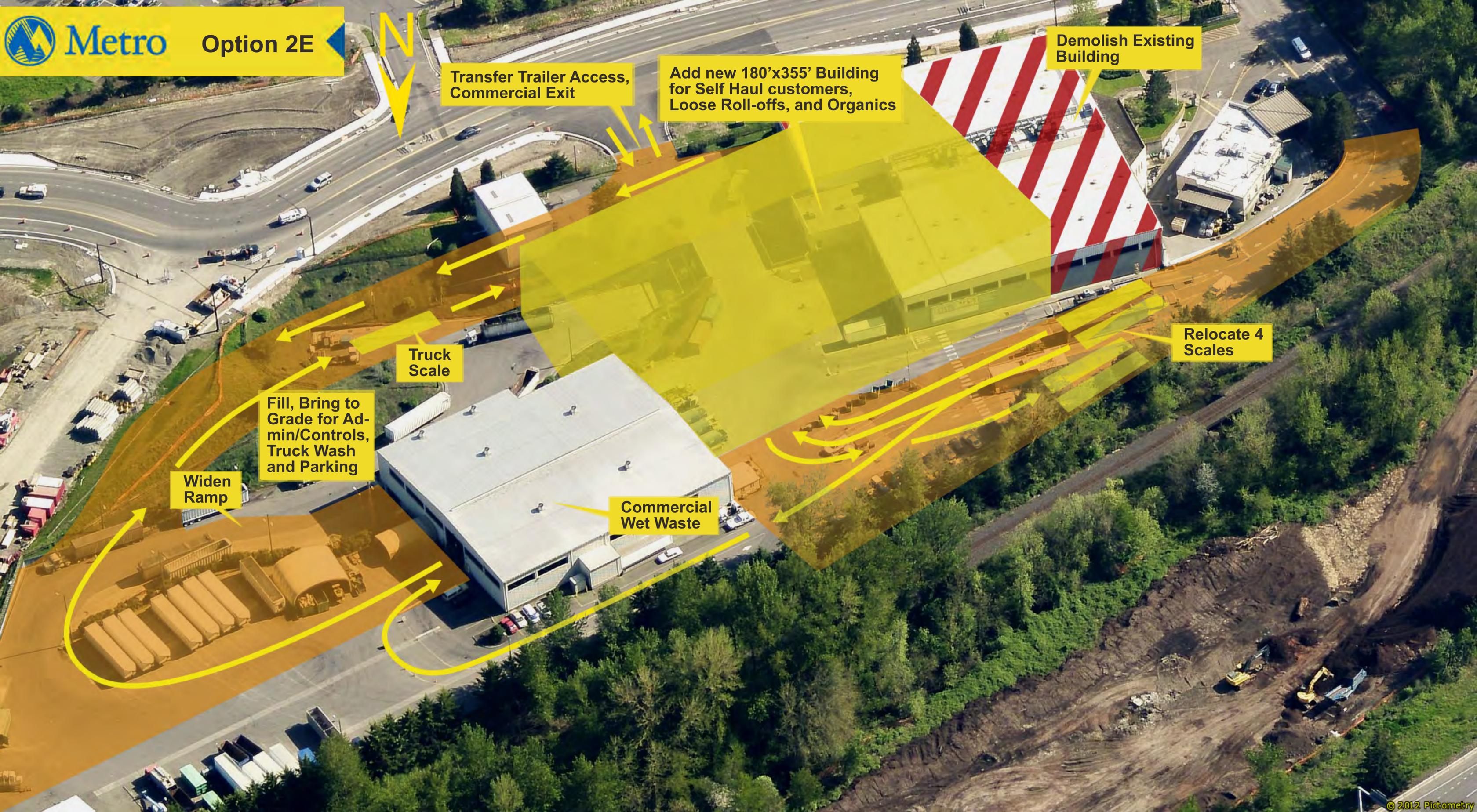
Relocate 4
Scales

Truck
Scale

Fill, Bring to
Grade for Ad-
min/Controls,
Truck Wash
and Parking

Widen
Ramp

Commercial
Wet Waste





Add Recycling Depot,
change to underground
stormwater management



Appendix I

Site Plans and Renderings



Organics & Yard Debris

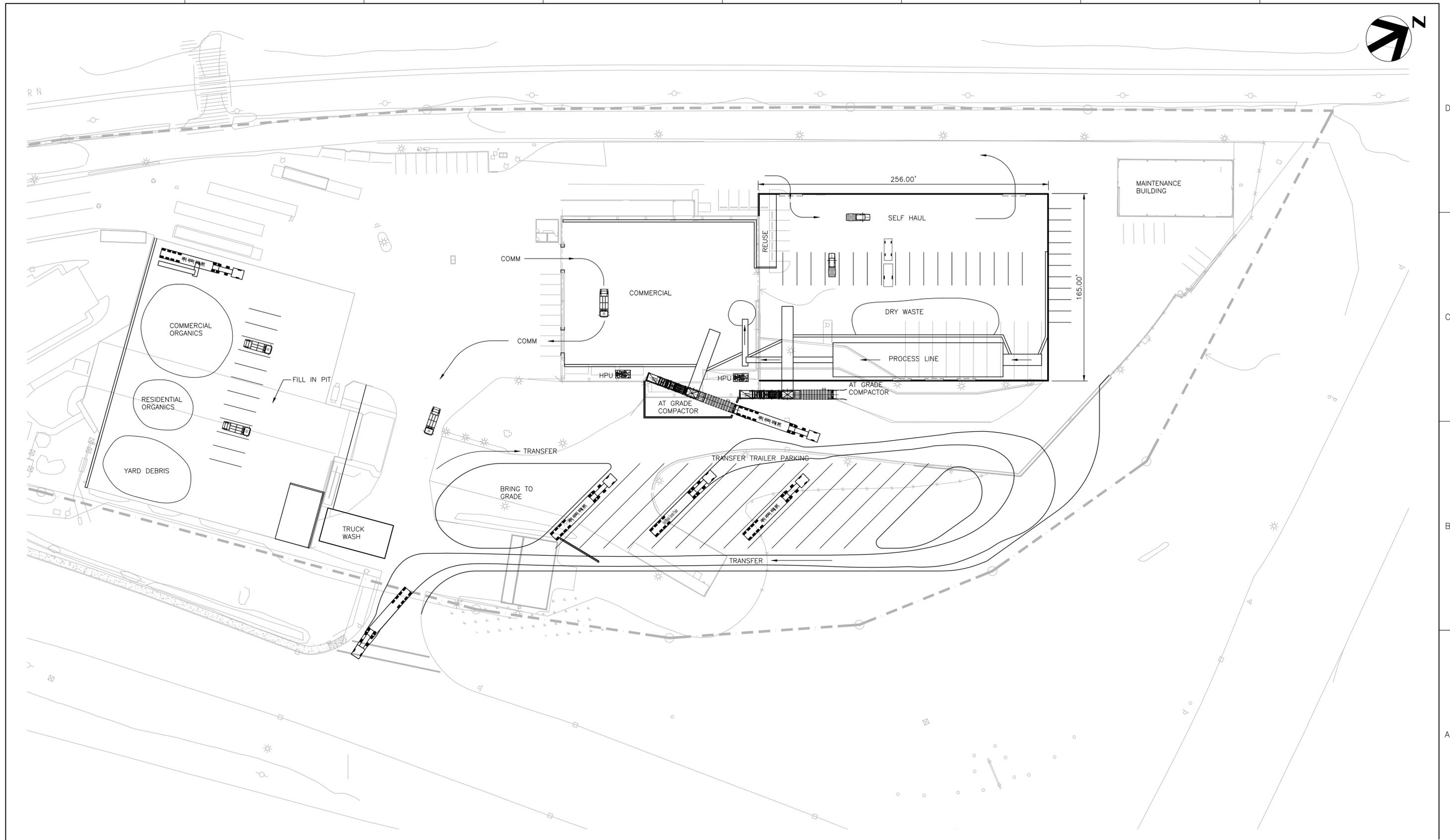
Bring to Grade

Transfer Trailer Parking

Commercial MSW

Processing Line

Self Haul



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
PROJECT NUMBER	00000000197327




Metro
 ASSESS ADEQUACY OF SERVICES FOR THE
 METRO SOUTH STATION SERVICES AREA

**OPTION 1
ALL FUNCTIONS AT GRADE
SITE PLAN**

0 1" 2"

FILENAME OPT_1_-_SP.dwg
SCALE 1" = 40'

SHEET
OPT 1 -SP



Processing Line

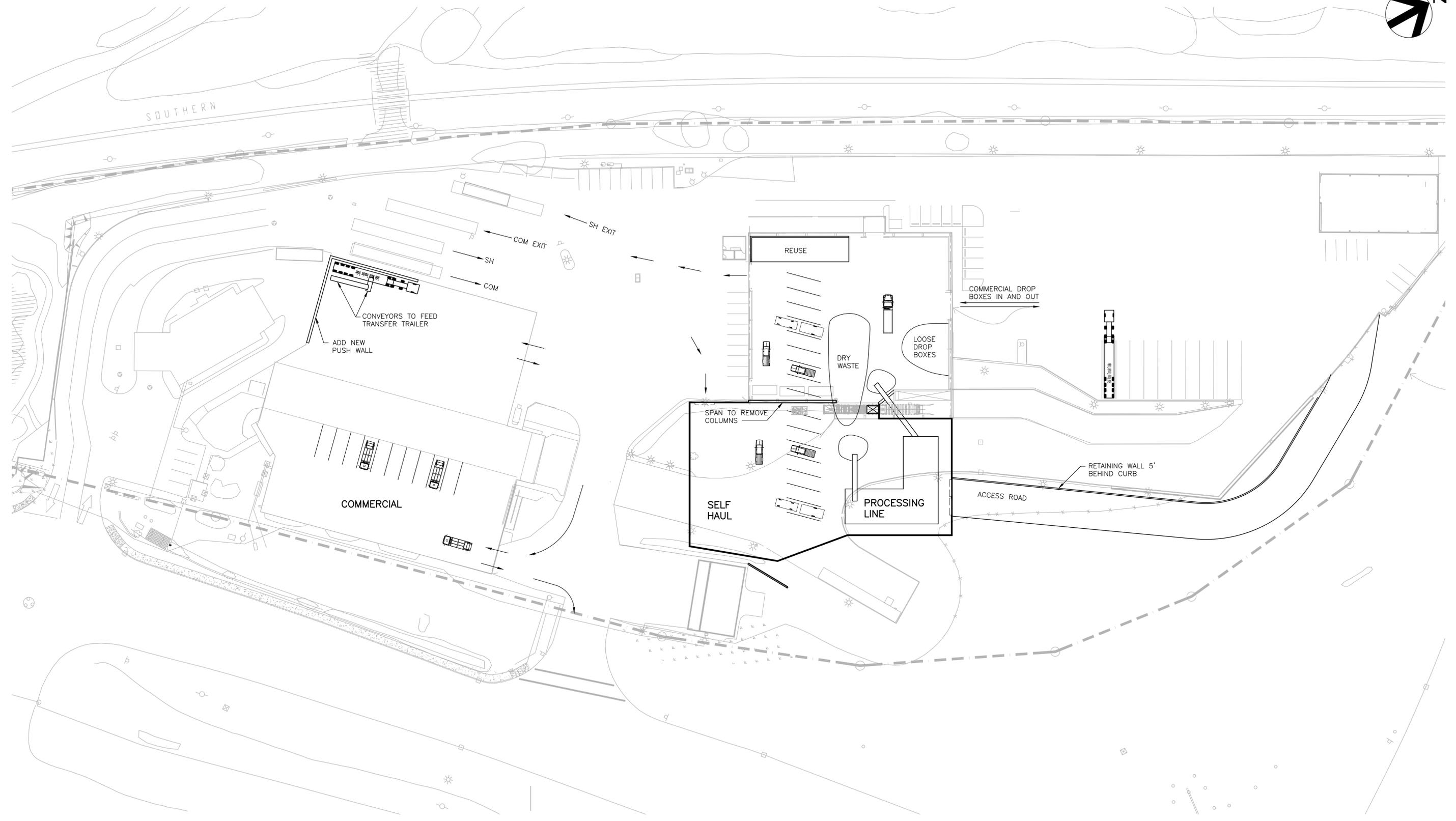
Commercial MSW

Commercial Organics & Yard Debris

Self Haul Traffic

Self Haul





ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
PROJECT NUMBER	00000000197327



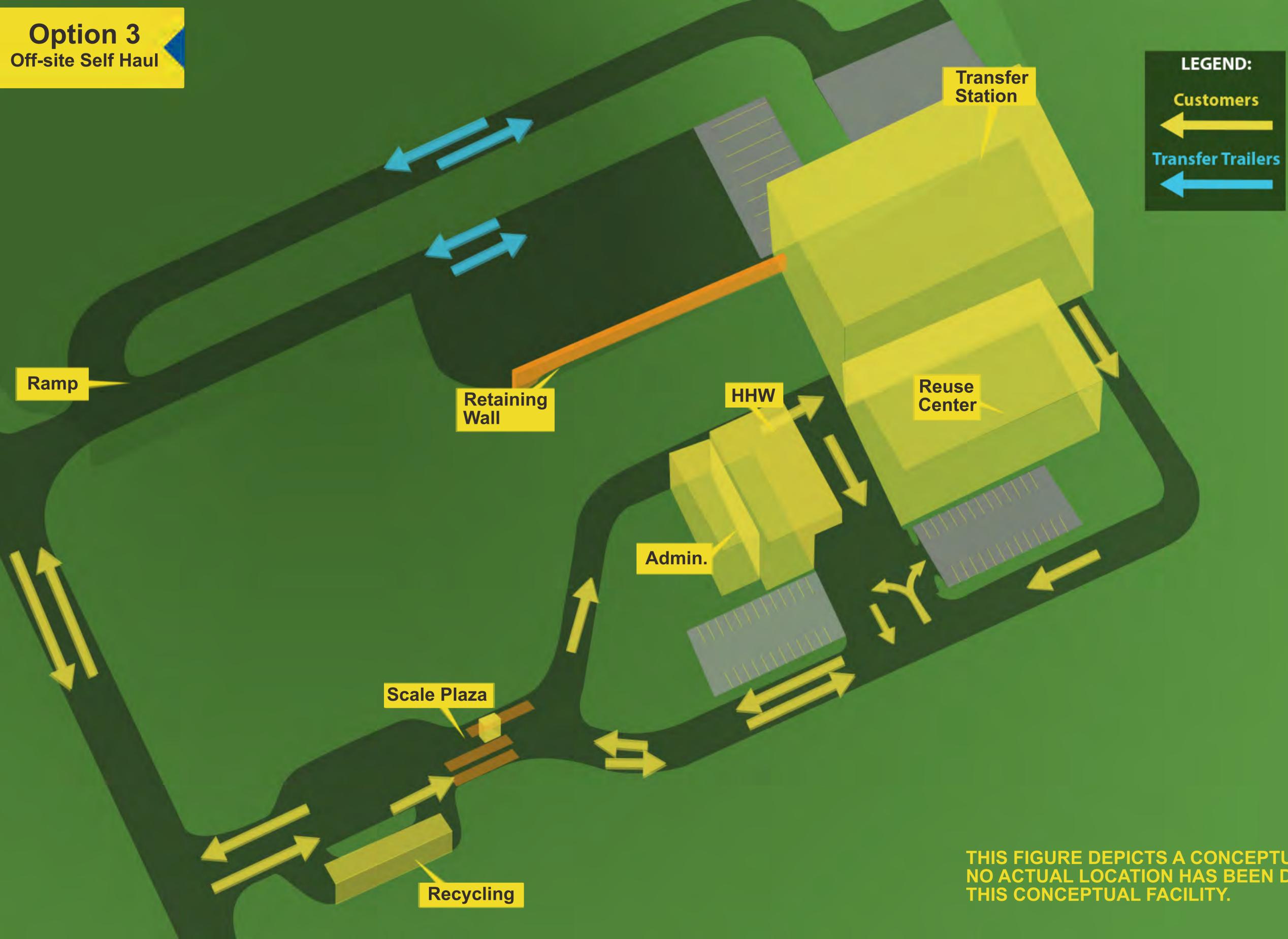
Metro

ASSESS ADEQUACY OF SERVICES FOR THE METRO SOUTH STATION SERVICES AREA

**OPTION 2
ELEVATED PROCESSING LINE
SITE PLAN**

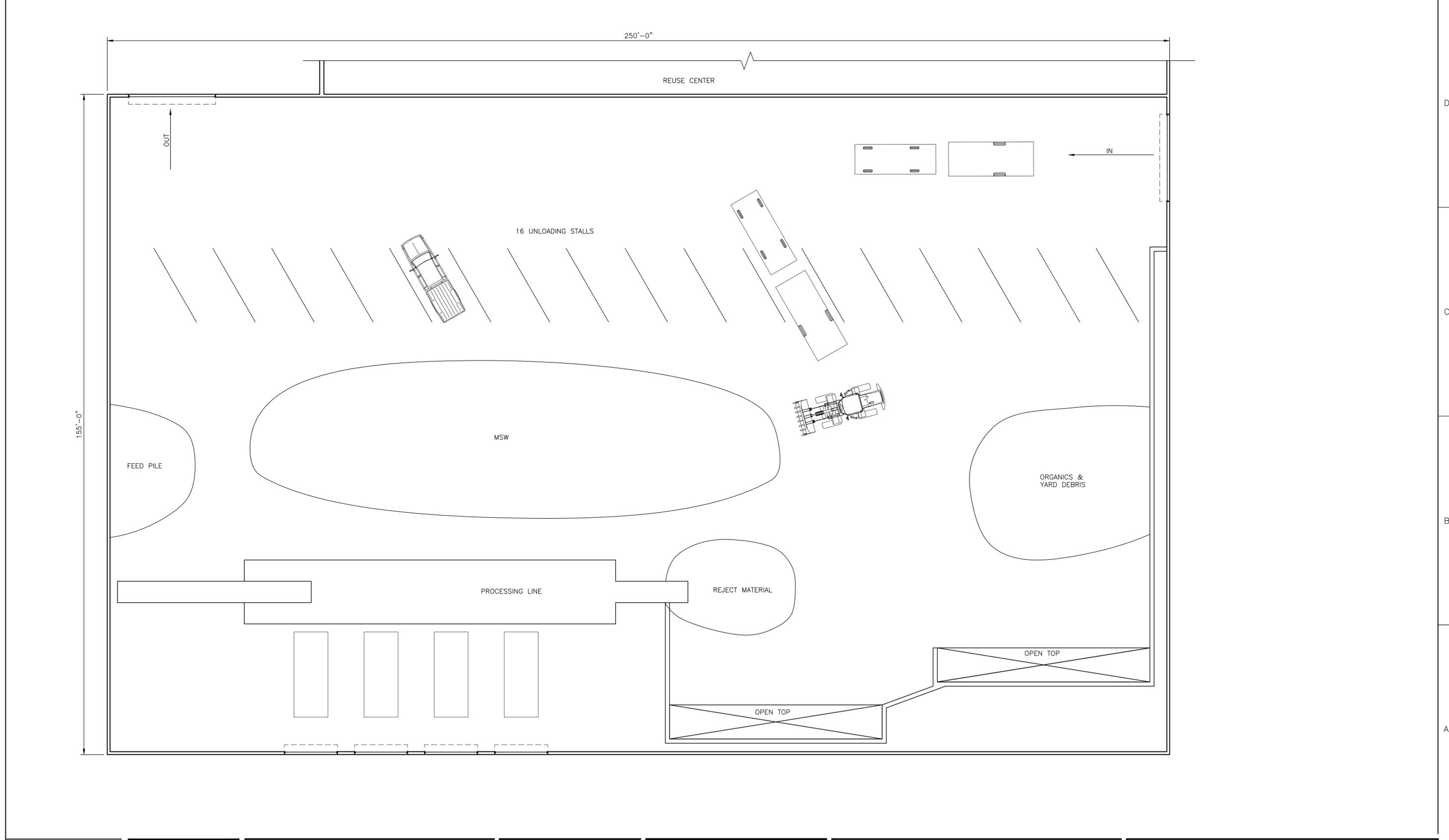


FILENAME	OPT_2_-_SP.dwg	SHEET
SCALE	1" = 40'	OPT 2 - SP



THIS FIGURE DEPICTS A CONCEPTUAL LAYOUT ONLY. NO ACTUAL LOCATION HAS BEEN DETERMINED FOR THIS CONCEPTUAL FACILITY.

1 2 3 4 5 6 7 8



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
PROJECT NUMBER	00000000197327



ASSESS ADEQUACY OF SERVICES FOR THE METRO SOUTH STATION SERVICES AREA

**OPTION 3
OFFSITE SELF HAUL
FLOOR PLAN**

0 1" 2"

FILENAME	OPT_3_-_FP.dwg	SHEET
SCALE	3/32" = 1'-0"	OPT 3 - FP

C:\working\esca\0093326\OPT_3_-_FP.dwg, 2/22/2014 2:17:56 PM, MEH/ken

Appendix J

Preliminary Cost Information

Engineering Opinion of Probable Construction Cost Option 1 - All Facilities at Grade

ITEM DESCRIPTION	Cost
Property Acquisition	N/A
Buildings	\$13,320,000
Site Work	\$4,230,000
Equipment	\$7,700,000
TOTAL	\$25,250,000

ITEM DESCRIPTION	QUANTITY	UNIT	ESTIMATED COST	
			UNIT PRICE	TOTAL PRICE
Buildings				
1 Concrete Apron	33	CY	\$350	\$11,700
2 Concrete Foundations	232	CY	\$600	\$139,400
3 Fill in Pit in Bays 1 & 2	4,815	CY	\$15	\$72,200
3a Cover Pit with floor slab	463	CY	\$350	\$162,000
4 Concrete Tipping Floor	2,097	CY	\$350	\$734,000
5 Concrete Tunnel Exterior Wall	0	CY	\$350	\$0
6 Pre-engineered Building - Transfer Station	45,300	SF	\$100	\$4,530,000
7 Mechanical & Fire Protection	45,300	SF	\$15	\$679,500
8 Electrical	45,300	SF	\$15	\$679,500
9 Steel Liners around infeed conveyors	2	LS	\$50,000	\$100,000
19 Concrete Push Walls (12' tall by 1' thick)	356	CY	\$600	\$213,300
11 Roll up Doors	6	EA	\$3,000	\$18,000
12 Temporary Sheet wall (when installing building and 1 compactor)	7,500	SF	\$25	\$187,500
13 Modify Existing Building - remove columns, add beams	1	LS	\$500,000	\$500,000
14 Pre-engineered Building for Truck Wash	2,400	SF	\$75	\$180,000
Site Work				
15 Clearing and Grubbing	2.66	AC	\$5,000	\$13,300
16 Earthwork/Fill in "site"	42000.00	CY	\$20	\$840,000
17 Pavement Demo	3.00	AC	\$8,000	\$24,000
18 Structural Fill under new buildings	2347	CY	\$12	\$28,200
19 Concrete Roadways/Parking	10667	SY	\$55	\$586,700
20 Retaining Walls	0	CY	\$15.00	\$0
21 Utilities	1	LS	\$100,000	\$100,000
22 Surveying	1	LS	\$35,000	\$35,000
23 Geotech	1	LS	\$50,000	\$50,000
24 Erosion Control/Storms	1	LS	\$350,000	\$350,000
25 Yard Lighting	10	EA	\$4,200	\$42,000
26 Site Fencing	2,800	LF	\$45	\$126,000
27 Site Landscaping	1	LS	\$40,000	\$40,000
28 Signage	1	LS	\$50,000	\$50,000
29 Site Phasing and Logistics Premium	1	LS	\$150,000	\$150,000
30 Temporary Shoring Wall	2,000	SF	\$85	\$170,000
Equipment				
31 Compactor Infeed Conveyors	160	LF	\$2,000	\$320,000
32 Compactors	2	EA	\$1,200,000	\$2,400,000
33 Organics Infeed Conveyors	175	LF	\$2,000	\$350,000
34 Material Sort Line	1	LS	\$1,500,000	\$1,500,000
35 Trailer Scale	1	LS	\$75,000	\$75,000
36 Truck Wash Equipment	1	LS	\$100,000	\$100,000

BASE COST	\$15,557,300
Contingency (25%)	\$3,889,325
Contractor's Fee (10%)	\$1,944,662.50
SUBTOTAL	\$21,391,288
Engineering & Design (10%)	\$2,139,129
Construction Administration (8%)	\$1,711,303
TOTAL	\$25,241,719

Engineering Opinion of Probable Construction Cost Option 2 - Elevated Process Line

ITEM DESCRIPTION	Cost
Property Acquisition	N/A
Buildings	\$11,660,000
Site Work	\$1,750,000
Equipment	\$5,030,000
TOTAL	\$18,440,000

			ESTIMATED COST	
ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
Buildings				
1 Concrete Apron	100	CY	\$350	\$35,000
2 Concrete Foundations	183	CY	\$600	\$110,000
3 Fill in behind walls	2,407	CY	\$25	\$60,200
4 Tipping Floor	1,245	CY	\$550	\$684,600
5 Tunnel Walls + around new compactor	956	CY	\$600	\$573,300
6 Pre-engineered Building	26,855	SF	\$100	\$2,685,500
7 Mechanical & Fire Protection	47,309	SF	\$15	\$709,600
8 Electrical	47,309	SF	\$15	\$709,600
9 Steel Hoppers/Chutes/Liners	2	LS	\$100,000	\$200,000
10 Push Walls (12' tall by 1' wide)	178	CY	\$600	\$106,700
11 Elevated Slab on Columns	1,245	CY	\$650	\$809,000
12 Modify Existing Building, remove columns add beams	1	LS	\$500,000	\$500,000
Site Work				
13 Clearing and Grubbing	2	AC	\$15,000	\$30,000
14 Earthwork/Structural Fill	5556	CY	\$15	\$83,300
15 Concrete Roadways/Parking	822	SY	\$55	\$45,200
16 Retaining Walls	111	CY	\$350.00	\$38,900
17 Utilities	1	LS	\$100,000	\$100,000
18 Surveying	1	LS	\$35,000	\$35,000
19 Erosion Control/Storms	1	LS	\$350,000	\$350,000
20 Yard Lighting	6	EA	\$4,200	\$25,200
21 Site Fencing	2,800	LF	\$45	\$126,000
22 Site Landscaping	1	LS	\$40,000	\$40,000
23 Signage	1	LS	\$50,000	\$50,000
24 Site Phasing and Logistics Premium	1	LS	\$150,000	\$150,000
Equipment				
25 Organics Infeed Conveyors	175	LF	\$2,000	\$350,000
26 Compactors	1	EA	\$1,200,000	\$1,200,000
27 Material Sort Line	1	LS	\$1,500,000	\$1,500,000
28 Trailer Scale	1	LS	\$50,000	\$50,000
29 Truck Wash	1	LS	\$0	\$0
			SUBTOTAL	\$11,357,100
			Contingency (25%)	\$2,839,275
			Contractor's Fee (10%)	\$1,419,638
			SUBTOTAL	\$15,616,013
			Engineering & Design (10%)	\$1,561,601
			Construction Administration (8%)	\$1,249,281
			TOTAL	\$18,426,895

**Engineering Opinion of Probable Construction Cost
Option 3 - Offsite Self Haul (12 acres)**

ITEM DESCRIPTION	Cost
Property Acquisition	\$3,136,320
Buildings	\$18,200,000
Site Work	\$3,850,000
Equipment	\$2,560,000
TOTAL	\$27,746,320

ITEM DESCRIPTION			ESTIMATED COST	
	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
Buildings				
1				
2	270	CY	\$600	\$162,000
3	33	CY	\$350	\$11,700
4	1,794	CY	\$350	\$627,900
5	118	CY	\$600	\$70,600
6	42,750	SF	\$100	\$4,275,000
7	42,750	SF	\$15	\$641,300
8	42,750	SF	\$15	\$641,300
9	2	LS	\$100,000	\$200,000
10	178	CY	\$600	\$106,700
11	3,000	SF	\$125	\$375,000
12	4,000	SF	\$150	\$600,000
13	2,500	SF	\$75	\$187,500
14	20,000	SF	\$50	\$1,000,000
15	741	CY	\$350	\$259,259
16	800	SF	\$440	\$352,000
17	3	EA	\$75,000	\$225,000
18	73,870	SF	\$20	\$1,477,400
Site Work				
19	2.4	AC	\$30,000	\$72,000
20	9.6	AC	\$15,000	\$144,000
21	9,877	CY	\$15	\$148,100
22	16,742	SY	\$80	\$1,339,300
23	3,200	SF	\$34.00	\$108,800
24	1	LS	\$175,000	\$175,000
25	1	LS	\$25,000	\$25,000
26	1	LS	\$75,000	\$75,000
27	10	EA	\$4,200	\$42,000
28	2,900	LF	\$45	\$130,500
29	1	LS	\$60,000	\$60,000
30	1	LS	\$50,000	\$50,000
Equipment				
31	0	LF	\$2,000	\$0
32	0	EA	\$1,200,000	\$0
33	1	LS	\$1,500,000	\$1,500,000
34	1	LS	\$75,000	\$75,000
			SUBTOTAL	\$15,157,359
			Contingency (25%)	\$3,789,340
			Contractor's Fee (10%)	\$1,894,670
			SUBTOTAL	\$20,841,369
			Engineering & Design (10%)	\$2,084,137
			Construction Administration (8%)	\$1,667,310
			TOTAL	\$24,592,815

Estimated Annual O&M Comparison

Oregon Metro South Station Assessment Project

Date: 7/30/2014
 By: O. Williams
 Checked: D. Frye

Labor, equipment, and other costs shown in this table represent the estimated difference ("delta") from existing MSS operations.

ITEM	RATE ^{2,3}		EXISTING ⁴	OPTION 1: All Functions At Grade		OPTION 2: Elevated Processing Line		OPTION 3: ⁵ Offsite Self-Haul				Notes		
				Change from Existing	Cost Delta	Change from Existing	Cost Delta	Change from Existing	New Site Cost Delta	Change from Existing	Existing Site Cost Delta		Total Change from Existing (new and existing)	Cost Delta Total (new and existing)
LABOR				<i>(FTE⁶)</i>		<i>(FTE)</i>		<i>(FTE, Existing site - converted to commercial only)</i>						
Supervisor	\$ 48.00	/hr	2	0	\$ -	0	\$ -	1.5	\$ 149,760	0	\$ -	1.5	\$ 149,760	
Spotter	\$ 17.00	/hr	12	3	\$ 106,080	4	\$ 141,440	6	\$ 212,160	-6	\$ (212,160)	0	\$ -	
Sorter	\$ 17.00	/hr	6	12	\$ 424,320	6	\$ 212,160	8	\$ 282,880	0	\$ -	8	\$ 282,880	Option 1 assumed to include some pre-sort on floor
Mechanic	\$ 35.00	/hr	3	1	\$ 72,800	1	\$ 72,800	1	\$ 72,800	0	\$ -	1	\$ 72,800	
Compactor Operator	\$ 26.00	/hr	1.5	1	\$ 54,080	1	\$ 54,080	0	\$ -	0	\$ -	0	\$ -	
Equipment Operator	\$ 26.00	/hr	4.5	0	\$ -	2	\$ 108,160	4	\$ 216,320	-1	\$ (54,080)	3	\$ 162,240	
Recycling	\$ 24.00	/hr	0	0	\$ -	0	\$ -	1	\$ 49,920	0	\$ -	1	\$ 49,920	One FEL provided for Option 3 recycling located in front of scales
Hazardous Waste Tech ⁷	\$ 24.00	/hr	2	0	\$ -	0	\$ -	2	\$ 99,840	-1	\$ (49,920)	1	\$ 49,920	
Goat Operator	\$ 26.00	/hr	1	0	\$ -	1	\$ 54,080	1	\$ 54,080	0	\$ -	1	\$ 54,080	
Scale Attendant	\$ 32.00	/hr	6.25	0	\$ -	0	\$ -	-1.25	\$ (83,200)	1.5	\$ 99,840	0.25	\$ 16,640	
Litter Patrol	\$ 17.00	/hr	1	0	\$ -	0	\$ -	1	\$ 35,360	0	\$ -	1	\$ 35,360	
Equipment O&M														
Loader	\$ 10.00	/hr	3	1	\$ 17,950	1	\$ 17,950	2	\$ 35,900	0	\$ -	2	\$ 35,900	Est 5 hrs/day each
Compactors	\$ 20,000	/year	2	0	\$ -	1	\$ 20,000	0	\$ -	0	\$ -	0	\$ -	Based on recent evaluation for SSI compactors
Processing Line	\$ 20,000	/year	1	1	\$ 20,000	1	\$ 20,000	1	\$ 20,000	0	\$ -	1	\$ 20,000	Processing lines assumed to see higher use and are more robust than existing line
Track Hoe	\$ 10.00	/hr	2	0	\$ -	0	\$ -	1	\$ 28,720	0	\$ 0	1	\$ 28,720	Est 8 hrs/day each
Shuttle Goat	\$ 5.00	/hr	2	0	\$ -	1	\$ 5,385	1	\$ 5,385	0	\$ -	1	\$ 5,385	Est 3 hrs/day each
Fork Truck	\$ 5.00	/hr	1	0	\$ -	0	\$ -	1	\$ 3,590	0	\$ -	1	\$ 3,590	Est 2 hrs/day each
Sweeper	\$ 5.00	/hr	1	0	\$ -	0	\$ -	0.5	\$ 3,590	-0.5	\$ (3,590)	0	\$ -	Est 4 hrs/day at each site
Skid Steer	\$ 5.00	/hr	1	0	\$ -	0	\$ -	1	\$ 5,385	0	\$ -	1	\$ 5,385	Est 3 hrs/day at each site
Mobile Equipment Fuel	\$ 48.00	/day/equip	13	2	\$ 34,464	4	\$ 68,928	7.5	\$ 129,240	-0.5	\$ (8,616)	7	\$ 120,624	Assumes \$4/gall, 3 gall/hr per equip, est 4 hrs/day each
Facilities, Other				Quantity		Quantity		Quantity						
General Maintenance	1.5	% of capital cost		1	\$ 291,699	1	\$ 212,946	1	\$ 309,354	0	\$ -	1	\$ 309,354	Costs are for capital cost of building addition or new buildings
Insurance (Liability, Fire, Etc.)	0.5	% of capital cost		1	\$ 97,233	1	\$ 70,982	1	\$ 103,118	0	\$ -	1	\$ 103,118	
Electricity	\$ 0.07	/kwh	530,000	250,000	\$ 17,500	200,000	\$ 14,000	370,000	\$ 25,900	0	\$ -	370,000	\$ 25,900	60 tph - compactor; estimated overall elec usage
Water	\$ 3.40	/748 gall	1929	1172	\$ 3,985	719	\$ 2,445	1,145	\$ 3,895	0	\$ -	1,145	\$ 3,895	10 gpd/FTE domestic + 5 gpd/100sf washdown
Storm	\$ 4.00	/1000 sf/month	479	0	\$ -	0	\$ -	523	\$ 25,091	0	\$ -	523	\$ 25,091	Assumes 12 acre site for Option 3
Sanitary	\$ 9.00	/748 gall	1929	1172	\$ 10,547	719	\$ 6,471	1,145	\$ 10,309	0	\$ -	1145	\$ 10,309	
				Subtotal	\$ 1,151,000	\$ 1,082,000		\$ 1,799,000		\$ (229,000)		\$ 1,570,000		
				Contingency⁸ (15%)	\$ 173,000	\$ 162,000		\$ 270,000		\$ (34,000)		\$ 236,000		
				TOTAL	\$ 1,324,000	\$ 1,244,000		\$ 2,069,000		\$ (263,000)		\$ 1,806,000		

NOTES:

- Quantities listed are number above current operations.
- 2014 labor rates as provided by or estimated based on hourly rates and take-home pay ranges provided by Metro and Republic for MSS contract.
- Equipment usage estimated based on typical transfer station operation.
- Existing O&M costs are intended to capture major items and may not match actual O&M for the facility.
- Option 3 shows delta for new site and existing site modified for commercial use only. Right hand Option 3 columns show total for both facilities.
- FTE = Full time equivalencies; labor costs based on FTE working 2080 hours per year
- Hazardous waste tech is located at transfer building and is separate from the employees at the Household Hazardous Waste (HHW) facility onsite. HHW operations are assumed to continue in some capacity at MSS regardless of the option.
- Contingency intended to cover miscellaneous O&M costs.

Appendix K

Preassessment Report



Preassessment Report

Metro South Station

MAY 2012



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INTRODUCTION

Metro South Station (“MSS”) is a widely used regional transfer station located in Oregon City, Oregon. Opened in 1983, MSS was originally envisioned as a transfer facility and an adjunct to a mass burn facility that was never built. It’s footprint, layout, and design did not contemplate material recovery, which is now a standard part of waste collection and transfer systems.

Today, MSS serves a variety of clientele. On any given day, commercial waste hauling trucks enter the facility alongside pick-up trucks driven by self-haulers. Commercial waste is dumped into a large pit, where it is compacted and shipped to the Columbia Ridge Landfill. Self-haul debris is emptied and source-separated to the best extent possible in several flat floor buildings. MSS also accepts recycled material and hazardous waste.

To adapt to the demands of material recovery, MSS has undergone considerable transformation since it was first constructed. The talented team that runs the facility, backed by the supporting staff at Metro headquarters, have done a yeoman’s job over the past 29 years adapting the facility to a changing waste stream. These adaptations, however, have created a number of important issues that confront MSS today.

- Capacity limitations, exacerbated by self-help clientele (self-haul makes up approximately 70% of the trips made to MSS but generates only 25% of the waste delivered to the facility)
- Traffic and circulation issues, both on the site and the surrounding area
- Materials recovery rates below targets
- Questions about how the facility fits within the Oregon City Town Center project
- The expiration of the 2019 waste disposal contract, which could result in the reconfiguration of the disposal system and the station’s role
- The ability of MSS to serve an increasingly-complex waste stream moving into the future

MSS provides a vital service to the Portland area. Its customer base is loyal, it generates ongoing revenue for neighborhood improvement projects, and it’s been part of the community for nearly three decades. However, given the demands placed on it, and drawing on a number of studies and surveys of its services and customers, MSS is struggling to meet the current needs of its customer base. Since Metro’s mandate includes long-term planning, there are also concerns about how MSS will meet future needs if it is already a capacity today.

To determine what changes should be made to MSS, if any, the Metro South Waste Roadmap Project is conducting an 18-24 month project titled, “Assess Adequacy of Services for the Metro South Station Service Area.” Chuck Geyer leads the project with team members Penny Erikson, Bryce Jacobson, Josh Naramore, and Matt Tracy.

The project has three stages.

1. A review of the solid waste transfer system in the Metro South service area.
2. A comprehensive needs assessment of MSS customers
3. The development of options to meet any unmet needs.

As part of the project, Red Fender Consulting was hired to provide the parameters of a process to scope the needs assessment.

NEEDS ASSESSMENT METHODOLOGY

The project team is following generally accepted protocols for a needs assessment project. These include:

- Preassessment. Determine the overall scope and plan for the assessment project to ensure that the implementation goes smoothly and generates justifiable information to make decisions.
- Assessment. The purpose of this phase is to implement the assessment in a methodologically sound manner that generates justifiable information to make decisions.
- Postassessment. The purpose of this phase is to share the information from the assessment, guide decisions, and support the implementation of recommendations.¹

Preassessment covers the following steps:

- Establish the overall scope of the needs assessment project
- Identify the primary performance issues
- Define the data requirements
- Create a management plan
- Validate the management plan

The last step—validation of the management plan—will take place after a review of this document and a final team meeting.

STEP 1: ESTABLISH THE PROJECT SCOPE

The project team took a two-step approach to establish the project scope.

Step 1: Lay the initial groundwork.

- Set the project goals
 - Establish a comprehensive overview of current services, customer types (and various subsets of these classifications), and state of sustainable practices in the Metro South service area
 - Determine the variables or factors to examine through the needs assessment
 - Identify customers' current and future service needs and gaps in the Metro South service area
 - Using performance criteria, develop a list of policy options to satisfy customer needs. Rank the options and develop conceptual designs and preliminary costs for recommended approaches
- Set the parameters for the way in which the project will be conducted

¹ Watkins, Ryan, West Meiers, Maurya, and Visser, Yusura Laila, *A Guide to Assessing Needs* (Washington, DC: The World Bank, 2012) 50-53.

- An open and transparent process
- Reach out to all parties who may have a say in MSS' future
- Have MSS provide the highest level of service to the community
- Balance all of the components—fiscal prudence, customer needs, environmental concerns, and a safe work environment, to name a few—in order to find the highest and best use of the facility
- Draft an initial list of MSS primary performance issues
- Determine which individuals and organizations should be contacted during the preassessment and assessment period

The team accomplished these tasks with two meetings held in early April, 2012.

Step 2: Review the groundwork with a wider audience of preassessment individuals to ensure accuracy and completeness.

The project originally anticipated a workshop to review the initial groundwork. After the groundwork phase was complete, however, it became clear that a more targeted approach to the review process would be more effective. Three meetings were held in April and May 2012 with following individuals:

- Meeting 1: Rick Winterhalter
- Meeting 2: Bob McMillan, Jim Quinn, Ken Ray, Rob Smoot, Scott Klag, Jen High, Vicki Kolberg and Bruce Philbrick
- Meeting 3: Dan Cooper and Andy Cotugno

Each of the three meetings had a similar format: review and discuss the initial performance issue list developed by the project team, adjust the issue priority rankings (if necessary), and review the assessment participant list on a by-issue basis for accuracy and completeness.

STEP 2: IDENTIFY THE PRIMARY PERFORMANCE ISSUES

ISSUE CRITERIA

The chief purpose of the preassessment phase was to identify the performance issues confronting MSS in advance of writing the RFP. The team used the following accomplish this.

- Establish the list of performance issues
- Prioritize each item on the list
- Determine the tools that would be needed to perform the needs assessment for that issue (e.g., intercept survey, one-on-one meeting)
- Determine who should be contacted to gather the needs assessment data

PERFORMANCE ISSUE CATEGORIES

At the conclusion of the preassessment meetings, nineteen distinct performance issues were identified (see Appendix A for a complete list). They can be broken 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
 - From picking wet waste to reuse or sale of recovered material, MSS is struggling to meet its current recovery goals. There are also concerns on how to achieve higher recovery targets slated for the future
- Impact of self-haul customers on the facility workflow
 - MSS is very popular with self-haul clientele. 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 MSS, there are still safety concerns surrounding the amount of vehicular traffic entering, circulating within, and exiting the facility
- Psychological and attitudinal factors
 - From generational beliefs about the role of a transfer station to public opinion about recycling and garbage services, the team identified several intangible issues that are having an effect on the MSS operation
- Political and financial considerations
 - For example, the role of the facility vis-à-vis Oregon City Regional Center planning projects

There was a central question that ran through the preassessment team's work. As mentioned earlier, MSS was originally designed to be a waste transfer facility. Material recovery was introduced later and has grown to such an extent that it is now a primary site activity.

With a goal of 50% dry waste recovery (more than triple what the facility can currently achieve), and with the myriad of performance issues facing the facility, how can MSS do a better job with material recovery without moving recovery activity offsite as the last major MSS study suggested?

This question is central to the MSS needs assessment project and must thread its way through the recommendations as the project data is analyzed.

PRIORITY RANKING

The team assigned a four-tiered ranking scale to each of the nineteen performance issues. The tally is shown below.

- Urgent 2
- High 6
- Medium..... 6
- Low 5

STEP 3: DEFINE THE DATA REQUIREMENTS

DATA SOURCES

The team identified a broad range of stakeholders who should have input on the MSS Needs Assessment project. These are summarized in the list below.

- Self-haulers
- Commercial haulers
- Local governments
- Vertically-integrated businesses owners and other businesses
- General public
- Key individuals with specific political, situational, or regulatory knowledge
- Other facilities that have experienced similar issues as MSS
- Other transfer station operators
- MSS employees

DATA COLLECTION TOOLS

As the team reviewed the performance issues, they developed a list of data collection tools that could be used during the needs assessment project. Not only can these tools solicit information for the needs assessment (inbound data), they can also be used to communicate information about the project to interested parties (outbound data).

- Intercept survey
- Public opinion survey
- Small group interviews
- One-on-one interviews
- E-newsletters
- Metro website
- Presentation (outreach)
- Postcard notification

- Promotion and Advertising
- Open Houses
- Review of scalehouse-generated transactional data

STEP 4: CREATE A MANAGEMENT PLAN

Introduction

The final part of the preassessment process is to offer a management plan that can be used to evaluate and subsequently monitor proposals to conduct the assessment

Goals

The goals of the needs assessment project are the same as listed above:

- Establish a comprehensive overview of current services, customer types (and various subsets of these classifications), and state of sustainable practices in the Metro South service area
- Determine the variables or factors to examine through the needs assessment
- Identify customers' current and future service needs and gaps in the Metro South service area
- Using performance criteria, develop a list of policy options to satisfy customer' needs. Rank the options and develop conceptual designs and preliminary costs for recommended approaches

Timeline (Exhibit B)

- Complete scoping phase (May, 2012)
- Draft and review the RFP, select the vendor, and award the contract (August, 2012)
- Perform the Needs Assessment (August – June, 2013)
 - Develop questionnaires
 - Perform two intercept studies
 - Traffic/process flow analysis
 - Material market analysis
 - Gap analysis
- Options Development (April – November, 2013)
 - Identify and prioritize possible solutions
 - Develop conceptual details
 - Ranking & option refinement
 - Associated policy review
 - Final ranking/recommendations
- Presentation to Metro Council
 - December 26, 2013

OTHER CONSIDERATIONS

Assessment Team Members, Roles, & Responsibilities

A team that will manage the needs assessment project must be defined, formed, and empowered.

Budget

A budget for the needs assessment project needs to be set and approved.

Selection of Needs Assessment Vendor

The assessment team, as part of the RFP drafting process, must decide the criteria on which the needs assessment vendor will be selected.

APPENDIX A
List of MSS Performance Issues

#	PRIORITY	ISSUE	SPEAK WITH?
1	Urgent	Space constrained (storage, queuing)	Commercial haulers Other cities/other systems w/satellites Self-haulers
2	High	Can't offer every service customers want with current layout (e.g., commercial organics recovery)	Users of facility Local governments Regulators who are cleaning up illegal dump sites Central and private customers (ECR)
3	High	Maximizing material recovery can't be accommodated	Transfer station operators End market representatives
4	Medium	No ability to quickly drop off recycling without going through scale house and entering facility	Other facilities that have had a self-haul problem (and how their solutions have worked) Self-haul customer
5	Low	Need more space to generate LEED recovery reports by load (waste characterization; spot weights and measure studies)	LEED folks Other operators
6	Low	Fraudulent out-of-area drop activity may be encouraged by lack of service cost and/or convenience	Regulators
7	Medium	Not enough emphasis on reuse (encourage reuse at the site)	Markets Contractors Rebuilding center West Vancouver Lane County
8	Medium	Safety concerns because of the unsignalized intersection	Commercial haulers (who use bypass lane) Oregon City (how they decide when back gate is a safety issue)
9	High	Concerns about facility in/out traffic flow	Customers Emergency responders
10	High	On-site transportation safety (e.g., trailer movement)	Penny Operator Customers Transporters
11	Medium	Inability to pick the wet waste	Operators
12	Low	General attitude that recycling is "free" affects consumer behavior	
13	Low	Generational thinking ("Grandpa went to the dump, so I have to.")	Survey
14	Medium	Facility not properly marketed	Competitors

#	PRIORITY	ISSUE	SPEAK WITH?
15	Medium	Private facilities have competitive advantage compared to MSS (they won't take self-haul customers)	1. Doug Anderson
16	High	2019 disposal contract expiration-could it bankrupt MSS	1. Doug Anderson
17	Low	Impact of rising fuel costs vis-à-vis usage patterns	1. Bill Stein
18	High	Impacts of development in surrounding area (town center developments, Max Green Line)	1. OR City (Tony Kunkel) 2. County 3. County Land Use Transportation Planners 4. ODOT 5. John Williams 6. Megan Gibb 7. Fred Bruening
19	Urgent	How to improve material recovery now that it's become a primary activity (and who are we recovering for?)	1. Mapcore

APPENDIX B Management Plan Timeline

