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Impact of Self-Haul Customers on the Regional Solid Waste System

January 2009

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Contents

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People places. Open spaces.

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

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Project sponsor:

Paul Ehinger, Director of solid waste operations, parks and environmental services

Introduction

The solid waste system in the Metro region has undergone significant change in the past two decades. The amount of recycling in the region has increased, but so has the amount of waste generated. More national waste companies have entered the local market and many of them are vertically integrated, owning and operating both hauling operations and recycling and waste transfer facilities. Metro and local governments have raised the bar on recycling requirements for solid waste facilities, and many facilities have retrofitted or changed their operations to meet higher recovery goals. Metro also recently legislated new mandates for regional business recycling and construction/demolition and other dry waste processing.

And lastly – the subject of this report – solid waste facilities are serving increasing numbers of customers, and many of these customers – even though they subscribe to curbside collection service – are occasionally choosing to "self-haul" their waste to a regional facility.

The ever-increasing number of self-haul customers is putting pressure on the region's solid waste system. Approximately 70% of the trips made to regional solid waste facilities are made by customers who are self-hauling their own waste, and yet these loads account for only 25% of the total solid waste tonnage delivered to these facilities. The facilities available for these self-haul customers are generally better equipped to handle commercial haulers bringing in large amounts of waste in fewer loads.

The impacts of self-haul are especially acute at Metro's transfer stations, which serve the majority of the region's self-haul customers. Metro's two facilities serve approximately 260,000 self-haul customers a year. Small loads delivered in small vehicles impact traffic, safety and the ability to recover material – particularly at Metro South Station in Oregon City.

Based on past trends, self-haul loads are projected to continue to increase, intensifying the pressures on facility operations, customer service and material recovery.

Report purpose

This report examines the impact of self-haul customers on the regional solid waste system and then explores options for delivering service in the most cost-effective, equitable and environmentally sound manner. Information and data used in this report has been drawn from Metro surveys and facility transaction records.

This report includes:

- an overview of the regional solid waste system
- self-haul customer characteristics
- disposal options available to self-haul customers
- historical trends and future projections
- impact of self-haul on customer service, operations and material recovery
- options for serving self-haul customers in the future.

As the agency responsible for solid waste system planning in the tri-county metropolitan area, Metro strives to ensure that the system is managed in an efficient and effective manner. This report is intended to aid the Metro Council, local governments and the solid waste community in discussing options for addressing the impact of self-haul customers on the regional solid waste system.

Section One - The regional solid waste system

System overview

The Metro region – encompassing 25 cities in the three counties in the Portland, Oregon metropolitan area – is served by a solid waste system that is made up of a mix of privately and publicly owned facilities that transfer, recycle or landfill solid waste (see Figure 1). The purpose of this system is to process, recover and dispose of all the waste that the region produces in the most efficient, economical and environmentally sound manner possible.

Some of the facilities in the system handle mixed waste, others act as processors for specific kinds of materials that can be recycled or composted, and others are landfills licensed to accept only certain types of waste.

Innovation and the opportunity for private entry into the system has helped create a diverse array of facilities that can respond to rapidly changing technologies, fluctuating market conditions, and local conditions and needs. For example, in recent years, rising disposal costs and robust recycling markets have motivated privately owned companies in the Metro region to create or expand dry waste processing facilities.

Components of the regional solid waste system

Waste transfer facilities

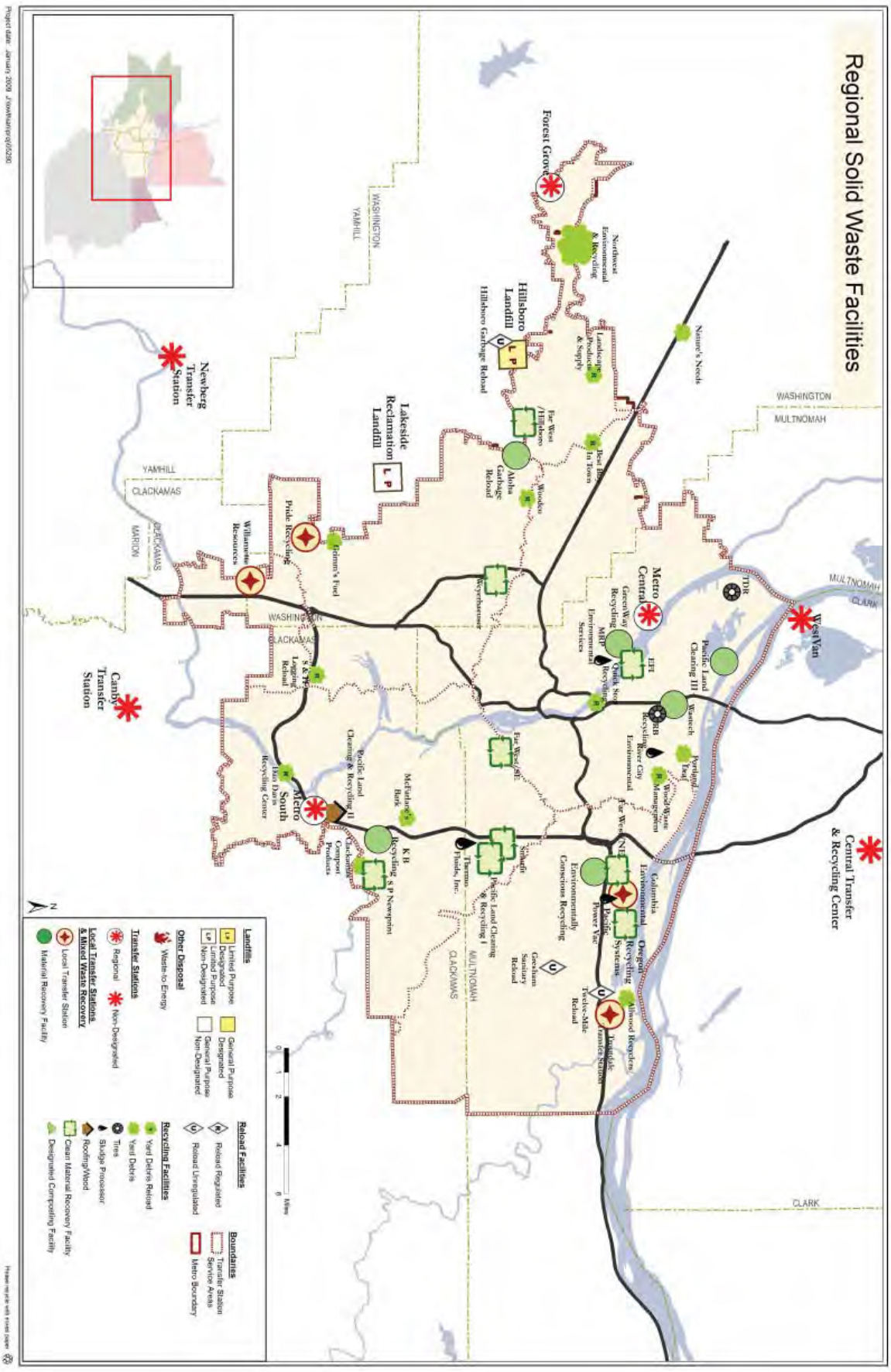
The six transfer stations located within Metro's boundaries consolidate loads of solid waste for transfer to landfills. Three of these facilities are regional transfer stations that can accept unlimited amounts of putrescible ("wet") waste and "dry" waste. The facilities handle commercial customers as well as households and businesses that haul their own waste ("self-haul" customers). The three other transfer facilities in the region are franchised to serve localized needs, and as such are authorized by Metro to accept only limited amounts of wet waste per year (but are allowed to accept unlimited amounts of dry waste for the purpose of conducting material recovery). The local transfer stations do not accept self-haul customers.

The region's six transfer stations have an estimated transfer capacity of approximately 2.06 million tons/year.[1] During 2006, these facilities accepted 1.05 million tons of waste. The region's transfer facilities provide more than adequate tonnage capacity for current and near-future needs.

Beginning January 1, 2009, all construction/ demolition and other dry waste must be processed for recycling before it can go to a landfill.

1. Regional Transfer Capacity Analysis, April 2004.

Figure 1


Regional Solid Waste Facilities
Central Transfer & Recycling Center
Metro Central
Metro South
Forest Grove
Hillsboro Landfill
Lakeside Reclamation Landfill
Newberg Transfer Station
Canby Transfer Station
WASHINGTON
MULTNOMAH
CLACKAMAS
YAMHILL
MARION
CLARK
Landfills
Limited Purpose Designated
Limited Purpose Non-Designated
General Purpose Designated
General Purpose Non-Designated
Other Disposal
Waste-to-Energy
Transfer Stations
Regional
Non-Designated
Local Transfer Stations & Mixed Waste Recovery
Local Transfer Station
Material Recovery Facility
Reload Facilities
Reload Regulated
Reload Unregulated
Recycling Facilities
Yard Debris Reload
Tires
Sludge Processor
Roofing/Wood
Clean Material Recovery Facility
Designated Composting Facility
Boundaries
Transfer Station Service Areas
Metro Boundary
Miles

Recovery facilities

The Metro region is currently served by 16 facilities conducting material recovery from dry waste of varying types. Twelve of these facilities are permitted to take only dry waste; the other four are licensed to accept a more limited range of materials (wood, yard debris, roofing and tires). Six of the 16 facilities are hybrid facilities that also perform other functions in addition to recycling (waste transfer, hazardous waste services.) There are also seven "clean" Material Recovery Facilities (MRFs) in or near the region that exclusively receive and process source-separated public curbside and business recyclable materials.[2]

Landfills

Much of the region's waste is transported to a Waste Management Landfill 150 miles east of Portland. There are two limited-purpose landfills just outside the Metro boundary that are permitted to take only dry waste: Hillsboro Landfill and Lakeside Reclamation Landfill (Grabhorn). The Lakeside Reclamation Landfill in Washington County is slated to close in July 2009.

2. Regional Solid Waste Management Plan – 2008-2018.

Section Two - Self-haul customer characteristics

Customer types

There are two basic types of customers who deliver waste to regional solid waste facilities: commercial haulers who pick up waste from businesses and residents and deliver the waste to regional solid waste facilities in loads averaging 5 tons; and, self-haul customers, which are businesses and individuals who deliver waste to facilities in loads ranging from 600 to 860 pounds.

To appreciate the impact of self-haul customers on the region's solid waste system, it is useful to understand some of the characteristics that distinguish this customer type.

Definition of "self-haul"

Customers characterized as "self-haul customers" are those who: 1) deliver their own waste to a solid waste facility; or, 2) are not a licensed or franchised waste hauler.

Self-haul customers represent both the business and public sectors:

- Business self-haul: Waste hauled by businesses that maintain an account at one or more solid waste facilities.
- Public self-haul: Waste hauled by residents and small businesses that pay by cash or credit card.

Amount of waste delivered – tons and trips

One of the most significant characteristics of self-haul (public and business combined) on the regional solid waste system is that they represent a relatively small percentage of the total tonnage delivered to solid waste facilities (24%, or 340,000 tons out of a total of 1.4 million tons), and yet they account for a large percentage of total loads (68%, or 440,000 loads out of a total of 650,000 loads) (see Figures 2 and 3).

Public self-haul has a significant impact on the regional solid waste system. Public self-haul accounts for 54 percent of total loads, but only 11 percent of the total tonnage.

Figure 2
Solid Waste Delivery Tonnage
Metro Region - 2006

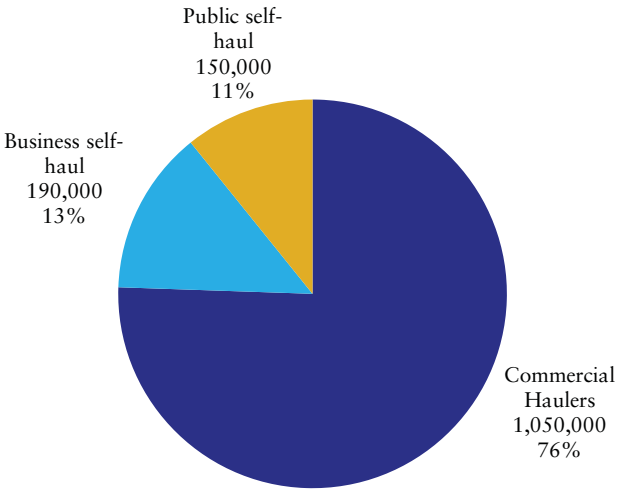
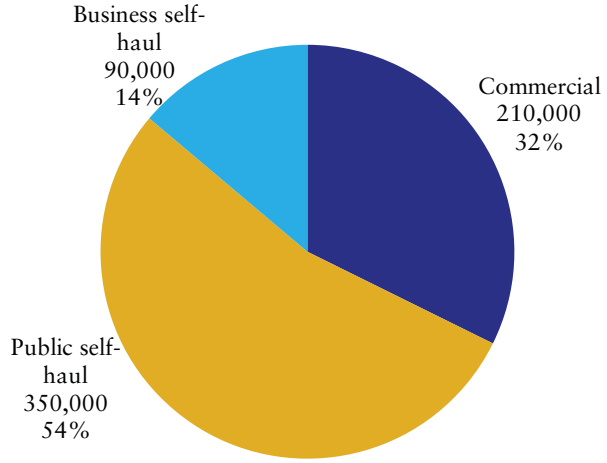


Figure 3
Solid Waste Loads
Metro Region - 2006



While public the self-haul and business self-haul customer groups are similar in the total amount of tonnage they each deliver annually to regional facilities (190,000 tons business, 150,000 tons pubic), public self-haul has a much bigger impact on the system for a number of reasons:

1) Public self-haulers deliver waste in smaller amounts than business self-haulers:
   - public self-haul average load weight is 600 pounds
   - business self-haul average load weight is 860 pounds

2) Public self-haul loads (trips) are four times that of business self-haul loads:
   - 350,000 public self-haul loads
   - 90,000 business self-haul loads

Types of waste delivered

Both public and business customers self-haul mixed waste (public trash containing food waste), household waste (rubbish, broken items), and construction and demolition (C&D) waste (see Figures 4 and 5).

Public self-haul customers are more likely than business self-haul to be hauling mixed and household waste; only about one-third are bringing in construction waste, probably from home remodeling projects.

Figure 4
Public

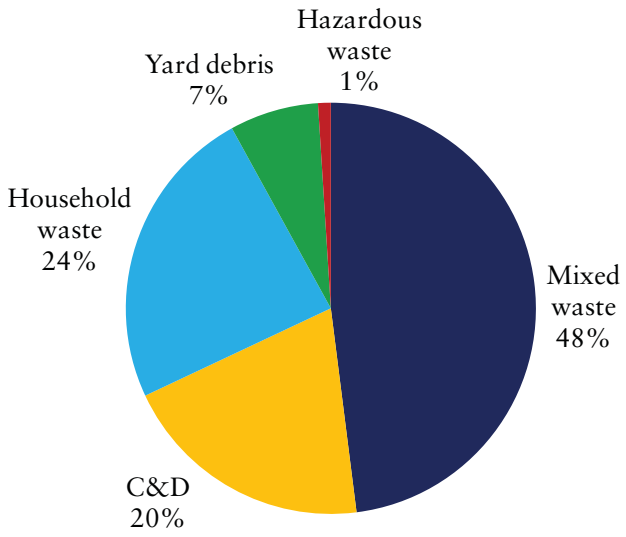
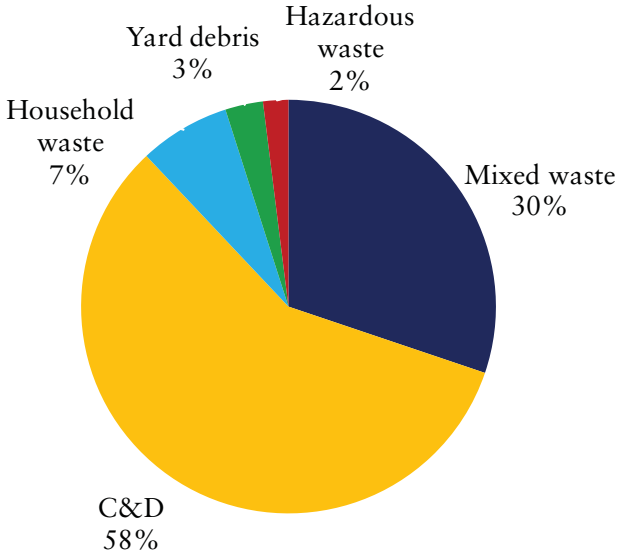


Figure 5
Business



Business self-haulers – including contractors – primarily bring in construction and demolition waste. This waste is highly recoverable, providing the facility is equipped and able to separate it for recycling.

Vehicle type

According to the April 2008 Metro survey,[3] three-quarters of self-haulers bring their waste to a transfer station either in a pickup truck alone (59%) or towing a trailer (14%). One in eight transfer station customers (12%) drove a passenger car towing a trailer and 7% carried waste in their vehicle. The remaining customers used a box van, step van, flatbed or other type of truck.

These types of vehicles need to be manually unloaded, which is a time-consuming process. Facility staff assists self-haulers in unloading recoverable material in designated areas, but at times the volume of traffic impedes sorting and recovery efforts.

3. Transfer Station Self-Haul Survey Results, The Gilmore Research Group, April 2008.

Payment type

Another distinction between public and business self-haul is that public self-haul pays with cash, and business self-haul often pays on account. A self-haul customer needs to be weighed in and out at the scalehouse, and often has an interaction with scalehouse staff about rates or material handling. Transaction time is therefore longer for public self-haul than business self-haul. This, together with the total number of self-haul loads, is the main reason that the increasing number of public self-haul customers is creating challenges at the transfer facilities.

When self-haulers use facilities

Based on Metro customer data (see Figures 6, 7 and 8):

- Self-haul customers use Metro's facilities more in the spring, summer and fall than in the winter. This is consistent with survey data that indicates that public self-haul customers – which are the majority of the self-haul customer group – typically come to a waste facility once or twice a year, often to deliver large items or material from a garage clean-up or remodeling project.
- Business self-haul most often delivers C&D waste, and come to a facility more often: once a week or once a month.
- Self-haul customers come to a Metro transfer station more often on Saturdays than any other day of the week.
- Self-haul customers come to a Metro transfer station mid-morning through mid-afternoon, rather than early morning or late afternoon/early evening (Metro Central opens at 8 a.m. and closes at 6 p.m.; Metro South opens at 7 a.m. and closes at 6 p.m.).

Figure 6
Loads per Month

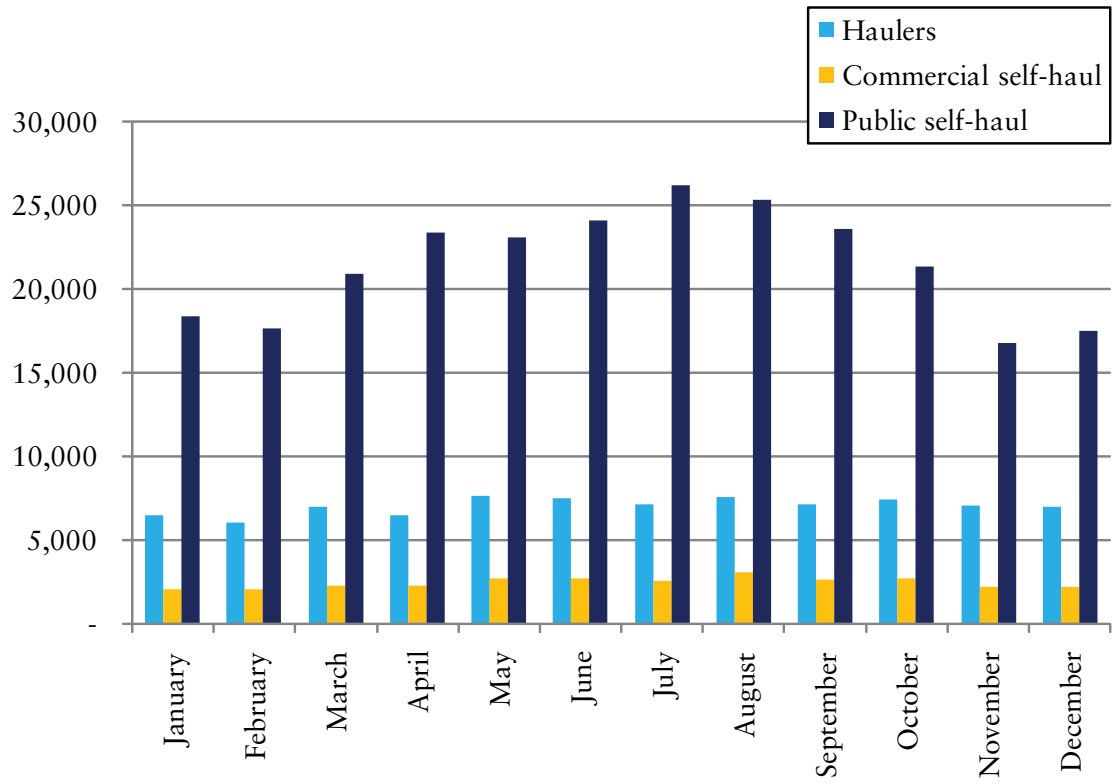


Figure 7
Loads per Day of Week

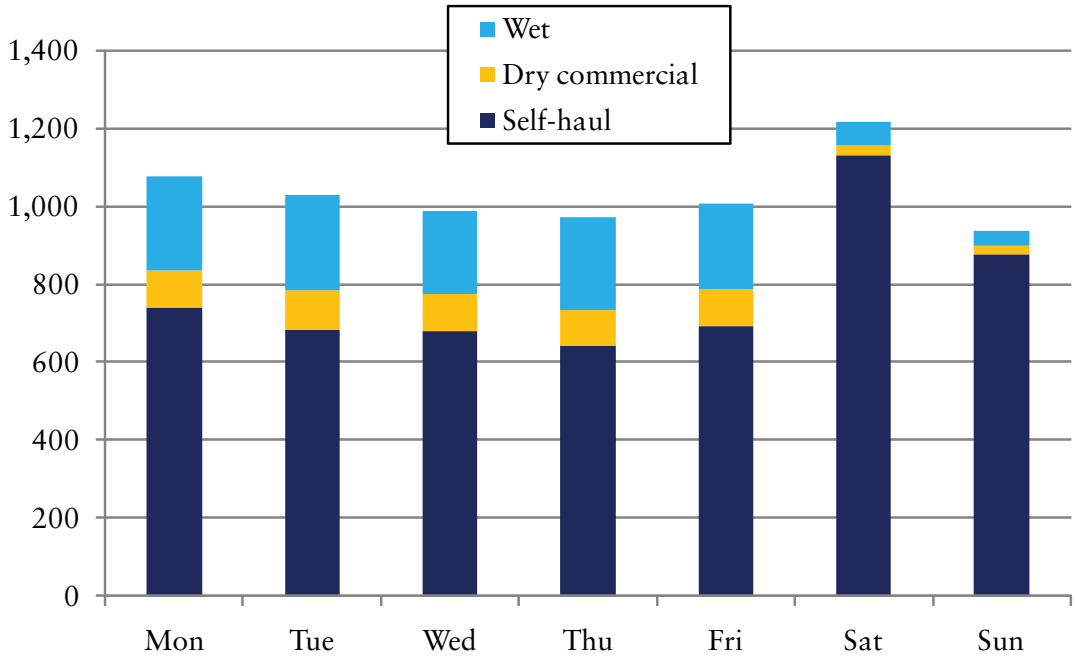
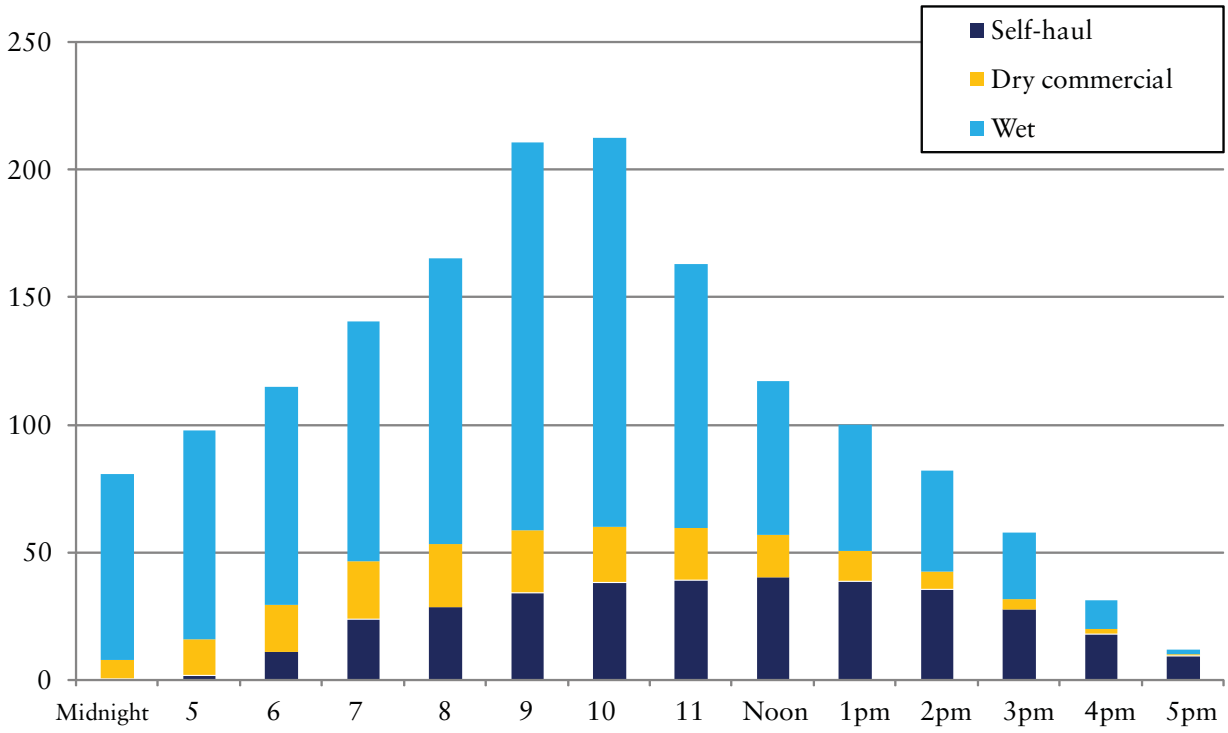


Figure 8
Tons per Hour

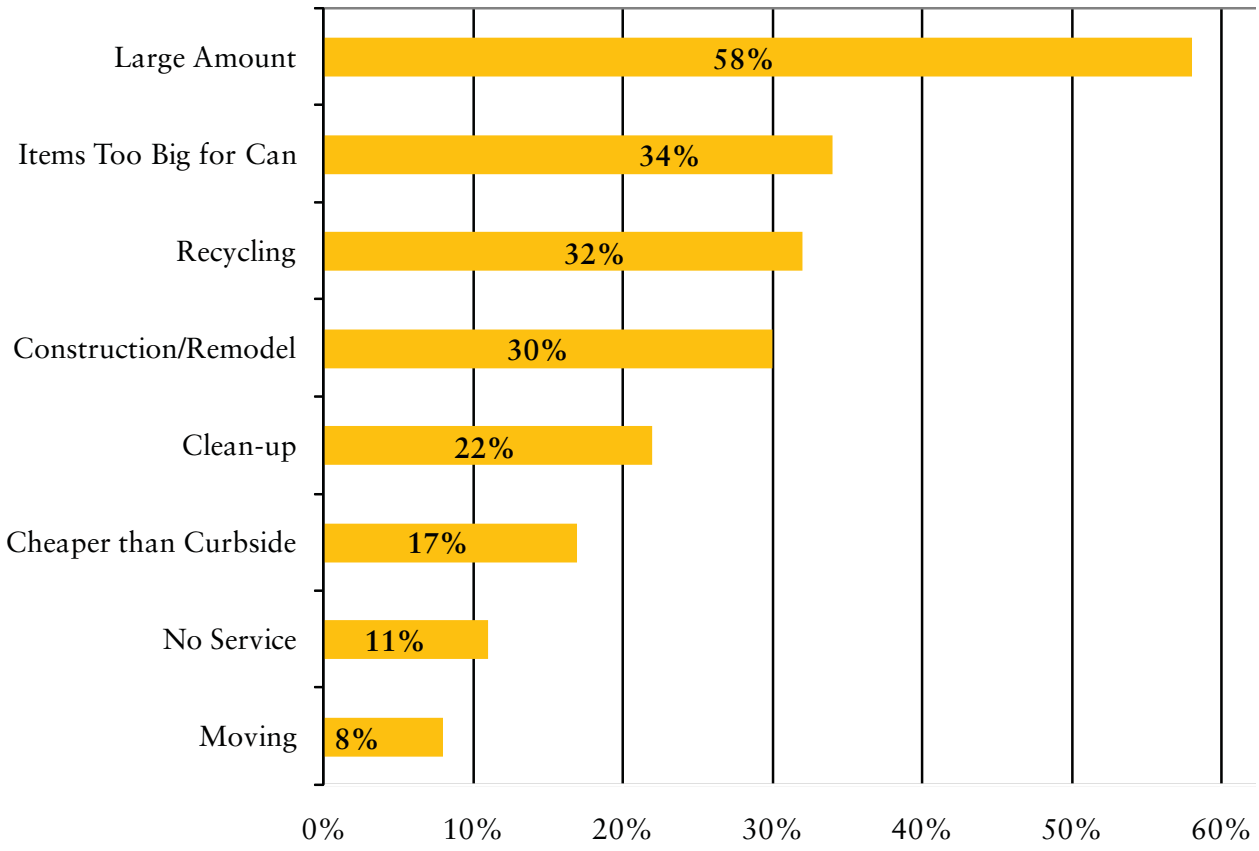


Why self-haulers haul their own waste

Metro has conducted surveys about self-haul customers at its transfer stations over the past ten years.[4] Some surveys have measured overall customer satisfaction with transfer station and captured information to help Metro understand customer motivation for self-hauling – what they haul, why they haul, and perceptions about other options for waste disposal.

Survey results have been largely consistent over the years in several respects. In large part, both public and business customers report that they self-haul their waste to a regional solid waste facility because they believe they have too much material for curbside collection, or that they have an item that is too large for curbside collection (see Figure 9). Many times the "too much/too large" refers to construction/ remodeling waste that is coming from a home, garage or business clean-up.

Figure 9
Public's Reasons for Self-Hauling



4. Transfer Station User Survey, Riley Research Associates, Sept. 1998; Commercial and Self-Hauler Analysis, Service Provision Plan Research, Dotten & Associates, Sept. 1999; Customer Intercept Survey for Metro South and Metro Central Transfer Stations, Gilmore Research Group, Nov. 1999; Intercept Survey for Metro South and Metro Central Transfer Stations, Gilmore Research Group, June 2001; Public and Business Self-Haul Customer Survey for Metro South and Metro Central Transfer Stations, Metro Solid Waste and Recycling Department, May 2006; Commercial and Self-Haul Customer Surveys for Metro Transfer Stations, Metro Solid Waste and Recycling Department, June 2006; Transfer Station Self-Haul Survey Results, The Gilmore Research Group, April 2008.

Surveys show many self-haul customers subscribe to curbside service.

Perception of cost is also a factor. In past surveys, 12-20% of public self-haul customers cited "cost" as one of the reasons self-haul rather than have their hauler pick it up or use a dumpster to dispose of the material. However, in the latest Metro Survey (April 2008) only 17% of those who said coming to a Metro transfer station was "cheaper than curbside" actually had looked into alternative disposal methods.

Fewer business self-haul customers than public self-haul customers cite cost as a reason for using a transfer station. However, business self-haul customers were more likely than public self-haul customers to indicate that "too much waste" was their reason for using a transfer station rather than curbside (nearly three-quarters of business self-haul customers are delivering construction waste to a solid waste facility).

According to the Metro surveys conducted over the past decade, the majority (up to 85%) of self-haul customers also subscribe to curbside collection service. Some surveys have indicated that customers with curbside service are not aware that their haulers are able to provide extra services (special pick-up of large items, or pick-up of additional waste that won't fit in the garbage can). Surveys also indicate that customers believe that self-hauling waste is cheaper than renting a drop box.

Section Three - Service options

Disposal options for self-haulers

Residents in the Metro region currently have limited options for self-hauling material to a disposal or recycling facility.

The following is a list of options currently available for self-haulers (there are various options for specific-material recycling, such as plastics and appliances; this list represents facilities that accept the types of waste most commonly delivered to solid waste facilities by self-haulers: mixed waste, construction and demolition waste, and bulky items).

- Transfer stations
- Material recovery facilities
- Landfills
- Yard debris facilities
- Curbside services offered by franchised haulers
- Pick-up services offered by private companies
- Drop box services
- Neighborhood clean-ups (public)
- Municipally sponsored curbside bulky waste collection

Transfer stations

There are three regional transfer stations in the region that accept self-haul customers. Two are publicly owned facilities – Metro South Station and Metro Central Station – and one, Forest Grove Transfer Station, is a privately owned facility. These facilities are open seven days a week.

Nearly 75% of all self-haul customers take their waste to Metro's two facilities, with roughly half of all customers delivering their waste to Metro South. Forest Grove Transfer Station accounts for approximately 3% of self-haul loads (see Figure 10).

Material recovery facilities

Material recovery facilities account for 13% of self-haul loads. There are two facilities open to the public that accept mix waste, construction and demolition waste, and bulky waste – Environmentally Conscious Recycling (ECR) and Pacific Landclearing III (PLC III). ECR is open seven days a week; PLC III is open Monday-Saturday.

Landfills

Hillsboro Landfill is the only facility open to the public. It is open Monday-Saturday. This facility accounts for 11% of self-haul loads.

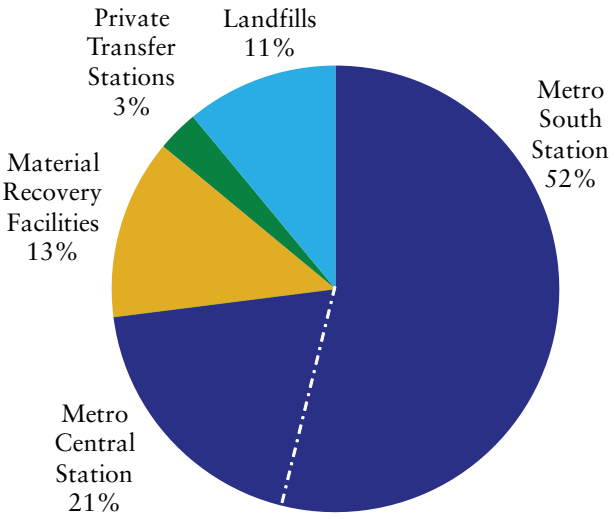
Yard debris facilities

There are numerous facilities in the region that take only yard debris and wood waste.

Pick-up services offered by franchised haulers

Franchised haulers in the region are required to provide either direct service to customers or options (referrals, information) for bulky items and large amounts of material. The availability of direct services varies by hauler. Some haulers provide the service, some don't, and some provide pick-up service for only certain types/sizes of items or material. Customers are often told to call Metro for options, or to look at Metro's "Find a Recycler" Web page.

Figure 10
Public Self-haul Loads



Pick-up services offered by private companies

There are a number of privately owned hauling companies that offer pick-up services for a range of items – cardboard, wood, appliances, metal, yard debris, etc. Businesses listed on Metro's "Find a Recycler" web page include J.R.J. Hauling, 1-800-Got-Junk?, Cascade Recycling, Oregon Hauling and Clean-up, and others. Accepted materials and pricing varies. These companies generally deliver their waste to a regional transfer station, disposal or recycling facility.

Drop box services

Drop boxes are an option for many types of waste. Drop box sizes and costs vary. Metro Recycling Information advises customers to call several companies to find the most cost-effective option for the type and amount of material they need to dispose.

Community clean-up events (public only)

Through its Disposal Voucher program, Metro provides disposal vouchers to qualified non-profit organizations and neighborhood associations for disposal of material collected at neighborhood clean-up events. These one- or two-day events provide residents a local, convenient opportunity to dispose of bulky items, as well as reusable goods and occasionally, electronics.

In addition to the disposal vouchers, Metro also funds a neighborhood clean-up matching grant program. Local governments are eligible for these funds, which help with non-disposal costs associated with community and illegal dump site clean-ups (drop box rental fees, advertising, and gloves and supplies for volunteers).

Municipally sponsored curbside bulky waste collection

Municipally sponsored curbside bulky waste pick-up events have been piloted in the region several times in recent years. They may still be offered on rare occasions in certain jurisdictions, but they are not regular occurrences.

Section Four - Impacts and trends

Impacts on Metro facilities

A noted in Section Three of this report, the impact of self-haul customers is most dramatic at Metro's two transfer stations, particularly Metro South. Metro South has functioned well as a transfer station and material recovery facility throughout its 25-year history, primarily due to numerous expansions, equipment additions and changes to on-site traffic flow.

However, while there is still sufficient capacity for tonnage, Metro South has reached its maximum site-use capacity as a result of the increase in vehicle traffic, specifically self-haul traffic.

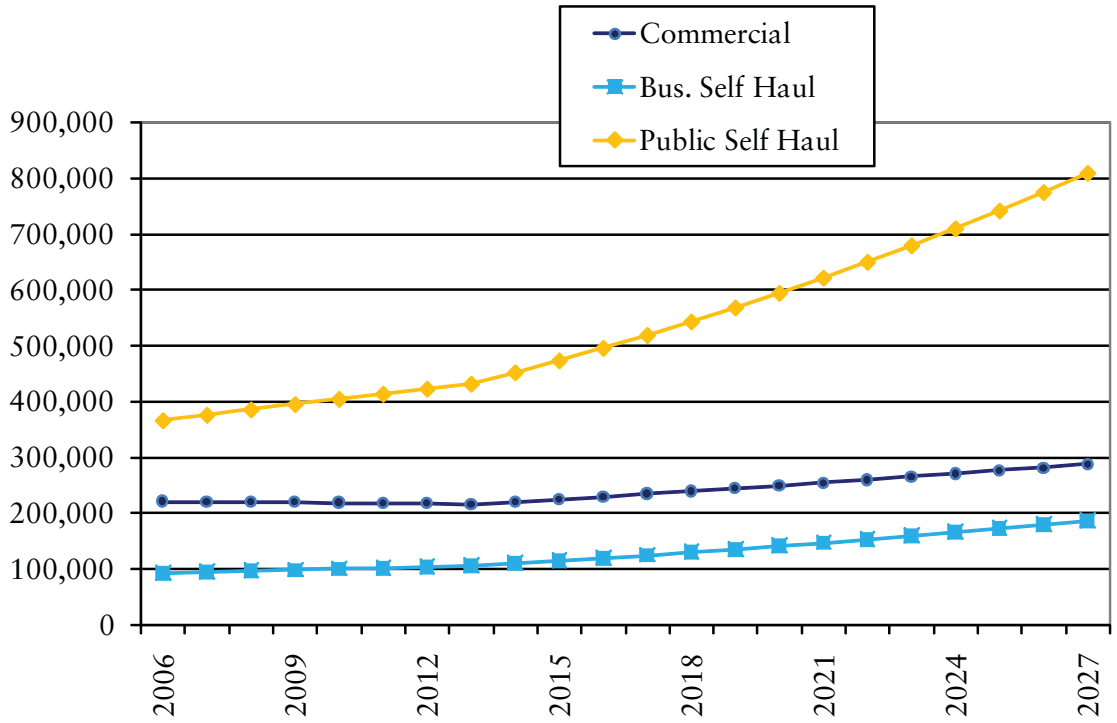
Operational impacts of increased self-haul at Metro South include:

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

Future trends

Based on history and projected population growth, the impact of self-haul will only intensify. The number of self-loads and tonnage has increased, and is expected to continue to increase, at a rate faster than commercial loads (see Figure 11). This increase in public self-haul facility use is an unprecedented trend in the solid waste industry. It is the result of the regional increase in home ownership (more construction and home remodeling), and the limitations on disposal-container weight and container size set by collection companies.[5]

Figure 11
Loads Delivered for Disposal[6]



5. 2008 Metro Facilities Master Plan, URS Corporation.
6. Joel Sherman, Senior Management Analyst, Metro Finance & Administrative Services

Section Five - Addressing the impacts of self-haul

Managing supply and demand

As we have seen from the previous chapters, the growing number of self-haul customers is putting pressure on the solid waste transfer and disposal system. In particular, Metro South Station is already at capacity for serving self-haul customers, which negatively affects material recovery, customer and worker safety and wait time.

This section will present a number of alternatives for managing the demand and supply for disposal and recycling services for the self-haul customer. The alternatives are not mutually exclusive and further research should be conducted to analyze the approaches and combinations best suited to the needs of the Metro region. These options have been gathered from programs researched and conducted in other jurisdictions – although many have been tried locally, at least in a limited fashion.

Demand options

There are a variety of approaches that could be tried in order to reduce self-haul demand at Metro facilities. A number of these policy options are discussed below.

Increase public self-haul prices at Metro facilities

Perhaps the most straightforward economic approach to reduce demand for self-haul services is to increase prices. Metro has pursued such an approach recently but the results have not been conclusive.

Components of Metro Tip Fee

An understanding of the components of the Metro tip fee is useful in seeing how prices can vary by customer type.

Transaction Fee Component

In Figure 12, the **public** self-haul customer is analogous to the "scalehouse users" customer category, since they must stop at the scalehouse to pay for the load – they do not have accounts that permit use of the automated scales. The transaction fee for this customer class is $8.50. As noted previously in this report, **business** self-haul customers by definition have accounts and can therefore use the automated scales, as do most of Metro facility commercial users. The transaction fee is $3 for this customer class.

Per-ton component

The per-ton component of any transaction is based on the amount of waste disposed. The rate includes a tonnage charge and several fees and taxes. For example, one ton of waste would be charged $74.75 in addition

Figure 12

Solid Waste Disposal Charges

Effective September 1, 2008 through August 31, 2009*

Solid waste rates	Last year's rates	Current rates	Change
Transaction Fees			
Scalehouse users	$8.50	$8.50	– 0 –
Automated scale users	$3.00	$3.00	– 0 –
Per-ton rates			
Tonnage charge	$47.09	$49.00	$1.91
Regional System Fee	$14.08	$15.04	$0.96
Excise tax	$8.23	$8.97	$0.74
DEQ & host fees	$1.74	$1.74	– 0 –
Metro Tip Fee	$71.14	$74.75	$3.61
Minimum charge	$17.00	$25.00	$8.00

*Source: Staff report adopting rate ordinance 08-1186.

to the appropriate transaction fee. The exception to this is when the "minimum charge" applies.

The minimum charge is levied on loads equal to or below a minimum load size. The current threshold is 440 pounds or .22 tons. Currently, the minimum charge for a public self-haul customer with a load size less than 440 pounds is $25 ($8.50 transaction fee for scalehouse users plus $16.45 per-ton charge). Any transaction above 440 pounds is charged the transaction fee and the appropriate proportion of the per-ton rate. For example, the average load size for a self-haul customer is 600 pounds, so the average charge for this customer class would be $30.85 ($8.50 transaction fee plus $22.35 per-ton charge).

Tip fee disincentive

Effective September 1, 2008, Metro adjusted the tip fee charged at its transfer stations as a way to provide a disincentive for many public self-haul customers. Metro adjusted the formula for the minimum charge, thereby raising the minimum charge by $8 (47%). The main adjustment was to increase the load size charged the minimum, from 240 to 440 lbs.

The policy discussion underpinning the change focused on trying to reduce the amount of public self-haul customers using Metro facilities (particularly Metro South), and keeping other providers of disposal services to this customer class competitive. These other providers include public haulers as well as limited-purpose landfills or material recovery facilities that accept public customers.

During the rate-setting process, monthly public collection rates were considered in the range of $22 per month. The minimum charge of $25 at Metro facilities would therefore be a disincentive for a homeowner to store a month's worth of trash rather than taking advantage of curbside service.

Metro also did not want the minimum charge at its facilities to be significantly lower than other disposal facilities servicing public self-haul (Hillsboro Landfill, Forest Grove transfer station and ECR). While minimum charges for minimal load sizes at these facilities are at least $7.50 more than Metro, Metro's rate change did serve to close the gap slightly. The hope is that reducing the gap between Metro's minimal charges and other facilities' would provide an incentive for self-haul customers to choose the closer facility, rather than traveling to Metro's facilities because of the lower cost.

While it is too early to measure the effects of raising the minimum charge, Metro has not yet seen a decline in the number of small loads being delivered to Metro facilities.

Split Fee Disincentive

Metro's previous attempt to provide a financial disincentive for small loads was through manipulating the split for transaction

Figure 13
Metro's Transaction Fee History

Fiscal Year	Automated Scales	Scalehouse
FY01-02	$5.00	$5.00
FY02-03	$6.00	$6.00
FY03-04	$6.00	$6.00
FY04-05	$7.50	$7.50
FY06-07	$3.00	$8.50
FY07-08	$3.00	$8.50
FY08-09	$3.00	$8.50

fees for users of the scalehouse versus the automated scales (see Figure 13). The change instituted for FY 06-07 raised the scalehouse fee by $1.00, while lowering the automated transaction fee by half. An analysis of the impact of the change[7] indicated no overall decline in transactions or a significant shift from the scalehouse to automated scales.

Increasing the scalehouse transaction fee did serve to more equitably allocate personnel costs, but did not result in an overall shift from scalehouse to automated scale transactions. Customers who traditionally used Metro's scalehouses continued to use them.

Cross-subsidies

While increasing prices directly at Metro facilities for self-haul has proven largely ineffective to date, other incentive/disincentive options are available. An inventory of such approaches was compiled for the City of Seattle,[8] several of which are characterized below.

Increase use of curbside collection

As Metro's surveys have shown, self-haul customers cite "too much waste" and "item too large for the can" as the main reasons for hauling their own waste. These, together with the other responses, seem to indicate that self-haul trips are associated with episodic events, such as garage clean-outs and remodeling projects.

There are alternatives available through the self-haul customer's curbside haulers or through firms specializing in home clean-ups: drop box service for unusual amounts or on-call pickup for bulky items. The barrier to the use of such services is usually perceived as cost, as such services are generally more expensive than the fee at Metro's facilities.

Several "bulky waste" programs have been tried periodically in which such services are provided at no cost or at a subsidized cost. A program identified in Tacoma (Call2Hall) provides a subsidy for such services as collected through the resident's monthly bill. The City of Portland and other local jurisdictions have in the past sponsored annual bulky waste curbside collection events, providing residents an opportunity to dispose of items they might otherwise haul themselves to a regional solid waste facility.

Clean-up Events

Metro currently funds and supports events and activities that provide households with convenient, neighborhood options for disposing of the types of waste they might otherwise bring to a transfer station. Specifically, Metro offers two programs that serve this need: the Disposal Voucher Program and Neighborhood Clean-up Matching Grant Program. Metro has allocated over $200,000 for the two programs in the current (2008-09) fiscal year. These events are funded through the Regional System Fee.

In both cases, some of the funds are used to support one- or two-day clean-up events during which residents can bring items, generally free of charge. Haulers provide drop

7. See appendix, Revenue Collection under Metro's Split Transaction Fee.
8. Seattle Solid Waste Recycling, Waste Reduction and Facilities Opportunities, Vol. I & II, URS, April 2007.

boxes, which are then delivered to a regional transfer station – most often, Metro South or Metro Central. The types of items that are generally accepted at these events are the same types of items and materials accepted at the regional transfer stations. Hazardous waste is not permitted (Metro conducts neighborhood household hazardous waste events separately). It is expected that at least a portion of the waste received at the clean-up events would be delivered to Metro by self-haulers if these clean-up events were not available.

Clean-up events are also a popular tool in many jurisdictions to target specific subsets of the waste stream. Some are used to collect white goods, hazardous waste, electronics or other items of interest to the sponsoring organization. Almost all such events are subsidized to some extent.

There are wide array of programs and variations of them that address the demand side of the self- haul customer group. Many have been tried to a limited extent locally; however, the scale is insufficient to address the problems, particularly at Metro South Station.

The next section addresses expanding the supply of services for self-haul customers.

Supply options

In addition to the demand options outlined above, there are a number of opportunities to expand the supply of services to self-haul customers.

Increasing facility capacity for public self-haul

The existing system of facilities serving self-haul customers has encountered problems providing adequate service, particularly at the Metro South Station (MSS). A number of facility options are available to increase the supply of services for this customer class.

Metro South Station

MSS as originally constructed consisted of a single building with a pit running the length of the building into which waste was directly unloaded. The design did not contemplate materials recovery, and was to be an adjunct to an on-site mass burn facility that would directly receive most commercial waste. The mass-burn facility was never built and the facility design was adjusted to accommodate transfer to the St. Johns landfill via truck. Operations began in 1983.

MSS has been extensively modified over the years to accommodate increasing demands for material recovery, household hazardous waste, paint recycling (later moved), long-haul transport and increasing self-haul demand. The current site has no land available for expansion.

Metro's 2008 Master Facilities Plan examined in detail how to address the service levels at the facility,[9] based on a needs assessment identifying current and future problems and possibilities. The study concluded that while the facility has excess volume capacity, it has reached its maximum vehicle capacity. The capacity problem is directly caused by self-haul customers delivering small volumes of waste. The plan recommended an additional site or sites would be needed to accommodate future demand.

The recommendation for future facilities recognized the uncertainty of the existing site (MSS) remaining a transfer station. There have been prior discussions as to whether the site should be converted to a different use, given changes in surrounding land uses and increases in population. Until this decision has been made, it is difficult to determine whether a replacement site or sites would be needed for self-haul, or commercial, or both.

Expansion of self-haul service at non-Metro facilities

The regional disposal system consists of a network of regional transfer stations such as MSS, as well as local transfer stations, limited-purpose landfills and material recovery facilities. Some of these facilities are geographically located in areas from which MSS currently draws self-haul customers, however, these other facilities do not accept waste from self-haul customers.

Two local transfer stations and one material recovery facility are located in relatively close proximity to MSS; others are scattered throughout the Metro region. One option for increasing service for self-haul customers would be to expand the facilities (and their franchises and licenses) to accommodate these customers. Since these customers deliver small loads, the economic viability of such system changes would need to be examined in more detail.

Self-haul customer bans and restrictions

Metro could achieve significant traffic relief at its stations by banning self-haul customers entirely, or banning selected types of loads. Such an action would require that alternatives were available and that an extensive education and outreach program was conducted prior to implementation. Metro has some limited experience with redirecting materials as a result of the recent implementation of the Enhanced Dry Waster Recovery Program (EDWRP).

EDWRP prohibits direct disposal of certain classes of materials without prior material-recovery processing. An analogous program could be developed in which certain classes

9. The portion of the study recommendations for MSS are included in the appendix.

of self-haul loads are redirected from Metro facilities to appropriate alternative facilities. Such an effort presupposes the existence of such facilities and their capacity to handle these additional customers.

Expansion of bulky-waste collection and neighborhood clean-up events

As has been previously discussed, bulky waste and neighborhood clean-up events often target public self-haul loads typical of those received at Metro transfer stations. These options could be expanded to provide periodic collection of limited items as bulky waste. Expanding such programs may result in fewer of these loads being delivered to the transfer stations, but these programs would have to be expanded dramatically to significantly reduce the number of self-haul customers coming to Metro's facilities.

For example, Metro's Disposal Voucher Program resulted in the disposal of 1,900 tons of yard debris and waste in FY 07-08. This is equivalent to 6,333 self-haul customers, or about 2% of the annual public self-haul loads at Metro stations. In this program, Metro pays the full cost of disposal, which was $124,300 in the fiscal year. All organizational costs, including drop boxes and the hauling to the disposal facility, are donated.

Both bulky waste and construction debris on-call collection were examined under the Seattle study. The study included programs in which service was provided by the regular curbside hauler, to services provided by nonprofits such as Goodwill. Estimated costs and participation rates varied depending on the program. For bulky waste, variable costs were estimated at approximately $200/ton, but a detailed breakout was not available.

Redemption Centers

Several states have established redemption centers for beverage containers. These centers often accept other recyclable materials, which are then marketed. The establishment of such centers has been discussed as part of the expansion of Oregon's Bottle Bill. Expansion of such centers to include other recyclable materials may have some impact on the use of Metro facilities, since 34% of self-haul customers (as measured in on-site intercept surveys) cited recycling as one of the reasons for coming to the facility.

Section Six - Summary

Review of current conditions

This report has provided an overview of the current solid waste system and the impact of self-haul customers on facilities. In summary:

- The tri-county metropolitan area's population will continue to increase.
- Waste recovery reports indicate that waste generation will continue to increase.
- Self-haul customers represent a relatively small percentage of the total tonnage delivered to solid waste facilities and yet they account for a large percentage of total loads.
- Public self-haul has a bigger impact on the system than business self-haul: they account for the majority of self-haul loads, they pay with cash and require time on the scales and interactions with scalehouse staff.
- Business self-haul waste contains a significant amount of recoverable material, since it often includes construction waste.
- Self-haulers report that their reasons for hauling their own waste is that the items or material is too much or too large for curbside.
- The majority of self-haulers subscribe to curbside service.
- Self-haulers perceive the cost at the transfer stations to be lower than the cost of other options available to them.
- Some surveys indicate that self-haul customers are not aware that their haulers provide special collection services for bulky items and large amounts of material.
- During the busiest times at the transfer stations, the ability to recover material is compromised.
- Operational impacts of increased self-haul also include increased wait time and concerns about customer and worker safety.
- Increases in the Metro transaction fee have not motivated cash customers to get Metro accounts, which would take some pressure off the scalehouse.
- Metro has increased the minimum charge at its facilities in the hope that it would incentivize customers to seek out other facilities in the system. This change was just implemented, but so far, the number of small loads delivered to Metro facilities has not declined.

Conclusion

Based on history and projected population growth, the impact of self-haul on the region's solid waste system will only intensify. There are a number of options for lessening self-haul traffic at Metro's transfer stations: some options address the demand side of the issue, some address the supply side. All options warrant further study and discussion, since they involve multiple service providers and stakeholders, would require increased funding, potential construction of new facilities, and developing and implementing new education and outreach efforts.

Appendices

Regional Transfer Capacity Analysis, April 2004- Executive Summary

Regional Solid Waste Management Plan, Executive Summary

Transfer Station 2008 Self-Haul Survey (The Gilmore Group) - Executive Summary

2008 Metro Facilities Master Plan (excerpt Metro South Station only)

Revenue Collection under Metro's Split Transaction Fee

Regional Transfer Capacity Analysis

April 2004

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METRO
PEOPLE PLACES
OPEN SPACES

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INTRODUCTION

Transfer stations located within the region are a critical component of Metro's disposal system because all the solid waste landfills serving the Metro region are located outside Metro's boundaries. The landfill that provides the majority of the region's disposal need is located 150 miles to the east. Transfer stations allow commercial haulers and the public to deliver their waste to a facility within the region for reloading and cost effective transportation to distant disposal sites.

This analysis is intended to address the question of how much capacity the region's solid waste facilities have to accept and load waste for transport to disposal sites serving the region. The focus of the study is on the estimated capacity to transfer "wet" or putrescible waste. Therefore, analysis is limited to those facilities that are permitted to accept wet waste. The study is based on the current level of development of each facility, including fixed equipment. The analysis also includes an estimate of the future need for solid waste transfer capacity, based on Metro's solid waste tonnage forecasts.

Key Findings:

- The current capacity of the six transfer facilities authorized by Metro to accept wet waste from the region is estimated to be 2.06 million tons per year.

- These six facilities received approximately 963,000 tons of wet and dry solid waste during 2003.

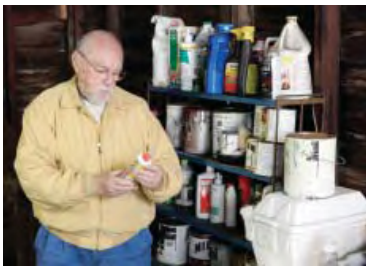
- The region's transfer capacity for wet waste currently exceeds the needed capacity by approximately 1.1 million tons per year.

- By 2015, deliveries of solid waste to the facilities in the region are expected to increase to about 1.56 million tons per year. Transfer stations serving the region are expected to handle 1.22 million tons of waste and will still have 841,000 tons of unused capacity.

- Future policy decisions could change the region's wet waste transfer capacity. For example, a requirement that all dry waste be processed prior to disposal could reduce wet waste transfer capacity by utilizing a significant portion of the wet waste capacity.

Regional Solid Waste Management Plan

2008 - 2018 Update



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Plan adopted by Ordinance No. 07-1162A, July 24, 2008.

Chapter VI. Section I. Plan compliance and enforcement,
amended by Ordinance No. 08-1198, Sept. 18, 2008.

Metro

People places • open spaces

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

Contents

Executive summary

This updated Regional Solid Waste Management Plan (RSWMP) provides the Portland metropolitan area with policy and program direction for the next decade (2008-2018). Implementation of the 13 goals and 68 objectives outlined in this Plan will enable the region to continue progress in reducing the amount and toxicity of waste generated and disposed, and will blaze new trails in advancing sustainable operations in the facilities and services of the solid waste system.

Key issues addressed in this updated Plan include:

- Reducing the amount and toxicity of waste generated and disposed
- Advancing sustainable practices throughout the region's solid waste operations
- Ensuring the disposal system continues to serve the best interests of the region.

Issues addressed in the plan

Resource conservation

This region is a national leader in successful waste reduction programs. Over the past 20 years, the waste reduction rate increased from 26% to 59%. Despite this achievement, many resources that can easily be recycled are still disposed. Enough waste from this region is landfilled each year to fill a football field 100 stories high. One-half of that disposed material is paper, wood, metal, glass, plastic and organics (food and yard waste) that could be recovered through existing programs. This Plan identifies more aggressive programs needed to achieve greater progress in material recovery.

Preventing waste from being generated in the first place is perhaps an even bigger challenge: The sum total of waste generated for recycling as well as disposal continues to increase. Between 1995 and 2005, regional population grew about 18%, or 239,000 new residents. Waste generation, however, grew by over 50%. With significant population growth and good economic times, the generation rate historically trends up due to increased commercial activity. The challenge is to instill greater awareness and implementation of effective waste prevention activities in the residential, commercial, and industrial sectors. This Plan continues many strategies intended to slow the rate of waste generation in the region and anticipates the implementation of new strategies, growing out of state recommendations, over the next 10 years.

Toxicity reduction

As with overall waste generation trends, volumes of household hazardous waste continue to climb, and only a portion of the total generated by households each year is separated and collected for recycling or safe disposal. This Plan will continue to guide sound management of household hazardous waste collected at facilities and events around the region. It also contains strategies to make more people aware of alternatives to hazardous products for homes and gardens, and to give them good reasons to use those alternatives.

Awareness that hazardous products are tossed into the waste stream have, in part, led to regional support for a more upstream-oriented approach to managing waste. Over the past decade, Europe and Canada have enacted "product stewardship" policies that require manufacturers to share responsibility for managing certain products at their end-of-life. The RSWMP update emphasizes the importance of making that policy shift here. Results from the region's advocacy for product stewardship policies could have significant payoff in reducing the waste handling burden on local governments, and arguably lead to reduced toxicity and increased recyclability in products manufactured for market.

Sustainable operations

Great strides in awareness and implementation of sustainability principles and practices have been made in the past decade, particularly in the Portland region.

This updated Plan provides groundbreaking sustainability guideposts for solid waste system operations. The solid waste system's operations are comprised of facilities, vehicles and people that collect, receive, process, transport, and recover or dispose of the region's waste stream.

At Metro's request, public and private sector stakeholders examined how sustainability principles could be applied to solid waste operations. Their recommended definition of sustainability, sustainability framework, and goals and objectives for sustainable operations are included in this Plan. These goals and objectives address air and water emissions, energy use, employee work life, and institutionalizing sustainability in solid waste system operations.

Disposal system decisions

A year-long analysis of transfer station ownership options was undertaken in conjunction with the development of this Plan. The main question addressed was whether the current system of public and private transfer station ownership should change.

After examining three different ownership models (all public, all private, public/private hybrid), Metro Council concluded that continuing the hybrid model, i.e., publicly-owned Metro Central and Metro South transfer stations and strategically placed private transfer facilities, is in the region's best interests.

This Plan's policies reflect that determination. Plan appendices indicate further areas of disposal system examination ahead for Metro, including waste allocation, public and private pricing, self-haul services and facility entry standards.

Metro's role in regional solid waste planning

Metro has the responsibility to conduct solid waste planning for the region through RSWMP, which serves as a regional framework for the coordination of solid waste programs and practices. Metro is accountable for state-mandated waste reduction goals in the tri-county region, and works with its local government and private sector partners to accomplish these goals. Local governments' solid waste ordinances, regulations and contracts are required to conform with the Plan (see Chapter VI, Plan implementation, compliance and revision for required elements of the Plan).

Plan performance

Historically, the regional waste reduction rate has been the primary benchmark of regional progress. This Plan continues an emphasis on that measure, but other means of assessing the solid waste system's performance (i.e., goals and objectives for sustainable operations) will be implemented and reported. In addition, the Plan is likely to be amended to incorporate a new set of numerical goals beyond the last benchmark year of 2009.

Annual work plans are the means by which Metro and local governments plan for the programs, projects and activities that implement the waste reduction elements of the Plan.

Regional work groups involving Metro, local governments, the DEQ and the private sector will include a standing group engaged in implementation and reporting on sustainable operations goals, as well as short-term groups that meet to study regional problems and recommend policy or program options or changes. These work groups play an important role in ensuring realization of Plan goals. They may also assist in evaluating programs or recommending Plan revisions.

Moving forward

Twenty-five cities, three counties, Metro, the Oregon Department of Environmental Quality (DEQ), private waste haulers, and private facility owners are all part of the solid waste system. The complex mix of public and private involvement in solid waste in our region makes cooperative planning essential. RSWMP provides a unified blueprint to ensure that the efforts of all parties are coordinated as key issues are addressed.

Hundreds of stakeholders participated in developing and shaping this RSWMP update through various venues and numerous discussions. Many of these stakeholders will also play valued roles in the Plan's implementation over the next 10 years. Collaborative efforts define the development and implementation of such plans for the region.

By implementing the direction in this updated Plan, the region will continue to provide national leadership in waste reduction, advance sustainable practices in system operations, ensure future changes in the solid waste system that serve the public interest, and move closer to achieving the Plan's vision of a system in which producers are an additional link in the responsibility chain, and all contribute to the sustainable use of natural resources.

Transfer Station
Self-Haul Survey Results

Prepared for:

Metro
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April 2008

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EXECUTIVE SUMMARY

Introduction

One of the primary responsibilities of Metro's Solid Waste & Recycling Department (SWR) is to oversee solid waste management and disposal within the region. Metro owns and operates two transfer stations—one in the industrial section of the City of Portland (Central) and one in Clackamas County at the south end of the region (South). In addition to local hauling companies, Metro's transfer stations serve approximately 300,000 self-haul customers each year including construction trade contractors, various businesses, and individuals hauling waste from homes and businesses. As use of the transfer stations increases, Metro must decide whether to expand the current transfer facilities, work diligently to convince users to manage their waste more efficiently, or both.

Metro contracted with the Gilmore Research Group to conduct intercept surveys of self-haul customers at the Metro Central and Metro South Transfer Stations to help the agency understand:

- Who uses the transfer stations
- Reasons why they haul their own waste rather than using local hauling companies
- The frequency with which they haul waste to the transfer station
- The type and amount of waste they haul
- The amount of waste (tonnage) they haul

Methodology

Gilmore Research Group conducted intercept interviews at the Metro Central and Metro South locations in the fall and winter of 2007 as follows:

Metro Central: 531 interviews conducted October 24-28
499 interviews conducted December 5-9

Metro South: 547 interviews conducted October 31 – November 4
525 interviews conducted December 12-16

Interviews were conducted across all hours the transfer stations were open to avoid bias by time of day. To encourage participation in the survey, self-haul customers at the Metro Central location were given a voucher for $5 off the cost of dumping their loads in exchange for completing the interview. Traffic volume at Metro South was high enough that incentives were not used at this location. Data on type of vehicle and trailer was collected by

observation. When possible load weights were recorded and matched back to respondent vehicles.[1]

Customer Profiles

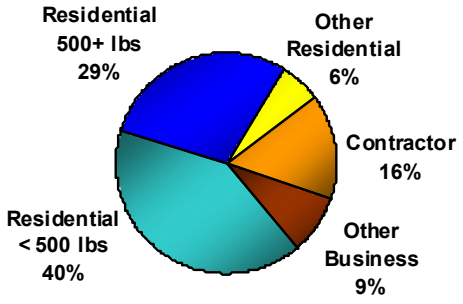
By Customer Type

Research findings resulted in four clearly defined customer groups based on their reasons for bringing waste to the transfer station and the amount of waste they haul:

- Residential customers hauling less than 500 pounds
- Residential customers hauling 500 pounds or more
- Contractors
- Other business (non-contractor) customers

Figure 1
Size of Customer Groups
Classified respondents

(Base = 2,102)



May not sum to 100% due to rounding.

A fifth group, "Other Residential Customers" was not subjected to separate analysis because of the weight of their load was known, they would have been classified into one of the other two residential customer categories. It is assumed this group shares characteristics with both of the residential groups that were analyzed (Figure 1).

Residential Customers Hauling Less than 500 Pounds

Four in ten transfer station users (40%) were individuals hauling less than 500 pounds of waste from a home. They were equally likely to use the Metro Central and Metro South Transfer stations. Most respondents in this group (61%) said they use the transfer station less than once a month. The majority brought mixed waste (48%) or household waste (31%), usually on weekends (67%), often hauling it in a pickup truck (74%) without a trailer. The average load weight for respondents in this group was 284 lbs.

Residential Customers Hauling 500 Pounds or More

Almost three in ten respondents (29%) were individuals hauling loads that weighed at least 500 pounds. These customers were slightly more likely to visit the Metro Central Transfer

[1] Respondents did not always submit a weight card to the scale house for recording. Weights were not recorded for loads containing only recycling or hazardous materials.

Station (53%) than Metro South (47%). Most (60%) said they come to the transfer station less than three times a year. Over half the respondents in this category (51%) reported hauling mixed waste and 28% brought in construction demolition waste. Just 15% of customers in this group were hauling household waste. The majority of these respondents (66%) visited the transfer stations on the weekend, usually hauling their waste in a pickup truck (76%). They were significantly more likely than other Residential Customers to use a trailer (30% compared to 10% of those hauling less than 500 pounds). The average load weight for respondents in this group was 965 pounds.

Contractors

About one in six respondents (16%) was hauling waste for a Contractor. Contractors were more likely to use the transfer stations in fall (54%) than in winter (46%) and were slightly more likely to use the Metro South Transfer Station (54%) than Metro Central (46%). Most Contractors (84%) said they use the transfer stations at least once a month including 38% who come at least once a week or even daily. Contractors tended to haul waste in pickup trucks (71%) or in box or step vans (15%). The 36% of Contractors who used a trailer often used either a single-axle trailer or one that was self-dumping. Most Contractors (76%) were hauling construction debris which the majority brought to the transfer station on a weekday (75%). The average load weight for this group was 1,126 pounds.

Other Business Customers

Nine percent of respondents (9%) were in this mixed group of customers that includes individuals who hauled waste for non-contractor businesses, small hauling companies like 1-800-GOTJUNK?, were hauling waste from both residential and business locations. These customers were more likely to use the transfer stations in the fall (57%) than the winter (43%) and their frequency of use varied widely. Four in ten respondents in this group (40%) reported using the transfer stations only a handful of times a year, 33% said they visit every month and 24% said they come at least once a week. They brought their waste in pickup trucks (66%) or box or step vans (14%). Not quite half the members of this group (48%) were carrying mixed waste and 24% were hauling construction demolition debris (46%). Of the four customer types, this group was the most likely to pay with a Metro account (8%). The average load weight for members of this group was 809 pounds.

By Transfer Station

Metro Central and Metro South Customers

With the exception of where transfer station users come from, there was almost no difference in customer profiles between those who used the Metro Central and Metro South transfer stations. For the most part, customers used the transfer station closest to their location. The breakout of the four customer types discussed above was similar at both locations. Half of all customers (50%) said they visited the transfer stations less than once a month and 12% said they visited the stations weekly. More than four in ten customers at both locations reported

hauling mixed waste (47% at Metro Central and 41% at Metro South). Three in ten customers at both locations were hauling construction debris. Fewer Metro Central customers reported hauling household waste as compared to Metro South (15% and 26% respectively). The reverse was true for yard debris (9% Metro Central and 3% Metro South). There was very little difference in average load weight for Metro Central customers (667 pounds) compared to Metro South customers (679 pounds).

Key Findings

- Three-quarters (74%) of respondents were hauling waste from a residence, 17% were hauling waste from a business and 9% were hauling waste from both a residence and a business. One seasonal difference was noted at the Metro South Transfer Station where the percentage of respondents who reported hauling waste from both a home and a business dropped from 11% in the fall to 5% in the winter.

- Mixed waste was the most common type of waste brought to the transfer stations (44%) followed by construction demolition (29%) and household waste (21%). Six percent (6%) of respondents were hauling yard debris. The percentage of respondents hauling mixed garbage decreased significantly between fall and winter for Metro South customers while the percentage carrying household waste showed a corresponding increase.

- There was a strong correlation between frequency of visits to the transfer station and waste type. Survey findings showed respondents who said they use the transfer station at least once a week were significantly more likely to be hauling construction demolition materials than those who use the transfer stations less often (57% compared to 31% of those who visit the transfer station one or two times a month and 22% of those who said they use the station less often). Conversely, respondents who said they come to the transfer station once or twice a month were significantly more likely to be hauling mixed waste or household than those who visit on a weekly basis.

- In answer to a multiple response question, respondents at both Metro Central and Metro South who were bringing waste from a home, most commonly said their reason for use the transfer station was "having a large amount of waste" (58%) followed by having items that were too big for the can (34%), recycling (32%) and bringing waste from a home building or remodeling project. Eighty-six percent (86%) of these respondents said they have collection service at their residence and 19% said they looked into alternative disposal options.

- Customers who brought waste from a business also cited a "having a large amount of waste" as their reason for coming to the transfer station (64%) followed by new home

construction/remodeling (54%) and then recycling (27%).[2] Customers who were asked why they do not have collection services at their places of business most commonly said the reason they don't have collection service is that they move around a lot and/or have a variety of work sites (22%).[3] This was especially true for Contractors, farmers and landscapers.

- Frequency of transfer station use was similar between the two locations. Half of all respondents said they (50%) visit the transfer station between one and three times a year and 43% said they visit at least once a month including 11% who reported coming one or more days per week. Six percent of respondents (6%) said the day of the interview was the first time they had used a transfer station. Contractors were the most frequent transfer station visitors (84% said they visit at least once a month compared to 33% of Residential Customers and 56% of "Other Business" customers).

- Three-quarters of those who hauled waste to the transfer station brought it in a pickup truck either alone (59%) or towing a trailer (14%). One in eight transfer station customers (12%) drove a passenger car towing a trailer and 7% carried the waste in their vehicle. The remaining customers used a box van, step van, flatbed or other type of truck. At Metro South, more respondents used pickup trucks in the fall than in the winter (79% and 71% respectively) while at Metro Central, vehicle choice remained constant between the two seasons (72% in both fall and winter).

- Trailer use varied by type of respondent. Nine in ten Residential Customers with loads under 500 pounds (89%) and 66% of Residential Customers with loads of 500 pounds or more, did not use a trailer. Residential customers who did use a trailer tended to use single-axle trailers more than any other kind. This pattern was also true for "Other Business" customers (69% did not use a trailer and 22% used a single-axle trailer). Just over half of the Contractors (56%) did not use a trailer, 24% used a single-axle trailer and 14% used one that was self-dumping.

- The average load weight for all respondents was 673 pounds with Metro South experiencing slightly, but not significantly, larger loads on average than Metro Central (679 pounds and 667 pounds respectively). Consistent with the higher percentage of Residential customers, about half of all loads at both locations were less than 500 pounds. The average load weight did not differ significantly by season at either the Metro Central or Metro South location.

- Although construction demolition was the second most common category of waste, these loads weighed the most on average. The average load of construction demolition

[2] Contractors were more likely than other customer types to cite dumping home construction debris as their primary reason for coming to the transfer station (71%).
[3] This question was asked of those who listed their business as office, farm/ranch, automotive, restaurant or grocery, or light industrial (n=241).

weighed 949 pounds compared to average weights of 621 pounds for mixed waste, 433 pounds for household waste and 577 pounds for yard debris.

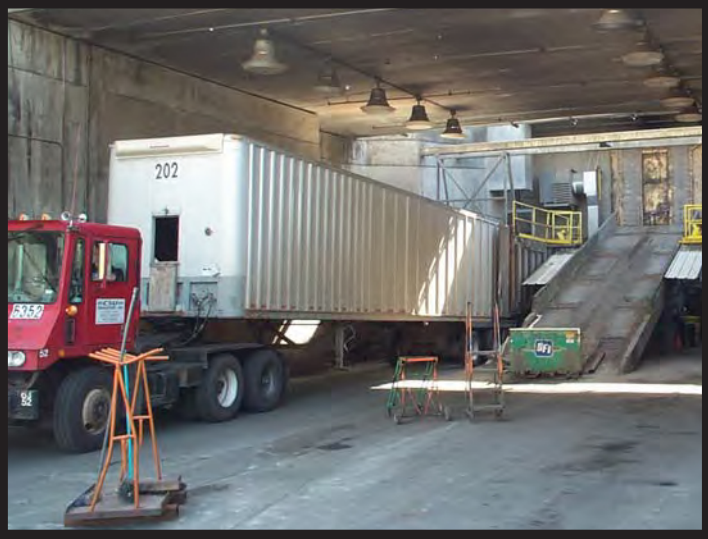
- Contractors carried more weight on average than Residential customers (1,126 pounds and 568 pounds respectively). The average weight of loads brought by Residential Customers hauling more than 500 pounds (965 pounds) was 86% of the average Contractor load weight and roughly four times the average for Residential Customers hauling smaller loads (284 pounds on average).

- Consistent with findings that Contractors had the heaviest loads and visited the transfer stations most frequently, the average load weight for respondents who said they come to the transfer station at least once a week was 1,023 pounds compared to average loads of between 540 and 725 pounds for those who said they come less often.

- Again, consistent with when Contractors come to the transfer stations, load weights were higher on weekdays than on weekends. Weekday loads averaged 754 pounds when 61% of those using the transfer stations were Residential Customers whereas weekend loads averaged 615 pounds when Residential Customers comprised 87% of transfer station users.

- Just under half of all respondents at both locations (47%) had items for recycling in their load. Respondents who brought waste from both a home and a business were the most likely to be carrying recyclable material (57%) while contractors were the least likely (43%). There were no significant differences in the percentage of customers carrying recyclable materials by season.

- Just 2% of <u>all</u> the customers who participated in the winter survey used a Metro account to pay for their load. Within each customer type, 6% of Contractors, 8% of "Other Business" customers and 1% of Residential Customers paid using a Metro account.



METRO

2008 Metro Facilities Master Plan

August 2008

Executive Summary

Section 1: Background Information

Section 2: Metro South Station

Section 3: Metro Central Station

Appendices 49

2-4. Facility Needs Assessment and Recommendations

URS conducted a series of site visits to the Metro South Transfer Station during the needs assessment process. These visits, and a corresponding series of interviews with representatives of Metro and Allied Waste, provided this needs assessment and the basis for the recommendations in the next section. (A summary of comments is included in Appendix D.)

Issues identified in the interviews about Metro South activities included:

- Long term site capacity – no more room to grow in current location
- The need for better signage
- Queuing capacity/traffic
- Recyclables recovery
- Self-hauling
- Sustainability
- Coordination with Allied Waste
- Organic waste
- Lighting improvements needed
- Good neighbor responsibilities

URS reviewed the facility needs and made recommendations for improvements at MSS considering the following:

- Regional facility needs
- Operations and safety
- Material recovery and recycling
- Sustainable design
- Good neighbor strategy

The needs assessment and improvements that the URS team recommends for MSS are also based on the major objectives of the Solid Waste Facilities Master Plan Update. These objectives are to:

- Improve the Sustainability of the Waste Transfer Operation
- Improve Customer Service
- Provide Flexibility in Materials Handling and Recovery
- Increase Operational Efficiency and Employee Safety
- Improve Hazardous Waste Facility Capacity

The recommendations that follow were based on the facilities needs assessments determined through interviews with Metro and MSS operator personnel. The recommendations are in two categories:

- Overall operations and non-facility recommendations that Metro should consider.
- Specific facility design options that include design and cost estimates.

The recommendations do not include a consideration by URS of the future of the facility or apply any cost benefit analysis. The purpose of these recommendations is to improve the existing operation of MSS.

Regional Facility Demands

The URS team assessed the future needs for MSS with consideration for how the region's growth has affected the current capacity and operation of the facility. MSS was the first regional transfer station. The station opened in 1983 and has served its customers well for twenty-five years.

The Clackamas Transfer and Recycling Center, now know as the Metro South Station, was designed and built when the region's solid waste was delivered to the St. Johns Landfill in North Portland. Within a decade of its opening, the Portland site closed and waste was shipped by transfer trailer to the Columbia Ridge Landfill, 150 miles east of Portland in Gilliam County, for disposal.

This change in regional disposal policy created different demands on how to manage waste. The initial role of MSS, as only a transfer station with limited recycling service, grew to include strategies to recover a larger volume of the waste stream.

The Metro region will continue to grow. The pace of population change, regardless of its intensity, will generate more waste and a demand for facilities to manage it. This is the context within which to consider the following options for MSS.

Long-term Commitment to the MSS Site

MSS site is an important location for Metro. Part of its value to the region combines the site's location, history, functions and customer familiarity with an emphasis on the self-haul public. These same variables have created a situation that, under the station's current configuration, it has reached its maximum vehicle capacity. This is an essential consideration in the future of MSS. The facility has additional volume capacity; the site doesn't have additional vehicle capacity.

The long-term use of this site as a solid waste facility requires a decision by Metro on one of the following options:

- Increase the public tipping fees to reduce public self-haul
- Expand the facility, if possible, into the remaining space available and operate it until it reaches complete capacity
- Retain the facility for only public self haul use and develop a new facility (separate location) for commercial traffic only
- Retain the facility for only commercial use with a large material recovery capability and relocate the public to separate site
- Develop a completely new facility for both commercial and public use

The Current Use of MSS

Future development and land use considerations in Clackamas County are colliding with the current use of MSS as a transfer station operation. Regional growth continues to place greater demand on the

current use of Metro South as a public access facility.

Historic research for Metro South indicates how the demand use for this facility has changed as the region grows. The contrast is in the steady increase in public vehicles at MSS and very stable flow of commercial vehicles over time. This difference is due to the number of private, regional material recovery facilities that have opened since the last facilities plan update in 2001.

These private facilities, which do not receive public vehicles, provide alternatives for commercial vehicles in the material recovery process. Their impact on the regional movement of solid waste is apparent in the changing flow forecasts for facilities. A 2001 estimate for the total waste volume at MSS in 2010 was 319,800 tons. The January 2008 estimate (Metro Transportation RFP) at MSS in 2010 is 277,106 tons.

The transfer processing capacity at MSS is over 400,000 tons per year. This exceeds both the 2001 and 2007 total waste volume forecasts for Metro South. This capacity, however, doesn't solve the traffic volume issues. Metro data from a 2006 survey indicates that 54% of the total traffic volume, which is public vehicles, represents only 11% of the waste volume. This growing contrast in vehicles versus volumes creates an inefficient transfer operation.

New Facility Site Selection

An important consideration in Metro's long-term regional role in managing solid waste is the decision to replace MSS. A new site and facility will be a challenging process and require a substantial lead time to find an appropriate property with the proper land use designation, size and transportation access.

The time necessary to complete the siting process may be a minimum of five years. The variables that will define the schedule and complexity for a new facility include site size and levels of service. Metro may consider a site for only commercial vehicles, only public vehicles, or a combination of both services and the HHW operation.

A site that serves only commercial vehicles may require 6 acres. If the site serves commercial and public vehicles its size may mandate 12 to 15 acres. The addition of an HHW facility and container storage will require 20 acres. The corresponding search sequence will be more difficult as the parcel size and site operations grow. Fewer site functions may ease the mitigation requirements.

More information about the Facility site selection process is included in Appendix C.

Recommendation 1: Decide on Future of MSS Site

Because MSS is operating at its maximum vehicle capacity with a queue that flows onto Washington Street during peak use periods, Metro needs to decide whether or not to improve the facility and at what cost. This decision, which is how to operate MSS as long as possible, should consider that any capital investment for improvements will not generate any significant additional revenue for Metro.

Revenue Collection under Metro's Split Transaction Fee

Prepared by

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Revenue Collection under Metro's Split Transaction Fee

Metro allocated $2,798,803 net costs to the Transaction charge

in order to recover the costs of 399,704 transactions during FY 06-07.

Transaction fees were set at $8.50 per load for Scalehouse customers,
and $3.00 per load for Automated customers.

Metro expected to recover $2,503,820 (89.5%) from Scalehouse customers;
and $315,411 (11.3%) from Automated customers.
for a total of $2,819,231 without elasticity effects.
This amounts to $20,428 more than needed to cover costs.

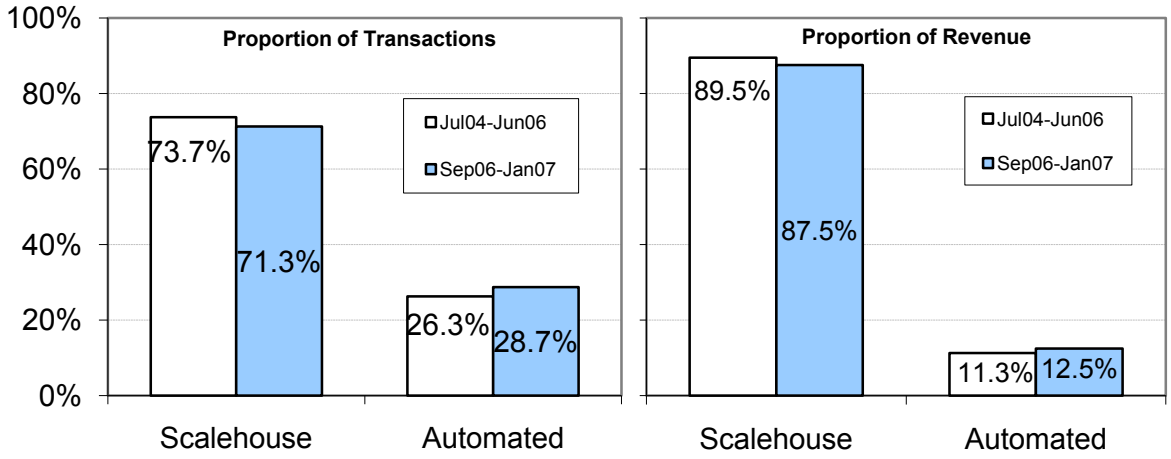
Sept06 thru Jan07 loads were 109,376 (71.3%) at the Scalehouses,
and 44,130 (28.7%) Automated.

Extrapolated to 399,704 total transactions for the year,
revenue would total $2,765,495 ,
or $53,736 less than requirements.
(mainly due to customers switching from scalehouse to lower-priced automated scales)

In fact, delivered loads are up ~ 1.1% vs. expectations for the year, so

the full-year revenue projection based on 5 months of transactions is…

$2,446,568 (87.5%) from Scalehouse customers;
and $348,395 (12.5%) from Automated customers.
for total revenue of $2,794,963 ,
or $24,268 less than expected.



If total loads matched projections, then this would be a shift of about 9,800 loads from the scalehouse to the automated scales.

Metro's Split Transaction Fee: The Effect of Rounding

As part of a new "neutral" stance toward self-haul, the RRC recommended--and the Council adopted--a transaction charge more directly aligned with cost of service. The RRC anticipated that raising the scalehouse fee by one dollar over the previous year, and lowering the automated transaction charge by over half would provide enough incentive for some (unquantified) number of scalehouse customers to seek out the lower automated charge. For each load that switched, Metro anticipated losing $5.50 in transaction revenue (lose $8.50, gain $3.00), with no anticipated decrease in scalehouse costs.

Thus, to soften the revenue impact of any elasticity-induced customer shifts and for ease of administration, both tiers of the Transaction Fee were rounded *up* prior to adoption. A review of the design parameters vs. the adopted charges is shown below along with a revenue analysis.

Design parameters (to the penny)

	Loads	Fee per load	Revenue
Scalehouse	294,567	8.49	2,501,689
Automated	105,137	2.83	297,113
Total	399,704	6.96 (avg.)	$2,798,802

Rounded (as adopted)

	Loads	Fee per load	Revenue
Scalehouse	294,567	8.50	2,503,820
Automated	105,137	3.00	315,411
Total	399,704	7.05 (avg.)	$2,819,231

Overcollection *if no elasticity:*	$20,429
Overcollection (shortfall) if 1.0% of scalehouse loads switch:	$4,226
Actual trend is about a 3.3% shift:	($33,307)