

RATE REPORT

The FY 2012-13 Solid Waste Rates A Methodological Statement



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Metro's Solid Waste Rates A Methodological Statement April 19, 2012

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The Chief Operating Officer has proposed that the Metro Council adopt the solid waste disposal charges and system fees shown in boldface type in the table below for Fiscal Year 2012-13.

Proposed Solid Waste Disposal Charges Effective August 1, 2012 through June 30, 2013

Solid Waste Rates	Current	Proposed	Change
Transaction Fees (fixed charge per load)			
Users of staffed scales	\$12.00	\$12.00	– 0 –
Users of automated scales	3.00	3.00	– 0 –
Tip Fees (rate for each ton in the load)			
Mixed solid waste	\$89.53	\$93.84	\$4.31
Recoverable solid wastes			
Yard debris or clean wood	\$48.83	\$45.78	(\$3.05)
Residential organics	51.14	54.83	3.69
Commercial organics	51.14	52.30	1.16
Asphaltic roofing	89.53*	91.57	2.04
Clean drywall	89.53*	67.80	(21.73)
Mixed inerts/rubble	89.53*	27.47	(62.06)
Minimum load charge			
<i>Minimum pounds per load</i>	\$28	\$28	– 0 –
	400	340	(20)

This Methodological Statement describes the assumptions, methodology, data, and policies on which these rates are based. The recoverable solid waste rates are new for FY 2012-13; methodology is addressed in Appendix C

This document assumes some knowledge of Metro's solid waste rates on the part of the reader. If you need more information please contact the author.

For More Information

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Section I

The Framework: Metro Solid Waste Functions and Their Finance

The context for the rate making process is outlined in this section. Topics covered: the functions funded by the rates, the legal environment, and financial principles and policies that govern Metro's design and implementation of the rates.

This section is not intended to be comprehensive but to provide an overview for new readers and a refresher for experienced readers. Interested parties may contact the author for more information.

Functions

Metro performs three conceptually different types of solid waste functions. Metro's finance follows these functions:

Disposal services. Metro owns two transfer stations that provide disposal services to commercial haulers, businesses and the public. Metro staffs the scalehouses, but the operation of the stations, transport and disposal are all performed by private operators under long-term contracts with Metro. Metro finances and manages this function as a municipal utility.

Regional Programs. Metro provides or participates in solid waste services and programs with region-wide impact. Some of these stem from state mandates. Others are driven by Metro's own goals and policies for the solid waste system. These programs and services are closer in form to public goods rather than utility functions. The programs are:

- Household hazardous waste reduction
- Latex paint recovery
- Resource conservation and recycling
- Landfill closure and stewardship
- Illegal dumpsite monitoring and clean-up

Regulation. Metro regulates privately-owned disposal facilities and manages its own flow control authority through a system of licensing, franchising, inspection and enforcement.

Finance: Rate Form follows Function

Over 85 percent of Metro's solid waste functions are funded by fees on disposal. There are three main fees: two types of disposal charges at Metro transfers stations – a fixed transaction fee and a tip fee – and the Regional System Fee, which is a per-ton surcharge levied on all disposal that is generated in the region regardless of the disposal site. Metro sets only a single rate for the mixed waste tip fee, but there are two-tiered schedules for the transaction and system fees.

Disposal Services are funded by user fees paid by customers of Metro’s transfer stations. Consistent with the “user pays” principle, these charges are designed simply to recover operating, maintenance and capital costs. The fee is structured as a two-part tariff, with a fixed charge (“Transaction Fee”) per waste load delivered, and a variable charge (“Tip Fee”) per ton of waste in the load. Metro further distinguishes two customer classes:

- Users of the staffed scales. This class is dominated by residential and business self-haulers using light vehicles, usually without tipping capability. This class pays a “staffed transaction fee” plus the tip fee per ton.
- Users of the automated scales. This class is dominated by commercial haulers. It pays an “automated transaction fee” plus the same tip fee as users of the staffed scales.

The Regional System Fee funds Metro’s regional programs and regulatory activities only. It is structured as a public goods charge¹ levied on all waste that is generated in the region and ultimately disposed, regardless of the disposal site. In generic terms, the Regional System Fee is a surcharge on landfill disposal. There is a rate for mixed waste, and a reduced rate for contaminated materials stemming from the cleanup of an accidental release into the environment.

Miscellaneous Charges. There are a variety of special disposal fees at Metro transfer stations that are based on material type – e.g., wood waste, tires, compostable waste. Formulas for these rates are specified in Metro code. Within the rate design for mixed waste, revenue from these charges is employed as an offset to the costs of the transfer stations. Similarly, there are a number of prices for the sale of goods and services – compost bins, latex paint, landfill gas. Within the rate design, revenue from these sales offsets the cost of the program that generated the revenue.

Controlling Law

Authority. Metro’s authority to charge fees for goods and services is derived from the Oregon Constitution, from the Metro Charter and from the provisions of Oregon law, including Oregon Revised Statutes Chapter 268. ORS 268 also enumerates Metro’s authorities over solid waste.

Allowable expenditures are set in state law. Under state law, Metro is limited to using the revenue derived from disposal fees only on activities related to solid waste. Specifically:

[T]he metropolitan service district shall use moneys collected by the district as service or user fees for solid waste disposal for (1) activities of the metropolitan service district related to solid waste, including activities of regional concern that are directly related to reducing the environmental impact from the generation, collection, transportation, processing and disposal of solid waste; and (2) planning, administrative and overhead costs for activities of the district related to solid waste.
[Oregon Revised Statutes section 459.335 as amended by HB 2671 in 2009]

User charges limited to the cost of service. The Metro Charter restricts the types of costs that may be recovered from user charges:

... charges for the provision of goods or services by Metro may not exceed the costs of providing the goods or services. These costs include, but are not limited to, costs of personal services, materials,

¹ A public goods charge is a fee applied to a utility bill to fund public-interest programs related to that utility service.

capital outlay, debt service, operating expenses, overhead expenses, and capital and operational reserves attributable to the good or service. [*Metro Charter, Chapter III. Finance, Section 15*]

Metro code section 5.01.150 and Chapter 5.02 govern solid waste rates. (Chapter 7.01 governs the Metro excise tax generally, and various subsections address the solid waste excise tax in particular.) Metro code is available online at www.oregonmetro.gov.

Rate Policies

The policies that govern Metro’s solid waste rates are summarized below. Application of these policies in various forms will be evident throughout Sections III and IV below.

Adopted Policies. In 1993² Metro adopted policies to guide choices during rate making:

Financial Criteria

- Revenue adequacy, reliability and predictability
- Authority to implement
- Implementation and administrative cost and effort
- Impact on credit rating

Economic Effects

- Rate payer equity and affordability
- Impacts on the costs of living and of doing business in the region

Environmental and Management

- Consistency with agency-wide planning policies and the Solid Waste Management Plan
- The rate structure should encourage waste reduction, reuse, and recycling

Bond Covenants. Metro continues to employ a number of the business practices that implemented its bond covenants even though the bonds were retired in December 2008:

Pay as you go: means that ongoing costs are to be paid with ongoing revenue.

Coverage to ensure revenue adequacy. One of Metro’s practices for meeting the debt service coverage was to base the revenue requirement on the budget rather than expected expenditures.³ Metro generally continues to follow this practice. Exceptions are explicitly noted.⁴

Operating surpluses. The priority for the use of operating surpluses is: restore contingencies, fund the new capital reserve, and hold any remaining surplus as undesignated fund balance.

Implicit Policies. From time to time the council has considered other rate policies without formally adopting them. We label these as implicit as long as the council has approved rates knowingly based on these policies. Two principal implicit policies are (1) neutrality toward self-haul (that is, neither encouraging or discouraging) by pricing it at cost; and (2) loading half of general and administrative costs onto programs and activities (100 percent loading is more typical in municipal utility cost-of-service pricing). The policy background for the latter is described in Appendix B.

² Resolution No. 93-1824A

³ For example, Metro budgets full personal services costs without an allowance for frictional vacancy.

⁴ For example, the “underspend allowance” discussion in Section III (page 10).

Section II

Rate Design

Solid waste rate making at Metro follows three standard steps:

1. Calculate the revenue that must be raised from each rate (“revenue requirement”);
2. Forecast the number of units (tons, transactions) from which revenue will be raised;
3. Divide the units into the requirement. This yields the average cost per unit (“unit cost”).

If the Metro Council approves these unit costs (with or without adjustment), they become the *adopted rates* for the following fiscal year. Thus, the rate design can be summarized simply:

$$\frac{\text{Revenue Requirement}}{\text{Number of Units}} = \text{Unit Cost} \xrightarrow{\text{adopt}} \text{Rate}$$

The main focus of this paper is documentation of each of these components for each of Metro’s solid waste rates.⁵ The organization of this paper follows the same order as the three standard steps, from revenue requirements through unit costs and quality control.

The appendices contain detail from the FY 2012-13 Rate Model from which all of the calculations in this report are derived.

⁵ These are: tonnage charges and transaction fees at Metro transfer stations, and the Regional System Fee which is levied on all disposal. There are two rates for the transaction fee corresponding to two customer classes: users of staffed scales and users of automated scales. There are seven tonnage charges – one for garbage and one each for six classes of “recoverable solid waste” accepted at the Metro stations.

Section III

Developing the Revenue Requirements

The revenue requirement for each rate is developed in three steps:

- Step 1 Estimate direct and indirect operating costs and revenues for each cost center
This step is done in conjunction with the budget cycle.
- Step 2 Determine the total revenue requirement for each cost center
This involves allocating indirect costs and non-rate revenue among cost centers.
- Step 3 Determine the revenue requirement for each rate
This involves allocating the requirements of all cost centers across all rates.

Separate sections describing each of these three steps follow a brief overview of Metro’s design of revenue requirements.

Solid Waste Revenue Requirements at Metro

While there are several ways to define the revenue requirement, most municipal utilities adopt a “cash needs” approach. Metro follows this approach, and defines “revenue requirement” as *the cash needed to fund operating costs and scheduled transfers to reserves, net of direct and indirect operating (“non-rate”) revenue*. Metro’s basic cash flow equation for revenue requirements is:

$$\text{Revenue Requirement} = \text{Uses of Funds} - \text{Non-Rate Revenue}$$

This basic equation underlies each of Metro’s solid waste rates. The following table shows the detail underlying this equation illustrated with the totals for the proposed FY 2012-13 Solid Waste Fund budget as of April 7, 2011.

Table III
“Cash Needs” Accounting for Revenue Requirements
 FY 2012-13 Totals for the Solid Waste Fund

Uses of Funds	
Direct operating expenses (operations and maintenance)	\$53,180,178
+ Indirect operating expenses (general and administrative)	7,405,496
+ Current-year capital outlays	5,315,562
+ Deposits to reserves	
Capital allowance	694,700
Contingency funding	– 0 –
Total Uses*	\$66,595,936

“Cash Needs” Accounting for Revenue Requirements *(continued)*
 Illustrated with FY 2012-13 Rate Amounts

minus: **Non-Rate Revenue**⁶

Program revenue (sales of goods & services and dedicated grants)	\$9,487,430
+ Indirect revenue (investment earnings, <i>etc.</i>)	757,119
+ Interfund and intergovernmental service transfers	208,778
+ Draws from reserves	5,676,062
Current capital expenditure	
Landfill (portion of operating costs)	
Total Sources* (excluding rate revenue).....	\$16,129,388
 <i>equals:</i> Revenue Requirement	 \$50,466,548

* Quantities in this and subsequent tables may not sum exactly to totals due to rounding.

This same accounting framework underlies the development of the revenue requirements for Metro’s solid waste programs and functions (Steps 1 and 2 on the following pages), and holds for each of the rates (Step 3).

⁶ For FY 2012-13 only this figure includes revenue from recoverable solid waste tonnage charges. For the FY 2013-14 round of rate making, these rates will be fully integrated in the rate model.

Revenue Requirements – Step 1
Estimate Direct Requirements and Resources

Direct requirements are based on costs and revenues that are associated with the delivery of a single program, product or service. Metro managers establish direct costs during the budget cycle each year. At the same time, managers estimate non-rate sources of funds including program revenue (*e.g.*, sales of latex paint), interfund transfers, and grants they expect to receive in direct support of the program, product or service. Direct requirements for each cost center are established by the cash needs equation of Table III, absent the allocation of general and administrative costs, which is done in Step 2. Table III.1 provides a summary of direct requirements by major cost center. Table 1 of the Rate Model, which is included as Appendix A, provides more detail.

Table III.1
Direct FY 2012-13 Revenue Requirements
(Based on Proposed Budget, April 19, 2012)

Center	Uses of Funds	Resources	Direct Requirements
Parks & Environmental Services	\$50,029,205	\$15,382,457	\$34,646,748
Disposal Operations	40,833,118	11,531,878	29,301,240
Parks/Environmental SW Programs	9,196,087	3,850,579	5,345,508
Sustainability Ctr. & System Plan.	\$7,388,723	\$538,809	\$6,849,914
Finance & Regulatory Services	\$1,658,731	\$60,877	\$1,597,854
Total Direct Costs and Resources	\$59,076,659	\$15,982,142	\$43,094,517
General & Administrative Costs	\$7,519,277	\$147,246	\$7,372,031
Total Solid Waste Fund	\$66,595,936	\$16,129,388	\$50,466,548

Documentation of Detail

Certain details of these calculations are not readily apparent from examination of the tables. These details are described below.

Indirect revenue is allocated among programs and functions in this step. Indirect revenue consists of investment earnings on the fund balance, revenue received on environmental clean-up waste (which incurs a reduced, fixed-rate Regional System Fee of \$2.50 per ton), regulatory fines and forfeitures, and miscellaneous revenue such as sales of documents and copies. This revenue is allocated in proportion to each program’s share of operating costs (that is, costs excluding capital and deposits to reserves).

Underspend allowance. An underspending allowance is provided against the revenue requirement of programs with contingent or “entrepreneurial” initiatives in their budgets. The purpose is to reduce operating surpluses if initiatives do not come to fruition. The default allowance is set at half of the underspending rate during the previous five years. For FY 2012-13 this affects the Resource Conservation & Recycling program only with a five percent underspend allowance that equates to \$368,952 (details in Table 1 of Appendix A). The Solid Waste Fund balance backfills the expenditure appropriation for these initiatives. If in fact the full budget is spent, the fund balance would be repaid from future rates. This practice does not violate the pay-as-you-go policy, as the FY 2012-13 rates are still set to recover *expected* expenditures.

Recycling credits. Non-commercial haulers who bring source-separated recyclable materials to the Metro transfer stations in conjunction with a waste load are allowed a credit against their disposal charge. The credit is \$3 for less than 100 pounds of recyclables and \$6 for 100 pounds or more.

Metro does not budget explicitly for such point-of-sale credits so the rate equation must ensure that sufficient revenue is raised from other rate payers to cover the cost. The steps are as follows. The number of credits is estimated from the historical claims rate and the forecast of transactions. The dollar value of the credits is a direct function of those numbers. The estimate of credits granted to minimum loads is charged against Scalehouse program revenue. The estimate associated with scaled loads is charged against program revenue for the major disposal contracts (“Major Contracts”). By thus reducing the revenue offsets, the revenue requirement is raised by the amount needed to cover the credits. For details see Table 1 of Appendix A.

Minimum load overage. Metro levies a flat disposal charge at its own stations for waste loads below a specified weight threshold (currently 360 pounds, proposed to drop to 340 pounds for FY 2012-13). The threshold is partly based on the limits of Metro’s state scale certification, partly on a policy to provide incentives to reduce the number of small loads.

The minimum load charge itself is comprised of the staffed transaction fee plus the tip fee on the threshold weight. However, most minimum loads are much smaller than the threshold, averaging 235 pounds. Thus, Metro obtains revenue on the full amount of the threshold, but pays costs only on the actual tonnage received. The revenue (without corresponding cost) on the difference between the average and the threshold (105 pounds in FY 2012-13) constitutes the “minimum load overage.” The estimated total overage for FY 2012-13 is \$250,595.

For rate making the minimum load overage is treated like another program revenue to offset the program cost. Because the overage is derived only from the tip fee portion of the minimum load charge, it is used to reduce the revenue requirements of tip fee components – specifically, the Tonnage Charge and the Regional System Fee. However, because the requirements for these rates have not been established at this stage of the analysis, the Rate Model takes a proxy approach: it assigns the overage to functions and programs that will later be allocated 100% to the appropriate rate. Specifically, the Tonnage Charge overage is added to program revenue for the major disposal contracts (for station operations, transport and disposal), and the Regional System Fee overage is allocated among regional program revenues.

Revenue Requirements – Step 2
Determine Total Requirements by Program
(Allocation of General & Administrative Costs)

Every enterprise has certain functions that support multiple activities. Examples include human resources, legal services, information technology, and management – collectively, “general and administrative” functions. These costs are termed indirect because they are required by the enterprise as a whole but are not generated by any one program, product or service. Such costs are often (but not always) allocated across functional areas or customer classes in municipal utility pricing. Metro implements a hybrid system: half of the costs are allocated, half are unallocated.

Metro’s method starts with a conventional allocation algorithm: a share of general and administrative costs are determined for each function and program using allocation factors that have a strong theoretical and historical correlation with cost causation. The factors for 16 types of indirect costs are documented in Table 2 of the Rate Model, which is reproduced in Appendix A.

However, Metro allocates only half of this general and administrative cost load among the direct cost centers. The other half remains unallocated and is ultimately recovered from the Regional System Fee. There is a long policy history underlying this approach which is summarized in Appendix B. In its review of Metro’s rates this year, the independent expert noted that given the policy purpose set forth in Appendix B, “the current Metro approach to allocating costs is within industry standard approaches.”

Table III.2 summarizes total revenue requirements for the major cost centers. Consistent with the discussion above, the reader will note that half (\$3,686,016) of the general and administrative costs is loaded into programs, and the remaining half remains unallocated.

Table III.2
Total Revenue Requirements

Cost Centers Program or Function	Revenue Requirements		
	Direct Requirements	G&A Loads	Total Requirements
Parks & Environmental Services	\$34,646,748	\$1,905,032	\$35,551,781
Disposal Operations	29,301,240	764,764	30,066,004
Parks/Environmental Programs	5,345,508	1,140,269	6,485,777
Sustainability Ctr. & System Plan	\$6,849,914	\$1,349,913	\$8,199,827
Finance & Regulatory Services	\$1,597,854	\$431,070	\$2,028,925
Totals	\$43,094,517	\$3,686,016	\$46,780,532
General & Administrative Costs	\$7,372,031	(\$3,686,016)	\$5,686,016
Total Solid Waste Fund	\$50,466,548	\$0	\$50,466,548

Revenue Requirements – Step 3
Determine Revenue Requirements by Rate Type
Allocate Total Program Requirements to Rate Categories

Up to this point, the revenue requirements have been calculated for programs and functions. In this step the requirement for each *rate* is established by allocating the requirements by program and function among the four rate categories.

For all but three functions, the allocation is one-to-one; that is, 100 percent of the requirement is assigned to one and only one rate. This approach is possible because most activities are **either** disposal functions **or** regional programs, not both. Thus, for example, the major contracts for station operations, transport and disposal are assigned completely to the Tonnage Charge, while hazardous waste reduction and landfill closure are assigned completely to the Regional System Fee.

The detail is documented in Table 3 of the Rate Model, which is included in Appendix A. Table III.3 shows a summary by major cost center.

Table III.3
Allocation of Revenue Requirements Among Fee Categories

Cost Centers Program or Function	Fee Categories				Total Revenue Req.
	Transaction Fees		Tonnage Charge	Regional System Fee	
	Staffed	Automated			
Parks & Environmental	\$2,592,834	\$286,190	\$27,615,294	\$6,057,462	\$36,551,781
Disposal Operations	2,592,834	286,190	27,186,979		30,066,004
Parks/Environ. Programs			428,315	6,057,462	6,485,777
Sust.Ctr. & System Plan.				\$8,199,827	\$8,199,827
Finance & Reg. Svcs.				\$2,028,925	\$2,028,925
Totals	\$2,592,834	\$286,190	\$27,615,294	\$16,286,214	\$46,780,532
General & Admin. Costs				\$3,686,016	\$3,686,016
Total Solid Waste Fund	\$2,592,834	\$286,190	\$27,615,294	\$19,972,229	\$50,466,548

Documentation of Details

As mentioned above, only three functions are allocated across multiple rates. These are: scalehouses, transfer station management, and facility and asset management. The reasons for the split allocations, together with the bases for the allocation, are described on the next page.

Scalehouse costs are allocated between the staffed and automated transaction fees, partly on the basis of direct costs (*e.g.* credit card service charges are solely a cost of the staffed scalehouses; toll arm maintenance, of the automated scales), and partly on correlation factors (*e.g.*, labor).

Facility and asset management is by legacy a “program” in Metro’s budget, but in fact serves to manage the solid waste physical plant, capital and capital plans. Therefore, the Rate Model treats it as a support service and allocates the revenue requirements between the tonnage charge and the regional system fee on the basis of staff time spent on the transfer stations and the facilities associated with regional programs – the hazardous waste facilities, the latex paint facility and the landfill – respectively.

Transfer station management costs. All disposal functions require some level of station management. Therefore, the costs of station management are spread across all disposal subactivities – scalehouses, operations contracts, pass-throughs and operations oversight. The allocation factors are based on the costs of personal services and materials and service in each of these subcategories, excluding the cost of the major contracts for transfer, transport and disposal as these would overwhelm all other factors combined and dramatically bias the results away from cost causation.

Section IV

The FY 2012-13 Unit Costs

Once the revenue requirements are established for each of the rates, the estimation of unit costs is quite straightforward. It involves four steps:

- Step 1 Forecast expected number of units,
- Step 2 Account for the time lag in implementation of the rates,
- Step 3 Calculate the unit costs,
- Step 4 Test the results for adequacy and sufficiency.

Each step is described in this section.

Unit Costs – Step 1 Forecast Expected Number of Units

At least once each year, Metro produces a 5-year forecast of tonnage and transactions. Particularly close attention is paid to the first 21 months of each forecast because approximately \$30 million (over 55 percent) of each year’s solid waste revenue requirements will be based on these numbers, as well as almost 90 percent of the operating revenue for the solid waste fund. The forecast performance is monitored monthly and revised quarterly as needed.

Because the effective date of the rates lags the start of the fiscal year, the forecasts must be subdivided into two segments: before the effective date and after the effective date. This information is used explicitly in Steps 2 through 4 below.

The FY 2012-13 rates are scheduled to take effect on August 1, 2012. The corresponding forecast segments are shown in Table IV.1 below.

**Table IV.1
Forecasts for the Fiscal Year 2012-13 Budget and Rates**

Units	July 1 to July 31	August 1 to June 30	Full Year
Metro Stations			
Transactions			
Staffed	18,904	195,413	214,317
Automated	7,311	89,527	96,838
Tonnage	38,816	413,203	452,019
Regional Tonnage			
Full-Fee	92,309	988,609	1,080,918
Clean-up	13,295	137,423	150,718

Unit Costs – Step 2
Account for the Time Lag in Implementation of the Rates

Because the FY 2012-13 rates are scheduled to take effect on August 1, the generation of revenue will be governed by the prevailing FY 2011-12 rates during July 2012⁷. The July revenue is estimated by multiplying those rates by the July forecast of tonnage and transactions from Table IV.1. The results are shown in the middle column below.

**Table IV.2
Revenue Requirements Adjusted for 1-Month Implementation Lag**

Rate	Annual Revenue Requirement	<i>minus:</i> Expected July 2012 Revenue	<i>equals:</i> Revenue Requirement <i>Aug'12 – Jun'13</i>
Staffed transaction fee	\$2,592,834	\$226,847	\$2,365,987
Automated transaction fee	286,190	21,933	264,257
Tonnage Charge	27,615,294	2,264,887	25,350,408
Regional System Fee	19,972,229	1,628,333	18,343,896
Total	\$50,466,548	\$4,142,000	\$46,324,548

Subtracting the July revenue from the annual revenue requirement leaves the amount of revenue that must be raised by the rates during the 11 months from August 1, 2012 through the end of the fiscal year on June 30, 2013. The total, \$46.3 million, is shown on the bottom line of the table above.

⁷ These rates may be found in the table on the opening page of this report.

Unit Costs – Step 3 Calculate the Unit Costs

The calculation of the unit costs is now quite straightforward. The 11-month revenue requirement for each rate is divided by the number of units forecasted for the same period. The math is shown in Table IV.3.

Table IV.3
FY 2012-13 Unit Costs
(Effective August 1, 2012 through June 30, 2013)

Rate	Revenue Requirement	÷ Expected Units	= Unit Cost*
Staffed transaction fee	\$2,365,987	195,413 transactions	\$12.00
Automated transaction fee	264,257	89,527 transactions	\$3.00
Tonnage Charge	25,350,408	413,203 Metro tons	\$61.35
Regional System Fee	18,343,896	988,609 regional tons	\$18.56
Total	\$46,324,548		

* Rounded to the nearest dollar in the case of transaction fees and to the nearest cent in the case of the Tonnage Charge and Regional System Fee.

The reader will note that the unit costs shown above are exactly the components of the tip fee shown on the opening page of this report. In most years the Chief Operating Officer proposes that the Metro Council adopt the unit costs thus calculated as the next year's rates⁸.

⁸ The only recent exception was FY 2009-10. Facing a potential \$10 increase in the tip fee during the severe economic downturn, the COO proposed, and the council adopted, a one-time departure from the pay-as-you-go policy and covered approximately \$2.4 million of revenue requirements with uncommitted solid waste fund balance. The proposed rates since FY 2009-10 have followed the pay-as-you-go policy.

Unit Costs – Step 4
Test Adequacy and Sufficiency of the Rates

Two final quality control steps are performed: an *adequacy test* to ensure that the rates recover the required revenue, and a *sufficiency test* to confirm that a rate increase is warranted. Both tests are subject to the budget and the forecast assumptions. The proposed rates pass both tests.

Adequacy

Because the rates are rounded, the resulting revenue will rarely match the revenue requirement exactly. The adequacy of the rates is confirmed within rounding error using a simple cash flow test. The math is shown in Table IV.4.

**Table IV.4
Cash Flow Test: FY 2012-13 Rates**

Rate	Unit Cost	x Number of Units	= Aug – Jun Revenue	+ July 2012 Revenue	= Expected Revenue
Staffed transaction fee	\$12.00	195,413	\$2,344,956	\$226,847	2,571,803
Automated transaction fee	\$3.00	89,527	268,581	21,933	290,514
Tonnage Charge	\$61.35	413,203	23,350,004	2,264,887	27,614,891
Regional System Fee	\$18.56	988,609	18,348,583	1,628,333	19,976,916
Total	-----	-----	46,312,124	\$4,142,000	\$50,454,124

vs. Revenue Requirement \$50,466,548
Revenue over / (under) requirement (\$12,424)

To balance the budget, a portion of the uncommitted fund balance is appropriated to backfill any difference between the expected revenue and the revenue requirement. For FY 2012-13 that amount is the \$12,421 shortfall shown above.

Sufficiency

To test whether a rate change is warranted, the difference between the FY 2012-13 revenue requirement is compared with the theoretical revenue without a rate change. If there is a shortfall, and the shortfall exceeds the amount of uncommitted fund balance, a rate increase would be warranted. The math is shown in Table IV.5 below.

**Table IV.5
Sufficiency Test: FY 2012-13 Revenue Without a Rate Change**

Test Factor	Dollars
Revenue with no rate change (using FY 2010-11 rates)	\$48,304,997
less: FY 2012-13 revenue requirement	\$50,466,548
<i>equals:</i> Rate revenue over / (under) requirement	(\$2,161,550)
<i>test:</i> Available uncommitted fund balance	\$416,943
Finding	<i>Rate increase warranted</i>

Section V

Summary

This report has described

- The programmatic, legal, and policy framework in which Metro's solid waste rates are set
- The methodology by which the rates are calculated

This report has documented

- The three steps by which revenue requirements are developed
- The four steps by which the rates themselves are calculated and tested
- The numbers and assumptions behind the proposed FY 2012-13 rates

For further information

- The FY 2012-13 Rate Ordinance and staff report are available on Metro's website
- The independent review of the FY 2012-13 rates is also available on the website
- Search "Rate Setting" on www.oregonmetro.gov

Schedule

- The Metro Council will first read the rate ordinance on April 19.
- Persons wishing to testify in public may request to do so on this date
- A public hearing and final action is scheduled for April 26
- Under this schedule the rates are to take effect August 1, 2012

Appendices

- Appendix A Rate Model Table 1
 Summary of the FY 2012-13 Solid Waste Fund Budget
- Rate Model Table 2
 Allocation of General & Administrative Costs
- Rate Model Table 3
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 proposed for FY 2012-13

Solid Waste Fund Rate Model
Table 1. Summary of the FY 2012-13 Solid Waste Fund Budget
 Based on the COO's Proposed Budget and Solid Waste Forecast Released March 2012

Line	Cost Centers		Uses of Funds					less: Sources of Funds (excluding rate revenue)					Direct Revenue Requirements (uses - sources)
	Center Program or Function	Expenses	Underspend Allowance	Less: Underspend Allowance	Capital	Deposit to Reserves	Total	Program Revenue	Allocated Revenue	Draw from Reserves	Interfund Transfers	Total	
Parks & Environmental Services													
	Disposal Operations												
1	Scalehouses	\$1,415,414	0%		\$3,915,781	\$572,106	\$1,415,414	98,485	\$23,507	\$3,905,781	\$0	\$11,531,878	\$1,293,422
2	Major Contracts	33,051,507	0%			122,594	33,051,507	6,034,096	548,916			6,583,011	26,468,496
3	Pass-Throughs	855,022	0%				855,022	904,100				904,100	(49,077)
4	Station Management	1,023,288	0%		3,915,781	572,106	5,511,175		16,995	3,905,781		3,922,776	1,588,399
5	Disposal Operations (total)	\$36,345,231	-----	\$0	\$3,915,781	\$572,106	\$40,833,118	\$7,036,680	\$589,417	\$3,905,781	\$0	\$11,531,878	\$29,301,240
6	Hazardous Waste Reduction	4,077,625	0%		253,000	122,594	4,453,219	308,000	39,748	253,000		\$600,748	3,852,471
7	Latex Paint Recovery	1,923,479	0%				1,923,479	2,011,875	18,750			2,030,625	(107,146)
8	Landfill Stewardship	1,143,447	0%		1,003,000		2,146,447	28,000	11,146	1,173,500		1,212,646	933,801
9	Facility & Asset Mgmt.	672,942	0%				672,942		6,560			6,560	666,382
10	Subtotal	\$44,162,724	-----	\$0	\$5,171,781	\$694,700	\$50,029,205	\$9,384,555	\$665,621	\$5,332,281	\$0	\$15,382,457	\$34,646,748
Sustainability Center & Planning													
11	Resource Cons. & Recycling	\$7,379,040	5%	(\$368,952)			\$7,010,088	\$87,875	\$71,930		\$175,313	\$335,118	\$6,674,970
12	System Planning	378,635	0%				378,635	\$87,875	3,691	200,000		203,691	174,945
	Subtotal	\$7,757,675	-----	(\$368,952)	\$0	\$0	\$7,388,723	\$87,875	\$75,621	\$200,000	\$175,313	\$538,809	\$6,849,914
Finance & Regulatory Services													
13	Private Facility Regulation	\$1,073,903	0%		\$30,000		\$1,103,903	\$15,000	\$10,468	\$30,000		\$55,468	\$1,048,435
14	Illegal Dumping	554,828	0%				554,828		5,408			5,408	549,420
16	Subtotal	\$1,628,731	-----	\$0	\$30,000	\$0	\$1,658,731	\$15,000	\$15,877	\$30,000	\$0	\$60,877	\$1,597,854
17	Total Programs and Functions	\$53,549,130	-----	(\$368,952)	\$5,201,781	\$694,700	\$59,076,659	\$9,487,430	\$757,119	\$5,562,281	\$175,313	\$15,982,142	\$43,094,517
General & Administrative													
18	Parks & Environmental Services	\$361,915	0%				\$361,915					\$0	\$361,915
19	Sustainability Center	317,543	0%				317,543					0	317,543
20	Budget & Finance	390,198	0%				390,198					0	390,198
21	Auditor, COO, CFO, Fin. Planning	797,067	0%				797,067					0	797,067
22	Accounting	478,628	0%				478,628					0	478,628
23	Building & Office Services	358,233	0%				358,233					0	358,233
24	Contract Services	130,786	0%				130,786					0	130,786
25	Human Resources	315,376	0%				315,376					0	315,376
26	Information Technology	889,770	0%				889,770					0	889,770
27	Media Relations & Creative Services	1,049,775	0%				1,049,775					0	1,016,310
28	Metro Attorney	453,850	0%				453,850					0	453,850
29	Policy & Compliance	516,839	0%				516,839					0	516,839
30	Risk Management & Insurance	247,061	0%		113,781		247,061			113,781		113,781	247,061
31	Safety	171,622	0%				171,622					0	171,622
32	Support Services	485,384	0%				485,384					0	485,384
33	Planning, GIS, Data Services	441,449	0%				441,449					0	441,449
34	Total General & Administrative	\$7,405,496	-----	\$0	\$113,781	\$0	\$7,519,277	\$0	\$0	\$113,781	\$33,465	\$147,246	\$7,372,031
35	Total Solid Waste Fund	\$60,954,626	-----	(\$368,952)	\$5,315,562	\$694,700	\$66,595,936	\$9,487,430	\$757,119	\$5,676,062	\$208,778	\$16,129,388	\$50,466,548

Solid Waste Fund Rate Model
Table 2. Allocation of General and Administrative Costs among Programs and Disposal Operations
Based on 50% Loading of General & Administrative Costs (Mixed Public-Private Pricing Model)

General & Administrative Cost Centers	General and Administrative Cost Loads by Program and Function ("Total G&A Costs" at left are the "Direct Revenue Requirements" for G&A from Table 1)										Totals			
	Programs					Disposal Operations					Allocated	Unallocated	Total G&A Costs	
	Resource Cons. & Recycling	Hazardous Waste Reduction	Latex/Paint Recovery	Private Facility Regulation	Illegal Dumping	Landfill Stewardship	Facility & Asset Mgmt.	System Planning	Subtotal (allocated to programs)	Major Contracts				Pass-Throughs
Parks & Environmental Services	\$83,035	\$16,116	-	-	\$18,418	\$3,070	\$132,917	\$35,762	-	-	\$12,279	\$48,040	\$180,958	\$361,915
Sustainability Center	\$158,772	-	-	-	\$2,436	\$5,869	\$163,808	\$18,161	-	-	\$13,130	-	158,772	317,543
Budget & Finance	\$71,931	\$41,195	\$17,801	\$11,085	\$4,975	\$11,988	\$9,924	\$4,858	\$4,858	\$163,808	\$18,161	\$31,291	195,099	390,198
Auditor, COO, CFO, Fin. Planning	\$146,935	\$84,149	\$36,363	\$22,643	\$1,385	\$11,238	\$4,018	\$9,924	\$334,615	\$37,098	\$26,820	\$63,919	398,534	797,067
Accounting	\$71,556	\$11,518	\$19,368	\$1,221	\$5,268	\$4,215	\$16,858	\$4,215	\$125,628	\$102,754	\$10,931	\$113,686	239,314	478,628
Building & Office Services	\$103,255	\$3,161	\$1,054	\$28,448	\$5,268	\$4,215	\$16,858	\$4,215	\$166,473	-	\$12,644	\$12,644	179,117	358,233
Contract Services	\$28,026	\$4,671	\$2,123	\$11,465	\$2,123	\$3,397	\$6,794	\$1,699	\$68,599	-	\$5,096	\$6,794	65,393	130,786
Human Resources	\$40,882	\$47,974	\$8,760	\$11,263	\$2,086	\$10,012	\$6,675	\$1,669	\$129,321	\$21,693	\$6,675	\$28,367	157,688	315,376
Information Technology	\$186,319	\$20,913	\$17,111	\$51,333	\$9,506	\$22,815	\$30,419	\$7,605	\$346,022	\$76,049	\$22,815	\$96,863	444,885	889,770
Media Relations & Creative Services	\$187,351	\$107,295	\$46,364	\$28,871	\$6,344	\$15,285	\$22,489	\$12,654	\$426,655	\$47,302	\$34,198	\$81,500	508,155	1,016,310
Metro Attorney	\$53,489	\$8,915	\$4,052	\$123,998	\$4,052	\$6,484	\$12,967	-	\$213,958	\$3,242	\$9,725	\$12,967	226,925	453,850
Policy & Compliance	\$36,139	\$19,970	\$9,420	\$5,259	\$2,717	\$5,600	\$3,296	\$1,854	\$84,257	\$6,932	\$5,012	\$174,163	258,420	516,839
Risk Management & Insurance	\$52,942	\$8,824	\$4,011	\$21,658	\$4,011	\$6,417	\$12,834	-	\$110,696	\$3,209	\$9,626	\$12,834	123,531	247,661
Safety	\$36,391	\$6,514	-	-	-	\$28,604	-	-	\$71,509	\$14,302	-	\$14,302	85,811	171,622
Support Services	\$61,046	\$73,391	\$14,244	\$18,314	\$3,391	\$16,279	\$10,853	\$2,713	\$200,231	\$31,608	\$10,853	\$42,461	242,692	485,384
Planning, GIS, Data Services	\$97,384	\$16,231	\$7,378	\$39,839	\$7,378	\$5,975	\$23,608	-	\$197,792	\$5,733	\$17,199	\$22,932	220,725	441,449
Allocated Loads	\$1,296,027	\$567,632	\$210,679	\$375,398	\$55,673	\$172,595	\$189,362	\$53,885	\$2,921,252	\$405,543	\$159,626	\$2,593	\$197,001	\$3,686,016
<i>Percentage load by program/function</i>	14.9%	12.2%	9.9%	25.9%	9.1%	13.1%	22.0%	12.5%	14.5%	22.3%	0.5%	0.3%	16.1%	2.1%

Table 2-Appendix. Allocation Factors for General & Administrative Costs

General & Administrative Cost Centers	Allocation Factors for General & Administrative Costs										Total G&A Costs		
	Resource Cons. & Recycling	Hazardous Waste Reduction	Latex/Paint Recovery	Private Facility Regulation	Illegal Dumping	Landfill Stewardship	Facility & Asset Mgmt.	System Planning	Subtotal (% allocated to programs)	Major Contracts		Pass-Throughs	Station Management
Parks & Environmental Services	x	22.9%	4.5%	-	-	5.1%	3.4%	0.8%	36.7%	-	-	-	13.3%
Sustainability Center	x	50.0%	-	-	-	-	-	-	50.0%	-	-	-	50.0%
Budget & Finance	x	18.4%	4.6%	2.8%	0.6%	1.5%	2.2%	1.2%	42.0%	4.7%	3.4%	3.4%	8.0%
Auditor, COO, CFO, Fin. Planning	x	18.4%	4.6%	2.8%	0.6%	1.5%	2.2%	1.2%	42.0%	4.7%	3.4%	3.4%	8.0%
Accounting	x	15.0%	2.4%	4.0%	0.3%	2.3%	0.8%	1.1%	26.2%	21.5%	2.3%	2.3%	23.8%
Building & Office Services	x	28.8%	0.9%	0.3%	7.9%	1.2%	4.7%	1.2%	46.5%	-	-	-	3.5%
Contract Services	x	21.4%	3.6%	1.6%	8.8%	1.6%	5.2%	-	44.8%	1.3%	3.9%	3.9%	5.2%
Human Resources	x	13.0%	2.8%	3.6%	0.7%	3.2%	2.1%	0.5%	41.0%	6.9%	2.1%	2.1%	9.0%
Information Technology	x	20.9%	2.4%	1.9%	5.8%	1.1%	3.4%	0.9%	38.9%	8.5%	2.6%	2.6%	11.1%
Media Relations & Creative Services	x	18.4%	4.6%	2.8%	0.6%	1.5%	2.2%	1.2%	42.0%	4.7%	3.4%	3.4%	8.0%
Metro Attorney	x	11.8%	2.0%	0.9%	27.3%	1.4%	2.9%	-	47.1%	0.7%	2.1%	2.1%	2.9%
Policy & Compliance	x	7.0%	3.9%	1.8%	1.0%	1.1%	0.6%	0.4%	16.3%	1.3%	0.5%	0.5%	33.7%
Risk Management & Insurance	x	21.4%	3.6%	1.6%	8.8%	1.6%	5.2%	-	44.8%	1.3%	3.9%	3.9%	5.2%
Safety	x	-	21.2%	3.8%	-	16.7%	3.4%	2.2%	41.3%	6.5%	2.2%	2.2%	8.7%
Support Services	x	12.6%	15.1%	2.9%	3.8%	3.4%	2.2%	0.6%	41.3%	6.5%	2.2%	2.2%	8.7%
Planning, GIS, Data Services	x	22.1%	3.7%	1.7%	9.0%	1.4%	5.3%	-	44.8%	1.3%	3.9%	3.9%	5.2%

NOTES

o The figures in Table 2-Appendix are used to distribute G&A costs among programs and disposal operations. For example, 18.4% of the cost of Media Relations & Creative Services is allocated to the Resource Cons. & Recycling program; 10.6% to the Hazardous Waste Reduction program; and so forth. o The data underlying the allocation factors in Table 2-Appendix have historically proven to correlate well with programs or functions and their use of G&A services. The following list identifies the specific measures that are converted to percentages and shown in the appendix table above. A "+," indicates a

FY 2012-13 Rates under the COO's Proposed Budget (run date: March 21, 2012)

Allocation based on	Allocation based on
Parks & Environmental Services..... SW FTE in Parks/Enviro Services	Policy & Compliance..... Operating Budget
Sustainability Center..... SW FTE in the Sustainability Cr.	Risk Management & Insurance..... Total Exempt FTE
Budget & Finance/Auditor, COO, CFO, Fin. Planning..... Operating Budget less Major Contracts	Safety..... Safety officer's time allocation
Accounting..... Usage (Scale Hs.) + M&S Budget (balance)	Support Services..... All Full-Time Equivalents (FTE)
Building & Office Services..... Employee head count at Metro Center	Planning, GIS, Data Services..... Usage (SUS) + Total Exempt FTE (balance)

Solid Waste Fund Rate Model

Table 3. Calculation of Revenue Requirements and Assignment to Rate Components
 Based on 50% Loading of General & Administrative Costs (Mixed Public-Private Pricing Model) and the Solid Waste Forecast Released March 2012

Line	Department Program or Function	Cost Centers		Revenue Requirements		Assignment of Requirements to Fee Categories			Confirm Sum to Final Requirements	
		Department		Direct (From Table 1)	G&A Loads (From Table 2)	Final Requirements	Transaction Fees			Regional System Fee
		Program	Function				Staffed	Automated		
Parks & Environmental Services										
1	Disposal Operations									
	Scalehouses			\$1,293,422	\$405,543	\$1,698,966	\$1,483,680	\$215,286		\$1,698,966
2	Major Contracts			\$26,468,496	159,626	26,628,122			26,628,122	26,628,122
3	Pass-Throughs			(\$49,077)	2,593	(46,484)			(46,484)	(46,484)
4	Station Management			\$1,568,399	197,001	1,765,400	1,109,154	70,905	605,342	1,785,400
5	Disposal Operations (total)			\$29,301,240	\$764,764	\$30,066,004	\$2,592,834	\$286,190	\$27,186,979	\$30,066,004
6	Hazardous Waste Reduction			3,852,471	567,632	4,420,103				4,420,103
7	LateX Paint Recovery			(107,146)	210,679	103,533				103,533
8	Landfill Stewardship			933,801	172,595	1,106,396				1,106,396
9	Facility & Asset Mgmt.			666,382	189,362	855,745			428,315	855,745
10	Subtotal			\$34,646,748	\$1,905,032	\$36,551,781	\$2,592,834	\$286,190	\$27,615,294	\$36,551,781
Sustainability Center & Planning										
11	Resource Cons. & Recycling			\$6,674,970	\$1,296,027	\$7,970,997				\$7,970,997
12	System Planning			174,945	53,885	228,830				228,830
13	Subtotal			\$6,849,914	\$1,349,913	\$8,199,827	\$0	\$0	\$0	\$8,199,827
Finance & Regulatory Services										
14	Private Facility Regulation			\$1,048,435	\$375,398	\$1,423,832				\$1,423,832
15	Illegal Dumping			549,420	55,673	605,092				605,092
16	Subtotal			\$1,597,854	\$431,070	\$2,028,925	\$0	\$0	\$0	\$2,028,925
17	Total Programs and Functions			\$43,094,517	\$3,686,016	\$46,780,532	\$2,592,834	\$286,190	\$27,615,294	\$46,780,532
General & Administrative										
18	Parks & Environmental Services			\$361,915	(\$180,958)	\$180,958				\$180,958
19	Sustainability Center			317,543	(\$158,772)	158,772				158,772
20	Budget & Finance			390,198	(\$195,099)	195,099				195,099
21	Auditor, COO, CFO, Fin. Planning			797,067	(\$398,534)	398,534				398,534
22	Accounting			478,628	(\$239,314)	239,314				239,314
23	Building & Office Services			358,233	(\$179,117)	179,117				179,117
24	Contract Services			130,786	(\$65,393)	65,393				65,393
25	Human Resources			315,376	(\$157,688)	157,688				157,688
26	Information Technology			889,770	(\$444,885)	444,885				444,885
27	Media Relations & Creative Services			1,016,310	(\$508,155)	508,155				508,155
28	Metro Attorney			453,850	(\$226,925)	226,925				226,925
29	Policy & Compliance			516,839	(\$258,420)	258,420				258,420
30	Risk Management & Insurance			247,061	(\$123,531)	123,531				123,531
31	Safety			171,622	(\$85,811)	85,811				85,811
32	Support Services			485,384	(\$242,692)	242,692				242,692
33	Planning, GIS, Data Services			441,449	(\$220,725)	220,725				220,725
34	Subtotal			\$7,372,031	(\$3,686,016)	\$3,686,016	\$0	\$0	\$0	\$3,686,016
35	Total Solid Waste Fund			\$50,466,548	\$0	\$50,466,548	\$2,592,834	\$286,190	\$27,615,294	\$50,466,548

FY 2012-13 Rates under the COOs Proposed Budget (run date: March 21, 2012) ----- Final revenue requirements by rate component. -----

Appendix B

Policy Background:

Loading 50 Percent of General and Administrative Costs

General and administrative costs (“G&A”) are allocated to each of the cost centers using factors consistent with a cost-of-service approach. These factors were established with advice and review from the Rate Review Committee in 2003 and 2004. Allocation factors are based on usage or strong correlation with usage, and are updated each year. Metro departs from most cost-of-service approaches on a key point: Metro loads only half of the G&A allocation on each cost center. (Under a standard approach, all of the G&A would be loaded.) The remaining half is allocated directly to the Regional System Fee.

This policy stems from a 1998 decision by the Metro Council to allow privately-owned transfer stations to handle a significant portion of the region’s putrescible waste. This decision was driven by the council’s interest in reducing the economic cost and environmental impact of waste truck transport. The council was able to achieve these objectives by authorizing more transfer stations around the region and thereby improving access to disposal sites. In conjunction with this decision, the council also adopted a financial arrangement designed to protect Metro’s fiscal position and minimize the risk of stranding public investment. The financial arrangement was implemented through the rate system – specifically, through a cost allocation approach in which all of Metro’s major fixed costs that were undertaken on behalf of the regional disposal system – debt service on the transfer stations, the fixed cost of the transport and disposal contracts, and certain general and administrative costs – were allocated to the Regional System Fee and paid by all regional ratepayers, not just users of the transfer stations. Under this mechanism, the condition of Metro’s Solid Waste Fund is far less sensitive to tonnage flows than would be the case under a standard municipal utility cost-of-service approach. In the years after 1998, the fixed contract costs were negotiated out of the contracts and debt service was later retired, leaving only G&A among the costs to be broadly shared. In this environment, and in recognition of the significantly reduced risk to the stranding of public investment, in 2005 Metro began loading half of the G&A onto cost centers using a standard cost-of-service approach, and left half in the surcharge paid by all ratepayers, the Regional System Fee.

In the next few years the Solid Waste Roadmap project, launched in 2010 to plan for the future of the regional solid waste system, will be examining options for the financing of programs and disposal. This project will either confirm, modify or rewrite the current rate approach consistent with the relationship between public and private investment in the system of the future.

Appendix C

Tonnage Charges for Recoverable Solid Waste

For FY 2012-13 the Chief Operating Officer is proposing to modify the definition and the rate structure for “recoverable solid waste (“RSW”) accepted at Metro’s transfer stations.

RSW is defined as high-grade or homogeneous materials received in a single transaction that can be recycled, composted or recovered, as-delivered. Examples include clean wood and compostable food waste. Historically, to encourage high-grading, Metro has not charged the cost of service for managing these wastes. The COO proposes to implement cost-of-service rates beginning in FY 2012-13. If the Metro Council approves these changes, RSW rate making will be integrated with the development of other solid waste rates. Until that time, this appendix serves as documentation.

All RSW is managed by contract. Hence, Metro’s contract prices are its direct costs, and these are included in the proposed RSW charges. The focus of this appendix is the allocation of general and administrative, capital, and fixed costs to the RSW tonnage charges.

General, administrative and capital. For FY 2012-13, these costs are allocated at the same per-ton rate as to the tonnage charge for mixed solid waste, and the revenue requirement for mixed solid waste is reduced by the amount of expected revenue from RSW charges. These amounts are shown in the table below.

Fixed cost. The fixed costs of the operating contracts are allocated using a double-factor allocation method based on the proportion of tonnage represented by each RSW and the proportion of operating cost represented by each RSW. Metro’s fixed operating loads are a function of both throughput and cost; therefore, an allocation based on both factors is appropriate. The double factor is simply $\text{tonnage_share} \times \text{cost_share}$, and renormalized. As with general, administrative and capital costs, the revenue requirement for mixed solid waste is reduced by the amount of expected revenue from the fixed-cost component of RSW charges..

More detail on the RSW methodology may be obtained by contacting the author.