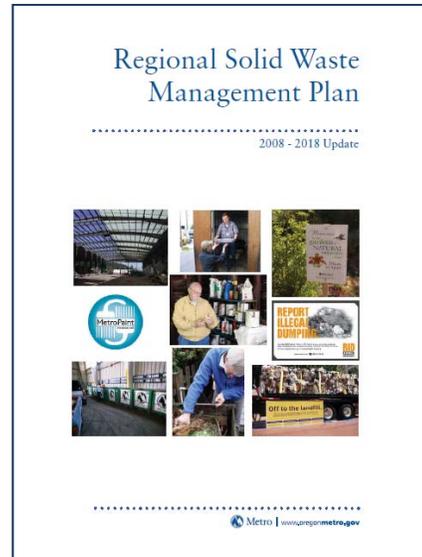

Regional Solid Waste Management Plan 2008-2018 Midterm Review



April 2015

 Metro | *Making a great place*

About Metro

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

A regional approach simply makes sense when it comes to making decisions about how the region grows. Metro works with communities to support a resilient economy, keep nature close by and respond to a changing climate. Together we're making a great place, now and for generations to come.

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SECTION 1: BACKGROUND

The 2008-2018 Regional Solid Waste Management Plan (RSWMP):

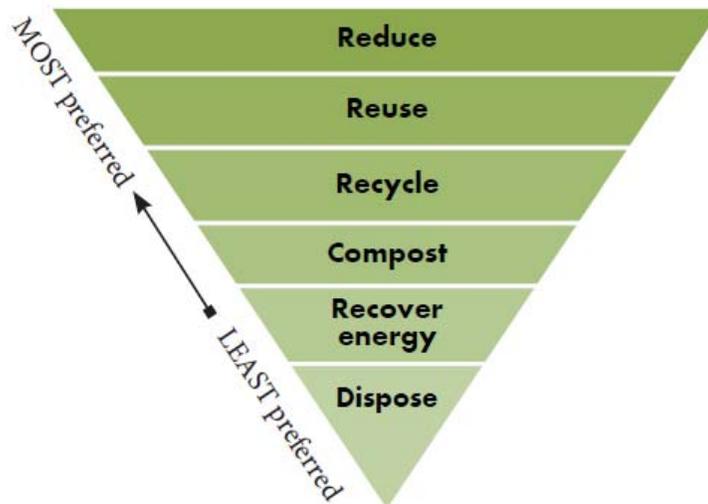
- Serves as a regional framework for the coordination of waste reduction programs
- Provides a prioritized program of solid waste system improvements
- Establishes regional goals and objectives, including a waste recovery goal
- Satisfies state law requiring the development and implementation of a waste reduction program for the Metro region

The RSWMP envisions an evolution from today's solid waste management practices to those that more holistically contribute to the sustainable use of natural resources. Implementation of the goals and objectives outlined in the plan will enable the region to continue progress in three key areas:

Waste Reduction	Reducing the amount and toxicity of waste generated and disposed and attaining the watershed's 64 percent statutory waste recovery goal.
Sustainable Operations	Advancing sustainable practices throughout the region's solid waste operations.
Solid Waste Disposal System	Ensuring the disposal system continues to serve the best interests of the region.

The plan uses the solid waste hierarchy as the framework for guiding solid waste management decisions and program development in these areas. The solid waste hierarchy provides an order of preference for action to reduce and manage waste represented in the figure below.

Figure 1. Solid waste hierarchy



Source: Oregon Revised Statutes 459.015; Oregon DEQ; RSWMP 2008-18, 2008.

SECTION 2: SCOPE AND METHODOLOGY

This report fulfills the requirement for a five-year review of the RSWMP to evaluate the need for plan revisions. The objectives of the review were to:

1. Determine if the plan is being implemented uniformly and consistently across the region.
2. Assess plan effectiveness in meeting program goals and objectives.
3. Determine if major mid-course corrections are needed.

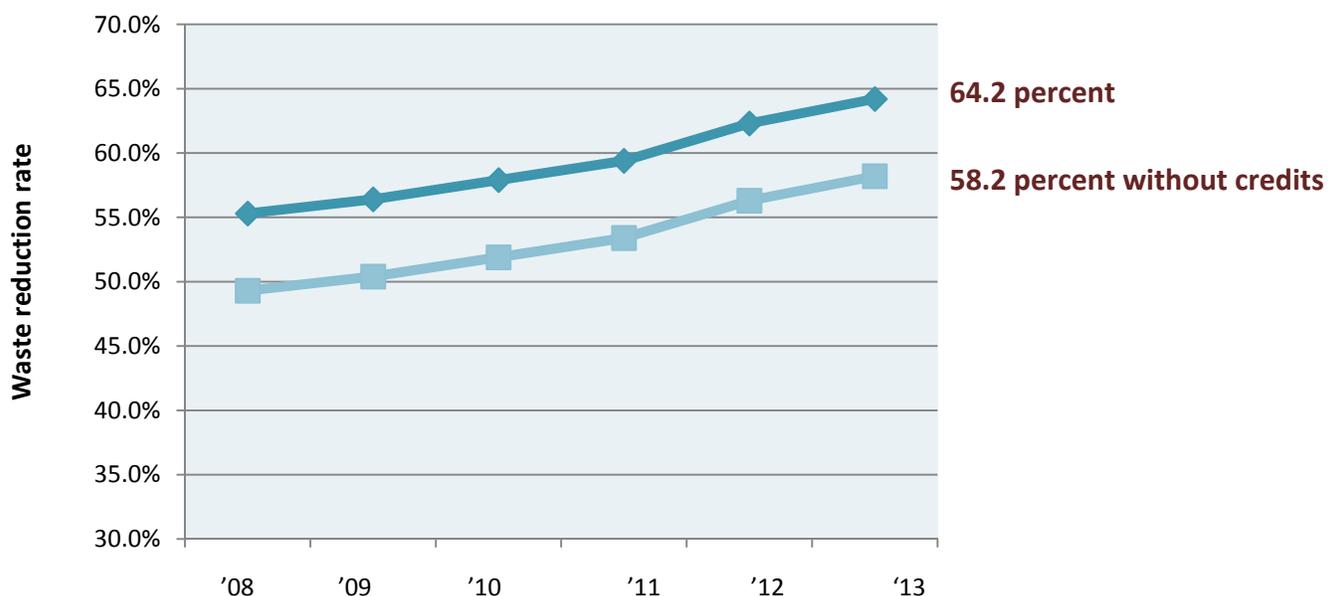
To accomplish these objectives, Metro assessed each program area in the plan to evaluate performance and identify areas for monitoring or improvement. The quantitative progress of the plan was evaluated using the most current recovery data provided by Oregon Department of Environmental Quality (DEQ). Metro also conducted a high-level review of progress on the Sustainable Operations and Solid Waste System elements of the plan.

SECTION 3: REGIONAL PROGRESS

In 2001, the Oregon legislature set state and watershed goals for recovery and a state goal for waste generation. The watershed goal for the Metro region, comprising Multnomah, Washington and Clackamas counties, is 64 percent recovery by 2009. The recovery goal includes an allowance for up to six percent credits in the recovery rate calculations for the implementation of programs that target waste prevention, reuse and composting. The statewide goals for waste generation are no increase in per capita waste generation by 2005 and no increase in total waste generation by 2009 and in subsequent years.

In 2013, the Metro region achieved the watershed recovery goal with a 64.2 percent recovery rate, recovering more than 1.3 million tons of material. This includes six percent in credits from waste prevention, reuse and composting programs, and a calculated 58.2 percent recovery rate from recycling, composting and energy recovery (primarily from wood waste).

Figure 2. Metro Region Recovery Rate 2008-2013

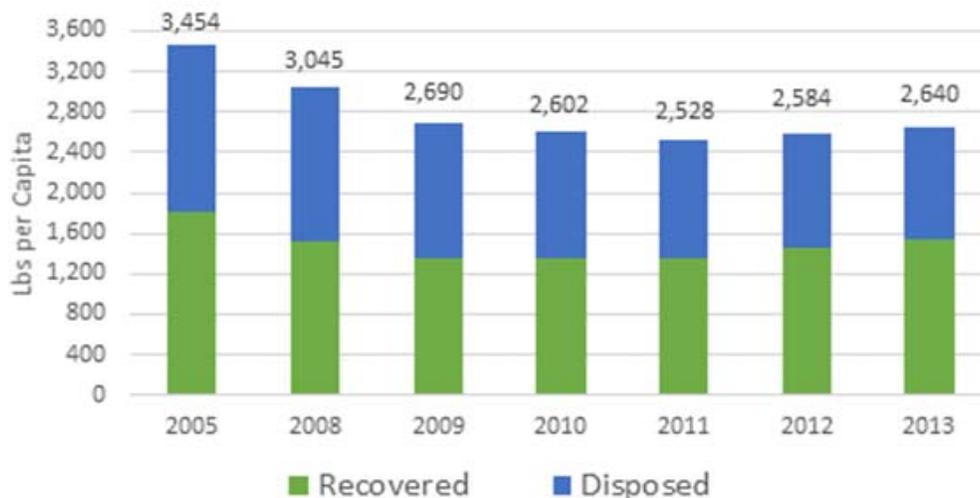


Source: Oregon Department of Environmental Quality, 2014.

The region saw increases in recovery for some commonly-recycled materials, such as paper, but also growth in newer items such as food scraps and electronics. A significant boost in electronic waste recovery can be attributed to Oregon E-Cycles, a statewide program that requires electronics manufacturers to provide free recycling of computers, monitors and televisions.

The per-capita waste generation in Oregon during 2013 was 2,469 pounds and Metro’s per-capita waste generation was slightly higher at 2,640 pounds. Overall, per-capita waste generation in the region has decreased 23 percent since 2005. Part of this decrease can be attributed to the Great Recession that began in approximately in 2007.

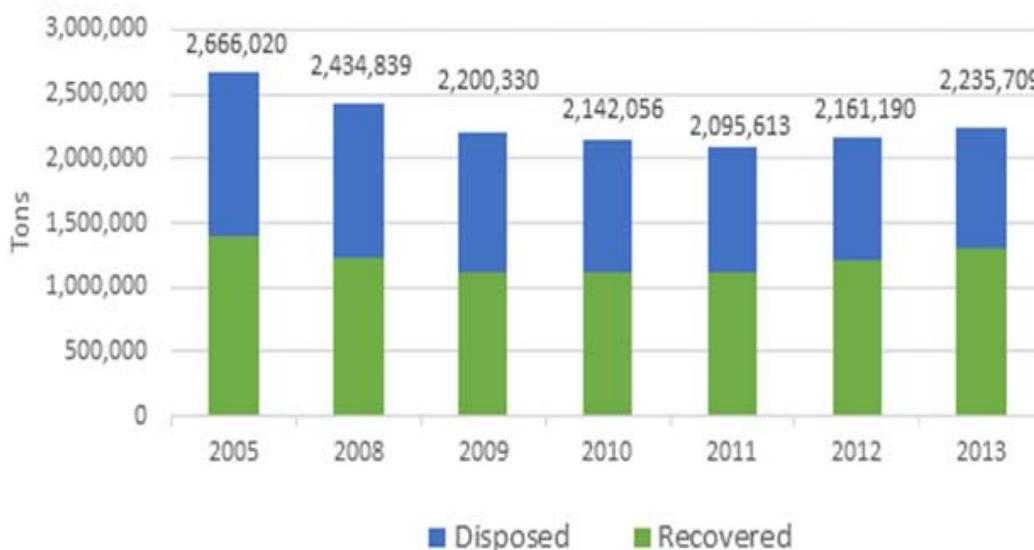
Figure 3. Per-Capita Waste Generation in Metro Region 2013



Source: Oregon Department of Environmental Quality, 2014.

Metro’s total waste generation during 2013 was more than 2.2 million tons. Total waste generation has decreased 16 percent since 2005.

Figure 4. Total Waste Generation in Metro Region 2013



Source: Oregon Department of Environmental Quality, 2014.

Recycling efforts of the region's residents and businesses have resulted in significant environmental benefits, including conservation of natural resources, energy savings and greenhouse gas reductions. Greenhouse gas reductions in 2013 from recycling, composting and energy recovery totaled approximately 1.9 million metric tons of carbon dioxide equivalents – equal to tailpipe emissions from nearly 420,000 passenger vehicles.

SECTION 4: FINDINGS

The RSWMP identifies policies, goals and objectives to guide the program in the key areas for action: waste reduction, sustainable operations and the solid waste disposal system. The plan identifies the waste recovery rate as the primary measure of plan performance. The midterm review identified six key findings based on the implementation of the plan to date that are detailed in the following pages.

1.0 Progress toward regional waste reduction goals and objectives has been achieved through long-standing and new programs.

Waste Reduction Goal and Objectives

The Waste Reduction component of the RSWMP includes four goals and 45 objectives to guide programs and regional requirements to reach the 64 percent recovery goal. The four goals are listed below and the objectives can be found in Appendix A.

Program Area Goals

Waste Reduction:	Increase the sustainable use of natural resources by achieving the waste reduction goal of 64 percent.
Education:	Increase the adoption of sustainable practices through increased knowledge, motivation and commitment.
Hazardous Waste:	Reduce the use and improper disposal of products generating hazardous waste in order to protect the environment and human health.
Product Stewardship:	Shift responsibility to manufacturers, distributors and retailers for ensuring that products are designed to be nontoxic and recyclable, and incorporate the cost of the product's end-of-life management in the purchase price.

Both the goals and objectives provide high-level direction to allow for programs to adapt with the evolving waste stream. The midterm review found that the region has made consistent progress toward the goals and meeting the plan's objectives through:

- Maintenance of key long-standing programs
- New and expanded programs to increase recovery in targeted sectors
- Required programs

The midterm review evaluated each of these programs areas and identified two areas for potential improvement and further program expansion. A summary of the review is detailed in the following pages.

Long-Standing Programs

Each year, Metro and its local government partners develop cooperative plans to implement the region's waste prevention and recycling programs. The creation of regionally coordinated plans and services accessible to all is the basis of each program area. As a result, each goal is supported by core programs that ensure basic waste reduction services and programs tailored to specific audiences. Examples of these programs are highlighted below.

Annual Waste Reduction Grant Program	Per-capita grants allocated to local governments have played an instrumental role in helping local jurisdictions implement waste prevention and recycling activities, provide regular outreach to citizens and businesses, maintain recovery progress and participate in regional waste reduction work groups.
Recycle at Work	The Recycle at Work program is a cooperative program delivered by Metro and local governments to provide technical assistance to businesses in the region through on-site waste evaluations, recommendations to the businesses around key practices and follow-up evaluations to assess progress. The program is designed to address the individual needs, barriers and particular circumstances affecting the business sector with regard to waste prevention, recycling and toxics reduction. Grants are provided to local governments for the Recycle at Work program based on number of employees in each jurisdiction.
School Education	Metro provides targeted education in schools, including elementary and secondary programs, to provide age-appropriate information and concepts around resource conservation and environmental awareness. The guiding approach is to develop curriculums that are appropriate for each age group and that cumulatively help build an environmental stewardship ethic.
Adult Education	In addition to conducting annual education and outreach campaigns to support resident awareness of recycling, reuse and waste prevention, Metro provides both phone and web-based information referral services through the Recycling Information Center (RIC) resource listings. In addition, Metro's website provides a comprehensive clearinghouse that includes the Find-A-Recycler tool and a "tools for living" section that provides information about alternatives to toxic products used at home and in the yard and garden.
Toxics Reduction and Natural Gardening	Education on alternatives to household chemicals is provided through general and targeted audience efforts. Natural gardening education is provided through partner outreach, an e-newsletter, two learning gardens, robust online information and informational brochures.
Hazardous Waste Collection Services	The region has long-standing services to prevent improper disposal through collection of household hazardous waste at Metro's two transfer stations and at neighborhood collection events held by Metro from spring to fall each year. As a part of the disposal services, education is provided on-site on alternatives to household chemicals and pesticides.

New and Expanded Programs

A number of new or expanded recovery programs have been implemented since approval of the 2008 RSWMP. These programs are focused on the sectors that offer the most potential for additional recovery. Examples of new or expanded programs are highlighted in the table below.

Product Stewardship Initiatives	<p>In partnership with DEQ and many public and private sector stakeholders, Metro invested considerable effort in building the region’s understanding of product stewardship and the opportunities it presents. The region developed technical resources to inform future initiatives, and provided assistance to state legislators and others in crafting specific legislative proposals. Since adoption of the RSWMP, there have been three major successes in advancing product stewardship: implementation of the Oregon E-Cycles legislation (2009); expansion of the Oregon Bottle Bill (2011); and passage and implementation of the PaintCare program (2009 pilot, 2013 permanent).</p>
Chemicals Policy Initiatives	<p>Metro has taken a more active role in working with DEQ, local governments and non-governmental organizations to advance chemical policy reform and toxics reduction initiatives.</p>
Building Industry	<p>The Enhanced Dry Waste Recovery Program was implemented in 2009. It requires that all mixed non-putrescible waste generated in the region must be delivered to a material recovery facility for processing prior to disposal to recover cardboard, wood and metals. A 2012 progress report showed that the program resulted in a 20,000-ton increase in recovered dry waste from the time the program was implemented.</p>
Commercial Organics	<p>Projects in the organics program area have focused on expanding food waste composting and usable food donation. Metro and local government staff continue to offer a peer-to-peer food donation outreach program. The Fork it Over! program plays an important role in linking donors with food rescue agencies in the community using online tools and on-site assistance from local government Recycle at Work staff.</p>

Required Programs

Although the RSWMP is implemented primarily through cooperative working relationships, the plan also contains required programs. Both requirements, the Regional Service Standard and the Business Recycling Requirement, are designed to support the implementation of other RSWMP programs and help the region meet state material recovery goals. These required elements are summarized below.

Regional Service Standard

The Regional Service Standard (RSS) addresses recycling collection services in the single-family residential, multi-family residential and business sectors, as well as education and outreach efforts targeting each of these sectors. The purpose of the standard is to ensure a comprehensive and consistent level of recycling services across the region. Local governments are required to either certify that their program meets the service standard, or submit an application to Metro for approval of an alternative program. The RSS has been effective overall in ensuring that the region’s households and businesses have equitable access to the waste reduction programs that will allow the region to meet its recovery goals.

Since the RSS was adopted in 2008, two revisions have been made to the standard:

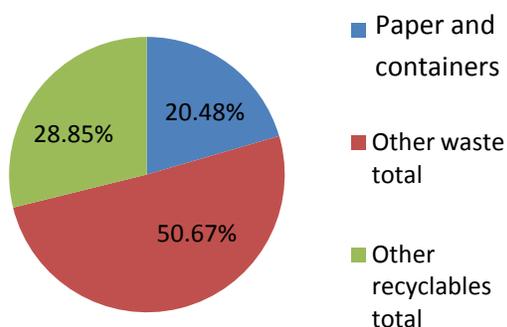
- In 2011, Metro adopted administrative procedures to respond to differences inherent in the urban and rural areas of the Metro region and allow for variations in level of service under certain conditions. The adopted administrative procedures included exemptions for the collection of motor oil and yard debris from multi-family communities and curbside yard debris collection for rural customers.
- In 2013, Metro amended the RSS to require that glass bottles and jars continue to be collected in a separate container from other recyclables. This practice limits contamination of paper and other recyclables and provides higher quality material to end markets.

Metro is in the process of reviewing the Regional Service Standard to improve its effectiveness. A household recycling and waste composition study to be completed in February 2015 will be used to help determine whether amendments to the Regional Service Standard should be considered to address recycling collection service frequency and contamination levels in recyclables.

Business Recycling Requirement

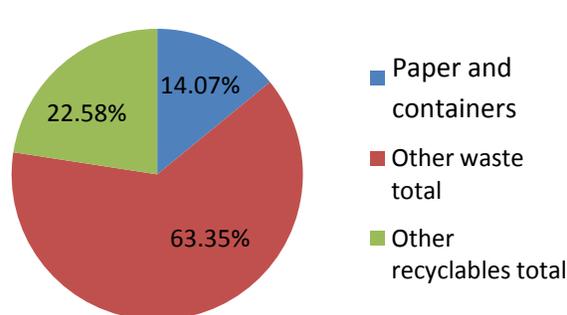
The regional Business Recycling Requirement (BRR) was implemented in 2009. It required local governments to establish recycling requirements for businesses. The requirement supports the RSWMP goals to reduce business sector waste that is generated and disposed in the region. The goal of BRR was to capture 90 percent of the paper and containers disposed of by businesses in the region. In the first couple of years after program adoption, local governments focused on notifying businesses of the new requirements and providing businesses with assistance in setting up their recycling programs. An evaluation of BRR completed by Metro in 2012 indicated that nearly all businesses have been notified of the recycling requirements and have recycling collection systems in place. A waste composition study conducted as a part of the evaluation indicated that the amount of recyclables disposed decreased since the adoption of the requirements, as shown in the figures below. In 2012, the business sector captured more than 83 percent of the desired materials. Overall, the program has been effective in establishing a standardized level of recycling services for businesses and their employees and contributing to this high capture rate.

Figure 5. 2007 Business Recycling Baseline Waste Composition Study



Source: Metro, 2007.

Figure 6. 2012 Business Recycling Waste Composition Study



Source: Metro, 2012.

Potential Areas for Program Enhancement

Although both the existing and new programs have been consistently implemented under the goals and objectives, three areas were identified for monitoring and potential program enhancement.

School Education

One of the school education objectives is to provide education programs that help teachers incorporate resource conservation concepts, including waste prevention and toxicity reduction, into their teaching. Metro's waste reduction youth education program serves a diverse audience of approximately 26,000 K-12 students each year. There is high demand for its classroom services because the presentations are specifically designed to fit into teachers' curricula, meet state standards for subject matter and instructional time, and provide age-appropriate waste reduction-related programming. Evaluation of the program shows that the presentations are effective at meeting Metro objectives and satisfying teachers' needs. While it is evident that there is unmet demand for the classroom services, staffing capacity limits Metro in the number of schools it is able to reach. Expanding the program will increase the number of students reached and help make additional progress toward the RSWMP's education goal and school education objectives.

Multifamily

The multifamily program includes an objective to implement a program that is suited to the needs of multifamily housing that is uniform and consistent across the region. While there has been relatively consistent implementation of education programs targeted at this sector, there continues to be inconsistency in the provision of collection services, as indicated by inequitable access to convenient recycling containers.

Commercial Food Scraps

The commercial organics program includes objectives to increase organic waste diversion and enhance access to recovery services throughout the region. Metro has provided funding assistance for collection program development and has continued to provide transfer and processing services for commercial food scraps through Metro Central Station. The development of alternatives to increase the region's capacity for processing food scraps to boost recovery is a critical next step to provide more stable and equitable access to services throughout the region.



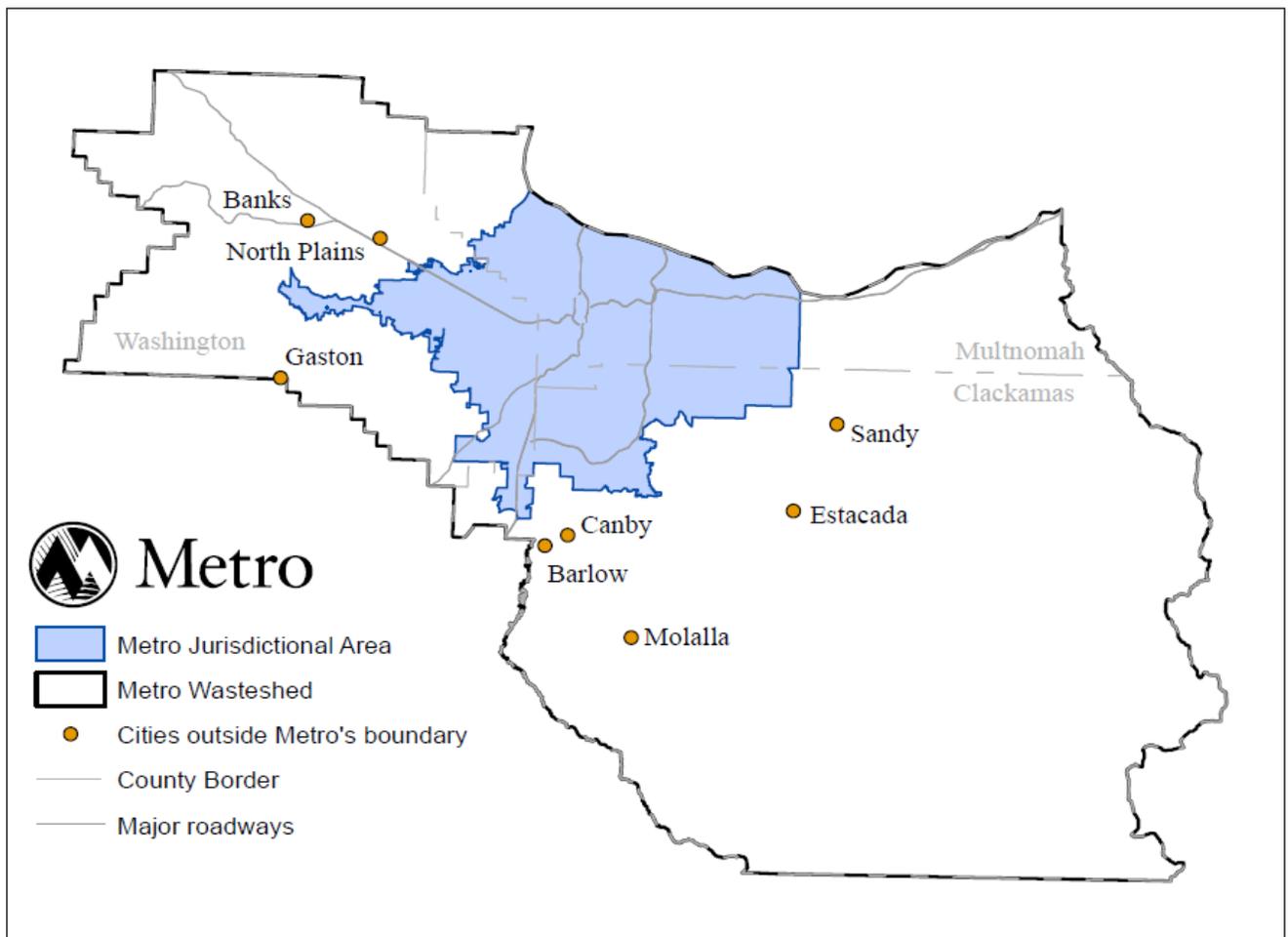
Metro waste reduction educator teaching primary school students about compost

2.0 Metro cannot effectively enforce requirements on jurisdictions outside of its geographic area of authority.

Under Oregon statute, the waste reduction component of the RSWMP applies to the entirety of Clackamas, Multnomah and Washington counties (the “wasteshed”). However, Metro cannot effectively enforce RSWMP requirements on jurisdictions outside of its boundary because it has limited legal authority to do so. There are eight jurisdictions, highlighted in the figure below, which are outside the Metro boundary that fall under RSWMP guidance. Most of these cities are in rural areas with populations under 3,000 and defer solid waste planning to their county authority.

Prior to beginning work on the next RSWMP, Metro should work with DEQ to more effectively align Metro’s plan implementation responsibilities with its geographic area of authority. This may include Metro maintaining coordination for solid waste planning for the regional wasteshed, but not being responsible for enforcing the plan requirements on jurisdictions not subject to Metro’s legal authority.

Figure 7. Metro Wasteshed Map



3.0 Considerable progress has been made toward sustainable operations goals and objectives.

Sustainable Operations Goals and Objectives

The sustainable operations goals and objectives were a new addition to the 2008 RSWMP that focused on how sustainability principles could be applied to solid waste operations that are regulated by government. The plan provides nine goals and 23 objectives to address air and water emissions, energy use, employee work life and institutionalizing sustainability in solid waste operations (See Appendix B).

Sustainable Operations Goals

- Goal 1.0** Reduce greenhouse gas and diesel particulate air emissions.
- Goal 2.0** Reduce stormwater runoff.
- Goal 3.0** Reduce natural resource use.
- Goal 4.0** Reduce use and discharge of toxic materials.
- Goal 5.0** Implement sustainability standards for facility construction and operation.
- Goal 6.0** Adopt best practices for customer and employee health and safety.
- Goal 7.0** Provide training and education non implementing sustainability practices.
- Goal 8.0** Support a quality work life.
- Goal 9.0** Employ sustainability values in seeking vendors and contractors.

In 2009, a baseline study was performed to determine what, if any of the sustainable operations goals and objectives already existed at solid waste facilities in the region. The study concluded that many of the facilities, including Metro-owned facilities, had energy and water conservation practices in place. In addition, many of the companies explored or had programs in place that address work-life balance, worker safety and community service programs. As a result, the region prioritized work on the first goal which is to reduce greenhouse gas and diesel particulate air emissions. Work toward this goal focused on: 1) reducing diesel particulates emitted by regional refuse and recycling collection fleets and 2) transitioning to clean fuels.

Diesel Particulate Reduction

Through a partnership with DEQ's Air Quality Division, the region received funding from a State Clean Diesel Grant issued by the U.S. Environmental Protection Agency (EPA). The grant retrofit solid waste fleet vehicles with emission control devices. The purpose of the retrofits was to eliminate 25-95 percent of all diesel particulate matter emitted by these vehicles. With its own funding contribution, Metro was able to retrofit 119 vehicles at a total cost of \$653,190.

Based on an EPA valuation for Multnomah County, a monetization of the direct and indirect human health and environmental impact benefits of this project are estimated at over \$1.4 million per ton of particulate matter mitigated. According to the 2013 Clean Fleet Refuse Vehicle Retrofit Project report by Metro, the full return on investment for this project over the four to five-year life expectancy of the vehicles and the devices is approximately \$7.2 million to \$9.1 million.

Clean Fuels

Clean fuels, such as compressed natural gas, produce less pollution than diesel. The region's solid waste system has started transitioning its vehicles to use clean fuels and developing the supporting infrastructure. For example, Waste Management installed two CNG fueling stations and is replacing its entire fleet of approximately 150 diesel-fueled vehicles with CNG-fueled vehicles.

As a result of the diesel particulate reduction and clean fuels efforts, the region has made significant progress toward reducing the environmental impacts of solid waste operations. Metro will continue to work on progress toward the first goal and serve as a resource for the solid waste industry on adoption of the other sustainable operations goals and objectives.

Compressed Natural Gas Benefits Compared to Diesel

Sulfur Dioxide	99% less
Particulate Matter	90% less
Nitrogen Dioxide	75-95% less
Carbon Monoxide	70-90% less
Carbon Dioxide	20-30% less

Source: NGV America, Environmental Protection Agency.



4.0 The Solid Waste Roadmap will further develop long-term guidance for the disposal system.

The region has an effective and complex solid waste system, with public facilities owned by Metro, private facilities regulated by Metro and private hauling companies regulated by local jurisdictions. During the 2008 RSWMP development, the disposal system was evaluated to determine the best way to deliver safe, environmentally sound and cost-effective waste transfer and disposal services to the public and private users of the region. The disposal system evaluation included an analysis of transfer station ownership options: public, private, or public-private hybrid. The Metro Council concluded continuation of the hybrid model of public and private transfer station ownership would best serve the region.

Following the transfer station analysis, several other system issues needed further analysis. To address this, the RSWMP includes a Systems Improvements Work Plan (see Appendix C) that identifies several specific areas for future evaluation including wet waste allocation, system financing, provision of self-haul services and facility regulation. Metro Council directed the development of system management policies, goals and objectives to guide decisions in these areas. This work is being addressed in part through the Solid Waste Roadmap planning effort. In 2015 and 2016, the Metro Council will be asked to identify a preferred approach for the future of disposal that will provide a set of principles to guide future decisions on the solid waste system. By the end of 2015, the Metro Council will need to adopt new terms for private facility authorizations, while considering the transition of private and public operations to support the vision for the future system. Key operational contracts associated with the management of waste at and from Metro transfer stations will expire by the end of 2019 and work on what follows them needs to be initiated by 2017. This work will result in key guidance for the long term management of the region's disposal system and should be incorporated into the next RSWMP.

Solid Waste Roadmap Key Questions

1. **Long-term Management.** Over the long run, what does the region want to do with materials that aren't reused, recycled or composted?
2. **Metro South Station.** What service alternatives should Metro pursue at Metro South and in the vicinity to provide for the full suite of needed services?
3. **Foundational Work.** What is the amount and nature of waste that might be discarded in the future, and how will various alternatives perform in managing it?
4. **Food Scraps Capacity.** What actions should Metro take to ensure adequate and reasonably proximate capacity to transfer and process food scraps collected from the region's businesses and residents?
5. **Transfer System Configuration.** What model of the public-private transfer system (e.g., service levels, tonnage allocations, rates, etc.) best provides for the public interest?
6. **Fee & Tax Policies.** How should Metro recover the cost of solid waste services and programs, and of general government, to improve stability, equity and predictability?

5.0 Discards management is shifting to materials management.

The RSWMP has provided sufficient guidance over the last five years for coordinating waste reduction program efforts. However, since the adoption of the plan, the framework for managing solid waste in Oregon has shifted to a more comprehensive approach that addresses the integrated nature of materials from production to disposal. This is consistent with the RSWMP policy guidance, but provides new opportunities for actions the region can take to reduce environmental and human health impacts of the generation and disposal of waste. In 2012, the Oregon Department of Environmental Quality (DEQ) adopted a new framework, *Oregon 2050 Vision and Framework for Action*, reflecting this shift and formalizing the approach for regional application.

Oregon 2050 Vision and Framework for Action

In the 2050 Vision, Oregonians live within the limits of their sustainable share of the world's natural resources. Materials and products support human health, well-being and healthy, resilient environments and communities—whether those goods are made in Oregon, used in Oregon, or both. Sustainable use of resources allows all people to enjoy a prosperous, clean economy and fulfilling lives, now and in the future. The desired outcomes for 2050:

- Producers make products sustainably. Every option is a sustainable option.
- People live well and consume sustainably.
- Materials have the most useful life possible before and after discard.

As described in the *Oregon 2050 Vision*, the materials management approach includes waste prevention and discard management, while also seeking to reduce environmental impacts by managing materials in each stage of their life. This approach identifies impacts and actions to address those impacts across the full cycle of materials and products as they move through the economy from raw material extraction to product design and manufacture, transport, consumption, use, reuse, recycling and disposal.

This approach provides new areas of opportunity for the development of both goals and actions to protect the environment and human health and should be used as framework for the next RSWMP.

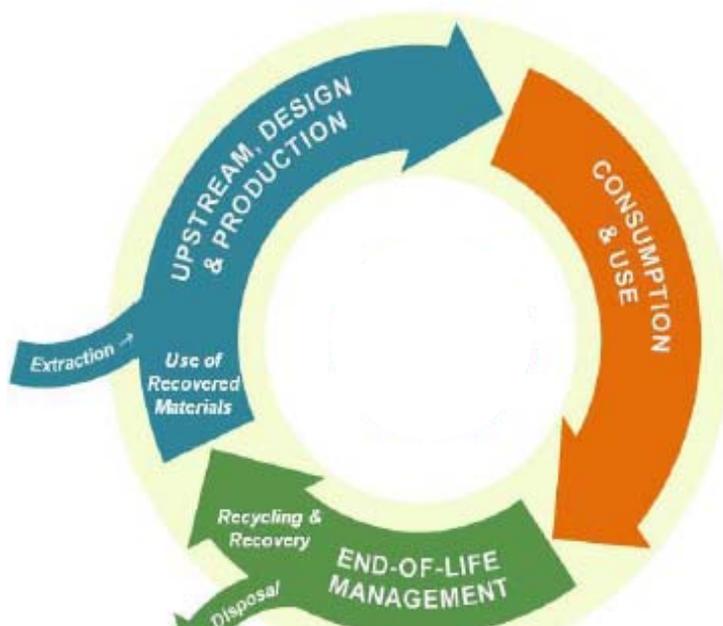


Figure 8. Life Cycle Materials and Products

6.0 New and updated goals are needed to track environmental progress.

The regional waste recovery rate has been the primary benchmark for plan performance. This goal and associated sector tonnage targets reflect a traditional focus on measuring landfill disposal from recycling, composting and recycling programs. The existing statewide and wasteshed recovery goals were last revised in 2001 and were set through 2009. The RSWMP directs the development of a new set of numerical goals beyond the last benchmark of 2009. As a part of the implementation of the *Oregon 2050 Vision and Framework*, DEQ is in the process of updating statutory goals and measures for all wastesheds, making it timely for the region to begin work on new goals.

DEQ is considering two measurement areas with both statutory goals and administrative measures. The statutory goals are highlighted in the table below and will be considered for adoption in the 2015 legislative session.

Oregon Wasteshed Goals and Measurement Areas

Focus Area	Statutory Goals
Material Recovery	<ul style="list-style-type: none"> ▪ Statewide recovery rate ▪ Statewide material-specific recovery rates for food, plastics and carpet ▪ Wasteshed recovery rate by tonnage ▪ Wasteshed recovery rate by environmental outcomes
Waste Generation	<ul style="list-style-type: none"> ▪ Statewide goals

The proposed statutory goals fall into two areas: wasteshed recovery and waste generation. In contrast to the existing measures, the new recovery goals will include only recycling and energy recovery in the rate calculations, excluding credit for waste prevention, on-site composting and reuse activities. The new measures around individual materials and environmental outcomes are intended to broaden the scope of the goals and consider the life-cycle environmental impacts of materials.

If the 2015 Oregon Legislature approves these proposed statewide and wasteshed goals, RSWMP will need to reflect these changes to state law, and in turn, the region will need to adopt new goals. These new goals will serve as an important first step toward the development of the next RSWMP. Metro will continue to work closely with DEQ on the development and coordination of goals, measures and data sources.

2015 Oregon Legislature- Senate Bill 263

This legislation is one of two proposals by DEQ that emerged from the Environmental Quality Commission's adoption of the *Oregon 2050 Vision and Framework for Action*. This proposal includes the removal of the six percent credits allowed for waste prevention, reuse and home composting activities in calculation of recovery rates and updates recovery goals. Without credits, the state recovery rate was 49.7 and the Metro region's recovery rate was 58.2 percent in 2013. The new goals include:

- New statewide recovery goals of 52 percent by 2020 and 55 percent by 2025
- Metro regional wasteshed recovery goal of 64 percent by 2025

SECTION 4: RECOMMENDATIONS

Recommendation 1: Continue work on key programs and increase progress on school-based education, multifamily services and the regional food scraps collection system.

Overall, the region has been consistent in the implementation of the RSWMP's waste reduction strategies and meeting the plan's objectives through the maintenance of key long-standing programs and the development of new and expanded programs. To continue progress toward reducing the amount of waste disposed, the region should continue to maintain key programs, evaluate potential expansion in school education and multifamily program areas and further develop the region's food scrap collection system.

Recommendation 2: Complete development of disposal system policies and guidance through the Solid Waste Roadmap.

The 2008 RSWMP identifies a number of important areas for improvements in the disposal system, but lacks broader system objectives to frame those improvements. Work is underway in the Solid Waste Roadmap projects to formulate both broad policies and more specific fixes to those areas. This key guidance should be incorporated into the next RSWMP.

Recommendation 3: As part of the process of putting together the next RSWMP, develop new and updated goals to track environmental progress that consider the lifecycle impacts of products and materials.

The development of new goals beyond those currently in place is critical to support continued progress in reducing the amount and toxicity of waste generated in the region. This work should be aligned closely with DEQ's proposed new measures and *Oregon 2050 Vision and Framework for Action*. These measures should include both long term goals and indicators that can monitor progress over time and take into account environmental benefits beyond quantities recovered.

Recommendation 4: In 2016, initiate the planning process for the next RSWMP, informed by materials management concepts.

Since the adoption of the 2008 plan, the framework for managing solid waste in Oregon and other leading communities and states has shifted to a more comprehensive approach that addresses the lifecycle impacts of materials. The *Oregon 2050 Vision and Framework for Action* is an important guidance document for regional work. The current RSWMP includes some elements of materials management, but needs to be updated to better reflect the state direction, the desired regional outcomes and a more systems based approach.

Appendix A: RSWMP Waste Reduction Goals and Objectives

Goals	Objectives
<p>Waste Reduction</p> <p>Goal: Increase the sustainable use of natural resources by achieving the waste reduction goal of 64%.</p>	
<p>Single-family residential</p>	<ul style="list-style-type: none"> • Conduct annual outreach campaigns that focus on preventing waste, reducing toxicity and/or increasing the quantity and quality of recycling setouts. • Identify and implement service provision changes and incentives to maximize recycling, and identify and evaluate new collection technologies. • Expand curbside service by adding new materials as markets and systems allow. • Promote home composting and appropriate onsite management of yard debris and food waste. • Develop residential organics collection programs when economically and technically feasible.
<p>Multi-family residential</p>	<ul style="list-style-type: none"> • Implement a program suited to the needs of multi-family housing that is uniform and consistent throughout the region. • Provide annual regional education and outreach targeting multi-family housing. • Identify and evaluate new collection technologies for implementation on a cooperative regionwide basis.
<p>Business</p>	<ul style="list-style-type: none"> • Provide businesses with annual education and technical assistance programs focused on waste reduction and sustainable practices. • Develop information and resource materials that demonstrate the benefits of waste reduction and sustainable practices to support the business assistance program. • Conduct annual regional outreach campaigns to increase participation in the business assistance program and to promote recycling opportunities and other sustainable practices. • Implement waste reduction and sustainable practices at government facilities. • Identify and implement opportunities for increasing recovery in the business sector, including service provision options, incentives for recycling and regulation. • Periodically review end-use markets to assess cost-effectiveness, material quality and capacity.
<p>Building industry</p>	<ul style="list-style-type: none"> • Develop a regionwide system to ensure that recoverable construction and demolition debris is salvaged for reuse or is recycled. • Provide the building industry with annual outreach, education and technical assistance programs that demonstrate the benefits of green building, including building material reuse and recycling. • Include sustainable practices and products in the development, construction, renovation and operation of government buildings, facilities and lands. • Support the development of and access to viable end-use markets for construction and demolition materials.
<p>Commercial organics</p>	<ul style="list-style-type: none"> • Provide outreach and education programs for targeted businesses to support and increase organic waste prevention and diversion practices. • Enhance access to organics recovery services throughout the region. • Implement organic waste recovery programs at government facilities where feasible. • Work to ensure that compost products are specified for use in government projects. • Periodically review the viability of end-use markets and assist with market development efforts.

Appendix A (continued): RSWMP Waste Reduction Goals and Objectives

Goals	Objectives
<p>Education services</p> <p>Goal: Increase the adoption of sustainable practices through increased knowledge, motivation and commitment.</p>	<ul style="list-style-type: none"> • Provide a regional information clearinghouse and referral service. • Provide education and information services for residents and businesses that are targeted to specific waste streams, materials or generators. • Provide education programs that help teachers incorporate resource conservation concepts, including waste prevention and toxicity reduction, into their teaching. • Provide programs at the elementary level that establish fundamental concepts of resource conservation and environmental awareness through active learning experiences. • Provide programs at the secondary level (middle and high school) that will extend concepts established at the elementary level and prepare students for making responsible environmental choices in everyday adult life. • Work with schools and teachers to increase support for regional solid waste programs and create opportunities for partnerships.
<p>Hazardous waste management</p> <p>Goal: Reduce the use and improper disposal of products generating hazardous waste in order to protect the environment and human health.</p>	<ul style="list-style-type: none"> • Provide hazardous waste education programs that focus on behavior change. • Provide hazardous waste education programs that focus on those products whose toxic and hazardous characteristics pose the greatest risks to human health and the environment, or that are very costly to properly dispose or recycle. • Provide hazardous waste reduction messages and information to all customers bringing waste to household hazardous waste collection sites. • Coordinate hazardous waste education efforts with related efforts conducted by government agencies and community groups in the region and in other areas. • Research and develop tools to measure the generation, impacts and reduction of hazardous waste, when this can be accomplished at a reasonable cost. • Manage collected waste in accordance with the hazardous waste hierarchy: reduce, reuse, recycle, energy recovery, treatment, incineration and landfill. • Coordinate collection programs with waste reduction and product stewardship efforts. • Conduct waste screening programs at solid waste facilities to minimize the amount of hazardous waste disposed with solid waste. • Use solid waste facilities efficiently and effectively for the delivery of collection services. • Maximize the efficiency of public collection operations, search for the most cost-effective methods and place a high priority on worker health and safety. • Offer a Conditionally Exempt Generator (CEG) program to manage waste from small businesses. • Implement bans on disposal of specific hazardous products as needed to address public health and environmental concerns.
<p>Product stewardship</p> <p>Goal: Shift responsibility to manufacturers, distributors and retailers for ensuring that products are designed to be nontoxic and recyclable, and incorporate the cost of the product's end-of-life management in the purchase price.</p>	<ul style="list-style-type: none"> • Prioritize product stewardship activities by evaluating products based on the significance of environmental impact (e.g., resource value, toxicity), current barriers to recycling, and financial burdens on governments for recovery programs. • Implement industry-wide product stewardship agreements or individual company stewardship programs in the region. • Educate public and private sector consumers about product stewardship and, in particular, their role in purchasing environmentally preferable products. • Work at the local, regional, state and national level to develop and implement policies, such as recycled-content requirements, deposits, disposal bans and advance recycling fees, that encourage product stewardship programs.

Appendix B: RSWMP Sustainable Operations Goals and Objectives

Goals	Objectives
<p>Sustainable Operations</p> <p>Goal: Reduce greenhouse gas and diesel particulate air emissions</p>	<ul style="list-style-type: none"> • Implement plans for greater energy efficiency. • Utilize renewable energy sources. • Reduce direct emissions of greenhouse gases from landfills and other facilities. • Reduce diesel particulate emissions in existing trucks, barges and rolling stock through best available control technology. • Implement long-haul transportation and collection alternatives where feasible.
<p>Goal: Reduce stormwater run-off</p>	<ul style="list-style-type: none"> • Implement stormwater run-off mitigation plans.
<p>Goal: Reduce natural resource use</p>	<ul style="list-style-type: none"> • Implement resource efficiency audit recommendations. • Implement sustainable purchasing policies. • Reduce disposed waste.
<p>Goal: Reduce use and discharge of toxic materials</p>	<ul style="list-style-type: none"> • Implement toxics reduction and management plans.
<p>Goal: Implement sustainability standards for facility construction and operation</p>	<ul style="list-style-type: none"> • Implement sustainability standards for site selection. • Require new construction to meet the Leadership in Energy and Environmental Design (LEED) or equivalent program standards. • Provide incentives for existing facilities to meet LEED or equivalent program standards.
<p>Goal: Adopt best practices for customer and employee health and safety</p>	<ul style="list-style-type: none"> • Reduce injuries by automating operations where effective. • Implement health and safety plans that meet or exceed current minimum legal standards.
<p>Goal: Provide training and education on implementing sustainability practices</p>	<ul style="list-style-type: none"> • Train key regional waste industry employees, government waste reduction staff and political officials in adopted sustainability practices. • Inform suppliers, contractors and customers of the adoption of sustainability goals and practices.
<p>Goal: Support a quality work life</p>	<ul style="list-style-type: none"> • Pay a living wage and benefits to all workers. • Promote community service. • Strive to employ a diverse work force.
<p>Goal: Employ sustainability values in seeking vendors and contractors</p>	<ul style="list-style-type: none"> • Request sustainability plans from potential vendors and contractors. • Assist vendors and contractors in achieving sustainable practices. • Support local vendors when feasible.

Appendix C: RSWMP System Improvements Work Plan

System Improvements Work Plan

Following the transfer system analysis, several other system issues need further analysis and policymaker review. The end result desired is a set of System Management Principles to guide future Metro decisions. A summary of these key system issues, a system improvements work plan, follows:

- (1) Wet waste allocation – Metro allocates wet waste in the system through tonnage authorization limits on local transfer stations and by granting non-system licenses for the 10% of wet waste not committed to our disposal contract. (These tonnage limits are a form of economic regulation.) The issue of policy drivers for determining future wet waste allocations in the region has been raised as part of the Disposal System Planning process. The primary desired outcome in waste allocation is that the ratepayer should benefit.
- (2) Public/private pricing – The Rate Policy Subcommittee’s report, presented to SWAC in March 2006, identified several areas to address in regional tip fees. These included the sensitivity of the public facilities to tonnage shifts and the private facility economics that improve with an increase in the tonnage charge and transaction fee and/or a drop in the Regional System Fee (RSF) and excise tax, even in the absence of any other change in cost or service to the private facility. Local government regulators have expressed concern that changes in fees for transfer and disposal services may not be directly related to costs or service. The desired outcome of addressing system finance issues at the heart of this matter is that the ratepayer should benefit.
- (3) Self-haul services at the region’s solid waste facilities - Approximately one-fourth of the region’s solid waste is delivered to facilities by other than licensed or franchised haulers. These self-haul loads at the region’s facilities contain about 30 to 40% recoverable material, but achieving high levels of material recovery from self-haul loads is hampered by insufficient space, small load sizes and a demand for services that sometimes exceeds the capacity of the facilities receiving the waste. A balance between demand and capacity is needed, with the desired outcome being the efficient provision of service to these customers and higher recovery of self-hauled loads. Whether this should be more generator-focused (in reducing or managing demand) or more facility focused (increasing capacity to serve self-haul in the region) or a combination is a key question.
- (4) Facility regulation – Metro controls the entry of new facilities into the solid waste system. The highest barriers to entry are for transfer stations or any other facilities handling wet or putrescible waste. Metro authorizes new transfer facilities from time to time after conducting cost/benefit and/or impact analysis. Previous cost/benefit studies have relied on measures of system cost, tip fee impacts, access, or travel time reductions. A recent local transfer station authorization was granted (Columbia Environmental) after consideration of these criteria, as well as an ad hoc criterion of supporting smaller, independent haulers in the region. Applicants and decisionmakers alike might benefit from clear guidance on the circumstances under which new transfer applications might be granted. Another issue in facility regulation that has been raised at the Metro Council is whether Metro should rate-regulate private transfer facilities as part of approved entry into the marketplace. The desired outcome on this issue is a determination of clear entry standards and regulatory controls on transfer facilities.