

Chapter IV

Program areas

A. Introduction

This chapter outlines goals and objectives that will guide the direction of key program areas to reduce the amount and toxicity of solid waste for the next 10 years. It is organized into four sections: waste reduction, education services, hazardous waste management and product stewardship. The objectives in these four sections are designed to achieve the region's goals, and will be used to guide the annual work plans produced by Metro and local governments.

Many of the programs will continue to focus on sectors where the most recoverable tonnage remains, as these will provide the greatest opportunity for achieving the waste reduction goal. These programs will be designed in the direction of recovery, while adhering to the solid waste hierarchy of reduce, reuse, recycle/compost, recover energy and disposal. Other programs will look beyond generator-based strategies and will focus on the toxicity or recyclability of products by addressing their design and manufacture (i.e., product stewardship).

These waste reduction efforts will require coordination and collaboration among Metro, local governments, service providers, the DEQ and the public. The coordination of efforts between those providing education and outreach services, for example, is important to avoid duplication of services and to reach the largest audiences. Collaboration can also assist in addressing complex environmental problems that cannot be solved by one agency, such as partnerships between hazardous waste and water quality programs to achieve the goals of protecting and restoring streams and critical habitat.

B. Waste reduction program areas

Goal: Increase the sustainable use of natural resources by achieving the waste reduction goal of 64%.

Specific objectives describing how each sector (single-family residential, multi-family residential, business, building industry and commercial organics) will contribute to this goal are described in the pages that follow.* The creation of regionally coordinated plans with services accessible to all is the foundation of each set of objectives.

*The Plan programs related to many of these objectives are described in the "High Recovery Scenario" in Chapter II, Plan programs for achieving the 64% goal.

Single-family residential

Following a boost to curbside recycling rates when commingled collection was introduced, increases to the recycling rate have tapered off recently. In 2005, about 46% of residential waste was recycled through curbside services. To stimulate additional participation and to ensure steady progress toward the waste reduction goal, the region has identified the objectives shown below.



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| 1.0 Conduct annual outreach campaigns that focus on preventing waste, reducing toxicity and/or increasing the quantity and quality of recycling setouts. | To increase the quantity and quality of materials set out for recycling in regional recycling programs, regular campaigns will be undertaken. Regional campaigns will be cooperative in nature and will use a clear and consistent message across the region. |
| 2.0 Identify and implement service provision changes and incentives to maximize recycling, and identify and evaluate new collection technologies. | Incentives in the form of monetary savings or convenience can encourage residents to participate in waste reduction programs. Currently, collection rates are structured to provide some degree of savings with increased recycling and reduced solid waste (e.g., mini-can rates, monthly collection, etc.). With emerging solid waste collection technologies, it is important to evaluate new collection techniques and options that may increase efficiencies and recycling rates. Research will be conducted on a cooperative regionwide basis to identify potential new collection options and opportunities for additional incentives through the residential rate structure, service options or other means. |
| 3.0 Expand curbside service by adding new materials as markets and systems allow. | The region's residents continue to seek more opportunities to recycle additional materials at the curb. Markets for recycled materials can be volatile, and it is vital to ensure that it is technically and economically feasible to collect and process any new materials before they are added to curbside collection. |
| 4.0 Promote home composting and appropriate onsite management of yard debris and food waste. | Composting and other onsite management is the least expensive and most environmentally sound option for handling yard debris and food scraps. Half of the region's residents participate in this activity and divert more than 50,000 tons of organics annually. Future activities in this area will include providing technical support for current onsite composters and developing more cost-effective home compost bin promotions that target interested residents. |
| 5.0 Develop residential organics collection programs when economically and technically feasible. | Although home composting of vegetative food waste and yard debris is the preferred method of managing yard debris and food scraps, the region will also examine the economic and technical feasibility of implementing curbside collection of residential food wastes to further increase organics recovery. |
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Monitoring and implementation methods

Detailed program planning and implementation of these objectives will be coordinated through the Local Government Recycling Coordinators group, which includes local governments, Metro and the DEQ. Implementation plans will be presented for review to the Regional Solid Waste Advisory Committee and Metro Council annually. The plans will detail annual programs, costs, and roles and responsibilities. Local governments and Metro will be jointly responsible for the implementation of these plans.

Multi-family residential

Recycling services for residents living in dwellings of five or more units (“multi-family” buildings) currently contribute to regional recovery levels, but could be collecting more material. These households, which range from suburban garden apartments to high-rise buildings in dense urban areas, present a number of challenges and opportunities for recycling. Although technically these are defined as residential dwellings, most multi-family units share common garbage and recycling areas and are serviced as commercial accounts by garbage haulers. Turnover in multi-family dwellings is much higher than in single-family housing, making more frequent education and outreach especially important. According to the 2002 American Housing Survey, people who rent (either apartments or houses) typically stay in the same location for less than two years while homeowners stay at the same location for about seven years.



The following objectives are designed to increase the efficiency and effectiveness of multi-family residential recycling programs.

1.0 Implement a program suited to the needs of multi-family housing that is uniform and consistent throughout the region.

The region will cooperatively develop a program tailored to the needs of multi-family housing.

2.0 Provide annual regional education and outreach targeting multi-family housing.

Outreach materials will be designed to address the barriers and benefits of recycling in a multi-family setting and will be adapted to a variety of conditions and collection systems.

3.0 Identify and evaluate new collection technologies for implementation on a cooperative regionwide basis.

Multi-family recycling presents many unique challenges. Emerging collection technologies will be evaluated on a cooperative regionwide basis to identify potential opportunities to enhance and improve collection.

Monitoring and implementation methods

Implementation of these objectives will be coordinated through the intergovernmental multi-family waste reduction work group. This work group will present its implementation plans for review to the Regional Solid Waste Advisory Committee and Metro Council annually. The plans will detail annual programs, costs, and roles and responsibilities. Local governments and Metro will be jointly responsible for the implementation of these plans.

Business

Businesses hold the greatest potential for increasing material recovery in the region, as they generate nearly half the region's waste. For example, 26% of the garbage businesses throw away (more than 107,000 tons annually) is paper that is fully recyclable. An additional 80,000 tons of paper and containers are needed to meet the 2009 waste reduction goal. To help achieve this goal, programs for this sector focus on providing direct assistance to businesses and regulatory and service provision options to increase recovery.

The following objectives are intended to help non-residential waste generators improve their recycling programs, initiate waste prevention practices, increase their purchases of recycled-content products and incorporate sustainable practices into their operations.



1.0 Provide businesses with annual education and technical assistance programs focused on waste reduction and sustainable practices.

The business community has indicated in a variety of forums that tailored one-on-one education and assistance is a preferred approach to increase recycling rates. By offering a comprehensive education and technical assistance program to businesses, the region addresses the needs of businesses that want to start or improve their waste reduction programs. It also focuses attention on a waste stream that generates a large percentage of the region's waste.

2.0 Develop information and resource materials that demonstrate the benefits of waste reduction and sustainable practices to support the business assistance program.

Information and resources, such as fact sheets, recycling containers, decals and Internet tools, provide additional tools to help businesses participate in the assistance program and improve their waste reduction practices.

3.0 Conduct annual regional outreach campaigns to increase participation in the business assistance program and to promote recycling opportunities and other sustainable practices.

Outreach campaigns stimulate individual business interest and broadly promote waste reduction ideas to a large portion of the business sector.

4.0 Implement waste reduction and sustainable practices at government facilities.

Government facilities make up a large portion of the business waste stream in the region. Improving practices at government facilities shows a commitment to serve as a model for the business community.

5.0 Identify and implement opportunities for increasing recovery in the business sector, including service provision options, incentives for recycling and regulation.

Incentives in the form of monetary savings, increased convenience and a variety of service options can encourage businesses to participate in waste reduction programs. Currently, collection rates and service standards are set by some, but not all, jurisdictions in the region. Research will be conducted on a cooperative regionwide basis to identify potential opportunities for additional incentives through commercial rate structures, service standards or other means. In addition, many municipalities around the country (including Portland and Seattle) have passed laws that either require items to be recycled or that ban them from landfill disposal. These regulatory approaches will be pursued if regional implementation is feasible.

6.0 Periodically review end-use markets to assess cost-effectiveness, material quality and capacity.

Conducting periodic market studies and reviewing end-use markets to ascertain the viability of recycling various materials can help provide businesses with up-to-date information on recycling opportunities and preparation guidelines. Many businesses generate materials that have historically had little opportunity for recycling, and need to be informed in a timely fashion when new materials become recyclable.

Monitoring and implementation methods

Implementation of these objectives will be coordinated by Metro through the intergovernmental business recovery work group. The work group will present its implementation plans for review to the Regional Solid Waste Advisory Committee and Metro Council annually. The plans will detail annual programs, costs, and roles and responsibilities. Local governments and Metro will be jointly responsible for the implementation of these plans.



Building industry

Regional efforts to manage construction and demolition debris follow a three-pronged approach:

- Preventing waste through salvage, deconstruction and reuse;
- Developing effective construction and demolition debris recovery programs for debris that is not suitable for deconstruction and salvage; and
- Maintaining and supporting viable and diverse markets for recyclable and reusable building materials.



The primary targets for increased recovery of construction and demolition debris include new commercial construction under \$3 million, commercial remodel/tenant improvement, complete and selective building demolition, and residential remodeling performed by licensed contractors.

The following objectives are designed to support the building industry in its efforts to develop sustainable practices promoting environmental protection and resource conservation.

1.0 **Develop a regionwide system to ensure that recoverable construction and demolition debris is salvaged for reuse or is recycled.**

The region's building industry currently enjoys a full range of waste reduction options and choices, including salvage and reuse, source-separated recycling and post-collection recovery. The existence of low-cost disposal at two regional landfills severely constrains the growth of salvage, recycling and recovery. The region will work with stakeholders to develop a program that ensures construction and demolition debris in the region is processed before disposal and recovered to the maximum extent possible.

2.0 **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.**

The building industry generally supports reuse and recycling, but often lacks information on these opportunities. Maintaining an ongoing outreach, education and technical assistance program helps builders make more informed decisions about managing their waste. Green building is a growing enterprise and it is important to work cooperatively with local green building programs to promote reuse and recycling.

3.0 **Include sustainable practices and products in the development, construction, renovation and operation of government buildings, facilities and lands.**

Construction, renovation and maintenance of government buildings and facilities represents a large portion of the construction activity in the region. These projects result in significant quantities of construction and demolition debris and present an opportunity to serve as models and demonstration projects for businesses in the region.

4.0 Support the development of and access to viable end-use markets for construction and demolition materials.

Periodic market studies will be conducted to assess the viability and diversity of local salvage markets or markets for materials typically found in construction and demolition waste. If markets appear weakened, then technical, monetary or research assistance may be provided to strengthen, maintain and diversify markets for construction and demolition materials.

Monitoring and implementation methods

Implementation of these objectives will be coordinated through the intergovernmental construction and demolition recovery work group. The work group will present its implementation plans for review to the Regional Solid Waste Advisory Committee and Metro Council annually. The plans will detail annual programs, costs, and roles and responsibilities. Local governments and Metro will be jointly responsible for the implementation of these plans.

Commercial organics

The region follows a two-track approach to organic waste management. The first track emphasizes preventing waste by donating usable food to food banks, and other uses such as animal feed (when appropriate). The second track focuses on implementing a collection and processing system to recover (i.e., compost) organic waste that cannot be diverted to those higher end uses. Regional efforts currently target large organics-rich businesses and industries, such as large retail grocery stores, restaurants, hotels, institutional cafeterias, wholesale produce warehouses and food processors.

The following objectives are designed to support the use of sustainable practices by businesses generating organic wastes.



1.0 Provide outreach and education programs for targeted businesses to support and increase organic waste prevention and diversion practices.

Donation is the highest end use for surplus food, and an established system to collect and redistribute donated food exists in the region. Emphasizing food donation also helps to address the problems of hunger in the region and the state.

2.0 Enhance access to organics recovery services throughout the region.

Organic waste that cannot be diverted to higher end uses may be collected for composting. The region will focus on increasing the composting opportunities that are available to businesses; every effort will be made to use existing infrastructure and to tailor generator and collection programs to fit within existing operations and regulatory systems.

3.0 Implement organic waste recovery programs at government facilities where feasible.

Government facilities that generate significant quantities of organic waste will serve as models for businesses in the region by adopting organics recovery programs.

4.0 Work to ensure that compost products are specified for use in government projects.

Metro and local governments will coordinate with other government agencies to incorporate the standard use of compost products for landscaping, soil conditioning and erosion control on publicly funded projects.

5.0 Periodically review the viability of end-use markets and assist with market development efforts.

Conducting periodic market studies to assess the viability of local compost markets is an important activity. If market trends indicate a weakening in demand, Metro and others can assist regional compost facilities with market development as needed to strengthen and maintain the marketability of compost and soil amendment products made from organic materials.

Monitoring and implementation methods

Implementation of these objectives will be coordinated through the intergovernmental organics recovery work group. The work group will present its implementation plans for review to the Regional Solid Waste Advisory Committee and Metro Council annually. The plans will detail annual programs, costs, and roles and responsibilities. Local governments and Metro will be jointly responsible for the implementation of these plans.

C. Education services

Goal: Increase the adoption of sustainable practices by households and businesses through increased knowledge, motivation and commitment.

Achieving the region's goals will require strong public support. Regional education and outreach efforts help build this support by supplying the information that residents and businesses need to make environmentally responsible choices in their daily lives. Metro and local governments provide a wide range of information through a variety of media. The Metro Recycling Information hotline responds to nearly 100,000 calls per year and the companion website has a host of tools and resources available. Local governments provide ongoing outreach and education through mailed materials and events.

Education and outreach efforts also build and reinforce resource conservation and environmental protection ethics that are essential to increasing sustainable practices. Regional education efforts start in the schools. Targeted education in schools, including elementary and secondary programs, provide age-appropriate information and concepts about resource conservation and environmental awareness, as well as programs designed to help teachers incorporate resource conservation concepts into their teaching. There are free classroom presentations and educational materials on waste prevention, recycling, composting and household hazardous waste reduction for elementary and secondary schools. In addition, technical assistance is available to help schools set up a waste reduction and recycling program or expand existing programs.

Metro and local governments also provide a wide variety of adult education programs. In particular, local governments and Metro have been promoting household hazardous waste (HHW) prevention and proper disposal education and outreach to the region for many years. Education targeted to adults about household hazardous chemical use and less toxic alternatives are ongoing through efforts such as the natural gardening program.

Information services and adult education

Numerous organizations within the region (including local governments, private businesses and non-profit agencies) provide disposal, recycling and other waste reduction services. Offering residents and businesses easily accessible and accurate referrals to these services is critical to reaching regional waste reduction goals.

The objectives for information services and adult education are shown below.



1.0 Provide a regional information clearinghouse and referral service.

Maintaining communication with and providing education to residents and businesses about waste reduction programs and services offered within the region is essential to help them make environmentally responsible choices.

2.0 Provide education and information services for residents and businesses that are targeted to specific waste streams, materials or generators.

Information services are more effective when they address specific needs and use methods that match how generators receive and respond to information on waste reduction opportunities. Education services are a critical part of each waste reduction program area (single-family, multi-family, business, building industry and commercial organics) targeted in the Plan.

Monitoring and implementation methods

Metro and local governments will work cooperatively to develop and distribute education materials for households and businesses. Metro will research and provide technical assistance on the most effective methods to educate households and businesses on waste reduction options. Local governments, haulers and Metro will cooperate and communicate on the implementation of these education programs. Implementation of these objectives will be coordinated through the intergovernmental work groups.

School education

Life-long learning about the value of resource conservation and the importance of protecting the environment begins with children in elementary and secondary schools. The guiding approach is to develop curriculums and programs that are appropriate for each age group and that cumulatively help build an environmental stewardship ethic.



The objectives for school education are shown below.

1.0 Provide education programs that help teachers incorporate resource conservation concepts, including waste prevention and toxicity reduction, into their teaching.

Today's teachers have a multitude of demands on their time and resources. Providing teachers with assistance on curriculums and programs helps teachers meet their needs, while simultaneously assisting the region in meeting its waste reduction goals.

1.1 Provide programs at the elementary level that establish fundamental concepts of resource conservation and environmental awareness through active learning experiences.

Elementary students are often eager to learn about ways to help make the world a better place. Providing age-appropriate information and concepts about resource conservation that encourage awareness and participation will build a strong foundation for life-long sustainable behaviors.

1.2 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.

By middle and high school, students can begin to make connections between their daily choices and behaviors and how they impact the environment. By providing opportunities to encourage their critical thinking skills, students can gain an appreciation and a sense of stewardship for the environment that will carry over into adulthood.

2.0 Work with schools and teachers to increase support for regional solid waste programs and create opportunities for partnerships.

Schools are vital institutions within our community. Working and partnering with schools provides an opportunity to educate the next generation about resource conservation programs. Schools are also large resource users and waste generators and need to be active participants in waste reduction programs.

Monitoring and implementation methods

Metro and local governments will continue to provide school waste reduction education programs. Metro and local governments will provide technical assistance to school recycling programs and will collaborate on the development and distribution of education materials to meet local needs. Implementation of these objectives will be coordinated with various waste reduction work groups and the Regional Solid Waste Advisory Committee.

D. Hazardous waste management

Goal: Reduce the use and improper disposal of products generating hazardous waste in order to protect the environment and human health.

Homeowners use a variety of products in their daily lives, some of which pose risks to human health and the environment during use, storage and disposal. Examples of these risks include fires or child poisonings due to improper storage; injuries to disposal system workers (haulers, transfer station or landfill workers); contamination of streams from runoff of lawn and garden care products; and pollution of streams or groundwater from improper disposal of auto products such as used oil or antifreeze.

Historically, the region's approach to dealing with the problem has been to provide disposal alternatives for the public through collection facilities and events. Collection programs are costly to operate, however, and waste volumes continue to increase, while only a portion of the total waste generated each year comes into the collection program. As a result, there has been growing interest in preventing the generation of household hazardous waste through increased education and outreach. In addition, the region is looking toward product stewardship to transfer responsibility from local governments back to manufacturers and retailers (see the section on product stewardship).

Hazardous waste reduction

Changing the way people use products in their home is a very challenging undertaking. Traditional education techniques such as informational brochures can be ineffective in getting people to change long-standing behavior.

The large number of households in the region, wide array of products, and competing messages from manufacturers and retailers all pose barriers to encouraging residents to change their behavior. Given these challenges, regional education and outreach efforts are paying increased attention to new methods to get residents to engage in more environmentally sustainable behavior.



The objectives for achieving hazardous waste reduction are shown below.

1.0 Provide hazardous waste education programs that focus on behavior change.

The region will pursue methods to tailor education messages to more effectively bring about behavioral changes in ways that can benefit public health and the environment. Programs will include learning about and targeting specific audiences that use hazardous products, identifying barriers to changing these behaviors, and overcoming these barriers. Education on hazardous products in the home will also be a part of Metro's school age education programs.

1.1 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.

With limited resources available for hazardous waste reduction efforts, it is important to focus on the types of waste that have the greatest health, environmental, and financial impacts. Focusing on pesticides, mercury and other persistent bioaccumulative toxins (PBTs), for instance, is consistent with these priorities. As more understanding is gained on the health and environmental impacts of hazardous wastes, education programs will focus on those wastes that are the most detrimental to human and environmental health.

1.2 Provide hazardous waste reduction messages and information to all customers bringing waste to household hazardous waste collection sites.

A large number of the region’s residents are already taking one step by bringing their leftover hazardous products to collection sites. This audience is likely to be receptive to information about the hazards of those products and the use of less toxic alternatives.

1.3 Coordinate hazardous waste education efforts with related efforts conducted by government agencies and community groups in the region and in other areas.

Along with the hazardous waste reduction efforts conducted by Metro, a number of other organizations in the region, such as water and air quality agencies, are involved in similar efforts. Coordination can eliminate duplication of efforts and can help solve problems that are too complex for any one group to address. Coordinating with hazardous waste education efforts in other areas can help keep local educators informed of the latest research and the success of approaches that others have tried.

2.0 Research and develop tools to measure the generation, impacts and reduction of hazardous waste, when this can be accomplished at a reasonable cost.

To reduce the environmental and health impacts of hazardous products, it is important to fully characterize their effect, but data are limited on many important aspects of household hazardous waste use and disposal. When it can be done at a reasonable cost, the region will acquire quantitative information on aspects such as purchasing, generation and disposal practices, repeat users, specific environmental and health impacts, consumer attitudes and behaviors, and the effectiveness of behavioral change programs.

Monitoring and implementation methods

Metro will continue to provide annual reports as required by permits. Implementation of these objectives will be coordinated with various waste reduction work groups and reported to Metro Council and the Regional Solid Waste Advisory Committee.

Hazardous waste collection

Even with significant efforts invested in preventing the generation of hazardous wastes, substantial volumes of hazardous wastes will still need to be managed and properly disposed. The region should provide convenient, safe, efficient and environmentally sound collection and disposal services for hazardous waste that cannot be eliminated through prevention and education.

The objectives for providing hazardous waste collection services are shown below.



1.0 Manage collected waste in accordance with the hazardous waste hierarchy: reduce, reuse, recycle, energy recovery, treatment, incineration and landfill.

The hazardous waste hierarchy differs from the solid waste hierarchy in that composting is not an option. In addition, treatment and incineration (without energy recovery) are acceptable for hazardous waste. For certain types of waste, treatment and incineration are the most environmentally sound options. To maximize the environmental soundness of the disposal methods selected, this hierarchy will be used when procuring contractors for ultimate disposal of collected household hazardous waste.

<p>2.0 Coordinate collection programs with waste reduction and product stewardship efforts.</p>	<p>When waste reduction efforts target particular wastes due to toxicity or cost concerns, collection programs will be available for disposal of the targeted waste. In some cases, however, Metro will not undertake collection but instead will pursue waste prevention or product stewardship solutions. In other cases, the convenience of Metro’s collection efforts may need to be increased when this is consistent with waste reduction goals and can be done in a cost-effective manner.</p>
<p>3.0 Conduct waste screening programs at solid waste facilities to minimize the amount of hazardous waste disposed with solid waste.</p>	<p>In spite of the availability of collection programs, some hazardous waste is still put into the trash. Effective screening programs will be used at solid waste facilities to keep this hazardous waste from the landfill.</p>
<p>4.0 Use solid waste facilities efficiently and effectively for the delivery of collection services.</p>	<p>Existing solid waste facilities that serve the public will be used as collection points for household hazardous waste. In some cases, these facilities may serve as the site of permanent collection depots; in others, they may serve only as occasional sites as a part of a schedule of temporary events.</p>
<p>5.0 Maximize the efficiency of public collection operations, search for the most cost-effective methods and place a high priority on worker health and safety.</p>	<p>To maximize the amount of waste properly managed with limited financial resources, collection programs must operate in an efficient manner. Program operators will continue to identify ways to reduce expenditures for materials, labor and disposal contractors, while maintaining high standards for environmental protection, worker health and safety, and customer service. Wastes brought to household hazardous waste collection centers can pose a wide variety of risks to the workers handling them. It is important to have a comprehensive health and safety program in place to properly protect these workers.</p>
<p>6.0 Offer a Conditionally Exempt Generator (CEG) program to manage waste from small businesses.</p>	<p>While federal and state laws allow small businesses that are classified as Conditionally Exempt Generators (CEGs) to dispose of their hazardous waste in the trash, Metro discourages this practice. As part of the effort to keep this waste out of the solid waste system, Metro operates a disposal program that provides a convenient and economical way for these generators to properly dispose of their hazardous waste.</p>
<p>7.0 Implement bans on disposal of specific hazardous products as needed to address public health and environmental concerns.</p>	<p>Some localities around the country have passed laws to ban the disposal of some or all hazardous products. When disposal of specific products poses a known risk to public health or the environment in the region, and there are convenient collection services available for such products, disposal bans will be implemented.</p>

Monitoring and implementation methods

Metro will continue to provide annual reports as required by permits for hazardous waste collection methods. Implementation of these objectives will also be coordinated with various waste reduction work groups and reported to Metro Council and the Regional Solid Waste Advisory Committee.

E. Product stewardship

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.

Over the past decade, state and local governments have been faced with finding solutions to rising waste quantities, strong competition for limited fiscal resources, and a growing amount of expensive and difficult-to-recycle products. These problems resist traditional solid waste management methods, which focus primarily on improving end-of-life management through better recycling and disposal programs. Product stewardship has emerged as a way to help deal with these problems.

Product stewardship is defined as an approach to managing the lifecycle costs of a product in which a product's designer, producer, seller and user share the responsibility for minimizing the product's environmental impact throughout all stages of the product's life cycle. The greatest responsibility lies with whomever has the greatest ability to affect the overall environmental impacts of the product.



This concept aspires to recast the system of product responsibility from resting primarily on governments to having others – consumers, retailers and manufacturers – share in reducing the product's life cycle impacts. "Products" in this sense are defined to include durable goods, nondurable goods and packaging.

The burden on government resources will be eased when manufacturers design, businesses distribute and sell, and consumers purchase products that are less toxic and more durable, reusable and recyclable. Product stewardship shifts responsibilities "upstream" from government to a product's users, retailers, distributors and manufacturers. These parties then take greater responsibility for ensuring that products are collected and recycled, and that markets exist for the recovered materials. If there are costs to recycle or dispose of a product, those costs should be part of the product's original price. This could be achieved by including a visible fee (i.e., an advance recycling fee) or by the manufacturer internalizing the costs of recovering, reusing and recycling. These "front-end" fee approaches are much preferable to "drop-off" or "end-of-life" fees which may increase illegal or improper disposal. Both "front-end" approaches are likely to increase the cost of a product in the near term, but could reduce the growth in solid waste management costs for ratepayers.

Objectives to achieve the product stewardship goal are shown below.

1.0 **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.**

The region will focus its resources on product stewardship activities that will have the greatest impact on decreasing local burdens, such as the need for government to provide special and costly collection programs. The region will coordinate with others at state, regional and national levels that are also seeking to set product stewardship priorities.

2.0 Implement industry-wide product stewardship agreements or individual company stewardship programs in the region. Product stewardship agreements require the support of local and state governments to ensure that programs are effectively implemented. A number of national industry stewardship programs are currently in place and progress is being made in others (e.g., household batteries, carpet, paint, cell phones, and office products such as recycled content paper, ink cartridges, and computers). Local efforts can assist these programs by promoting product take-back opportunities and other activities.

3.0 Educate public and private sector consumers about product stewardship and, in particular, their role in purchasing environmentally preferable products. Product stewardship encourages changes in thinking and behavior from a consumption and use perspective toward waste minimization and sustainable production. Such changes are enhanced by educating public and private consumers about the environmental impacts of their purchases and encouraging them to consider those impacts when making purchasing and disposal decisions. When businesses, institutions and governments adopt policies and purchase products that are part of product stewardship programs, they provide direct and visible support to stewardship programs. The electronic product environmental assessment tool (EPEAT) for electronic products is a good example.

4.0 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. Local, regional, state and national policies can provide the necessary incentives or legislative foundation required to make stewardship programs efficient, effective and sustainable. Because local governments are responsible for ensuring an environmentally sound and efficient solid waste disposal and recycling system, they directly benefit when product stewardship solutions result in manufacturers and others sharing that responsibility. Local governments are encouraged to support the product stewardship approach and to adopt product-specific policies. For example, a jurisdiction could include a provision in computer procurements that requires the sellers to take them back for recycling at the end of their useful life.

Monitoring and implementation methods

Implementation of these objectives will be coordinated with various waste reduction work groups and reports will be provided to Metro Council and the Regional Solid Waste Advisory Committee.