



Portland Recycles! Plan

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**City of Portland
Office of Sustainable Development**

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CITY OF PORTLAND
OFFICE OF SUSTAINABLE DEVELOPMENT

A BETTER FUTURE. A BETTER NOW.

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Chapter 1: Why Should Portland Reduce, Reuse and Recycle?

In a resolution adopted in June 2006, Portland City Council directed the Office of Sustainable Development to conduct a public process and develop a plan that would achieve the following solid waste management goals over the next 10 years:

- ▶ *Promote sustainability of the solid waste and recycling system that includes maximum efficiency, equity and economic vitality, improved worker safety and reduced environmental and human health impacts over the entire life cycle of the materials.*
- ▶ *Minimize the impact of harmful wastes by targeting toxicity and reducing greenhouse gas emissions.*
- ▶ *Reduce per capita waste generation below 2005 levels by the year 2015.*
- ▶ *Increase recovery of all waste with a target of 75 percent by the year 2015 and promote highest value use of the recovered materials.*

A vision for a more efficient and sustainable system

In every area of its operations, the City of Portland encourages actions to help reduce:

- ▶ Greenhouse gas emissions that contribute to global warming.
- ▶ Local air pollution.
- ▶ The need for additional landfills.
- ▶ Toxic waste.

In studying how to achieve these various objectives, the Portland City Council recognized a significant lost opportunity. A review of waste composition data indicated that at least 90 percent of total waste is recyclable with current technology. This information moved Council to establish a new recycling goal of 75 percent by 2015.

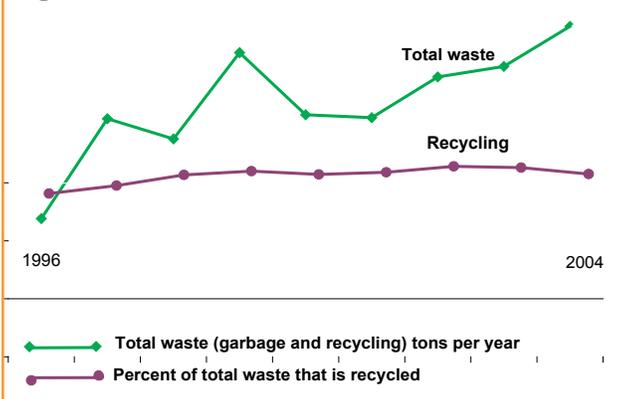
Waste is not only about landfills

Waste is about energy, environmental health, local jobs and reducing carbon dioxide emissions and other greenhouse gases that cause global warming. The nature of the problem has shifted from the worry about filling up scarce landfill space to a broader concern about the rapid consumption of resources and the need to use them efficiently. The City's policies focus on long-term sustainability and recognition of the lost energy and raw materials in every ton of garbage thrown away.

Recycling has increased, but residents and businesses create more waste

Oregon residents and businesses have increased their waste production over the last ten years. Since 1996, per capita waste generation, including material that is either recycled or thrown away, grew by 44 percent. The Oregon Department of Environmental Quality (DEQ) reports that the greatest increases in per capita generation are in construction, remodeling and demolition waste (CR&D), yard debris, scrap metal and plastics (particularly water and drink containers).

Figure 1: Growth of Total Waste in Portland



While businesses and residents in Portland continue to demonstrate a strong recycling ethic, they are struggling to recycle more than they throw away. For the Portland region, waste generation increased 3.3 percent in 2004 over the previous year and the amount of waste thrown away grew by 7.5 percent. Recycling rates, however, have leveled off at about 63 percent over the past five years.¹ (See Figure 1.)

Portland can begin to reverse this trend by reducing the amount of material entering the waste stream in the first place. Design and manufacturing practices, packaging,

purchasing and consumption activities all play a role in reducing the expense of energy and natural resources inherent in higher waste generation. **Waste prevention must be an overriding objective for the future of our waste management system.**

Significant recycling potential remains

There is plenty of opportunity to recapture those lost resources. Almost 90 percent of waste is recyclable with current technology. Portland is doing a good job, better than most cities, at redirecting waste from garbage cans to recycling bins. Nevertheless, it is possible to improve the system's performance, as long as a significant portion of recyclable material still remains in the trash.

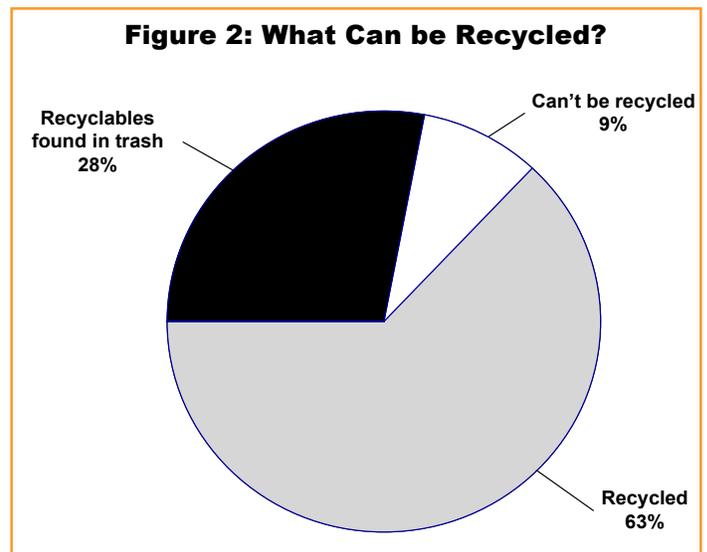
Data on waste generation indicates that 75 percent comes from activity in the business sector while 25 percent originates with single-family households. (See Figure 2.) Because of the large volumes of potential recyclables in the garbage, the following target waste streams receive top priority for improvement: (See Figure 3.)

- Food scraps and food-contaminated paper represents approximately 29 percent.
- Construction, remodeling and demolition materials are approximately 20 percent.
- Common recyclables are another 26 percent — including paper, which accounts for 14 percent of the total waste stream — mostly from commercial offices.

The good news is that Portland is one of the top cities in the nation for its achievements in reuse and recycling. Unfortunately, this means that the work becomes more difficult from this point forward, as the easy steps to improve resource recovery are already in use.

¹. See discussion on page 8 (How to measure success in the Solid Waste & Recycling Program).

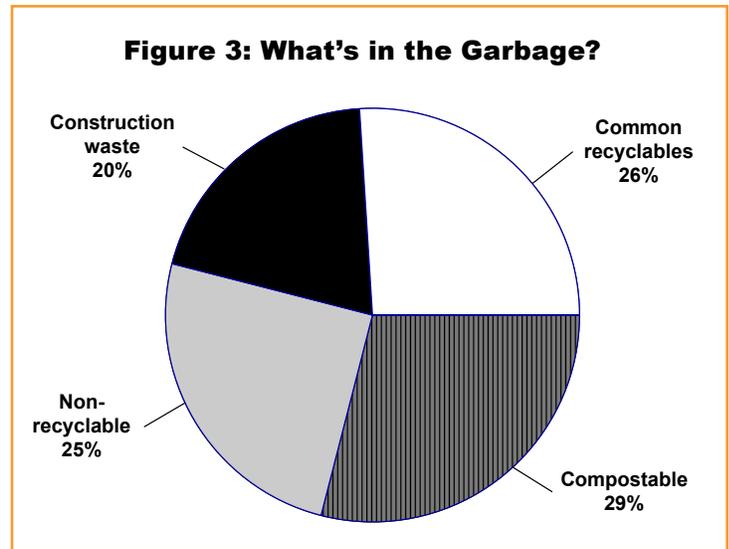
Figure 2: What Can be Recycled?



City policy will need to reach beyond the voluntary measures that are the foundation of many of its programs and take a more assertive approach in influencing waste prevention and recycling behavior. More than ever, it is important to be strategic in implementing the most effective programs that enhance awareness, provide expanded opportunities and motivate sustainable behavior.

Why should we push for better waste prevention and higher recycling rates?

In 2001, the Oregon Legislature established statewide waste generation goals that aim for zero increases in per capita waste generation after 2005 and in total waste generation after 2009. Not producing a product in the first place saves much more energy than recycling it once it becomes a waste product. The economic and environmental benefits of recycling are significant, but the benefits of waste prevention are even greater.²



NOTE: "Non-recyclable" includes a variety of items for which there is no process or capacity to recycle in the Portland Metro region.

Energy savings and global warming

It takes 95 percent less energy to recycle aluminum than it does to make it from raw ore. Making recycled steel saves 60 percent; recycled newspaper 40 percent; recycled plastics 70 percent and recycled glass 40 percent.

Portland's current recycling rate is a significant factor in reducing carbon dioxide (CO₂) emissions and reaching global warming mitigation goals citywide and for the region. The City's goal is to reduce carbon dioxide emissions that affect global warming to 10 percent below 1990 levels by 2010. The Portland metro area recycled approximately 1.1 million tons of material in 2005, reducing greenhouse gases equivalent to taking 438,021 cars off the road for one year. The energy saved would power 162,255 houses for one year.

Air quality improvements

The region's recycling efforts also reduced carbon monoxide, hydrocarbons, nitrogen oxides and other air pollutants, equivalent to taking 123,845 cars off the road for a year.

Resource conservation and financial savings

The Portland region recycles about \$89 million worth of materials that otherwise would have been thrown away. This includes enough paper each year to save about 8.2 million trees, equal to the number of trees in eight Forest Parks.

Job growth and economic development

Recycling provides a large number of jobs that generally pay above the national average wage. Sending 10,000 tons of waste to the landfill supports six jobs, while recycling the same amount supports 36 jobs. In the Portland area, more than 1,000 people work in the recycling industry. Demand for recycled materials has never been greater and, in many cases, exceeds the supply currently provided by the public. New business and product opportunities associated with recycled materials will add to the growth of the sustainable industries sector of our local economy.

² Statistics cited in this section come from "Ecofacts" published by Metro.

Waste prevention requires a variety of partners

Waste prevention is the most effective means to conserve energy and natural resources, but it is difficult to regulate. It is important to address waste prevention on a number of fronts, working with a variety of partners to foster real change in this area.

Local governments like the City of Portland can design their internal operations and use institutional buying power to promote waste prevention. Within its own operations, the City has significant power as a purchaser and consumer of products to see tangible improvements in waste prevention. For example, the Bureau of Purchases is already instituting “take back” policies requiring some of the City’s larger suppliers to handle packaging and obsolete products that would otherwise have to be discarded. As part of a broader strategy of promoting product stewardship, the City has explored opportunities with the Northwest Product Stewardship Council.

Encouraging or requiring residents and business owners to prevent waste is not as simple. Many prime waste prevention opportunities come at the design and manufacturing phases and can be outside the reach of local government regulation.

The Oregon Department of Environmental Quality (DEQ) recently released a draft waste prevention strategy. The City will work closely with DEQ to address these priorities through its policies, programs and regulatory actions.

Toxic materials are still a problem

The continued use of toxic materials and products means harmful chemicals are entering the environment both in their use phase (e.g., as herbicides applied to lawns) and as wastes destined for landfill disposal. In partnership with Multnomah County, the City of Portland has adopted a new Toxics Reduction Strategy, a guide to government purchasing and policies to reduce the use of toxics. The City’s long-term goal is to eliminate the governmental purchase, release and use of toxic substances that present potential negative health or environmental impacts.

Handling and disposal of most toxic wastes are typically regulated under federal and state law. Another current DEQ initiative assesses household hazardous waste to identify the most important hazardous materials and their related products. State, regional and local governments will use this information to target specific priority products and materials for regulatory action. The City is particularly interested in electronic waste, or e-waste. Used and obsolete computers, televisions and personal electronic devices are a growing concern given their popularity and short useful lives. The City supported a successful effort during the 2007 legislative session to develop a statewide recycling program for these products.

Metro has offered free toxics “roundup” events throughout the region for several years and these continue to provide a valuable service for Portland residents looking to dispose of small quantities of hazardous wastes (e.g., paint, pesticides, batteries and fluorescent lights). The Metro transfer stations also accept these materials on an ongoing basis at no charge to customers.

Many of these same materials have been the subject of product stewardship initiatives. (See Chapter 3.) The City will continue to explore these strategies and others to minimize toxic material use and disposal.

Chapter 2: Policy, Strategy and Process

The policy approach

The Portland Recycles! Plan's policy approach relies on a mix of expanded voluntary measures and new regulatory requirements to achieve the goals established by City Council. Heightened oversight and enforcement will be necessary to the success of this approach.

The Office of Sustainable Development suggests that the City implement changes to residential and commercial services in two phases over eight years: Phase One (2008 – 2009) and Phase Two (2009 – 2015).

The following strategies are critical to the success of the Plan::

- ▶ **Promote behavior change and education** — Effective education programs and commitment strategies support the development of new daily habits and personal motivation that will lead to an increase in waste prevention and recycling activities.
- ▶ **Require participation** — New requirements are necessary to compel businesses in particular to optimize waste prevention and recycling activity. Residential strategies focus on voluntary participation throughout most of the plan period; if the plan's goals are not met, participation requirements may be applied to residents in the later phases.
- ▶ **Lead by example in government** — Guided by the Sustainable City Principles, City policy for waste prevention and recycling encourages innovation and behavior change from within to serve as a model for the broader community.
- ▶ **Support regional and state policy and legislation** — A coordinated approach within all levels of government is necessary. Authority for certain policies or actions may reside with regional or state agencies.
- ▶ **Implement local legislation** — City legislation may be necessary to establish new policy and implement recommendations in the Plan.

Developing the Plan

The Portland Recycles! Plan reflects input, advice and recommendations from groups representing Portland residents, advocacy groups, businesses and garbage haulers. From August 2006 through January 2007, four stakeholder groups held a total of 20 meetings to discuss waste and recycling for the residential sector, the commercial sector, internal City operations and construction waste. *Appendix D* features a report of the proceedings and outcomes from the stakeholder process.

To assess the feasibility of the various recommendations, OSD staff conducted economic and environmental modeling on various plan scenarios. Members of the Solid Waste Advisory Committee (*See Appendix G*) contributed discussion, review and analysis. OSD staff then developed a draft Plan based on the goals, input from stakeholder groups, and results of economic modeling.

The draft Plan was released to the public on May 1, 2007. A 45-day review period included public meetings and presentations to business and neighborhood associations, environmental advocacy groups and governmental partners. In addition, a summary of the Plan was mailed to all Portland households as part of the *Curbsider* newsletter, and an interactive presentation was posted on the OSD Web site. The City received more than 5,900 online and mail-in comments on the Plan. Several modifications to the Plan were made in response to suggestions and concerns raised in the review process.

On August 8, 2007, the Portland City Council adopted the residential, waste prevention and city operations portions fo the Portland Recycles Plan!, while directing OSD to re-examine options for the commercial col-

lection system that would support broader sustainability goals. The recommendations in Chapters 5 and 6 were modified to reflect additional staff analysis and input from City Council.

Addressing system-wide changes

Recommendations relating to system-wide changes appear in the later chapters. Several important aspects of the Portland Recycles! Plan apply across the entire waste management system:

1. Offer targeted educational outreach

A strong education and outreach component is critical to the successful implementation of the proposed changes. Each audience will require a different targeted educational program. It will be important to seek out new channels of communication, refresh the key messages, find innovative methods of delivery and cultivate effective partners in the community.

OSD's outreach campaigns rely on the principles of community-based social marketing to achieve behavior change. These principles focus on removing perceived barriers, promoting the benefits and building personal commitment to change. This approach will best communicate the reasoning and the methods necessary to achieve new waste management requirements.

2. Strengthen enforcement

The Portland Recycles! Plan proposes a more stringent regulatory approach. To be effective, it will require timely oversight, predictable consequences and, at times, punitive measures to be effective.

While the City will continue to focus on education and voluntary compliance, a stronger emphasis on monitoring, phased-in enforcement and verification will accompany behavior change strategies. This represents a shift in regulatory approach from almost exclusive reliance on achieving voluntary compliance through technical assistance and motivational outreach.

3. Decrease fuel use and emissions

The Portland Recycles! Plan also addresses global warming and pollution issues by requiring improvements in the private fleet of trucks used for collecting garbage and recycling in Portland.

Concern over the use of fossil fuel and the public health impacts of diesel truck emissions prompted several recent City initiatives including a renewable fuel standard for all diesel sold in Portland, and the use of B20 biodiesel (blend of 20 percent biodiesel and 80 percent ultra-low sulfur diesel) in all diesel vehicles in the City fleet. As of March 2007, all residential garbage and recycling haulers must use B20 as well.

The Plan's strategy for a sustainable fleet also includes bringing hauler fleets into compliance with the 2007 EPA truck emission standard. Trucks from 1994-2006 model years could be retrofit with emission control devices to meet the standard, while pre-1994 trucks would need to be replaced or rebuilt, as retrofitting is not possible.

4. Increase oversight for facility standards

Portland's recycling system is already highly reliable. More than 95 percent of materials collected for recycling are successfully processed and sold as inputs for new manufacturing and production. Yet improved monitoring and regulation of sorting facilities will further assure Portland residents that all materials left at curbside are actually getting recycled.

The recycling collection system in Portland depends on recyclables making it successfully to end markets to offset virgin materials. Metro's monitoring of local material recovery facilities (MRFs), however, suggests that not all recyclables are making their way to the intended markets. Bales of recyclable paper destined for

paper mills sometimes contain glass and plastic containers — a problematic source of contamination.

Particularly troubling is that about one in five plastic containers ends up contaminating paper bales. Other recyclables end up leaving the facility as residual garbage.

Metro, the regional agency that grants operating permits to waste handling facilities in the region, monitors the MRFs that process recyclable materials for contamination and residual levels. However, because these “clean” MRFs are not required to obtain a license from Metro, no standards have been set for their performance and no agency regulates them for compliance.

Greater oversight will improve performance of the facilities, and assure Portland residents and businesses that their recycling efforts are not in vain.

How to measure success in the Solid Waste & Recycling Program

To track improvements in the performance of the City’s Solid Waste and Recycling Program under the new initiatives proposed in this Plan, it is important to have a reliable and meaningful set of metrics for comparative analysis. The recycling rate has traditionally been one such measure used by many cities and states. The City has recently updated its recycling rate calculations to align with the methodology used by the state DEQ, including DEQ’s assignment of credits for waste prevention, reuse and home composting. The revised recycling rate of 63 percent will form the baseline for evaluating progress toward reaching the City’s goal of 75 percent recycling by 2015.

Reaching the new recycling goal will require improved recycling efforts in all target sectors (residential, commercial and construction waste). Below are initial estimates for the potential recycling gains in each sector are shown in Table 1.

Table 1: Increased recycling achieved with Portland Recycles! Plan recommendations

Sector	Estimated recovered tons	Increase over current levels	Contribution to recycling rate
Residential	25,000*	33%	2 %
Commercial	75,000**	23%	6 %
Construction	50,000***	60%	4 %
Prevention	12,000****	n/a	1 %
Total	162,000 tons		13 %

** assuming 60 percent capture of target recyclables currently disposed and 25 percent participation in food scraps collection.*

*** assuming 60 percent capture of target recyclables currently disposed*

****assuming 50 percent capture of construction materials currently disposed including 15,000 tons recovered under Metro’s proposed processing requirement*

***** waste prevention reduces overall generation by this amount, thereby improving the recycling rate*

It is equally important to gauge success in meeting the other goals established by City Council. Waste prevention efforts are notoriously difficult to measure but careful analysis of waste generation trends may lend some insights. Staff will need to develop new, targeted metrics for the other sustainability goals of the Plan. Tracking progress will require regular, timely reporting with a focus on precision and relevance.

Chapter 3: Waste Prevention

Encourage waste prevention, discourage waste creation

Portland's goal is to stop growth in the waste stream, and to raise the recycling rate to 75% by 2015.

In Portland, waste generation levels for 2005 are approximately 14 pounds per capita per day and have grown 44 percent per year over the past 10 years. This trend was the basis for the City Council adopting a waste prevention goal in 2006 to reduce per capita waste generation below 2005 levels by 2015. To meet the City's goal, it will be necessary to halt the growth in waste generation and reverse any increases since 2005.

According to state statute, waste prevention includes 1) using less material, 2) reuse of products and materials for their original purpose and 3) on-site composting of organic materials. Recycling, off-site commercial composting and energy recovery are not included. Efforts to improve waste prevention include:

- Repairing and extending the usable life of products.
- Buying durable, repairable, reusable products.
- Buying used goods, materials or products.
- Reducing consumption of goods.

Waste prevention can stimulate the local economy

Waste prevention does not have to equate with lower economic activity. It may stimulate the purchase of services instead of goods (e.g., tourism and entertainment). It may also encourage development of new businesses specializing in waste prevention services, the production of more durable, less wasteful products or other activities that contribute to economic growth and vitality.

OSD's activities align with DEQ strategy

Recently DEQ developed a draft waste prevention strategy to guide their programs over the next ten years. The strategy assigns priority to design, construction, remodeling and demolition of buildings (with an initial focus on residential buildings), business practices (initial focus on packaging), consumer education and research and analysis. Additional research and evaluation work by the State will refine the strategy and support specific implementation plans.

The State's strategy and OSD's activities intersect in several key areas:

- **Public outreach and education:** OSD disseminates information and advice through a comprehensive outreach and education program. This will be the primary channel for persuasive campaigns around effective waste prevention measures.
- **OSD Green Building:** This program is poised to integrate building-related waste prevention initiatives given its focus on promoting resource conservation in building design and construction practices.
- **OSD Recycle at Work, the technical assistance and recognition program for business recycling:** This program promotes waste prevention activities to its business clients. As DEQ identifies the most effective strategies from its research and evaluation, Recycle at Work is well equipped to disseminate new information from the state to the broader business community.
- **City purchasing:** The Bureau of Purchases is responsible for the City's primary purchasing functions. Sustainable procurement strategies are the work of a cross-bureau team that includes OSD. The State's strategy will inform the work of the cross-bureau team.

- **Product stewardship opportunities** offer long term waste prevention benefits through shared responsibility for end-of-life management of products, with responsibility borne by manufacturers and consumers. By sharing the burden of end-of-life management and the financial responsibility that comes with it, consumers and manufacturers have a stake in improving the design of products so they are more durable, easier to recycle and less toxic to produce. The e-waste recycling requirements passed by the Oregon Legislature in 2007 offer a relevant example.

Recommendations

These recommendations will ensure that waste prevention is a primary message in outreach efforts and City programs:

Waste Prevention Recommendations	Phase One	Phase Two
	2008-2009	2009-2015
1. Emphasize waste prevention in education and outreach.	xxx	xxx
2. Work with DEQ to implement Waste Prevention Strategy.	xxx	xxx
a. City as stakeholder in planning process.	xxx	
b. Integrate results in City programs and outreach.		xxx
3. Pursue product stewardship policies and projects.	xxx	xxx
4. Work with green building program to develop and promote Best Management Practices for waste prevention.	xxx	xxx
5. Explore retailers' role with waste prevention through new partnerships, pilot projects and promotion.		xxx

1. Emphasize waste prevention in education and outreach.

During the first year of plan implementation, messages about the major recycling changes proposed for the residential and commercial collection systems will dominate the City's public education campaign. Once that campaign is complete attention will turn to promoting waste prevention. Waste prevention will be a primary message for all audiences. Research and evaluation will support the development of a short list of meaningful consumer behaviors.

2. Work with DEQ on implementing waste prevention strategy.

The City will be a key stakeholder in the continuing development of the state waste prevention strategy, forging a strong and productive partnership with DEQ. The range of City programs that can serve as a conduit for that strategy makes this partnership vital for success at both the local and state levels.

Once definitive results are available from DEQ's research and evaluation efforts, City programs that provide technical assistance to employees, residents and businesses will offer targeted information.

3. Pursue product stewardship policies and projects.

The City supports product stewardship legislation on an on-going basis, such as the e-waste recycling legislation of 2007. Other projects may result from participation in regional product stewardship workgroups such as the Northwest Product Stewardship Council. Recommendations are also included in the plan for using City purchasing practices to achieve waste prevention. (see Chapter 7.)

4. Work with the green building program to develop and promote best management practices for waste prevention in construction, remodeling and demolition.

One of the priorities of the state strategy is construction-related waste. The State process will recommend a new set of building design and construction practices that target waste prevention in construction and demolition. The City's Green Building and Solid Waste and Recycling programs will partner with the state to take these innovations into the field.

5. Explore retailers' role with waste prevention through new partnerships, pilot projects and promotion.

The City will explore joint projects with the retail community that include packaging reduction, producer "take-back" programs, and sustainable procurement strategies.

Chapter 4: Residential Program

The residential sector (single-family homes and multifamily housing up to four units) generates about 25 percent of Portland's total waste. Residents have sustained a high level of recycling, recovering over half of the waste they generate. While residents are recycling more material than ever (up 7 percent since 1996), they are also sending more waste to the landfill (up 16 percent since 1996).

Much of what is in the garbage could be recycled or composted through an expansion of the curbside recycling program. The bigger challenge lies in bringing down the volume of material each household must manage because of its purchasing and consumption patterns.

Curbside collection has been successful; now residents want expanded service

Portland's curbside collection system has not changed significantly since 1992, with the exception of adding several new materials to the collection list. Residents have been careful to prepare their materials properly for curbside setout and, as a result, the system has continued to produce high quality recyclable materials. Portland's residential recovery rate of 63 percent far exceeds most U.S. cities, including Los Angeles (45 percent), Denver (9.5 percent), Seattle (52 percent), Austin (27.8 percent) and Chicago (17.6 percent).³

Customers pay one monthly rate for curbside collection services (garbage, recycling and yard debris). Different rates exist for the various services levels, for example lower charges for "mini-can" or monthly service than for the most common weekly 32-gallon can service.

The average customer sets out their garbage once a week in various sizes of can or roll cart. Recyclables, including paper of all types, cardboard, aluminum, tin and other scrap metals and plastic containers (no tubs) are set out once a week in two yellow bins. The City asks that customers provide additional rigid collection containers to keep glass separate; motor oil is also set out on the side. Customers set out yard debris in containers or yard debris bags every other week.

Although the current system works well, the processing available in the region has changed since Portland's yellow bin system was initiated. Material recovery facilities can sort increasingly "commingled" (mixed) waste streams, reducing the need for customer sorting of their curbside recyclables. Many recycling haulers mix the recyclables together on the truck, causing confusion for residents. Why should they sort recyclables if they are being thrown back together anyway?

Residents may feel their efforts are in vain, fearing that the recyclables are destined for the landfill instead. The curbside system needs to be updated to mirror current processing technology. Education and outreach to residents should clearly explain that the facilities sort the mixed recyclables and that residents can have faith in the commingled approach to the collection of curbside recyclables.

Table 2: Current customer cost per month (based on size of garbage)*		
Weekly		
	20-gallon mini can	\$17.90
	32-gallon can	\$20.60
	35-gallon cart	\$21.95
	60-gallon cart	\$26.65
	90-gallon cart	\$31.05
Monthly		
	32-gallon can	\$12.05
*Includes weekly recycling and bi-weekly yard debris		
Note: Rates may be affected by terrain charges, depending on customer location.		

3. Residential recycling rates as reported in *Waste News*, Feb. 19, 2007.

Haul away more, and do it better

Opportunities for improving the capacity and performance of the residential program include:

- **Equipment changes:** Upgrade collection containers consistent with new local collection and processing practices.
- **New materials:** Collect a broader range of recyclable materials.
- **New standard service:** Remove food scraps and increase collection of recyclables to enable every-other-week garbage collection.
- **Neighborhood collection:** Expand non-curb-side collection opportunities.

Opportunities within the current regulatory framework

The City regulates collection and hauling of residential garbage and recycling under a franchise system created in 1992. Hauling companies granted non-exclusive franchises serve specific geographic territories and offer standardized services under regulated rates. Participating haulers pay the City a franchise fee of five percent of their gross residential revenue. These fees are used to regulate the system and promote recycling and waste prevention.

The City conducts an annual rate review to establish the monthly rates paid by residents for garbage and recycling collection services. The City revises rates to reflect changes in such factors as fuel costs, labor costs and equipment purchase. A profit margin for the haulers is also included.

The following mechanisms are available to support enhanced waste prevention and recovery:

- Customer rates can be set to offer residents greater incentives to reduce garbage and increase recycling.
- Franchised haulers can be required to use new collection services or operational practices.
- The City can offer haulers payments to cover costs of new investment or provide reward for achieving higher recycling rates or reducing garbage generation among customers.

Research sheds light on consumers' waste handling practices

Research on the behavior of Portland residents indicates key factors affecting their waste handling practices:

- **Relationships with the driver:** Quality of interaction between residents and their route driver is a significant factor.
- **Communication sources and feedback:** Residents look to their route driver or neighbors for feedback on how to recycle properly. If the hauler picks up the material that is set out, residents assume the materials are recyclable and properly prepared.
- **Personal motivation:** Commitment based on recycling being “the right thing to do” is a strong motivator.
- **Knowledge and understanding:** Confusion over what exactly can be recycled and how it should be prepared and set out can dampen recycling behavior.
- **Access to information:** Language barriers or lack of access to technology can impede recycling behavior. Knowing where to go to get answers is important.
- **Personal impact:** Residents need to feel that their contribution on an individual level makes a difference.
- **Faith in system:** Residents can become cynical about recycling if they believe that their materials are going to the landfill instead of the recycling center.
- **Simplicity and consistency in collection systems:** Residents want the system to be easy, clear and predictable.

These considerations are important for fostering behavior change among Portland residents who have already shown a willingness to participate and a desire for expanded services.

Recommendations

Residential Program Recommendations	Phase One 2008-2009	Phase Two 2009-2015
1. Add recycling and yard debris roll carts	xxx	
2. Add new materials for recycling	xxx	
3. Expand neighborhood collection events	xxx	
4. Require hauler feedback to customers	xxx	xxx
5. Develop new emissions requirement for garbage and recycling trucks	xxx	
6. Work with Metro and DEQ to develop standards for Material Recovery Facilities (MRFs)		xxx
7. Include food scraps with yard debris and make yard debris collection weekly		xxx
8. Add garbage roll cart and begin every-other-week garbage collection		xxx
9. Develop customer and hauler incentives		xxx
a. Differentiated can rates		xxx
b. Waste reduction targets		xxx
10. Implement ban on recyclables in the garbage		xxx

Phase One (2008 – 2009)

1. Add recycling and yard debris roll carts.

Roll carts for collection of mixed recyclables will replace the two-bin curbside system. Glass will still be collected separately. Customers currently using their own can or bags for yard debris will receive a yard debris cart.

The benefits of recycling and yard debris roll carts include customer convenience, higher volumes of material collected, drier material for sorting, expanded list of acceptable materials and improvement in worker health and safety. Recycling processors have already praised Beaverton and Lake Oswego's successful roll cart programs.

2. Add new materials for recycling.

Since 1995, the Portland curbside program has limited its collection of plastics to bottles or containers with screw tops. Improved processing and marketing options have made other containers such as margarine and yogurt tubs, small buckets and plastic plant pots viable. Several other local communities have expanded their collection programs to include these container types.

3. Expand neighborhood collection events.

OSD-funded neighborhood clean-up events will be expanded to include more non-curbside materials such as other plastics, plastic foam, e-waste, and construction waste. The events also provide a forum for

broader public education around waste prevention and reuse. The convenience of collection events based in local neighborhoods coupled with the outreach opportunities they offer is a value-added expansion for the residential services.

4. Require hauler feedback to customers.

Consistent feedback to customers about proper preparation and set-out of recyclable and compostable materials will complement the switch to roll cart service. Haulers will be expected to consistently leave information for customers when there is noticeable contamination (non-recyclable items) in the recyclable or compostable materials set out for collection. The City will assist with this effort by providing haulers with easy to use preprinted forms that reduce driver time to complete.

5. Develop new emission standards for garbage and recycling trucks.

Trucks used in the residential franchise system are already required to use 20 percent biodiesel (B20). The development of new truck emission standards, including one for particulate matter (PM), will apply to trucks used in either residential or commercial service. The standard may be met through new truck purchase or retrofit, rebuild or replacement of older models. Coordination with other local and regional governments will help to prevent the shift of low-performing vehicles to less regulated areas of the region.

6. Work with Metro and DEQ to develop standards for Material Recovery Facilities (MRFs) and a method to monitor and enforce for compliance.

With greater mixing of materials in a single recycling roll cart, Portland residents need assurance that their curbside recyclables are actually being recycled at the processing facilities (MRFs). Currently, 95 percent of what residents set out is captured and sold as inputs for new goods and materials. This high level of sorting and processing needs to be maintained. Metro has stated that if residential contamination rates increase and disposal of recyclables from MRFs also increase, then additional permitting, inspection, monitoring and enforcement may be necessary to assure effective processing by all MRFs.

The City will work with Metro and DEQ to develop standards for acceptable low levels of contamination and residual at MRFs. Implementation of these standards could happen through a voluntary self-certification process or monitoring and enforcement through regulatory agencies. Once the standards are in place, waste haulers will receive notification about which facilities are in compliance and able to accept material from Portland residents.

Phase Two (2009 – 2015)

7. Include food scraps with yard debris and make yard debris collection weekly.

In Phase Two, the City proposes to add collection of household food scraps including vegetable waste, meat, bones, dairy, grains and food-soiled paper. Unlike backyard composting, this broad range of food scraps can be safely and effectively composted at an industrial composting facility where potential problems with odors, pests and animal scavengers are strictly controlled.

This expansion will bring Portland in line with other major west coast cities including San Francisco, Alameda, Seattle, Bellevue, Everett, Kent and other Washington jurisdictions. Curbside food scrap collection is contingent on the availability of local processing capacity. In the Portland metro region, there are no compost facilities that can accept both yard debris and food scraps. The Cedar Grove composting facility in Washington currently receives Portland's commercial food scraps. Cedar Grove is likely to expand to the Portland metro area by 2009.

New rules from DEQ are expected to increase the standards for yard debris composting facilities. Upgrading the facilities to meet these new requirements would allow them to consider processing food

scraps. Some local processors have recently signaled their intent to upgrade in anticipation of composting a mixed organic waste stream. DEQ anticipates adopting the rules in 2008 and facilities will need to comply by 2010.

Food scraps would be collected in the same bin with yard debris. Haulers currently collect yard debris every other week, but weekly service would be necessary with the introduction of food scraps collection. A variety of collection strategies—such as in-kitchen collection pails, use of compostable plastic bags, preparation tips, etc.— will be developed to ease customer concerns about odor and pests.

8. Add garbage roll cart and begin every-other-week garbage collection.

With expanded recycling opportunities, most residents will not need garbage collection every week. Every-other-week garbage service complements expanded recycling services and helps to reinforce a waste prevention ethic. Implementation of every-other-week garbage pick-up will coincide with the rollout of the weekly yard debris and food scraps collection service.

This reversal of pick-up schedules will help offset the rate increases needed to offer weekly yard debris and food scrap service. Preliminary analysis suggests that switching to every-other-week garbage service combined with weekly recycling, yard debris and food scrap service would lead to a minimal rate impact on most Portland customers. Bellingham, Washington (60 percent subscription level) and Olympia, Washington (100 percent) use a similar every-other-week trash collection system.

9. Develop customer and hauler incentives.

Differentiated can rates: Customers with larger garbage cans pay more for service than those with smaller cans. The current monthly rates subsidize smaller garbage can sizes to encourage reductions in garbage. Increasing the difference between the rates for small and large garbage cans will boost the incentive to reduce garbage and switch to a smaller can.

Any subsidy for smaller can customers has to be made up in the rates paid by those using larger cans. Higher rates for larger cans, however, may lead haulers to encourage larger can service. Some of the surcharge for large can service will be returned to the City. These funds will then be used for incentive payments to the haulers for switching customers to less frequent service and/or smaller can size.

Waste reduction targets: The City will explore the potential benefits of providing haulers with financial incentives (e.g. discounts in franchise fees) for meeting specified waste reduction targets such as a decrease in number of tons disposed or an increase in the number of customers signing up for every-other-week garbage or smaller can service. Effective implementation will require reliable and verifiable reporting and analysis of whether hauler incentives translate into customer behavior change.

10. Implement ban on recyclables in the garbage.

If the proposed set of incentives and expanded opportunities to recycle are not producing significant gains, by 2010, the City will evaluate whether it is necessary to strengthen regulatory controls. A disposal ban on curbside recyclables will require that haulers monitor garbage collection containers for their contents. When haulers detect recyclables, they will notify the customer in writing and leave the garbage uncollected. Once the customer removes the recyclables from their garbage, haulers could levy additional charges if the customer asks for a repeat pick-up.

Seattle, Washington adopted a similar ban and implemented a phased enforcement strategy. During the first year of implementation, residents with garbage containers that did not comply received written feedback. Starting in the second year, haulers began to leave garbage at the curb for non-compliant residents. It is likely that Portland will phase in this regulatory strategy sometime after 2010.

Estimated cost impacts

With the implementation of Phase One (recycling roll cart and yard debris cart), most Portland customers will see a rate increase of approximately \$2.50/month. This cost covers the addition of the new carts. For most customers, the cost can be offset completely by switching to a smaller can size or reducing frequency of garbage service. Adjustments may have to be made in the rates to avoid penalizing current mini-can and once-a-month customers who cannot further reduce can size or frequency.

In Phase Two, the implementation of weekly yard debris and food scrap collection service should cause minimal or no increase in rates for customers who choose the standard service package of every-other-week garbage collection.

Chapter 5: Commercial Program

The commercial sector (businesses and multifamily complexes with more than four units) accounts for 75 percent of total waste generated in Portland. Since 1996, all commercial garbage and recycling customers have been required to recycle at least 50 percent of their waste materials. While businesses have generally met this requirement, increases in the total amount of waste produced have out-paced gains in recycling.

The City of Portland does not regulate rates paid by commercial customers

Private hauling companies (55 total) provide garbage and recycling collection services to Portland businesses in a competitive system. Customers choose their hauler and negotiate price, services, collection location and frequency. The hauling companies operate under a permit issued by the City and are required to:

- Offer recycling for 14 principal recyclables.
- Report to the City the collected amounts of garbage and recyclables.
- Pay the City a fee of \$3.80/ton of garbage collected, plus an annual fee of \$60 per company.

In addition, 28 independent recyclers offer services for a variety of recyclable materials and operate under a different type of permit and set of requirements. They pay no waste-related fees to the City.

Despite the large number of hauling companies providing collection service, the system is relatively efficient. This is in part because only nine haulers are responsible for most of the hauling activity, handling about 83 percent of the commercial tonnage. These haulers capture the efficiencies that come with full, compact collection routes.

Unlike neighboring communities which franchise commercial collection (assign a geographic territory for each hauler) and set rates for recycling and garbage services, the City of Portland does not regulate the rates paid by commercial customers. A recent study comparing the rates paid in Portland to the rates paid for similar service in the cities and counties surrounding Portland had several important findings:

- Rates vary widely among Portland businesses for similar levels of service.
- On average, Portland businesses that used smaller collection containers, such as cans or roll carts, paid significantly more than similar businesses in surrounding suburban communities that have franchised service.
- Businesses that used containers of one cubic yard or more paid, on average, somewhat less than they would have in surrounding areas served by franchised haulers.

There may be several reasons for the discrepancy in rates between customers in Portland and those in neighboring communities. First, franchise systems allow cross-subsidization between commercial service levels. For example, to reduce the impact on small business customers, other customers could be charged more. Cross-subsidization between commercial and residential rates may also occur with commercial customers subsidizing residential customers. In addition, suburban jurisdictions may see higher transportation costs and greater inefficiencies due to lower density of development and longer travel distances. Finally, haulers may have different reported costs and allowable expenses in the suburbs, as compared to Portland.

Technical support and education encourages voluntary compliance

The City relies on targeted outreach, technical support and education to gain voluntary compliance with the current 50 percent recycling requirement. The City's business assistance program targets paper-rich sectors with information about waste prevention, recycling and buying recycled products, and provides resources and recognition to businesses. Portland Composts!, established in 2005, promotes composting of food scraps from hotels and restaurants, grocery stores, institutional kitchens and food processors with educational materials, technical assistance and on-site staff training.

The City's administrative rules require that businesses document their recycling efforts through a recycling plan form that indicates which materials are recycled and identifies the type of collector for those materials. This requirement has not proved to be effective in practice and has not been strictly enforced as a result.

At the regional level, Metro is moving forward with a mandatory business recycling policy that requires businesses in the region to recycle paper and containers (plastic, metal and glass). Local governments will be responsible for monitoring business performance and enforcing the requirements through inspection and potential penalties. The policy will require local governments in the region to adopt comparable recycling requirements.

Construction, remodeling and demolition

Building-related activities (demolition, remodeling and tenant improvement, new construction and land clearing) generate construction, remodeling and demolition (CR&D) waste. Slightly more than half of the CR&D material generated in Portland is disposed in the landfill. Local processors recover the remainder. A number of dry-waste processing facilities and material-specific processors in the Metro region recover CR&D recyclables. In addition, two "special purpose" landfills accept CR&D waste for disposal.

Metro recently adopted a requirement for enhanced dry waste recycling (EDWRP). The policy requires that starting January 1, 2009, all mixed dry waste generated in the region must be processed to recover recyclable materials (wood, metal and cardboard) before landfill disposal. No more than 15 percent of these materials are allowed in the processing residual.

All building projects in Portland with a permit value of \$50,000 or more (including construction, remodeling and demolition phases) are required to separate and recycle at least 50 percent of the waste from the job site. Required recyclables include wood, old corrugated cardboard, metal, rubble (concrete, asphalt) and land clearing debris.

The general contractor is responsible for ensuring recycling at the job site, including recycling by sub-contractors, and for completing a "Pre-Construction Recycling Plan Form" and returning it to OSD. The recyclables either can be "source-separated" by material or combined with other dry waste in a mixed load for post-collection processing. Data from 2006 suggest that contractors returned only about 50 percent of the required recycling plan forms.

The City of Portland and Metro have focused their programs on educating contractors and building owners about their options for reusing and recycling CR&D materials. A number of information aids, including Metro's "Toolkit" and OSD's "TI Guide," are widely circulated and available on the Internet. Metro has also sponsored industry outreach efforts through trade associations, targeted media coverage and strategic partnerships.

Discussing how the commercial system should change

The competitive nature of hauling services has limited the promotion and growth of waste prevention and recycling activity in the commercial system. To retain customers, haulers tend to offer the least complicated service at the lowest cost. This makes it difficult for them to promote expanded recycling services and remain competitive. In general, most businesses are very sensitive to price and will not demand expanded recycling service unless it represents a cost savings.

Noise from nighttime collection in mixed-use neighborhoods was an early topic that informed the consideration of reforms to the commercial waste system. However, the volume of nighttime noise complaints indicates that the impact is not in and of itself significant enough to require a major overhaul of the commercial collection system:

- In 2004, only 50 of the noise complaint calls logged by the Noise Control Office (or less than 1.5 percent) were about nighttime noise related to garbage or recycling collection activities.
- In 2006, that number had dropped to approximately 25-35 complaints.
- There are additional means available to regulate the nighttime noise problem.

The question of how the commercial system should change to improve performance was an important impetus for development of the draft Plan. There are many possibilities, ranging from adding new recycling requirements to the existing system to moving to a franchise system with assigned geographic hauling territories and regulated rates.

The commercial stakeholder group established as part of the Portland Recycles! planning process explored these options. Unfortunately, there was no consensus on the best approach to take. While many stakeholders from the garbage hauling industry advocated for franchising, the idea lacked support from the hauling community as a whole and from other members of the stakeholder group. Several members, however, did speak out in favor of new recycling requirements and financial incentives to boost business recycling and waste prevention activity.

Business response to the draft Plan was strongly in favor of reaching the waste prevention and recycling goals without change to the regulatory structure of the competitive hauling market. Most were willing to accept greater responsibility for meeting the new goals, but opposed further government intervention in regulating rates or assigning hauler territories. While there was not consistent support for recycling mandates, trends in adoption of voluntary measures through the City's business recycling and compost programs indicate limited response to fully voluntary programs. Some targets are necessary to compel businesses to recover the more significant components of commercial garbage.

At a meeting of the City Council on August 8, 2007 to adopt the Portland Recycles! Plan, staff presented recommendations calling for new recycling mandates for businesses and higher service standards for waste hauling companies. Council directed OSD to further investigate options for the collection system that would reduce noise, fuel use and air pollution, while at the same time provide incentives for increasing business recycling and food scrap composting. These options could include financial incentives, rate setting and/or a franchise approach like the residential system.

Incorporating new recycling mandates for businesses and higher operating standards for hauling companies is an important first step, one that will ultimately strengthen the performance of any future regulated system. Franchising options provide environmental benefits such as reduced traffic, noise, fuel use and emissions but also financial incentives for greater recycling through rate regulation. Ultimately, these benefits are maximized by franchising fewer hauling companies to serve large geographic zones where one hauling company operates in each zone. Rate regulation alone also provides an opportunity for financial incentives to businesses.

After further staff analysis, discussion with City Commissioners and feedback from stakeholders, a phased strategy was developed. The strategy is built on a series of steps designed to 1) increase business recycling, 2) ensure waste haulers can provide more expansive service and 3) take further regulatory action, if needed, to reach City goals. A decision about whether additional regulation is needed will be made once these performance standards are in place and an evaluation has been conducted of both the waste hauling industry and recycling achievements.

Commercial Program Recommendations	Phase One 2008-2009	Phase Two 2009-2015
1. Phase in new performance standards followed by additional regulation as needed to meet City goals for the waste collection system.	xxx	xxx
2. Establish a new overall 75 percent mandatory recycling requirement for businesses by 2015.	xxx	
3. Establish new mandatory food scrap diversion: a. Start with businesses that generate the most food scraps. b. Expand to include all food scrap generators above specified level or size.	xxx xxx	xxx xxx
4. Establish a new mandatory paper and containers recycling requirement for all businesses in the city.	xxx	
5. Increase mandatory CR&D recycling ordinance to 75 percent recycling and improve notification, education and verification of compliance.	xxx	
6. Give small commercial customers the option for service and rates under residential franchise.	xxx	
7. Provide additional education and technical assistance for CR&D, food and paper waste prevention and recycling.	xxx	
8. Promote salvage, reuse and recycled content products in construction, remodeling and demolition projects.	xxx	
9. Develop new hauler requirements and strengthen regulatory approval process.	xxx	
a. Equipment and services to allow their customers to reach 75 percent recycling goal.	xxx	
b. Require that all trucks use B20 and meet new emission standards.	xxx	
10. Build partnerships with business organizations to assist with and promote compliance with new recycling requirements.		

Recommendations

1. Phase in new performance standards followed by additional regulation as needed to meet City goals for the waste collection system.

Step 1: 2008 Recycling mandates and hauler standards

- Implement business recycling mandates for food, paper and containers (plastic, metal and glass) and construction waste.
- Adopt hauler standards for expanded recycling services and new fleet and equipment requirements.
- Clarify approval process for hauling permits, and include new service and equipment standards.
- Give small commercial customers the option for service and rates under residential franchise.

New requirements will be established for both businesses and waste hauling companies, putting in place those features needed to create a high-performing system. Haulers will have the opportunity to make the business decisions and operational changes needed to meet the new standards, with some potential industry consolidation as a result.

To provide some relief to small commercial customers, they will be given the option of obtaining service from the residential franchise hauler at residential rates. This option will be available to customers with single roll cart service equivalent to once-a-week service levels supported by residential rates.

More detailed analysis is provided in the related recommendations listed below.

Step 2: 2009 - 2010 Research rate regulation and evaluate system

- Research models for rate regulation that include incentives for recycling and waste prevention.
- Evaluate system performance against City goals and key benchmarks.
 - Compliance with new business and hauler requirements.
 - Improvement in the commercial recycling rate.
 - Improvement in the efficient delivery of services.
 - Other metrics as appropriate.

In late 2010, OSD will complete an evaluation of progress made in improving recycling rates and the sustainability of the collection system after the mandatory measures go into effect in 2008. If the system is not meeting key benchmarks, further regulatory options will be considered.

OSD will also explore potential rate models that include financial incentives to encourage greater waste prevention and recycling and discourage disposal as garbage. This preliminary research will support the development and implementation of any options Council may consider in 2011.

Step 3: 2011 Council decision and next steps

- Report evaluation results to Council.
- Council decides whether to pursue further regulation.
- With direction from Council, develop options for consideration and conduct analysis.
- Implement options for further regulation if adopted by Council.

Based on the assessments conducted under Step 2, OSD will recommend to Council whether additional regulation is needed. Council will then direct OSD on next steps for bringing options forward.

2. Establish a new overall 75 percent mandatory recycling requirement for business recycling by 2015.

In the resolution calling for the Portland Recycles! Plan, Council adopted a new recycling goal of 75 percent by 2015. Review of waste composition data indicated that 90 percent of all waste is recyclable under existing programs. This represents a significant lost opportunity.

Existing levels of recycling and the capture of large streams of additional material bring the new goal within reach. The dominant elements in business waste—food and food soiled paper, paper, containers and CR&D materials—are the obvious targets for recycling mandates

3. Establish new mandatory food scraps diversion requirement.

Start with businesses generating the most food scraps

The food scrap diversion requirement will first target a group of 100-200 businesses that are among the largest generators in Portland. Some are already participating in Portland Composts!, the City's voluntary food scraps composting program; or sending waste to animal feed production facilities. The new rule will require all businesses within this target to divert their food scraps to either animal feed or composting. Target businesses include hotels, restaurants, hospitals, educational institutions, food processors and distributors.

Currently, over 270 Portland business sites participate in Portland Composts!. Participating businesses and haulers have responded with mixed feedback about potential cost impact. While many businesses will face an increase in their monthly charges, some of the largest generators have been able to participate without significant cost increases.

Expand to include all food scrap generators above specified level or size

Data on the type of business, number of employees and estimates of solid waste or food scrap generation will be collected and a second tier of mid- to small-sized businesses will be included in the mandatory program sometime after 2009.

4. Establish a new mandatory paper and containers recycling requirement for all businesses in the City of Portland.

Paper is readily recyclable and most businesses have a collection system already in place. Estimates show that businesses generated about 150,000 tons of total recyclable paper in 2005. Of that total, an estimated 28 percent went to the landfill and 72 percent was recycled. Independent recyclers collect approximately 80 percent of the paper. Commercial waste haulers gather the remainder.

Data from Metro suggest that 58 percent of the mixed containers generated by businesses in the region are still being thrown away as garbage. To capture these materials, many businesses could adopt a collection system similar to the residential and multi-family approach in which paper and containers are collected in a commingled mix and glass is collected separately.

A citywide mandate to recycle all paper and containers will be compatible with the Metro mandatory recycling proposal, and will in fact set a higher standard than what Metro has proposed. The regulation will be reinforced through inspection at businesses and enforcement of best business practice for recycling. In addition, commercial loads may be monitored at the transfer station with paper and/or container-rich loads tracked back to the contributing customers on that route.

5. Increase mandatory Construction, Remodeling & Demolition recycling ordinance to 75 percent.

Similar to the overall business recycling requirement, the existing CR&D recycling requirement will increase to 75 percent. Given the priority placed on salvage and reuse of these materials, the requirement should account for this activity through some type of credit system.

Because material recovery by local Material Recovery Facilities (MRFs) that sort and recover mixed dry recyclables (not including food scraps) is typically less than 50 percent of the recyclables from incoming loads, sending CR&D material for MRF processing may not meet the 75 percent requirement. Even with the Metro EDWRP policy in effect in 2009, it is unclear that the City requirement will be met by sending mixed construction waste to these facilities. To maximize recovery, processing mixed dry loads should be the option of last resort. Other waste prevention and source separation activity will be necessary to achieve an overall recycling rate of 75 percent for a construction project.

City staff at OSD and the Bureau of Development Services will improve mechanisms for informing construction project managers, providing technical help and verifying compliance with the requirement.

6. Give small commercial customers the option for service and rates under residential franchise

Changes to the residential franchise agreement will require that all residential franchisees honor any request for residential rates by small commercial customers in their franchise area who request once-a-week collection at a service level already established in the residential rate.

Providing small businesses the opportunity to secure service under the residential franchise system offers several potential benefits. Businesses may be able to recycle more if residential service offers collection of a broader array of materials than their current commercial service. They may also have an opportunity to reduce their monthly charges by capturing the regulated rate available under the residential franchise.

7. Provide additional education and technical assistance for CR&D, food scraps collection and paper/container waste prevention and recycling.

Promoting waste prevention and recycling and connecting businesses with necessary resources will require greater field presence of City staff. For CR&D waste, Metro staff and consultants have focused much of their outreach activity on trade associations, City staff will be an on the ground presence, visiting specific project sites and interacting with the managers and contractors. The City's current business recycling outreach and technical assistance program offers a model for success.

8. Promote salvage, reuse and recycled content products in construction, remodeling and demolition projects.

Greater attention will be paid to promoting salvage, deconstruction and the use of recycled-content products —particularly for historically significant projects and/or those with a specified permit value. Metro recently established a free online exchange (www.BoneyardNW.com) for those materials, promoting their reuse in the regional market. The technical assistance activities described in the previous recommendation will reinforce these priorities.

9. Develop new hauler requirements and strengthen the regulatory approval process.

Strengthen the commercial hauler permit system

The existing system of annual hauler permits must also be tightened to establish explicit limits on the right to collect waste as conferred by the City. Some of the changes will include strengthening and clarifying the authority to issue and revoke permits, establishing conditions for permit approval and renewal and clarifying the duration and scope of services allowed under the permit

Require proper equipment and systems to allow customers to reach the 75 percent recycling goal

All haulers must offer every customer a service package that allows the business to meet the 75 percent goal. Haulers will have to demonstrate their ability to provide the necessary recycling services through

existing operations, sub-contracting with another provider or by participating in a co-op. Haulers will also have to demonstrate that they have the right trucks, containers and equipment as well as sufficient staff to meet these service requirements. Haulers with commercial customers subject to the mandatory food scraps diversion requirement must offer food scraps collection service to those customers. Likewise, haulers must offer paper and container recycling so all customers can meet that recycling requirement.

Require all trucks to use biodiesel (B20) and meet new emission standards

Trucks used in commercial service must follow (and provide proof of compliance with) the same fuel and emission standards developed for the residential program. Permit approval and renewal will be contingent on verification of compliance.

10. Build partnerships with business organizations to assist with outreach on and promote compliance with new recycling requirements.

During public review of the draft plan, business representatives expressed strong interest in working closely with the City to promote waste prevention and recycling. Business organizations willing to pledge a commitment to meeting the new recycling mandates can promote compliance within their membership. The City will provide interested business organizations with training and educational materials that will support greater business-to-business outreach.

Chapter 6: Multifamily Program

The multifamily sector is regulated under the commercial program but is more like the residential sector in the types of waste generated and the recycling behavior of individuals. By definition, multifamily properties are those with five or more units, including apartments, town homes and condominiums, mobile home parks, moorages and group living facilities. In Portland, an estimated 66,000 units in 3,500 complexes house approximately 138,600 people--roughly 26 percent of the City's residents. While subject to the same 50 percent recycling requirement that applies to businesses, the multifamily sector generally has a lower recycling rate than the residential and commercial sectors.

Recent reforms in the multifamily program aim to improve the recycling performance of this population. New rules effective July 2005 require standardized recycling systems at every multifamily property. Glass is collected in one container and all other recyclables (paper, metal, plastic) are commingled in a second container. This is comparable to the recycling roll cart system proposed for the residential program. A consistent and predictable collection system at all multifamily properties makes recycling education for tenants more effective. While all properties must be in compliance, City staff has assisted, about one half of the complexes in converting to this standard. All properties are expected to be in compliance by 2010.

Other requirements for multifamily properties include:

- Multifamily property owners are required to provide a recycling system for tenant use at each property.
- The collection system for recyclables must be as convenient as that provided for garbage.
- Property managers are required to provide tenants with recycling education materials within 30 days of move-in and on an annual basis.

Improving recycling at multifamily properties has its challenges. There is no direct link between the mandate to recycle 50 percent and the behavior of the individual tenants. Tenants are not subject to the requirement,

and have little to no control over the location, capacity or convenience of the recycling system at their residence. Property managers and owners are subject to the 50 percent recycling requirement but have no control over the actual recycling and disposal behavior of the tenants. A two-pronged approach including tenant education and oversight of property managers/owners is necessary to overcome these barriers.

Recommendations

Multifamily Program Recommendations	Phase One 2008-2009	Phase Two 2009-2015
to meet the unique characteristics and challenges in this sector.		
1. Establish the 75 percent commercial recycling requirement as a long-term goal for multifamily recycling.	xxx	
2. Require that multifamily property owners meet proposed commercial recycling requirements, including:	xxx	xxx
a) Recycle 75 percent of construction, remodeling and demolition (CR&D) waste at projects with a permit value over \$50,000.	xxx	xxx
b) Mandatory food scraps diversion at qualifying properties.	xxx	xxx
3. Gain compliance on current administrative rule requirements for multifamily properties.	xxx	xxx
a) Monitor multifamily properties to verify that adequate recycling systems have been provided and are as convenient as garbage disposal.	xxx	xxx
b) Continue to convert multifamily properties to the “two-sort” recycling collection system to reach 100 percent compliance.	xxx	xxx
c) Work with property managers to ensure tenant education requirements are met (provide recycling information within 30 days of move-in as well as on an annual basis.)	xxx	xxx
4. Work with Metro and other local government partners on new multifamily research and program initiatives.	xxx	xxx

1. Establish the 75 percent commercial recycling requirement as a long-term goal for multifamily recycling.

Recognizing that multifamily recycling performance typically falls below that of the broader residential sector, there is still benefit in setting a recycling target for these properties. The 75 percent level, however, should be viewed as a long-term goal given the challenges in changing tenant recycling behavior. It will be the responsibility of the property owner/manager and the hauler to ensure adequate collection systems are in place and tenants are motivated to use them.

2. Require that multifamily property owners meet proposed commercial recycling requirements.

Recycle 75 percent of construction, remodeling and demolition (CR&D) waste at projects with a permit value over \$50,000. Multifamily properties would be subject to the same requirements as other commercial properties (see discussion of this recommendation in Chapter 5).

Mandatory food scraps diversion at qualifying properties. This requirement would apply only to multifamily properties with centralized food service such as group homes, assisted living facilities or others that produce a significant level of food scraps. See discussion in previous chapter for more analysis of this requirement.

3. Gain compliance on current administrative rule requirements for multifamily properties.

Monitor multifamily properties to verify that adequate recycling systems have been provided and are as convenient as garbage disposal. Recycling convenience is critical for any collection system and property owners must coordinate with their garbage hauler to ensure that this requirement is met. The most successful strategy is to have the recycling system set up in the same location as the garbage.

Continue to convert multifamily properties to the “two-sort” recycling collection system to reach 100 percent compliance by 2010. The simplicity and predictability of the standardized system allows tenants to develop recycling habits that are transferable if they move to another multifamily property within the City. It also supports uniform educational materials and long term communication strategies.

Work with property managers to ensure tenant education requirements are met.

Consistent and repeated outreach to tenants is needed to promote recycling behavior. This is best delivered through the manager responsible for the property. The City can assist with this process by providing managers with education materials and monitoring their efforts to provide the information both upon move-in and on an annual basis.

4. Work with Metro and other local government partners on new multifamily research and program initiatives.

Metro has been a strong partner in sponsoring research and data collection, providing grant funds to local governments to support new program initiatives and coordinating regional policy. The City will continue to collaborate with Metro and other regional partners to find innovative ways to improve the recycling performance of multifamily properties.

Chapter 7: City Government Operations

Sustainable City Government Partnership helps bureaus meet sustainability goals

A recent City Council resolution established the Sustainable City Government Partnership to strengthen the City's commitment to improving the economic, environmental and social sustainability of its internal practices and community-wide initiatives. The partnership will support several existing programs including sustainable procurement, toxics reduction and sustainable paper use. All City bureaus will work collaboratively to set goals, objectives and performance measures for sustainable practices to advance the resolution's directives.

Improved waste prevention and recycling fit into this framework, but clear goals and a well-defined system to achieve the goals are necessary. Solid waste and recycling services provided to City bureaus are rather disorganized, involving multiple hauler contracts, decentralized decision-making and inconsistent collection systems and employee education.

City staff is developing a more centralized collection and reporting system

Through the process of negotiating new hauling contracts for all City needs, City staff will develop a centralized collection and reporting system so that the City can track performance and capture the value of recycled commodities. A single solicitation for hauling services will require proposers to provide rigorous and detailed reporting of recycling and disposal tonnages, as well as line item pricing for specific services.

The Portland Recycles! Plan City Operations stakeholder group provided additional input to align contract provisions with the recommendations of the plan in the development of a Request for Proposal. The City anticipates a new contract in 2007.

The stakeholder group also initiated a series of waste evaluations to determine what types of materials are in the trash generated by City bureaus. Evaluators sampled seven different buildings, including offices and maintenance yards, and found the following:

- Compostable materials, including yard debris, food scraps and compostable paper, accounted for 30-55 percent of all waste.
- At several sites sampled, food scraps alone represented over half of what was in the garbage.
- Recyclables, including paper, containers and bulk metal averaged 20-40 percent of the waste.
- Mixed waste paper and office paper represented between 3 and 30 percent.
- Animal waste was significant at the park site sampled, accounting for 27 percent of total garbage volume.
- Hazardous materials such as fluorescent light tubes, medical wastes and hazardous wastes were present, but at less than 1 percent.

Recommendations

Goals for bureau performance will exceed the expectations set for the residential and business sectors so that the City can lead by example. The City must also meet any new requirements established for the commercial sector such as mandatory paper, food and CR&D recycling. With a variety of waste-related initiatives underway, coordinated services and centralized, dedicated staff and resources will be necessary to maintain consistency and accountability.

City Operations Recommendations	Phase One	Phase Two
	2008-2009	2009-2015
1. Establish a new recycling rate goal: 85 percent for all City facilities by 2015.	xxx	
2. Establish a waste prevention goal: zero increase in the waste stream.	xxx	
3. Consolidate and improve the City contract for garbage and recycling services.	xxx	
4. Provide dedicated staff at Office of Management & Finance.	xxx	xxx
5. Create a cross-bureau waste prevention and recycling team.	xxx	
6. Promote waste prevention through sustainable purchasing practices.	xxx	xxx
7. Initiate food scrap service.		xxx
8. Explore options for animal waste in parks.		xxx
9. Provide comprehensive employee education on waste prevention and recycling practices.	xxx	xxx
10. Provide public recycling with City trash cans.		

1. Establish a new recycling rate goal: 85 percent for all bureaus.

City operations will set an example for the community by meeting a more ambitious recycling rate of 85 percent — 10 percent above the goal set for Portland’s residents and businesses. New data collected in 2007-2008 will set a baseline for measuring progress as City bureaus adopt the same new recycling requirements for food scraps, paper and CR&D waste as all Portland businesses (see Chapter 5 on commercial recommendations).

2. Establish a waste prevention goal.

City bureaus will create a meaningful waste prevention goal that takes into account waste generation trends and expected outcomes from the various sustainable practices underway. Since data on waste generation from previous years do not exist, gathering baseline data for all waste disposed and recycled by the City will assist in measuring progress in succeeding years.

In the spirit of leading by example in City operations, the proposed waste prevention goal is to reduce overall generation below the 2007-08 baseline year by 2015. This is more aggressive than a per capita target as it does not allow for any growth that may occur from increases in total number of City employees.

3. Improve and provide centralized coordination of City contracts for garbage and recycling services.

With an RFP already in process, a new contracts are expected in 2007. This will form the cornerstone of a coordinated, well-managed system for the City and will establish strong partnerships with waste haulers. The proposed solicitation and resulting contracts would create greater transparency in the pricing for different services and allow the City to monitor progress toward meeting the recycling and waste prevention goals.

4. Provide dedicated staff at the Office of Management and Finance (OMF) for reaching goals and administering waste contract, with technical assistance from OSD.

The City will gain financial and environmental benefits from a coordinated and centralized approach to monitoring the waste and recycling streams generated by bureaus and managing the new consolidated waste hauling contracts. Meeting the goals of this plan will require dedicated staff resources from the Office of Management and Finance.

This staff, along with the facilities staff at OMF, Parks and other stakeholder bureaus, and with technical support from OSD, will:

- Manage the new waste contracts.
- Track tonnage reports and other performance indicators.
- Implement standardized collection systems at each City facility.
- Expand recycling and composting opportunities.
- Develop and implement employee education strategies.

By providing staff to focus on improving the City's waste management practices, the bureaus will increase their accountability for efficient use of resources, maximize inter-bureau collaboration, and capture bureau-wide efficiencies and cost savings.

5. Create a cross-bureau waste prevention and recycling team led by OMF.

A team of bureau representatives similar to the membership of the City Operations stakeholder group will support the planning and policy development work of the staff. The team will help coordinate implementation in the home bureaus, avoid duplication of efforts and coordinate efforts with the hauler.

6. Promote waste prevention through sustainable purchasing practices.

The City's Sustainable Procurement Strategy has been underway for the past five years. Practices oriented toward improved waste prevention should be included in that framework. Stakeholder suggestions include:

- Set an expectation that vendors will reduce packaging. Strategies for accomplishing this will vary based on the size of the purchase.
- Look for and support opportunities to create and participate in "green" catalog purchases.
- Continue and expand producer take-back requirements.
- Continue education of Procurement Card holders and any others who make purchases in their role at the City.
- Provide opportunities for vendors to display sustainable products. (e.g, "Green Team" vendor fairs)
- When feasible, require annual contracts to include data collection on sustainable purchasing performance to measure performance.
- Educate employees to ask people to buy only what they need.
- Encourage use of the Web bulletin board for reuse items.

7. Initiate food scrap service.

City facilities that generate significant quantities of food scraps must meet the new proposed mandate for food scraps diversion. The Jean Vollum Natural Capital Center (in which OSD is housed) is already successfully diverting food scraps. To gain employee support, the stakeholders advised the use of pilot programs to implement this new service.

8. Explore options for animal waste.

One experiment is already under way in Gabriel Park involving the use of a “doggy loo,” a modified portable toilet designed for the collection of pet feces at the park. The City should consider innovative approaches from other cities to find practical ways to manage the significant amount of animal waste in Portland’s parks.

9. Provide comprehensive employee education on waste prevention and recycling practices.

Comprehensive education will help employees establish the waste prevention and recycling habits needed to meeting the new goals. Design and delivery of the education should be coordinated by the dedicated staff described in Recommendation 4 above.

10. Provide public recycling with City trash cans

The City government currently provides public trash receptacles in the public right-of-way at various locations throughout Portland. The City will provide recycling options at these locations, subsidized by citywide solid waste and recycling revenues.

Appendices

The following appendices are available for viewing and download at www.portlandonline.com/osd or in print by calling OSD at 503-823-7202.

- A) Council Resolution No. 36423
- B) Council Briefing Report (2006)
- C) Report on Focus Groups (2005)
- D) Report on Stakeholder Meetings (2007)
 - 1) Appendices
- E) Portland Business Survey Results, Cost of Service Study (2004)
- F) Staff Analyses and Economic Modeling
 - 1) Commercial Stakeholder Proposal: Analysis and Results (2007)
 - 2) Solid Waste Advisory Committee: Analysis of Residential Stakeholder Recommendations (2007)
 - 3) Solid Waste Advisory Committee: Analysis of Commercial Stakeholder Recommendations (2007)
- G) List of Solid Waste Advisory Committee Members