Ontario's 60% Waste Diversion Goal - A Discussion Paper

June 10, 2004

Ontario

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Ministry of the Environment

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1 Introduction

Ontario's Waste Diversion Goal

An expanding economy and a growing population are placing additional demands on Ontario's natural resources and straining our ability to effectively manage the environmental impact of that growth. That is why the provincial government is proposing to take a new comprehensive approach to waste diversion, one that will *reduce* the amount of waste generated, *increase* the rates of reuse and recycling, and *reduce* the amount of waste going to disposal.

In order to achieve the results Ontarians need in waste management, the provincial government is setting a goal of diverting 60% of Ontario's waste from disposal by the end of 2008, up from the current diversion rate of 28%[1].

Achieving a 60% diversion rate by 2008 is an ambitious goal, but it can be achieved if *everyone* — Ontario residents, businesses, industry, manufacturers and packagers, waste management experts, and environmental experts, as well as municipalities and the provincial government — commits to finding better waste management solutions. And, while the provincial government sets the overall goal and the policy framework, it will be up to municipalities and the business and commercial sectors to determine how best to get there.

Reaching this goal will be determined in large part by finding better ways of dealing with the large portion of solid waste that is made up of organic materials – organics currently make up about 38% of waste generated by households and about 11% of the waste generated by the industrial, commercial, and institutional (IC&I) sectors (e.g., factories, restaurants and schools).

It will also require progress to be made in reducing waste in many other areas such as improving the municipal Blue Box programs, requiring more waste diversion efforts from the IC&I sectors, and increased recycling of items such as electronic waste.

Though the challenges are many, Ontario is well positioned to become a leader in waste diversion, drawing on its existing environmental protection and resource conservation programs and building on the many waste reduction and recycling success stories of its municipalities, businesses and industries.

How Ontario Calculates the Waste Diversion Rate

The diversion rate is the total quantity of waste diverted from disposal as a percentage of the total waste diverted plus disposed.

$$\text{Waste Diversion Rate [\%]} = \frac{\text{Waste Diverted}}{\text{Waste Diverted and Disposed}} \times 100\%$$

Waste disposed includes waste sent to landfill and to thermal energy from waste (EFW) facilities.

[1] Includes only residential and industrial, commercial and institutional (IC&I) sectors for 2002.

Purpose of Discussion Paper

The provincial government is issuing this discussion paper to seek input from stakeholders and the public on ways to help Ontario reach its waste diversion goal – **diverting 60% of waste from disposal by the end of 2008**. The paper is organized into five sections:

1. Introduction – provides an overview of the waste management challenge in Ontario.
2. The Waste We Produce – contains information about how much waste Ontario produces, who generates it, and where our waste ends up.
3. Ontario's Regulatory Framework – describes the current rules and programs for waste diversion that Ontario has now.
4. Moving Forward – outlines the proposed approach to a sound waste diversion strategy for Ontario.
5. For Consideration – asks a series of questions designed to solicit input on waste management.

The Waste Management Challenge

Today, more than 12 million tonnes of solid waste are generated annually in Ontario. The amount of waste continues to increase, much of it destined for landfills both inside and outside the province.

Our reliance on landfill is driven largely by historical economics – currently it is generally less expensive to send waste to landfills than to establish and operate diversion programs. However, long-term environmental costs have not been factored into these cost comparisons. In addition, many large urban centres do not have access to suitable landfills within their boundaries and have to rely on disposal sites in other communities. As the market demand for recyclables increases, and public pressure against locating landfills continues, this economic imbalance may be reduced. A challenge still remains to find acceptable disposal options for the 40% of waste that will *not* be diverted, even if Ontario reaches its 60% goal.

Recent amendments to the State of Michigan's waste laws provide additional motivation for diverting waste that Ontario communities and industries currently send there for disposal. These new Michigan state requirements prohibit the disposal in landfills of certain materials in domestic or imported waste, including tires, beverage containers, yard waste, sewage, and used oil.

Ontario's challenge is to find innovative ways to extend and enhance Ontarians' access to 3Rs programs – reducing, reusing and recycling – at home and in the workplace.

Part of the challenge is to construct an effective and efficient system that connects homes, offices, factories and schools to the industries that need and want waste materials to make new products. We know there is a tremendous amount of valuable recyclable material in our waste stream that could be put to good use. In fact, the demand for some waste materials, especially paper, is so high that some Ontario industries currently import large quantities from other countries. For example, every kilogram of aluminum that could be recovered effectively from the waste stream can be used by industry.

Ontario needs to build on the ability of industry to use recovered materials in the place of precious non-renewable resources. Spurring investment in Ontario recycling and waste management sectors will contribute to economic growth – a 2000 Statistics Canada survey found that Ontario's waste management businesses generated revenues of $1.55 billion, 45% of all Canadian revenues for waste management.

There are many economic benefits associated with increased waste diversion. By reducing the need for landfilling, waste diversion avoids the accompanying costs of siting, constructing and operating a landfill site, as well as long-term operating and maintenance costs.

By encouraging increased recycling, waste diversion makes a contribution to economic development and job creation, by creating or expanding businesses that collect, process and broker recovered materials, as well as companies that manufacture and distribute products made with recovered materials.

In addition, waste diversion provides manufacturers with many of the raw materials they need to operate more efficiently, helping to improve competitiveness and sustainability. The paper industry, for example, depends on recovered materials. Processing of recovered, recyclable materials into feedstock provides added value in manufacturing sectors that use that feedstock.

By encouraging the reuse of products that still have significant value, waste diversion creates or expands the reuse and remanufacturing sectors. Examples include pallet rebuilders (reuse of wood), tire retreaders, electronic appliance remanufacturers, resale and thrift shops, and repair shops. These businesses focus on refurbishing products.

By encouraging source reduction (i.e. the redesign of products and processes so that less material is used to achieve the same function), waste diversion reduces the cost of doing business. For example, manufacturers can save on the use of packaging for their products.

Ontario has a long history of promoting the 3Rs and residential recycling programs such as the Blue Box and home composting, and waste reduction efforts in office buildings and other industrial, commercial and institutional enterprises have been relatively successful. We must build on that success if we are to reduce our dependence on disposal.

2 The Waste We Produce

What We Throw Out and What We Recycle

In 2002, Ontario threw out a total of about 9.4 million tonnes of waste. This waste went either to landfills here in Ontario or in the United States, or to incineration. Waste from residential sources, and the industrial, commercial and institutional (IC&I) sectors accounted for about 7.2 million tonnes of the waste thrown out. Waste from construction and demolition (C&D) activities accounted for the remaining 2.2 million tonnes of waste thrown out.

In 2002, about 2.8 million tonnes of solid waste generated by the residential and IC&I sectors was managed through 3Rs activities, equivalent to about 28% of the total. This included 1.2 million tonnes of residential waste and 1.6 million tonnes of IC&I waste. The residential portion of diverted waste was comprised of:

- 400,000 tonnes composted;
- 700,000 tonnes recycled through the Blue Box system;
- 94,000 tonnes of white goods (refrigerators and stoves) and bulky items (furniture) recycled;
- 13,000 tonnes of Household Hazardous Waste and electronics recycled.

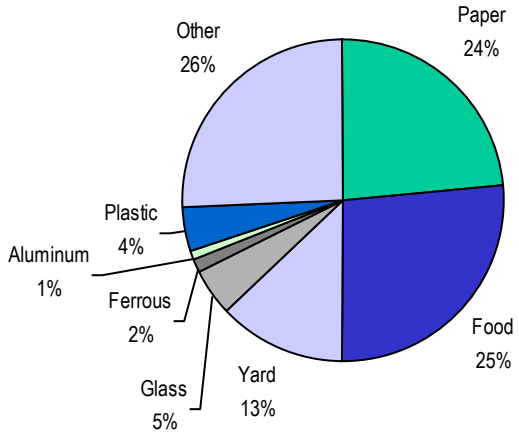
Current recycling programs have been relatively effective but, as the above shows, they deal with only a limited portion of the waste stream. For example, much more organic waste from households could be recovered.

The three categories of waste generators and wastes that are the focus of this discussion paper – residential, IC&I and C&D – are described briefly below.

Residential Waste Composition

Paper and organic wastes (food and yard waste) represent about 62% of the total residential waste generated. The rest is made up of a wide variety of materials, including non-recycled materials such as ceramics, textiles, leather, rubber, batteries, ashes, rubble, fibreglass, and drywall.

Figure 1: Residential Waste Composition

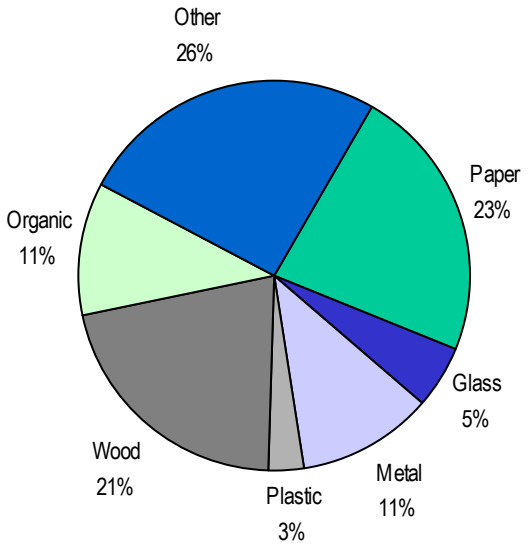


A 60% diversion rate is achievable through actions such as maximizing Blue Box recycling, enhancing organics diversion, and pursuing diversion opportunities in the “Other” category.

IC&I Waste Composition

The composition of waste varies from one particular industry or commercial sector to another. Within the manufacturing sector, the composition of the waste produced depends to a large extent on the products being made. For example, waste from an electronics manufacturer would have more plastics, metal and paper than waste from a furniture manufacturer, whose waste has more wood. Similarly, waste from different retail establishments may vary. Restaurants and retail food establishments generate more organic materials than office establishments.

Figure 2: IC&I Waste Composition



However, some materials such as cardboard packaging are in such common use that they appear in the waste stream of virtually all IC&I sectors.

For the IC&I sectors to achieve 60% diversion, actions must be geared toward maximizing recycling under the 3Rs regulations. Greater organics diversion should also be pursued, particularly by restaurants and food retailers. There must also be more proactive investigation of diversion solutions for materials in the “Other” category.

C&D Waste Composition

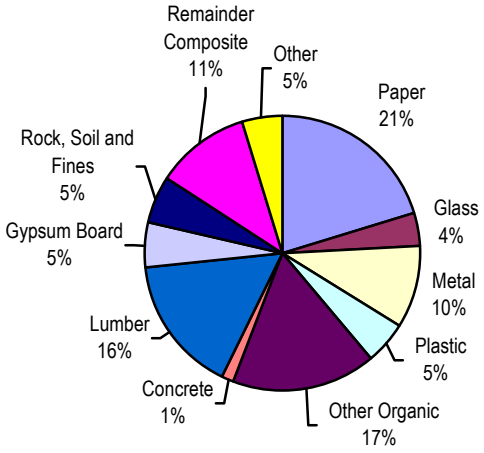
C&D waste is generated from the construction, renovation, repair and demolition of structures such as residential and commercial buildings, roads and bridges. The composition of C&D waste varies for these different activities and structures. Overall, C&D waste is composed mainly of wood products, asphalt, drywall, and masonry. Other components that are often present in significant quantities include metals, plastics, earth, shingles, insulation, and paper and cardboard.

As in many industrial waste streams, C&D debris also contains wastes that can even be hazardous, such as:

- excess construction materials such as adhesives and paint, as well as their containers;
- waste oils, grease and fluids from machinery and equipment;
- batteries, fluorescent bulbs and appliances.

The C&D sector can reach the 60% waste diversion goal by taking appropriate actions to maximize the diversion of wastes covered by the 3Rs regulations. Taking measures to reduce the 17% of total waste that falls into the "Other Organic" category is also likely to be part of the sector's strategy to meet its waste diversion goal.

Figure 3: Composition of Construction Waste



Municipal Sector Waste Diversion

There are many examples of municipal best practices in waste diversion. For example, the City of Guelph has consistently improved its waste diversion system over the past 20 years, incorporating new technologies as they became available. Its current system requires residents and businesses to separate their waste into three 'streams': i) wet (compostable) stream; ii) a dry recyclable stream; and, iii) a dry non-recyclable stream (garbage). When fully implemented, this system is capable of diverting 70& of Guelph's waste.

The City of Peterborough operates a comprehensive waste diversion system for Blue Box materials, leaf and yard waste, household hazardous waste, and electronics. For 2003, Peterborough is reporting a 50% diversion rate for residential waste from landfill. Plans are underway to expand waste diversion activities by introducing a city-wide source separated organics program in 2005.

Quinte Waste Solutions (QWS) operates waste diversion programs for Centre & South Hastings Waste Services Board, whose members represent Belleville, Quinte West, Tyendinaga, Prince Edward County, Centre Hastings, Tweed and Marmora & Lake. QWS has achieved a 65% diversion rate for Blue Box materials, household hazardous waste, and organics. A 'pay as you throw' policy is in effect, supporting the waste diversion efforts of the participating municipalities.

Ontario's municipal sector continues to make progress in waste diversion. In fact, based on 2002 data collected through the Municipal Performance Measurement Program (MPMP) of the Ministry of Municipal Affairs and Housing, the median waste diversion rate of Ontario's municipalities was 27%. Table 1 shows the range of diversion rates in Ontario's larger municipalities and regions. While final

performance figures are not yet available, preliminary results indicate that municipalities achieved significantly better diversion rates in 2003.

Table 1: Diversion Rates in Ontario Municipalities/Corporations Serving Populations > 100,000 (2002 figures)

Municipality/Corporations	Population	Diversion Rate (%)
City of Toronto	2,500,000	27
Regional Municipality of Peel	988,940	35
City of Ottawa	822,600	32
Region of York	634,000	24
Regional Municipality of Durham	551,000	30
City of Hamilton	494,928	20
Regional Municipality of Waterloo	469,800	40
Regional Municipality of Niagara	424,900	39
Regional Municipality of Halton	394,636	38
Essex-Windsor Solid Waste Authority	374,779	31
City of London	355,800	35
County of Simcoe	231,955	32
City of Greater Sudbury	155,601	30
City of Kingston	114,195	42
City of Thunder Bay	113,318	28
Municipality of Chatham-Kent	109,945	32
City of Barrie	109,720	32
City of Guelph	106,170	38

Diversion rates as reported to the Ministry of the Environment in a recent survey
Calculated based on a definition which includes incineration as disposal

Some municipalities are already making significant progress towards 60% diversion:

- Both the Township of Frontenac Islands (population 1,661) and the Town of Hanover (population 6,845) have a waste diversion rate of 58%;
- The County of Wellington (population 81,143) has achieved a 57% diversion rate.

IC&I Sectors' Waste Diversion

Two examples of successful waste diversion in the IC&I sectors are:

- Brewer's Retail has operated a successful deposit-return system for beer containers for many years, achieving a 97% recovery rate for the industry standard bottle. The Beer Store reports that its packaging return system currently removes about 550,000 tonnes of solid waste from municipal landfill and recycling programs. All refillable and non-refillable beer containers (both domestic and imported) sold through *The Beer Store* are subject to a minimum deposit of 10 cents which is redeemed when containers are returned to *The Beer Store*. Other beers, primarily imports, sold only through the LCBO do not carry a deposit but *The Beer Store* accepts and recycles these containers as a customer service. Many municipalities in Ontario that

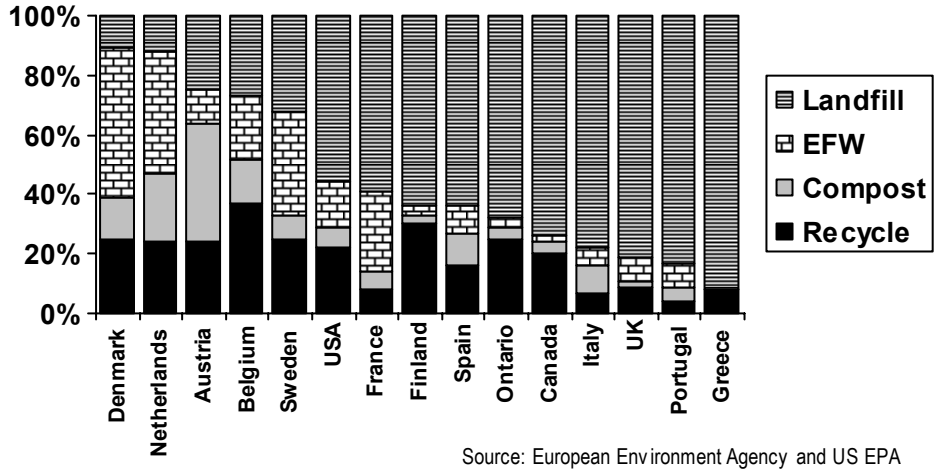
are using the "generally accepted principles" (GAP) protocol for measuring municipal waste flows are already using the recovery rates of the Brewer's Retail in their own diversion rate calculations.

- The Greater Toronto Airports Authority (GTAA) has worked to advance environmental initiatives at Toronto Pearson International Airport while implementing its Airport Development Plan. During the redevelopment at Pearson Airport, the GTAA has done much to divert its waste from landfill. For example, it recycled all contaminated soil associated with the project on-site and diverted almost 90% of their construction waste for reuse and recycling. In 2004, the GTAA expects to achieve their goal of diverting over 85% of construction waste.

How Ontario Compares

The amount of waste landfilled in Ontario, on a percentage basis, is relatively high compared to many other jurisdictions. The amount of waste diverted in Ontario (compost and recycle) is similar to countries like the U.S.A., but well behind other countries such as Austria and the Netherlands.

Figure 4: Waste Management Methods Internationally



Source: European Environment Agency and US EPA

A scan of practices being used internationally reveals that most jurisdictions use a combination of tools to achieve their waste diversion goals:

- Germany's strategy is based on the concept of 'Extended Producer Responsibility' which is embedded in law and requires industry to take back and recycle packaging used for consumer goods. Specific recycling targets are also established in law, from which companies that are part of a nationwide system for collection, sorting and recycling of packaging are exempt.
- Ireland uses a variety of tools, including targets, government funding, and public policies, to achieve its waste diversion goal. Ultimately, Ireland is planning to have an integrated network of about 20 state-of-the-art facilities incorporating energy recovery and high standards of environmental

protection. In 2001, Ireland placed an environmental levy on plastic shopping bags and a per tonne levy on landfill of waste. The funds collected as a result of this levy are used for environmental initiatives such as waste management, education and awareness.

Ontario's diversion rate of 28% (residential and IC&I waste) is comparable to the United States (including the Great Lakes and area states) which has a 30% diversion rate for what is referred to as Municipal Solid Waste or MSW (residential, commercial and institutional waste). The largest difference between our waste disposal practices is that Ontario sends less than 2% of its waste to incineration, or energy from waste (EFW) systems, whereas the U.S. sends about 15%.

The Great Lakes states in the U.S. have varied waste diversion programs. While there are differences in the definitions used for "diversion", high level comparisons between the current waste diversion rate of Ontario and those of the Great Lakes and area states suggest that, like Ontario, many states are investing in waste diversion.

Jurisdiction	Current Waste Diversion Rate[2]
Minnesota	45.6%
Indiana	35%
Illinois	32.5%
New York	29.8%
Ontario	28%
Pennsylvania	26.8%
Wisconsin	24.6%
Ohio	23.5%
Michigan	15.1%

In Canada, Nova Scotia has set an example by banning a number of wastes from disposal in landfill including: compostable organic material; newsprint; beverage containers; used tires; automotive lead-acid batteries; waste paint; and corrugated cardboard. These materials are collected through a widespread curbside recycling program and through depots. Nova Scotia's curbside recycling and composting of organic waste was available to 76% of the population in 2002, resulting in a 46% diversion rate from disposal.

Nova Scotia has also established the Resource Recovery Fund Board (RRFB), a non-profit corporation, to lead provincial waste diversion and industry stewardship activities. It is funded by a portion of the deposit on beverage containers, as well as from fees on tires and paint. The RRFB develops and administers sustainable industry stewardship programs, helps set up new businesses based on the processing of materials diverted, and provides

[2] Source: State of Garbage in America – 14th Annual Nationwide Survey of Solid Waste Management in the United States – BioCycle Journal, January 2004. Estimated rates using similar categories of materials for comparison.

incentives to residents to reduce, reuse, recycle and compost. Voluntary industry stewardship programs are in operation for paint, dairy containers, beverage containers, newsprint, and used tires.

The City of Edmonton provides a good example of a comprehensive, multi-pronged waste diversion strategy. It has two curbside recycling programs:

- the Blue Bag program provides curbside collection of recyclables for houses, duplexes and fourplexes. It collected 28,588 tonnes of recyclables in 2002 and boasted a participation rate of 84%;
- the Blue Bin program, implemented in 2000, provides service to apartments and condominiums. In its first two years, the program was serving about half of the buildings eligible and had collected 1,000 tonnes of material. At maturity, the Blue Bin program is expected to divert an additional 6,000 tonnes of recyclables per year.

Edmonton also has 20 Recycling Depots, called 'Eco Stations', throughout the city for use by residents and businesses. Eco Stations accept paper, cardboard, and boxboard, plastic, glass and metal containers, as well as household hazardous waste and almost all other waste materials.

The Edmonton Waste Management Centre combines several waste management facilities at one location, including a Materials Recovery Facility for sorting recyclables, a teaching theatre, the Clover Bar Landfill site, and the Edmonton Composting Facility, The latter facility is the largest of its type in North America with a capacity of 200,000 tonnes of municipal solid waste and 22,500 dry tonnes of biosolids each year. In 2002, Edmonton diverted 44% of its waste from landfill through composting.

Summary

For Ontario to reach its 60% diversion goal, action will be required by everyone.

For the residential sector to achieve 60% waste diversion by 2008, Blue Box recycling must be maximized and diversion of organics through composting must be enhanced. Opportunities to divert wastes in the "Other" category such as electronics must be pursued.

Currently, waste generation is almost equally split between the residential and IC&I sectors. However, as Figures 1 and 2 illustrate, the composition of the two waste streams is quite different. In the residential sector, the largest gains are likely to come from increased diversion of organics, both food and yard waste.

For IC&I sectors to achieve 60% diversion, recycling under the 3Rs regulations must be maximized. Certainly, greater organics diversion should be pursued, particularly by restaurants and food retailers. Also, more aggressive investigation of diversion solutions for the "Other" category of waste which make up about 26% of the total should be promoted.

The C&D sector will need to maximize its diversion of wastes currently covered by the 3Rs regulations in reaching the 60% diversion goal. It will also have to investigate diversion options for the 17% of their waste made up of "Other Organic".

Who Plays a Role in the Waste That Ontarians Generate?

- *Provincial Government*: The provincial government, primarily through the Ministry of the Environment, is the regulator, responsible for setting and enforcing standards, issuing approvals, and promoting waste diversion.
- *Municipal Government*: Municipalities are responsible for operating and maintaining recycling and waste management services used by the public, and for planning to meet future waste management needs. The *Municipal Act, 2001,* (Act) provides municipalities with powers to pass by-laws within the scope provided for in the Act and other provincial and federal legislation relating to their waste management systems.
- *Waste Generators (Individuals)*: Each member of the public, as a waste generator, is responsible in helping to reduce the amount of waste generated and participating in recycling and reuse programs.
- *Waste Generators (Businesses)*: All industrial, manufacturing and commercial enterprises which produce, distribute, or sell products and services are responsible for the waste they generate.
- *Waste Management Industry*: Private sector recycling and waste management companies manage most of the waste generated by the non-residential sector. They are involved in a diverse range of 3Rs activities and often work in partnership with municipalities.
- *Environmental Groups*: Environmental groups have long promoted the need to reduce waste and conserve our natural resources and play an important role in raising public awareness of waste management issues.

3 Ontario's Regulatory Framework

Overview of Current Regulatory Framework for Waste Diversion

A focus on recycling began in Ontario in the 1980s with requirements for municipalities to undertake waste management planning and goal setting for waste diversion. Waste diversion strategies, primarily focused on the residential and IC&I sectors, took off in the early 1990s with the "3Rs Regulations", described below. Notwithstanding these regulations, in recent years, more emphasis has been placed on residential diversion through the Blue Box program than on IC&I diversion requirements and deposit-return requirements.

Ontario Regulation 101/94

This regulation requires municipalities with over 5,000 people to implement and operate recycling programs that follow certain minimum standards. Municipal recycling programs must source separate and recycle five specified materials plus two others as shown in the following table.

Municipalities Must:		
Recycle All These Items	**Recycle at Least Two of These Materials**	
Newsprint	Phone books	Boxboard
Steel FBC[1]	Aluminum foil items	Paper cups and plates
Glass FBC	Magazines	Fine paper
Aluminum FBC	Rigid plastic containers	EPS[3] FBC and packing
PET[2] FBC	Cardboard	Textiles
	Plastic film	Polycoat FBC

[1] Food and beverage containers [2] Polyethylene terephthalate [3] Expanded polystyrene

Ontario Regulation 101/94 also requires municipalities to implement certain composting programs:

- Municipalities with over 5,000 people must provide residents with a program allowing them to compost household organic waste themselves (e.g., in the backyard). The regulation requires municipalities to provide the composting bins at cost or less, to promote the program and to offer residents information on proper composting procedures.
- Municipalities with over 50,000 people must provide residents a service that allows them to source separate and divert leaf and yard waste from disposal. The municipality must divert the materials received through the system they operate, whether curbside collection or depots.
- Municipalities with 5,000 to 50,000 people whose systems result in source separated leaf and yard waste, for example, as a result of special fall leaf collections, must divert the wastes from disposal.

Ontario Regulation 102/04

Ontario Regulation 102/94 requires owners of the following establishments to conduct waste audits, develop and implement waste reduction plans, and update the audits and plans annually:

- schools with an enrolment of 350 students or more;
- retail complexes where the floor area is 10,000 m^2 or more;
- construction projects where building floor area is 2,000 m^2 or more;
- Class A, B, or F hospitals in Ontario Regulation 964 under the *Public Hospital Act*;
- hotels or motels with 75 units or more;
- demolition projects where building floor area is 2,000 m^2 or more;
- office buildings where office floor area is 10,000 m^2 or more;
- restaurants whose annual sales are $3 million or more;
- manufacturers where 16,000 or more hours are worked per month.

Ontario Regulation 103/04

This regulation requires owners of the establishments listed in Ontario Regulation 102/94 and of multi-unit residential (apartment) buildings with six or more units to have source separation programs for specified wastes and to ensure that the wastes are recycled.

Table 2: Materials To Be Recycled by Establishments Designated under Ontario's 3Rs Regulations

	School Over 350students	**Retail*** Over 10000 m^2	**Construction** Over 2000 m^2	**Hospital** Class A,B,F	**Hotel/Motel** Over 75 units	**Demolition** Over 2000 m^2	**Office** Over 10000 m^2	**Restaurant** $3 million+ Sales	**Manufacturer** Over 16000 hrs worked per month	**Apartment** 6 units +
Aluminum food & beverage cans	■									
Cardboard	■									
Fine paper	■									
Glass food & beverage bottles/jars	■									
Newsprint	■									
Steel food & beverage cans	■									
Brick & concrete			■							
Drywall(unpainted)			■							
Steel			■							
Wood (untreated)			■							
PET (#1) plastic food & beverage bottles					■					
Aluminum									■	
Glass									■	
HDPE plastic jugs, crates, totes, drums									■	
LLDPE film									■	
Polystyrene expanded foam									■	
Polystyrene products									■	
Municipal Blue Box materials										■

* Equivalent to a very large retail store or a mall

Ontario Regulation 103/94 only applies to establishments in municipalities with populations over 5,000, except for manufacturers, and construction or demolition projects. The wastes specified for each sector are shown in Table 2. Note that inclusion in the table does not mean that the entire sector is required to participate in recycling. For example, only about 10% of the businesses that could fit into “Manufacturer” are required to recycle under the current regulation.

Ontario Regulation 104/94

Ontario Regulation 104/94 requires manufacturers, packagers and importers of packaged food, beverage, paper or chemical products to conduct a packaging audit and implement a packaging reduction work plan. The requirement applies only to manufacturers and packagers where 16,000 or more hours are worked per month, or importers whose annual cost of goods are $20 million or more.

A packaging audit must address the:

- type and amount of the packaging;
- amount of reused or recycled materials being used;
- management decisions and policies affecting packaging;
- reusability and recyclability of the packaging after use;
- final destination and its impact on that waste stream.

Ontario Regulation 347

Ontario Regulation 347, under the *Environmental Protection Act*, exempts from waste management approval requirements wastes specified as recyclable materials. The exemption is intended to encourage recycling and waste diversion.

The regulation means that, subject to certain limitations, a waste approval is not required when materials are transported directly from the waste generator to the industrial user or manufacturer that will use it in their operations or in recycling activities.

Ontario Regulations 357 and 340

Ontario Regulation 357 (Refillable Containers for Carbonated Soft Drinks) requires that all carbonated soft drinks be sold in refillable containers. It also requires that retail vendors refund deposits of 15¢-40¢ (depending on container size) to customers who return empty refillable containers for carbonated soft drinks.

Ontario Regulation 340 (Containers) provides an exemption to the refillable requirement for non-refillable containers that are recycled in a multi-material recycling system. The regulation allows the minimum share of sales in refillable containers to drop if the recycling rates for non-refillable containers go up.

Waste Diversion Act (WDA) and Waste Diversion Ontario (WDO)

The *Waste Diversion Act* (WDA), passed in June 2002, created Waste Diversion Ontario (WDO), a multi-stakeholder non-government corporation. The WDO’s mandate is to develop, implement and operate waste diversion programs for specific wastes, as requested by the Minister of the Environment.

One of the key concepts underlying Ontario's *Waste Diversion Act* is Extended Producer Responsibility or EPR. The EPR concept is the foundation for the work that WDO does through the Blue Box Program and other programs under development. It gives producers or 'stewards' incentives to make products that generate less waste and that, consequently, impose fewer costs on the waste management system.

For each waste diversion program, WDO creates a sustainable funding method, based on fees paid by designated industry stewards. An industry funding organization (IFO), set up for each program, helps WDO with this part of the process. Each waste diversion program includes rules for industry fees to be charged, estimated costs for the program, and waste diversion targets. As part of developing a program, WDO engages in a public consultation process.

WDO is actively working with industry in a number of areas:

- **Blue Box Program Plan**: WDO developed a groundbreaking sustainable funding and diversion program for the municipal Blue Box system, now being implemented by WDO and Stewardship Ontario, the industry funding organization for the program. The initial goal was to achieve 50% diversion from disposal by 2006 for Blue Box-eligible materials. The provincial government has requested that this be increased to 60% by 2008, recognizing the importance of diversion through the Blue Box system to the province's overall waste diversion strategy. Municipalities are now receiving funds for their Blue Box programs, ensuring a sustainable base for this important activity.
- **Used Oil and Used Tires**: The provincial government has asked WDO to develop programs for used oil and oil filters, and used tire wastes. WDO, the Ontario Used Oil Management Association and the Ontario Tire Stewardship are currently in the process of developing detailed proposals for implementation of diversion programs for these materials.

Electronics Waste

Electronics waste makes up a small but growing portion of the waste stream. Environment Canada estimates that, out of the 31,000,000 tonnes of waste generated in Canada in 2000, about 157,000 tonnes was composed of electronic wastes. While these wastes represent a small fraction of the waste stream in terms of quantity, there are good environmental reasons for diverting them – the toxic nature of some of their components such as metals and other contaminants, can pose serious environmental problems, Each item may contain only a small amount, but when disposed of in landfill, the quantity of these contaminants can become significant. Another potential benefit of diverting them is that some of these materials also contain valuable materials worth recovering.

Household Hazardous Waste

Household Hazardous Wastes (HHW), because they are disposed of by homeowners, are not regulated as hazardous waste under current laws. HHW includes paints, solvents, acids, bases, antifreeze, flammables, oxidizers, pesticides, used crankcase oil, partially-empty aerosol cans, batteries, propane tanks and cylinders, and syringes.

In 2002, there were 76 municipal HHW collection programs in operation in Ontario and about 12,280 tonnes of HHW was diverted from municipal landfills, playing a significant role in reducing the environmental impact of HHW.

Future WDO Opportunities

Any waste can be 'designated' under the *Waste Diversion Act* which would require WDO to develop and implement a waste diversion program. Some areas that could be considered for designation in the near future include: electronic products; household hazardous wastes; batteries; pharmaceuticals; fluorescent tubes.

4 Moving Forward

Ontario's challenge is to determine how best to manage waste in a way that is sustainable and protective of the health and well being of communities and the environment. Effective ways to increase the waste diversion rate are likely to require new ways of working, new ways of thinking, and new ways for all of us to participate in finding the solutions to our common problem of waste.

Potential Markets for Compost

The private sector has had some success at creating custom blends for the retail market (mixed with manures, peat etc.)

The value of compost sold in bulk is limited because it has to compete with topsoil and other materials which sell for about $20/tonne.

Composting can result in less Greenhouse Gas (GHG) emissions than is generated through other waste management options. Less GHG means a potential to benefit from the carbon credits and trading systems that may be available.

Anaerobic digestion has the potential for energy recovery which translates into an additional revenue stream and even more GHG savings.

There may be other uses for the compost such as rehabilitating mine tailings and brownfields.

There are a number of factors that will help determine how successful Ontario will be in reaching its waste diversion goal. Most importantly, we must be able to create a sense of public ownership of the need to manage our wastes differently than we do now.

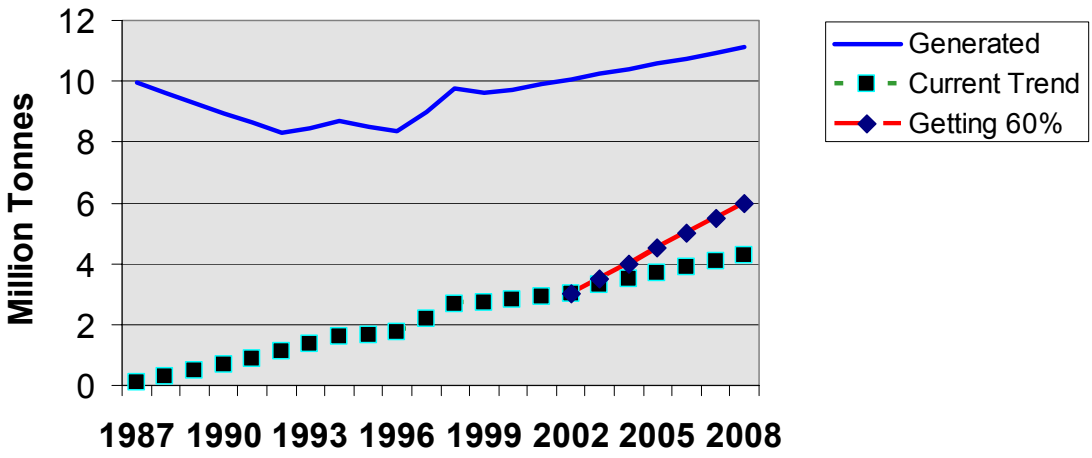
We will also need to effectively address some of the obstacles to waste diversion, including a recognition that landfill is currently cheaper than recycling programs. We must also build our waste diversion solutions on an understanding that *convenience* to the anticipated user of the system is a major determinant of its ultimate success.

There is considerable need to build sustainable markets for recovered materials. In the case of organics diversion, not only are sustainable markets for compost needed, but also new and expanded collection and processing technologies and processes, as well as effective compliance with regulations.

The provincial government also acknowledges that more effective enforcement of regulations as well as greater certainty and timeliness of environmental approvals would assist industry and commercial enterprises in meeting new waste disposal or diversion objectives.

Overall, the provincial government believes that a province-wide strategy for waste diversion is needed to take Ontario to the next level in waste management. Without taking action, Ontario will fall far short of its goal of reaching 60% diversion by the end of 2008 (see Figure 5).

Figure 5: Changing the Waste Diversion Trend
(Excludes waste from construction and demolition activities)



The following discussion outlines a broad framework for better waste management through diversion in Ontario. It focuses on identifying the key areas where action is required if Ontario is to reach its desired waste diversion target in the proposed timeframe.

After considering all comments received from stakeholders and the public on the issues contained in this discussion paper, the provincial government will move forward on a comprehensive, province-wide waste diversion strategy for Ontario.

A. Setting Province-wide Waste Diversion Objectives and Targets

The provincial government has set an overall goal of diverting 60% of Ontario's waste from disposal by the end of 2008. This goal raises the bar for many municipalities and businesses in Ontario and will require significant contributions from all waste generators – individuals, as well as industry. All sectors will be encouraged to look at what and how much waste they generate, where that waste goes now, and how much more can be diverted.

Achieving 60% diversion as a province could require establishing mandatory targets for some and objectives for others.

Setting mandatory targets could be appropriate for some groups where the greatest gains and results can be achieved. But for others, where targets are impractical, the government could seek other ways to encourage and promote further waste diversion, including the provision of incentives. And, even when targets are set, the provincial government plans to ensure municipalities and industries have the flexibility necessary to determine how they mobilize to meet them.

IC&I Sectors

The industrial, commercial and institutional (IC&I) sectors generate a considerable amount of waste. Like municipalities, many companies have already implemented considerable measures to reduce their waste and some

companies divert even more than 60% of the waste they produce. Convincing all companies in this sector to reach a 60% waste diversion rate by 2008 by managing more of their waste through reduction, reuse, recycling and composting would make a major contribution to the province-wide goal.

To ensure full participation in the IC&I sectors, the provincial government would enhance enforcement of the current 3Rs regulations (refer to Section 3: Ontario's Regulatory Framework).

In addition, the Ministry of the Environment would also revisit Ontario Regulation 103/94 to ensure that it meets the government's current waste diversion objectives and is appropriate for Ontario's current business and industrial landscape. This could include consideration of the sectors now covered by the regulation, as well as the specific requirements contained in it.

New requirements could be introduced for waste generators in these regulated sectors to report to the public on their waste diversion rates, starting with the largest enterprises.

Municipal Sector

Residential waste, which is generated by household activities, and managed by municipalities, is a significant part of the waste stream. While there are a number of successful programs dealing with residential waste already in place, we want to build on that success.

To help support municipalities to increase diversion, the provincial government could set mandatory waste diversion targets for municipalities to achieve. The provincial government could set varying targets across the municipal sector to recognize demographic, geographic or technical factors. For example, diversion rates might vary according to the population of a municipality or the level of urbanization.

Mandatory targets for municipalities could be phased in. One option based on this approach could work as follows:

- The largest municipalities with populations over 250,000 could have a waste diversion target rate of 60% by 2008. These municipalities already have limited centralized composing infrastructure in place or have plans to develop centralized composting in the near future.
- Medium-sized municipalities with populations over 50,000 and less than 250,000 could be given a lower interim waste diversion target, achieving 60% diversion over a longer period of time to allow for development of centralized composting systems and other diversion infrastructure needs.
- Small municipalities with less than 50,000 people could be given a lower diversion target in recognition of the fact that it would not always be economically efficient to establish centralized composting.

Progress would be monitored through the current system in which municipalities report their diversion rates on an annual basis to Waste Diversion Ontario, complemented by their reporting to the Municipal Performance and Measurement Program (MPMP), managed by the Ministry of Municipal Affairs and Housing.

Enforcement

To ensure everyone does their part, some degree of enforcement will be required. Municipalities have the authority to regulate compliance through bylaw enforcement. Typically, a municipality will establish standards based on provincial legislation and regulations governing what and how much waste residents are permitted to set out for collection and which materials must be separated for recycling. Some municipalities also establish bag limits and require the purchase of tags for bags that exceed the limit. Moreover, other municipalities require the use of translucent bags to monitor what is being set out. In some cases, multi-family buildings are audited. When compliance is absent, bylaw enforcement may fine the property owner or in some cases, ceases providing services.

In IC&I sectors, waste management is normally managed by the private sector and the contracts will often establish clear limits on what will be handled. For the waste generator, the incentive to reduce waste usually derives from the costs incurred for waste disposal. Quite often, though, recycling programs are associated with increased costs, reducing the incentive. There is a clear need for effective enforcement of compliance in order to ensure a fair playing field for all businesses.

Effective enforcement is the key to compliance. There may be opportunities to obtain greater diversion rates through stricter enforcement of the existing 3Rs regulations. Working within the existing regulatory framework may also allow for additional materials to be added to the amount of waste that is successfully diverted.

Potential Action Items:

- Set mandatory waste diversion targets for municipalities, varying by size of population.
- Require public reporting of waste diversion rates by certain businesses.
- Review and enforce more consistently diversion regulations for IC&I sectors.

Considerations:

- *Setting waste diversion objectives and targets would require IC&I sectors to develop a data management system to monitor and report their waste diversion activities. Businesses with ISO 14001 already have these systems in place.*
- *Although fairness would dictate setting targets for all waste generators, there are unique challenges facing municipalities of different sizes. Preliminary analysis shows that setting a mandatory target for municipalities with populations of more than 250,000 would result in substantial progress towards the 60% diversion goal. The cost effectiveness of additional waste diversion achieved from setting mandatory targets for municipalities of between 100,000 and 250,000 is reduced, though, of course, there would be some increase in the amount of total waste diverted.*
- *Recycling materials from apartments and other multi-dwelling buildings is often difficult due to convenience and storage concerns. Innovation in improving multi-dwelling diversion programs will be the key to improving diversion rates in some municipalities. .*

B. Residential Waste Diversion: Accelerating Centralized Composting

Organic waste materials hold great potential if they are considered as a *resource*, rather than as a something simply to be disposed of as they represent about 38% of the current residential waste stream and about 11% of the industrial, commercial and institutional waste stream. Many Ontario households are already dedicated to backyard organics composting. Currently, 1.25 million households are responsible for diverting about 125,000 tonnes of organic waste through backyard composting. Together with the centralized composting capacity developed in a few municipalities, about 485,000 tonnes of organic waste (the majority of which is leaf and yard waste) are now being diverted from disposal.

To achieve a 60% diversion rate, Ontario needs to increase the amount of organic waste that is being diverted from the current 485,000 tonnes to 1.2 million tonnes by 2008 – a significant increase.

Increasing the amount of household backyard composting is essential, though limited in terms of the volumes and kinds of materials involved. Each household composter diverts about 100 kilograms of organic material per year from disposal for a one-time cost of about $45 to $60 per composter. It can manage yard wastes, food residues from fruits and vegetables, and ornamental plants, but not other compostable household organics such as pet droppings and bedding, bones and meat scraps, disposable diapers, food wrappings, large quantities of leaf and yard waste.

Theoretically, if each one of the remaining two million single family households started using a composter, another 200,000 tonnes could be diverted. At $45 - $60 per composter, this initiative would cost between $90 million to $120 million and add 5% to the overall provincial waste diversion rate. This is the maximum diversion the province could achieve through backyard composting.

Clearly, backyard composting, while important, is not enough. To achieve a significant increase in the amount of household organic waste being diverted, centralized composting systems and facilities are necessary.

Fortunately, there is a record of success to build on:

- many municipalities have significant experience in collecting and processing leaf and yard waste;
- some municipalities have already successfully implemented large scale organics diversion programs that require householders to separate organic waste from other materials;
- aerobic and anaerobic composting processes, the most common methods for diverting organic waste, are supported by accessible and reliable technologies;
- private sector businesses have shown an interest in the Province's initiative on an enhanced organics program.

A few municipalities have developed some capacity for centralized composting, but most have limited the materials to yard wastes. Some municipalities such as Guelph and Toronto have started to collect and compost a wide variety of 'wet' kitchen and household wastes such as wet food, coffee grounds, and kitty litter. These 'wet' processing systems differ from yard waste systems in that they are typically, large-scale centralized composting facilities usually housed in a building

operated under controlled conditions. They are able to accelerate decomposition by aeration (fans), continuous turning and controlled moisture, or through the use of anaerobic digestion.

Toronto's success with organics diversion in Scarborough and Etobicoke has led to their intended expansion of the program to an additional 210,000 homes in October, 2004. Similarly, Guelph has achieved a high diversion rate through their wet/dry diversion program.

To be able to divert 1.2 million tonnes of residential organic wastes by 2008 (and reach the 60% diversion target), Ontario must add about 600,000 tonnes of capacity to its current centralized composting capacity. This would require additional infrastructure able to deal with more than 2,000 tonnes of organic wastes per day. While a larger municipality might be served by its own facility with a capacity of up to100,000 tonnes/year, facilities with a capacity of up to 25,000 tonnnes/year could meet the needs of smaller municipalities. There may also be opportunities to maximize economic efficiencies by combining municipal and private sector composting facilities, or building larger regional facilities.

While the capital cost of building new plant capacity to process this amount of material varies based on the specific technology used, the overall capital costs are expected to be significant. A number of estimates have been developed by different organizations for their own purposes:

- Waste Diversion Organization[3] considered the costs of a province-wide program capable of diverting 450,000 tonnes and concluded that the capital cost would be about $350 million.
- The City of Toronto estimated that it spent $10 million in capital costs to build a 25,000 tonne per year demonstration scale anaerobic digestion facility at the Dufferin Transfer Station property.
- The Region of Peel is building a new centralized composting facility as part of a larger waste management integrated facility that will be able to process 60,000 tonnes of source separated material per year. The capital costs directly attributable to the construction of the composting facility will be approximately $15 million.

Based on this range of cost estimates, the cost of implementing a province-wide system to handle the additional 600,000 tonnes/year to achieve a 60% diversion rate for organics in 2008 could be significant. On an amortized capital cost basis, these estimates suggest that the costs of backyard composting and centralized composting can be relatively comparable to process the same amount of organics waste. A range of possible financing options for waste diversion infrastructure and ongoing operation is discussed in the next section.

Potential Action Items:

- ► Continue to support and encourage backyard composting.
- ► Implement increased residential organic waste collection and centralized composting in Ontario's largest municipalities.

3 A former interim group of stakeholders established to assist the Ministry with development of stewardship programs and waste diversion initiatives.

Considerations:

- *Diverting organics from disposal is viewed as a particularly critical component of a province-wide strategy to reach the 60% diversion goal by 2008.*
- *Some municipalities already have source separation programs for food and other household organics or are actively planning for them. For others, time will be required for the necessary organics recycling systems to be put in place.*
- *Successful organics diversion requires sustained markets for compost, collection and processing infrastructure, and effective compliance with regulations.*
- *Innovative approaches will be required to adapt organics collection programs to serve tenants of apartment and condominium buildings.*

C. Developing a Financing Strategy for Increased Waste Diversion, including Centralized Composting for Residential Waste

Diversion of waste from disposal, while it involves additional costs, serves a strategic purpose for the municipalities and industries seeking to better manage their wastes. Based on information submitted to WDO for the year 2002, costs per tonne to operate a Blue Box system, typically range from about $85 to $250 per tonne, with higher costs often being associated with travel costs in servicing a large rural area. Thus economies of scale can be assumed for larger municipalities. In addition, some of the costs associated with diverting more waste through the Blue Box system are offset by 50% contributions from industry through Waste Diversion Ontario's Blue Box Program Plan.

Similarly, the range of operating costs for a centralized organics program will range significantly with size of municipality; typical processing facility operating costs are approximately $100 per tonne.

One major challenge in the development of more waste diversion, including expanded composting capacity in Ontario, is the issue of how to finance the construction and ongoing operation of the necessary infrastructure.

In order to meet the 60% target, the largest municipalities would have to accelerate and expand their residential organic waste collection and centralized composting in the near term. This would require significant up-front capital expenditures and additional resources would be required for ongoing operation. In addition, municipalities would incur ongoing operational costs for collection and processing. A financing strategy that could include financial support from the provincial government could be considered as part of developing this overall strategy.

Self-financing Through User Pay Systems

- User pay systems for household garbage collection (sometimes called "pay-as-you-throw" systems) can help to finance residential waste management services, making householders more directly responsible for the waste they generate. Approximately 137 Ontario communities have adopted user pay systems, some with and some without bag limits for garbage services, covering 3.7 million Ontarians and 1.3 million households. User pay systems

are effective in encouraging recycling and composting – experience shows that they can increase waste diversion rates by 10% - 25%.

Municipal Borrowing

- Municipalities could borrow funds up-front to construct the necessary waste diversion infrastructure. Municipalities could draw on revenues from their property tax base to cover principal and interest payments.
- The provincial government has announced the new Ontario Strategic Infrastructure Financing Authority (OSIFA), replacing the Ontario Municipal Economic Infrastructure Financing Authority (OMEIFA). In 2004-05, OSIFA's infrastructure renewal loan program will be focused on offering affordable infrastructure financing to municipalities for five key priorities: clean water infrastructure, sewage treatment facilities, waste management infrastructure, municipal roads and bridges, and public transit. OSIFA will raise capital from individual and institutional investors to form a pool that provides loans to broader public sector partners. All borrowers will receive the same low interest rate.

Provincial Grants

- The provincial government could provide capital grants for all or a portion of the capital costs of adding composting and other diversion facilities. Grants could be time-limited to encourage early action. Note that there are currently no provincial grant programs available for municipalities to fund waste diversion programs.

Provincial Waste Disposal Surcharge

- The provincial government could impose a surcharge on waste sent for disposal. Such a surcharge could function as both a funding mechanism to finance waste diversion systems and as an incentive to waste generators to reduce the amount of waste. A disposal surcharge could raise significant revenues to help achieve the waste diversion goal.

Encouraging Private Sector Investment in Waste Diversion Facilities

- A wide variety of contractual arrangements are being considered by some municipalities whereby the private sector competes for a contract from a municipality to collect and process organic wastes from households and/or commercial establishments. The composting facility could be financed either by the municipality (or group of municipalities) or the private sector. In the case of the latter option, the contract would likely have to ensure a revenue stream that would provide a return on investment in a relatively short period of time (e.g., five years). These revenues could derive from agreed-to rates or prices for collection and/or disposal of wastes to landfill and through recycling and composting processes.

Revenues from Enhanced Marketing of Compost

- High quality compost produced from a compost facility allows greater flexibility in establishing value-added markets. For example, a marketing strategy that targets 'dollar markets' such as topsoil blenders, landscaper, retail garden centres, sports centres, and nurseries will yield substantially

higher revenues than low grade compost that is limited to 'volume markets' such as agriculture, sod production or mine reclamation.

- The provincial government is proposing to harmonize the metal criteria for compost in Ontario with those of the Canadian Council of Ministers of the Environment (CCME) Guideline. Details of this proposal --"Interim Guidelines for the Production and Use of Aerobic Compost in Ontario" - are available on the Environmental Registry website. This harmonization would support the production of high quality compost and enable easier use and marketing of the end product, while ensuring that public health and the environment are protected.

Financing Options through Waste Diversion Ontario

- WDO could be asked by the province to develop a waste diversion program for a designated material. When a waste is "designated", WDO establishes rules prescribing fees payable by 'industry stewards' (brand owners and first importers of the designated material) for the costs of developing, implementing and operating the particular waste diversion program.

Potential Action Items:

► Make available and encourage a range of financing options for creating new waste diversion programs and infrastructure that includes consideration of the following components:
  - ► user pay;
  - ► provincial funding;
  - ► municipal financing through borrowing;
  - ► a provincial waste disposal surcharge;
  - ► private sector investment;
  - ► revenues from new markets for recycled materials;
  - ► designation of new wastes for which Waste Diversion Ontario must develop waste diversion programs.

Considerations:

- *Low disposal costs are often cited as a barrier to composting.*
- *Sustainable markets will be required for the increased quantities of compost.*
- *Proposed revisions to Ontario's compost guidelines would assist in developing new markets for the end product produced by municipal composting facilities.*

D. Industrial, Commercial and Institutional Waste Diversion: A Renewed Commitment

The IC&I sectors include a wide range of businesses such as manufacturers, banks, retail shops, schools, apartment buildings, construction and demolition companies and many others. Waste generated by these IC&I sectors is an important candidate for waste diversion because it represents half or more of the total waste stream.

The existing regulatory requirements may need to be changed to better reflect a renewed commitment to waste diversion. A limited number of IC&I waste

generators fall under the existing regulation: Ontario Regulation 103/94 covers the largest generators in select sectors. Also, the regulation currently does not include any requirements for organic waste diversion.

To monitor progress on meeting the 60% diversion objective, the provincial government could require the largest waste generators in the IC&I sectors to report their waste diversion rates publicly. This could be phased in on a sector-by-sector basis over a few years beginning with the sector that generates the largest quantity of waste.

Achieving waste diversion in small businesses may be better helped by providing needed training, rather than by regulation. The provincial government could work with different partners, such as industry associations, to provide sector-focused training on waste reduction.

Small businesses would continue to be exempt from Ontario's 3Rs regulations, but would be encouraged to make progress in waste diversion. A 2000 survey completed by the Canadian Federation of Independent Business (CFIB) found that "the high concern that small and medium-sized enterprises (SMEs) have for the environment is also evident in the way they manage their own day-to-day affairs. In 2000, one in two small businesses (47.4% of respondents) threw out less or an equal amount of garbage compared to a household." According to CFIB, this represents a significant improvement from 1990, when only 28.1% met that standard.

Industry Successes in Recycling

There are many examples of successful waste reduction programs operated by companies and organizations in the industrial, commercial and institutional sectors. Many have been recognized by the Recycling Council of Ontario in its annual Waste Reduction Awards. For example, in 2002/2003 RCO recognized the following companies, among others, for their achievements in waste minimization:

Platinum Award Winners

- Nemak of Canada – Essex Aluminum Plant: Since 1997, the plant has reduced its total waste disposal by over 10 million kilograms and solid waste disposal has been reduced by 34%. It uses collected scrap materials as its primary input and its products are 100% recyclable at the end of their life cycle.
- Steelcase Canada Ltd: Between 2000 and 2002, Steelcase reduced its aluminum wastes by 48%, corrugated cardboard box by 40%, fabric by 74% and solvents by 76%.
- Toyota Motor Manufacturing Canada Inc: The company recycles excess steel and grinding dust and is implementing an innovative water recycling system that cleans waste water and recycles it back into the production process. In addition, used solvents are collected, sent for recycling, and returned to the company for re-use.

Potential Action Items:

- ► Review and revise Ontario Regulation 103/94 to reflect a renewed commitment to ICI waste diversion.
- ► Require the largest waste generators to publicly report their waste diversion rates.
- ► Phase in public reporting of waste diversion rates by other waste generators on a sector-by-sector basis.
- ► Provide training to small businesses to help them increase their waste diversion rates.

Considerations:

- *A large number of businesses are not currently subject to 3Rs regulations. A cost assessment of new requirement would be required before any new requirements were put in place.*
- *Building Code changes could be considered for new multi-unit residential buildings to require provision of convenient source separation services for residents.*

E. Feasibility of Phasing-in a Ban on Disposal of Organics and Recyclable Materials

This discussion paper has emphasized that diverting organics and recyclables from disposal is a critical component of achieving the 60% diversion goal in the residential sector. Preventing these materials from going to landfills will help preserve our natural resources and reduce the impact on the environment, reducing odours caused by the organics as they decompose and avoiding problems caused by landfill leachate on groundwater.

The provincial government could consider phasing in a ban on the disposal of certain organics (e.g., household organics) and recyclables (e.g., Blue Box materials) from disposal.

Many provinces are targeting organics in their diversion strategies. Both Prince Edward Island and British Columbia have established aggressive diversion targets with an emphasis on organics. Nova Scotia is the only province to have implemented a ban on organics – it banned compostable organic material from landfills in 1998. The ban includes food waste (including meat, fish, bones and dairy products), leaf and yard waste, and non-recyclable paper products. Now, 76% of Nova Scotians have curbside collection and centralized composting of food, leaf and yard waste, and paper products. In addition, 53 of 55 municipalities in the province offer centralized composting to businesses, including supermarkets, restaurants, food processing plants, etc. As a result of its success in waste diversion, Nova Scotia plans to close 15 landfill sites by 2005.

However, it is important to note that a ban on organics in landfill would only be enforceable if it applied to *all* waste generators. This would mean that the industrial, commercial and institutional sectors would also need to be subject to the ban. The greatest success would come from full participation, which would likely require additional efforts in enforcement.

Case Study: California

For example, California's State Agency Buy Recycled Campaign (SABRC) requires all state agencies to purchase products with recycled content. SABRC complements the *Integrated Waste Management Act* which seeks to reduce the amount of waste going to California's landfills.

Specifically, all state and local government agencies in California must ensure that 50% of their purchases are recycled-content product (RCP) purchases. Suppliers of RCP must certify the recycled content of all products offered or sold to the state. State agencies are required to report their RCP purchases annually to document compliance with the RCP procurement mandates of the SABRC.

Diverting more of these materials means that adequate alternatives to disposal must be made available. Alternatives could include residential and IC&I source

separation programs and the provision of recycling containers or depots in public areas. Where adequate alternatives for managing these materials do not exist, time would be needed to put appropriate alternatives in place. This means that any ban would likely have to be phased in over a reasonable period of time.

Potential Action Items:

- ► Phasing in a ban on the disposal of key organics and recyclables from disposal.

Considerations:

- o *While a ban could be put in place relatively quickly, it could not take full effect until there was reasonable assurance that adequate alternatives to disposal were available.*
- o *The development of the necessary infrastructure, especially for organic waste, would take time.*
- o *Practical difficulties to enforcing a ban would have to be addressed.*

F. Finding New Waste Diversion Technologies

New technologies may be able to help Ontario increase its waste diversion rate by helping us to recycle and manage materials more easily and at lower cost, and to enable diversion of a broader range of materials.

New technologies will be helpful in areas such as organics diversion. For example, collecting organic material such as food scraps from apartment buildings is difficult because of convenience and storage issues. Innovations may allow garbage chutes to be modified to direct organics, recyclables and garbage into separate containers below. Other innovations may include the use of “deep collection” systems which use in-ground containers to store organic wastes, keeping the collected wastes cool to prevent odours. In municipalities where many residents live in apartments or condominiums, a significant amount of organic material and other recyclables will be missed if new technologies are not developed.

Before a new waste diversion technology can be developed on a large scale, it must demonstrate that it reliably delivers on its promises and effectively protects the environment. Research or demonstration projects may be one way for that to happen.

To encourage the private sector to come forward with innovative technologies and investment, Ontario needs the right climate for research and development. In part, this means ensuring we have the right approvals process – one which protects the environment but also spurs investment, innovation, and economic development.

To help facilitate new technology development, the provincial government could consider streamlining the approvals process under the *Environmental Protection Act* (EPA) for small scale research or demonstration projects for new or emerging waste diversion technologies. Small scale research or demonstration projects are not normally subject to the *Environmental Assessment Act* (EAA) but the existing “research” exemption in Ontario Regulation 334 for municipal projects could be further clarified.

Approval could depend on the scale and length of the project, with approval requirements under the EPA streamlined so that they were proportional to the potential level of environmental effects of a project. All proposals would require clearly defined and documented research objectives and study protocols. Air approvals under the EPA would still be required for any air emissions. Municipal land use approval requirements and bylaws would still apply to all sites.

Potential Action Items:

- Streamline the approvals process under the *Environmental Protection Act* (EPA).
- Clarify the 'research' exemption in Ontario Regulation 334, ensuring that small scale research or demonstration projects for new waste diversion technologies are not subject to the *Environmental Assessment Act* (EAA).

Considerations:

- *Clear definitions and criteria of "research" and "demonstration project" would need to be developed.*

G. Reducing Packaging and Increasing the Recycled Content in Products and Packaging

While packaging serves many useful functions, its utility is temporary. Packaging becomes waste as soon as it has fulfilled its intended purpose, regardless of how important and necessary that purpose may have been. In fact, its usefulness has made it a large component of almost all waste streams. Packaging makes up about 25% by weight of the residential waste stream and makes up a considerably higher percentage by volume.

Under Waste Diversion Ontario's (WDO) Blue Box Program Plan, brand owners and importers of printed paper and packaging materials in the residential Blue Box system pay fees to cover half of the net cost incurred by municipalities for the operation of their Blue Box programs. The fees are based on the quantity and type of materials managed by municipalities.

The government expects that WDO's Blue Box Program Plan will help reduce packaging. The Blue Box Program Plan's financial incentives encourage companies to use less packaging, or use recyclable materials in their packaging that are marketable or cost less when they arrive in the Blue Box system. These companies will pay fewer fees when they package products in materials that are easily recycled and when they reduce the amount of materials in their packaging. The list of packaging materials and product stewardship activities will expand over the next few years so that there will be less and less non-recyclable materials used in packaging.

The provincial government could pursue opportunities at the national level to improve programs aimed at reducing packaging, and increasing recycled content of products, building on successful initiatives such as the CCME National Packaging Protocol which achieved a 50% packaging reduction by 1996, well ahead of the 2000 deadline. Additionally, the provincial government could continue development of useful information on how best to promote packaging reduction, reuse and recycling.

Deposit-Return Systems

Under a deposit-return system, the product or product container is subject to a deposit when purchased which is refunded to the purchaser when the used product or product container is returned. The amount of the deposit would need to be enough, relative to the product cost or type of product, to encourage returns to be made. In some situations, deposit-return systems have proven to be a very effective way to ensure that a high percentage of waste is diverted.

Potential Action Items:

- ► *Improve programs designed to reduce packaging and increase recycled content of products through working with other levels of government.*
- ► *Disseminate information on best practices in packaging reduction, reuse and recycling.*

Considerations:

- o *Consumer preferences will help motivate manufacturers towards packaging reduction and increased recycled content in products.*
- o *Implementing non-refillable beverage container deposit-return systems in Ontario would have minimal impact on municipal waste diversion rates in Ontario since the majority of beverage containers are already collected in existing recycling programs (e.g., through the Blue Box or The Beer Store).*

H. Expanding Public Education and Awareness Activities to Promote the 3Rs

Most people and businesses want to recycle, buy environmentally friendly products and reduce the amount of waste. Continuing promotion and education is important to help people recycle and to assist municipalities and industry to develop recycling and other waste diversion programs.

A promotion and education plan could meet information and education needs and determine how best to promote waste diversion. The plan should describe the benefits of recycling and waste diversion, give examples of successful and innovative recycling programs and technologies, provide information on how different types of recycling programs work (such as organics source separation programs), and identify what recycling information and reports are available and where to get them.

The provincial government would work in partnership with all stakeholders to develop and distribute information and educational materials to the public, municipalities, and the business community.

Potential Action Items:

- ► Work with stakeholders to deliver effective public education on the 3Rs.

Considerations:

- o *A high level of public participation is essential to achieving the waste diversion objectives and targets. Convenience can be a consideration for users, regardless of the environmental benefits.*

I. Initiating a Province-wide Monitoring System for Waste

Comprehensive data is needed to measure progress towards Ontario's waste diversion goal. We must measure our performance so that we can keep on track, make adjustments where necessary, and keep the public informed.

The provincial government could require all waste generators (municipalities and industry) to monitor and report waste statistics such as waste generated, diverted and disposed in order to monitor progress. Requirements for IC&I sectors would be phased-in, starting with the largest waste generators first. The provincial government could require waste management facilities (e.g., waste transfer stations and landfills) to develop a data monitoring and reporting system to enable the ongoing measurement of the success of waste diversion activities promoted under this strategy.

The data monitoring and reporting system would have to include data on facility capacity, and on waste types and quantities disposed or diverted. The reporting requirement could apply to all sites used for the management of waste including landfills, incinerators, transfer stations, and processing facilities.

Potential Action Items:

- Require all waste generators in the municipal and IC&I sectors and waste site operators to report waste diversion statistics, including quantities of waste disposed and diverted.

Considerations:

- *Implementing reporting requirements may mean new costs for those required to report and to operate the monitoring system.*

SUMMARY OF POTENTIAL ACTION ITEMS

Note that these are examples of actions that could be part of a provincial waste diversion strategy. They should not be considered as a government commitment, but rather as an area for consideration and discussion.

A. Setting Province-wide Waste Diversion Objectives and Targets

- ► Set mandatory waste diversion targets for municipalities, varying by size of population.
- ► Require public reporting of waste diversion rates by certain businesses.
- ► Review and enforce more consistently diversion regulations for IC&I sectors.

B. Residential Waste Diversion: Accelerating Centralized Composting

- ► Continue to support and encourage backyard composting.
- ► Implement increased residential organic waste collection and centralized composting in Ontario's largest municipalities.

C. Developing a Financing Strategy for Increased Waste Diversion, including Centralized Composting for Residential Waste

- ► Make available a range of financing options for creating new waste diversion programs and infrastructure that includes consideration of the following components:
  - ► user pay;
  - ► provincial funding;
  - ► municipal financing through borrowing;
  - ► a provincial waste disposal surcharge;
  - ► private sector investment;
  - ► revenues from new markets for recycled materials;
  - ► designation of new wastes for which Waste Diversion Ontario must develop waste diversion programs.

D. Industrial, Commercial and Institutional Waste Diversion: A Renewed Commitment

- ► Review and revise Ontario Regulation 103/94 to reflect a renewed commitment to IC&I waste diversion.
- ► Require the largest waste generators to publicly report their waste diversion rates.
- ► Phase in public reporting of waste diversion by other waste generators on a sector-by-sector basis.
- ► Provide training to small businesses to help them increase their waste diversion rates.

E. Feasibility of Phasing-in a Ban on Disposal of Organics and Recyclable Materials

- ► Phasing in a ban on the disposal of key organics and recyclables from disposal

F. Finding New Waste Diversion Technologies

- ► Streamline the approvals process under the *Environmental Protection Act* (EPA).
- ► Clarify the 'research' exemption in Ontario Regulation 334, ensuring that small scale research or demonstration projects for new waste diversion technologies are not subject to the *Environmental Assessment Act* (EAA).

G. Reducing Packaging and Increasing the Recycled Content in Products and Packaging

- ► Improve programs designed to reduce packaging and increase recycled content of products through working with other levels of government.
- ► Disseminate information on best practices in packaging reduction, reuse and recycling.

H. Expanding Public Education and Awareness Activities to Promote the 3Rs

- ► Work with stakeholders to deliver effective public education on the 3Rs.

I. Initiating a Province-wide Monitoring System for Waste

- ► Require all waste generators in the municipal and IC&I sectors and waste site operators to report waste diversion statistics, including quantities of waste disposed and diverted.

5 For Consideration

Your Input is Needed

All interested individuals and groups including municipalities, industry, environmental groups, the recycling and waste management industry, waste management professionals, and the general public are being asked to participate.

No decisions have been made on the approaches and options described in the paper. All comments received from stakeholders and the public will be considered before any decisions are made.

If you are interested in responding to this paper with your ideas and suggestions, please contact the Ministry of the Environment by sending comments by mail, fax or email to:

Ontario Ministry of the Environment
Waste Management Policy Branch
Ontario's 60% Waste Diversion Goal: A Discussion Paper
135 St. Clair Avenue West, 7th floor
Toronto, Ontario, M4V 1P5

Fax: (416) 325-4437

Email: wastediversion@ene.gov.on.ca

You can also provide comments directly through the Environmental Bill of Rights (EBR) Environmental Registry where you will find a copy of the Discussion Paper at [insert web address].

Please provide your response by August 9, 2004.

In addition to formal written responses, you are encouraged to participate in a series of public and stakeholder consultation sessions being held throughout the Province. Sessions are currently planned in June. For further information about meetings in your area go to the website of the Ministry of the Environment at www.ene.gov.on.ca or call toll-free at 1 800 565-4923 or, in Toronto, 416 325-4000.

Your participation is greatly appreciated.

Consultation Questions

The provincial government welcomes comments on any topic raised in the discussion paper. The provincial government is particularly interested in advice and perspectives on the following:

Waste Diversion versus Waste Disposal

1. Should the provincial government, private sector, institutions and municipalities invest in waste diversion, even if it is more expensive than disposal? Why or why not?

Ontario's Waste Diversion Goal

2. Is a 60% waste diversion rate by 2008 a feasible goal for Ontario?

3. This paper proposes that municipalities meet a mandatory waste diversion target. Should there be different targets (or objectives) for municipalities based on their size, recognizing differing waste management challenges and needs?

    a. If yes, what should those targets (or objectives) be and what criteria should be used to categorize municipalities according to size?

    b. Should the targets (or objectives) be immediate or phased in, for all municipalities or by size?

4. Should the province set a waste diversion target or objective for IC&I sectors or for individual groups within this broad category? How should it be applied?

5. What can we learn from other jurisdictions that have a higher average waste diversion rates than Ontario?

IC&I Sectors' Requirements

6. Should source separation for the IC&I sectors be mandatory? Why or why not?

7. What can we learn from other jurisdictions that require their IC&I sectors to source separate?

8. Are the waste diversion regulations that currently apply to the IC&I sectors (e.g., Ontario Regulation 103/94) appropriate and supportive of the waste diversion strategy or should they be revisited (e.g., recycling requirements, types of establishments covered, size thresholds)?

9. If waste diversion programs are mandatory for businesses based on their size, how should the categories of 'large' and 'medium-sized' business be defined?

10. Given the potential cost impact, should requirements on medium-sized businesses be phased in and, if so, over what period of time?

11. Given the costs of source separation, should small businesses and organizations be exempt from such a requirement? If so, what is an appropriate size threshold for such an exemption?

12. Should the provincial government require reporting of waste diversion data? How should this data be made public?

Organics Diversion

13. What can we learn from other jurisdictions that have already achieved significant organics diversion?

14. What do you see as the best way to finance the development of centralized composting systems?

15. Should the provincial government consider banning organic wastes and recyclables from disposal?

16. What challenges are there related to establishing composting facilities and sustained markets for compost materials?

17. What opportunities are there related to establishing sustained markets for compost materials? Are there synergies between organics composting and other compostable materials (e.g., sewage, agricultural nutrients)?

Financing Options

18. What financing options hold the most promise for the amount of investment required to increase Ontario's waste diversion rate? (The provincial government encourages as much input and detail as possible on appropriate methods of financing the various components of a waste diversion strategy that will achieve the waste diversion objective in an economic and practical manner.)

19. If provincial funding was made available, should it be provided on a performance basis only, meaning that funding is directly tied to meeting clear performance targets? (This would entail making funding contingent on the submission of a waste diversion plan and subsequent payments would depend on the achievement of the performance targets set out in that plan.)

20. Is there public support for a waste disposal surcharge if revenues were used to promote waste diversion?

Promoting Investment and Innovation

21. How can the provincial government promote greater investment in waste diversion and waste diversion technologies?

22. What are the potential economic benefits of greater investment in waste diversion in Ontario?

23. Should the provincial government consider expediting approvals for new and emerging waste diversion technologies that contribute to meeting the province's waste diversion goal?

Reducing and Reusing Waste

24. How can the provincial government encourage packaging reduction? What is the role of the provincial government and consumers?

25. How can the provincial government encourage increased recycled content of products?

26. What role should deposit-return systems play in Ontario's waste diversion strategy?

Public Awareness and Participation

27. How can greater residential/public participation in waste diversion programs be encouraged?

28. What are effective methods to raise awareness of waste reduction, reuse, recycling and composting?

Creating Efficiencies

29. How can private and public generators of organics waste work together to establish composting facilities?

30. What types of waste diversion activities are best pursued on a regional basis, rather than by individual municipalities?

31. Which components of the strategy hold the most promise for short-term improvements in Ontario's waste diversion rate?