Ministry of the Environment

Non-hazardous Waste Disposal and Diversion

Background

Non-hazardous waste includes non-recyclable and recyclable materials (for example, paper, plastics, aluminum, polystyrene, and organic waste such as kitchen waste and yard waste) generated by households and businesses and organizations in the industrial, commercial, and institutional (IC&I) sector (such as manufacturers, restaurants, hotels, hospitals, offices, retail outlets, and construction and demolition projects). Approximately 12.5 million tonnes of non-hazardous waste is generated in Ontario annually. The IC&I sector generates about 60% of this waste, and households—that is, the residential sector—generate 40%.

The two primary ways non-hazardous waste can be managed are through disposal or by diversion. The waste can be disposed either by depositing it in a landfill or by other means, such as incineration (also referred to as thermal treatment). Approximately two-thirds of the province's waste that is disposed is deposited in landfills in Ontario; the majority of the remaining waste is shipped to landfills in the United States (mainly in Michigan and New York state). Only a small portion (about 1%) is incinerated. Diversion (from landfills) of non-hazardous waste can be achieved through reducing, reusing, or recycling the waste that is generated.

Municipal governments are generally responsible for managing waste generated by the residential sector. They collect residential waste and recyclable materials (except in most multi-unit residential buildings); operate waste management sites, facilities, and systems; and set targets for waste disposal and diversion in their respective jurisdictions. The IC&I sector and most multi-unit residential buildings are responsible for managing the waste they produce. These organizations contract private-sector companies to collect and transport their waste either to landfills in Ontario or the United States or to recycling facilities (which may be operated by a municipality or by a private-sector waste management company).

The Ontario government, primarily through the Ministry of the Environment (Ministry), is responsible for setting standards for the management of non-hazardous waste through legislation and regulations and for enforcing compliance with these legislative requirements. In Ontario, the management of non-hazardous waste is governed primarily by the *Environmental Protection Act* (EPA), the *Environmental Assessment Act* (EAA), and the *Waste Diversion Act, 2002* (WDA). The Ministry is also responsible for approving new municipal and private-sector waste management sites, facilities, and systems (land, buildings, and equipment used in the collection, handling, transportation, storage, processing, or disposal of waste) and for

ensuring that these operations comply with legislative requirements. For major undertakings, an environmental assessment must be completed and submitted to the Ministry. The Ministry reviews the assessment and evaluates the overall potential impact of the undertaking. Only when it gives its approval can the project proceed.

The Ministry's Waste Management Policy Branch develops policies, regulations, and legislation to increase diversion and ensure effective management of waste that is not diverted. The Environmental Assessment and Approvals Branch manages environmental assessments and reviews and issues certificates of approval. Compliance staff at the Ministry's district offices and in its Sector Compliance Branch perform inspections to ensure compliance with non-hazardous waste legislation and ministry policy.

Under the WDA, the provincial government has established an arm's-length organization, governed by a board of directors, called Waste Diversion Ontario (WDO). The key responsibility of WDO is to develop, implement, and operate waste diversion programs for certain wastes, as designated by the Minister of the Environment, and to monitor the effectiveness and efficiency of those programs. It does this in conjunction with an Industry Funding Organization (IFO) comprised of industry "stewards"—brand owners and first importers of products that generate the waste. At the time of our audit, WDO was responsible for the diversion of four wastes designated by the Minister: municipal blue box waste, municipal hazardous or special waste (for example, paint, solvents, oil filters, single-use batteries, antifreeze, fertilizers, pressurized containers, and pesticides), waste electrical and electronic equipment, and used tires. Three IFOs had also been established: Stewardship Ontario, for blue box waste and municipal hazardous or special waste; Ontario Electronic Stewardship, for waste electrical and electronic equipment; and Ontario Tire Stewardship, for used tires.

Diversion programs for the designated wastes are funded entirely or partly through fees charged to industry "stewards" based on their respective market share for their products. For example, even though municipalities are responsible for managing blue box waste generated in their respective jurisdictions, the total net cost of the blue box program is to be equally shared between municipalities and the "stewards" whose products generate the waste. For the other three designated wastes, the full responsibility for developing, implementing, and funding the cost of the diversion programs lies with WDO and the industry "stewards."

Audit Objective and Scope

The objective of our audit was to assess whether the Ministry has adequate procedures in place to encourage the sound management of non-hazardous waste, including compliance with related legislation, regulations, and policies, and to reliably measure and report on its effectiveness in this regard.

Our audit followed the professional standards of the Canadian Institute of Chartered Accountants for assessing value for money and compliance. We set an objective for what we wanted to achieve in the audit, and developed audit criteria that covered the key systems, policies, and procedures that should be in place and operating effectively. We discussed these criteria with senior management at the Ministry. Finally, we designed and conducted tests and procedures to address our audit objective and criteria.

Our audit included visits to the Ministry's head office and to district offices in four of its five regions, where we interviewed staff and reviewed pertinent files. We also met with staff at WDO. Given that the province's municipalities are responsible for managing residential waste, we conducted a survey of Ontario municipalities with populations greater than 15,000, to which over 60% responded. The survey's overall objective was to obtain information on the challenges these municipalities face

in managing residential waste generated in their respective jurisdictions. We met with representatives from eight large municipalities to further discuss their survey responses, and also met with representatives from the Association of Municipalities of Ontario, the Ontario Municipal Waste Association, and the Ontario Waste Management Association. We also visited a municipal landfill, a composting facility, and a facility for recovering recyclable materials.

We researched non-hazardous waste management practices in other Canadian provinces and in European Union jurisdictions. Two Canadian provinces, British Columbia and Nova Scotia, have a much higher overall non-hazardous waste diversion rate than Ontario, and therefore we visited these two provinces and met with representatives from their respective environment ministries to better understand non-hazardous waste management practices in these two provinces.

The Ministry's Internal Audit Services had recently issued one report on the Ministry's environmental assessment process, which we reviewed. As well, we reviewed recent reports issued by the Environmental Commissioner of Ontario. We considered the relevant issues noted in these reports in determining the scope and extent of our audit.

Summary

In 2004, the government set a goal of diverting 60% of Ontario's waste from being disposed in landfills by the end of 2008. Based on the latest information available at the time of our audit, the combined diversion rate of waste generated by the residential and industrial, commercial, and institutional (IC&I) sectors was about 24%. In this regard, Ontario ranks sixth among the provinces and is well behind most European jurisdictions, considered leaders in waste diversion. Many of the issues that the government identified in 2004 as keys to achieving 60% waste diversion by the end of 2008 have yet to be successfully addressed. Waste diversion in the residential sector, at about 40%, has increased fairly substantially since 2002, but this increase has been offset by a drop in the IC&I sector's diversion rate. Our specific observations are as follows:

- Municipalities, generally responsible for managing residential waste, and households are making progress in diverting waste away from landfills. However, although their overall diversion rate for residential waste is about 40%, we found that individual municipalities' diversion rates reported to us varied significantly, from about 20% to more than 60%. This is mainly due to differences in the frequency and quantity of disposable waste collection and differences in blue box recyclable materials that are collected. In addition, only about 15% of Ontario's municipalities have instituted an organic waste-composting program, which, in total, collect from about 40% of the province's households. The differences in municipalities' waste management practices are predominantly driven by the following key factors:
  - *Whether a municipality can market its blue box and organic recyclable waste.* Municipalities compete with each other and with the private sector for markets for recyclable waste. The larger municipalities, which can generate significant volumes, are more successful at securing markets than the smaller municipalities and therefore can encourage greater recycling.
  - *Cost.* On average, municipalities reported that the cost of diverting a tonne of blue box recyclable materials was about 40% higher than the cost of disposing a tonne of waste in a landfill. Over half of the municipalities that responded to our survey indicated that the funding they received under the current cost-sharing formula with industry "stewards" to offset some of

the costs they incur for running the blue box program was not sufficient.

- *Landfill capacity that is available to a municipality.* In theory, when waste is collected less often and when bag limits are imposed, residents typically divert more waste. For example, one municipality indicated that by collecting recyclable materials weekly and disposable waste every two weeks while imposing a bag limit, it was able to increase its diversion rate by about 20%. But the responses to our survey indicated that the municipalities that have sufficient landfill capacity are less likely to limit the frequency of waste collection and impose a bag limit on residents.
- *Residents' preferences.* Municipal councils are well aware that their constituents want a higher level of waste pickup service and no bag limits regardless of the impact on waste diversion.

- The IC&I sector generates approximately 60% of the waste in Ontario, but only manages to divert about 12% of its waste. Regulations under the *Environmental Protection Act* (EPA) require large generators to conduct a Waste Audit, prepare a Waste Reduction Work Plan, and implement programs to source-separate waste for reuse or recycling. However, the Ministry has little assurance that the regulations are being complied with for the following reasons:
  - The Ministry of the Environment (Ministry) does not have adequate information on the number of businesses or organizations to which the regulation applies nor which segments of the IC&I sector generate the largest amount of waste so that it may target them for inspection.
  - In half of the inspection files we reviewed, there was no evidence that the ministry inspector had reviewed either the Waste Audit or the Waste Reduction Work Plan.
  - The inspections do not assess the extent to which IC&I-sector businesses and organizations have actually acted on their plans or whether the plans have resulted in an increase in the amount of waste diverted.
  - The inspections do not assess the effectiveness of a facility's source-separation program in increasing waste diversion and whether the waste that has been source-separated is actually being processed for recycling.

    By comparison, British Columbia and Nova Scotia, two provinces with much higher diversion rates in the IC&I sector, have taken a somewhat different approach and have, to varying degrees, implemented a ban on landfilling recyclable materials. Such bans largely restrict IC&I-sector waste generators from mixing recyclable materials with waste, because landfills can no longer legally accept recyclable materials.
- Organic waste generated by both the residential and IC&I sectors represents almost one-third of the total waste generated in Ontario, but there is no province-wide organic waste diversion program or target, despite the Ministry's having considered establishing a program as early as 2002.
- Manufacturers and importers of tires along with those whose products generate electronic and household hazardous waste pay a fee to cover the cost of either diverting these products from landfills or safely disposing of them at the end of their lifecycle. These manufacturers and importers may pass on this cost to retailers, who in turn may pass the cost on to consumers. The underlying legislation does not require that, if retailers choose to include this cost in the product selling price, it be shown separately as such on the customer receipt.
- One in five municipalities that responded to our survey felt that they had insufficient landfill disposal capacity for their residential

waste. As well, the existing capacity will be filled more quickly once export of residential waste to Michigan largely ends after 2010 and an additional 1 million tonnes of this waste previously shipped to that state is deposited in Ontario landfills annually. Opening new landfills within municipalities is not always a viable option, both because they are costly and because residents do not support new landfills.

- The Ministry inspects landfills and non-hazardous waste management sites, facilities, and systems against the conditions of their certificate of approval. But we noted that many of these certificates do not reflect changes in standards. Also, in our review of inspection files, we found numerous examples of non-compliance with the certificates' conditions had been noted, but that many of these were not being followed up on a timely basis to ensure that the required changes were made.

OVERALL MINISTRY RESPONSE

Ensuring that Ontario's waste is managed in a way that is protective of human health and the environment is a key priority for the Ministry. We are committed to ensuring that our non-hazardous waste program encourages diversion, promotes reduction, and ensures that opportunities for increased reuse and recycling are available.

The Ministry has been implementing a framework that focuses on reducing the production of waste and promoting the reuse, recycling, and proper management of waste. Our comprehensive regulatory regime consists of stringent rules and conditions for the development and operation of landfill sites, as well as conditions of approval for all waste disposal sites and haulers of waste.

In addition to this regulatory approach, the Ministry has developed successful waste diversion programs that focus on the core principles of reducing, reusing, and recycling. Recycling programs like the blue box program have been increasingly successful in diverting materials from landfill.

The Ministry is also looking ahead and exploring opportunities for alternative waste management solutions, including recently introduced programs focused on diverting electronics and used tires. The Ministry is committed to improving its non-hazardous waste program and appreciates the recommendations of the Auditor General to assist in continuous improvement.

Detailed Audit Observations

WASTE DIVERSION

Ontario's Waste Diversion Goal

Recognizing that an expanding economy and a growing population are placing additional demands on Ontario's natural resources, in 2004, the provincial government proposed to take a more comprehensive approach to waste diversion—an approach that would reduce the amount of waste generated, as well as increase the rates of reuse and recycling, thereby reducing the amount of waste being disposed of in landfills. It issued a document titled "Ontario's 60% Waste Diversion Goal: A Discussion Paper" which stated that "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."

The paper, which at the time of our audit was still on the Ministry's website, identified a number of issues that needed to be addressed if the province was to be successful in reaching its goal:

- creating "a sense of public ownership of the need to manage our wastes differently than we do now";

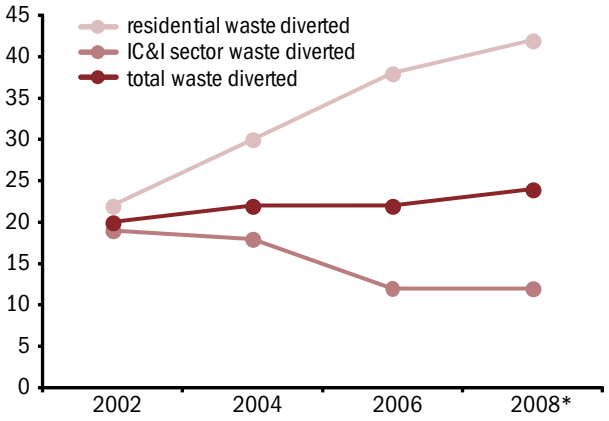
- addressing some of the obstacles to waste diversion, including recognizing that disposing waste in a landfill is currently cheaper than recycling the waste;
- building sustainable markets for recyclable materials, especially in the case of organic waste (which requires not only a sustainable market for the compost generated but also better collection and processing technologies);
- more effective enforcement of regulations under the various acts that govern the management of non-hazardous waste, as well as greater certainty and timeliness of environmental approvals, to help IC&I enterprises in meeting new waste disposal and diversion objectives; and
- the need for a province-wide waste diversion strategy, without which Ontario will fall far short of the diversion goal.

The province recognized at the time that waste diversion has many economic benefits. Specifically, by reducing the need for landfills, waste diversion avoids the costs of siting and constructing landfills, as well as the long-term operating and maintenance costs associated with landfills. Also, waste diversion contributes to economic development and job creation by creating or expanding businesses that collect, process, and broker recyclable materials, as well as companies that manufacture and distribute products made with recyclable materials.

As seen in Figure 1, which is based on the most recent data available at the time of our audit from Statistics Canada and the Ministry of the Environment, Ontario's overall waste diversion rate was only about 24%, far below the target of 60% diversion by the end of 2008. The residential sector's diversion rate was about 40%, while the IC&I sector's diversion rate, as reported to Statistics Canada by waste management companies, was only 12% . (This percentage is for 2006. The diversion rate in the IC&I sector for 2008 was originally scheduled to be released by Statistics Canada before our report was to be finalized. However, as of the date that our report went for publication, Statistics Canada had not yet released the 2008 data.) Waste diversion in the residential sector has significantly increased since 2002, but this increase has been offset by a drop in the IC&I sector's diversion rate, resulting in only a slight increase since 2002 in Ontario's overall waste diversion rate.

Figure 1: Ontario Waste Diversion Rate, 2002–2008 (%)

Source of data: Statistics Canada and the Ministry of the Environment



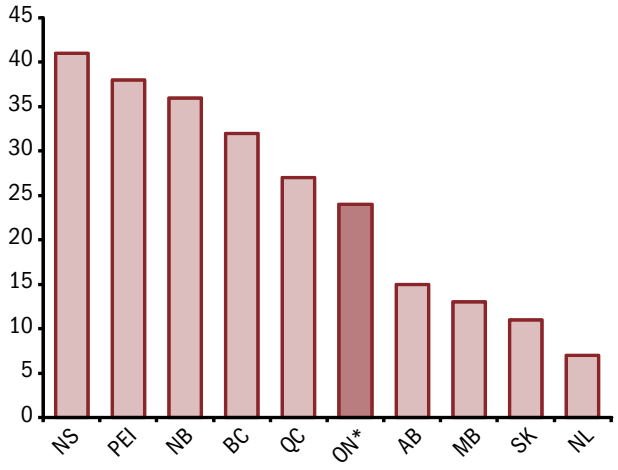
* Through WDO, the Ministry collects waste diversion data from municipalities annually; based on the information collected, the Ministry has determined the 2006 and 2008 residential-sector diversion rates to be 38% and 42%, respectively. The latest waste diversion data available from Statistics Canada for the IC&I sector is from 2006. The 2008 diversion rate was originally scheduled to be released by Statistics Canada before our report was to be finalized; however, as of the date that our report went for publication, Statistics Canada had not yet released this information. The total waste diversion rate for 2006 and 2008 was derived using the WDO residential waste diversion rate for those years and the 2006 Statistics Canada IC&I-sector diversion rate.

As seen in Figure 2, which is based on the latest available data, Ontario's overall waste diversion rate is below that of five other provinces: Nova Scotia, Prince Edward Island, New Brunswick, British Columbia, and Quebec. As well, many countries in the European Union perform better than Ontario in waste diversion. Figure 3 shows that for 2008, Austria, Germany, Belgium, the Netherlands, and Sweden—considered leaders in waste diversion—diverted a significantly higher percentage of their waste than Ontario did.

Many of the issues that the Ministry had previously identified as key to achieving 60% waste diversion by the end of 2008 had yet to be successfully addressed at the time of our audit. The following sections of our report discuss these in more detail.

Figure 2: Amount of Residential and IC&I Waste Diverted in 2006, by Province (%)

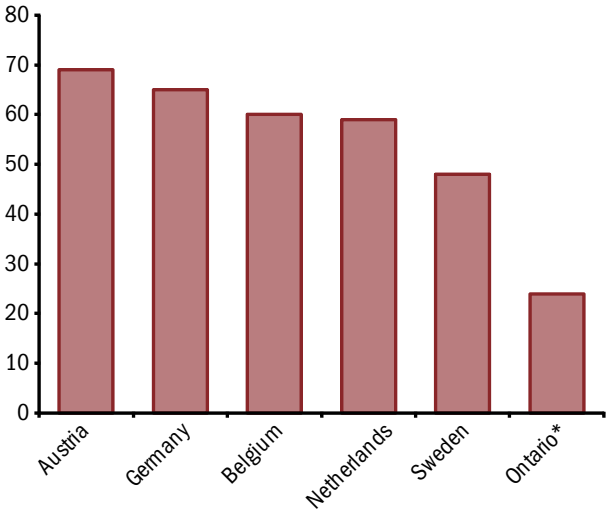
Source of data: Statistics Canada and Ministry of the Environment



* Through WDO, the Ministry collects waste diversion data from municipalities annually; based on the information collected, the Ministry has determined the 2008 residential-sector diversion rate to be 42%. The latest waste diversion data available from Statistics Canada for the other provinces is from 2006. Ontario's total waste diversion rate was derived using the 2008 WDO residential waste diversion rates and the 2006 Statistics Canada IC&I-sector diversion rate, which are the latest data available. The 2008 waste diversion rates for Ontario and the other provinces were originally scheduled to be released by Statistics Canada before our report was to be finalized; however, as of the date that our report went for publication, Statistics Canada had not yet released the 2008 data.

Figure 3: Amount of Waste Diverted in Ontario and Selected European Countries in 2008 (%)

Source of data: Statistics Canada, Ministry of the Environment, and Eurostat



* Through WDO, the Ministry collects waste diversion data from municipalities annually; based on the information collected, the Ministry has determined the 2008 residential-sector diversion rate to be 42%. Ontario's total waste diversion rate was derived using the 2008 WDO residential waste diversion rate and the 2006 Statistics Canada IC&I-sector diversion rates. The latest waste diversion data available from Statistics Canada for the IC&I sector is from 2006. The 2008 waste diversion rate was originally scheduled to be released by Statistics Canada before our report was to be finalized; however, as of the date that our report went for publication, Statistics Canada had not yet released this information.

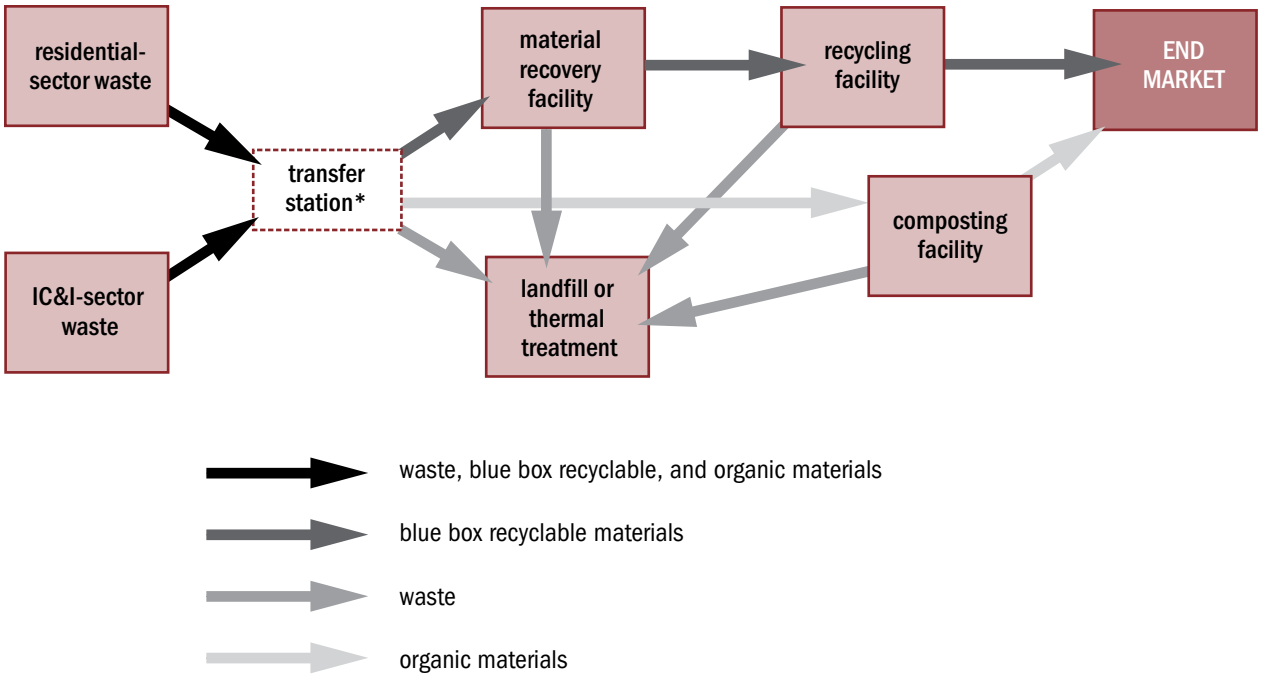
Residential-sector Waste

As indicated earlier, municipalities are generally responsible for managing waste generated by households (except in most multi-unit residential buildings) in their respective jurisdictions. A regulation under the *Environmental Protection Act* (EPA) requires municipalities with populations greater than 5,000 to set up diversion programs for the following specific residential wastes: glass bottles and jars, steel and aluminum cans, newsprint, and plastic bottles, plus two additional items to be chosen from a supplementary list of residential wastes.

Waste and recyclable materials (blue box waste and organic waste) are collected in most cases at the curb by the municipalities themselves or by private-sector waste management companies contracted by the municipalities. Residents can also take their waste and recyclable materials to drop-off depots or collection sites. In smaller and rural municipalities, where significant distances between residences can make curbside collection impractical, drop-off depots and collection sites are the only avenue that these municipalities can realistically use to collect waste and recyclable materials. Figure 4 illustrates the flow of waste and recyclable materials from collection to their end destination. In large urban centres, waste and recyclable materials collected curbside or at drop-off depots and collection sites are sometimes transported to a temporary storage site called a transfer station. From the transfer station, non-recyclable waste is taken away for disposal either in a landfill or, in limited cases, to a thermal treatment facility. The recyclable materials are taken to either a material recovery facility (MRF) for sorting or a composting facility. Residual non-recyclable waste from an MRF or composting facility is taken to a landfill. In smaller municipalities, waste and recyclable materials collected curbside or at drop-off depots and collection

Figure 4: Flow of Waste and Recyclable Materials

Prepared by the Office of the Auditor General of Ontario



* In smaller municipalities, waste, blue box recyclables, and organic materials are often taken directly to a landfill, a material recovery facility, or a composting facility, respectively.

sites are usually taken directly to a landfill, MRF, or composting facility. From an MRF, municipalities market their recyclable materials either directly to local private-sector recycling companies or to a broker, which may market the recyclable materials overseas. Most municipalities both own and operate transfer stations, MRFs, composting facilities, and landfills or own these waste management facilities but contract with private-sector companies to operate them.

Annually, about 65% (approximately 2.3 million tonnes) of residential waste that is to be deposited in landfills is deposited in landfills that are predominantly owned by municipalities within the province. The remaining 35% (about 1 million tonnes annually) is shipped to the United States, mainly to landfills in Michigan and some to landfills in the state of New York. The province has secured the commitment of some of the larger municipalities to not ship any more residential waste to Michigan after 2010.

Variation in Municipalities' Waste Diversion Rates

Based on the results of our survey, we note that Ontario municipalities and households are making reasonable efforts to divert waste away from landfills. However, although the average municipal diversion rate for residential waste is about 40%, individual municipalities' diversion rates vary widely. Of the municipalities that responded to our survey, approximately one-quarter reported a waste diversion rate of between 20% and 40%, about half reported a diversion rate of between 40% and 60%, and the remaining quarter reported a diversion rate of over 60%. Survey responses and our discussions with municipalities indicated that the following factors influence these variations in diversion rates between municipalities.

Frequency and Quantity of Waste Collection in Municipalities

One factor that has a direct impact on waste diversion is the frequency and quantity of waste

collection (that is, how often waste is collected and the number of bags allowed). In theory, when waste is collected less often and when bag limits are imposed, residents typically divert more waste. In our discussions, one municipality indicated that it had found that collecting waste every two weeks instead of weekly and imposing a bag limit provided a high incentive for its residents to divert waste and therefore optimized waste diversion. By moving to a biweekly collection of waste and a weekly collection of recyclable materials, the municipality was able to increase its diversion rate by about 20%. Of the municipalities that responded to our survey, 70% had weekly curbside waste collection, whereas only 30% collected waste biweekly. In addition, a third of the municipalities had instituted a one- or two-bag limit; another third had a three- or four-bag limit; and the remaining third had no limit.

Over half the municipalities reported that the frequency and quantity of waste collection in their jurisdiction was dictated by municipal councils, which tend to want to provide the levels of waste pickup service desired by their residents rather than what would optimize waste diversion. Landfill capacity available to a municipality also played a role in determining the frequency and quantity of waste collection in a municipality. In the responses to our survey, nearly 90% of the municipalities that indicated they had no or insufficient landfill capacity had imposed a bag or container limit on the waste they collected from their residents.

Variation in Recyclable Materials Collected by Municipalities

Our survey also revealed that municipalities vary widely in the types of recyclable materials their blue box programs collect. Among the municipalities that responded to our survey, the number of recyclable materials collected ranged from the minimum seven required by the EPA up to 20 different types of materials. In addition, although organic waste represents almost a third of the total waste generated, only 15% of the municipalities collect organic waste from approximately 40% of Ontario households. Nearly half the municipalities that responded to our survey indicated that the availability of reliable and sustainable local markets for recyclable and organic waste and/or the availability of infrastructure (that is, an MRF or a composting facility) to process this material determined the recyclable materials the municipality could collect and whether the municipality could collect organic waste.

With respect to the availability of sustainable markets, we learned from our discussions with municipalities that they compete with one another and with the private sector for markets for recyclable materials. The larger municipalities, which generate significant volumes of recyclable materials and organic waste, are more successful at securing markets than the smaller municipalities.

Funding of Diversion Activities

Even though municipalities are responsible for managing the blue box recyclable materials generated in their respective jurisdictions, the total net cost of the blue box program is to be equally shared between municipalities and the industry "stewards" whose products generate the waste. Over a third of the municipalities that responded to our survey indicated that cost was a major challenge in effectively managing non-hazardous waste. On average, municipalities reported that the cost of diverting a tonne of blue box recyclable materials was about 40% higher than the cost of disposing a tonne of waste in a landfill.

Fees are collected from each "steward" based on the market share of its products. The fees collected are supposed to fund half of the total net costs incurred by municipalities in operating their blue box programs. This cost-sharing is designed to ensure that the municipalities are not overburdened by the cost of managing a blue box program, thereby encouraging the program's sustainability. But at the time of our audit, our analysis indicated that about 80% of the municipalities that ran a blue box program received less than 50% of their program's net costs. Some municipalities received only 25% of their program's net costs. This variation may occur

because approximately half the funds collected from "stewards" are set aside and provided only to those municipalities that are able to demonstrate efficiencies in the operation of their blue box program from the use of best practices, innovation, and new and emerging technologies. In addition, "stewards" in the newspaper industry don't pay a fee: instead, they provide municipalities with free advertising in local community papers.

Over half of the municipalities that responded to our survey indicated that the funding they received under the current formula to offset some of the costs they incur for running the blue box program was not sufficient. Also, according to Waste Diversion Ontario, one in four municipalities did not choose to use the advertising space provided by "stewards" in the newspaper industry and, in their response to our survey, a number of municipalities indicated that they would rather that these "stewards" paid a fee.

Review of the *Waste Diversion Act*

In October 2008, the Ministry began a review of Ontario's *Waste Diversion Act, 2002* (WDA). As part of that review, the Ministry launched a public dialogue with numerous stakeholders, including industry "stewards," retailers, municipalities, environmental organizations, waste management companies, and concerned members of the public. At the time of our audit, the Ministry had prepared a report on its WDA review that proposed significant changes to Ontario's waste diversion framework. To address some of the issues noted above, one of the key changes proposed is extended producer responsibility (EPR)—that is, making "stewards" fully responsible for waste diversion in both the residential sector and the IC&I sector. The rationale is that if "stewards" were fully responsible for waste management, they would have an incentive to redesign their products and packaging in order to reduce overall collection and recycling costs. In our discussions, municipalities were generally supportive of EPR but indicated that certain key issues had to be resolved before EPR could be fully implemented in the province. Specifically, municipalities were concerned about the level of waste collection service that might be provided to their residents under EPR and about the possibility that EPR would strand waste management infrastructure that some municipalities have made significant investments in acquiring. At the time of our audit, the Ministry was seeking further consultation with respect to the proposed framework before amending legislation.

RECOMMENDATION 1

To further increase diversion of waste in the residential sector, and as part of its current review of the *Waste Diversion Act*, the Ministry of the Environment should work with municipalities, industry "stewards," and other stakeholders to:

- increase the availability of reliable and sustainable markets for recyclable and organic waste;
- increase capacity within the province to process recyclable materials and organic waste; and
- review the current funding formula for the blue box program to ensure that it achieves its objective of municipalities and "stewards" equally sharing costs.

MINISTRY RESPONSE

The Ministry agrees that a healthy and robust recycling sector is important. Although all partners in waste management have demonstrated progress, the Ministry recognizes the value of continuous improvement and is committed to working with municipalities, industry stewards, and other stakeholders. The Ministry will take each aspect of this recommendation into consideration as it reviews the current waste diversion framework.

Over the past few years, the province has taken a leadership role in the introduction of

a number of industry-funded waste diversion programs. Along with the municipal blue box program (which is jointly funded by municipalities and industry), Ontario now has programs for used tires, waste electronics, and household hazardous waste. Because market opportunities and processing capacity are critical factors in sustaining a healthy recycling program, these programs all have a dedicated budget for improving and supporting processing capacity and for market development activities. As each of the waste diversion programs mature, the Ministry will identify areas for continued improvement.

The Ministry recognizes the challenges related to the diversion of organic waste. The Ministry has been consulting with municipalities and other stakeholders to explore ways to expand processing capacity for organic waste.

Industrial, Commercial, and Institutional (IC&I) Sector Waste

Regulations under the *Environmental Protection Act* (EPA) require large generators of waste in the IC&I sector to prepare a report (Waste Audit) on:

- the amount, nature, and composition of waste that they generate;
- the manner by which the waste gets produced, including management policies that relate to the production of waste; and
- the way in which the waste is managed.

The regulations also require that these generators prepare a plan (Waste Reduction Work Plan) for reducing, reusing, and recycling the waste that they produce, including how the plan will be implemented, time frames for implementation, and expected results. These generators must also have source-separation programs for specified types of waste (for example, aluminum, cardboard, paper, plastic, glass, and steel, but not organics) and must make reasonable efforts to ensure that waste is recycled. The Ministry is responsible for enforcing the regulations under the EPA.

Unlike residences, which rely on municipalities to manage their waste, businesses and organizations in the IC&I sector predominantly rely on private-sector waste management companies to dispose and divert their waste. The waste management companies collect and transport their waste to either landfills or recycling facilities, which may be operated by a municipality or by the waste management companies themselves. Some waste management companies have also entered into agreements with landfills in Michigan and in New York State for the depositing of waste destined for disposal; annually, approximately 30% (2.4 million tonnes) of total IC&I waste generated is shipped to the United States.

The Ministry does not have information on the amount of waste disposed and diverted in the IC&I sector. As mentioned earlier, based on the latest Statistics Canada information available at the time of our audit, the IC&I sector's waste diversion rate was only 12%. In fact, the sector's diversion rate has been steadily declining, from 19% in 2002 to 12% in 2006.

According to the Ontario Waste Management Association (the association that represents private-sector waste management companies), some of the main barriers that contribute to lower rates of recycling in the IC&I sector are as follows:

- The cost of disposing waste in a landfill is about 40% lower than the cost of recycling. This creates a big incentive for private-sector organizations to choose the cheaper option.
- The regulations under the EPA apply only to large generators (primarily based on facility size or economic activity), and enforcing the regulations is difficult. Small and medium-sized businesses, which generate approximately 60% of the IC&I waste in Ontario, are not covered by the current regulations.
- Many IC&I waste generators lack the necessary knowledge, time, and financial resources

to establish an effective waste reduction and recycling program in their business.

- Currently in Ontario, there is insufficient capacity to recycle IC&I waste, due mainly to a lack of any certainty of supply in IC&I material to be recycled.

For the IC&I sector to achieve the province's 60% diversion goal, the government's 2004 discussion paper identified many of the issues noted above. Some of the action items that the government considered as possible ways to address these issues back then were:

- reviewing the waste diversion regulations under the EPA, because only a limited number of IC&I waste generators fall under the regulations;
- requiring the largest waste generators to publicly report their waste diversion rates, and phasing in public reporting of waste diversion rates by other waste generators on a sector-by-sector basis; and
- providing training to small businesses to help them increase their waste diversion rates.

The government also considered imposing a surcharge on waste sent for disposal, which could function as a funding mechanism to finance waste diversion programs and as an incentive to waste generators to reduce the amount of waste sent for disposal.

As yet, the Ministry has not acted on any of these possible initiatives. However, in 2004 the Ministry also recognized that in order to encourage the private sector to come forward with innovative technologies and investment, it needed "the right approvals process" that protected the environment but also encouraged investment and innovation. We noted that to this end, the Ministry has made several changes to its environmental assessment process for waste management projects in recent years. In 2007, it introduced a regulation aimed at streamlining the environmental assessment process for certain waste management projects that have minimal or predictable environmental effects, such as transfer stations, processing sites, and small and medium-sized landfills. Also in 2007, the Ministry released several guidance documents aimed at better communicating to the proponents and the public the requirements at various stages of an environmental assessment process.

RECOMMENDATION 2

In order to increase waste diversion in the IC&I sector, the Ministry of the Environment should:

- gather information on the amount and type of waste generated by small and medium-sized businesses and organizations that are not regulated under the *Environmental Protection Act* (EPA) and consider what actions could be taken to reduce the amount of waste that is currently going to landfills;
- require those large entities that are regulated under the EPA to publicly report their waste diversion rates. The Ministry should then, as part of its inspection work, assess the accuracy of the rates reported; and
- conduct research into successful practices used in other provinces and European countries to divert IC&I-sector waste from landfills. In assessing which practices might be transferable to Ontario, the Ministry will need to balance the environmental benefits with the economic challenges currently being faced by the business community.

MINISTRY RESPONSE

Since 2008, the Ministry has consulted extensively on revisions to Ontario's waste diversion framework. We acknowledge that good information forms the basis of policy and program design, and recognize that there are gaps in the information available to the Ministry to maximize waste diversion in the IC&I sector. The Ministry's ongoing review of the waste diversion framework will include consideration of how to obtain the information necessary to support diversion policies and programs.

The Ministry will also continue to conduct research into best practices in other jurisdictions, including reviewing what they are doing to divert waste in the IC&I sector, how they gather information on the amount and type of waste generated by small and medium-sized businesses, how they report on diversion rates by regulated companies, and how they audit those reports. We will also review associated costs and environmental benefits, and assess whether these best practices would be appropriate in Ontario.

Compliance in the IC&I Sector

Ministry inspectors conduct province-wide site inspections of IC&I-sector businesses and organizations that are regulated under the EPA to ensure compliance with the regulations. In the 2008/09 fiscal year, the Ministry also started to provide outreach programs to educate these businesses and organizations at the corporate or association level on the requirements of the regulations under the EPA. Figure 5 shows the number of inspections carried out by the Ministry in each segment of the IC&I sector in 2009/10.

Despite these recent efforts at ensuring compliance, we noted that the Ministry does not have information on the actual number of companies or organizations in most of the IC&I segments covered by the EPA regulations, nor does it track which segments generate the largest amounts of waste in order that these may be prioritized for inspection. The Ministry advised us that it selects entities for inspection at random through various means, such as searches on the Internet, in the Yellow Pages, and in industry directories. A 2008 study commissioned by one Ontario municipality found that the top five IC&I waste generators in the city were Retail (29%), Accommodation and Food Services (19%), Manufacturing (11%), Health Care and Social Assistance (10%), and Arts, Entertainment, and Recreation (7%). As Figure 5 shows, in 2009/10 among the lowest numbers of inspections were carried out in the retail and restaurant segments. Although we acknowledge that this one municipality's results may not be indicative of the entire province, the Ministry should be gathering such data on Ontario's largest IC&I waste generators in order to target these establishments for inspection. In addition, such information would be useful from a policy perspective when evaluating possible approaches to reduce the amount of waste going to landfills.

We also noted that the Ministry does not gather any data on IC&I waste disposal and diversion: instead, it relies on Statistics Canada for this information. Statistics Canada only publishes information on IC&I waste disposal and diversion every two years; therefore, IC&I disposal and diversion statistics for 2008 would ordinarily not be available until mid-to-late 2010. Although placing some reliance on the data gathered by Statistics Canada is practical, obtaining some information from the large IC&I waste generators covered by the EPA would enable the Ministry to better assess how effective its inspection efforts have been and make the necessary changes to its inspection strategy on a more timely basis.

Figure 5: Number of Ministry Inspections in the IC&I Sector, 2009/10, by Segment

Source of data: Ministry of the Environment

Segment	Businesses in Segment	Inspections in 2009/10
multi-unit residential	unknown	90
hotels and motels	430	73
educational institutions	2,414	72
construction and demolition	variable	63
office buildings	unknown	37
manufacturing	unknown	27
retail shopping establishments	unknown	27
retail shopping complexes	unknown	13
restaurants	unknown	9
hospitals	121	0
Total		**411**

The results of the inspections conducted in 2009/10 revealed significant cases of non-compliance with the EPA regulations in many IC&I segments. An Ontario Chamber of Commerce survey, conducted in May 2010, of a sample of larger IC&I entities revealed that 45% of the respondents were not even aware of the regulations under the EPA that related to waste diversion.

By comparison, British Columbia and Nova Scotia, two provinces with higher IC&I waste diversion rates than Ontario, have to varying degrees implemented a ban on landfilling recyclable materials. Nova Scotia's ban has been in place since the mid-1990s. The legislation to some extent forces IC&I waste generators to separate recyclable materials from all other waste, because landfills cannot legally accept recyclable materials. In 2004, Ontario also considered the feasibility of phasing in a ban on disposal of organic waste and recyclable materials as a way to help achieve the 60% diversion goal, but no action in this regard has been taken.

Scope of Inspections in the IC&I Sector

The inspections that the Ministry conducts of IC&I businesses and organizations have not been particularly effective in increasing the sector's waste diversion rate, largely because their scope consists only of ensuring that the business or organization has prepared the required Waste Audit and Waste Reduction Work Plan and that these reports are complete. Ministry inspectors do not check that the information reported on the Waste Audits and Waste Reduction Work Plans reflects the organization's actual processes. Inspections also do not assess the extent to which businesses and organizations have actually acted on the plans or whether the plans have resulted in an increase in the amount of waste diverted. This assessment is especially important with respect to the Waste Reduction Work Plan, which, as indicated earlier, is designed to be the business's or organization's overall plan for reducing, reusing, and recycling the waste that it produces and which includes details on implementation, time frames for implementation, and expected results. We found that in half of the inspection files we reviewed, there was no documentation to indicate that the ministry inspector had reviewed either the Waste Audit or the Waste Reduction Work Plan.

Inspections aimed at ensuring that IC&I businesses and organizations have implemented a program to source-separate waste for reuse or recycling are only to assess whether the business or organization has the necessary bins to source-separate specified waste and whether reasonable efforts have been made to educate customers, workers, or tenants on the use of the bins. The inspections do not generally address how effective a facility's source-separation program is and whether the waste that has been source-separated is actually being sent to recycling facilities. Ministry inspectors informed us that even those IC&I businesses and organizations that are making reasonable efforts to source-separate their waste generally do not know what happens to the waste after the waste management company picks up the source-separated waste. They can do little to ensure that the source-separated waste is actually being recycled and not simply disposed in a landfill. The Ministry informed us that, through inspections, it ensures that the waste management companies operate under a valid certificate of approval. But we noted that the certificates under which these companies operate do not generally require that they process the collected IC&I source-separated waste for recycling. In any case, a number of inspection files that we reviewed did not contain evidence that the inspector had checked that the waste management company was operating under a valid Ministry-issued certificate of approval.

Enforcement of Other EPA Regulations

A regulation under the EPA requires that large manufacturers, packagers, and importers of packaged food, beverage, paper, or chemical products undertake a packaging audit and implement a packaging reduction work plan. The packaging

audit and the packaging reduction work plan, among other things, are intended to provide information on the type and amount of packaging these companies use, the amount of reused or recycled materials being used in the packaging, and plans to reduce the amount of packaging. We noted that the Ministry has never enforced this regulation since its implementation in 1994, except for having performed one inspection in May 2007.

Similarly, another regulation under the EPA requires that all carbonated soft drinks be sold in refillable containers. Yet another regulation under the EPA provides an exemption if brand owners for carbonated soft drinks show that a minimum 30% of sales volume is in refillable containers and that the non-refillable containers used for the remainder of the sales are recycled. We noted in our *1997 Annual Report* that these regulations were not being enforced at that time, and more than a decade later, they remain unenforced. Carbonated soft drinks are predominantly being sold in non-refillable containers throughout the province. The Environmental Commissioner of Ontario made this same observation in his 2003/04 annual report and noted that "the fact that for more than 13 years [the Ministry of the Environment] has refused to prosecute companies that contravene the regulations and simultaneously has failed to amend the regulations creates a strange situation for all stakeholders and undermines the concept of the rule of law." In 2003, the Ministry reviewed these regulations on the basis that they were outdated and unworkable and that there was clear consumer preference for recyclable over refillable containers for carbonated soft drinks, but the review did not result in any changes to the legislation.

RECOMMENDATION 3

To improve waste diversion in the IC&I sector, the Ministry of the Environment should:

- gather data on the number of businesses to which the waste diversion regulations apply and on which of these are the largest waste generators to assist both its inspection activities and policy decisions, and ensure that businesses are aware of the requirements of the regulations;
- increase the scope of its inspections to include an assessment of the extent to which businesses have implemented their Waste Audits and Waste Reduction Work Plans and whether there has been any increase in the amount of waste diverted; and
- verify during inspections and document whether waste management companies are operating under a valid certificate of approval.

If the Ministry plans to continue not to enforce its regulation that requires large manufacturers, packagers, and importers to implement a packaging reduction plan and its regulation that requires all carbonated soft drinks to be sold in refillable containers, it should consider revoking these regulations.

MINISTRY RESPONSE

To assess the effectiveness of the recycling regulations and improve compliance, in 2007 the Ministry established a dedicated team of inspectors to implement comprehensive compliance activities. The Ministry uses the best available information from a variety of sources to identify facilities to which the regulations apply and to assess which sectors generate the largest amounts of waste. It then focuses its compliance efforts on these sectors. For example, the Ministry is negotiating with head offices of companies to implement corporate-wide recycling programs, thereby reaching a large number of facilities. Over the past two years, the Ministry has completed eight such corporate-wide initiatives, thereby nearly doubling the number of facilities brought into compliance. The Ministry is also working with school boards and the

Ontario Hospital Association to reach multiple facilities in these sectors.

The Ministry has also significantly increased its outreach and education efforts in the IC&I sector by making presentations to industry associations and creating guidance kits and web-based resources. Recent examples include working with the construction and demolition sector, which generates high volumes of waste. The Ministry follows up on this education and outreach with regular inspections and abatement activity, if necessary. Through these efforts, the Ministry promotes improved diversion practices for this sector. The Ministry will also assess whether additional data on facilities to which the waste diversion regulations apply is required to assist both its inspection activities and policy decisions.

Current regulations require companies to complete waste audits and waste reduction work plans; source-separate specified wastes; and ensure that collected wastes are removed from their premises. During inspections, environmental officers ensure that companies are fully complying with these regulations. Officers do not have the authority to enforce an increase in waste diversion or the extent to which companies are implementing audits and work plans. Instead, they assess and enforce that businesses have made "reasonable efforts" to divert waste.

The Ministry is committed to documenting during inspections that waste management companies are operating under a valid certificate of approval. In September 2010, we will implement changes to our inspection tracking and reporting system to ensure that this is documented consistently.

The container regulations pre-date the blue box program. As part of the government initiative to reduce regulatory burden, the Ministry is reviewing all regulations.

Organic Waste

Organic waste includes such items as leaf and yard waste, food waste from households, and food waste generated by the IC&I sector (such as waste from restaurants, hotels, hospitals, food-processing facilities, and grocery stores). Organic waste generated by both the residential and IC&I sectors represents almost a third of the total non-hazardous waste generated in Ontario, but there is no province-wide organic waste diversion program or target, although the Ministry did consider establishing such a program as early as 2002. Although legislation requires municipalities with populations over 50,000 to collect leaf and yard waste for composting, there is no such requirement for the collection of food waste from Ontario's households or businesses. Municipalities with populations over 5,000 are required only to distribute backyard composters.

However, driven by the need to reduce reliance on landfills, some municipalities have chosen to initiate their own organic waste collection programs (commonly referred to as green bin or green cart programs) for their residents. Based on the latest information available at the time of our audit, we note that about 15% of Ontario's municipalities collect household organic waste for diversion from about 40% of the province's households. The regulation that requires source separation of recyclable materials in the IC&I sector does not include organic waste. By comparison, in an effort to force the diversion of organic waste, both British Columbia and Nova Scotia have, to varying degrees, banned the depositing of organic waste in the provinces' landfills. We were informed that in Nova Scotia, over 90% of the municipalities provide residents with curbside collection of household organic waste, and that where curbside pickup is unavailable, businesses and residents have access to centralized composting facilities.

In 2002, the Ministry intended to implement a province-wide organic waste diversion program under the *Waste Diversion Act* (WDA). In its 2004 discussion paper, the Ministry acknowledged

that diverting organic waste from disposal was "a particularly critical component of a province-wide strategy to reach the 60% diversion goal by the end of 2008." But since then, little action has been taken on this initiative. At the time of our audit, the Ministry informed us that difficulties associated with identifying industry "stewards" of organic waste to bear the cost of a province-wide organic waste diversion program have prevented the Ministry from instituting such a program for organic waste. As part of the WDA review, the Ministry is exploring the possibility of a diversion program for "branded organics"—certain organic wastes for which "stewards" can be easily identified. Implementing a province-wide organic waste diversion program will also require sufficient capacity to process the organic waste that is currently generated in Ontario. We estimate that in order for all municipalities and all IC&I businesses and organizations to have an organic waste diversion program, at least three times more processing capacity would need to be available.

RECOMMENDATION 4

To increase overall waste diversion in Ontario, the Ministry of the Environment should work with municipalities, businesses and organizations, and private-sector waste management companies to phase in over time a province-wide organic waste diversion program for both the residential and IC&I sectors. As part of implementing the program, the Ministry, in conjunction with these stakeholders, will need to ensure that there is sufficient capacity to process the additional organic waste and that a sustainable market exists for the processed waste.

MINISTRY RESPONSE

Many municipalities in Ontario have successfully implemented green bin and other diversion programs to divert organic waste. These programs diverted over 800,000 tonnes of organic waste in 2008—an increase of 25% from 2006—and municipalities continue to expand their efforts in this area.

The Ministry wants to increase diversion of organic waste and is consulting with municipalities, businesses, and other stakeholders on ways to do so. As part of these consultations, the Ministry is considering the appropriate standards for compost, environmental protection measures, and other tools to support a sustainable market and processing capacity for organic waste and to further encourage expansion of organic waste diversion in both the municipal and IC&I sectors.

Waste Diversion Ontario

In 2002, the *Waste Diversion Act* established an arm's-length organization called Waste Diversion Ontario (WDO). According to the act, WDO's primary task is to develop, implement, and operate, in conjunction with an Industry Funding Organization (IFO—an organization representing industry "stewards"), waste diversion programs for waste materials designated by the Minister and to monitor the programs' effectiveness and efficiency. Each IFO is responsible for developing and operating a waste diversion program and funding it with fees charged to "stewards" based on the market share of their products. The IFOs also fund almost all of WDO's operations from part of the proceeds collected from "stewards." Such costs amount to about $1.5 million annually.

At the time of our audit, WDO was responsible for four diversion programs: the municipal blue box program and the Municipal Hazardous or Special Waste (MHSW) Program, under the Stewardship Ontario IFO; the Waste Electrical and Electronic Equipment (WEEE) Program, under the Ontario Electronic Stewardship IFO; and the Used Tires Program, under the Ontario Tire Stewardship IFO. Collectively, these designated wastes constitute about 15% of Ontario's total waste stream. Bringing these

diversion programs under WDO has facilitated the establishment of province-wide diversion targets for these waste streams and the shifting of the responsibility for diversion costs to the "stewards" whose products generate the waste.

Program Implementation and Performance Monitoring

The underlying legislation states that, before implementing a diversion program, WDO must submit a program proposal to the Minister for approval. Among other things, the proposal must outline the program's objectives (including diversion targets) and the methods that will be used to measure whether the objectives are being met. Figure 6 highlights the diversion targets established for the four programs under WDO and whether these targets have been achieved based on the latest information available at the time of our audit.

With respect to the implementation of the diversion programs and the Ministry's and WDO's monitoring of the programs' performance in relation to targets, we noted the following:

- In their first year, two of the four programs did not meet their diversion targets. In the operating agreement that governs the relationship between the Minister of the Environment and WDO, we noted that there are no requirements for WDO to advise the Minister why diversion targets have not been met and what action it plans to take toward achieving the targets.
- The operating agreement stipulates that both parties are to conduct a review of the performance and implementation of the agreement every three years. But since WDO's inception in 2003, neither the Ministry nor WDO has conducted a formal review of the agreement.
- Municipalities that have registered with WDO provide annual reporting on, among other things, the amount of blue box recyclable materials diverted in tonnes. WDO uses this information together with an estimate of the total waste generated by these municipalities to calculate the diversion rate for the blue box program (reported in Figure 6 as 66% for 2008). Only 3% of the information submitted by municipalities on blue box materials diverted had been audited to verify its accuracy. Concerns also exist regarding the diversion rates reported for WEEE, MHSW, and used tires. Only registered collectors submit diversion data to the IFOs, so the activity of unregistered collectors is not reflected in the reported diversion rate for these wastes.

Figure 6: Waste Diversion Ontario Programs: Baseline, Targeted, and Actual Diversion Rates, 2008–2010

Source of data: Ministry of the Environment

Program	% of Total Waste Generated	Implementation Date	Baseline Diversion When Implemented	Diversion Target	Actual Diversion Rate
blue box	11.0	Feb. 2004	45%	60% diversion by 2008	66% in 2008
municipal hazardous or special waste	0.7	July 2008	28%	phase 1: 39% by 2009	phase 1: 29% in 2009
used tires	1.8	Sept. 2009	on-road tires: 48%; off-the-road tires: 12%	on-road tires: 91% by 2009/10; off-the-road tires: 14.25% by 2009/10	at the time of our audit, the program had not completed its 12-month cycle
waste electrical and electronic equipment	0.7	Apr. 2009	21%	phase 1: 32% by 2009/10	phase 1: 15% in 2009/10 (based on 12-month projections)
Total	**14.2**				

Further, we noted that the information used to calculate the WEEE, MHSW, and used-tire diversion rates that is submitted by the IFOs responsible for these programs had not been objectively assessed by WDO.

- The Ministry needs to be cognizant of the fact that WDO has been charged with the responsibility of monitoring the performance of programs developed by the same IFOs that fund WDO's operations.
- Waste diversion programs are implemented only after the Ministry is satisfied that the program plans developed by the IFO and WDO reflect ministry requirements. In March 2003, the Ministry asked WDO to develop a waste diversion program plan for used tires. The IFO submitted a program plan to WDO in September 2004. Stakeholder consultation led WDO to reject the program plan and seek further direction from the Ministry in June 2005. Three years later, in August 2008, the Ministry asked WDO to submit a revised program plan. The revised Used Tires Program was ultimately implemented in September 2009. By then, the Ministry had spent more than $1.8 million to clean up what was considered to be the largest stockpile of used tires in Ontario. Had this plan been able to have been implemented sooner, the tire manufacturers would likely have borne much of that cost rather than the taxpayers.
- For the Used Tires Program and for the MHSW and WEEE programs, industry "stewards" pay a fee to their respective IFOs to cover the full cost incurred by registered collectors and processors in recycling or disposing their products at the end of their life cycle. Therefore, registered collectors do not charge an additional fee when these products are dropped off at their locations. "Stewards" usually pass on this cost to retailers, which in turn can include this cost in the price they charge to consumers. Neither the Ministry nor WDO monitors whether the costs passed on to consumers by retailers are the same as the costs that "stewards" are actually charging. The Ministry believes that the monitoring of these costs is outside of its legislative authority. We surveyed a number of retailers across the province to assess whether the "eco fee" charged on products in the WEEE program was in accordance with the fee paid by the program's "stewards." Although we found that most retailers charged the proper published fee, a number of retailers were charging an older fee that had expired as of March 2010. For instance, instead of charging an "eco fee" of $7.80 for a desktop computer, we found that one retailer charged $13.44. As well, we found that one retailer indicated that the "eco-fee" is built into the price of the product and did not show it as a separate charge, as this is not required; therefore, the fee actually being charged was indeterminable. In addition, there is no requirement under the programs for collectors to register themselves. Unregistered collectors usually charge a fee when the WEEE, MHSW, or used tires are dropped off at their locations. A consumer who unknowingly uses an unregistered collector may pay twice for the cost to recycle or dispose the products—initially, when purchasing the product and again at the time of drop-off.

RECOMMENDATION 5

To enhance accountability for the achievement of diversion targets for wastes specifically designated under the *Waste Diversion Act, 2002,* and to ensure that the reporting of the diversion results against the targets to the Minister is complete and reasonably accurate, the Ministry of the Environment should:

- review the operating agreement to ensure that it contains sufficient accountability provisions to require Waste Diversion Ontario to provide an action plan when waste diversion targets are not being met;

- ensure that the waste diversion information submitted by municipalities and the Industry Funding Organizations (IFOs) is objectively assessed, including the impact on this information of unregistered collectors that do not submit waste diversion data; and
- reconsider its policy of allowing collectors of designated wastes the option of whether or not to register with an IFO.

Where retailers are charging a specific "eco fee," the Ministry should also reconsider whether they should be required to disclose the amount of the fee on the customer receipt.

MINISTRY RESPONSE

The Ministry agrees that good reporting is an essential component of monitoring results from Ontario's waste diversion programs. The Ministry has ongoing discussions with Waste Diversion Ontario (WDO) over ways to enhance reporting and accountability across waste diversion programs.

On October 12, 2010, following a review of the Municipal Hazardous or Special Waste program, the government announced oversight and accountability improvements as well as new consumer protection measures.

WDO and the Minister will be revising their operating agreement to change the structure of the WDO Board of Directors to ensure that it reflects the knowledge and expertise needed to oversee waste diversion programs, that it avoids conflicts of interest, and that it includes consumer representation.

To strengthen the accountability of waste diversion programs, the government requested that WDO implement independent third-party verification of environmental performance and standardized reporting for all waste diversion programs (in addition to existing requirements for audited financial statements). WDO has initiated the process for third-party verification, which will include an objective assessment of the data collected and reported by the programs and will be made public.

To ensure that consumers are protected, the government is also investigating incorrect or misleading fees that retailers may charge. In instances where it is believed that consumers have been charged inappropriately, existing tools available under the *Consumer Protection Act, 2002*, will be used.

WASTE DISPOSAL

As shown in Figure 7, for 2006, the most recent data available at the time of our audit, waste generated in Ontario that is not recycled is disposed of mainly by depositing it in one of approximately 1,100 active landfills in the province or in landfills in the states of Michigan and New York. A very small percentage of the waste is disposed by incineration.

The IC&I sector generates approximately 65% (about 6.7 million tonnes) of the waste that is disposed annually. Approximately one-third of this waste is shipped to the United States. The remaining 35% of the waste that is disposed is generated by the residential sector; about a third of that waste is also shipped to the United States. In August 2006, the province secured the commitment of the larger Ontario municipalities to stop cross-border shipments of municipally managed waste to Michigan by the end of 2010. The province's commitment affects only residential waste exported by municipalities; it does not affect waste exported by waste management companies serving the IC&I sector. Seven Ontario municipalities were shipping over 1 million tonnes of waste annually to Michigan. According to this commitment, the municipalities were to implement a 20% reduction in their shipments of waste by the end of 2007 and an additional 20% reduction by the end of 2008, achieving 100% by the end of 2010.

Figure 7: Ontario Waste Disposal, 2006
Source of data: Statistics Canada and Ministry of the Environment

Method of Disposal	Tonnage (million)	Waste Disposed (%)
disposal sites in Ontario	6.6	63
disposal sites in the U.S.	3.7	36
thermal treatment in Ontario	0.1	1
Total	**10.4**	**100**

Since 2006, the Ministry has maintained the Landfill Inventory Management System (LIMO), which tracks information such as total approved capacity, remaining capacity, annual waste received, service area, and waste type on the 32 largest landfills in Ontario. Twenty-three of these landfills belong to the municipal sector, and the remaining nine to the private sector. These 32 landfills receive approximately 85% of total waste disposed in Ontario. The Ministry does not track capacity in the more than one thousand smaller landfills that receive the remaining 15% of total waste disposed in Ontario.

Landfill Capacity in the Province

According to LIMO's estimate, in 2008 the remaining capacity in the 32 largest landfills was expected to last approximately 25 years at the then-current fill rate. Because residential waste from Ontario can largely no longer be shipped to Michigan after 2010, an additional 1 million tonnes of waste will have to be deposited annually in landfills in Ontario, which will exhaust their capacity much sooner.

One in five municipalities that responded to our survey felt that they had insufficient disposal capacity for their residential waste. Overall, to develop additional disposal capacity, municipalities felt that, in addition to finding new landfill sites or expanding existing ones, pursuit of alternative technology and implementation of diversion programs would help them meet their waste disposal needs. Although some recent landfill expansions have taken place, municipalities generally indicated that their residents tend to reject the opening of new landfills as a solution to increasing capacity.

Our research on waste management practices in other jurisdictions revealed that European countries such as Belgium, Germany, the Netherlands, and Sweden thermally treat between 35% and 50% of the total waste they generate. As indicated earlier, Ontario incinerates only about 1% of the waste it generates. At the time of our audit, there was one commercial-scale thermal treatment facility, which had been operating since 1992. From thermal treatment, the facility generates electricity, which it sells to the electrical grid, and sends steam to a nearby industrial plant. Municipalities, in our discussions, indicated that the provincial government needs to take more of a leadership role in communicating that thermal treatment facilities—for example, energy-from-waste facilities— are a viable option for waste disposal. They indicated that municipal councils across the province were divided on the virtues of this technology and that a clear message from the provincial government on the use of such facilities would help in uniting the opinions of the various councils in this regard.

RECOMMENDATION 6

To increase Ontario's capacity to dispose waste, the Ministry of the Environment should take a leadership role in working with municipalities and other stakeholders to research and adopt alternative waste disposal technologies such as the thermal treatment facilities that are in use in other jurisdictions.

MINISTRY RESPONSE

The Ministry's priority is to reduce waste generation and divert as much waste as possible from disposal by supporting initiatives that accomplish this in a safe and environmentally responsible manner.

Municipalities and businesses are responsible for deciding how they will manage their

waste. The Ministry provides guidance to make sure the selected options both meet environmental standards and do not discourage other efforts to reduce, reuse, and recycle waste. To this end, the Ministry will continue to engage with Ontario businesses and municipalities on approaches for addressing their waste management needs that take into consideration available landfill capacity, changes in diversion, and alternative technologies for waste disposal, including facilitating the testing of these technologies.

Monitoring of Waste Disposal Sites and Waste Management Systems

Certificates of Approval

Under the *Environmental Protection Act*, before commencing operations, new waste disposal sites, waste processing facilities, and waste management systems require a certificate of approval from the Ministry. Existing sites, facilities, and systems also require an updated certificate of approval if they expand or significantly alter their operations. A certificate of approval contains site-specific conditions to ensure that the operation will not have an adverse impact on the environment. It includes a number of requirements on the design, use, operation, and maintenance of equipment and processes for the appropriate handling, disposal, and storage of non-hazardous waste. For private-sector waste management operations, certificates of approval also contain a requirement to provide financial assurance so that funds are available to the provincial government should the owner become unable or unwilling to fulfill legislative requirements.
On average, the Ministry approves approximately 600 to 700 certificates a year for non-hazardous waste disposal sites, waste processing facilities, and waste management systems, recording the individual certificates in a database called the Integrated Divisional System (IDS). As Figure 8 shows, as of March 2010, the Ministry had issued approximately 5,500 certificates of approval for non-hazardous waste sites, facilities, and systems.

Figure 8: Certificates of Approval for Non-hazardous Waste Sites, Facilities, and Systems Issued by the Ministry of the Environment, as of March 2010
Source of data: Ministry of the Environment

Type of Site	# of Certificates
closed disposal sites	1,300
active disposal sites	1,100
processing or transfer facilities	760
waste management systems	2,300
Total Non-hazardous Waste Certificates	**5,460**

Reviewing Certificate-of-Approval Applications

The Ministry has no service delivery standards for the time it takes to review the non-hazardous waste certificate-of-approval applications it receives. Based on our review of a sample of files for certificates issued in 2008 and 2009, the average length of time to issue a certificate from the date of the application was 10 months. By comparison, the Ministry's standard for reviewing certificates for hazardous waste sites, facilities, and systems is 50 days. The Ministry informed us that the time required for the review of the application depends on a number of factors, such as the type, complexity, and completeness of the application. As of May 2010, approximately 480 non-hazardous waste certificate-of-approval applications awaited approval, 8% of which had not been assigned to any review engineers. Of the applications that were being reviewed by the engineers, the reviews had to that point taken an average of eight months.

The Ministry charges a fee for each certificate-of-approval application that it processes. In the 2009/10 fiscal year, the Ministry collected $383,000 in fees from about 700 applications. We noted that the fee is based on a 1999 per diem rate established by the Professional Engineers of Ontario—the regulating body for engineers in the province. The per diem rate has since increased,

but that increase has not been reflected in the Ministry's application fee. As a result, the Ministry estimated that only about two-thirds of its current costs for reviewing the certificate applications are recovered through these fees.

Updating Certificates of Approval

The Ministry has been issuing non-hazardous waste certificates of approval since the 1970s. These certificates do not have expiry dates. Any updates to the existing certificates must therefore be initiated either by the Ministry (if there are significant changes in the standards under which these sites, facilities, and systems operate) or by the owner (if operations are significantly expanded or altered). We noted that in some North American jurisdictions, certificates of approval have terms of between five and ten years and then they have to be renewed.

In 2005, the Ministry realized that the conditions in the certificates of approval for waste management sites, facilities, and systems needed to be updated to reflect changes in standards, and developed protocols for updating the conditions. But at the time of our audit, we noted that the Ministry did not know how many of the certificates actually required updating. As a result, many of these sites, systems, and facilities operate under different environmental standards. For instance, a 1998 regulation specified more stringent requirements for landfill design, operations, closure, post-closure care, and financial assurance for new or expanding landfills larger than 40,000 cubic metres that accept only municipal waste for disposal. But only some of the province's larger landfills currently operate under this new standard.

When a certificate's conditions are updated, the Ministry usually attaches amendments to the existing certificate rather than issuing a new certificate. For instance, we noted that one waste transfer station, which had its original certificate issued in 1991, had been issued 25 amendments to that original certificate between 1991 and 2008. Some were amendments to previous amendments, not to the original certificate. A number of ministry inspectors we interviewed informed us that the Ministry's practice of issuing amendments as attachments creates confusion for the operators and for ministry inspection staff, because tracking the requirements in numerous amendments becomes difficult. A number of municipalities that responded to our survey also indicated that managing numerous stand-alone amendments to the original certificate instead of one consolidated certificate is onerous.

Financial Assurance

Regulations under the EPA require the Ministry to collect financial assurance from all private-sector landfill sites. It is also ministry policy that certificates of approval for other private-sector waste management operations contain a requirement to provide financial assurance. Financial assurance provides the Ministry with security to ensure that taxpayers are not responsible for costs of the cleanup of any contamination caused by landfills and other waste management operations. To ensure that the amount of the financial assurance is still sufficient, as the operations of the waste management sites and facilities change, operators are to re-valuate the financial assurance and submit the re-valuation to the Ministry for review. Often, conditions in a certificate of approval require a periodic review of the amount of the financial assurance. As of March 2010, the Ministry held over $232 million in financial assurance for non-hazardous waste sites and facilities. In the five-year period between 2005 and 2009, the Ministry has had to use only $8 million of assurance funds to clean up non-hazardous waste sites and facilities. With respect to the Ministry's collection of financial assurance, we noted:

- The Ministry, for the most part, had been successful in collecting the required financial assurance. However, there were still a number of certificates of approval that had been issued without the Ministry collecting the required financial assurance from the operator prior to issuing the certificate. The total amount outstanding as of March 31, 2010, was approximately $20 million.

- The Ministry had not thoroughly followed up on the re-valuations of financial assurance or reviewed the submitted re-valuations on a timely basis. Many of the re-valuations or the Ministry's reviews of submitted re-valuations had been due for nearly four years, with some due as far back as 1996.

RECOMMENDATION 7

To better facilitate compliance with certificates of approval for non-hazardous waste management sites, facilities, and systems, the Ministry of the Environment should:

- review its existing certificates, especially for the larger or more environmentally risky operations, to ensure that they reflect current standards and operations and revise those that need updating;
- in cases where numerous amendments have been issued to an existing certificate, consolidate the amendments into one, new certificate;
- develop a standard for the time it should take to review certificate-of-approval applications for non-hazardous waste operations and review the outdated application fee it charges to ensure that it reflects the cost of processing the applications; and
- collect, follow up on, and review the re-valuation of the required financial assurance, especially for the larger operators, on a timely basis.

MINISTRY RESPONSE

The Ministry receives approximately 6,500 certificate-of-approval applications annually. In recent years, increasingly stringent environmental requirements, a more transparent approvals process, and an increasing volume of applications resulted in a significant backlog in the Ministry's approvals program. In September 2009, the Ministry successfully eliminated this backlog by implementing significant business-process improvements, such as streamlining review processes to reduce turnaround times.

Over the next two years, the Ministry will continue to modernize the approvals program with the development of a registry for low-risk activities, a strengthened environmental compliance approval for higher-risk activities, and an electronic service-delivery system. The program will also address specific recommendations made by the Auditor General, including regular review of existing certificates to ensure that they are current, consideration of the development of standards for turnaround times, and an assessment of associated fees.

In the meantime, the Ministry has undertaken a number of activities to address the Auditor General's recommendations. It has implemented a risk-based approach to updating certificates of approval for landfills to ensure that they meet current standards and are protective of the environment. The current focus is on the 32 larger landfill sites because they receive more than 85% of the waste that is destined for landfill in Ontario. The updating of their certificates of approval will be completed by late September 2010. In addition, existing certificates of approval are now being updated when a facility requests an amendment to its operations or when the Ministry identifies a site-specific environmental issue.

The Ministry has instituted a new approach to the current practice of amending certificates of approval. A consolidated certificate of approval will be issued that will include the original plus any subsequent notices of amendment.

In 2008/09, the Ministry completed a review of and updated all financial assurance requirements for potentially high-risk hazardous-waste and liquid-industrial-waste receivers. In March 2009, the Ministry implemented an automated system that enables follow-up on financial assurance requirements. Numerous certificates

of approval have been updated with stronger financial assurance requirements. The Ministry will use this approach to focus now on the non-hazardous waste sector.

Inspections

The Ministry inspects waste management sites, facilities, and systems to ensure that regulatory requirements are met and that no adverse environmental impacts result from their operations. When the Ministry's environmental officers inspect these sites, facilities, and systems, they generally inspect against the conditions in their certificates of approval. The Ministry annually inspects approximately 9% of all active and closed waste disposal sites, 15% of processing facilities, and 10% of waste management systems. We noted that between the 2005/06 and 2009/10 fiscal years, the total number of inspections dropped by 22%. According to the Ministry, this drop was a result of devoting more resources to monitoring in the Ministry's air, water, and hazardous waste programs.

The Ministry's method of selecting sites and facilities for inspection is predominantly based on previous non-compliance history and complaints from the public. We reviewed the Ministry's inspection procedures and a sample of files and noted the following:

- Inspectors identified many examples of non-compliance with the certificate of approval's conditions, such as waste stored or loaded outside, exceeding waste limits, elevated levels of methane gas, groundwater impacts exceeding ministry guidelines, odour, and burning of non-wood waste. However, in about 25% of the files that we reviewed, the Ministry did not provide deadlines for operators to take corrective action. In the files that had timelines imposed on remediation actions or where timelines were imposed as part of a certificate-of-approval condition, over 40% were not followed up on by the Ministry on a timely basis. On average, the Ministry took a year after the deadline had passed to follow up on whether the operator had taken required action.
- Non-hazardous waste management sites and facilities are often required, as a condition of their certificate of approval, to submit an annual report to the Ministry. The annual report, which provides the Ministry with an additional tool (aside from inspections) for monitoring waste management operations, contains information such as the volumes of waste managed, operational and environmental problems encountered, and mitigating actions taken, as well as an assessment of groundwater quality. Similar to the issue raised in our *2007 Annual Report* on hazardous waste, the majority of the ministry inspectors we interviewed indicated that there were no procedures in place to track when time-sensitive materials such as these annual reports were due, nor was there an alert through the Ministry's system to notify the inspectors when these were due. In our sample, we noticed that a number of sites were late in submitting their annual reports, with one site submitting an annual report only twice in the last seven years.
- As of March 2010, 70 landfills had submitted groundwater and surface-water analyses that the Ministry's technical staff hadn't reviewed. The average age of the unreviewed submissions was over seven months.

RECOMMENDATION 8

To improve its monitoring of non-hazardous waste management operations for compliance with legislative requirements, the Ministry of the Environment should:

- impose time frames for corrective action where inspections detect cases of non-compliance, and follow up to ensure that

the required remedial action has been taken within the required timelines; and
- ensure that time-sensitive materials such as annual reports from non-hazardous waste management operations are submitted and reviewed on a timely basis.

MINISTRY RESPONSE

An important part of the Ministry's regulatory oversight is its risk-based inspection program. Each year, the Ministry's inspection resources are allocated to address environmental risks in various facilities and sectors around the province. The Ministry's compliance policy provides direction and guidance to environmental officers on the use of voluntary and mandatory abatement actions to address non-compliance. By April 2011, the Ministry will have implemented changes to its policy to address the imposition of specific timeframes for corrective action for non-compliance, as well as standard procedures for ministry follow-up on the implementation of required remedial action.

The Ministry will also implement procedures by April 2011 to ensure that it tracks the submission of annual reports from non-hazardous waste management operations and that these reports are reviewed in a systematic manner. These procedures will also outline the follow-up that will take place when annual reports are not submitted.

MEASURING PROGRESS IN WASTE DIVERSION

The waste diversion rate is defined as the total quantity of waste diverted from disposal as a percentage of the total waste generated. The Ministry uses this indicator to gauge how successful Ontario has been in diverting waste from landfills. Over the course of our audit, we noted that certain limitations in calculating the diversion rate make the indicator less than precise:

- Diversion can be achieved through reusing, reducing, or recycling the waste that is generated. Recycling can be measured for the most part by surveying municipalities and private-sector recycling and composting facilities regarding the actual amounts of recyclable materials that have been marketed or processed, but reuse and reduction activities are by their nature more difficult to measure.
- With respect to recycling activities, it is difficult to capture the results of activities that are conducted by the waste generators themselves (for example, backyard composting).
- Any waste materials transported by the waste generator directly to secondary processors (such as pulp and paper mills), thus bypassing recycling or composting facilities or municipalities involved in waste management activities, are difficult to capture.
- Definitions of what constitutes recycling vary, making meaningful jurisdictional comparisons problematic.
- Diversion is usually measured in terms of tonnage. Heavier materials such as glass can have a disproportionate effect on the diversion rate in relation to their volume if the recycling of such materials suddenly begins or ceases.

Alberta and Nova Scotia have begun to use a per capita waste disposal rate to measure diversion. Such a rate is more objective and simpler to calculate, because it requires only measuring the amount of waste that is annually disposed divided by population. A lower per capita disposal rate over time would indicate greater diversion. The Ministry should assess the benefits of adopting an alternative performance indicator, such as the per capita waste disposal rate, to gauge the success of waste diversion activities.

RECOMMENDATION 9

The Ministry of the Environment should assess the benefits of adopting an alternative performance indicator, such as the per capita waste disposal rate, because it is more straightforward to calculate and is likely a more accurate and reliable measure of waste diversion in Ontario that will facilitate benchmarking progress relative to other jurisdictions.

MINISTRY RESPONSE

The Ministry recognizes the importance of developing performance indicators that provide reliable and accurate measures of waste diversion efforts to benchmark our progress. The Ministry will consider this recommendation as part of our ongoing review of the waste diversion framework.