# RESOURCES – NOT GARBAGE
# MUNICIPAL SOLID WASTE IN ONTARIO

By John Jackson

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## SUMMARY

### Current Status

In 1996, almost 9 million tonnes of municipal solid wastes were generated in Ontario. This amount was almost identical to the amount of wastes generated in 1987, almost ten years earlier. Approximately 80% of the waste generated was dumped into landfills in 1996.

As of 1996, garbage disposal had been reduced by 22% from 8.9 million tonnes in 1987 to seven million tonnes in 1996. This means that four years after the provincially-set 1992 interim target date, we still have not met the interim target of 25% reduction. This makes it very unlikely that the target of 50% reduction by 2000 will be achieved.

Disposal of garbage from residences has increased by 2.6% between 1987 and 1996. Disposal from the industrial, commercial and institutional sectors has decreased by 60%.

This failure to reduce wastes generated and disposed of results in: wasted valuable resources, increased energy use, increased contamination at both the production and disposal stages, increased use of water at the production stage, increased climate change because of the release of methane by decomposing garbage, and the release of toxic contaminants from waste disposal facilities to the air and to surface and ground waters.

The failure to reduce garbage generation and disposal to a greater extent has resulted in proposals for the expansions of many landfills across the province and for the creation of new mega-sites such as the Adams Mine in northern Ontario.

### Causes of Problems

This failure to reduce waste generated and disposed of reflects industry's failure to emphasize environmental factors in the design of products so as to increase the durability and repairability of products and to eliminate and reduce packaging. It also reflects the high consumption levels in our society. Per capita consumption in our society has increased by 45% in the past twenty years.

Provincial government actions and inactions have exacerbated these problems. These include: failure to enforce provincial regulations requiring refillable soft drink containers and the failure to expand such requirements to all beverage containers; the failure to require product stewardship by the manufacturers, distributors and sellers of products; the failure to ensure that industry pays for recycling costs, which has resulted in many municipalities reducing their efforts in recycling; and the weakening of the public role in decision-making around waste management, especially in the approvals process for waste disposal facilities.

### Agenda for Change

Used materials must not be seen as garbage, something to be gotten rid of, but as valuable materials to be preserved and reused. The waste management system should be transformed into a used materials management system.

The goals in this vision are:

- to minimize energy and materials consumption,
- to maximize the reuse of materials,
- to eliminate waste disposal,
- to provide citizens with a controlling role in the design and oversight of the used materials management system,
- to make producers and sellers responsible for their products,
- to educate the public on how they can achieve these goals, and
- to have government, industry and consumers working together to develop the used materials management system.

The components in this system are: use and waste reduction, producer responsibility, emphasis on reuse and refill, deposit-return systems, composting, curbside and depot collection, residuals to cleaner disposal, public control, and public education.

**Key Recommendations**

- The Province should set a target of 80% reduction in disposal by 2005 in comparison with 1987 with an interim target of 60% by 2003.
- The Province should pass regulations requiring producer-operated take-back systems, including refundable deposits, on hazardous products, reusable products, and durables. Product producers, brand owners and distributors should be required to cover the costs of municipal composting, recycling and disposal programmes.
- The Province should ban the disposal of refillable, reusable, repairable, recyclable and compostable used items from disposal.
- The Province should develop standards for disposal facilities that require that specialized facilities be designed specifically to meet the hazards created by the specific types of materials permitted to be received at the facility. Mixed waste landfills should be banned. All wastes should go through a processing facility before going to disposal. The Province should require that disposal facilities be located in the community where the wastes are generated. A disposal facility should not be built unless the neighbourhood residents where it is to be located agree to the facility.

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*The only species capable of generating waste*
*is the human species.*
*No other in nature is capable of producing something*
*no one else wants to have.*

Gunter Pauli,
*Upsizing: The Road to Zero Emissions:*
*More Jobs, More Income and No Pollution*

## INTRODUCTION

On average, in Ontario each person disposed of about 348 kilograms of residential solid waste in 1996 for a total of 3.9 million tonnes.[2] This places us fifth in the world in per capita residential waste disposal, after the U.S., Australia, the Netherlands, and Japan.[3] When solid wastes from the industrial, commercial and institutional sectors are added, the wastes disposed of totaled approximately 7 million tonnes in 1996.[4] It is estimated that an additional 1.7 million tonnes of wastes were generated that were diverted from disposal through recycling and composting programmes.[5]

The flip side of high waste production levels in our society is the high levels of consumption. These levels have been growing dramatically during this century. In the U.S. the population tripled between 1900 and 1989. During the same period, the consumption of raw materials to manufacture products grew by seventeen times.[6] The patterns have been very similar in Canada.

Canada and the U.S. have approximately 5% of the world's population but consume more than a third of the world's resources.[7] If everyone on the planet had a lifestyle similar to the average North American, we would require three Earth's.[8] Calculations have been made to determine an individual's "fair Earthshare" if resources and assimilative capacity were equally divided among the Earth's inhabitants. Just purchasing and disposing of the *Globe and Mail* each day uses up 10% of an individual's "fair Earthshare."[9]

## ENVIRONMENTAL PROBLEMS FROM MUNICIPAL SOLID WASTE

### Wasted Resources

Every time something is landfilled or burned in an incinerator or energy from waste plant valuable resources are lost. This means that more raw materials are extracted from the environment to create replacement or new products. This increased extraction adds to the perpetuation and increase in the devastation created by current forestry and mining practices.

The devastation to the environment is substantially greater at the production end than at the disposal end in the lifecycle of a product. Waste production processes in our society result in

94% of the materials extracted for production processes being turned into waste before we even see the product.[10]

**Increased Energy Use**

Making products from raw materials usually requires substantially more energy than reusing materials or making the same product from recycled material. For example, reuse of glass containers saves 80% of the energy used to make glass.[11] It takes 25 times as much energy to make an aluminum item from raw materials as from recycled aluminum.[12] It takes almost twice as much energy to make a cereal box from raw materials as from recycled boxboard.[13] As a result, municipal waste adds to the environmental impacts, including climate change, from energy production.

**Increased Contamination in the Production Stages**

Reducing the amount of materials thrown away as waste reduces the amount of new production and, as a result, reduces the contamination of air, water and land. For example, producing recycled paper results in 75% less air pollution and 35% less water pollution than making a paper product from trees.[14] When scrap iron is used instead of ore to make steel, mining wastes are reduced by 97%, air pollution by 86% and water pollution by 76%.[15] It also reduces the production of hazardous wastes.

**Increased Use of Water**

It usually takes more water to make an item from raw materials than from recycled materials or to reuse a product. For example, it requires 60% less water to make paper from recycled fibres than from trees.[16]

**Environmental Damage from Disposal of Municipal Solid Waste**

**Climate Change**

Methane is a potent greenhouse gas, contributing to climate change. On a per kilotonne basis, methane is approximately twenty-one times more potent than carbon dioxide as a greenhouse gas.[17] Methane is responsible for approximately 13% of all of Canada's greenhouse gas emissions.

As the organic wastes in solid waste landfills decompose, they generate methane. Almost three-quarters of this methane is released into the air, despite the presence of methane capturing systems at landfills. According to Environment Canada, solid waste landfills are the third largest source of methane emissions in Canada, accounting for almost one-quarter of all methane releases.[18]

Composting also creates methane, but much less of this is released to the environment. It is estimated that landfilling wastes rather than composting them results in the release of 93% more methane gases for the same amount of waste.[19]

The collection and transfer of used materials for recycling, composting or disposal also contribute to greenhouse gases through the release of $CO_2$ as a result of burning fuel during transportation. The City of Toronto estimates that collecting and transporting one tonne of used paper the average distances involved in the city results in the release of 12 kilograms of $CO_2$. The lighter and less dense that the materials collected are the greater the amounts of $CO_2$ released per tonne because trucks are filled more quickly and more total miles must be traveled.[20]

**Release of Toxic Air Contaminants**

The incineration of used materials releases toxic air contaminants. These include carcinogenic and endocrine disrupting organic chemicals and heavy metals such as arsenic, lead, cadmium, mercury and chromium. Approximately 22% of the airborne dioxins that enter the Great Lakes come from municipal waste incinerators.[21] Despite the use of the most modern air pollution control equipment, incinerators or energy from waste plants still emit toxic air contaminants.

Municipal landfills also emit hazardous air contaminants, although only limited testing has been carried out on the air above landfills. Environment Ministry tests in 1995 of the air above Toronto's and York Region's main landfill, the Keele Valley site, found vinyl chloride, a known carcinogen, at levels of 2.9 micrograms per cubic metre. Ontario's standard for vinyl chloride in the air is one microgram per cubic metre over a 24-hour period.[22] These levels were found despite the fact that the Keele Valley site has modern gas collection and destruction systems. This information has led to 30,000 current and former owners of property near the Keele Valley landfill launching a class-action suit against Toronto for $600 million.[23] Vinyl chloride, benzene and a dozen other volatile organic chemicals have also been found in the air around the Britannia landfill in Mississauga and the Brock West landfill in Pickering.[24]

**Release of Toxic Contaminants to Surface and Ground Waters**

All solid waste landfills create a toxic soup called leachate. Leachate is created by the percolation of rainwater and liquids already in the waste through the layers of waste at the site and by the anaerobic decay of organic wastes. Leachate commonly contains aromatic hydrocarbons such as benzene and toluene, chlorinated benzenes, volatile halocarbons, phenols and various carboxylic acids.[25] Leachate can be released to either ground or surface waters. Some recent examples of municipal landfills leaking toxics include the Ennismore landfill site in Peterborough County, Manitoulin Island's landfill, a Sidney Township landfill near the CFB Trenton base, and a City of Kingston landfill leaking into the Cataraqui River. Although all these dumps were built prior to the modern engineered landfill, it is generally accepted that even the best-designed landfill will eventually leak.[26]

Elaborate leachate collection systems are now used to avoid ground and surface water contamination. The leachate that is thus collected is piped or trucked to a sewage treatment plant. Leachate trucked from landfills is the largest component of the hazardous wastes shipped off-site in Ontario for treatment or disposal. Municipal sewage treatment systems are not designed to destroy many of the hazardous contaminants in landfill leachate so the contaminants end up being discharged into rivers and lakes.[27]

Many of the toxic air contaminants released by incinerators and landfills also eventually fall to the ground becoming surface water contaminants.

**Fires and Explosions**
Fires and explosions have occurred at waste treatment facilities because of improper storage or handling of materials. The latest year for which the Ontario Fire Marshall has gathered statistics on fires at waste facilities is 1995. They show that there were 15 fires at waste transfer sites, including two injuries. There were 35 fires in recycling facilities, including six injuries and one death. The injuries were primarily to workers at the facilities.[28] The most notorious fire at a recycling plant is the fire in July 1997 at Plastimet in Hamilton. This fire burnt for four days. A fire at a recycling plant in Etobicoke in February 1998 caused over a million dollars in damage. Municipal incinerators have also had explosions, resulting in injury and death to workers in the facilities.

The build up and seepage of methane from landfill sites into neighbouring homes has caused explosions and fires and long-term evacuations. In 1976 the residents of an 81-unit townhouse development in Kitchener started moving out of their homes because of fear of explosions from methane seeping from an adjacent municipal landfill. By 1986, the development had become a ghost town. In late 1993, the units were reopened after Waterloo Region spent over $6 million on new gas extraction wells and a barrier wall between the landfill and the homes.

**Other Environmental Effects**
These include truck traffic, noise, odours, litter, dust, attraction of rats, birds and insects, and aesthetic concerns.

In 1998, thirty-five families on Ralgreen Crescent in Kitchener filed a lawsuit against the City for $65 million because of damages caused by an old municipal landfill site. Their homes were built on or near the landfill. The residents have been experiencing illnesses suspected to be caused by landfill gases leaking into their basements. Structural damage, including large cracks in the foundations, exterior walls and floors and garages, has occurred in their homes. The residents claim that the shifting of the ground as the garbage decomposes causes this damage.

## CURRENT STATUS AND TRENDS

### Diversion from Disposal

In 1987, the Liberal government set a provincial goal of reducing the amount of solid waste going to disposal by at least 50% by the year 2000 compared to the amount disposed of in 1987. An interim target of 25% reduction by 1992 was set. Disposal is defined to include landfill and incineration, including energy from waste plants. These targets were subsequently confirmed by the NDP government and by the current PC government.

As of 1996, garbage disposal had been reduced by 22% from 8.9 million tonnes in 1987 to 7 million tonnes in 1996.[29] This means that four years after the 1992 interim target date, we still have not met the interim target of 25% reduction. Disposal of garbage from residences has increased by 2.6% from 1987 to 1996. Disposal from the industrial, commercial and institutional sectors has decreased by 60%.

Reduction in garbage going to disposal has stalled in recent years. The amount of waste disposed of in 1996 is identical to that disposed of in 1994. This makes it even more unlikely that the 50% diversion target will be met by 2000 - a target that does not even begin to match the 80% diversion targets that numerous studies and experiences in many communities show is feasible.[30]

The Ministry of the Environment has redefined the waste diversion target to make it easier to achieve the 50% goal. The goal is now defined not as an absolute reduction in wastes going to disposal, but as a per capita reduction. On this basis there had been a 32% per capita reduction in wastes going to disposal in Ontario in 1996 in comparison with 1987 disposal levels. Even using this substantially more lax definition of the target, it is highly unlikely that the 50% waste diversion target will be met. Between 1994 and 1996, there was only a 2% increase in per capita diversion. At that rate, per capita diversion in 2000 would be 36%. This is substantially lower than the 50% target that the government has stated as its goal.

**Reduction**

The reduction aspect of solid waste has not been taken seriously. Between 1987 and 1996, the total amount of solid wastes generated in Ontario was unchanged. In the residential sector, wastes generated *increased* by 27% while the population increased by only 15%.

This failure to reduce waste generated in the residential sector reflects the failure to emphasize environmental factors in the design of products so as to increase the durability and repairability of products and to eliminate and reduce packaging. It also reflects the high consumption levels in our society. Per capita consumption in our society has increased by 45% in the past twenty years.[31]

In the industrial, commercial and institutional sectors, wastes generated decreased by 23%. This reduction has focused on the stages of making their products and transporting them to retailers. Industry has not placed the same emphasis on reducing consumer packaging, etc., which is necessary to reduce the generation of waste in the residential sector.

**Reuse and Refill**

Ontario has regulations calling for the use of refillable containers for soft drinks and milk. Regulation 357 requires that all carbonated soft drinks be sold in refillable containers. However, Regulation 340 allows for the sale of carbonated soft drinks in non-refillable containers provided that a minimum of 30% of sales are in refillable containers and a 50% recycling rate is met.

Regulations 344 and 345, developed in 1972, limit the size of disposable milk containers, with the intention of promoting the use of refillable containers. Regulation 344 exempts certain recyclable milk containers from the refillable requirements.

Successive Ontario governments have repeatedly weakened the requirements for refillable soft drink containers. In the 1950's and 1960's almost all soft drinks were in refillables. In 1978, a gentlemen's agreement was made between the soft drink industry and the Province to have 75% of soft drinks in refillables. In 1985, a regulation was passed requiring 40% refillables if the recycling rate is less than 50% and 30% refillables if the recycling rate is at least 50%. These

regulations are still in force. The provincial target set by the PC government in the 1970's was to have 75% of fluid milk sold in refillable containers.

Industry and government consistently ignore the refillable regulations for milk and soft drinks. Less than 2% of soft drinks are now sold in refillable containers and successive provincial governments over the past ten years have failed to enforce the regulations.[32] The situation is similar for milk containers. As the provincial government notes regarding refillable milk containers, "Over the years, exemptions have served to void the original intent of the regulations."[33] The province is proposing to revoke the requirements for 30% refillables for soft drinks.[34]

The Toronto Environmental Alliance launched a lawsuit in 1996 to try to enforce the soft drink refillable regulations against Coca-Cola Beverages Ltd. Later that year, the Provincial Government stopped TEA's private prosecution by stating that the Province was in negotiations with the company.

Despite the failure of the province and the soft drink industry to take refillables seriously, there is support for the use of refillable containers. A 1997 survey of Ontario residents found that 84% of the respondents believe that refillable beverage containers are better for the environment than single-use containers that require recycling after only one use; 80% believe that a deposit-return system with a preferential refund for refillable beverage containers should be required in Ontario. Sixty-eight percent of the respondents support a ban on non-refillable beverage containers.[35]

Some companies are using the refillables option. Many of The Beer Store's sales are in refillable containers.[36] A winery near Toronto has just introduced returnable-refillable wine bottles. Refillable milk containers are now used in some dairies in London, St. Thomas, Simcoe, Brantford, Stratford, Woodstock, Hamilton, Burlington, Ottawa, Carleton and Toronto.[37]

Refillable beverage containers are common in many European countries. For example, in Denmark 97% of all beverage containers are refillable; in Germany 76% of soft drinks are in refillables; in Austria 95% of mineral water is in refillables; in Norway, 60% of wine and liquor is in refillables.[38]

Reuse has become a major activity in the product distribution system. Reuse accounted for almost half of the packaging used in 1996.[39] This is overwhelmingly accounted for by the reuse of wood and plastic pallets for carrying products.

Reuse is also growing in construction, renovation and demolition activities.

**Composting**

Approximately one-quarter of the solid wastes generated in Canada are organics that are compostable.[40] Approximately 37% of residential waste is compostable. In 1996, only seven percent of the residential waste stream in Ontario was composted in backyard composters or in central composting facilities. Data on composting by the industrial, commercial and institutional sectors is not available.

Ontario's regulations require municipalities with populations over 5,000 to encourage and support backyard composting. This generally takes the form of municipalities subsidizing the costs of backyard composters for residents. In municipalities over 50,000, the municipality is required to also provide for leaf and yard waste collection and composting. In almost all cases this takes the form of special pickups in the fall after the leaves have fallen and in early January for Christmas trees. Some municipalities also have a special pickup in the spring after people have cleaned up their yards. A few municipalities pick up compostables on a regular basis. This includes Guelph, with its wet-dry system, and St. Thomas and Tillsonburg.

In May 1998, the province issued draft guidelines for aerobic composting facilities and for compost use. The provincial government does not financially supported municipal composting programmes.

In June 1998, the Ministry issued for comment draft regulations for the approval, siting and operation of composting facilities for leaf and yard waste, compostable vegetable waste, and wood that is not painted, treated or laminated. These regulations propose that composting facilities be exempted from applying for certificates of approval. They would be under the new standardized approval regulations (SAR) where they simply notify the Ministry that they are setting up the facility and state that they are following the guidelines. These new provisions would reduce the opportunity for local residents to have input into the siting and operation of composting facilities.

A major problem that has arisen with composting is contamination. Compost is potentially a valuable resource that can add vitality to soils. Unfortunately, in some cases, the product from centralized composting facilities contains hazardous contaminants that do not make it suitable to grow food on. For this reason, in some cases, compost has been used as landfill cover. This does not make the best use of valuable resources.

Compost becomes contaminated because of the collection system, in which other wastes are intermingled with the compostables.

**Recycling**

The main tool that the province and municipalities have relied upon to reduce waste disposal is recycling programmes, especially the blue box programme. Municipalities with a population over 5,000 are required to have a curbside recycling programme that receives a minimum of seven materials, including newsprint, aluminum, glass, steel, PET and a choice of two other materials. In 1996 the provincial government proposed to give municipalities more flexibility in choosing the materials they would recycle. But in November 1997, the province stepped back from these proposed changes.

Approximately 3.5 million households or 85% of the households in Ontario have curbside recycling service, primarily through the blue box. It is estimated that 85% of those households with access to recycling service use it on a regular basis.[41]

Despite this emphasis on household recycling, only 12% of household waste went into recycling programmes in 1996.[42] When the industrial, commercial and institutional sectors are added,

approximately 16% of wastes went to recycling. *The Toronto Star* has calculated that only 18% of the recyclable materials in Ontario end up being recycled.[43]

Over the past few years Ontario's recycling programme has become more controversial for several reasons:

**Costs**
Between 1985 and 1996, municipalities put $375 million into the blue box programme; the province put in $208 million and industry put in $41 million.[44] But industry ended their contributions and as of March 1998 the provincial government ended all financial contributions to the programme.

Municipalities started recycling programmes with the understanding that they would share the costs with industry and the Province. Municipalities have become alarmed as the full costs of operating the blue box programme have been dropped on them. This cost is estimated to total $43.6 million each year, after revenues from the sales of recyclable materials.[45]

Industry, especially Corporations Supporting Recycling (CSR) and the Canadian Soft Drink Association, say that the aluminum pop can is the "cash cow' that will finance the blue box. This cash cow, however, appears to be shrinking. The soft drink industry is increasingly using PET containers for their product instead of aluminum. The Association of Municipal Recycling Coordinators reports that over the past three years aluminum can tonnages have gone down while tonnages of PET containers have gone up. This is true even in those communities where CSR has had an advertising campaign to urge the public to put their pop cans into the blue box. This switch has dramatic financial implications for municipalities. In the spring of 1998, a tonne of aluminum cans sold for between $1212 and $1865; a tonne of PET bottles sold for between $115 and $407.[46]

The market prices for selling recyclable materials constantly fluctuate. This places municipalities in a speculative market, making it impossible for them to precisely predict the revenues from their recycling programmes.

When there are substantial differences in costs between recycling and disposal programmes, municipal councillors find it hard to justify keeping the recycling programmes going. This becomes especially difficult as other factors, such as increases in social service costs, place upward pressure on municipal tax rates.

**Failure to Follow Regulations**
Until recently, Thunder Bay ignored the regulatory requirement to set up a curbside-recycling programme. Even though all municipalities over 5,000 in population are required to have curbside collection of recyclables, Thunder Bay with a population of approximately 110,000 had only a depot system for collecting recyclables, until two-and-a-half years after the date that it was required to have curbside collection. Thunder Bay only set up the programme after the province issued a control order against the city for its failure to obey the regulations.

Some municipalities, particularly in northwestern Ontario, are put into a difficult position in trying to follow the regulations because of the long distances that recyclables have to be

transported to get to market. This adds substantially to their costs, especially for heavy items such as glass. In some cases, these municipalities are stockpiling glass and looking at ways to use the glass in their communities, such as in road beds. In September 1998, Blind River announced that it was dropping its recycling programme because of the high costs.[47]

Other municipalities are now threatening to stop picking up certain materials in their blue boxes because of the failure of industry and the province to financially support the programme.

**Deposit-Return**

Ontario's regulations require a deposit-return system for at least 30% of the soft drinks marketed. These are the same 30% that are supposed to be in refillable containers. As with the requirements for refillables, this requirement is being ignored by industry and government. Instead these containers end up on municipalities' hands in their recycling and disposal systems.

Manitoba and Ontario are the only provinces without substantial deposit-return regulatory requirements. Effective October 1998, British Columbia's deposit-return system was extended to all beverage containers except milk. Tetrapak containers were given an extra year to start a deposit-return system.

Deposit-return systems are much more effective than curbside collection methods for retrieving containers for reuse or recycling. Canadian and U.S. experience demonstrates that deposit-return systems result in recovery rates of 72% to 98% of beverage containers.[48] Current curbside collection in Ontario of soft drink packaging is only about 54%.[49] The best curbside collection programmes for beverage containers achieve less than 70% recovery.[50] Another benefit of deposit-return systems is that the containers are recovered in better condition - unbroken and with less contamination - and are, therefore, more compatible with reuse than are materials gathered at the curb.

The provincial government is currently assessing whether to continue having deposit-return requirements. The Toronto Environmental Alliance and the Citizens' Network on Waste Management have been leading a campaign to have the current regulations enforced and to expand them to all beverage containers. As of September 1998, 269 Ontario municipalities, representing almost 84% of Ontario's population, had passed resolutions asking the Province to have a strong deposit-return system.[51] A survey of Ontario residents found that 87% of Ontarians would support the government if it required a deposit on all juice, soft drink and bottled water containers; only 7% opposed such action.[52]

**Recycling or Downcycling?**

Recycled materials frequently are not made into the same item again. For example, a PET bottle may be made into plastic fence posts. As a result, value is lost whereas in reuse programmes the same use is maintained and value is maintained. In addition, most items cannot be endlessly recycled. They eventually end up being disposed of because the quality of the material has deteriorated so badly. For example, the more they are recycled, the shorter paper fibres become. As the fibres get shorter they become too weak to be used.

Another factor that decreases the use of recycled materials for the production of the original item is that some Federal health regulations are barriers to recycling plastics into food containers because of concern about contamination of the food.

**Provincial Proposals for Reform**
The Province plans to make the following kinds of changes to "promote diversion and recycling":

- revise the definition of recyclable material to encourage reuse and recycling;
- revise the source separation requirements for municipalities to allow for the use of wet-dry collection systems;
- place approvals for municipal recycling sites under the new standardized approval regulations process, where a certificate of approval is not issued (The municipality simply informs the Ministry that they are going to operate the facility. This reduces the former opportunities for public input.);
- remove the regulatory requirement for a 50-metre buffer around municipal recycling facilities, if all processing and storage is within enclosed buildings; and
- remove the regulatory requirements for large industrial, commercial and institutional establishments to develop waste audits and amend the requirements for waste reduction workplans.

Concern has been raised by the public about these lessening of requirements for recycling facilities because of past experiences where recycling facilities have caused serious community problems. The Plastimet fire in Hamilton is the most spectacular example of this kind of problem.[53]

**Incineration and Energy from Waste**

Three incinerators and energy from waste facilities for municipal waste now operate in Ontario; these are located in Hamilton, London, and Brampton.

In April 1991, the NDP government banned the construction of new municipal solid waste incinerators and the expansion of existing ones. This ban was put into regulation in September 1992. In December 1995, the PC government lifted this ban. They also put into place guidelines for combustion and air pollution control requirements for new municipal waste incinerators. Since that time there has been substantial lobbying by the incinerator industry for new incinerators, but none have been built or expanded. Public concern and the high costs of building and operating incineration plants are the main reasons why there has not been more activity in this sector.

**Current Activity**
Since the lifting of the ban, the Ministry of the Environment has issued one certificate of approval for an incinerator for municipal waste. This was granted in December 1996 for the operation of a five-tonne per day incinerator in the Town of Durham in southwestern Ontario. The incinerator was not installed because of the municipality's concerns about the costs of the facility. After one year the certificate of approval expired.

KMS Peel Inc., which operates the energy from waste plant in Brampton, is preparing environmental assessment documents for an expansion of their plant. This plant receives municipal wastes from throughout the Region of Peel. KMS Peel plans to submit its final EA documents to the Ministry in 1999.

Toronto plans to put out a call for proposals for disposal options for its waste in 1999. Among the options that will be considered is incineration or energy from waste.

Simcoe County had considered building an energy from waste plant, but, after extensive lobbying by local environmentalists, the County withdrew incineration and energy from waste from its list of options.

The use of burn barrels by householders to burn their garbage is a serious concern. The U.S. Environmental Protection Agency reports that burn barrels emit significant quantities of volatile organic compounds, chlorobenzenes, dioxins and furans, and metals to the air. The EPA concluded that "the large magnitude of the emissions [from backyard burning of residential wastes], coupled with the concentration of these emissions in the local neighborhoods due to poor dispersion, will lead to increased direct inhalation exposure.[54] The extent to which burn barrels are used in Ontario is not known. The Province does not ban burn barrels. It is left up to the by-laws of each municipality to deal with the burn barrel issue. Most cities have banned the use of burn barrels.

**Current Trends**

There is an increasing focus on waste derived fuel as a method to get rid of municipal garbage. This includes sending materials such as tires and wood waste to be burned as fuel in industrial operations.

The concept is now being expanded to the creation of special pellets out of municipal waste to be sold as fuel. For example, the Herhof system, which is now being promoted throughout Ontario and is in use in Caledon, proposes to make a "stabilate" out of the product from the composting process. This would be sold as refuse derived fuel to cement, steel and hydro producers.[55]

The province is proposing to facilitate this process by amending the regulations to expand the definition of waste derived fuel and to specify the thermal energy value that must be met to be defined as waste derived fuel.

Another trend in the incineration industry is to try to find ways to avoid the costs of disposing of incinerator ash in solid waste or hazardous waste landfills. Approximately 30% by weight of the wastes that go into an incinerator or energy from waste facility ends up as ash that must be removed from the plant.[56]

KMS Peel is proposing to mix the bottom ash from their incinerator with plastic wastes. These would then be used to manufacture shipping pallets and paving stones.[57]

**Landfill**

In 1996, 7 million tonnes of solid waste were disposed of in Ontario. Approximately 95% of this went to landfill.

Just over five years ago a waste disposal crisis seemed imminent across Ontario. Ministry of the Environment information documents asserted:

> By the year 2000, nearly 250 currently active landfills are expected to be full. However, as a result of the loss of actual disposal capacity by the closing of landfill sites, more than half of Ontario's residents will have no place to dispose of their garbage by as early as 1996.[58]

Another Ministry backgrounder announced: "Waste Crisis in the Greater Toronto Area."

The waste disposal crisis seemed to fade away. Among the reasons for this were:

- strong local citizen action that forced communities to drop their focus on disposal and look at ways to reduce the garbage produced,
- the growth of recycling programmes, and
- the substantial movement of wastes, especially from the industrial and commercial sectors, to cheap landfill sites in the U.S.

But many neighborhoods are still confronted by the prospect of their communities being disrupted by new or expanded landfills as the search continues for landfills in many communities across Ontario.

Some recent trends in the landfill situation include:

1) There have been substantial decreases in some of the landfilling fees charged. At one point dumping fees at Toronto's Keele Valley site were close to $180 per tonne. As of December 1998, the fees were $55 per tonne.

2) Municipalities are seeing landfills as a way to make money. For example, Osgoode Township near Ottawa is considering expanding the Township's Springhill Landfill site, even though they have enough space to satisfy the needs of their residents for 40 to 60 years. The reason is that the Township sees the landfill as a business opportunity that could "provide significant revenue for the municipality over a period of many years" if it received wastes from throughout eastern Ontario.[59]

Waterloo Region has become alarmed at the revenues they are losing because industrial and commercial wastes are being shipped to cheaper sites in the U.S. They have given special landfill fee reductions to commercial and industrial waste generators.[60]

3) More municipalities are focusing on expanding existing landfills rather than seeking to site new large landfills on greenfield sites. Examples of this are the landfills in Grey County, Warwick, and Richmond. Municipalities generally see it as easier to expand a site rather than get a whole new community angry with them if they try to site a new one. Also it tends to be easier to get provincial approval for an expanded site than it is for a new site.

4) Increasingly landfills are being permitted to receive wastes from throughout Ontario. Previously most certificates of approval limited the area from which wastes could be taken to a landfill to the municipalities surrounding the landfill.

5) As more landfills are developed and licensed by private companies, narrow definitions of need and alternatives for environmental assessment purposes are used. When dealing with private sector proposals, the Ministry accepts opportunity as the only need description that is required. Opportunity means the ability to find wastes to fill the landfill. The opportunity to make money has become all that is needed to define need. Alternatives are also very scoped. In private sector proposals, the Ministry does not require the proponent to do more than a very limited assessment of alternative ways to address the need and they are only asked to look at other sites that the company already owns. This means that, when private companies provide disposal facilities for municipal solid waste, the debate is much more scoped than it would have been if the proponent were a municipality.

6) As a result of changes to the *Municipal Act* made in 1993, by majority vote a county can take over responsibility for waste management in the county, including taking over landfills currently owned and operated by a township or town. This has resulted in weakened local control over waste disposal operations in many small municipalities. It has, however, in some cases resulted in improved operations at these already existing landfill sites and in progress on clean-up activities because the upper tier municipality has access to more money to carry out the activity.

7) When landfills leak, the owner of the site sometimes acquires adjacent land instead of cleaning up the contamination or preventing further leakage. Ontario's Reasonable Use Guidelines require that groundwater beyond the boundaries of a landfill site not exceed certain levels. Recently, when this guideline is exceeded, owners have, with the support of the Ministry of the Environment, bought adjacent land so the guideline can be met. This allows the contamination of groundwater under more and more pieces of land. The most recent example of this occurred when the Town of Haileybury bought 55 hectares next to their landfill to be a leachate contaminant attenuation zone.[61]

8) Competition in the landfill field in Ontario has recently diminished. Canadian Waste Services bought out all the solid waste landfill operations previously owned by Laidlaw and Philip Environmental, with the exception of Philip Environmental's Taro Landfill in Stoney Creek. As municipalities increasingly look to the private sector to provide them with landfill space instead of going through the expensive and politically difficult task of siting landfills, the control by Canadian Waste Services over landfill space will grow.[62] Canadian Waste Services has recently become a partner in Notre Development's Adams Mine landfill proposal, a proposed landfill that would be large enough to take one-seventh of all the solid wastes currently disposed of in Ontario for the next twenty years.

**Toronto**

In early 1998, Toronto began shipping part of its municipally collected waste to a BFI-owned landfill near Ann Arbor, Michigan. As of 1999, Toronto was shipping 450,000 tonnes of garbage to this site each year. This has resulted in considerable concern by citizens in Michigan who

have joined with Windsor activists to form "No Waste - the Network of Waste Activists Stopping Trash Exports".

Toronto plans to issue a request for proposals for disposal in 1999.

**Adams Mine**
Notre Development Corporation plans to build a landfill for municipal solid waste in an abandoned iron mine in Temiskaming, about ten kilometres southeast of Kirkland Lake. Northeastern Ontario residents are alarmed at the proposal because the hydraulic trap containment system proposed to keep hazardous leachate away from ground and surface water is unproven. Also local residents object to waste from southern Ontario being shipped to the North, leaving northern residents to bear all the risks. It is estimated that 90 to 95% of the area's residents are opposed to the plan.[63]

After fifteen-hearing days in a process that had been severely scoped by the Minister of the Environment, in June 1998 the Environmental Assessment Board gave approval to Notre Development Corporation to develop Adams Mine as a landfill to receive waste from anywhere in Ontario. The approval was given on the condition that the proponent meet 26 conditions relating to monitoring/operation and remedial action and contingency plans, contaminating lifespan, financial assurance, and community consultation and participation. In addition, the company was to conduct one more test on the underlying groundwater movement. One Board member dissented stating that "it is my considered opinion the proponent has not fulfilled the onus placed on it to demonstrate the effectiveness of the proposed hydraulic containment design."[64]

A coalition of farmers, residents and environmental groups in the area appealed the Board's decision. In late August, the provincial cabinet denied the appeal, supporting the Board's decision. The local coalition has filed an application for review by the courts of the hearing board's decision.

In March 1999, the Ministry stated that it intends to issue the certificate of approval for the site. The approval is for the disposal of one million tonnes of waste a year for the next twenty years. This would take one-seventh of all the wastes currently disposed of in Ontario. Over the past few years, Notre Development has approached municipalities throughout southern Ontario as potential customers. The main customer that the company is looking to is Toronto and the area surrounding Toronto.

**Provincial Changes**
**1) Hearings:** Since the introduction of the Environmental Protection Act and the Environmental Assessment Act, rarely have landfills been approved without a substantial hearing. Since the P.C. government came into power, this situation has changed. In July 1996, despite the fact that the Hamilton Region Conservation Authority and 3,000 members of Stoney Creek Residents Against Pollution (SCRAP) requested a hearing, the Ministry approved a landfill site in a quarry in Stoney Creek without a hearing. This is the Taro site owned by Philip Environmental.

A municipal landfill in Dufferin County near Orangeville was approved in December 1997 without a hearing.

The Adams Mine landfill, a major proposal for 20 million tonnes of waste, was put through a quick, very scoped hearing. The only topic that could be discussed at the hearing was the hydraulic containment system. The Minister announced the hearing in December 1997 and stated that the Board decision had to be made by May 1998. This was later extended by one month.

**2) Intervenor Funding:** In order to support public participation in hearings before administrative tribunals on environmental matters, successive governments have awarded intervenor funding to citizens' groups to hire lawyers and technical experts. This practice first began in 1984 when the P.C. cabinet began giving intervenor funding on an ad hoc basis. This was formalized in April 1989 when the Liberal government brought in the *Intervenor Funding Project Act*. This legislation was extended in April 1992 by the NDP government. In April 1996, the P.C. government let the legislation expire, thus ending intervenor funding for citizens to participate in hearings.

As a result, because of lack of funding, the concerned citizens who were opposed to the Adams Mine landfill proposal were severely limited in the number of expert witnesses that they were able to call. In a hearing on a proposed PCB waste transfer and processing facility in Northumberland, the hearing panel expressed concern about the inability of concerned citizens to launch a case.[65]

**3) Landfill Standards:** New landfill standards have been passed into regulation by the government effective August 1, 1998. These standards include mandatory air emissions controls, assessment of hydrogeology and surface water, generic and site-specific landfill design standards, requirements for site operations and monitoring, closure and post-closure care requirements, and financial assurance.

Describing the new standards, the Ministry states: "The advantage of generic designs is the added certainty they bring to the approvals process."[66] It is likely that these standards will be used in the future as a justification for eliminating hearings or restricting the topics discussed at hearings.

Ontario's proposed waste management regulation[67] includes provisions that would allow changes to an approval for a landfill without going back for a new hearing or, in some cases, without even having to notify the Ministry of the Environment that the changes have been made. These include extending the time that the landfill can be used, expanding the area from which wastes can be taken, and alterations in pollution control equipment and the contours.

**Producer Responsibility**

Does the responsibility of the manufacturer and distributor of a product end when the product is put on the store shelf? In Ontario, for the most part the answer to this question is "Yes". In Ontario the overwhelming responsibility for dealing with used materials and their associated wastes rests with municipalities. In Europe and some parts of Canada, this answer is not accepted. There the responsibility is placed on the producer of the product.

Producer responsibility or extended producer responsibility, as it is sometimes called, takes many forms:

- return to retailer or manufacturer systems, sometimes called take back systems (e.g., electronic equipment, computers, household appliances, used oil, tires, automobiles, cameras, batteries, drugs, beverage containers, pesticide containers); these often have a deposit attached to them at the time of purchase to encourage consumers to return the used product to obtain a refund;
- manufacturer, brand owner and distributor operated and paid for collection systems for retrieving products sold (e.g., the system in Germany for retrieving packaging); and
- payments by manufacturers, brand owners and distributors to municipalities for all or part of the costs for operating a recycling system.

There is broad public support in Ontario for producer responsibility. Over 70 municipalities have passed resolutions calling for full producer responsibility for used materials. Seventy-four percent of Ontarians believe that "product manufacturers and their consumers" should pay for the disposal and recycling of consumer packaging while only 14% believe municipal taxpayers should pay.[68]

Some companies in Ontario have set up producer responsibility systems. Examples are the Brewers of Ontario, with their take back system for beer containers and packaging, and Canadian Tire, Zellers, Radio Shack, Black's Photography, Astral Photo Images and Battery Plus, which take back worn out rechargeable batteries.

Despite this widespread support for producer responsibility and the fact that some companies are assuming responsibility, very little has been done in Ontario to support and require producer responsibility. A recent survey of Canadian jurisdictions by Environment Canada showed that Ontario had done less to encourage producer responsibility than any other province in Canada.[69]

Successive provincial governments have discussed producer responsibility schemes for over a decade but no provincial action has been taken to require such responsibility. Instead, provincial governments have taken actions to undermine or discourage producer responsibility. Ontario governments have failed to require the soft drink industry to follow provincial regulations requiring deposit-return systems. The current provincial government is proposing to drop these requirements.

In 1997, when municipalities such as North York and Windsor-Essex County were planning to use powers granted to them under Bill 26 to raise money from producers, such as wine and liquor stores and newspapers, to cover their costs of disposing of and recycling their products, the Ministry of Municipal Affairs and Housing quickly passed a regulation that "prohibits charges being imposed for the management (including collection, disposal, reuse and recycling) of any waste materials except on the person who actually discards the material or except where the charges relate to the cleanup of illegally disposed of waste."[70]

In June 1998, the province brought forward a proposed regulation for "manufacturer controlled networks." The intent of these regulations is to facilitate product stewardship programmes. A

manufacturer controlled network is a "waste management system of an original product manufacturer, that may include MCN consolidation sites and MCN collection systems, for the receiving, collection, handling, sorting, bulking, baling, packaging, temporary storing, transferring and transporting of a spent product."[71] This regulation would give such networks exemptions from certain requirements of the Environmental Protection Act, such as the need for certificates of approval and the filling in of manifests when transporting the materials.

In October 1998, Ontario's Minister of the Environment called on the private sector to assume their "fair share" of the costs of waste diversion programmes by making financial contributions to a new "waste diversion organization." The purpose of this organization is "to give municipalities the tools to reduce the cost of their recycling programs and to develop, implement and fund municipal initiatives to increase waste diversion." The Liquor Control Board of Ontario made an initial contribution of $4 million. The Minister said that if industry fails to voluntarily make enough financial contributions to the new waste diversion organization, the government will require them to contribute.[72] Enough details have not yet been provided on this programme to determine the extent to which it will lead to producer responsibility.

## VISION FOR THE FUTURE

On the basis of the experiences that citizens across this province have had with our current solid waste management system, citizens have developed a vision of the direction that we must take.

The goals in this vision are:

- to minimize energy and materials consumption,
- to maximize the reuse of materials,
- to eliminate waste disposal,
- to provide citizens with a controlling role in the design and oversight of the used materials management system,
- to make producers and sellers responsible for their products,
- to educate the public on how they can achieve these goals, and
- to have government, industry and consumers working together to develop the used materials management system.

The core of this shift is to make all decisions on the basis of not viewing used materials as garbage, as something to be gotten rid of, but instead as valuable used materials to be preserved and reused. The waste management system should be transformed into a used materials management system.

Achievement of our vision involves the following components:

### Use and Waste Reduction

Waste reduction efforts usually focus on lessening the amount of materials used in a product or package. This includes, for example, light-walling the container or increasing the efficiency of

the manufacturing processes by using fewer resources. While such initiatives are essential, they are not sufficient to achieve the reduction goals that we have set.

Focus on used materials management means that we must devise lifestyles and provide consumer choices that encourage us to live better with less. It also means that products should be designed to last longer and to be repairable. Whenever possible, packaging should be eliminated.

Use reduction should also focus on eliminating the use of hazardous materials in the production of products.

**Producer Responsibility**

Full producer responsibility should be at the core of the used materials management system. A key component of producer responsibility is the requirement for industry to take back what it produces after the consumer is finished using it - to accept responsibility for the product throughout its entire life-cycle. The takeback principle encourages companies to use fewer resources in the production process, to design for reuse and remanufacturing, and to become more eco-efficient.

**Emphasis on Reuse and Refill**

Reuse and refill should be stressed to minimize the use of new raw materials and to decrease the consumption of energy. This should begin with all beverage containers and rapidly be expanded to other containers. Non-reusable products and non-refillable containers should be phased out. For example, throw-away-after-single-use items, such as disposable cameras, should be banned.

Community reuse facilities should be set up. These easily accessible neighbourhood facilities include exchange programmes, repair shops, and mechanisms for sharing tools, lawn mowers, etc.

**Deposit-Return Systems**

The most effective way to ensure that product take-back systems work and to increase reuse and refill is through deposit-return systems. Deposit-return systems should start with all beverage containers and then be extended to other products such as household hazardous waste products and packaging (e.g., used solvent containers, batteries, pesticides, paints) and durables (e.g., appliances, computers and electronic equipment).

**Composting**

Backyard composting of residential wastes should be stressed. Apartment and condominium complexes should set up small-scale composting facilities for each building. Apartment buildings should be designed to facilitate the use of composting facilities. In addition neighbourhood composting facilities should be set up.

The use of centralized facilities should be carefully assessed, since there tends to be greater contamination in such facilities. However, they may prove to be the most effective way to

recover the compostables from apartment buildings, especially in apartment buildings that have not been specially designed to support composting programmes.

Restaurants and grocery stores, as well as other industrial, commercial and industrial facilities should send their organic wastes for reuse or composting, or set up their own composting facilities on site. They could then sell or give away the compost to their customers.

**Curbside and Depot Collection**

Curbside and depot collection should be set up only for the used materials that are not covered by take-back and deposit-return systems, or backyard or community composting facilities. For example, recyclables such as newsprint, old corrugated cardboard and fine paper as well as containers that do not lend themselves to return systems would continue to be collected in curbside recycling systems or at recycling depots in smaller communities. Other products such as non-recyclable fibres, brush and trees that do not break down well in backyard composters could be collected at curbside and taken to community or centralized composting facilities.

Apartment buildings should be designed to facilitate separation of used materials at source for ease of use and to facilitate the gathering of uncontaminated recyclables and compostables.

**Residuals to Cleaner Disposal**

Reusables, compostables, recyclables and hazardous materials should be banned from disposal at solid waste facilities.

With diversion rates of at least 80% by 2,000 in the new used, materials management system, disposal facilities would be much smaller. As well, with the prohibition of both hazardous materials and compostables from disposal, the production of leachate will be decreased and will be less hazardous. It will be possible to develop dry fills and disposal facilities that are specially designed for the specific materials being sent to them. The large, multi-material, mixed waste landfill will be an historic artifact. All wastes should go through a processing facility before any wastes are disposed of. Such smaller, less hazardous facilities will allow for more flexibility in siting and will be more acceptable to communities.

Disposal facilities should be located in the community where the wastes are generated. This will encourage local residents to be more responsible since it will make them have to live with the consequences of any bad decisions they make in the used materials management system. This approach is also essential for environmental justice reasons.

Incineration and energy from waste plants should not be part of the disposal option. They waste valuable used materials and are a very inefficient energy source. They also are a major source of environmental contamination from their stack emissions and the ash left over from the burning process.

**Payment for Collection, Recycling, Composting and Disposal**

In the used materials system, most costs will be covered directly by the producers, brand owners and distributors of the product through take-back systems.

The cost of handling those materials that are still left for the municipality to take care of, i.e., going into the curbside and depot system, should be handled to the largest extent possible by the producers of the products. There may be some costs left over that cannot be reasonably allocated back to the producers of the products. These costs could be recovered through user fees charged to the residents and institutions, commercial and industrial operations that use the system. A properly set up user fee system will encourage people to properly use the used materials system, i.e., encourage them not to throw away valuable used materials.

**Public Control**

Local people should have control over the used materials management strategy in their community. For example, a disposal facility should not be located in a neighbourhood unless the local people willingly accept it. No one community should be the repeated recipient of undesirable used materials management facilities. Compensation mechanisms should not be used to bribe communities into accepting undesirable waste facilities.

Community monitoring committees should be set up for used materials management facilities on which local neighbours form the majority. If the community is not satisfied that the promises made when the facility was approved are being met, the community should be able to close down the facility. This committee should also have the power to require a formal public inquiry when a disaster such as that at Plastimet in Hamilton occurs.

**Education**

Education programmes are essential for the development and implementation of a used materials management strategy. People must understand the implications of their consumption habits and of the ways that they handle used materials. They must understand the options for addressing waste management problems. Educational programmes are a central aspect behind effective involvement in the decision-making process.

**Enhanced Employment and Economic Vitality**

Long-term economic vitality is dependent on making the transition from a wasteful society to a conserver society. The used materials approach, based on reusing valuable resources and reducing the consumption of raw resources and energy, ensures an economy that has the materials needed to produce the items that we and future generations will need. An economy focused on reusing and recycling used materials will also increase employment.

A study by the Tellus Institute for Resource and Environmental Strategies compared the economic impacts of increasing the proposed waste diversion targets for the Greater Toronto Area from 50% to 80%.[73] They concluded that the economic advantages would be:

* 2,214 more jobs, primarily in the low tech sector,
* establishment of 19 new recycling industries, and

* revitalization of deteriorating industrial sectors because the new industries could be sited in abandoned industrial buildings.

## RECOMMENDATIONS FOR PROVINCIAL ACTION

### Targets

**Recommendation 1:** The Province should set a target of 80% reduction in disposal by 2005 in comparison with 1987 with an interim target of 60% by 2003. This target should be measured on an absolute basis - not per capita. Disposal should continue to be defined as landfill and incineration, including energy from waste.

### Take-Back and Refillables

**Recommendation 2:** The Province should revise the deposit-return and refillables regulations for soft drinks to raise the minimum refillables rate from 30% to 90% by 2003. The Province should place similar requirements on all beverage containers, including milk, soft drinks, wine, liquor, juices and water. Refillable regulations should also be developed for all other containers. The Province should enforce its deposit-return and refillables regulations.

**Recommendation 3:** The Province should pass regulations requiring producer-operated take-back systems, including refundable deposits, on hazardous products, including batteries, pesticides, paints and cleaners, on tires and on durables such as appliances, computers and electronic equipment.

**Recommendation 4:** Systems for refill, reuse and repair should be readily available to everyone.

### Composting

**Recommendation 5:** The Province should provide financial and technical support for backyard, neighbourhood and centralized composting facilities.

**Recommendation 6:** Neighbourhood composting facilities could be approved under standardized approval regulations. These regulations should include requirements for consultation with neighbours of the proposed facility.

**Recommendation 7:** The Province should require that centralized composting facilities receive a certificate of approval and there should be a discretionary hearing determined on the basis of public demand or the concerns of the Ministry's Director.

**Recommendation 8:** The Province should require screening processes to ensure that composted material does not contain hazardous materials.

**Recommendation 9:** The Province should require product producers, brand owners and distributors to contribute to the costs of municipal composting programmes. Large commercial agri-businesses should be required to contribute to these costs, but small farm producers should not.

**Recycling**

**Recommendation 11:** The Province should maintain and enforce its requirements for curbside collection of recyclables in all communities with a population over 5,000.

**Recommendation 11:** The Province should require that recycling facilities receive a certificate of approval to operate and there should be discretionary hearings if there is a public call for hearings or if the Ministry's Director has concerns. The current requirement for a 50-metre buffer zone around municipal recycling facilities should be maintained. The requirements for buffer zones and hearings should apply to both municipal recycling facilities and private operations.

**Recommendation 12:** The Province should require that product producers, brand owners and distributors cover the costs of municipal recycling programmes.

**Incineration and Energy From Waste**

**Recommendation 13:** The Province should place a ban on the construction of new incinerators or energy from waste plants for municipal solid waste. This ban should include a ban on the production of refuse derived fuel that is intended to be used in incineration processes.

**Recommendation 14:** The Province should require that existing municipal solid waste incinerators and energy from waste plants be phased out by 2005.

**Recommendation 15:** The Province should ban the use of burn barrels for municipal solid waste.

**Disposal**

**Recommendation 16:** The Province should ban the disposal of refillable, reusable, repairable, recyclable and compostable used items.

**Recommendation 17:** The Province should develop standards for disposal facilities that require specialized facilities designed specifically to meet the hazards created by the specific types of materials to be received at the facility. Unprocessed mixed municipal solid waste should be banned from landfills.

**Recommendation 18:** The Province should require that disposal facilities be located in the community where the wastes are generated.

**Recommendation 19:** All disposal facilities should be subject to the full Environmental Assessment process, including a hearing, and assessment of need and alternatives.

**Recommendation 20:** Participant and intervenor funding should be required by provincial law for concerned citizens both at the hearing and pre-hearing stages.

**Recommendation 21:** A disposal facility should not be built unless the neighbourhood residents where it is to be located agree to the facility. The definition of neighbourhood and of the extent and nature of the indication of agreement will have to be worked out through further discussions across the province. If a site cannot be agreed to for a facility, the community should explore other methods for handling the waste.

**Recommendation 22:** The Province should require that a community liaison committee be set up for each disposal facility. Neighbourhood residents should have the majority of seats on the committee.

**Recommendation 23:** If significant violations of the certificate of approval occur and corrective actions are not implemented within a satisfactory timeframe, the community liaison committee should have the power by majority vote to require the Province to close the down the facility and/or hold a formal public inquiry.

**Recommendation 24:** The Province should require product producers, brand owners and distributors to contribute to the costs of municipal disposal programmes.

**Recommendation 25:** Disposers of wastes should be required to contribute to the costs of municipal disposal and composting programmes through user fees, sometimes called "pay as you waste" or "pay as you throw" systems. Such systems should not, however, replace the requirements for the producers and sellers of products to contribute to these costs.

**Hazardous Wastes**

**Recommendation 26:** The Province should ban hazardous materials, such as pesticides, fertilizers, and batteries, from the composting, recycling and disposal streams. The most effective way to ensure that hazardous materials do not enter the municipal solid waste stream is to ban the use of some of these items or ban the inclusion of certain hazardous substances in them.

**Industrial, Commercial and Institutional Actions**

**Recommendation 27:** The Province should require industrial, commercial and institutional facilities to conduct waste audits and develop waste reduction plans with a particular focus on reduction and reuse. The plan should be available to the community for comment and should be assessed by the Province for adequacy and accuracy. Failure to develop and implement an acceptable waste reduction plan should result in provincially-imposed penalties.

**Recommendation 28:** The Province should require industrial and commercial operations to ensure that their products and services are designed and delivered in ways that support reuse, composting, and recycling, and eliminate or minimize the need for disposal.

**Provincial Actions**

**Recommendation 29:** The Province should set an example by conducting waste audits and developing and implementing waste reduction plans.

**Recommendation 30:** The Province should enact purchasing policies that emphasize reduction, reuse and recycling criteria.

**Education**

**Recommendation 31:** Governments, schools, industry and environmental and community organizations should have educational programmes to make the public aware of the need to reduce consumption of resources and of how they can minimize their resource consumption and waste generation.

**Recommendation 32:** Government and industry should financially support environmental and consumer organizations to put together and distribute public service pieces that encourage reduced consumerism. All media should be required to use these public service pieces.

## ENDNOTES

[1] In this paper, the term municipal solid waste refers to residential, industrial, commercial and institutional wastes that are not designated by provincial regulations as hazardous wastes. It includes both wastes that municipalities are responsible for collecting, composting, recycling or disposing of, whether by their own workforce or by contract with private companies, and wastes that industrial, commercial and institutional organizations themselves take for reuse, recycling, composting or disposal.

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[26] Jerry A. Nathanson, *Basic Environmental Technology: Water Supply, Waste Management and Pollution Control*, 2nd Edition (Upper Saddle River, New Jersey: Prentice Hall, 1997), p. 298.

[27] *Ibid*, p. 230.

[28] Ed Gulbinas, Office of the Fire Marshall, *Control of Fire Risks to the Community and the Environment* (1998).

[29] Data in this section is based on *Recycling Roles and Responsibilities Final Report*, *op. cit*, Appendix E.

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[32] Government of Ontario, *Responsive Environmental Protection, Technical Annex*, 1996, p. 79.
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