

**Region of Durham
Long Term Waste Management
Strategy Plan: 2000 to 2020**

**Approved in principle on December 15, 1999
by the Region of Durham**

**Prepared by the
Region of Durham Works Department
Waste Management Services**

**Region of Durham Works Department
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1. Introduction

The Region of Durham currently disposes of solid non-hazardous residential garbage waste in one of three landfill sites. The landfill sites are; the Region owned site in Brock Township near Cannington, a private site in Richmond Township near Napanee, and in the City of Toronto's Keele Valley site in York Region. Approximately 125,000 tonnes or 85% of the Region's garbage waste is sent to the Keele Valley Landfill site for disposal.

This site is scheduled to close in the Fall of 2002. Accordingly, the Region must secure another site for the disposal of garbage waste.

In the summer of 1998, the Region of Durham established a process to develop a Long Term Waste Management Strategy Plan. This Waste Plan is to guide the management of residential waste generated within Durham Region over the next 20 years.

The prime objective of the Waste Plan is to:

“Develop a long term waste management strategy plan to investigate technically feasible waste reduction and waste disposal opportunities in an environmentally and financially responsible manner.”

In order to achieve the above objective, the Waste Plan needed to:

- **Determine the anticipated quantities of waste for recycling, composting, other diversion and garbage disposal;**
- **Investigate the various opportunities available for the disposal of waste materials;**
- **Examine the costs of managing a waste management system;**
- **Obtain input from residents through a series of public meetings;**
- **Review integrated waste management systems; and**
- **Summarize the findings into a final report.**

The Region of Durham is subject to the provisions of the Environmental Assessment Act because the disposal of waste is contracted out. Accordingly, a planning process under the Act may be required. This process would include such matters as: developing a long term waste plan, obtaining comments from the public, determining waste diversion rates and quantities, as well as estimating waste quantities for disposal. The Region's long term waste management plan was designed to accommodate these requirements.

Community participation was central to the development of the waste plan and to meeting the above objectives. This participation was achieved through the establishment of a Waste Management Advisory Committee. This Committee met monthly, reviewed technical information, toured waste facilities, and held numerous public information meetings to obtain comments from the general public.

The Region had a goal of achieving 50% waste diversion by the Year 2000. It will not be met. The current waste diversion rate is about 25%.

The Region needs to plan for the future. Increased recycling, composting and re-use must occur in order to reduce our dependence on landfill site disposal.

2. Existing Waste System

2.1 Background

Waste management services are a shared responsibility of the Region of Durham and each of the eight Area Municipalities.

The Area Municipalities are responsible for the following services:

- Collection of curbside garbage
- Collection of garbage from multi-residential buildings
- Collection of curbside leaf and yard wastes

Collection service is not provided to all residents and businesses and the level of services offered varies from municipality to municipality.

The Region of Durham is responsible for the following services:

- Transfer and disposal of curbside residential garbage waste
- Transfer and disposal of garbage from multi-residential buildings
- Disposal of curbside leaf and yard wastes
- Collection, processing, and sale of the curbside Blue Box recyclables
- Collection of Blue Box recyclables from multi-residential buildings
- Operation of a rural landfill site
- Operation of a Blue Box Recycling Center
- Operation of three Regional waste disposal sites
- Perpetual care of former municipal landfill sites
- Promotion and Education

There is a common level of service. These services are provided to Regional residents, with the exception of the rural areas of the Township of Brock as the curbside collection of Blue Boxes is only offered to those residents receiving regular municipal curbside garbage collection.

2.2 Blue Box Recycling

The Region provides for the curbside collection of Blue Box recyclables from 136,000 households once every two weeks. The recyclables collected are processed through the Region's Recycling Center and marketed for re-sale. Currently, there are 16 items in this program.

The Region also provides for the weekly collection of Blue Box recyclables from 22,000 multi-residential dwelling units. These materials are processed and marketed for re-use.

In 1998, the Blue Box recycling program diverted **28,400** tonnes of material and these programs represent **15%** of the total waste stream.

2.3 Yard Waste Composting

Some of the Area Municipalities collect residential leaf and yard wastes and these materials are delivered to a centralized compost facility. Each Area Municipality provides their own level of service and there is a considerable variance in the services being offered. The Region provides for the processing and disposal of all such leaf and yard waste materials.

In 1998, the yard waste composting program diverted **8,700** tonnes of material and this program represents **5%** of the total waste stream.

2.4 Garbage Disposal

The Area Municipalities collect garbage waste from along the curb and from multi-residential buildings. Garbage is collected weekly and garbage from multi-residential buildings may be several times a week, depending on site restrictions. Garbage waste is delivered to the Region for disposal. Most residents receive weekly garbage collection services from their Area Municipality, except the rural area of the Township of Brock.

The Region provides for the disposal of garbage waste using its rural landfill site and three private waste transfer stations. Waste is processed through the transfer stations and is hauled directly to landfill sites for disposal.

In 1998, the Region disposed of **121,400** tonnes of garbage and this program represents **62%** of the total waste stream.

2.5 Regional Waste Disposal Sites

The Region operates one rural landfill site and three waste management disposal sites. They are located in Brock Township, Port Perry, Blackstock, and Oshawa.

These sites receive the following types of waste from residents and small businesses: garbage, wood & brush, yard wastes, scrap metal, tires, Blue Box materials, and household hazardous wastes. The Region hauls the material to various locations for composting, recycling, re-use or landfill disposal.

In 1998, the Region received **35,900** tonnes of garbage, recyclable, compostable, and re-use wastes and this represented **18%** of the total waste stream.

2.6 Tonnes of Waste by Material type

The total amount of residential waste diverted from landfill and the total amount of waste landfilled in 1998 is shown in the Table 1. The tonnes of garbage, recyclables, compostables and re-use materials from the Region's waste disposal sites have been shown by waste type rather than as a single total.

TABLE 1
Total tonnes of waste received by the Region in 1998

Program	tonnes	percent of total
Waste Diversion:		
Curbside Blue Box	26,300	
Multi-residential Blue Box	2,100	
Regional sites Blue Box	2,300	
<i>Subtotal: Blue Box recycling</i>	<i>30,700 tonnes</i>	<i>15%</i>
Curbside yard waste	8,700	
Regional sites yard waste	4,500	
<i>Subtotal: yard waste composting</i>	<i>13,200 tonnes</i>	<i>7%</i>
<i>Regional Re-use programs</i>	<i>5,800 tonnes</i>	<i>3%</i>
Subtotal: waste diversion	49,700 tonnes	25%
Waste Disposal		
Curbside Garbage waste	121,400	
Regional sites garbage	23,400	
Subtotal: waste disposal	144,800 tonnes	75%
Total Waste	194,500 tonnes	

2.7 Financing Waste Management Services

The financing of residential waste management services is a shared responsibility of the Area Municipalities and the Region of Durham.

The Area Municipalities levy for the collection of garbage and yard waste services. The amount of the levy varies from municipality to municipality and is dependent on the services provided.

The Region levies for the above noted Regional waste management services. It is based on a net unit cost per tonne for the amount of waste disposed. In 1999, the unit rate systems cost was \$84 per tonne.

The 1998 budget amounts for waste management services are shown in Table 2. These costs do not include funding for general administration or capital programs.

TABLE 2

**Total costs in 1998 to manage waste within the Region,
 not including general administration and capital program costs**

Services provided	Gross cost	Net cost	Percent
All Area Municipalities			
• Collection	\$ 5,302,000	\$ 5,302,000	28%
Region of Durham			
• Blue Box Collection	\$ 2,844,000		
• Waste transfer	\$ 4,692,000		
• Waste disposal	\$ 9,554,000		
• Revenue	\$ (3,135,000)	\$ 13,955,000	72%
Total net costs		\$ 19,257,000	

3. *The Planning Process*

In June of 1998, the Region of Durham established a planning process to develop a “Long Term Waste Management Strategy Plan”. This process involved a Steering Committee, a public Advisory Committee, and a study consultant.

3.1 Waste Management Steering Committee

This Committee included the members of: the Region’s Works Committee, a member of the Region’s Finance and Administration Committee, the Chair of the Public Advisory Committee, as well as representatives from the study consultant and the Region’s Works Department. This Committee met monthly and reviewed the progress of the study. The Committee discussed technical reports, toured waste facilities, and provided overall guidance and support for the waste study.

3.2 Waste Management Advisory Committee

This Committee comprised of 14 members of the general public who represented a wide variety of interests throughout the Region, 8 representatives selected by the Area Municipalities, 2 from the study consultant, and 2 from the Region’s Works Department. In total, there were 26 Committee members and they met on a regular monthly basis.

The Committee elected a Chair, to represent them at the Steering Committee meetings, studied technical reports, toured waste facilities, discussed issues in group workshops, and held nine Public Information Meetings throughout the Region.

The Committee submitted a report containing 27 recommendations for the Region to consider in the development of a long term waste plan.

3.3 Study Consultant

The Region retained the services of Proctor & Redfern Ltd, now Earth Tech Canada, to assist the Region’s Works Department in undertaking the study. The consultant provided technical report information and planning documents,

prepared minutes of meetings, arranged for tours of waste facilities, prepared displays for the public information meetings, undertook a financial study, and actively participated in study discussions and presentations.

The consultant submitted a report containing 12 recommendations for the Region to consider when developing its long term waste plan.

The consultant recognized the Region's planning process as being sound. They suggested that most of the Advisory Committee's recommendations be accepted and that the Region should now investigate a process to implement the preferred "Long Term Waste Management Strategy Plan".

3.4 Region of Durham Works Department

The Works Department actively participated in the study by providing support to the Steering Committee, the Advisory Committee, and the Study Consultant. The Region set and distributed the meeting agendas, approved Committee minutes, provided technical information regarding the current waste management programs within the Region, as well as staff resources to assist in the development of the study.

The Works Department closely examined the recommendations from the Waste Advisory Committee and the Study Consultant. Comments were also received at a special workshop presentation for Regional Councillors, where the Department described the study process, outlined the general results of the study, and provided comments received during the public review process.

The Works Department then prepared a number of considerations that would further assist in the development of a waste plan.

The recommendations received from both the Waste Advisory Committee and the Study Consultant, the additional considerations from the Works Department, as well as the comments from the Regional Council workshop were the major building blocks from which the long term waste management plan was developed.

4. The Long Term Waste Management Strategy Plan

The preferred long term waste management strategy plan is:

- 1. To divert at least 50% of the residential waste from disposal by the Year 2007 or earlier.**
- 2. To secure an alternate source for the disposal of residential waste, when the City of Toronto's Keele Valley Landfill Site is closed.**
- 3. To implement an integrated residential waste management system for the collection, processing and disposal of: (1) Blue Box recyclables, (2) Food and Yard waste compostables, (3) residual garbage waste, and (4) special wastes.**
- 4. To consider an "Energy From Waste" type facility for the disposal of residual garbage waste.**

In order to do this, the Plan must encourage residents to maximize the amount of residential waste that they can divert from landfill disposal through programs such as: Blue Box Recycling, and Food & Yard Waste Composting, as well as Re-Use programs.

When implemented, this plan will have a significant impact on the amount of garbage sent to a landfill site for disposal. Table 3 illustrates the required changes.

TABLE 3

Existing and Preferred Rates for Waste Diversion and Garbage Disposal

System	Existing %	Preferred %	Change %
Recycling	15 %	20 %	+ 5 %
Composting	7 %	30 %	+ 23 %
Re-use	3 %	5 %	+ 2 %
Waste Diversion	25 %	55 %	+ 30 %
Garbage Disposal	75 %	45 %	(30 %)

A 30% reduction in the amount of garbage waste collected, processed, and disposed is a challenging target. In 1999, this equates to 58,400 tonnes of waste. This is the amount of garbage that would have to be diverted from landfill for recycling, composting or re-using in order to achieve a waste diversion rate of 56%.

The following Sections describe the Waste Plan in more detail and the steps necessary to achieve a goal of more than 50 % waste diversion from landfill.

5. *Waste Reduction Plans*

5.1 Blue Box Recycling

The object of this plan is to increase curbside Blue Box recycling and Blue Box recycling in multi-residential buildings from 16% of the waste stream to 20%. In order to do this, the current 30,700 tonnes of recyclables will have to increase by 8,300 tonnes to achieve 39,000 tonnes or 20% of the total waste stream.

The long term waste management plan will:

- Add more materials to the Blue Box program, provided reasonable markets exist to recycle such materials.
- Increase the awareness of Blue Box recycling with a greater emphasis being placed on promotional and educational activities.
- Continue to encourage the delivery of large quantities of Blue Box recyclables to the Region's Recycling Center at no charge.
- Introduce a policy requiring all residents and small businesses, receiving municipal waste disposal services, to participate in the Blue Box recycling programs.
- Evaluate the need to increase curbside Blue Box recycling collection service from a "once every two weeks" program to a "weekly" service.
- Provide new residents, with curbside waste disposal services, with 2 Blue Boxes and an information package.
- Provide new residents living in multi-residential buildings with 2 mini Blue Boxes or Blue Bags and an information package.
- Introduce a policy encouraging all "special event organizers" to provide Blue Box collection and recycling services at special events.

5.2 Yard Waste Composting

The object of this plan is to significantly increase the amount of compostable materials that can be diverted from landfill disposal. To do this, the current 13,200 tonnes of material, or 7% of the total waste stream, will have to increase to 58,400 tonnes in order to achieve the 30% waste diversion goal. This 30 % goal includes compostables from the yard and garden as well organic food wastes from the kitchen.

The long term waste management plan will:

- Increase the awareness of yard waste composting with a greater emphasis being placed on promotional and educational activities.
- Increase promotion to encourage residents to obtain and use backyard home composters.
- Increase promotion to encourage residents to leave their grass clippings on the lawn.
- Assist the Area Municipalities in increasing the curbside collection of Yard wastes, during the growing season, to a weekly service in the built-up areas.
- Add more materials to the Yard waste composting program, particularly excessive quantities of garden wastes, fruits, vegetables, and grass clippings.
- Introduce a policy requiring all residents and small businesses receiving municipal waste disposal services to participate in Yard waste composting programs.
- Introduce a policy encouraging all “special event organizers” to provide Yard waste collection and composting services at special events.

5.3 Food Waste Composting

The object of this plan is to introduce food waste composting as another method of diverting wastes from landfill disposal. This goal of this program, in conjunction with the Yard waste composting program, is to capture 30 % of the total waste stream. Food waste compostables includes all organic food wastes from the kitchen.

This will be a new program, as it currently does not exist, and the long term waste management plan will:

- Introduce the concept of residential Food waste composting with emphasis being placed on new promotional and educational activities.
- Undertake combined Food waste and Yard waste composting pilot programs.
- Assist the Area Municipalities in phasing in residential Food waste composting collection programs in built-up areas.
- Introduce a policy encouraging all “special event organizers” to provide Food waste collection and composting services at special events.

5.4 Curbside and Multi-residential garbage waste

The object of this plan is reduce the amount of garbage waste sent to a landfill site for disposal. Currently, this is 144,800 tonnes per year, or 74% of the total waste stream, and the goal is to divert 58,400 tonnes of this waste to recycling, composting, or re-use programs.

The long term waste management plan will:

- Increase the awareness of Garbage waste disposal with a greater emphasis being placed on promotional and educational activities.
- Develop a policy to establish a weekly limit to the number of garbage bags that residents and small businesses can place out along the curb for waste disposal services.
- Consider a policy to charge residents and small businesses a user fee to cover the cost of providing waste disposal services for all garbage bags in excess of the weekly limit.
- Identify those waste materials that are not acceptable in the Region's garbage waste disposal system, because the materials require recycling, composting or re-use.
- Assist the Area Municipalities in evaluating the need to reduce curbside non-organic Garbage waste collection from a "weekly" to "once every two week" service, upon the successful achievement of 50% waste diversion.
- Assist the Area Municipalities in providing garbage waste collection services that are compatible with the Region's waste processing and disposal programs.

5.5 Special Wastes

The object of this plan is to increase the diversion of special wastes, either through Regional Waste Disposal Sites, for those materials that can not be collected at the curb, or through Regional Re-use Centers, for those materials that are unwanted but still useable. There is a need to divert these types of materials from garbage waste.

The Regional Waste Disposal Sites currently provide this service. In addition to garbage, recyclables and compostables, these sites accept household hazardous wastes, appliances and other white goods, scrap metal, and other reuseables.

Regional Re-Use Centers is a new service that will encourage residents to drop-off, exchange or select unwanted but re-useable items. Such facilities will require inside storage and utilities as well as staffing. The Region does not support unattended community drop-off depots due to the past experience with excessive littering around recycling igloo depots.

The Re-Use Centers could be operated as a business unit and should coordinate and harmonize activities with other established charities and donation operations.

The long term waste management plan will:

- Develop Re-use Centers for the drop-off, exchange, or selection of unwanted but useable items.
- Increase the awareness of Re-use Centers with an emphasis being placed on promotional and educational activities.
- Continue to operate Regional Waste Disposal sites for the collection, processing and disposal of special wastes such as; appliances, oil and oil filters, propane tanks, paints, batteries, and other household hazardous wastes.

5.6 Revised Waste Diversion Goal

- With the implementation of the long term waste management plan, the Region should be able to achieve a waste diversion goal of at least 50% by the Year 2007 or earlier.

6. *Waste Disposal Plans*

One of the objectives of the long term waste plan is to secure waste disposal capacity for the Fall of 2002 when the City of Toronto's Keele Valley Landfill Site is closed.

The Region currently disposes of 125,000 tonnes of garbage at this site and, this represents 64% of the Region's total waste stream of 194,500 tonnes. This could be a major concern, if future waste disposal capacity is not secured.

The long term waste management plan will:

- Continue to participate with other Greater Toronto Area Regions to search for waste disposal capacity.
- Search for waste disposal capacity outside the Region in preparation for the closure of the Keele Valley landfill Site in the Year 2002.
- Not support the development of any new landfill site or landfill site operation within the Region of Durham.
- Support the development of "Energy From Waste" type facilities to generate steam and/or electricity from the disposal of residual garbage wastes.
- Support the development of proven new and emerging waste disposal facilities for the disposal of residual garbage wastes.

7. *Region of Durham's Waste Disposal Facilities*

The Region operates four waste disposal sites. These sites operate Tuesday to Saturday from 8:00 am until 4:00 pm and accept a variety of wastes from residents and small businesses. These wastes are then hauled to various locations for proper disposal.

Regional customers are charged a minimum fee per visit, receive a daily discount of 100 kg off the total weight of waste material delivered, and are exempt from fees for Blue Box recyclables and household hazardous wastes, provided these are delivered separately.

Currently, the “net” cost to operate these sites is recovered from the Regional tax levy and is based on the percentage of customers using the waste disposal sites from each Area Municipality. In 1999, the estimated “net” cost is \$ 2,900,000.

However, a number of operational improvements can be made in order to function more like a business unit and eliminate the annual need to be financially supported by the general Regional taxpayer. The vast majority of Regional residents each receive weekly garbage collection, biweekly Blue Box collection, and Yard Waste collection services. The Regional waste sites provide service to those residents who require additional waste services.

The long term waste management plan will:

- Continue to maintain service five days per week, Tuesday to Saturday from 8:00 am until 4:00 pm, with the exception that the locations in Oshawa and Port Perry where the weekday hours will be 8:00 am until 6:00 pm.
- Charge one uniform waste disposal rate for all waste materials delivered for processing and disposal.
- Operate the waste disposal sites as a business and eliminate the need for financial support from the Regional tax levy.
- Charge full user fee rates in order to recover the costs of operation.
- Continue to examine the need for operational changes and improvements within the Regional Waste Disposal system.

8. *Implementing the Long Term Waste Management Plan*

8.1 Waste Management Advisory Committee

The Region established a Waste Management Advisory Committee to assist in the development of a long term waste Plan. The Committee was very successful and it accomplished its mandate. The Committee has expressed an interest in continuing the process through the implementation stages of the approved Regional Waste Plan.

The long term waste management plan will:

- Retain the Waste Management Advisory Committee through the implementation stages of the Waste Plan by arranging working group meetings on an “as required” basis.

8.2 Implementation

The Region needs to determine the most cost effective and efficient method of implementing the long term waste management waste plan. This activity will necessitate the Region setting priorities, undertaking various studies, carrying out pilot projects, and refining the financial costs.

The long term waste management plan will:

- Prepare a schedule to set priorities, establish time lines, undertake follow-up studies, and carryout pilot projects to ensure a transition into the preferred long term waste management plan.
- Evaluate the financial benefits of moving from a “net uniform systems rate per tonne” to an “actual net cost per tonne” for the Regional recovery of costs to process and disposal of: (1) Blue Box recyclables, (2) Food and Yard waste compostables, and (3) garbage wastes.

8.3 Updating the Waste Plan

It is important the long term plan be updated on a regular basis.

- The long term waste management plan will be updated once every 5 years.

9. *Next step*

The next step is to phase in the implementation of the Waste Action Plan. The implementation of this Long Term Waste Management Strategy plan will ensure residents will have feasible waste reduction and waste disposal opportunities that are environmentally and financially responsible.