Residual Waste Study
durhamyorkwaste.ca

Draft Environmental Assessment Terms of Reference

...prepared in accordance with Sections 6.(1) and 6.(2)(a) of the *Environmental Assessment Act*

MacViro

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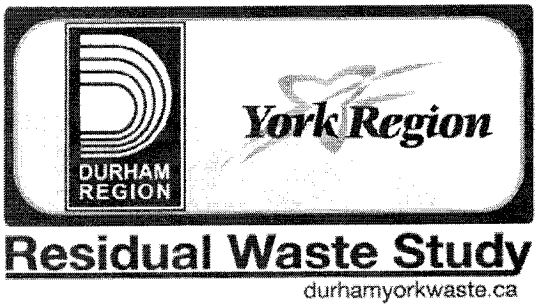

Residual Waste Disposal Planning Study

Draft Environmental Assessment

Terms of Reference

September 2005

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1. INTRODUCTION

This introduction provides an overview of waste management within the two Regions as background to the Residual Waste Study, a reference to the appended Glossary of Terms, an outline of the scope of the EA Terms of Reference as required by provincial legislation and a description of the endorsement, by the respective Regional Councils, of the EA Terms of Reference.

1.1. Background on Residual Waste Study

Durham and York Regions have agreed to undertake a joint Residual Waste Planning Study. Both municipalities are in need of a solution to manage the remaining solid waste after diversion (residual or post-diversion waste). The Regions are working to address the social, economic, and environmental concerns of residents through an Environmental Assessment (EA) Study, which will examine potential waste management alternatives.

The Region of Durham has programs in place for the source separation and diversion of both "Blue Box" recyclables and household organics. The Blue Box program is being expanded over the next few years to collect a wider range of materials and the source separated organics collection/composting program is being expanded to service the entire Region. In its December 1999 Solid Waste Master Plan, the Region adopted a diversion target for residential waste of at least 50% by 2007 or earlier. On April 14, 2004, Durham Regional Council adopted the position to increase waste diversion beyond 50%. In light of the province's recently-announced policy initiative of "60% diversion by 2008" the Region will likely refine its diversion target to align with that proposed by the Province.

York Region has programs in place for the source separation and diversion of "Blue Box" recyclables and household organics. In July 2005, the Region opened a single-stream Blue Box recycling facility located in East Gwillimbury. This facility enables residents to put all recyclables into one blue box, eliminating the need for separating containers and fibres. The facility also allows residents to recycle approximately 25 items, including #1 to #7 rigid plastic containers, empty paint cans, and milk containers. Household collection of organics began, as a pilot project, in the Region in September of 2004, and currently services 67,000 households in the Town of Markham. The Regions Area Municipalities will be initiating new collection programs in the coming years.

Even with the expanded source separated diversion efforts, Durham and York continue to face the challenges of managing residual waste. Both Regions face a shortage of available landfill capacity over the long term. In response to the closing of existing landfill sites in the GTA and the inability to develop new landfill capacity, Durham and York Regions, along with other GTA municipalities, were forced to enter into contracts for the "export" of their residential waste primarily to Michigan. In response to this situation, the Regions want to implement, as quickly as possible, a Durham/York based solution that is socially and environmentally acceptable to both communities, that maximizes environmental protection and that fosters the wise management of potential resources, such as the recovery of additional recyclable materials from the residual waste which are currently lost by way of landfill in Michigan.

Durham and York Regions, recognize that Ontario doesn't have sufficient energy to meet its growing needs. Both Regions recognize that there is opportunity associated with the utilization of the waste stream as a fuel source to produce energy and have identified this opportunity as a key part of the subject EA Study.

Since the adoption of the Environmental Assessment Act in the 1970s, the EA process has evolved into a study or decision-making process undertaken in consultation with interested parties including the public and other parties, that evaluates alternatives considering potential effects on the environment, the availability of mitigative measures that address, in whole or in part, these effects and the comparison of the advantages and disadvantages of the remaining or "net" effects. The result of this process is to provide the planning rationale and support for a preferred solution.

The EA Study provides a planning approach where environmental constraints or opportunities are considered in the context of the broadly defined environment (i.e. the natural environment as well as the social, economic and heritage "environments") and potential effects are understood and addressed before development occurs.

All public sector (i.e. provincial or municipal) undertakings that have the potential for significant effects in terms of their scope are generally subject to the Act and must apply for approval from Ontario's Minister of the Environment. With respect to waste management, certain types of waste management undertakings require approval under the EAA. In general, approval under the EAA is required for the establishment or the expansion of a waste disposal facility.

Under the EA Act, an Environmental Assessment (EA) Terms of Reference must be prepared and submitted to the Minister of the Environment for approval before an EA Study can be undertaken.

1.2. Glossary of Terms

A glossary of terms and abbreviations that are expected to be frequently used over the course of the EA Study is included in Appendix "A". Attached to the glossary is a comment sheet that the public or agencies can use to request clarification on certain terms or to request additional terms be added. As such, the glossary will be continually updated over the course of the Study.

1.3. Scope of EA Terms of Reference

This EA Terms of Reference has been prepared in accordance with the following sections of the Environmental Assessment Act (EAA):

> *6.(1)* ***Terms of Reference.*** *– The proponent shall give the Ministry* [of the Environment] *proposed terms of reference governing the preparation of an environmental assessment for the undertaking*
>
> and,
>
> *6.(2)* ***Same.*** *– The proposed terms of reference must,*
>
> *(a) indicate that the environmental assessment will be prepared in accordance with the requirements set out in subsection 6.1(2);...*

The Environmental Assessment will be prepared in accordance with the requirements set out in Subsection 6.1(2) of the EAA with regards to the content of an environmental assessment:

> *6.1(2)* ***Contents.*** *- ....the environmental assessment must consist of,*
>
> *(a) a description of the purpose of the undertaking;*
>
> *(b) a description of and a statement of the rational for,*
>
> *(i) the undertaking,*

(ii) the alternative methods of implementing the undertaking and

(iii) the alternatives to the undertaking;

(c) a description of,

(i) the environment to be affected or that might reasonably be expected to be affected, directly or indirectly,

(ii) the effects that will be caused or that might reasonably be expected to be caused to the environment, and

(iii) the actions necessary or that may reasonably be expected to be necessary to prevent, change, mitigate or remedy the effects upon or the effects that might reasonably be expected upon the environment, by the undertaking, the alternative methods of implementing the undertaking and the alternatives to the undertaking;

(d) an evaluation of the advantages and disadvantages to the environment of the undertaking, the alternative methods of implementing the undertaking and the alternatives to the undertaking; and,

(e) a description of any consultation about the undertaking by the proponent and the results of the consultation.

This EA Terms of Reference has been prepared in accordance with the requirements of the Environmental Assessment Act and with guidance provided by the Ministry of Environment Environmental Assessment and Approvals Branch (EAAB). The EA Terms of Reference document is organized as follows:

Section 1 - introduction that provides some background to the Study and the scope of the EA Terms of Reference document;

Section 2 - identification of the proponents;

Section 3 - purpose and description of the proposed undertaking;

Section 4 - description of the range of alternatives that will be evaluated in the EA Study;

Section 5 - description of the environment potentially affected by the undertaking;

Section 6 - description of the evaluation methodologies and criteria to be applied in the evaluation of alternatives;

Section 7 - consultation plan for the environmental assessment;

Section 8 - a commitment on the part of Durham and York to prepare a monitoring strategy for performance of the undertaking, once in place; and,

Section 9 -a discussion regarding flexibility in the application of the EA Terms of Reference.

Included with this EA Terms of Reference as separate documents are the results of public and government agency consultation undertaken as part of the Terms of Reference development and background on the development of the EA Consultation Plan described in Section 7 of this Terms of Reference document. There are seven summary reports that have been prepared for the public consultation events held to date including summary tabulation of comments received at the events together with responses to these comments. **The Consultation Record (including the Consultation Summary Reports) do not form part of the Terms of Reference submitted for review and approval by the Minister**. These documents are available at www.durhamyorkwaste.ca or by contacting the Study Coordinator at 1-800-372-1102 ext. 3731 or by email to info@durhamyorkwaste.ca.

This EA Terms of Reference is also accompanied by a series of *Background Documents*. These background documents contain the rationale supporting the development of this Terms of Reference. **The Background Documents do not form part of the Terms of Reference submitted for review and approval by the Minister**. These documents are available at www.durhamyorkwaste.ca or by contacting the Study Coordinator at 1-800-372-1102 ext. 3731 or by email to info@durhamyorkwaste.ca .

The accompanying background documents are as follows:

2-1 Purpose and Need for the Undertaking;

2-2 Consideration of "Alternatives To" the Undertaking;

2-3 Consideration of "Alternative Methods of Implementing" the Undertaking;

2-4 Description of the Environment Potentially Affected; and,

2-5 Relevant Policies & Approvals Requirements.

1.4. Municipal Endorsement of Proposed EA Terms of Reference Document

This Draft Terms of Reference will be developed further in response to comments provided by the public and review agencies. The Councils of Durham and York Regions will then endorse the Proposed EA Terms of Reference. It will then be submitted to the Minister of the Environment for approval. The Proposed Terms of Reference must be approved by the EA Study, Durham/York Joint Waste Management Group (JWMG) prior to adoption by both Regional Councils.

This proposed EA Terms of Reference document will be consistent with the resolutions of both municipal councils and must be endorsed for submission to the Minister of the Environment for approval (See Appendix "B" – Pending).

2. IDENTIFICATION OF THE PROPONENTS

The proponents for the Proposed Environmental Assessment Terms of Reference and the corresponding Environmental Assessment Study are **'The Regional Municipality of Durham'** and **'The Regional Municipality of York'**. As noted above, the elected councils of both municipalities must approve the proposed EA Terms of Reference prior to its submission to the Minister of the Environment for Approval.

2.1. Inter-Municipal Partnership Agreement

The text here will describe the terms of the Agreement and the Terms of Reference for the Durham/York Joint Waste Management Group – and will be included once the agreement has been finalized and prior to issuance of the Proposed Terms of Reference. Copy to be provided in Appendix "C"

2.2. Potential for Cooperation with Private Sector Partner(s)

As noted above, this EA Study may result in the identification of a preferred undertaking for residual waste processing that would require a competitive process and selection of a vendor(s) to partner with the co-proponents in the development of the facility(ies) for the preferred residuals processing system. The identification of a preferred vendor will likely be necessary, prior to seeking EA Approval, to allow for a sufficiently detailed description of the undertaking (including its design, operation, maintenance, monitoring and contingency measures) and respective net effects. It is expected that the vendor together with other potential public and/or private sector parties, would enter into "partnership" agreements with the co-proponents to implement the undertaking. Following the competitive process and selection of a preferred vendor and/or other partner(s), it may be decided to include these confirmed participants in the EA submission to the Minister as "participants", along with the co-proponents, in the implementation of the preferred alternative system at the preferred alternative site.

3. PURPOSE AND DESCRIPTION OF THE UNDERTAKING

3.1. Purpose of the Undertaking

The purpose of the undertaking is:

> ***to process - physically, biologically and/or thermally - the waste that remains after the application of both Regions' at-source waste diversion programs in order to recover resources - both material and energy - and to minimize the amount of material requiring landfill disposal.***
>
> ***In proceeding with this undertaking only those approaches that will meet or exceed all regulatory requirements will be considered.***

Specifically, the waste to be managed will be:

- Municipal Solid Waste (MSW) from residential sources generated within Durham and York Regions remaining after at-source diversion;
- A portion of post-diversion Industrial, Commercial and Institutional (IC&I) waste traditionally managed by the respective Regions at Regional waste disposal facilities; and,

- Municipal post-diversion residual waste from neighbouring non-Greater Toronto Area (GTA) municipalities that may provide disposal capacity for processing residues. For example, the City of Peterborough, the County of Peterborough and the County of Northumberland. A condition for including waste from neighbouring non-GTA municipalities in the total amount of material that would be managed by this undertaking, is the ability of these municipalities to provide disposal capacity (landfill space) for processing residues as neither Durham nor York currently have sufficient long-term disposal capacity for such residues.

At-source programs refer to those initiatives undertaken at the source of waste generation (e.g. at home or work/business) to eliminate the generation of waste, manage it at the source, or to divert wastes to an appropriate facility (e.g. separation of recyclable materials from the waste stream by the home owner and placement of the recyclable material in a blue box for curbside collection or backyard composting).

3.2. Description of the Undertaking

The following description of the undertaking is for the purpose of initiating the Environmental Assessment Study only. It may be refined or altered based on public or stakeholder input, and the findings of the various EA steps and studies. The final description of the undertaking will be included in the Environmental Assessment document submitted to the Minister for approval in accordance the requirements of Section 6.1(2)(a) of the EA Act.

The undertaking that would be the subject of an EAA approval in accordance with this EA Terms of Reference would be a residual waste processing facility(ies), which would be capable of managing the minimum annual 254,800 tonnes/year of residual wastes projected to remain after the achievement of the Regions' diversion objectives. Over the 35-year planning period (starting in 2011 and ending in 2045) it is projected that a minimum of 12,800,000 tonnes of residual wastes will require management. Both Durham and York support an earlier start, if feasible.

It should be noted that any policies or programs, supporting diversion, that are identified for implementation as a result of the "Alternatives To" evaluation (i.e. identification of the preferred approach or technology) could be implemented without the need for EAA approval and therefore, do not form part of the undertaking described in this EA Terms of Reference.

The agreement between Durham and York recognizes Durham and York would be responsible for the management of their own share of residual waste from the preferred "Alternative To" (e.g. ash, char, or a stabilized disposal waste stream). The agreement also recognizes that the respective Regions would be responsible for any EA(s) required to establish disposal capacity (likely landfill) for such process residues, or the establishment of contracts with private sector residuals processing facilities. To date, there have been no alternative processing approaches or technologies identified that would totally eliminate the need for landfill capacity within the subject planning period.

3.3. Potential Consideration of Contingency or Surplus Disposal Capacity

After the evaluation of the "Alternatives To" (alternative technologies) and during development of the minimum site size requirement, the need to include contingency disposal or processing capacity will be reviewed. At that time, a detailed assessment of the potential of at-source diversion will have been completed and both Regions will have a better understanding of the performance of their diversion programs. In this regard, it should be noted that achievement of 60% diversion by only at-source programs requires on average across all parts of the waste stream, that 85% of people participate in diversion programs and that 70% of available material is captured and diverted (i.e. 85% multiplied by 70% equals 60% diversion). This is an average, as some material (for example most snack food packaging) cannot be diverted at all. For certain recyclable materials, such as most paper fibres (newsprint, cardboard etc.), over 90% participation and 90% capture will be required, which is a very optimistic achievement. If, based on an updated review of diversion program performance, it is evident that the performance of these programs will likely not, on their own, achieve 60% diversion, then the addition of some contingency capacity to the proposed undertaking will be considered in consultation with the public.

Similarly, over the course of the Study, it may become evident that opportunities exist to provide capacity beyond that required by Durham and York. This excess capacity could be used to benefit the proponents and the broader environment. Dewatered biosolids, along with residual MSW from neighbouring non-GTA municipalities that may provide disposal capacity for processing residues outside the study area, or additional residual IC&I wastes from Durham or York are examples of potential waste streams that could be managed by surplus capacity identified during the EA process..

4. RANGE OF ALTERNATIVES TO BE EVALUATED IN EA STUDY

4.1. "Alternatives To" the Undertaking (Alternative Approaches and Technologies)

4.1.1. Consideration of Disposal Systems

To ensure that alternatives are considered in the context of cumulative impacts and full life-cycle impact analysis, processing systems will be evaluated rather than independent component approaches or technologies. This approach recognizes that municipal waste management solutions require integrated strategies to effectively manage solid waste. In most cases, the management of residues from a processing facility will entail adding a landfill component to each of the waste management systems. Other examples include the addition of physical processing equipment at the front-end or back-end of the facility(ies) to capture additional recyclable materials.

4.1.2. Component Approaches and Technologies for Alternative Disposal System Development

During development of the EA Terms of Reference potentially available ways to process the waste remaining after diversion, or "Alternatives To", were screened for reasonableness and applicability to the purpose of the undertaking. Those that passed the screening are identified in the EA Terms of Reference for consideration during the EA. The alternatives identification and screening process were developed and reviewed in consultation with the public. Background Document 2-2[1] provides the rationale for the components that have been included for consideration in the EA Study and for those that are discounted from consideration.

Role of Additional Diversion

[1] Background Document 2-2 "Consideration of "Alternatives to" the Undertaking, Durham/York Residual Waste Study, DRAFT, September 2005

Given the preference of diversion over disposal in both municipalities, the potential of an enhanced diversion system merits consideration at the EA evaluation. Consideration of this alternative could confirm the 60% diversion objectives or recommend a change. A "zero waste" system is not included with this alternative. This level of diversion is considered not reasonably available to the Regions within their planning timeframe. Although the Regions recognize that a number of communities in North America and abroad have set 'zero waste' targets, there are no jurisdictions achieving this level of diversion and corresponding reduction in waste generation. The Regions also do not have jurisdiction over packaging and other related aspects of commerce, which is a significant policy area required to reduce waste.

Role of Landfill

It has been clearly identified by Durham and York Regions that there is a desire to identify a preferred long term alternative that maximizes the recovery of resources and minimizes the reliance on landfill as a primary method of disposal. Landfill facilities will be assumed to continue to play a role for the disposal of certain materials that cannot be otherwise processed or diverted. A landfill only system, whereby a new landfill site capable of managing all waste that remains after at-source diversion would not meet the proposed purpose of the undertaking, and thus will not be considered in this proposed EA Study. Rationale for the exclusion of this option is provided in Background Document 2-1[2]. Furthermore, the results of consultation in both Durham and York (see Consultation Record, Summary of Consultation on "Alternatives To") indicate public support for minimizing the role of landfill in future disposal systems, and the need or preference to recover resources that remain in the residual waste stream.

Table 4-1 describes components that have been identified for consideration during the EA Study.

[2] Background Document 2-1 "Purpose and Need for the Undertaking, Durham/York Residual Waste Study, DRAFT, September 2005

TABLE 4.1: STUDY COMPONENTS – "ALTERNATIVES TO"

Components:	Rationale for Inclusion in EA Evaluation:
Mechanical Treatment	✓ This equipment has been applied for a long time in different contexts to increase the capture rate of recyclable materials. ✓ May be considered to pre-process wastes to be managed by biological or thermal processing alternatives to capture recyclable content and improve consistency and mixture of materials for processing. ✓ May also be used for the management of the respective process residues to capture recyclable content (e.g. metals) flowing through the processes.
Biological Treatment	✓ This approach is being applied elsewhere including other parts of Canada for a mixed waste stream. This approach offers the potential for a relatively stable landfill with reduced odours and other nuisance impacts. Considering the proportion of organics remaining in the residual waste stream, this alternative may be applicable to addressing the purpose of the undertaking.
Thermal Treatment	✓ Based on recent industry activity in Ontario (e.g. responses to requests for expressions of interest) and facilities operating in other jurisdictions it is evident that this alternative is reasonably available to address the purpose of the undertaking from both a commercial and technical perspective.

Each of the proposed processing alternatives will require landfill disposal capacity for process residues. The landfill component will be identified following the identification of the preferred "Alternative To". Options to address that landfill component, depending on the amount of capacity required, may include:

- Contracting to use private sector landfill capacity;
- Identification of new capacity; and/or,

- Establishment of Waste Supply/Residuals Supply Agreements with neighbouring municipalities outside the Greater Toronto Area (GTA).

During the EA Study, Durham and York will decide whether to pursue this capacity jointly or individually.

4.2. "Alternative Methods" of Implementing the Undertaking (Alternative Sites)

Following the identification of the preferred "Alternative To" (i.e. residual processing system), "Alternative Methods" (i.e. facility(ies) site(s)) will be identified and evaluated during the EA Study. Background Document 2-3[3] provides the rationale for the process that is proposed for the purpose of locating a residuals processing facility(ies).

The process of identifying siting alternatives for a processing facility(ies) will not seek to consider all lands within the study area but rather, will focus on those unconstrained lands considered reasonably available and accessible to Durham and York. Accordingly, the following types or categories of sites will be considered at the EA evaluation:

- Publicly owned lands that meet the minimum site size and configuration requirements for the type of facility(ies) being pursued and that are located in areas that are unconstrained from a land use perspective; and,

- Lands offered by a "willing seller" property owner that exhibit the minimum site size and configuration requirements for the type of facility(ies) being pursued and that are located in areas that are unconstrained from a land use perspective.

The only circumstances that would lead to the consideration of privately owned lands not being offered by the property owner (i.e. expropriation) would be a determination, in consultation with the public and Ministry of the Environment (MOE), that the first two categories of sites do not present a reasonable range of siting alternatives.

[3] Background Document 2-3 "Consideration of "Alternative Methods" of Implementing the Undertaking, Durham/York Residual Waste Study, DRAFT, September 2005

5. DESCRIPTION OF ENVIRONMENT POTENTIALLY AFFECTED

The Durham/York study area, comprised of lands within the geographic boundaries of The Region of Durham and York Region, which could potentially be affected by the proposed undertaking, is generally described in the following sub-sections. A more detailed description of the 'Environment Potentially Affected' is provided in Background Report 2-4. Appendix "D" provides a base map of the study area.

5.1. Natural Environment

The study area is bounded by three major bodies of water. These are Lake Ontario to the southeast, Lake Simcoe to the northwest and Lake Scugog to the northeast. The study area shares municipal boundaries with Simcoe County to the northwest, the City of Kawartha Lakes to the northeast, Peterborough and Northumberland Counties to the east, the City of Toronto to the southwest and The Regional Municipality of Peel to the west.

One of the dominant physical characteristics of the study area is the Oak Ridges Moraine. It is one of southern Ontario's most prominent landforms and traverses the south-central portion of York and Durham Regions. The Oak Ridges Moraine is a ridge of sand and gravel over 160 km long running east-west between Caledon, in the west and Rice Lake in the east. The Moraine serves as the headwater region for most streams draining south through York and Durham to Lake Ontario and north to Lake Simcoe and the Kawartha Lakes.

The management of the natural environment features within Durham and York Regions are primarily under the jurisdiction of the Ministry of Natural Resources and five conservation authorities – Central Lake Ontario, Toronto and Region, Ganaraska Region, Lake Simcoe Region and the Kawartha Region Conservation Authorities.

5.2. Socio-Economic

Durham and York Regions have strong balances of distinct urban and rural lands. The development plans and strategies for the area focus on preserving the boundaries between urban and rural areas.

The Regional Official Plans for Durham and York Region both identify firm urban boundaries that are intended to prevent urban development from encroaching on rural areas. Within the urban areas, a

compact, transit-supportive urban form is supported, as are intensification and mixed-use land uses in appropriate locations. Urban areas are planned to accommodate the vast majority of population growth in Durham and York Regions.

Rural areas are composed of a range of land uses including prime agricultural lands, open space use, aggregate extraction areas, rural settlements, and environmentally sensitive areas. A major focus of the study area's land use planning is to limit rural development and to protect areas of high quality soils for agricultural use. Rural settlements are planned to act as centres for the provision of services and goods to rural communities but are not planned to absorb significant population growth in either Region. Growth in rural areas must address servicing capacity and municipal planning policies.

Industrial development occurs primarily along the major transportation routes in the study area. In particular, highway corridors such as Highway 401 in The Region of Durham and Highway 7 and Highway 404 in York Region play an important role in the location of industrial uses. Other transportation facilities such as the railways and harbours play an important role in the location of industrial lands. Additionally, older industrial areas, such as the Yonge Street Corridor in York Region, are being redeveloped to promote economic revitalisation.

From 1996 to 2001, The Region of Durham experienced a population change of 11%, while York Region experienced a 23% increase in population.

5.3. First Nations Communities

There is one First Nation community in the Region of Durham. The Mississaugas of Scugog Island First Nation is one of the smallest First Nations in Canada. There is one First Nation community in York Region, the Chippewas of Georgina Island First Nation. The Chippewas of Mnjikaning (Rama) First Nation are located just north of the study area in neighbouring Simcoe County,

In addition to the First Nation communities reference above, a number of First Nation communities in Southern Ontario, are also considered in this Study.[4]

[4] Background Document 2-4 "Description of the Environment Potentially Affected", Durham/York Residual Waste Study, DRAFT, September 2005

6. ECONOMIC BASE

Economic development within the Region of Durham is heavily based on manufacturing and energy industries. These industries have been attracted to the area because of its excellent location, highly skilled workforce, leadership in innovative technologies, and superior research and development.

Economic development within York Region is based on manufacturing and business service industries. These industries are attracted to York based on accessibility, skilled labour force, high quality of life and supporting infrastructure.

6.1.1. Industry

The industrial sector is strong and stable within the Region of Durham. General Motors and Ontario Power Generation are two of Durham's top employers and have been major contributors to the study area's economy. The energy industry benefits from Durham's access to the North American electricity grid and Durham's commitment to workforce development from The University of Ontario Institute and Technology by offering degrees in support of energy related businesses.

York Region's labour force has plenty to offer with over 65% of adults over 20 having post-secondary education. Magna International, manufacturers of automotive components, is York Region's top employer, with over 12,000 employees.

6.1.2. Agriculture

Statistics Canada reported that 44% of all farmland situated in the Greater Toronto Area (GTA) is in the the Region of Durham. In 2001, the gross farm receipts for the Region equalled $234 million. There are approximately 1,709 farms in the study area. Durham's agricultural products consist primarily of fruit, dairy, floriculture, livestock, poultry, and corn products. The majority of farmland in Durham in 2001 was in crop production. The Region is a leader in agriculture, in the GTA, in terms of the number of farms, amount of farmland, and gross farm receipts.

Although employment in the agricultural industry represents only 1% of the working force, agriculture is still significant in York Region. In the Holland Marsh, 10,000 acres of agricultural land are responsible for producing more than 90% of Ontario's celery and Asian vegetables, 80% of Ontario's carrots, and

66% of Ontario's onions. York Region also has the highest horse population in Ontario, with 18,000 horses and 69 commercial stables.

6.1.3. Tourism

Tourism is an integral part of the study area's economy. The Great Blue Heron Charity Casino in Port Perry, is owned by the Mississauga of Scugog Island First Nation and opened in 1994. Lakes Scugog, Simcoe, and Ontario provide year round fishing opportunities and are popular summer destinations for visitors to the area. Durham and York Regions have over 65 golf courses and many conservation areas.

Paramount Canada's Wonderland, located in Vaughan, attracts more than 13 million guests annually. There are numerous museums in the study area, one of the most predominant being the McMichael Canadian Art Collection, which is situated on 100 acres of conservation land in Vaughan.

6.2. Transportation Systems

The study area exhibits an effective and integrated road network that facilitates the safe, convenient and economical movement of people and goods. Highway 401 is the primary highway in the area. The 401 corridor runs east-west and follows the northern shore of Lake Ontario through the Region of Durham. Highway 400 runs north-south from Toronto through the City of Vaughan and the Township of King. Highway 404 also runs north-south from Toronto through the eastern portion of York Region and ends at Green Lane in the Town of East Gwillimbury. Highway 407 runs east-west from Halton Region, through York Region, to just east of Brock Road in Pickering (Region of Durham). There are plans to extend Highways 404 and 407 through York Region and into the Region of Durham. The future extension of Highway 404 would affect the Township of Brock and would run east near Highway 48 and end at Highway 12. The EA process for the extension of Highway 407, east of Pickering to Highway 35/115,

began in the summer of 2002. The EA Terms of Reference was approved in January 2005, and the individual EA is currently underway. The proposed work for Highway 401 includes increasing the number of lanes to ten between Westney Road and Harwood Avenue in Ajax and constructing a new interchange at Stephenson Road in Oshawa.

There are two commercial airports in the study area: Oshawa Municipal Airport and Buttonville Municipal Airport in Markham. There is one international airport approximately 50 km from the centre of the study area: Lester B. Pearson International Airport in Toronto.

The two national railroads that run through the study area are the main line of the Canadian National Railway (CNR) and the main line of the Canadian Pacific Railway (CPR).

6.3. Power Generation and Transmission Corridors

The Region of Durham is home to two large nuclear power generating. Darlington Nuclear Generating Station is located in the Municipality of Clarington and has an output of 3,524 MW, enough to provide approximately 18% of Ontario's electricity needs. Pickering Nuclear Generating Station is located on the northern shore of Lake Ontario in the City of Pickering. Pickering Nuclear is one of the largest nuclear generating facilities in the world and has a total output of 4,120 MW, enough to provide approximately 21% of Ontario's electricity needs.

There is a hydro corridor (a tract of land containing hydroelectric pylons and cables) that runs north from the Pickering Power Plant. The Corridor is owned by the Province and managed by the Ontario Realty Corporation. Hydro One operates this large electricity distribution system.

6.4. Legal / Jurisdictional Considerations

The Region of Durham and Region of York are both two-tier government structures, with differing waste management responsibilities. The Region of Durham shares the responsibility for waste management services with the local area municipalities, depending on the stream of materials being managed, some are managed by the Region and some are managed by the lower-tier municipality. In York Region, local area Municipalities are responsible for the collection of waste streams at the curbside. York Region is responsible for waste management with the exception of collection. Both Regional governments are responsible for the management of residual wastes.

7. EVALUATION METHODOLOGIES AND CRITERIA

7.1. Comparative Evaluation of "Alternatives To" the Undertaking

The evaluation of the ways to manage the waste remaining after diversion ("Alternatives To" the undertaking) will be a comparison of the advantages and disadvantages associated with each alternative.

Advantages and disadvantages associated with alternative residual processing systems will be defined using a "net" effects analysis. The proposed step-by-step methodology to apply a net effects analysis of "Alternatives To" in the Residual Waste Study is described as follows:

Step 1 - Prior to initiation of the evaluation of "Alternatives To", the proposed evaluation methodology and criteria will be reviewed in consultation with the public and agencies. This review will seek additional input on the proposed evaluation steps and evaluation criteria presented in the EA Terms of Reference and will seek to establish and confirm the relative priorities to be considered during the evaluation.

Step 2 - The component alternatives will be assembled into a range of alternative residuals processing systems with each system being capable of managing the entire projected residual waste stream.

Step 3 - Data collection will be undertaken for the purpose of applying each of the comparative evaluation criteria to each of the alternative disposal systems. The proposed disposal system comparative evaluation criteria are included in Appendix "E" – Table E-1 of this EA Terms of Reference. Suggested indicators and data sources may be adjusted at the initiation of the EA evaluation based on input received from agencies and the public.

Step 4 - The comparative evaluation criteria are applied to each of the alternative residual processing systems and potential effects identified.

Step 5 - Each of the potential effects identified at Step 4 will be considered with respect to the availability of measures to mitigate (i.e. measures that may be applied to reduce or eliminate a negative potential effect) or enhance (measures that may be applied to improve or increase the magnitude of a benefit or positive effect) the effects, and identify the remaining or 'net effects'.

Step 6 - The net effects associated with each disposal system under each comparative criterion will be compared and a list of relative advantages and disadvantages associated with each alternative processing system developed.

Step 7 - The relative advantages and disadvantages of each alternative processing system will be considered in the context of priorities established in consultation with the public and agencies and the preferred system selected. The preferred system will be the one exhibiting the preferred balance of advantages and disadvantages accounting for the significance of environmental categories and criteria established by the public and agencies.

Background Document 2-2[5] provides additional information on the development of the proposed "Alternatives To" evaluation methodology.

7.2. Screening and Comparative Evaluation of Alternative Methods of Implementing the Undertaking

The evaluation of "Alternative Methods" of implementing the undertaking will be comprised of a facility(ies) site selection process. Site selection will start with a review of the entire study area to identify those areas considered un-constrained from the standpoint of locating the facility component(s) of the preferred residuals processing system. These available areas will then be systematically evaluated to identify a long-list of sites followed by additional screening and comparative steps to narrow that list down to a preferred siting option. The following describes the major steps proposed to be used in this evaluation process:

Step 1 - Prior to initiation of the evaluation of "Alternatives Methods" and after a preferred approach ("Alternative To") has been identified by the EA Study, the proposed evaluation methodology and criteria will be reviewed in consultation with the public and agencies. This review will seek additional input on the proposed evaluation steps and evaluation criteria presented in the EA Terms of Reference and will seek to establish and confirm the priorities to be considered during the evaluation.

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[5] Background Document 2-2 "Consideration of "Alternatives to" the Undertaking, Durham/York Residual Waste Study, DRAFT, September 2005

Step 2 - Apply siting constraints to entire study area and identify those lands considered un-constrained for the purpose of the siting of a processing facility(ies). The proposed siting constraints may include, but are not limited to, the criteria listed in Appendix "F" – Table F-1. Lands within the study area, which are constrained by any of the exclusionary criteria, would be screened out for the purpose of moving forward in the site selection process.

Step 3 - Identify a minimum site size requirement for the type of facility(ies) to be sited based on the preferred "Alternative To" and considering the required facility throughput (ie. processing needs of Durham and York Regions) and, if applicable, any desired contingency or surplus capacity (See Section 3.3 above).

Step 4 - Identify a "long-list" of siting opportunities in the un-constrained lands through a review of publicly owned lands and the issuance of a request for "willing seller" properties. Review the "long-list" of sites to ensure that a reasonable range of alternatives are included on the list (e.g. sites in both municipalities, etc.). To be considered, "willing seller" properties must lie within the unconstrained lands identified in Step 2 and meet the siting constraints set out in Appendix "F" – Table F-1.

Step 4(b) - ***Optional.*** If it is determined that there is not a reasonable range of siting opportunities on the "long-list", then a review of privately owned lands in the study area would be undertaken to identify additional siting opportunities with the same or better attributes than those publicly owned and "willing seller" sites on the list. The owners of identified properties would be approached to determine if a negotiated acquisition of the property is feasible.

Review the "long-list" of sites to ensure that a reasonable range of alternatives are included on the list.

Step 4(c) - ***Optional.*** If it is still determined that there is not a reasonable range of siting opportunities on the "long-list", then each of the constraints applied at Step 2 would be reviewed and potentially adjusted in consultation with the public and government

agencies. Steps 2 and 4 and, if necessary, 4(b) would then be re-applied. Step 4(c) would be repeated, as required, to arrive at a reasonable "long-list".

Only if necessary, would the expropriation of privately held lands be considered. This would be the approach of last resort for the purpose of siting a facility(ies).

Step 5 - As a rule-of-thumb, a "long-list" site evaluation will be carried out if there are more than three (3) sites remaining after the application of siting constraints and consideration of available siting opportunities. The purpose of this level of evaluation is to eliminate less preferred sites from the list of sites under consideration using broad-based technical, economic and social criteria. The proposed "long-list" evaluation criteria are included in Appendix "F" – Table F-2. Their application would result in the identification of a "short-list" of alternative sites.

Step 6 - Evaluate the "short-list" of alternative sites using the same net effects analysis methodology described in Section 6.1 (Steps 4, 5, 6, and 7) resulting in the identification of a Durham/York siting preference. The "short-list" comparative evaluation criteria are included in Appendix "F" – Table F-3.

Step 7 - ***Optional.*** The preferred Durham/York site from Step 6 may be compared against sites identified in vendor proposals, subject to certain minimum requirements (See Section 6.3 below).

Step 8 - Identify potential "Alternative Methods" other than siting, if applicable, for development of a preferred site. Examples of the types of alternatives that could be considered at this step include: access routes/entry points; site configurations; landscaping/screening concepts; etc. The scope and methodology for evaluating these types of alternatives would be developed during the EA Study.

Background Document 2-3[6] provides additional information on the development of the proposed "Alternative Methods" evaluation methodology.

7.3. Application of a Competitive Request for Proposal (RFP) Process

An RFP process will be used to select a vendor of the preferred technology ("Alternative To") following the selection of a preferred Durham/York Site. This RFP will request firm price proposals for a facility(s) to be developed on the identified site. In addition to this "base bid" proposal request, vendors may be offered the option of proposing the preferred technology on their own site. Any site offered at this stage would have to meet certain minimum specified requirements, such as being located in Ontario. If any additional acceptable sites were offered at this stage in the process they would be subject to the same complete comparative evaluation process set out in section 6.2 including Step 6 which includes a net effects analysis. Following this comparison an overall preferred vendor and site would be selected.

7.4. Estimated Study Schedule

The following presents an estimated Study schedule from preparation of this EA Terms of Reference to implementation of a proposed undertaking. This schedule will be updated as Study steps and implementation activities are completed.

TABLE 6.1: ESTIMATED SCHEDULE

Project Milestone	Estimated Timeframe
➢ Prepare EA Terms of Reference	2005
➢ Submit EA Terms of Reference to Minister for Approval	December 2005
➢ EA Terms of Reference Approved	March 2006
➢ Initiate EA Study	April 2006
➢ Evaluate "Alternatives To" the Undertaking (i.e.	2006

[6] Background Document 2-3 "Consideration of "Alternative Methods" of Implementing the Undertaking, Durham/York Residual Waste Study, DRAFT, September 2005

Project Milestone	Estimated Timeframe
Technologies)	
➢ Select Preferred Approach to Manage Residual Wastes	End of 2006
➢ Evaluate "Alternative Methods" of Implementing the Undertaking (i.e. Siting)	2007
➢ Select Preferred Durham/York Site	End of 2007
➢ RFP to Identify a Preferred Technology Vendor	Early 2008
➢ Selection of Preferred Vendor	Mid 2008
➢ Comparison of Vendor Sites with Preferred Durham/York Site (if applicable)	Mid to Late 2008
➢ Selection of Preferred Site	Late 2008 to Early 2009
➢ Complete Site Specific Studies to Confirm Suitability and Documentation to Support Approvals	2009
➢ Submit EAA Approval Documentation to Minister for Approval	Late 2009
➢ EA Review and Approval by Minister	2010
➢ Implementation of Undertaking	Mid 2010 to 2011

7.5. Detailed Site Specific Studies

To establish and operate a solid waste management facility(ies), the Environmental Protection Act (EPA) requires that a Provisional Certificate of Approval be obtained. Detailed investigations will be completed at the preferred site, once selected, to satisfy the requirements of the EPA, to obtain a Certificate of Approval, and to confirm the suitability of the proposed facility(ies) on the proposed site.

The scope of detailed studies to be undertaken will depend on the type of facility(ies) being established and the nature of the site location and its conditions. A detailed work program will be developed once the preferred site is selected and will be prepared in consultation with the public and relevant government agencies. Background Document 2-3 identifies a preliminary scope of studies that could be completed at the preferred site.

8. CONSULTATION PLAN FOR THE ENVIRONMENTAL ASSESSMENT

This section describes a general consultation plan, which is intended to guide the consultation process over the course of the EA Study. It includes reference to the types of parties to be consulted over the course of the Study and the scope of consultation to be undertaken at various milestones during the Study. Provision is also made for issues resolution, which could be applied during the Study.

8.1. Parties to be Consulted during EA Study

In general, there are four types or categories of parties to be consulted over the course of the EA Study. These categories, together, are considered to cover the full range of stakeholders, which may have an interest in the EA Study and include:

- **Public Liaison or Advisory Committees** which are committees designated by the proponent to represent a broad range of interests across the study area community and to focus public input to the EA Study.
- **First Nations Groups** as identified by Durham and York in consultation with the Ontario Native Affairs Secretariat that may be potentially affected by the outcome of the EA Study.
- **Government and Agencies,** which represent the interests and mandate of various governmental departments, ministries and agencies potentially affected by the outcome of the EA Study.
- **General Public,** which includes all residents and businesses within the study area, which may have a broad or general interest in the Study or that, may be directly affected by the Study outcome. Over the course of the EA Terms of Reference development, a contact list of those individuals and groups expressing interest in the Study has been compiled and will be updated as the Study proceeds. The current contact list is included in the Consultation Record supporting this EA Terms of Reference.

By way of a Communications Strategy developed for the Study (see Section 7.2 below) and future Study consultation events, the lists of parties to be consulted will be continually updated over the course of the EA Study.

8.2. Scope of Consultation at Study Milestones

Over the course of the EA Study, a range of notices, updates, etc. will be prepared and issued in accordance with the Study's Communications Strategy. It is anticipated that the scope of consultation events will move from initiatives and events addressing and seeking input from the larger community to a program that is more focused on the individuals and community with the greatest potential to be impacted by the proposed undertaking. Table 7.1 outlines the minimum scope of consultation associated with the various Study milestones. Additional consultation activities that may arise will be developed and implemented as required as part of the EA Study in accordance with the principles outlined in the Residual Waste Study Communications Strategy.

TABLE 7-1: CONSULTATION PLAN OVERVIEW

Study Milestones	Minimum Scope of Consultation Activities
➢ Initiate EA Study	General Public Notices and Events to Inform and Receive General Public and Agency Input on Overall Scope of Study.
➢ Review of Evaluation Methodology and Criteria for "Alternatives To" (Alternative technologies)	More focused events such as workshops or 'step-specific' open houses open to the general public and intended to obtain input on finalizing the evaluation methodology and criteria.
➢ Evaluate "Alternatives To" the Undertaking ➢ Select Preferred Approach to Manage Residual Wastes	Open House / Public Meeting type events open to the general public and intended to notify and receive input on selection of the preferred "Alternative To".
➢ Review of Evaluation Methodology and Criteria for "Alternative Methods" (alternative sites)	More focused events such as workshops or 'step-specific' open houses open to the general public and intended to obtain input on finalizing the evaluation methodology and criteria.

Study Milestones	Minimum Scope of Consultation Activities
➢ Evaluate "Alternative Methods" of Implementing the Undertaking ➢ Select Preferred Durham/York Site	*At Identification of Short List:* Open House / Public Meeting type events open to the general public and intended to notify and receive input on the process leading to selection of the short list sites (i.e. study area to suitable areas to long list to short list). *At Evaluation of Short List:* Open House or Public Meeting type events open to the general public but focused on the communities surrounding the short list sites for the purpose of identifying community-specific issues and information regarding the respective sites. *At Identification of Preferred Site:* One-on-one meetings, such as kitchen table meetings, and focused information sessions with community / residents potentially impacted by site to inform and exchange information regarding site specific issues, next steps in process, and opportunities to discuss / resolve concerns. General public notice of selected preferred site.
➢ RFP to Identify a Preferred Technology Vendor	Focused information session(s) with residents / community potentially impacted by facility(s) to introduce and explain specifics of technology being proposed for site. General public notice on selected preferred vendor.

Study Milestones	Minimum Scope of Consultation Activities
➢ Complete Site Specific Studies to Confirm Suitability and Documentation to Support Approvals	Provision of opportunity to form a Site Liaison Committee consisting of resident, agency and other interest representatives to review and provide input on site specific studies. One-on-one meetings, such as kitchen table meetings, and focused information sessions with community / residents potentially impacted by site to obtain input on Study methodologies and to inform and exchange information regarding Study results, design and operational implications, and supporting documentation.

Feedback Mechanism for Responding to and Incorporating Public Comment

Following each public consultation event, comments received will be tabulated and addressed following the same process as utilized in the development of the EA Terms of Reference. Comments will be summarized in a table format outlining the comment, the response to the comment, and any changes to the EA Study that may be required to address the issues raised. These response tables will then be made available to interested parties through the Study website at www.durhamyorkwaste.ca, and provided in hard copy by request to the Study Coordinator at 1-800-372-1102 ext. 3731 or by email to info@durhamyorkwaste.ca.

Communications Strategy

To effectively disseminate information on the Study and to provide opportunities for the public and agencies to provide specific or general input to the Study, Durham and York have developed a communications strategy. Elements of the Communications Strategy include maintenance of a Study website (www.durhamyorkwaste.ca); the development and issuance of public advisories, notices and news; and the provision of a range of avenues for communication between the public and Study representatives. This strategy will be maintained and updated, as required, for the entirety of the Study.

8.3. Issues Resolution

Over the course of the Study it is expected that issues will arise that require resolution either before moving from one step to the next or prior to the issuance of approvals. It will be Durham and York's

preference to resolve issues as they arise and without the assistance of an outside party. However, should this approach not work, the use of a facilitator to negotiate a resolution or use of the EAA's mediation provisions would be considered. It is recognized that unresolved issues could be referred to the Province's Environmental Review Tribunal which would make a decision on approval of the undertaking and that unresolved issues could have a bearing on that decision and that conditions of approval could be imposed to deal with certain issues.

9. MONITORING STRATEGY

Over the course of the Study and the application of evaluation criteria, potential effects and mitigative requirements will be identified for the proposed undertaking. It is noted that these considerations will be defined based on predictive studies and modeling and in the absence of the actual programs and/or facilities. Accordingly, over the course of completing the EA Study, Durham and York will develop a monitoring strategy and schedule for the purpose of confirming assumed or predicted impacts and the performance of mitigative measures once the undertaking is in place and operational.

10. FLEXIBILITY IN APPLICATION OF THE TERMS OF REFERENCE

In the course of implementing the work proposed in this Terms of Reference, Durham and York may determine that minor adjustments to the approaches and methodologies described herein are necessary and/or appropriate. Minor adjustments may include:

- Provision and/or identification of additional information requirements;
- Studies or consultation methods/events to address concerns expressed by the public as Study results become available; or,
- Adjustments to the sequence of Study events which may be required depending on Study results and circumstances.

Where there is a likelihood that information or circumstances will change in the coming years as the EA is completed, this EA Terms of Reference makes reference to the intent or purpose of the consideration. Details with regards to the methods or steps to be followed to achieve the intent or purpose of the

consideration are included in the background documentation that is not approved by the Minister. For example, data sources and specific indicators for the evaluation criteria are not included in the Terms of Reference but may be reviewed in the background documents if a party is interested in the types of considerations for application of the evaluation criteria.

Where minor adjustments are contemplated, such adjustments will be undertaken at the direction of the Durham-York Joint Waste Management Group, which functions as a steering committee for the Study, and in consultation with the MOE.