Approved Environmental Assessment Terms of Reference

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

March 31, 2006

Ministry of the Environment

Office of the Minister

135 St. Clair Ave. West
12th Floor
Toronto ON M4V 1P5
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ENV1283MC-2006-729

MAR 3 1 2006

Ms. Mirka Januszkiewicz
Director
Waste Management Services
Regional Municipality of Durham
Works Department

c/o Durham/York Residual Waste Study
605 Rossland Road East
Whitby ON L1N 6A3

Dear Ms. Januszkiewicz:

Thank you for submitting your Terms of Reference (ToR) for the Durham/York Residual Waste Study on December 31, 2005, as amended on February 17, 2006. The ministry has completed its review and I wish to inform you that I have approved the amended ToR for the preparation of an environmental assessment with respect to the Durham/York Residual Waste Study.

I congratulate the Regional Municipalities of Durham and York for having the foresight to develop a long-term plan and for seeking local solutions. Furthermore, I commend the Regions' commitments to expand diversion programs to achieve a goal of 60% diversion by 2011. This is a critical component to your long-term waste management plan and I trust that your consideration of residual waste processing systems will not come at the expense of your waste diversion goals.

As required by subsection 6.1(1) of the *Environmental Assessment Act*, the environmental assessment must now be prepared in accordance with the approved ToR. While this approval provides additional certainty to your environmental assessment decision-making process, it does not secure approval of an undertaking. The Regions of Durham and York are responsible for fulfilling the commitments outlined in the ToR and providing the appropriate level of quality in the environmental assessment.

... 2

Should you wish to vary significantly from your approved ToR in preparing your environmental assessment, you will need to submit a (new/amended) ToR for my approval. In the event of any uncertainty, you should consult with the Ministry of the Environment through the Ministry's Environmental Assessment and Approvals Branch.

Should you require further assistance please contact Ms. Samantha Kassel, Project Officer of the Environmental Assessment and Approvals Branch, at telephone 416-314-8214 or by email at samantha.kassel@ene.gov.on.ca.

Yours truly,

Laurel C. Broten
Minister of the Environment

Attachment

c: David Merriman, MacViro Consultants, Inc.
David Walmsley, Jacques Whitford Limited
Jim McKay, Jacques Whitford Limited

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Ontario

ENV1283MC-2006-729

MAR 3 1 2006

Mr. Andy Campbell
Director
Solid Waste Management Branch
Regional Municipality of York
Transportation and Works Department

c/o Durham/York Residual Waste Study
605 Rossland Road East
Whitby ON L1N 6A3

Dear Mr. Campbell:

Thank you for submitting your Terms of Reference (ToR) for the Durham/York Residual Waste Study on December 31, 2005, as amended on February 17, 2006. The ministry has completed its review and I wish to inform you that I have approved the amended ToR for the preparation of an environmental assessment with respect to the Durham/York Residual Waste Study.

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Should you require further assistance please contact Ms. Samantha Kassel, Project Officer of the Environmental Assessment and Approvals Branch, at telephone 416-314-8214 or by email at samantha.kassel@ene.gov.on.ca.

Yours truly,

Laurel C. Broten
Minister of the Environment

Attachment

c: David Merriman, MacViro Consultants, Inc.
David Walmsley, Jacques Whitford Limited
Jim McKay, Jacques Whitford Limited

TERMS OF REFERENCE - NOTICE OF APPROVAL

ENVIRONMENTAL ASSESSMENT ACT

SECTION 6.(4)

APPROVAL OF TERMS OF REFERENCE

FOR

THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT

RE: Proponent: Regional Municipalities of Durham and York

Undertaking: Durham/York Residual Waste Study

EA File No.: EA 02 08

As provided for by section 6.(4) of the *Environmental Assessment Act*, Terms of Reference, as submitted for approval to the Ministry of the Environment on December 31, 2005, and revised through the submission of Terms of Reference dated February 17, 2006, to govern the preparation of an environmental assessment for the above-noted undertaking, are hereby approved.

Pursuant to subsection 6.1(1) of the *Environmental Assessment Act*, any environmental assessment for the above-noted undertaking, submitted to the Ministry of the Environment pursuant to subsection 6.2(1) of the *Environmental Assessment Act*, must be prepared in accordance with the Terms of Reference as hereby approved.

Reasons for approval:

1. The ToR ensures that the EA will be completed using a comprehensive public and government agency consultation process that is open and transparent;

2. The ToR ensures that the completed EA will contain a sufficient level of detail to accurately assess the environmental effects of all alternatives and the proposed undertaking; and,

3. The ToR sets out a planning process that will ensure the completed EA will be consistent with the purpose of the EAA and the public interest.

Dated the 31 day of March, 2006 at TORONTO.

Minister of the Environment
135 St. Clair Avenue West, 12th Floor
Toronto, Ontario
M4V 1P5

Proposed Environmental Assessment Terms of Reference

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

February 17, 2006

Residual Waste Disposal Planning Study

Proposed Environmental Assessment

Terms of Reference

February 17, 2006

prepared by:

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600 Cochrane Drive, Suite 500
Markham, Ontario, Canada
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TABLE OF CONTENTS

1. Introduction 1

1.1. Background on Residual Waste Study 1
1.2. Glossary of Terms 3
1.3. Scope of EA Terms of Reference 3
1.4. Municipal Endorsement of Proposed EA Terms of Reference Document 6

2. Identification of the Proponents 6

2.1. Inter-Municipal Partnership Agreement 6
2.2. Potential for Cooperation with Private Sector Partner(s) 7

3. Purpose and Description of the Undertaking 7

3.1. Purpose of the Undertaking 7
3.2. Description of the Undertaking 8
3.3. Potential Consideration of Contingency or Surplus Disposal Capacity 9

4. Range of Alternatives to be Evaluated in EA Study 10

4.1. "Alternatives To" the Undertaking (Alternative Approaches and Technologies) 10
4.1.1. Consideration of Disposal Systems 10
4.1.2. Component Approaches and Technologies for Alternative Disposal SystemDevelopment 10
4.2. "Alternative Methods" of Implementing the Undertaking (Alternative Sites) 14

5. Description of Environment Potentially Affected 15

5.1. Natural Environment 15
5.2. Socio-Economic 16
5.3. First Nations Communities 16
5.4. Economic Base 17
5.4.1. Industry 17
5.4.2. Agriculture 18

5.4.3. Tourism 18
5.5. Transportation Systems 18
5.6. Power Generation and Transmission Corridors 19
5.7. Legal / Jurisdictional Considerations 20
6. Evaluation Methodologies and Criteria 20
6.1. Comparative Evaluation of "Alternatives To" the Undertaking 20
6.2. Screening and Comparative Evaluation of Alternative Methods of Implementing the Undertaking 22
6.3. Application of a Competitive Request for Proposal (RFP) Process 24
6.4. Estimated Study Schedule 25
6.5. Detailed Site Specific Studies 25
6.6. Applicability of the Canadian Environmental Assessment Act 26
7. Consultation Plan for the Environmental Assessment 26
7.1. Parties to be Consulted During EA Study 27
7.2. Scope of Consultation at Study Milestones 27
7.3. Issues Resolution 29
8. Monitoring Strategy 30
9. Flexibility in Application of the Terms of Reference 30

Appendices

Appendix A	Residual Waste Study – Glossary of Frequently Used Terms and Abbreviations
Appendix B	Regional Council Resolutions Endorsing Proposed EA Terms of Reference
Appendix C	Agreement Between The Region of Durham and York Region for Joint Study on Waste Disposal
Appendix D	Study Area Base Map
Appendix E	Preliminary Evaluation Criteria for "Alternatives to the Undertaking" (i.e., Alternative Technologies)

Appendix F **Preliminary Screening and Evaluation Criteria for "Alternative Methods" of Implementing the Undertaking (i.e., Alternative Sites)**

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 food waste began, as a pilot project in September of 2004, and is currently provided to approximately 67,000 households. Full implementation of household organics programs is expected to be completed by 2008.

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.

During the later half of 2005, the United States government initiated the process of passing legislation that, if successful, would prevent or severely inhibit Durham's and York's current disposal arrangements with sites in the State of Michigan. There is a reasonable likelihood that this legislation will be passed in 2006.

Durham and York recognize that the Province of 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 cultural 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".

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 ten summary reports that have been prepared for the public consultation events held to date. .Summary tables have been prepared 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**.

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**.

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.

The Consultation Record and Background 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 .

1.4. Municipal Endorsement of Proposed EA Terms of Reference Document

This Proposed Terms of Reference addresses comments provided by the public and review agencies in response to the Draft EA Terms of Reference. The proposed EA Terms of Reference were supported by the Durham/York Joint Waste Management Group (JWMG) at their November 22nd, 2005 meeting and forwarded to the respective Committees and Councils for their consideration and approval. The respective Councils in both the Regions of Durham and York approved the Proposed EA Terms of Reference (in Durham on December 14th, 2005 and in York on December 15th, 2005) for the Durham/York Residual Waste Environmental Assessment Study and authorized the submission of the Proposed Terms of Reference to the Minister of the Environment (MOE) for approval. These Council Resolutions are provided in Appendix "B".

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 proponents reached an Agreement on June 30, 2005 to undertake the EA Study as a joint effort. Further, the Joint Waste Management Group (JWMG) was formed to oversee completion of the EA Study. A copy of the Agreement and the Terms for the JWMG are attached as Appendix "C".

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

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 316,000 tonnes/year of residual wastes projected to remain after the achievement of the Regions' diversion objectives. This amount includes the receipt of a quantity of additional post-diversion waste from other sources. Over the 35-year planning period (starting in 2011 and ending in 2045) it is projected that a minimum of 13,300,000 tonnes of residual wastes will require management. Background Document 2-1[1] provides additional details on the development of these estimates. Both Durham and York

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

support an earlier start for the planning period (i.e. earlier implementation of a preferred alternative), 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 arranging for the disposal (likely landfill) for its share of the residue generated from the processing of residual wastes. 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 for 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[2] provides the rationale for the

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

components that have been included for consideration in the EA Study and for those that are discounted from consideration.

Role of Additional Diversion

Given the preference of diversion over disposal in both municipalities, it is reasonable to assume that diversion rates may well increase beyond 60% over the final years of the planning period. For planning purposes it has been assumed that the diversion rate would increase to 75% over the final years of the study period. Achievement of a "zero waste" system, however, has not been contemplated over this period. 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[1]. Furthermore, the results of consultation in both Durham and York (see Consultation Record, Summary of Consultation on

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

"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.

TABLE 4.1: STUDY COMPONENTS – "ALTERNATIVES TO"

Components:	Rationale for Inclusion in EA Evaluation:
Mechanical Treatment (Examples: Screens for sorting materials & magnets for recovering ferrous metal)	✓ 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 (Examples: anaerobic digestion & aerobic biodrying of alternative fuel)	✓ This approach is being applied elsewhere including other parts of Canada to process 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 (Examples: gasification, pyrolysis and conventional combustion)	✓ 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).

However, the actual identification of existing landfill capacity and/or siting of new landfill capacity to manage these process residues is outside the scope of this EA Study. 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 lands considered to be generally suitable for the processing of post-diversion residual waste such as existing and/or designated industrial lands. 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 considered to be generally suitable for the processing of residual waste; 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 considered to be generally suitable for the processing of residual waste.

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, December, 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[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 Lake Iroquois shoreline is another significant feature within the study area that serves as a source area for some watercourses.

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.

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

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 Highways 7, 407 and 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]

5.4. 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, superior research and development and a high quality of life.

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.

5.4.1. 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 of 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.

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

5.4.2. Agriculture

Statistics Canada reported that 44% of all farmland situated in the Greater Toronto Area (GTA) is in 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.

5.4.3. 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.

5.5. 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) and Highway 427 extends into York Region presently terminating at Highway 7 in the City of Vaughan.

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 active commercial airports in the study area: Oshawa Municipal Airport and Buttonville Municipal Airport in Markham. The Pickering lands, owned by the Federal Government, were declared an "airport site" in August 2001. To protect Federal Lands for future aviation needs, the Pickering Airport Site Zoning Regulations (AZR) came into effect on September 2005. The AZR restrict the height of buildings, structures and objects including natural growth on regulated lands and protect aircraft from potential hazards such as bird strikes and electronic signal interference for a distance of up to 15 km off the end of each runway. 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).

5.6. 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.

5.7. Legal / Jurisdictional Considerations

The Region of Durham and York Region 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. The Region of Durham is responsible for managing diversion and disposal of materials, and depending on the area, collection may be provided by the Region or by the lower-tier municipality. In York Region, local area municipalities are responsible for the collection of all waste streams at the curbside. York Region is responsible for all other aspects of waste management with the exception of collection. Both Regional governments are responsible for the management of residual wastes.

6. EVALUATION METHODOLOGIES AND CRITERIA

6.1. 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 will be 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 disposal 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[2] provides additional information on the development of the proposed "Alternatives To" evaluation methodology.

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

6.2. 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 to be generally suitable for the purpose of locating the preferred disposal system. These generally suitable 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.

Step 2 - Apply siting constraints to entire study area and identify those lands considered to be generally suitable the purpose of locating the preferred disposal system. The proposed siting constraints may include, but are not limited to, the criteria listed in Appendix "F" – Table F-1. The criteria would be used to delineate the limits of the broad area considered generally unsuitable for the purpose of locating the preferred disposal system thereby focusing on generally suitable areas.

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 (i.e., 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 generally suitable areas through a review of publicly owned lands and, if necessary, 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. To be considered, "willing seller" properties must lie within the generally suitable areas identified in Step 2.

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, if necessary, "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 is 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 - Prospective vendors of the technology(ies) comprising the preferred disposal system, will be requested to submit their qualifications and may be invited to submit their own alternative site(s) for consideration. Prospective vendor site(s), if submitted, must clear minimum compliance requirements, such as being located in Ontario, to be included on the short list of sites. Public and agency consultation will be undertaken when the short list of alternative sites has been finalized.

Step 7 - A Request for Proposals (RFP) will be issued to prospective technology(ies) Vendors with the intent of identifying a Preferred Vendor. This will be done concurrently with the evaluation of the short list of sites. The short list of alternative sites from Step 6 will be evaluated 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 comparative evaluation criteria will be applied on the basis of sufficiently detailed data and analyses. These criteria are included in Appendix "F" – Table F-3. Public and agency consultation will be undertaken when a Preferred Vendor and site have been identified.

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

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

A Request for Qualifications (RFQ) followed by an RFP process will be used to ultimately select a vendor of the preferred technology ("Alternative To") concurrently with the selection of a preferred Durham/York Site. The RFP will request price proposals for a facility(s) to be developed on a prospective site described using generic characteristics. Following this comparison an overall preferred vendor and site would be selected.

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

6.4. 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	March 2006
➢ Evaluate "Alternatives To" the Undertaking (i.e. Technologies)	2006
➢ Select Preferred Approach to Manage Residual Wastes	2006
➢ Evaluate "Alternative Methods" of Implementing the Undertaking (i.e. Siting) and competitive process to Identify a Preferred Technology Vendor	2006/early 2007
➢ Select Preferred Site and Select Preferred Vendor	End of 2007
➢ Complete Site Specific Studies to Confirm Suitability and Documentation to Support Approvals and Submit Applications	2008
➢ EA Review and Approval by Minister	2009
➢ Implementation of Undertaking	Mid 2009 to 2010

6.5. 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[3] identifies a preliminary scope of studies that could be completed at the preferred site.

6.6. Applicability of the Canadian Environmental Assessment Act

This undertaking is subject to the requirements of the *Ontario Environmental Assessment Act. However, t*he requirements of the *Canadian Environmental Assessment Act* (CEAA) may also apply. Should the CEAA be triggered, the proponent intends to work in a coordinated way with provincial and federal governments, with both governments having formally agreed to coordinate their respective EA processes established by the applicable environmental assessment legislation. The exact relationship between the proponents, the provincial government and the Federal government will be determined upon identification of a potential CEAA trigger.

7. 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.

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

7.1. 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.

7.2. 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 and review of Evaluation Methodology and Criteria for "Alternatives To" (Alternative technologies)	General Public Notices possibly followed by events such as open houses 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)	Events such as open houses intended to obtain input on finalizing the evaluation methodology and criteria.
➢ Evaluate "Alternative Methods" of Implementing the Undertaking, RFP to Identify a Preferred Technology Vendor and Identification of a Preferred Site	*At Identification of Short List:* Open House 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 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.

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.

7.3. 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.

8. 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.

9. 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.

Appendix A

Residual Waste Study – Glossary of Frequently Used Terms and Abbreviations

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Aerobic Treatment:	Biological treatment of organic waste by bacteria that require oxygen. (e.g. windrow composting – see Composting)
Air Emissions:	For stationary sources, the release or discharge of a pollutant from a facility or operation into the ambient air either by means of a stack or as a fugitive dust, mist or vapour.
Alternative Disposal Technology (ADT):	Technologies, other than landfill, capable of disposing municipal waste (e.g. incineration, EFW, gasification, pyrolosis, etc.).
Alternative Fuel:	Fuel, that is obtained via various mechanical and biological processes that recover materials such as plastics, fibre, wood and dried organic matter from the residual waste stream for input to a thermal process.
Anaerobic Treatment:	See Anaerobic Digestion
Anaerobic Decomposition:	See Anaerobic Digestion
Anaerobic Digestion (AD):	The controlled biological conversion of organic material, by bacteria, in the absence of oxygen, to produce biogas, liquid effluent and a solid, partially stabilized organic material.
Approved Site or Facility:	A landfill site or waste management facility with a current valid Certificate of Approval
Ash:	The non-combustible fraction that remains after combustion of waste.
'At-Source':	Referring to a waste minimization or management activity occurring at the source of waste generation (e.g. at the household, at the business, etc.).
Baghouse Residue:	Leftover material that is captured by an air pollution control / filtering device that removes dust and particles from the exhaust gas stream.
Baling:	Compacting solid waste into blocks to reduce volume and simplify handling.
Biocell:	A cell in which organic waste is decomposed biologically in an aerobic process and landfill gas is extracted.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Biodegradable:	Capable of decomposing under natural conditions.
Biogas:	Gas formed during the anaerobic decomposition of organic material, mainly consisting of methane and carbon dioxide.
Biological Treatment:	A treatment technology that uses bacteria to process organic waste.
Biomass:	Plant material, vegetation, or agricultural waste used as a fuel or as an energy source.
Bottom Ash:	The non-airborne ash resulting from burning waste in an incinerator. The material, which falls to the bottom of the combustion grate and is removed mechanically in an EFW facility.
Briquetting:	The compaction of waste into small bricks to be burned in an incinerator. Bricks are easier to manage and have a higher calorific value than regular uncompacted waste.
British Thermal Unit (BTU):	Unit of heat energy equal to the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit at sea level.
Buffer Area:	That part of a disposal site or facility that is not a waste fill area (in the case of a landfill) or is not occupied by a building. (i.e., area between actual facility and the property boundary)
Bulky Waste:	Large items of waste materials, such as appliances, furniture, large auto parts, trees, stumps.
Calorific Value:	The amount of heat produced by a specific material type when combusted under specific conditions. Calorific Value is usually expressed in Calories or Joules per kilogram (i.e. Cal/Kg or J/Kg).
Canadian Council of Ministers of the Environment (CCME):	A council made up of environmental ministers from provincial and federal levels of government that proposes nationally consistent environmental standards and objectives to achieve high levels of environmental quality for waste management, air pollution, and toxic chemicals across Canada.
Candidate Site:	Property identified as suitable for consideration as a potential site for a waste management facility.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Carbon Monoxide (CO):	A colourless, odourless, poisonous gas produced by incomplete fossil Fuel combustion.
Carcinogenic:	Capable, in sufficient quantities, of causing the cells of an organism to change in such a way as to produce cancer.
Catalyst:	A substance that changes the speed or yield of a chemical reaction without being consumed or chemically changed by the chemical reaction.
Cells:	In landfill sites, areas where waste is placed, compacted, and covered with layers of cover material on a daily basis.
Cellulose:	A complex carbohydrate that is composed of glucose units and makes up the cell walls in plants. Naturally occurs in wood and other fibrous products such as cotton and is the raw material of many manufactured goods, such as paper, rayon, and cellophane.
Certificate of Approval:	A license or permit issued by the Ministry of the Environment for the operation of a waste management site/facility.
Class Environmental Assessment (EA):	A planning and approvals process for a group of projects which are routine, similar in nature, limited in scale, and possess predictable environmental effects.
Cogeneration:	The consecutive generation of useful thermal and electric energy from the same fuel source.
Combustion:	1. Burning, or rapid oxidation, accompanied by the release of energy in the form of heat and light. 2. Refers to controlled burning of waste, in which heat chemically alters organic compounds, converting into stable inorganics such as carbon dioxide and water.
Combustion Chamber:	The actual compartment where waste is burned in an incinerator.
Combustion Product:	Substance produced during the burning or oxidation of a material.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Commercial Waste: All solid waste emanating from business establishments such as stores, markets, office buildings, restaurants, shopping centers, and theatres.

Community Recycling Centre (CRC): A waste management facility that offers waste management services to small businesses and residents. A CRC is a place to drop off items such as electronics, white goods, household hazardous waste, leaf and yard waste, and blue box recyclables items.

Compactor: Equipment used to crush and compact waste, to reduce volume.

Completely Mixed Reactor: When liquid enters the completely mixed reactor, it quickly mixes completely with the liquid already in the reactor, making the contents of the reactor homogenous. Also, commonly referred to as a continuously stirred tank reactor.

Compost: The relatively stable humus material that is produced from the aerobic decomposition or composting process in which bacteria in soil mixed with degradable organic materials break down the mixture into an organic soil amendment.

Composting Facilities: 1. A facility where the organic component of municipal solid waste is decomposed under controlled conditions; 2. An aerobic process in which organic materials are ground or shredded and then decomposed to humus in windrow piles or in mechanical digesters, drums, or similar enclosures.

Composting: The controlled biological decomposition of organic material in the presence of air to form a humus-like material. Controlled methods of composting include mechanical mixing and aerating, ventilating the materials in a vessel or placing the compost in piles out in the open air and mixing it or turning it periodically.

Contingency Plan: A plan developed to be implemented should some aspect of the project need to be altered or some aspect of the operation fail (i.e. “Plan B”).

Corporations Supporting Recycling (CSR): A Canadian, not-for-profit, private sector organization that works with municipalities and industries to aid in developing sustainable municipal recycling and waste diversion systems.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Cover Material:	Soil, or other approved (by MOE) materials, used to cover compacted solid waste in a sanitary landfill. Alternatives to soil include non-hazardous ash from incinerator facilities, tarps, and other materials.
Cyclone:	A cone-shaped air-cleaning device that collects and separates particles of different densities, from the air/gas stream, by using a rapid rotational effects and gravity.
Design and Operation (D&O) Plan/Report:	A document (plan/report), required for obtaining a Certificate of Approval, which describes in detail the function, elements or features of a landfill site/facility or waste management facility, and how a landfill site/facility or waste management facility would function including its monitoring, and control/management systems.
Digestion:	The biochemical decomposition of organic matter
Disposal:	Final placement or destruction of wastes. Disposal is typically accomplished through use of approved sanitary landfills or incineration with or without energy recovery.
Disposal Facilities:	Facilities for disposing of solid waste, including landfills and incinerators, intended for permanent containment or destruction of waste materials.
Diversion:	The management of materials by reduction, reuse, recycling, and composting.
Diversion Rate:	The percentage of waste materials diverted from traditional disposal such as landfilling or incineration to be recycled, composted, or re-used.
Dump:	A site used to dispose of solid waste without environmental controls.
Durham/York Residual Waste Study	The Durham/York Residual Waste Study is a joint initiative between the Region of Durham and York Region to work together to find a way to manage solid waste remaining after at-source diversion.
Ecological/Environmental Risk Assessment (ERA):	A scientific method used to examine the nature and magnitude of risks from the exposure of plants and animals to contaminants in the environment.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Economies of Scale:	The theory that constructing a larger facilities can be less expensive to construct and operate, on a per unit basis, than several smaller facilities having the same capacity, or throughput.
Eddy Current:	Circular electric currents in metals that create repulsive forces, similar to magnetic forces, in non ferrous electrical conductors such as Aluminum. (e.g., eddy current separator used to separate aluminum and other non ferrous metals).
Electrostatic Precipitator (ESP):	A device that removes particles from a gas stream after combustion occurs. The ESP imparts an electrical charge to the particles, causing them to adhere to charged metal plates inside the precipitator. Rapping on the plates causes the captured particles to fall into a hopper for disposal.
Emission Factor:	A representative value that relates the quantity of pollutant release to the atmosphere with an activity or input associated with the release of that pollutant.
Emissions:	Technically, all solid, liquid, or gaseous discharges from a processing facility, but normally referring to Air Emissions (with solids referred to as residue and liquids as effluent).
Emissions Trading:	The creation of surplus emission reductions at certain stacks, vents or similar emissions sources and the use of this surplus to meet or redefine pollution requirements applicable to other emissions sources. This allows one source to increase emissions when another source reduces them, maintaining an overall constant emission level. Facilities that reduce emissions substantially may "bank" their "credits" or sell them to other facilities or industries.
Endothermic:	A chemical reaction that requires (takes in) heat.
Energy-from-Waste (EFW):	The recovery of energy in the form of heat and/or power from the thermal treatment of waste. Generally applied to incineration, pyrolysis, gasification but can also include the combustion of landfill gas and gas produced from anaerobic digestion of organic materials.
Energy Recovery:	The recovery of energy in the form of heat and/or power from the thermal treatment of waste. Generally applied to incineration, pyrolysis, gasification but can also include the combustion of landfill gas and gas produced from anaerobic digestion of organic materials.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Environment (as it relates to the Environmental Assessment Act):	Environment is broadly defined under the Environmental Assessment Act as follows: (a) air, land or water, (b) plant and animal life, including human life, (c) the social, economic and cultural conditions that influence the life of humans or a community, (d) any building, structure, machine or other device or thing made by humans, (e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or (f) any part or combination of the foregoing and the interrelationships between any two or more of them.
Environmental Assessment (EA):	A systematic process that is conducted in accordance with applicable laws or regulations aimed at assessing the effects of a proposed undertaking on the environment. Includes evaluation of need, alternatives, impacts, and mitigative, remedial, monitoring and/or compensatory measures.
Environmental Assessment Act (EAA):	Provincial (Ontario) legislation (Act), the purpose of which is to provide for the: protection; conservation; and, wise management of Ontario's environment. To achieve this, the EAA ensures that environmental problems or opportunities are considered and their effects are planned for before development or building takes place.
Environment and Plastics Industry Council (EPIC):	A council of the Canadian Plastics Industry Association (CPIA) dedicated to sustainable plastics recycling and to minimizing plastic waste sent to landfill.
Environmental Protection Act (EPA):	An Ontario Act to provide for the protection and conservation of the natural environment.
Environmental Assessment Terms of Reference: (EA) Terms of Reference	An Environmental Assessment Terms of Reference outlines the steps to be taken for an Environmental Assessment.
Exothermic:	A chemical reaction that gives off heat.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Exports :	In solid waste programs, municipal solid waste and recyclables transported outside the municipal jurisdiction or locality where they originated.
Expression of Interest (EOI):	A preliminary document prepared by an outside source documenting their interest in a proposed project and a very general set of qualifications they possess that would make them eligible to participate further in the project.
Extended Producer Responsibility (EPR):	A policy to shift the responsibility of a product's life cycle away from the municipality to the producers and to provide incentives for producers to consider the environmental impacts into the selection of materials and the design of the product.
Feedstock:	The input material to be processed at a waste management facility.
Extended Producer Responsibility (EPR):	A policy to shift the responsibility of a product's life cycle away from the municipality to the producers and to provide incentives for producers to consider the environmental impacts into the selection of materials and the design of the product.
Ferrous Metals:	Metals derived from iron or steel; products made from ferrous metals include appliances, furniture, containers, and packaging like steel drums and barrels. Recycled products include processing tin/steel cans, strapping, and metals from appliances into new products.
Flares:	A controlled open flame device used to burn off unwanted or unusable natural gas, biogas, or landfill gas.
Flue Gas:	The air coming out of a stack or a chimney after combustion in the burner it is venting. It can include carbon oxides, water vapour, nitrogen oxides, sulphur oxides, particles and other chemical pollutants.
Fluidized Bed Incinerator:	An incinerator that uses a suspended bed of hot sand or other granular material to transfer heat directly to waste. Used mainly for destroying municipal sludge or other materials of uniform particle size.
Fly Ash:	The airborne ash resulting from burning waste in an incinerator removed by air pollution control receptor.
Fugitive Emissions:	Emissions not caught by a capture system.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Gasification:	Conversion of solid material such as coal or waste into a gas for use as a fuel.
Gigajoule (GJ):	A measurement of energy. A typical single family household (approx. 2000 sq. ft.) uses approximately 60 to 90 GJ annually for heating (NRCan).
Grapple:	A mechanical device used to grasp materials (e.g., waste). A bucket, with several hooks to grasp, hold and release material.
Grapple Feeding:	A process in which material is fed by a grapple into the processing system. Usually involves grasping a planned amount of the material from a large pile.
Greenhouse Effect:	The warming of the Earth's atmosphere attributed to a build-up of carbon dioxide or other gases; some scientists think that this build-up allows the sun's rays to heat the Earth, while making the infra-red radiation atmosphere opaque to infra-red radiation, thereby preventing a counterbalancing loss of heat.
Hazardous Waste:	Materials that can pose a substantial or potential hazard to human health or to the environment when improperly managed. Possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on special MOE or EPA lists.
High Density Polyethylene (HDPE):	A material used to make plastic rigid containers, milk and juice jugs, margarine tubs, and detergent bottles. The plastic is translucent or opaque and does not crack when bent. Referred to as No. 2 Plastic.
Household Hazardous Waste (HHW):	Hazardous products used and disposed of by residential as opposed to industrial consumers. Includes paints, stains, varnishes, solvents, pesticides, and other materials or products containing volatile chemicals that can catch fire, react or explode, or that are corrosive or toxic.
Household Waste (Domestic Waste):	Solid waste, composed of garbage and rubbish, which normally originates in a private home or apartment house
Hydrolysis:	Decomposition of a chemical compound by reaction with water, such as the dissociation of a dissolved salt or the catalytic conversion of starch to glucose.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Impact Studies:	Studies that predict negative consequences (if any) of a proposed undertaking. Air, visual, natural environmental, traffic, hydrogeological, Noise, Health Risk, Land Use and Hydrological Impact Studies are required under the Environmental Protection Act.
Imports:	Municipal solid waste and recyclables that have been transported to a jurisdiction or locality for processing or final disposition (but that did not originate in that jurisdiction or locality).
Incineration:	A thermal treatment technology involving destruction of waste by controlled burning at high temperatures with the overall aim of reducing the volume of waste.
Incinerator:	A furnace for burning waste under controlled conditions.
Individual Environmental Assessment:	An Individual Environmental Assessment requires the following steps to fully address the requirements of the EAA: 1) Preparation of the Proposed EA Terms of Reference; 2) Submission of the EA Terms of reference to Minister of Environment for Approval; 3) Completion of the EA Study in accordance with approved EA Terms of Reference, and; 4) Submission of the EA Study to Minister of Environment for Approval.
Industrial, Commercial & Institutional (IC&I) Waste:	Combination of wastes generated by industrial, commercial and institutional sectors that are not typically picked up at the curb or accepted at public drop-off facilities as part of the municipal waste collection process. These wastes are primarily managed by way of contract with private waste management service providers.
Industrial Waste:	Unwanted materials from an industrial operation; may be liquid, sludge, solid, or hazardous waste.
Institutional Waste:	Waste generated at institutions such as schools, libraries, hospitals, prisons, etc. (part of the IC&I waste stream).
In-Feed:	Material that is fed into the front-end of a process.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Integrated Waste Management System:	The combination of diversion and disposal alternatives comprising one waste management system. For example - blue box recycling, source-separated organics composting, incineration, and landfilling of ash and residuals could all form part of an integrated waste management system.
Landfills:	Sanitary landfills are outdoor disposal sites for non-hazardous solid wastes. Waste is spread in layers, compacted to the smallest practical volume, and covered by material applied at the end of each operating day.
Leachate:	Liquid that collects contaminants as it trickles through wastes, or other materials. Leaching may occur in landfills and may result in hazardous substances entering surface water, ground water, or soil.
Leachate Collection System:	A system that gathers leachate and pumps it to the surface for treatment
Lift:	In a sanitary landfill, a compacted layer of solid waste placed on top of a lower level of compacted solid waste including appropriate cover material.
Limestone Scrubbing:	Use of a limestone and water solution to remove gaseous stack-pipe sulphur before it reaches the atmosphere.
Liner:	A relatively impermeable barrier designed to keep leachate inside a landfill. Liner materials include plastic and/or dense clay.
Magnetic Separation:	Use of magnets to separate ferrous materials from mixed municipal waste stream.
Mass Burn Incineration:	The incineration of waste with minimal initial pre-treatment or separation of wastes.
Materials Recovery (or Recycling) Facility (MRF):	A facility that processes (separates, bales) residentially collected mixed recyclables individual recyclable product streams, for shipment to market.
Mechanical Separation:	The physical separation of wastes by material type, size or density using trommels, cyclones, and various screens.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Mechanical Treatment:	Involves the physical treatment of waste materials to recover recyclable materials and to prepare waste for further treatment or disposal.
Mediation:	An attempt to bring about a peaceful settlement or compromise between disputants through the objective intervention of a neutral party.
Ministry of the Environment (MOE) Ontario:	The MOE monitors pollution and restoration trends in Ontario and uses that information to develop environmental laws, regulations, standards, policies, programs, and guidelines. The MOE works to provide cleaner air, land, and water for Ontarians.
Mitigation:	Measures taken to reduce adverse impacts on the environment.
Mixed Municipal Waste:	Solid waste that has not been sorted into specific categories (such as plastic, glass, yard trimmings, etc.)
Modular Facility:	A facility of several parallel units designed to allow for an expansion by adding additional units in parallel.
Moisture Content:	The percentage of a material that is water.
Monitoring:	Periodic or continuous surveillance or testing to determine the characteristics of a substance or the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, plants, and animals.
Municipal Solid Waste (MSW):	Common garbage or trash generated by industries, businesses, institutions, and homes.
National Pollutant Release Inventory (NPRI):	The only legislated, nation-wide, publicly accessible inventory of information on annual releases to air, water, land, and disposal or recycling from all sectors in Canada.
Non-combustible waste:	Waste, which cannot be combusted (burned) even if energy is added. (e.g. stone, glass and metals).
Non-Ferrous Metals:	Nonmagnetic metals such as aluminum, lead, and copper. Products made all or in part from such metals include containers, packaging, appliances, furniture, electronic equipment and aluminum foil.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Old Corrugated Cardboard (OCC):	Bulky cardboard that is typically found in boxes used for shipping and packaging. It is made from 2 strips of cardboard with a wavy, or "corrugated" strip running through the centre.
Old Newspaper (ONP):	Old news papers set out, collected and processed for recycling.
Ontario Guideline A-7:	Air emission guidelines developed by the Ministry of the Environment (MOE) to govern combustion and air pollution control requirements for new municipal waste incinerators and gasifiers in the Province of Ontario.
Ontario Regulation 347 (O. Reg. 347):	A regulation under the Environmental Protection Act that specifies standards and approval requirements for waste management sites and systems in Ontario.
Operating and Maintenance Costs:	Usually expressed annually, operation and maintenance costs are a sum of money to operate and maintain the facility in operating order (i.e., labour, utilities, equipment repairs, materials, supplies, disposal fees, etc.)
Open Burning:	Uncontrolled fires in a dump.
Organic:	Referring to or derived from living organisms. In chemistry, any compound containing carbon except carbon dioxide.
Organic Matter:	Carbonaceous waste contained in plant or animal matter and originating from domestic or industrial sources.
Package Plant:	Small wastewater treatment systems designed to treat limited sewage flow at the facility site.
Particulate:	A particle of a solid or liquid that is suspended in air.
Pelletizing:	The compaction of waste into small pellets to be thermally processed in an incinerator or gasifier. Pellets are easier to manage and have a higher calorific value than regular uncompacted waste.
Pilot Tests:	Small-scale testing of a waste management technology under actual site conditions to identify potential problems prior to full-scale implementation.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Plasma-Arc Reactor:	A thermal waste treatment technology that operates at extremely high temperatures and can produce a synthetic gas.
Plug Flow Reactor:	When a high solid slurry enters a plug flow reactor, its flow is unidirectional with minimal to no mixing in the axial direction, making the contents of the reactor heterogeneous.
Point of Impingement (POI):	A defined point or points set at a defined distance from a facility (usually between the facility and sensitive community receptors) at which a specific limit for air pollutants must be met.
Pollutant:	Generally, any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.
Pollution:	Generally, the presence of a substance in the environment that because of its chemical composition or quantity prevents the functioning of natural processes and produces undesirable environmental and health effects
Polyethylene Terephthalate (PET):	A type of plastic that is clear or coloured transparent with high gloss. It is used for carbonated beverage bottles, peanut butter jars, and some household cleanser cleaners. Bottles have a raised dot on the base and is referred to as No. 1 Plastic.
Positive Displacement Pumps:	A pump that forces fluid from one chamber to another by reducing the volume of the first chamber while increasing the volume in the second chamber.
Post-Closure:	The time period, following the shutdown of a landfill, waste management or manufacturing facility; established for monitoring purposes.
Potable Water:	Water that is safe for drinking and cooking.
Powdered Activated Carbon (PAC):	Used in air pollution control systems to control mercury and dioxins/furans. PAC has a large surface area, which allows the carbon to adsorb (stick to) and react with contaminants.
Precipitator:	Pollution control device that collects particles from an air stream.
Proponent:	Proponent means a person/persons who: 1) carries out or proposes to carry out an undertaking, or 2) is the owner or person having charge, management or control of an undertaking.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Proprietary Devices:	A device that is either used, produced, or marketed under exclusive legal right of the maker.
Putrescible:	Able to rot quickly enough to cause odours and attract flies.
Pyrolysis:	Decomposition of waste and its constituent chemicals by heat in the absence of oxygen.
Quench:	A method to cool a substance quickly and suddenly after heating. Often performed by placing the hot material in water.
Receptor:	The person, plant or wildlife species that may be affected due to exposure to a contaminant.
Recycle/Reuse:	Minimizing waste generation by recovering and reprocessing usable products that might otherwise become waste (.i.e. recycling of aluminum cans, paper, and bottles, etc.).
Refuse Derived Fuel (RDF):	Waste that has been processed to remove non-combustible materials. RDF can be compacted or compressed through processes such as pelletizing or briquetting. Pelletized or Bricked RDF is easy to manage and handle, and also usually has a higher calorific value because of the increased density and reduced moisture content.
Refuse Reclamation:	Conversion of solid waste into useful products; e.g., composting organic wastes to make soil conditioners or separating aluminum and other metals from waste for recycling.
Reserve Capacity:	Extra treatment capacity built into infrastructure such as solid waste and wastewater treatment plants and interceptor sewers to accommodate flow increases due to future population growth.
Residential Waste:	Waste generated in single and multi-family homes, including newspapers, clothing, disposable tableware, food packaging, cans, bottles, food scraps, and yard trimmings other than those that are diverted to backyard composting.
Residual:	Amount of a pollutant remaining in the environment after a natural or technological process has taken place; e.g., the sludge remaining after initial wastewater treatment, or particulates remaining in air after it passes through a scrubbing or other process.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Residual Municipal Solid Waste (RMSW):	Common garbage or trash generated by industries, businesses, institutions, and homes that remains after diversion programs have been used to remove recoverable materials.
Resource Recovery:	The process of obtaining matter or energy from materials formerly discarded.
Rotary Lobe Pumps:	Type of rotary pump where two or more rotating lobes are put in a chamber between suction and discharge nozzles. Fluid that enters the suction nozzle is trapped in the pockets formed by the lobes. The fluid is then carried around and eventually forced out through the discharge nozzle.
Scrubber:	An air pollution device that uses a spray of water or reactant or a dry process to trap pollutants in emissions.
Selective Catalytic Reactor (SCR):	An air pollution control device that reduces the nitrogen oxide emissions, with a catalyst, to water vapour and elemental nitrogen by injecting ammonia into the flue gases. The catalyst is required because SCR systems occur at much lower temperatures than SNCR (see below) systems.
Selective Non-Catalytic Reduction (SNCR):	An air pollution control device that converts nitrogen oxide emissions into elemental nitrogen and water by injecting a chemical reagent typically urea, or another ammonia-based solution into the flue gas.
Self Hauled Wastes:	Wastes that are delivered to a waste management facility by the waste generator.
Shrouded Flares:	Flares that are enclosed in order to control combustion and monitor emissions more reliably, as opposed to an open flame where there is a lack of control.
Siting:	The process of choosing a location for a facility.
Source Reduction:	Reducing the amount of materials entering the waste stream from a specific source by redesigning products or patterns of production or consumption (e.g., using returnable beverage containers). Synonymous with waste reduction.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Source Separated Organics (SSO):	Organics separated by the household or business that include food wastes and leaf and yard wastes. Source separated organics are collected by a separate collection vehicle and sent for processing/composting.
Source Separation:	Segregating various wastes at the point of generation (e.g., separation of paper, metal and glass from other wastes to make recycling simpler and more efficient).
Spent Media:	Odour control equipment that can no longer be used as a result of trapping solid residue.
Stabilized Organic Material:	Organic material that has converted to a form that resists any further change. Bacteria stabilizes organic material and converts the material to gases and other more inert materials.
Stack:	A chimney, smokestack, or vertical pipe that discharges flue gas or used air.
Stakeholder:	Any organization, governmental entity, or individual that has a stake in or may be impacted by a given approach to environmental regulation, pollution prevention, energy conservation, etc.
Stoichiometric:	A chemical condition where by there exists a mixture of chemicals having the exact proportions required for complete chemical combination, applied especially to combustion of materials. (e.g. stoichometric conditions occur in an incinerator when there is sufficient oxygen present to completely combust the waste material)
Stratigraphy:	The order of rock or soil layers in a geological formation.
Syngas:	A gas product (primarily hydrogen and carbon monoxide) resulting from gasification processes and can be used as a fuel or feedstock chemical.
Terms of Reference:	A terms of reference is a document that sets out detailed requirements for the preparation of an Environmental Assessment.
Thermal Treatment:	Use of elevated temperatures to treat wastes (e.g., combustion or gasification)
Tipping Fee:	A monetary fee paid to process a dispose of waste at a facility.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Toxic Equivalents (TEQs):	Used to report toxicity-weighted masses of mixtures of dioxins. The dioxin toxicity equivalent value is compared to 2, 3, 7, 8, tetrachloridibenzo-*p*-dioxin, and determined by adding the products of the measured concentration of each dioxin and furan congener multiplied by the toxicity equivalent factor.
Toxic Waste:	A waste that can produce injury if inhaled, swallowed, or absorbed through the skin.
Transfer Station:	Facility where material is transferred from collection vehicles to larger trucks or rail cars for longer distance transport.
Trommel:	A rotary cylindrical screen, typically inclined at a downward angle that separates materials of different physical size. Trommel screens are used to separate mixed recyclables, municipal solid waste components, or to screen finished compost from windrow and aerated static pile systems.
Undertaking:	A project or facility that is subject to an environmental assessment. It is defined in the Environmental Assessment Act as follows: 1. an enterprise or activity or a proposal, plan or program in respect of an enterprise or activity by or on behalf of Her Majesty in right of Ontario, by a public body or public bodies or by a municipality or municipalities, 2. a major commercial or business enterprise or activity or a proposal, plan or program in respect of a major commercial or business enterprise or activity of a person or persons other than a person or persons referred to in clause (1) that is designated by the regulations, or 3. an enterprise or activity or a proposal, plan or program in respect of an enterprise or activity of a person or persons, other than a person or persons referred to in clause (a), if an agreement is entered into under section 3.0.1 in respect of the enterprise, activity, proposal, plan or program; ("entreprise")
United States Environmental Protection Agency AP-42 (US-EPA AP-42):	US-EPA document *Compilation of Air Emission Factors, Volume 1: Stationary Point and Area Sources*.
Urea:	A form of nitrogen that converts readily to ammonium.
User Fee:	Fee collected from only those persons who use a particular service, as compared to one collected from the public in general.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Venturi Scrubbers:	Air pollution control devices that use water to remove particulate matter from emissions.
Volume Reduction:	Processing waste materials to decrease the amount of space they occupy, usually by compacting, shredding, incineration, or composting.
Waste:	1. Refuse from places of human or animal habitation. 2. Unwanted materials left over from a manufacturing process.
Waste Characterization:	The process of identifying the various components, including quantities, and materials found within a waste stream.
Waste Exchange:	Arrangement in which individuals or companies exchange their wastes for the benefit of both parties.
Waste Feed:	The continuous or intermittent flow of wastes into an incinerator or other device.
Waste Generation:	The weight or volume of materials and products that enter the waste stream before recycling, composting, landfilling, or combustion takes place. Also can represent the amount of waste generated by a given source or category of sources.
Waste Generator:	The individual, household, establishment or business engaged in an activity that generates a specific waste or wastes.
Waste Management System:	A set of facilities or equipment used in, and any operations carried out for, the management of waste including the collection, handling, transportation, storage, processing or disposal of waste, and may include diversion programs and facilities and one or more waste disposal sites.
Waste Minimization:	Measures or techniques that reduce the amount of wastes generated during industrial production processes; term is also applied to recycling and other efforts to reduce the amount of waste going into the waste stream.
Waste Reduction:	Using at-source reduction, reuse, or composting to prevent or reduce waste generation.

GLOSSARY OF FREQUENTLY USED TERMS AND ABREVIATIONS

Durham/York Residual Waste Study

Waste Stream:	The total flow of solid waste from homes, businesses, institutions, and manufacturing plants that is recycled, burned, or disposed of in landfills, or segments thereof such as the "residential waste stream" or the "recyclable waste stream."
Waste-to-Energy (WTE) Facility/Municipal-Waste Combustor:	Facility where recovered municipal solid waste is converted into a usable form of energy, usually via combustion.
White Goods:	Usually large household appliances such as washing machines, dishwashers, and refrigerators/freezers.
Yard Waste:	The part of solid waste generated at the household in the yard composed of grass clippings, leaves, twigs, branches, and other garden refuse.
Zero Waste:	Refers to efforts to reduce solid waste disposal to zero, or as close to zero as possible, by minimizing excess consumption and maximizing the recovery of wastes through recycling and composting.

UNITS OF MEASUREMENT

Area
m3 cubic metre
scf standard cubic feet 35.3 m3

Mass/Weight
Re. Orders of Magnitude: x 10^2 = x 100, x10^3 = x 1000, etc.
g gram
mg milligrams 1 x 10^{-3} grams
µg microgram 1 x 10^{-6} grams
ng nanogram 1 x 10^{-9} grams
kg kilogram 1 x 10^3 g
pg picogram 1 x 10^{12} grams
t metric tonne 1 x 10^3 kg
kt kilotonne 1 x 10^6 kg
lb pound 1 lb = 453.592 grams

Power
W watt
kW kilowatt 1 x 10^3 W
MW megawatt 1 x 10^6 W

Volume
L litre .
mL millilitre 1 L = 1 x 10^3 mL
m3 cubic metre 1 m3 = 1 x 10^3 L
Rm3 and DSm3 dry cubic metre of flue gas corrected to standard conditions (25°C, 101.3 kPa, 11% O2) as defined by MOE APC on Incinerators Policy 01-03-02

Time
s second
min minute
hr hour
wk week
y year

ELEMENTS

Cd - Cadmium
Hg - Mercury
Pb - Lead

COMPOUNDS

CO - Carbon Monoxide
CO^2 - Carbon Dioxide
CH_4 - Methane
HCl - Hydrogen Chloride
TPM - Total Particulate Matter
PM2.5 - Particulate Matter Diameter <=2.5 ìm
NOx - Nitrogen Oxides
N_2O - Nitrous Oxide
PCDDs - - Polychlorinated Dibenzodioxins
PCDFs - Polychlorinated Dibenzofurans
SO_2 - Sulphur Dioxide
VOCs - Volatile organic compounds

MISCELLANEOUS

BTU - British Thermal Unit
°C - temperature in degrees Celsius
N/A - not available
% - percent
cfm - cubic feet per minute
ppmdv - part per million by dry volume
ppmv - part per million by volume
ppm - part per million
min - minimum
max - maximum

Appendix B

Regional Council Resolutions Endorsing Proposed EA Terms of Reference

DIRECTION MEMORANDUM

Clerk's Department

TO: C. Curtis, Commissioner of Works

FROM: P.M. Madill, Regional Clerk

DATE: December 14, 2005

RE: Direction as per minutes of the Regional Council meeting held on December 14, 2005

REPORT OF: Works Committee **ITEM # 1**

DURHAM/YORK RESIDUAL WASTE ENVIRONMENTAL STUDY
PROPOSED TERMS OF REFERENCE (2005-WR-29)

THAT Council approve the Proposed Terms of Reference for the Durham/York Residual Waste Environmental Assessment and authorize staff to submit the Proposed Terms of Reference (ToR) to the Minister of the Environment (MOE) for their approval.

P.M. Madill, A.M.C.T., CMM I
Regional Clerk

"Service Excellence for our Communities"

York Region

Regional Clerk's Office
Corporate Services Department

December 15, 2005

The Honourable Laurel C. Broten
Minister of the Environment
135 St. Clair Avenue West
12th Floor
Toronto, ON M4V 1P5

Dear Minister:

Re: Proposed Terms of Reference
Durham/York Residual Waste Environmental Assessment

Regional Council, at its meeting held on Thursday, December 15, 2005, adopted the following recommendations of the Solid Waste Management Committee regarding the report entitled "Proposed Terms of Reference, Durham/York Residual Waste Environmental Assessment":

1. Council approve the Proposed Terms of Reference for the Durham/York Residual Waste Environmental Assessment.

2. The Regional Clerk forward the proposed Terms of Reference to the Minister of the Environment for approval.

Accordingly, enclosed for your approval are the Proposed Terms of Reference for the Durham/York Residual Waste Environmental Assessment, prepared in accordance with Sections 6.(1) and 6.(2)(a) of the Environmental Assessment Act. A copy of Clause 1, Report No. 8 of the Solid Waste Management Committee is also enclosed for your information.

Please contact Andrew Campbell, Director, Solid Waste Management, at 905-830-4444, ext. 5711, if you have any questions with respect to this matter.

Sincerely,

Denis Kelly
Regional Clerk

K.Price
Attachment
Copy to: A. Campbell, Director
B. Boffey, MacViro Consultants Inc.
196285 P27 Dec 7/05

Appendix C

Agreement Between The Region of Durham and York Region for Joint Study on Waste Disposal

RESIDUAL WASTE MANAGEMENT
EA STUDY AGREEMENT

This Agreement dated June 30, 2005 is made

BETWEEN:

THE REGIONAL MUNICIPALITY OF DURHAM
("Durham")

-and-

THE REGIONAL MUNICIPALITY OF YORK
("York")

RECITALS

WHEREAS:

(a) Durham and York are each responsible within their respective geographic limits for the disposal of solid waste; and

(b) Durham and York wish to examine and identify a preferred method or methods of processing – physically, biologically and/or thermally - the waste that remains after the application of Durham's and York's at-source waste diversion programs in order to recover resources – both material and energy – and to minimize the amount of waste requiring landfill.

NOW THEREFORE Durham and York agree as follows:

INTERPRETATION

Definitions

1. In this Agreement and in the recitals above,

   (a) "**Agreement**" means this Residual Waste Management Environmental Assessment Study Agreement;

   (b) "**Durham**" means The Regional Municipality of Durham acting as a body corporate and, where the context requires, includes all employees, officers, servants and agents of The Regional Municipality of Durham;

(c) "**JMG**" means the Joint Management Group described in Section 12;

(d) "**Milestone**" means a milestone set out in Section 9;

(e) "**Study**" means the study described in Section 5; and

(f) "**York**" means The Regional Municipality of York acting as a body corporate and, where the context requires, includes all employees, officers, servants and agents of The Regional Municipality of York.

Schedules

2. The following Schedules are attached to and form part of this Agreement:

Schedule "A" Joint Management Group Terms of Reference
Schedule "B" Study Budget

References

3. Unless otherwise specified, references in this Agreement to Sections and Schedules are to Sections and Schedules in this Agreement.

4. Reference to any statute or statutory provision includes reference to that statute or statutory provision as from time to time amended, extended or re-enacted.

SCOPE OF THE STUDY

5. Durham and York shall jointly undertake an environmental assessment study (the "Study") to examine and identify a preferred method or methods of processing – physically, biologically and/or thermally - the waste that remains after the application of Durham's and York's at-source waste diversion programs in order to recover resources – both material and energy – and to minimize the amount of waste requiring landfill.

6. The Study shall satisfy all of the applicable requirements for an environmental assessment under the *Environmental Assessment Act*, R.S.O. 1990, c. E18.

7. Only those physical, biological or thermal technologies/systems that meet or exceed current regulatory requirements shall be considered in the Study.

8. The Study shall establish an annual processing capacity for alternative technologies/systems based on the projected quantity of solid residual wastes generated over a 35-year planning period (2013 to 2045).

9. Following are the significant milestones contemplated for the Study:

(1) Approval by the Minister of the Environment of the Environmental Assessment Terms of Reference (Fall 2005);

(2) Selection of the preferred technologies/systems for processing the post-diversion waste following an assessment of the alternatives to the undertaking (2006); and

(3) Selection of the preferred site(s) for implementation of the preferred technologies/systems following an assessment of alternative methods of carrying out the undertaking (2007).

10. The Study shall include the development of a policy designed to compensate property owners (including road authorities) impacted by the selection of the preferred site(s).

11. The Study shall assume that each party shall be responsible for arranging for the landfill disposal of its own share of residue generated from the processing of residual wastes by the preferred technologies/systems.

12. Upon completion of the Study, the parties may enter into a new agreement governing (a) the preparation of a request for proposals designed to select a technology provider to implement the preferred technologies/systems and (b) the processing of all necessary legislative approvals.

STUDY MANAGEMENT

13. The Study shall be managed by a Joint Management Group ("JMG") comprised of elected officials and citizens from Durham and York as well as an observer from the City/County of Peterborough Waste Management Steering Committee. The terms of reference for the JMG shall be as set out in Schedule "A".

FINANCIAL

14. Prior to March 31 in each year, the JMG shall review, and submit to the appropriate Committees and the Regional Councils for their approval, a detailed budget for the following calendar year of the Study. The Councils of both Durham and York must approve such budgets. The projected overall budget for the entire Study is set out in Schedule "B".

15. During 2005, each party shall pay its own costs associated with its own public information sessions. All other costs incurred in relation to the Study shall be shared between the parties. Such costs shall include, but not be limited to,

(a) preparation of Study documents;

(b) consulting fees;

(c) public notices and out-of-pocket expenses associated with public meetings in either Region;

(d) *intervener funding (if any);* and

(e) any hearing before the Environmental Review Tribunal.

16. Durham and York staff time and in-house resources spent on the Study shall not be a shared cost.

17. If the parties should obtain funding from some source, such as from senior levels of government, other than the parties themselves, such funding shall be used to reduce the financial contributions of both parties equally.

18. Each party shall indemnify the other against and save it harmless from and against all claims, demands or proceedings for loss, damage or injury, including death and from and against all costs and expenses which it may sustain, suffer or incur, resulting from or arising directly or indirectly out of the actions or omissions of such party pursuant, or purportedly pursuant to this Agreement or resulting therefrom in any way whatsoever.

GENERAL MATTERS

Term

19. The Agreement shall commence on June 30, 2005.

20. This Agreement shall terminate upon the completion of the environmental assessment, provided that either party may terminate earlier upon written notice to the other party given within 60 days after the achievement of a Milestone. Each party shall be responsible for its respective share of all costs incurred prior to termination. In addition, the terminating party shall be responsible for all costs of amending the Terms of Reference to permit the environmental assessment to continue. Neither party shall be liable to the other party for any other costs or damages resulting from the termination.

Successors and Assigns

21. This Agreement shall not be assigned by either party without the prior approval of the other.

22. This Agreement enures to the benefit of and binds the parties and their respective successors and permitted assigns.

Amendments

23. No amendment to this Agreement shall be effective unless it is in writing and signed by both parties.

Arbitration

24. Any dispute, difference, issue or question arising between the parties or between which concerns or touches upon the validity, construction, meaning, performance or effect of this Agreement, shall be referred to and resolved by arbitration in accordance with the *Arbitration Act, 1991*, S.O. 1991, c.17. The arbitration decision shall be final and binding and shall not be subject to appeal under any circumstances (whether with respect to a question of law, a question of fact, a question of mixed fact and law, or otherwise).

Further Assurances

25. The parties shall promptly and duly execute and deliver such further documents and assurances, and take such further action may be necessary from time to time in order to more effectively carry out the intent and purpose of this Agreement and to establish and protect the rights, interests and remedies intended to be created.

Notices

26. (1) Any notice under Section 19 shall be in writing and shall be delivered to the following addresses:

The Regional Municipality of Durham 605 Rossland Road East Whitby, Ontario L1N 6A3	The Regional Municipality of York 17250 Yonge St. Newmarket, Ontario L3Y 6Z1
Attention: Regional Clerk Fax No. (905) 668-9963	Attention: Regional Clerk Fax No. (905) 895-3031

(2) Notice shall be sufficiently given if,

(a) delivered in person;

(b) sent by registered mail; or

(c) sent by facsimile transmission during normal business hours on a business day.

(3) Each notice sent shall be deemed to have been received,

(a) on the day it was delivered;

(b) on the third business day after it was mailed; or

(c) on the same day that it was sent by facsimile transmission or on the first business day thereafter if the day on which it was sent by facsimile transmission was not a business day.

(4) Either party may change its address for notice by giving notice to the other in the manner provided in this Section.

IN WITNESS WHEREOF Durham and York have executed this Agreement.

THE REGIONAL MUNICIPALITY OF DURHAM

Per: _____
Roger Anderson, Regional Chair

Per: _____
Pat Madill, Regional Clerk

Authorized by Clause 1
of Report 4 **of the**
Transportation and Works
Committee, adopted by Regional Council
at its meeting on June 23, 2005

THE REGIONAL MUNICIPALITY OF YORK

Per: _____
Bill Fisch, Regional Chair

Per: _____
Denis Kelly, Regional Clerk

Approved
by Solicitor: _____

Schedule "A"

JOINT MANAGEMENT COMMITTEE

TERMS OF REFERENCE

1. **Mandate**

1.1 The JMG is a sub-committee of Durham's Works Committee and York's Waste Management Committee whose composition and activities shall be in accordance with these Terms of Reference.

1.2 The JMG shall provide advice and make recommendations to Durham's Works Committee and York's Waste Management Committee on all matters relating to (a) the Residual Waste Management Environmental Assessment Study Agreement between Durham and York dated June 30th, 2005 (the "Agreement"), (a) the environmental assessment study described in the Agreement (the "Study"); and (c) any other agreement between the parties regarding the processing of waste that remains after the application of Durham's and York's at-source waste diversion programs.

2. **Scope of Activities**

2.1 The JMG shall,

(a) examine the composition and quantity of the post-diversion residual wastes to be managed;

(b) establish the limits of the area to be serviced by a facility, or facilities, established as a result of the Committee's work;

(c) research available energy and recyclable resource markets and their operating requirements;

(d) review and make recommendations regarding the Study's preferred post-diversion residual waste processing technologies and systems;

(e) review and make recommendations regarding the Study's preferred site location(s) for the required facility or facilities;

(f) secure meaningful public input through public information protocols such as workshops and open houses;

(g) report and make recommendations to the Durham's Works Committee and to York's Waste Management Committee respecting all other matters set out in Section 1.2 of these Terms of Reference, as required.

3. **Composition**

3.1 The JMG shall be comprised as follows:

a) *8 Voting members*

Four (4) current members of Durham's Works Committee.
Four (4) current members of York's Waste Management Committee.

The Chairs and Vice Chairs of each Committee, or their designate, shall sit as members of the JMG. These members shall select the remaining two (2) members from their respective Committee to sit on the JMG.

b) *6 Non-voting members*

Three (3) interested residents from the Region of Durham[M1].
Three (3) interested residents from the Region of York.

c) The Chair of the City & County of Peterborough's Waste Management Steering Committee, or a designate, shall sit as an observer.

3.2 Membership in the JMG shall be for a 3-year term corresponding with the terms of Regional Councils.

3.3 The JMG may establish project teams and/or working groups as deemed necessary to address specific issues. The Chair of any project team or working group shall be a voting member of the JMG.

4. **Officers**

4.1 The Chairs of Durham's Works Committee and York's Waste Management Committee shall be Co-Chairs of the JMG and shall preside over JMG meetings in an alternating fashion. If either Co-Chair is absent, the Vice-Chair of the respective Regional Committee shall serve as Chair for that JMG meeting.

5. **Support Services**

5.1 Durham's Commissioner of Works and York's Commissioner of Transportation & Works and their designates shall serve as staff liaison to the JMG.

5.2 Staff support from both Durham and York shall be provided to the JMG as required.

5.3 The staff liaisons shall co-ordinate all requests for advice from the JMG through meeting agendas and addenda to meeting agendas. JMG responses to such requests shall be co-ordinated by the staff liaison to the respective Regional Committees.

5.4 Both Regions shall provide secretarial and other administrative support services to the JMG in an alternating fashion. When, for example, the JMG meeting is in Durham Region, administrative support shall be provided by Durham Region staff. The respective Regional Departments shall be responsible for these administrative expenses.

6. Meetings

6.1 The JMG shall coordinate its meetings with the Durham's Works Committee and the York's Waste Management Committee meetings. Special meetings may be held at the call of the both of the Co-chairs of the JMG.

6.2 The location of JMG meetings shall alternate between the Region of Durham and Region of York offices.

6.3 Unless otherwise determined, all JMG meetings shall be open to the public. As a formal advisory Committee within both Durham and York, procedures at the JMG meetings shall be governed by the procedural by-law of the Region hosting the meeting unless specified otherwise in this Terms of Reference.

7. Delegations at Committee Meetings

7.1 Any person wishing to appear before the JMG as a delegate must submit a request to both staff liaisons advising of the topic or item to which they wish to speak. All such requests must be received at least one week prior to a JMG meeting to ensure that the delegation is included in the meeting's agenda. Any person wishing to address the JMG as a delegate, who has not previously arranged to do so, may be granted permission to do so only by resolution of the JMG.

8. Minutes and Agenda

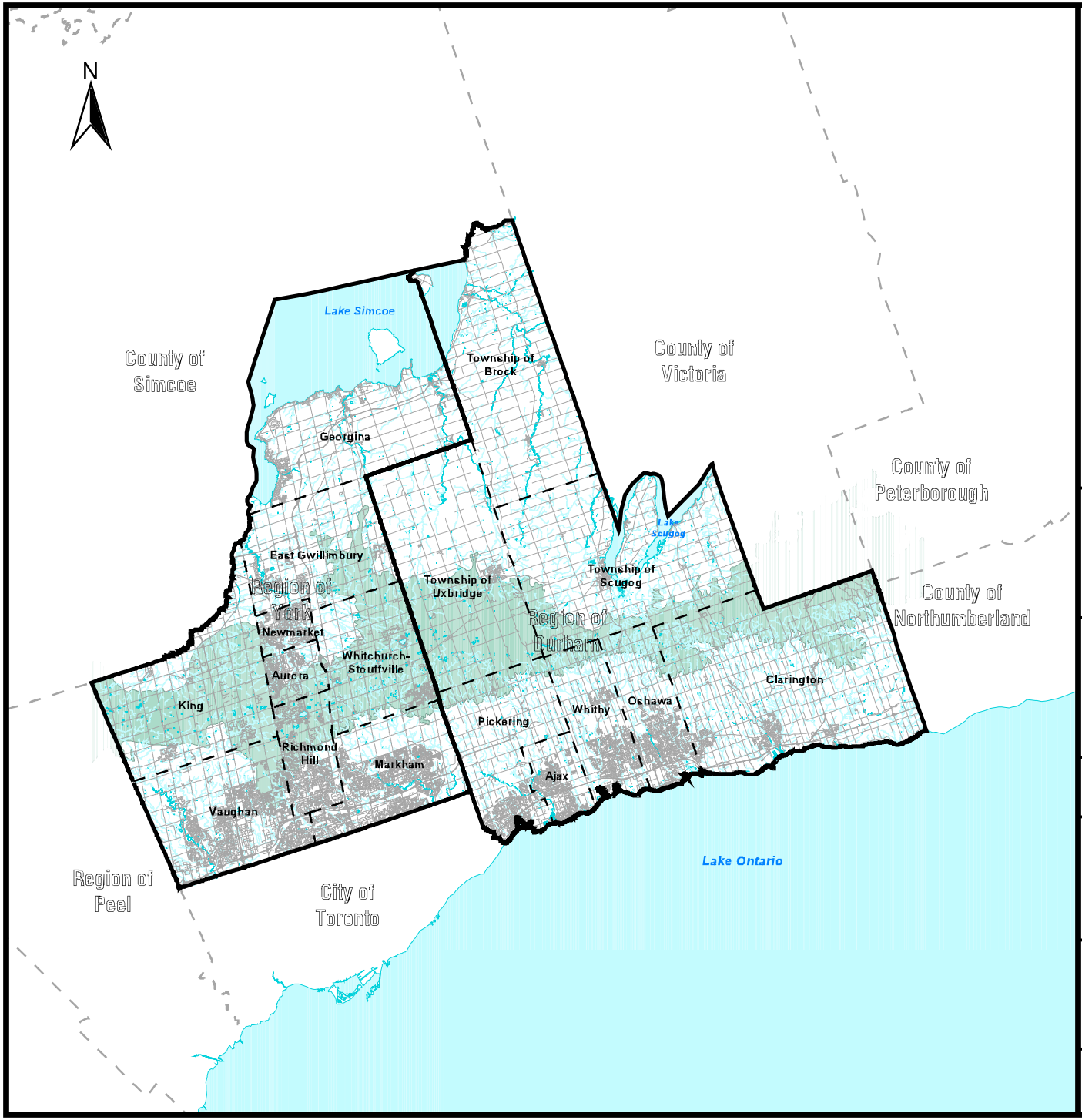
8.1 All minutes of meetings of the JMG shall be submitted to both Durham's Works Committee and York's Waste Management Committee.

9. Committee Resolutions

9.1 JMG shall seek to achieve consensus on decisions. Recommendations are 'carried' if supported by a majority of voting members. Only resolutions as they appear in the adopted Minutes may be considered as officially representing the position of the JMG.

Appendix D

Study Area Base Map



Legend

- Oak Ridges Moraine
- Waterbody
- Watercourse
- Road
- Local Municipal Boundary
- Regions of York and Durham

MacViro

Jacques Whitford

DURHAM REGION

York Region

Residual Waste Study

November 2005

10 0 10 20 Kilometers

Scale 1 : 750,000

Durham / York Residual Waste Study

Basemap

Appendix E

Preliminary Evaluation Criteria for "Alternatives to the Undertaking" (i.e., Alternative Technologies)

TABLE E-1: Preliminary Comparative Evaluation Criteria for "Alternatives to" the Undertaking (Step 4)

Environmental Considerations	Preliminary Evaluation Criteria
Natural Environmental Considerations	◆ Environmental burden at a global or macro-environmental scale, including impacts to air, land and water. ◆ Consumption /preservation of non-renewable environmental resources. ◆ Potential for destruction or disruption of sensitive terrestrial and/or aquatic habitats at an eventual site. ◆ Potential to increase waste diversion rate and/or make best use of residual (post-diversion) waste materials.
Social Cultural Considerations	◆ Potential for land use conflicts from siting of facilities required for alternative.
Economic/Financial Considerations	◆ Net system costs per tonne of waste managed – in a systems context. ◆ Sensitivity of system costs and affordability to external financial influences.
Legal/Technical Considerations	◆ Legal/Contractual risks associated with waste management alternative. ◆ Technical risks associated with waste management alternative.

Appendix F

Preliminary Screening and Evaluation Criteria for "Alternative Methods" of Implementing the Undertaking (i.e., Alternative Sites)

TABLE F-1: Preliminary Exclusionary Criteria for the Identification of Suitable Areas where a long-term waste management facility could be sited. (Step 2)

- Exclude designated[1] lands located within areas protected by Provincial/ Federal legislation and Provincial land use plans and policies including the Oak Ridges Moraine Conservation Plan, the Green Belt Plan, and the Provincial Policy Statement 2005.
- Exclude designated residential areas and areas within an appropriate separation distance[2] of these designations.
- Exclude designated Natural Heritage Features and Areas and areas within an appropriate separation distance of these designations. Examples include:
    - Significant Habitat of Endangered and Threatened Species and Species at Risk;
    - Significant Areas of Natural and Scientific Interest;
    - Significant Wetlands, Woodlands, etc.;
    - Ground water Discharge/Recharge Areas;
    - Wellhead Protection Areas and Infiltration Areas;
    - Designated Hazard Land; and,
    - Conservation Areas.
- Exclude Prime Agricultural Lands.
- Exclude designated Park / Recreational Lands and areas within an appropriate separation distance of these designations.
- Exclude Institutional facilities and areas within an appropriate separation distance of these facilities or lands (e.g. schools, hospitals).
- Exclude areas around federally regulated airports as per Transport Canada Guidelines.

[1]Designated refers to land uses and related policies as set out in Federal/Provincial Statues and Regulations and applicable Municipal Official Plans/Municipal Policy Plans. These designations will be clearly defined at the outset of the evaluation of "Alternative Methods"

[2]Appropriate Separation Distances will be defined following the identification of the preferred "Alternative to" and in consultation with the public, agencies and the MOE. Consideration will also be given to existing land use compatibility guidelines including, for example, the MOE's "D-Series" Guidelines for Land Use Compatibility, and B-7 Series Guidelines for Reasonable Use Concept.

TABLE F-2: Preliminary Factors to be used in the Evaluation of the "Long-List" of Alternative Sites. (Step 5)

Factor	Constraint
Proximity to required infrastructure (dependent on technology selected)	• Example: Maximum distance (to be specified) from electrical grid interconnection point or heat load if an EFW facility was part of the preferred "Alternative To" • Distance to required sewer and water services
Site accessibility	• Maximum distance (to be specified) from major highway, rail line and/or transit system
Potential impact of the haul route (i.e., traffic, noise, land use, cost)	• Length of haul route (distance to main waste generation source(s)) • Land use along haul route • Road type, width and traffic volumes along haul route
Property size	• Minimum size (determined in Step 3) in comparison with the actual site size (ie. amount of surplus land available beyond the minimum site size requirement)
Land use compatibility	• Designated industrial or industrial type land use adjacent to the site
Availability of site	• Requirement to acquire site through expropriation
Potential impacts on unregulated airport operation	• Proximity to unregulated airports

TABLE F-3: Preliminary Comparative Evaluation Criteria to be used in the Evaluation of the "Short-List" of Alternative Sites. (Step 6)

Environmental Considerations	Preliminary Evaluation Criteria
Public Health & Safety and Natural Environment Considerations	◆ Potential Air Quality Impacts *Note: The preferred technology must at least meet all applicable air quality regulations.* ◆ Potential Water Quality Impacts (Surface Water and Groundwater) ◆ Potential Environmentally Sensitive Areas and Species Impacts ◆ Potential Aquatic and Terrestrial Ecology Impacts
Social and Cultural Considerations	◆ Compatibility with Existing and/or Proposed Land Uses ◆ Potential Impact on Residential Areas ◆ Potential Impact on Parks and Recreational Areas ◆ Potential Impact on Institutional Facilities or Areas ◆ Potential Impact on Archaeological Resources, Built Heritage and Cultural Heritage Landscapes ◆ Potential Traffic Impacts
Economic / Financial Considerations	◆ Operation and Maintenance Costs for Facility(ies) ◆ Capital Costs to develop Facility(ies)
Technical Considerations	◆ Compatibility with Existing Infrastructure ◆ Design/operational flexibility provided by site
Legal Considerations	◆ Complexity of Required Approvals ◆ Complexity of Required Agreements