



Durham/York Residual Waste Study

Draft Report

(Referred to as Draft until Final EA Submission)

Thermal Facility Site Selection Process Results of Steps 1-5 Identification of the "Short-List" of Alternative Sites

March, 2007





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1. Introduction and Background

1.1 Overview of the Durham / York Residual Waste EA Study

Durham and York Regions (the Regions) have partnered to undertake a joint Residual Waste Planning Study. Both municipalities are in need of a solution to manage the solid waste that remains for disposal after diversion (residual or post-diversion waste). The Regions are working together to address the social, economic, and environmental concerns of residents through an Environmental Assessment (EA) Study process to examine potential long-term residual waste management alternatives.

The Region of Durham

The Region of Durham (Durham) has programs, and plans for 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 has recently been implemented to service all Durham Region single-family residences. In its December 1999 Solid Waste Master Plan, Durham 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” Durham will likely refine its diversion target to align with that established by the province.

The Region of York

York Region (York) has a number of programs in place for the source separation and diversion of “Blue Box” recyclables, yard waste, and household hazardous waste, and is in the process of implementing programs to capture household organics. In July 2005, York opened a single-stream Blue Box recycling facility located in the Town of 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 food and household cleaning containers, empty paint cans, and milk cartons. Curbside collection of household organics was initiated, as a pilot project, in September 2004 and is currently provided to approximately 131,000 households. Full implementation of the household organics programs is expected to be completed by the end of 2007, at which time the Region would be in a position to meet and potentially exceed the Provincial waste diversion target of 60 percent.

Shared Issues

Even with the expanded diversion efforts, Durham and York continue to face the challenge of managing residual waste that cannot be currently diverted. Both Regions face a shortage of available landfill capacity over the long term. In response to the closing of existing landfill sites in the Greater Toronto Area (GTA) and the inability to develop new landfill capacity, Durham and York, along with other GTA municipalities, were forced to enter into contracts for the “export” of their residential waste to disposal facilities located primarily in the State of Michigan.

On August 31, 2006 Michigan Senators announced they had reached an agreement with the Province of Ontario to end shipments of Municipal Solid Waste (MSW) to Michigan by 2010. The shipment of MSW to Michigan will be phased out over the four year period, with a 20 percent reduction of Canadian waste within the first year, 40 percent reduction within two years and a complete end to these shipments within four years. Following 2010, Ontario Municipalities including Durham and York will no longer have the option of disposal of MSW in Michigan landfills.

Shared Opportunities

Facing common waste disposal issues, the Regions are acting to implement, as quickly as possible, a Durham/York based solution that: is socially and politically acceptable to both communities; maximizes environmental protection; and, fosters the wise management of potential resources which are currently lost by way of landfill in Michigan. In addition to solving long-term, residual waste management issues, Durham and York, recognize the growing need for additional sources of energy generation in Ontario. Both Regions recognize that there is an opportunity associated with the utilization of the waste stream as a fuel source to produce energy and have identified this opportunity as a key benefit associated with the subject waste disposal EA Study.

Appendix 1, Map 1-1 provides a map of the Durham/York Study Area.

1.2 Environmental Assessment Act (EAA)

Since the enactment of the Environmental Assessment Act (EAA) in the 1970s, the environmental assessment (EA) process has evolved into the completion of a decision-making process, in consultation with the public and other interested parties, that evaluates: alternatives considering potential effects on the environment; the availability of mitigative measures that address, in whole or in part, the potential effects; and, the comparison of the advantages and disadvantages of the remaining or “net” effects. The result of this process provides the planning rationale and support for a preferred approach and method to implement the undertaking.

The EA Study provides a planning approach where environmental constraints or opportunities are considered in the context of the broadly defined environment (i.e. the natural environment as well as the social, economic and heritage and other “environments” relevant to the undertaking) 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 EAA and must apply for approval from Ontario’s Minister of the Environment. With respect to waste management, certain types of waste management undertakings require compliance with the EAA. In general, approval under the EAA is required for the establishment or the expansion of a waste disposal facility.

Under the EAA, an Environmental Assessment Terms of Reference (EA Terms of Reference) must be prepared and submitted to the Minister of the Environment for approval before an EA Study can be undertaken. The EA Terms of Reference is intended to establish some rigor and certainty with regards to the steps to be taken and opportunities for input to the study.

On March 31, 2006 the Minister of the Environment approved the EA Terms of Reference for the Durham/York Residual Waste Study.

1.3 Potential Changes to Requirements under the EAA

During 2005 and 2006, the Ontario Ministry of Environment (MOE) undertook the drafting of a Regulation under the Environmental Assessment Act that would streamline the planning and approvals process for Energy-from-Waste (EFW) and other waste processing facilities. Under this proposed regulation, proponents such as Durham and York could choose an EFW technology and a site for the facility outside of the EAA requirements and then meet the requirements of the EAA by undertaking a comprehensive environmental screening of the proposed facility and site. This environmental screening process has been used successfully in the energy sector for some time.

Under this proposed regulation proponents such as Durham and York, who are currently completing individual EA’s for EFW facilities, would be given the option of continuing with their current individual EA or switching to the new environmental screening process. The proposed regulation identifies a 60-day period for proponents involved in individual EA’s to declare their intent to switch to the new screening process.

If Durham and York were to switch to the new screening process, much of the technical work undertaken to-date would be applicable to completing the eventual screening process. The decision to select thermal treatment (EFW) as the preferred technology or “Alternative To” and the decision on selecting a preferred site for the facility would be subject to the rigors of the new environmental screening process.

1.4 Purpose of this Report

This draft report entitled *Thermal Facility Site Selection Process, Results of Steps 1-5, Identification of “Short-List” Alternative Sites* has been prepared as part of the Durham/York Residual Waste Study to document the step-by-step process followed in the identification of a “Long-List” of alternative sites and the evaluation process followed that has resulted in a “Short-List” of sites for consideration further in the process.

This report will form part of the supporting documentation and materials for stakeholder consultation in the evaluation of “Alternative Methods” and identification of the preferred facility location for the Durham/York Residual Waste Study. Public and agency input received on this draft report will be considered when moving forward in the process and when preparing the EAA approval documentation.

1.5 Overview of Report Content

This report provides the relevant background and the step-by-step results of the completion of Steps 1 to 5 of the “Alternative Methods” evaluation process leading up to the identification of the “Short-List” of alternative sites for Durham and York Regions. The report has been structured such that, depending on the needs or interests of the reader, the entire process can be

reviewed at varying levels of detail. The following are the key components comprising this report:

Executive Summary

An executive summary has been prepared which presents the highlights and key findings of the evaluation process and culminates with the presentation of next steps. The executive summary is included at the front of the report and has also been prepared as a separate document for wider distribution.

Main Report

The main report contains the detailed documentation of the process flowing from start to finish. It includes the following sections:

- **Section 1** that provides relevant background and an overview of the report purpose, structure and content.
- **Section 2** that describes the facility site selection methodology and evaluation criteria as well as the public and agency consultation program followed to date in the evaluation of “Alternative Methods”.
- **Section 3** that describes the application of the Step 2 Area Screening Criteria and the identification of areas within Durham and York Regions that are potentially suitable to site a Thermal Treatment facility.
- **Section 4** that describes how many sites are being considered and the minimum site size and configuration requirements.
- **Section 5** that describes the process followed in the identification of specific sites.
- **Section 6** that describes the list of alternative sites that were identified.
- **Section 7** that describes in detail, how the sites identified were evaluated, including those that were screened out and those that exhibited significant disadvantages relative to other sites. Section 7 concludes with a detailed description of the “Short-List” of alternative sites.
- **Section 8** that provides a series of next steps related to public and agency consultation on the “Short-List” of sites, the detailed comparative evaluation process to be followed in the identification of a preferred site, as well as an overview of the data collection requirements to complete the “Short-List” evaluation process..

Also included with the main report are a series of appendices (**Appendices 1 to 8**) that provide additional background, detail and data directly related to the materials discussed in Sections 1 through 8.

Appendices

- **Appendix 1** includes a Map of Durham/York Study Area.
- **Appendix 2** includes excerpts from the approved EA Terms of Reference and supporting Background Document 2-3 that outline the “Alternative Methods” evaluation process and criteria.
- **Appendix 3** includes a Map delineating the “unconstrained” areas identified in Step 2 along with a detailed account of the data sources referenced to apply the Step 2 Area Screening Criteria and generate the Map 3-1.
- **Appendix 4** includes a detailed technical memorandum on Single versus Multiple Facility Scenarios as well as conceptual drawings of the proposed facility.
- **Appendix 5** includes detailed supporting documentation related to the two (2) calls for “willing sellers” that were completed to identify potential sites.
- **Appendix 6** includes a Map of all the sites identified through Step 4 and also provides site profiles (Summary Data and Aerial photographs with the Step 2 Area Screening Criteria applied).
- **Appendix 7** includes a Map of all the “Long-List” of alternative sites and detailed evaluation tables for each “Long-List” site with the Step 5 “Long-List” evaluation factors applied.
- **Appendix 8** includes a Map of the “Short-List” of sites identified through Step 5 and also provides figures for each site showing land uses around each site.
- **Appendix 9** includes a detailed overview of the proposed consultation strategy for consulting on the “Short-List” of sites with agencies, stakeholders, First Nations, and the public.

2. Step 1 – Facility Site Selection Methodology and Criteria

2.1 Overview of Evaluation Methodology

To measure and evaluate the potential impacts and to maximize the potential of locating a site with optimum conditions to support a thermal treatment facility operation, the scope of the evaluation criteria to be used in the siting process must consider a broadly defined environment. Consideration of a broadly defined environment is also a requirement of the EAA, and for the purpose of this study includes:

- Public Health and Safety and the Natural Environment;
- Social/Cultural Considerations;
- Economic/Financial Considerations;
- Technical Considerations; and,
- Legal Considerations.

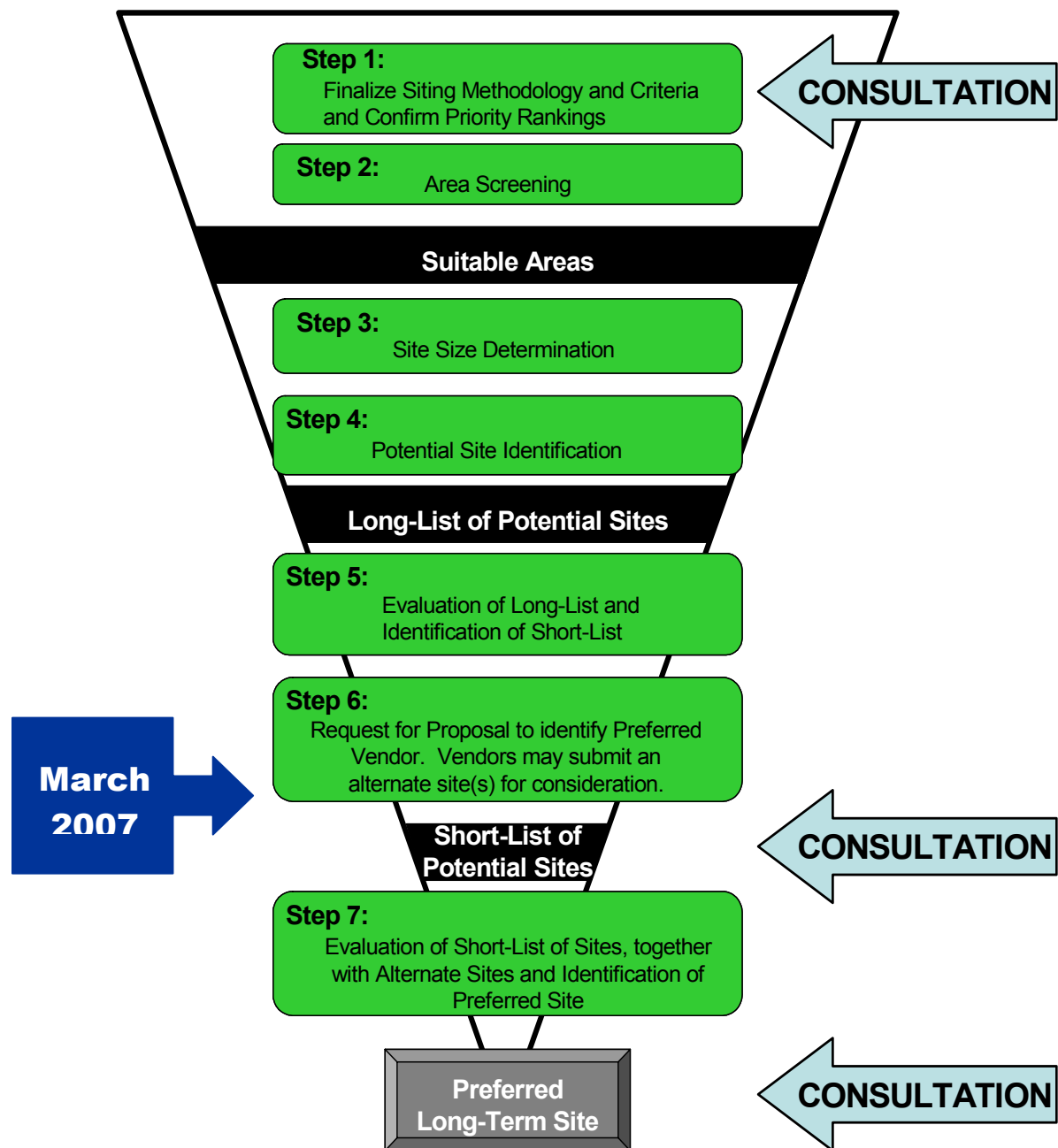
To identify a preferred site, a seven-step facility site selection process, outlined in Figure 2-1 is being applied. This step-by-step methodology was originally presented in the approved EA Terms of Reference¹ and Background Document 2-3² (prepared as supporting documentation to the approved EA Terms of Reference).

The following Section 2.2 provides an overview of the evaluation methodology and criteria that were presented in the approved EA Terms of Reference.

¹ Durham/York Residual Waste Study - Approved Environmental Assessment Terms of Reference, March 31, 2006.

² Durham/York Residual Waste Study - Background Document 2-3 “Consideration of Alternative Methods of Implementing the Undertaking”, December 16, 2005.

Figure 2-1 Overview of the Proposed Facility Siting Process



2.2 Description of Evaluation Methodology and Criteria

Step 1 - Finalize Siting Methodology and Criteria and Confirm Priority Rankings

Once the preferred “Alternative To” (i.e. Disposal System) had been identified through the EA study, (Approved by both Regional Councils in June 2006) and prior to the evaluation of “Alternatives Methods”, the evaluation criteria and methodology proposed in the EA Terms of Reference were reviewed with Agencies, stakeholders and the public to:

- Ensure the methodology and criteria can be suitably applied to the preferred “Alternative To”;
- Identify and incorporate any changes in relevant policies and legislation that may have come into effect since the EA Terms of Reference was approved, including the possibility of restrictions to the transport of residual wastes from Durham and York to the United States thereby requiring an accelerated evaluation of “Alternative Methods”;
- Provide a final opportunity for interested parties/people to comment on the methodology and criteria prior to the initiation of the evaluation process and with the knowledge of what it is that’s going to be sited (i.e. thermal treatment facility).;
- Solicit input from the public to confirm priority rankings for each category of the environment provided by the public during the development of the EA Terms of Reference; and,
- Allow the proponents to address any questions or concerns with respect to the “Alternative Methods” evaluation process before its initiation.

Once the above was finalized and confirmed, the foundation was laid to allow for the initiation of the evaluation of “Alternative Methods” which will ultimately provide the basis for the identification of a preferred site.

Step 2 - Area Screening

The starting point for the area screening process is to identify the boundaries of the study area in which a suitable site could be identified. For this siting process, the study area being considered includes all lands within the municipal boundaries of Durham and York Regions.

Initiation of the facility siting process begins with the delineation of the limits of the broad area, within Durham and York that consists of features and land uses considered unsuitable for the establishment of a thermal treatment facility. It is important to conduct this high level screening early in the planning process to focus serious effort within potentially suitable areas, such as designated industrial lands, and to avoid and prevent undue disruption on unsuitable areas, such as significant natural features, agricultural lands and existing residential areas.

The result of this second step is the identification of areas within the study area that are considered generally suitable for the purposes of locating a thermal treatment facility.

Step 3 - Site Size and Configuration Determination

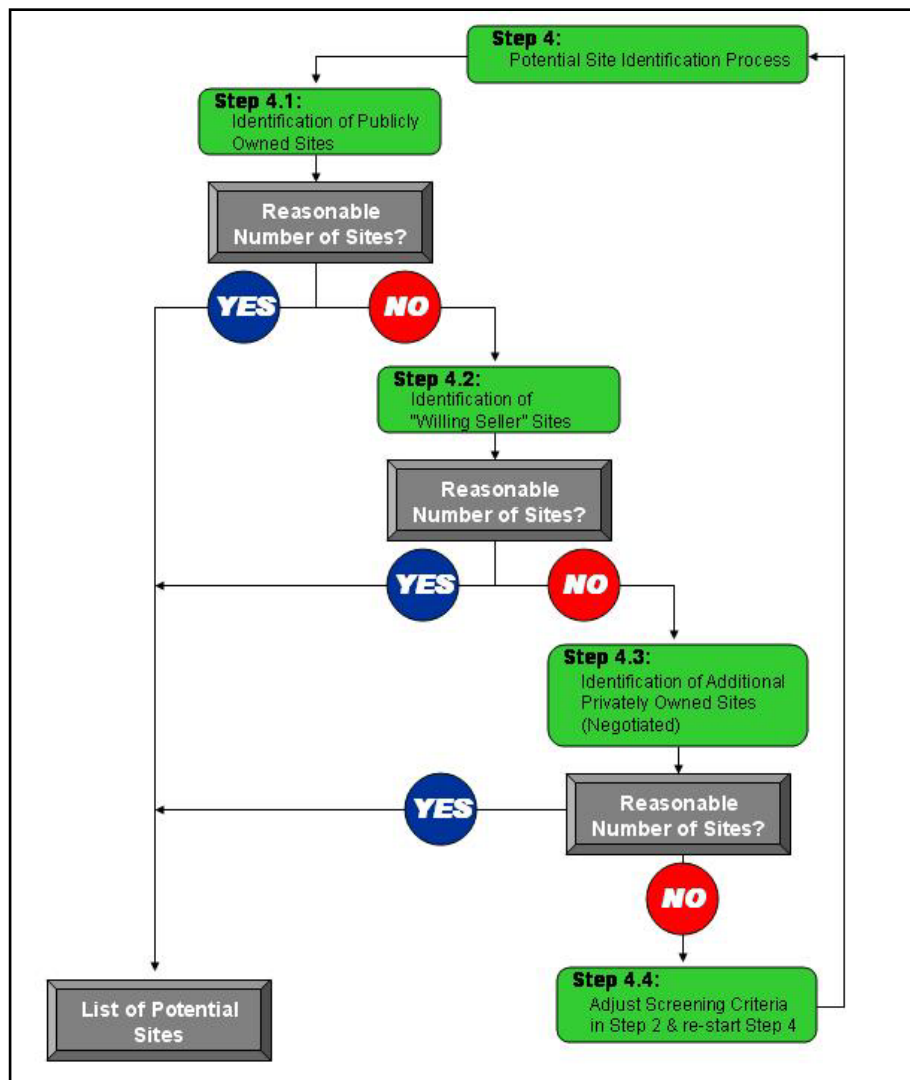
To identify potential sites within the remaining areas, considered potentially suitable for the establishment of a thermal treatment facility, the minimum required site size was determined. The determination of a minimum site size is essential to Step 4 when initiating the identification of sites to provide a minimum site size to prospective property owners.

Step 4 - Methodology & Criteria: Potential Site Identification

Following the identification of potentially suitable areas, and determination of the minimum site size and configuration requirements, Step 4 sought to identify potential siting opportunities within the potentially suitable areas that meet the minimum site size requirements.

Figure 2-2 outlines the Step 4 site identification process. To establish a range of siting opportunities, it was anticipated that the first two measures in Steps 4.1 and 4.2 (i.e. publicly owned and “willing seller” sites) would be pursued at a minimum.

Figure 2-2 Overview Of Step 4 – Potential Site Identification



Step 5 - Evaluation of “Long-List” & Identification of “Short-List” of Sites

Following the identification of potential sites in Step 4, Step 5 reduces the number of sites that will be compared in greater detail to a “Short-List” of sites. For the purpose of this level of study, sites would be deemed unsuitable for further consideration if they exhibited significant technical, social and/or environmental disadvantages relative to other sites on the list considering an established set of initial comparators. Sites that pass through this evaluation step do not exhibit any obvious disadvantages of significance and would be included on a “Short-List” of alternative sites and will be carried forward to Step 6 for a detailed comparative evaluation.

The “Long-List” evaluation criteria used to identify sites for the “Short-List” are in greater detail in Appendix 2, Table 2-2.

Step 6 - Engaging Vendors of the Preferred Technology

At Step 6 of the process, prospective Thermal Treatment technology vendors will be requested to submit their qualifications through a formal Request for Qualifications (RFQ) process for consideration.

Step 7 - Evaluation of “Short-List” of Alternative Sites

The purpose of Step 7 is to undertake a detailed evaluation of the “Short-List” of sites to identify a site exhibiting the preferred balance of advantages and disadvantages given the established priorities of Durham and York Regions. The assessment will consider the sites as well as the haul routes, transfer requirements and requirements for additional infrastructure to develop the site. Sites will be compared based on a broad range of criteria to identify the “Preferred Site”.

Step 7 will entail a comparative evaluation of the “Short-List” sites utilizing criteria and indicators to measure potential. The criteria and indicators have been included in Appendix 2, Table 2-3.

2.3 Public and Agency Consultation

The following sections provide an overview of the consultation activities completed to date in the evaluation of “Alternative Methods”. For a detailed account of these activities, please refer to the Evaluation of Alternative Methods – Step 1 Report on Consultation³.

2.3.1 Consultation with Agencies

Following the approval of the preferred “Alternative to” by both Regional Councils (June 2006), the next step in the Study was to identify a site(s) to locate the facility. As stipulated in the approved EA Terms of Reference, before the evaluation methodology and screening criteria were applied, the process had to first be reviewed and confirmed with the public stakeholders and agencies (Alternative Methods, Step 1). This process sought input on the proposed evaluation process, evaluation criteria to be applied and the priorities to be afforded to each of the categories of the environment to be considered during the “Short-List” comparative evaluation process.

³ Durham/York Residual Waste Study, Report – Results of Public and Agency Consultation on Proposed Facility Siting Methodology and Criteria, September 2006.

To facilitate consultation with key stakeholder and agencies a letter of invitation was issued to representatives from the established Government Review Team, local Municipal Planning Departments and Conservation Authorities, as well as other key Agencies inviting them to attend one (1) of two (2) workshop sessions. These workshop sessions were held on September 11th and 12th, 2006. The purpose of these sessions was to review the proposed siting methodology and criteria with key government agencies prior to their application. Input received from these workshop sessions was used to finalize the evaluation methodology and criteria to be utilized in the evaluation of “Alternative Methods”.

2.3.2 Consultation with the Public

2.3.2.1 Public Information Sessions

A series of concurrent Public Information Sessions on ‘Alternatives Methods’ – Facility Siting Evaluation Methodology and Criteria were held on September 12th, 13th and 14th, 2006 in both Durham and York Regions. The purpose of these sessions was to present and receive comments on the evaluation of “Alternative Methods” (i.e., facility siting) including siting methodology, criteria and priority rankings, area screening, site size determination and comparative evaluation of sites as well as the proposed next steps in the Study. Input received from these information sessions was used to finalize the evaluation methodology and criteria to be utilized in the evaluation of “Alternative Methods”.

The Public Information Sessions were extensively advertised in a variety of media in both Regions and resulted in coverage by a variety of news media.

A total of 167 residents participated in the Public Information Sessions in both Durham and York Regions. A total of 125 residents attended the three sessions in the Region of Durham, whereas a total of 42 residents participated in the three sessions in York Region. These residents included representatives from industry, municipalities and the general public.

2.3.2.2 Public Polling

The Regions retained the services of the public polling firm *Ipsos Reid*. *Ipsos Reid* undertook an online survey in September, 2006 to determine broader public opinion on the conclusions regarding the proposed siting methodology and evaluation criteria.

The firm conducted an online survey, and received responses from a target audience of 1005 residents in both Durham and York regions - a total of 412 Durham residents and 593 York residents. The sample was chosen in order to be representative of the population demographics of the two Regions. The format of the survey was similar to a questionnaire distributed at the Public Information Sessions. Respondents were asked to rate the relative importance of the following categories with respect to the siting of the proposed thermal treatment facility:

- Public Health and Safety and the Natural Environment;
- Social/Cultural Considerations;
- Economic/Financial Considerations;

- Technical Considerations; and
- Legal Considerations.

The key findings of the polling are as follows:

- Almost all (96%) respondents feel that the natural environment/public health and safety is either extremely or very important in making the decision on where the waste management facility should be located;
- Three quarters (74%) of respondents think that the social/cultural environment is extremely/very important in making waste management facility location decisions;
- Three quarters (74%) of respondents think that the economic environment is extremely or very important in making decisions on locations for a waste management facility;
- Nearly seven-in-ten (68%) respondents believe that technical issues are extremely/very important in deciding waste management locations; and
- Just under six in ten (57%) respondents consider legal issues extremely/very important in making decisions on waste management facility locations;

2.4 First Nations Consultation

During the development of the approved EA Terms of Reference and throughout the duration of the EA Study, a detailed First Nations distribution list was developed. This list was assembled in consultation with:

- The Ministry of the Environment (MOE);
- Indian and Northern Affairs Canada (INAC);
- The Ontario Secretariat for Aboriginal Affairs (OSAA); and,
- Other First Nations organizations and groups.

At each point of consultation in the EA, the First Nations and related organizations on the list have been notified of the pending consultation and invited to participate. As well, whenever new documents become available and are distributed to the agency contact list, documents have also been distributed to all First Nations groups on the list. Consultation with First Nations during Step 1 of the Alternative Methods evaluation process included a direct mailing of information to the study distribution list with a request for review and comment. First Nations groups were also invited to participate in the Open Houses which were held in September 2006.

In April 2007, First Nations groups will be invited to participate in the consultation on the “Short-List” of sites and requested to review the documentation and provide feedback.

2.5 Final Criteria Based on Results of Public and Agency Consultation

The site selection methodology and criteria, outlined in the approved EA Terms of Reference, were generally, accepted by the consultation participants. However, there are four (4) aspects of the site selection methodology that have been refined further as a result of input received during consultation.

2.5.1 Refinement No. 1 – Removal of Separation Distances at the Step 2: Area Screening Stage

Participants at the workshops held to consult with local agencies, on balance, were of the opinion that the proposed buffers for residential lands, institutional land uses and parks & recreational areas (300 metres) and the 120 metre buffer for natural heritage features were far too extensive resulting in the possible exclusion of potentially suitable lands. Further discussion with participants revealed that it would be reasonable to consider buffers at a subsequent step in the site selection process when a more detailed understanding of an alternative site’s location, relative to surrounding land uses and features, has been established.

This refinement would not alter the intent of Step 2 in the site selection process (i.e., the delineation of “the limits of the broad area considered generally unsuitable for the purpose of locating the preferred system thereby focusing on generally suitable areas”). Alternative siting opportunities will be examined more closely at Step 5 of the process at which time each prospective site will be examined relative to the compatibility of adjacent land uses, accessibility and proximity to servicing among other factors. Further, the “Short-List” of prospective sites will be subject to a more detailed comparative evaluation based, in part, on criteria that will consider land use compatibility, the proximity of sensitive natural heritage features and the potential effects on residential areas and institutional land uses. The separation distances between each site and incompatible features and land uses will be a key component in the comparative evaluation of alternative “Short-List” sites and selection of the preferred siting alternative.

2.5.2 Refinement No. 2 – Consideration of Sites within the Greenbelt Plan Area

A number of the consultation participants, in particular, those representing Durham and York Regional and Area Municipal Planning Departments indicated during Step 1 that there may be an opportunity to consider prospective public or private sites within the Greenbelt Plan area. The overall intent of the Greenbelt Plan (i.e., the protection and enhancement of specialty and prime agricultural areas, natural heritage features and open space connections and cultural heritage resources) within the Greater Golden Horseshoe is well established through its “Protected Countryside” and other land use policies. The Greenbelt Plan, however, also acknowledges that public “infrastructure” (which includes waste management systems and electric power generation and transmission), is fundamental to the economic well-being of southern Ontario and would be permitted to occur within “Protected Countryside” areas subject to these uses conforming to the applicable policies of the Greenbelt Plan. The Greenbelt Plan also acknowledges that the expansion and development of infrastructure facilities that serve inter-regional needs will be required in the future. The Greenbelt Plan states that all infrastructure approved under the Environmental Assessment Act (EAA) is permitted within the “Protected

Countryside” provided it serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt and conforms to the applicable policies of the Greenbelt Plan.

The location of a potential site within designated “Protected Countryside” areas under the Greenbelt legislation is listed as an exclusionary feature for the purpose of Step 2 of the site selection methodology. However, the Consultant Team decided that potentially suitable sites located in the Greenbelt Plan area would be considered for further review and public comment. Further, opportunities to expand an existing component of Durham’s and/or York’s solid waste management system located within the Greenbelt Plan area would also be considered in order to utilize existing resources. This approach would accommodate the possible identification of additional siting opportunities and reflect that this type of infrastructure is not prohibited under the Greenbelt Plan. It was decided that any potential sites that were considered in this manner would be brought forward for further public input and comment on this aspect as part of the consultation process for the “Short-List” of potential sites.

2.5.3 Refinement No. 3 – Completion of Steps 4.1 and 4.2 simultaneously

It was determined at the outset of this process, based on comments received from a number of agencies that the Regions would undertake a review of both publicly owned sites, as well as “willing seller” sites to ensure that both public and private sector siting opportunities were explored. This was accomplished through discussions with Regional staff representatives and the completion of two (2) calls for “willing sellers”. It was the intention of both Regions that by soliciting interest from a much broader range of property owners, that a “longer” list of sites could be developed offering a greater range of alternatives and opportunities.

2.5.4 Refinement No. 4 – Separation of the Siting Process from the Competitive Process

It was originally envisioned in the EA Terms of Reference (Step 6) that potential technology vendors would be provided the opportunity to submit a site along with their technology during the Request for Qualifications (RFQ) process. Under the advisement of procurement and legal counsel, it was determined that these two processes (submission of a site, and submission of technology qualifications) should be completed as two entirely separate processes. Completing these processes as part of the same competitive process could represent an unfair advantage to those vendors offering both a site and technology versus only those vendors providing a technology and thereby jeopardize the success of the competitive process.

By “uncoupling” the RFQ and Request for Proposals (RFP) process from the siting process, it allowed for a more “fair” process to those involved and also allowed for the completion of siting activities in advance of a formal RFQ/RFP process for technology(ies). The siting component of Step 6 was addressed through the development of an REOI to potential technology vendors to provide the opportunity for this group to potentially offer up a site through a formal competitive process as described in the approved EA Terms of Reference.

3. Step 2 – Study Area Screening

Following the confirmation of the siting evaluation methodology and criteria at Step 1, the next step was to define the boundaries in which a suitable site could be identified. For this siting process, the study area considered included all lands within the regional boundaries of Durham and York (see Appendix 1, Map 1-1).

3.1 Purpose of the Screening Process

Initiation of the area screening process began with the delineation of the limits of the broad area, within Durham and York that consists of features and land uses considered unsuitable for the establishment of a waste processing facility. It is important to conduct this high level screening early in the planning stage to ensure that only sites located within potentially suitable areas, such as designated industrial lands, undergo the detailed comparative evaluation process. This initial screening process ensures that unsuitable areas, such as significant natural features, agricultural lands and existing residential areas would not be considered further in the siting process.

The result of this second step is the identification of areas within Durham and York that are considered generally suitable for the purposes of locating the preferred thermal treatment facility.

3.2 Data Collection and Application of the Screening Criteria

In order to delineate the areas within Durham and York that would be considered unsuitable for the establishment of a thermal treatment facility, a significant amount of spatial data collection was required. For each of the criteria identified in the approved EA Terms of Reference and confirmed in Step 1, a variety of data sources were identified and incorporated into a Study Geographic Information System (GIS) database. These screening criteria were clearly defined at the outset of the evaluation of “Alternative Methods” in Step 1 and were provided to relevant stakeholders and agencies for input/comment prior to the initiation of Step 2.

Additional detail on the sources for all of the data used in the screening process can be found in Appendix 3, Table 3-1.

To identify “unconstrained” areas, each of the exclusionary criteria were mapped separately and the resulting constraint maps were overlaid to identify those areas that are considered “unconstrained”.

3.4 Identification of Potentially Suitable Areas

Areas considered unconstrained make up a small percentage of the Durham and York Study Area. These areas are primarily located in Durham Region along the Highway 401 corridor and in York Region along the Highway 404 and Highway 407 corridors. These areas consist of primarily industrial and commercial land uses, located away from city centres and suburban communities.

Following the application of the Area Screening criteria, it was determined that the following municipalities had areas where a Thermal Facility could potentially be sited:

- City of Pickering
- Town of Ajax
- Town of Whitby
- City of Oshawa
- City of Clarington
- Town of Aurora
- Town of East Gwillimbury
- Town of Markham
- Town of Richmond Hill
- City of Vaughan
- Town of Newmarket

Appendix 3, Map 3-1 show the unconstrained areas within the Study Area, following the application of the area screening criteria.

4. Step 3 – Determination of Required Site Size

To identify potential sites within the remaining areas, considered potentially suitable for the establishment of a thermal treatment facility, the number of sites required and the required site size must first be determined.

4.1 Single Site versus Multiple Site Approach

During the evaluation of the alternative systems, it was assumed that all systems would be represented as a single facility that comprises all system component functions. For comparative evaluation, it was key that the same fundamental assumptions such as ‘single facility, single site’ be applied to all of the systems under comparison.

At that time, based on the experience of the project team, it was the assumption that:

- A ‘single facility, single site’ system configuration represents the most efficient system configuration and would provide the economies of scale that are being sought in the Durham/York study;
- In general, a ‘single facility, single site’ configuration also represents the configuration which would be expected to have a lower potential for environmental and social impacts, as the total land area required and number of potential receptors that could be impacted by the systems increases as the number of sites required for each system increases.

Appendix 4a) provides a technical memorandum that outlines in detail, the rationale for proceeding with development of one thermal treatment system located on a single site.

4.2 Thermal Treatment Facility Footprint

4.2.1 Facility Capacity

The thermal treatment facility is sized based on the envisaged Durham/York ultimate need for thermal treatment of residual Municipal Solid Waste (MSW). The ultimate capacity of the thermal facility is estimated to be 400,000 tonnes per year (t/yr) of MSW, at the end of the 35-year planning period for the study, operating 24 hours per day and 7 days per week.

Previous studies have identified waste quantities to be processed throughout the 35-year planning period and many of the factors affecting waste quantities are described in detail in the “Report on Additional At-Source Diversion and Residual Quantities to be Managed”⁴.

Based on the projected annual quantities of waste generated in the study area, as of the beginning of the planning period in 2011 and achieving a diversion rate of 60%, a processing capacity of 250,000 t/yr was used as the minimum system capacity estimate for the formulation and comparison of alternative systems.

The quantity of waste requiring disposal is expected to increase throughout the 35-year planning period for the study and the rate at which this quantity increases depends on a number of factors including:

- whether or not Durham and York achieve a diversion rate of 60% by 2011;
- whether or not higher diversion rates are achieved during the planning period;
- whether there is potential for managing municipal post-diversion residual waste from neighbouring non-GTA municipalities;
- economic growth and other factors which could result in higher overall quantities of waste requiring disposal over the planning period; and
- initiatives such as extended producer responsibility which could result in lower quantities of waste requiring disposal over the planning period.

For the purposes of the determining potential site sizes for this study, the following was assumed:

- an initial processing capacity of 250,000 t/yr has been assumed for the beginning of the planning period, based on Durham and York achieving 60% diversion by 2011; and
- a processing capacity of 400,000 t/yr will be required at the end of the 35-year planning period to address the above factors affecting the quantity of waste to be processed.

⁴Durham/York Residual Waste Study “Report on Additional At-Source Diversion and Residual Quantities to be Managed”, May 30, 2006

A review of waste tonnage projections, based on recent waste audits, the potential role of the Dongara facility in York Region and the potential availability of waste from neighbouring non-GTA municipalities is currently underway. Prior to proceeding with the Request for Proposals (RFP) for a thermal facility, revised minimum and maximum processing capacity requirements will be determined. These processing capacity requirements will address the fluctuation of waste quantities during the year (peak availability of waste in April/May, lowest availability of waste in January/February) and revised long-term waste projections for the 35-year planning period.

4.2.2 Facility Components

For the purposes of sizing the proposed facility and site, the predicted future requirement of three process units (capacity of 400,000 t/yr) will be used in determining the proposed facility footprint. The proposed facility is broken down into the following process components:

- Waste Receiving;
- Waste Bunker;
- Incineration;
- Air Pollution Control (APC);
- Air-Cooled Condenser;
- Ash Processing/Storage;
- Access Bay; and
- Miscellaneous Areas (including turbine/generator, fly ash storage, switchyard and administration areas).

Appendix 4b), Drawing 4-1 provides a conceptual plan of the thermal treatment facility, showing each of the above process components. Appendix 4b), Drawing 4-2 provides an elevation view of the thermal treatment facility. The “footprint” area, for the purposes of this report, is defined as a rectangle having length and width dimensions corresponding to the maximum length and maximum width in the facility layout to accommodate the above process components.

The area required for each of the above facility components was estimated using information from existing facilities and process technology vendor data and are considered “typical”. Variations in component area dimensions can be expected depending on the process technology equipment manufacturer(s) ultimately chosen and facility layout design variations. The overall footprint as outlined in Appendix 4b) Drawing 4-1 is an estimated size of 220 metres (m) long by 125 metres (m) wide.

4.3 On-Site Buffer Requirements and Overall Site Size

Waste management facilities such as Material Recycling Facilities (MRF’s), transfer stations, organics processing facilities and thermal processing facilities are known to be located on widely varying site sizes, regardless of facility capacity. In Europe and Japan for example, where available land is scarce, many Energy From Waste (EFW) facilities are constructed with virtually no on-site buffer and these plants exist in an urban setting with no adverse impacts on the community.

For the purposes of planning and development of site search criteria for a Durham/York facility, however, a range of site sizes is identified in this report based on assumed on-site buffering around the estimated facility footprint.

The conceptual plan shown in drawings 4-1 and 4-2 in Appendix 4b), of a 400,000 t/yr facility is actually accommodated on a 9.1 hectare (ha) site and has a buffer of 80 m on three sides of the facility and 40m on the fourth side.

An assumed 100 m buffer on all sides of the facility would provide for substantial on-site truck queuing, potentially eliminating the need for truck queuing along public roadways. Additionally, the facility could be expanded beyond 400,000 t/yr to meet future requirements without space design constraints.

In terms of off-site impacts, a 100 m buffer is recommended to mitigate potential impacts leading to fewer complaints from nearby receptors.

The total site area based on the facility footprint developed above (220 m x 125 m) and a buffer of 100 m on all sides of the footprint is:

- Preferred site size = 13.7 hectares (i.e., 420 m x 325 m)

The selection of a 100 m buffer is somewhat arbitrary, although, in the absence of definitive MOE guidelines for EFW facilities, it is consistent with the MOE recommended separation distance between *composting* facilities and residences/public institutions. This buffer dimension is, therefore, considered conservative because odour impacts at a thermal treatment facility are expected to be less than from a composting operation.

The greater the buffers, the more potential off-site impacts are mitigated. Examples of potential impacts from a thermal treatment facility include odour, noise, dust and cooling tower plumes. Effective buffer zones can also be accomplished by means other than ownership of on-site lands. The on-site buffers also provide adequate space for typical waste management facility site requirements, including:

- On-site roads for waste delivery trucks and, preferably, separate roads for administrative/operating staff, maintenance personnel, facility visitors;
- Extended on-site roadway for waste delivery truck queuing at the weigh scales;
- Large transfer trailer vehicle movements (turning radii);

- Weighscales and scalehouse;
- Parking;
- Stormwater management features (storm pond); and
- Berms and landscaping.

The site size range developed above is 9.1 – 13.7 ha. To verify the suitability of this range, research was completed on a number of representative European thermal treatment facilities (see Table 4-1 below). The facilities identified are all modern facilities having comparable capacities to that contemplated for a Durham/York facility and range from 0.19 to 0.40 m²/(t/yr), which translates into a range of 7.6 to 16 ha for a 400,000 t/yr facility.

Table 4-1 Additional European EFW Facility Site Sizes

Plant	Approximate Annual Capacity	Site Size	Ratio Site Size: Annual Capacity
	(t/yr)	(ha)	m ² /(t/yr)
ASM Brescia	700,000	13	0.19
Amsterdam	750,000	17	0.23
SYSAV	600,000	14	0.23
Nordforbraending	150,000	4	0.27
Uddevalla	200,000	8	0.40

The range of potential site sizes from a minimum of 9.1 ha to a maximum of 16 ha discussed above will determine the extent to which a site can be considered to “stand alone” or will have to rely on neighbouring properties for many of the features that contribute to the acceptability of the facility in a particular location. A “stand-alone” facility with provision for expansion from 250,000 to 400,000 tonnes per year, on-site ash processing, stormwater management features, parking for 100 vehicles, on-site roads for full management and queuing of waste and ash vehicles, buffer zones and set-backs would require the maximum size in the range. However, a smaller parcel of land at the lower end of the range, may still be capable of meeting the minimum facility size and infrastructure requirements where some required infrastructure may already exist on a companion site or where the potential exists for infrastructure sharing between neighbouring sites.

5. Step 4 – Potential Site Identification

5.1 Application of Site Identification Process

Following the identification of potentially suitable areas and the determination of the minimum site size and configuration requirements, Step 4 was completed to identify a list of potential sites. To establish this list of sites, siting opportunities were identified in the following order:

- Step 4.1 - Identification of Publicly Owned Sites
- Step 4.2 - Identification of “Willing Seller” Sites

As outlined in Section 2.5.3, it was decided at the outset of this process, based on comments received from a number of agencies that the Regions would undertake a review of both publicly owned sites, as well as “willing seller” sites to ensure that both public and private sector siting opportunities were explored

The approved EA Terms of Reference also provided for additional site identification opportunities, if required, as outlined below.

- Step 4.3 - Identification of Additional Privately Owned Sites (Negotiated)
- Step 4.4 – Adjust Screening Criteria and Re-apply

There is no set guideline for what constitutes a reasonable number of sites on which to conduct preliminary investigation, however, following the completion of Steps 4.1 and 4.2 it was determined that a suitable number of sites, offering a reasonable range of alternatives and features were identified and therefore the need to identify additional sites through Steps 4.3 and 4.4 (see above) were not required.

5.2 Identification of Publicly Owned Sites

Publicly owned sites that were considered surplus or were un-used or un-developed within the suitable areas (Step 2) that met the minimum site size requirement (Step 3) were identified through discussions with both Durham and York Region Real Estate and Economic Development departments and through contact with other public agency representatives (As demonstrated in Section 5.3)

5.3 Identification of “Willing Seller” Sites

In addition to publicly owned land, sites where the owner would be interested in selling the site (“willing sellers”) were also identified and considered as potential sites. In order to qualify as a “willing seller” the site must have been offered for consideration by the owner of the subject property and be prepared to enter into an agreement with Durham and/or York.

To identify potential sites that met the “willing seller” criteria, the Regions undertook two (2) calls for “willing sellers” as described below:

November 2006 - “Call for Willing Sellers”

On November 21, 2006 the Regions of Durham and York issued a “Call for Willing Sellers” (the “Call”) to a wide range of agencies that may be interested in identifying a site to be considered as part of this process. Distribution included the following:

- Area Municipal Property Contacts, Planning and Public Works Directors, and Chief Administrative Officers/City Managers;
- Commercial Realtors and Real Estate Boards operating in Durham and York Regions;
- Ontario Industrial Associations with members in Durham and York Regions; and,
- Chambers of Commerce.

The Call identified what the proposed use of the site was, the initial screening criteria the site would be required to pass, the minimum size of the site and some of the potential energy outputs from the facility. Appendix 5a) includes a copy of the letter that was distributed and the contact distribution list utilized. As a result of this Call five (5) sites were identified that met the requirements of Step 2 and Step 3. Details on these sites can be found in Section 6 of this document.

February 2007 - Request for Expressions of Interest (REOI)

Based on the results of the November 2006 “Call for Willing Sellers” it was determined that a broader range of potentially interested parties should be contacted and a final Call was issued. On February 9, 2007 a formal Request for Expressions of Interest (REOI) for “Potential Sites for a Proposed New Thermal Waste Treatment Facility for the Regions of Durham and York” was issued by the Durham Region Purchasing Department. The following activities were completed to advertise the REOI:

- Distribution to all those contacted in November as part of the “Call for Willing Sellers”;
- Distribution to major energy users within Durham and York that may provide a potential market for heat and/or steam generated at the facility. These users were identified through a number of industrial directories and through the assistance of both Regions Economic Development departments;
- Distribution to approximately 50 EFW technology vendors who have been identified throughout the EA study as potential respondents to a competitive process for the proposed facility.
- Posting on the Region of Durham’s Purchasing Website; and,
- Public Notification in local newspapers.

In addition to the public notifications, two (2) information sessions were held to provide a venue for interested parties to ask questions and get more detailed information about the REOI and the study in general. The information sessions were held as follows:

- **Information Session #1** – Wednesday February 14th, 2007 from 3pm to 6pm at Durham Region Headquarters.
- **Information Session #2** – Thursday February 15th, 2007 from 3pm to 6pm at the York Region Waste Management Centre.

In total, 15 individuals attended the two (2) information sessions. Appendix 5b) of this document contains the REOI document, the REOI notification and distribution list, and information session presentation materials.

As well, follow-up telephone calls were made to each of the identified major energy users within Durham and York (See Appendix 5a) for a list of major energy users identified) to ensure they received the notification and to address any questions or concerns.

As described in Section 2.5, issuance of the REOI to potential technology vendors also provided the opportunity for this group to potentially offer up a site through a formal competitive process as described in the approved EA Terms of Reference (Step 6).

As a result of the REOI process, an additional five (5) sites were identified. Details on these sites can be found in Section 6 of this document.

6. Alternative Sites Identified

The preceding site identification process resulted in the identification of twelve (12) alternative sites. Five (5) sites were located in the Municipality of Clarington, one (1) site in the Town of Whitby, one (1) site in the Town of Pickering, two (2) sites in the City of Oshawa, one (1) site in the Township of Brock, one (1) site in the Town of East Gwillimbury, and one (1) in the City of Vaughan. These sites represent both publicly and privately owned sites in Durham and York Regions and were considered to offer a sufficient and reasonable range of opportunities and alternatives to proceed with the siting evaluation process. For the purposes of this study the sites were categorized as follows:

Table 6-1 Alternative Sites Identified

Site Name	Municipality	Site Location	Nearest Major Intersection
Clarington 01	Municipality of Clarington	West side of Osbourne Road, North of CN Rail	Highway 401 and Courtice Road
Clarington 02	Municipality of Clarington	South side of Osbourne Road, South of CN Rail	Highway 401 and Courtice Road
Clarington 03	Municipality of Clarington	West side of South Service Road. West of Bennett Road. South of Highway 401	Highway 401 and Bennett Road
Clarington 04	Municipality of Clarington	East/South side of South Service Road. West of Bennett Road. North of Lake Road.	Highway 401 and Bennett Road

Site Name	Municipality	Site Location	Nearest Major Intersection
Clarington 05	Municipality of Clarington	East side of Courtice Road, South side of Highway 401	Highway 401 and Courtice Road
Whitby 01	Town of Whitby	East side of Montecorte Street, South of Nordeagle Avenue.	Highway 401 and Brock Street
Oshawa 01	City of Oshawa	East side of Thornton Road North, North side of Taunton Road West	Highway 4 and Highway 52
Oshawa 02	City of Oshawa	East side of Thornton Road North, North side of Taunton Road West	Highway 4 and Highway 52
Pickering 01	Town of Pickering	South side of Clements Road. East of Squires Beach Road.	Highway 401 and Brock Road
Brock Township 01	Township of Brock	West part of lot 10, Concession 11 Brock Township Between Concession 11 and Regional Road 12 West of Highway 12	Regional Road 12 and Highway 12
East Gwillimbury 01	Township of East Gwillimbury	North side of Garfield Wright Boulevard. East of Woodbine Avenue on East side of York Region Waste Management Centre	Highway 404 and Davis Drive
Vaughan 01	City of Vaughan	East side of McGillvray Road. South of MacKenzie Drive	Highway 27 and Rutherford Road

Appendix 6 contains a map of all sites identified (Map 6-1: Alternative Sites Identified) and site profiles for each site with the Step 2 Area Screening constraints identified and applied.

The sites identified above, primarily are located on the outer limits of urban development. Typically, when siting these types of facilities it is advantageous to locate the facility in close proximity to where the majority of the waste is being generated. However, due to the size of the site required for this facility and the trends in urban growth in both Durham and York Region (i.e., residential neighbourhoods developing in close proximity to industrial lands), the siting opportunities within the “urban” industrial areas were limited.

6.1 Application of Step 2 and Step 3 Screening Criteria

To confirm each identified sites ability to meet the Step 2 and Step 3 screening requirements, each site boundary was incorporated in the GIS database developed in Step 2 and then constrained areas were overlaid. The application of Step 2- Area Screening Criteria and Step 3-

Site Size and Configuration Criteria resulted in five (5) sites being removed from further consideration as follows:

- **Site Vaughan 01** – This site is heavily constrained by Natural Heritage Features including a watercourse, hazard lands and wooded areas and is therefore screened from further consideration.
- **Site Pickering 01** – This site, with a total site area of 6.3 hectares, does not have sufficient area for the proposed facility and required on-site infrastructure and is therefore screened from further consideration.
- **Site Oshawa 01** – This site is heavily constrained by Natural Heritage Features including a watercourse, hazard lands and a designated Environmentally Sensitive Area (ESA) and is therefore screened from further consideration.
- **Site Oshawa 02** – This site is heavily constrained by Natural Heritage Features including a watercourse, hazard lands and a designated Environmentally Sensitive Area (ESA) and is therefore screened from further consideration.
- **Site Brock Township 01** – This site is designated Agricultural Land and is constrained by Natural Heritage Features including wetlands, hazard lands, and wooded areas and is therefore screened from further consideration.

Removal of these five (5) sites from further consideration results in a “Long-List” of seven (7) sites to be carried forward into the “Long-List” evaluation process.

6.2 The “Long-List” of Alternative Sites

The site identification and initial Step 2 and Step 3 screening processes (Section 6.1 above) resulted in the identification of seven (7) sites that form the “Long-List” of alternative sites. These sites represent both publicly and privately owned Sites in Durham and York Regions and are considered to offer a sufficient and reasonable range of opportunities and alternatives to proceed with the siting evaluation process. The “Long-List” of sites is as outlined in Table 6-2 below:

Table 6-2 The “Long-List” of Alternative Sites

Site Name	Municipality	Site Location	Nearest Major Intersection
Clarington 01	Municipality of Clarington	West side of Osbourne Road, North of CN Rail	Highway 401 and Courtice Road
Clarington 02	Municipality of Clarington	South side of Osbourne Road, South of CN Rail	Highway 401 and Courtice Road
Clarington 03	Municipality of Clarington	West side of South Service Road. West of Bennett Road. South of Highway 401	Highway 401 and Bennett Road

Site Name	Municipality	Site Location	Nearest Major Intersection
Clarington 04	Municipality of Clarington	East/South side of South Service Road. West of Bennett Road. North of Lake Road.	Highway 401 and Bennett Road
Clarington 05	Municipality of Clarington	East side of Courtice Road, South side of Highway 401	Highway 401 and Courtice Road
Whitby 01	Town of Whitby	East side of Montecorte Street, South of Nordeagle Avenue.	Highway 401 and Brock Street
East Gwillimbury 01*	Township of East Gwillimbury	North side of Garfield Wright Boulevard. East of Woodbine Avenue on East side of York Region Waste Management Centre	Highway 404 and Davis Drive

* See Section 7.5.5 for additional detail

Map 7-1 in Appendix 7 shows the location of the “Long-List” of alternative sites within the Study Area.

7. Step 5 – Evaluation of the “Long-List” of Alternative Sites

7.1 Purpose and Approach for Comparatively Evaluating “Long-List” Alternative Sites

7.1.1 The “Long-List” Evaluation Process

The purpose of establishing and evaluating a “Long-List” of prospective sites is to reduce the number of sites to a “Short-List” that will then be compared in greater detail. It is important to conduct this level of evaluation to ensure that only sites with a reasonable chance of being selected undergo the more detailed comparative evaluation process. For the purpose of this investigation, sites would be deemed unsuitable if they exhibited significant technical, social and/or environmental disadvantages relative to other sites on the list. Sites that pass through this evaluation step are then included on a “Short List” of alternative sites and subjected to a more detailed comparative evaluation process.

It is important to note that the difference between Step 2 and Step 3 and the remaining site evaluation steps is that Step 2 and 3 are utilized to screen out lands considered unsuitable for further investigation. At Step 4 and throughout the remainder of the site evaluation process, the evaluation process converts from a screening process to one that compares the relative advantages and disadvantages of sites to identify those sites that ultimately exhibit the preferred balance of advantages and disadvantages.

7.2 Data Collection and Site Review

7.2.1 Application of the “Long-List” Evaluation Criteria

For each of the “Long-List” evaluation criteria, data was collected, reviewed and applied. Data collected at Step 4 was limited to published sources of information available to both Regions and limited roadside observation of the “Long-List” of sites.

7.3 Overview of “Long-List” Site Advantages and Disadvantages

In accordance with the approved EA Terms of Reference, the evaluation of the “Long-List” of alternative sites incorporates a comparative evaluation process. Table 7-1 below presents the relative comparison of each of the sites based on their respective advantages and disadvantages utilizing the detailed data provided in Appendix 7, Table 7-2 to 7-7.

Table 7-1 Comparison of “Long-List” Relative Advantages and Disadvantages

EVALUATION CRITERIA	“LONG-LIST” OF ALTERNATIVE SITES						
	CLARINGTON 01	CLARINGTON 02	CLARINGTON 03	CLARINGTON 04	CLARINGTON 05	WHITBY 01	EAST GWILLIMBURY 01
Proximity to Required Infrastructure	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE
Site Accessibility	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE
Potential Impact of Haul Route	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	DISADVANTAGE	ADVANTAGE
Property Size	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE
Land Use Compatibility	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	DISADVANTAGE	ADVANTAGE*
Availability of Site	ADVANTAGE	ADVANTAGE	DISADVANTAGE	DISADVANTAGE	DISADVANTAGE	DISADVANTAGE	ADVANTAGE
Proximity to Unregulated Airports	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE

*See Section 7.5.5 for additional detail.

7.4 Results of the “Long-List” Evaluation

7.4.1 Pairing of Clarington 01 and Clarington 02 sites

Based on a more detailed review of sites Clarington 01 and Clarington 02, it was determined that these sites should be, for the purposes of evaluation of the “Short-List” of sites, be treated as a single site with two (2) parcels. These sites are very similar in size, location, ownership, natural features, and proximity to required infrastructure. Both sites, owned by the Region of Durham, are also directly adjacent to Regional property where the new Clarington Water Pollution Control Plant is being constructed and where potential infrastructure sharing could take place.

7.4.2 Sites Considered Significantly Disadvantaged

The comparative evaluation of the “Long-List” of alternative sites resulted in one (1) site exhibiting a significant number of disadvantages relative to other sites on the “Long-List” and was therefore removed from further consideration as follows:

- Site Whitby 01 – This site is located near Natural Heritage Features including; ANSIs, ESAs, wetlands, and community parks. It is also located near, numerous potentially sensitive receptors including; residential communities, institutional facilities, and a shopping centre (See Appendix 6, Site Profile - Whitby 01)

Pairing of the Clarington 01 and 02 sites and the removal of the Whitby 01 site from further consideration, results in a “Short-List” of five (5) sites to be carried forward into the “Short-List” evaluation process.

7.5 Step 5B – Description of the “Short-List” Alternative Sites

There are no formal established guidelines or requirements that dictate the number of “Short-List” alternative sites which must be considered to identify a preferred site. In identifying the “Short-List” of siting opportunities, consideration should be given to:

- Maintaining a range of distinct siting opportunities;
- Level of effort and potential community disruption associated with “Short-List” studies; and,
- Targeting expenditure of study resources on those sites with at least a reasonable and ideally the best chance of selection as the preferred site.

Based on the application of relative advantages and disadvantages to each of the “Long-List” sites, five (5) sites have been carried forward for further, more extensive, comparative evaluation. These sites are referenced as the “Short-List” sites and are outlined in detail in Table 7-1 below.

Table 7-2 The “Short-List” of Alternative Sites

Site Name	Municipality	Nearest Major Intersection	Ownership	Size
Clarington 01/02	Municipality of Clarington	Highway 401 and Courtice Road	Municipal	Parcel 01: 12 Hectares (30 Acres) Parcel 02: 12 Hectares (30 Acres)
Clarington 03	Municipality of Clarington	Highway 401 and Bennett Road	Private	18 Hectares (45 Acres)
Clarington 04	Municipality of Clarington	Highway 401 and Bennett Road	Private	15 Hectares (37 Acres)
Clarington 05	Municipality of Clarington	Highway 401 and Courtice Road	Private	26 Hectares (64 Acres)
East Gwillimbury 01	Township of East Gwillimbury	Highway 404 and Davis Drive	Municipal	11 Hectares (29 Acres)

The following provides a more detailed description of each of the “Short-List” alternative sites based on the information collected and evaluation process followed in Step 5. Appendix 8, Map 8-1 identifies the locations of the “Short-List” of alternative sites. Figures 8-1 to 8-5 are site maps for each of the “Short-List” sites. The evaluation of these “Short-List” sites and the identification of a preferred site will be discussed in a subsequent report following a detailed consultation process on the “Short-List”.

7.5.1 “Short-List” Site: Clarington 01/02

Site Clarington 01/02 is made up of two parcels (undeveloped lands), south of Highway 401 in the Municipality of Clarington. Parcel 01 is located between Courtice Road and Osbourne Road and Parcel 02 is located south of Osbourne road, north of Lake Ontario. The CN Rail is adjacent to the south side of Parcel 01 and to the north side of Parcel 02. There are commercial sites north of both parcels. The lands east and west of the sites are undeveloped and are currently used for agricultural purposes. The Courtice Water Pollution Control Plant, which is scheduled to be completed in 2007, is being built just south of Parcel 01 and west of Parcel 02. The Darlington Nuclear Generating Station is located approximately 0.5 km to the east of Parcels 01 and 02. The nearest major intersection is Highway 401 and Courtice Road which is approximately 1.7 km from the Parcels. Each Parcel is approximately 12.1 hectares in area and are both located in the Clarington Energy Park.

Advantages Identified – “Long-List” Evaluation Step

- Potential access to heat load

- Close proximity to Highway 401
- Existing Industrial Area
- Part of Clarington Energy Park
- Site Owned by Durham Region

Disadvantages Identified – “Long-List” Evaluation Step

- No significant disadvantages identified at this time.

7.5.2 “Short-List” Site: Clarington 03

Site Clarington 03 is undeveloped land in the Municipality of Clarington, located south of Highway 401 (between Highway 401 and East Beach Road) and west of South Service Road. There are commercial sites located on the lands east and west of the property. The CN Rail is located south of the site. A number of residences and farms are located north of the site on the north side of Highway 401 as well as south of the site on the south side of the CN Rail. A creek appears to run along the inner west edge of the site. The nearest major intersection is Highway 401 and Bennett Road which is approximately 1.6 km from the site. The site size is approximately 18 hectares.

Advantages Identified – “Long-List” Evaluation Step

- Close proximity to Highway 401
- Existing planned industrial/ commercial area

Disadvantages Identified – “Long-List” Evaluation Step

- Site acquisition required
- Potential issues with on-site Natural Features
- Potential issues with planned residential development to the south of the site

7.5.3 “Short-List” Site: Clarington 04

Site Clarington 04 is undeveloped land, south of Highway 401 between Bennett road and South Service Road, in the Municipality of Clarington. The lands east and west of the site are undeveloped and are currently used for agricultural purposes. The CN Rail is located south of the site. There are commercial sites located on east and west, non-adjacent sides of the property. A number of residences and farms are located north of the property on the north side of Highway 401. The nearest major intersection is Highway 401 and Bennett Road which is approximately 1.1 km from the site. The site size is approximately 15 hectares.

Advantages Identified – “Long-List” Evaluation Step

- Close proximity to Highway 401

- Existing planned industrial/ commercial area

Disadvantages Identified – “Long-List” Evaluation Step

- Site acquisition required
- Potential issues with planned residential development to the south of the site

7.5.4 “Short-List” Site: Clarington 05

Site Clarington 05 is undeveloped land, south of Highway 401 between Courtice Road and Osbourne Road, in the Municipality of Clarington. Commercial Sites are located north of the site, north of Highway 401. The CN Rail is located south of the site. The lands east and west of the site are undeveloped and are currently used for agricultural purposes. The nearest major intersection is Highway 401 and Courtice Road, which is approximately 0.2 km from the site. The site size is approximately 26 hectares. This site is located in the Clarington Energy Park.

Advantages Identified – “Long-List” Evaluation Step

- Potential access to heat load
- Close proximity to Highway 401
- Existing Industrial Area
- Part of Clarington Energy Park

Disadvantages Identified – “Long-List” Evaluation Step

- Site acquisition required

7.5.5 “Short-List” Site: East Gwillimbury 01

Site East Gwillimbury 01 is located in the Town of East Gwillimbury, 2.6 km from the nearest major intersection – Highway 404 and Davis Drive. The site is undeveloped land surrounded by commercial/ industrial sites to the west, east, and south. The York Region’s Waste Management Centre which consists of a new Materials Recycling Facility and Waste Transfer Station is located immediately west of the site. One of York’s Household Hazardous Waste and Recycling Depot are situated south of the site. The land north of the site is undeveloped and is currently used for agricultural purposes. The site is approximately 11 hectares in size.

Advantages Identified – “Long-List” Evaluation Step

- Close proximity to Highway 404
- Existing industrial/commercial area
- Potential for shared infrastructure with York Region’s Waste Management Centre
- Site owned by York Region

Disadvantages Identified – “Long-List” Evaluation Step

- No significant disadvantages identified at this time.

Note: This site is located within the "Protected Countryside" area of the Greenbelt and would have been excluded during Step 2 of the site selection process. However, the wording of the Greenbelt Plan creates a special case for site specific planning approvals. Amendments to the Town of East Gwillimbury Official Plan and the zoning by-law for the land use at this site resulted from a previous site specific approval that occurred before the Greenbelt Plan took effect. The Greenbelt Plan permits these types of site specific approvals to continue without requiring future planning applications to conform with the policies of the Greenbelt Plan. Of the various sites reviewed and considered during the screening process, these circumstances were unique to this site. The inclusion of this site on the “Short-List” on this basis will be presented during the public consultation process for the “Short-List” of sites for further input and comment.

8. Next Steps

8.1 Proposed Consultation on “Short-List” Identification

Following the authorization from both Regional Councils to consult on the “Short-List” of sites, a detailed announcement and consultation strategy will be implemented. Appendix 9, Table 9-1, contains an overview of this strategy. As with the announcement of the preferred “Alternative to” the “Short-List” of sites will be presented to all parties initially as the “Consultants Conclusion”.

8.2 Step 7 - Evaluation of the “Short-list” Alternative Sites

Following the consultation on the “Short-List” of sites, once feedback from the public, agencies and stakeholders has been received and incorporated, the initiation of the detailed technical evaluation of the “Short-List” can begin. The purpose of Step 7 is to undertake a detailed evaluation of the “Short-List” of sites to identify a preferred site that best meets the siting objectives. The assessment will consider the sites as well as the haul routes, transfer requirements and requirements for additional infrastructure to develop the site. Sites will be compared based on a broad range of criteria to identify the preferred Durham/York site.

It is important to note that each criterion does not necessarily carry the same priority. The intent of comparing alternatives for a range of criteria is to identify potential impacts and, where possible, avoid them, and to identify and assess tradeoffs between sites. It is not likely that one alternative will completely satisfy all criteria, and therefore, where possible, measures would be required to mitigate impacts.

The evaluation criteria to be applied at this Step have been assembled under 5 categories:

- Public Health and Safety and Natural Environment;
- Social/Cultural Considerations;

- Economic / Financial Considerations;
- Technical Considerations; and
- Legal Considerations.

Step 7 will entail a comparative evaluation of the identified sites utilizing criteria and indicators to measure potential effects within the above categories. The proposed criteria and indicators have been included in Appendix 2, Table 2-3. There are different methods (qualitative, quantitative or a combination of both) that can be used to evaluate the sites. There is no requirement to apply any specific methodology except that the process must be rational, traceable and replicable and must consider advantages and disadvantages based on a net effects analysis of alternatives. This methodology is commonly applied to address the approval requirements of the EAA and promotes the selection of siting preferences considering relative advantages and disadvantages based on net effects after the application of reasonably available mitigative measures.

This net effects analysis consists of the following steps:

1. Undertake data collection and apply the comparative evaluation criteria to each of the “Short-List” sites. Potential effects to the environment would be identified based on the application of the comparative evaluation criteria. The net effects analysis will initially be carried out based on secondary data sources (i.e., Official Plans, aerial photographs, existing base maps) and limited field reconnaissance.
2. Consider measures that may be reasonably applied to mitigate potential effects identified in the previous step for each site. The result of this step will be the identification of net or post-mitigation effects for each of the sites.
3. Compare the net effects associated with each site and establish the relative advantages and disadvantages of each site. Under each criterion, sites would receive a High, Medium or Low ranking based on the comparative analysis against the other sites. The site that best meets the objective of the criterion will receive a High ranking and the site that least meets the objective of the criterion a low ranking. It is not intended that specific ranges would be pre-determined for the ranking, instead they will be developed based on a comparison between the potential sites.

For this study, a qualitative evaluation methodology will be applied which considers tradeoffs between sites using professional judgment in the context of priorities set by the community.

8.3 “Short-List” Site Data Collection

In order to comparatively evaluate each of the “Short-List” sites utilizing the evaluation process and criteria described above (Section 8.2), the following data/information collection activities will be undertaken:

- Potential local air quality monitoring
- Site specific water quality, terrestrial, aquatic and ecological assessments

- Detailed land use assessments
- Stage 1 Archaeological Assessments
- Preliminary Traffic Impact Assessments
- Economic/Financial review of each site and facility construction and operational implications
- Detailed assessment of current infrastructure and servicing
- Discussions with all levels of government regarding additional approval requirements
- Discussions and negotiations with property owner, potential heat load users, electrical power companies, etc.

8.4 Identification of the “Preferred” Site

Once the planned “Short-List” consultation process is complete and the detailed evaluation process described above is finalized, the Consultants will then recommend a “Preferred” site.

The preferred site will be the one with the preferred balance of advantages and disadvantages relative to the established category priorities and rankings. This decision will be based on the priorities and professional judgement exercised by both Regions and in consideration of the technical database, advice from technical experts and input received from stakeholders (i.e., public, neighbours, agencies, etc.)

Ultimately, both Regional Councils will be responsible for approval of the “Preferred” site.