Background Document 2-3

Consideration of “Alternative Methods” of Implementing the Undertaking

Development of Environmental Assessment Terms of Reference
(EA Terms of Reference)

December 16, 2005
Residual Waste Disposal Planning Study
Background Document 2-3
Consideration of “Alternative Methods” of Implementing the Undertaking

Development of Environmental Assessment
Terms of Reference

TASK 2
BACKGROUND DOCUMENTATION

December 16, 2005

prepared by:

MacViro Consultants Inc.
600 Cochrane Drive, Suite 500
Markham, Ontario, Canada
L3R 5K3

Jacques Whitford Limited
7271 Warden Avenue
Markham, Ontario, Canada
L3R 5X5
Table of Contents

1. Introduction ......................................................................................................................................................... 1
   1.1 Background ............................................................................................................................................... 1
   1.2 Environmental Assessment Act (EAA) .................................................................................................. 2
   1.3 Overview of Background Documentation .......................................................................................... 2
   1.4 Purpose of this Background Document ............................................................................................ 3

2. Overview of the Proposed Site Selection Methodology ...................................................................................... 3
   2.1 Step 1: Finalize Siting Methodology and Criteria and Confirm Priority Rankings ......................... 5
   2.2 Step 2: Area Screening ......................................................................................................................... 5
   2.3 Step 3: Site Size and Configuration Determination ........................................................................ 11
   2.4 Step 4: Potential Site Identification .................................................................................................. 11
      2.4.1 Step 4.1: Identification of Publicly Owned Sites ..................................................................... 13
      2.4.2 Step 4.2: Identification of “Willing Seller” Sites ..................................................................... 13
      2.4.3 Step 4.3: Identification of Additional Privately Owned Sites (Negotiated) ............................. 13
      2.4.4 Step 4.4: Adjust Screening Criteria and Re-Apply Criteria to Identify New Areas .............. 14
   2.5 Step 5: Evaluation of Long List & Identification of Short List of Sites ......................................... 14
   2.6 Step 6: Engaging Vendors of the Preferred Technology ............................................................... 15
   2.7 Step 7: Evaluation of Short-List Sites ............................................................................................... 16

3. Consultation During Site Selection Process .................................................................................................. 23

4. Facility Design and Approvals Considerations ............................................................................................. 24

List of Figures

Figure 2-1 Overview of the Proposed Facility Siting Process ............................................................... 4
Figure 2-2 Overview of Step 4 – Potential Site Identification ............................................................. 12

List of Tables

Table 2-1 Step 2 – Area Screening ................................................................................................................... 7
Table 2-2 Factors for Identifying Sites for the Short List ........................................................................ 14
Table 2-3 Step 6 – Evaluation of Short List of Sites and Identification of Preferred Durham/York Site .......................................................................................................................... 18
1. Introduction

This introduction provides an overview of waste management within the two Regions, the Environmental Assessment Act (EAA), the Background Documents supporting the Environmental Assessment (EA) Terms of Reference and the purpose of this particular Background Document.

1.1 Background

Durham and York Regions (the Regions) have agreed to undertake a joint Residual Waste Planning Study. Both municipalities are in need of a solution to manage the solid waste remaining 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 process to examine potential waste management alternatives.

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 is being expanded to service all of Durham. 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.

York Region (York) has programs and plans for programs in place for the source separation and diversion of “Blue Box” recyclables and household organics. In July 2005, York 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 cartons. 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 the 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 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 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 politically acceptable to both communities, that maximizes environmental protection and that fosters the wise management of potential resources 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
Consideration of “Alternative Methods” of Implementing the Undertaking
Background Document 2-3
Durham/York Residual Waste Study

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 does not have sufficient energy to meet its growing needs. Both Regions recognize that there is a significant 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.

1.2 Environmental Assessment Act (EAA)

Since the adoption of the Environmental Assessment Act (EAA) in the 1970s, the EA process has evolved into the completion of a study or 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, these effects and the comparison of the advantages and disadvantages of the remaining or “net” effects. The result of this process is to provide the planning rationale and support for a preferred solution.

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

All public sector (i.e., provincial or municipal) undertakings that have the potential for significant effects in terms of their scope are generally subject to the 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.

1.3 Overview of Background Documentation

A series of documents are being prepared to provide the necessary background and rationale in support of the EA Terms of Reference. These documents describe:

- underlying assumptions and commitments on the part of the Regions with respect to completing the EA Study in accordance with the approved EA Terms of Reference;
- public and agency consultation undertaken by the Regions in developing the EA Terms of Reference; and,
- the manner in which that consultation influenced the document submitted to the Minister of the Environment for approval.

These documents have been provided to support the development of the EA Terms of Reference, but do not form part of the Terms of Reference that will be submitted for approval by the Minister of the Environment. The subject background documents contain information that may
be referenced to obtain a better understanding of how the Regions established the steps, methods and criteria included in the EA Terms of Reference. The following provides a list of the background documents prepared for the Durham/York Residual Waste Study:

- 2-1 Purpose and Need for 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 Identification of Approvals Required for the Undertaking and Applicable Policy, Guidelines and Practices of the Approvals Authority.

1.4 Purpose of this Background Document

The purpose of this Background Document is to outline how the siting of a waste processing facility (i.e., Alternative Methods) will take place following the selection of a preferred approach for managing the wastes that will remain after the application of both Regions at-source waste diversion (reduction, reuse, recycling and composting) programs. In addition, this document also describes how a competitive process to identify the preferred technology vendor(s) will be incorporated into the facility siting process.

The overall objective of this step in the EA process is to identify a preferred site that minimizes the potential impacts on the natural, social, and cultural environment while optimizing affordability and maximizing technical suitability.

2. Overview of the Proposed Site Selection Methodology

In identifying and assessing alternative sites, consideration must be given to:

- the potential impact(s) on the site;
- the area immediately surrounding the site;
- the area(s) along haul routes to the site; and,
- the impact from construction and maintenance of additional infrastructure required for the facility at a site.

To measure and evaluate these potential impacts and to maximize the overall suitability of the site, the scope of the evaluation criteria to be used in the siting process must consider a broadly defined “environment”, consistent with the requirements of the EAA, including:

- public health and safety and the natural environment;
- social/cultural environments;
- economic/financial environments;
- technical environments; and,
- legal environments.
To identify potential impacts, evaluate sites, and identify a preferred site a seven-step facility site selection process, described in the following sections and outlined in Figure 2-1 is proposed to be utilized.

Figure 2-1  Overview of the Proposed Facility Siting Process
2.1 Step 1: Finalize Siting Methodology and Criteria and Confirm Priority Rankings

Once the preferred “Alternative To” (i.e. Disposal System) has been identified through the EA study, and prior to the evaluation of “Alternatives Methods”, the evaluation criteria and methodology proposed in the EA Terms of Reference will be 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 increasing 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;
- Solicit input from the public to confirm category priority rankings 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 evaluation of “Alternative Methods” process before its initiation.

Once the above is complete, the foundation will be laid to allow for the initiation of the evaluation of “Alternative Methods” and ultimately will provide the basis for the identification of a preferred site. The means by which the following steps in this evaluation process may be applied will be confirmed at Step 1.

2.2 Step 2: Area Screening

The starting point for the area screening process is to identify the boundaries in which a suitable site could be identified. For this siting process, the study area to be considered will include all lands within the municipal boundaries of Durham and York. Initiation of the facility siting process will begin 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 stages to ensure that only sites located within potentially suitable areas, such as designated industrial lands, undergo the detailed comparative evaluation process and that unsuitable areas, such as significant natural features, agricultural lands and existing residential areas would not be considered in the 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 waste disposal facility(ies).

In Step 2, the criteria listed below, and outlined in detail in Table 2-1, will be used to delineate the areas within Durham and York that would be considered unsuitable for the establishment of a waste processing facility. These criteria are consistent with established federal, provincial and
municipal land use planning policies and address the exclusion of particular land uses. The list of designated lands would be developed based on a review of applicable Official Plans/Municipal Policy Plans and Federal/Provincial Statutes and Regulations. These screening criteria will be clearly defined at the outset of the evaluation of “Alternative Methods” in Step 1 and would be provided to relevant stakeholders and agencies for input/comment.

- Exclude designated lands located within areas protected by Provincial/ Federal legislation such as the Oak Ridges Moraine Conservation Plan and the Greenbelt Protection Plan.
- Exclude designated residential areas and areas within an appropriate separation distance 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.
### Table 2-1  Step 2 – Area Screening

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Constraint</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclude designated lands located within areas protected by Provincial/ Federal legislation</td>
<td>• Remove areas protected by Provincial/Federal legislation from further consideration.</td>
<td>Areas protected by Provincial/Federal legislation are significant features that are typically a combination of geological and ecological features. Waste processing facilities are either prohibited or discouraged, depending on the applicable legislation. These areas can be compromised by waste processing facility activities.</td>
</tr>
</tbody>
</table>
| Exclude designated residential areas and areas within an appropriate separation distance of these designations | • Identify designated residential areas in official plans and areas within an appropriate separation distance of these designations and remove them from further consideration.  
• Appropriate separation distances will be defined following the identification of the preferred “Alternative To”, in consultation with agencies, stakeholders, public and the MOE. | Designated residential areas are not compatible land uses for a waste processing facility. To reduce the potential impacts from the facility(ies) during construction and operation, the facility should be located a suitable distance from designated residential areas. |
### Areas to be Excluded from Consideration

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Constraint</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| Exclude designated Natural Heritage Features and Areas and areas within an appropriate separation distance of these designations including: Significant Habitat of Endangered and Threatened Species; Significant Areas of Natural and Scientific Interest; Significant Wetlands, Woodlands, etc.; Designated Hazard Lands; and, Conservation Areas | • Identify designated Natural Heritage Features and Areas (including 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 Lands; and, Conservation Areas) and areas within an appropriate separation distance of these designations and remove them from further consideration.  
• Appropriate separation distances will be defined following the identification of the preferred “Alternative To”, in consultation with agencies, stakeholders, public and the MOE. | Designated Natural Heritage Features and Areas contain both valuable natural environmental and ecological resources and offer natural environment oriented outdoor education and recreational amenities. These functions can be compromised by waste processing facility activities. |
### Areas to be Excluded from Consideration

<table>
<thead>
<tr>
<th>Criteria</th>
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<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclude Prime Agricultural Lands</td>
<td>• Identify lands designated for agricultural use in local or regional official plans and remove from further consideration.</td>
<td>The Provincial Policy Statement requires that Prime Agricultural Areas (i.e., those areas predominated by specialty crop lands and/or Canada Land Inventory Classes 1, 2, and 3 soils) be protected for agriculture. Permitted uses and activities in these areas are: agricultural areas; secondary uses and agriculture-related uses. Proposed new secondary uses and agriculture-related uses will be compatible with, and will not hinder, surrounding agricultural operations. For this study, waste processing facilities are considered an inappropriate use of prime agricultural land and incompatible with prime agricultural areas as defined in local official plans.</td>
</tr>
<tr>
<td>Exclude designated Park / Recreational Lands and areas within an appropriate separation distance of these designations</td>
<td>• Identify designated Park / Recreational Lands and areas within an appropriate separation distance of these designations and remove them from further consideration.</td>
<td>Park land and/or recreational establishments with a significant outdoor component are generally not compatible with waste processing facilities, in particular with the potential noise, dust and odour nuisance impacts from these facilities. Special consideration may be given to outlying recreational uses which are primarily indoor and which may directly benefit from one or more of the products from a waste processing facility.</td>
</tr>
</tbody>
</table>

The Provincial Policy Statement requires that Prime Agricultural Areas (i.e., those areas predominated by specialty crop lands and/or Canada Land Inventory Classes 1, 2, and 3 soils) be protected for agriculture. Permitted uses and activities in these areas are: agricultural areas; secondary uses and agriculture-related uses. Proposed new secondary uses and agriculture-related uses will be compatible with, and will not hinder, surrounding agricultural operations. For this study, waste processing facilities are considered an inappropriate use of prime agricultural land and incompatible with prime agricultural areas as defined in local official plans.
### Areas to be Excluded from Consideration

<table>
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<tr>
<th>Criteria</th>
<th>Constraint</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclude Institutional facilities and areas as well as lands within an</td>
<td>• Identify institutional facilities or areas and lands within an appropriate separation distance of these facilities or areas and remove them from further consideration.</td>
<td>Sensitive institutional facilities tend to be located in built-up areas, which are not compatible with waste processing facilities. Depending on the type of institution and scope of the waste processing operation, the institution itself may be sensitive to and incompatible with a waste processing facility.</td>
</tr>
<tr>
<td>appropriate separation distance of these facilities or lands (e.g.</td>
<td>• Appropriate separation distances will be defined following the identification of the preferred “Alternative To”, in consultation with agencies, stakeholders, public and the MOE.</td>
<td></td>
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<tr>
<td>schools, hospitals)</td>
<td></td>
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<tr>
<td>Exclude areas around federally regulated airports as per Transport</td>
<td>• Exclude regulated lands around an airport, which falls under the Federal Aeronautics Act.</td>
<td>The Federal Aeronautics Act and Transport Canada guidelines prohibit the use of land outside an airport property boundary where such land uses are hazardous to aircraft operations (i.e., organic waste at waste processing sites that may either attract birds or adversely affect flight visibility).</td>
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<tr>
<td>Canada Guidelines</td>
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</table>
2.3 Step 3: Site Size and Configuration Determination

To identify potential sites within the remaining areas, considered potentially suitable for the establishment of a waste processing facility, the minimum required site size must be determined. The factors used in determining this size will be:

1. Type of technology to be sited (i.e., the Preferred "Alternative To" which will be determined during the initial stages of the EA Study) and technology specific requirements;

2. Number of facilities required will be assessed based on issues such as the system/technology selected, economies of scale, etc. ;

3. Design throughput of a facility considering the need for contingency capacity, the management of seasonal variations in municipal waste generation and the possibility of establishing capacity for Industrial, Commercial & Institutional (IC&I) wastes or wastes from a surrounding municipality;

4. Typical set back requirements from property boundaries (i.e., residences, roads, utilities, etc.), which are specified in local municipal zoning by-laws;

5. The minimum buffer area that is required around the site (the minimum will be a pre-determined number that is not site specific) required to secure environmental approvals;

6. Information provided by vendors of the preferred technology(ies) on site size requirements; and,

7. Conceptual layout for a facility and on-site ancillary features (i.e., roads, weighscale, administration facilities, etc.) that corresponds with the decisions made regarding the above considerations. This conceptual layout will be important to ensure the configuration of the site (i.e., shape) is suitable for the proposed facility(ies).

2.4 Step 4: Potential Site Identification

The purpose of Step 4 is to identify a long list of potential sites within the suitable areas that meet the minimum site size requirements.

It is proposed that sites, satisfying the requirements of Steps 2 and 3, will be identified in the following order:

1. Identification of Publicly Owned Sites (Municipal, Provincial, and Federal) (must meet minimum site size and configuration requirements for the type of facility(ies) to be developed).

2. Identification of Willing Seller Properties, (must meet minimum site size and configuration requirements for the type of facility(ies) being developed).

3. Identification of Additional Privately Owned Sites (must meet minimum site size and configuration requirements for the type of facility(ies) being developed).
Note: The identification of additional privately-owned sites would only be considered if an insufficient number of publicly owned and willing seller sites are identified and the acquisition of the property could be negotiated.

Figure 2-2 Overview Of Step 4 – Potential Site Identification
2.4.1 Step 4.1: Identification of Publicly Owned Sites

All publicly owned land that is considered surplus or is currently un-used or un-developed within the suitable areas (identified in Step 2) that meet the minimum site size requirement (Step 3) will be identified. If a reasonable range of sites are identified, the process would move on to the next step. While there is no specific number that is considered “reasonable” the decision will be based upon professional judgement and may recognize such issues as ensuring that prospective sites are identified in both Regions.

2.4.2 Step 4.2: Identification of “Willing Seller” Sites

In addition to publicly owned land, sites where the owner would be interested in selling the site (“willing sellers”) may also be considered as potential sites if it is determined that a “reasonable” number of prospective sites has not been established further to Step 4.1. A “willing seller” site must be offered for consideration by the owner of the subject property and the owner of a “willing seller” site must be prepared to enter into an option agreement with Durham and York.

To identify potential sites that meet the “willing seller” criteria, the identified suitable areas, determined site size requirements, and the siting objectives will be publicly advertised to solicit interest from landowners.

2.4.3 Step 4.3: Identification of Additional Privately Owned Sites (Negotiated)

If, following Step 4.1 and 4.2, it is still determined that a “reasonable” number of prospective sites have not been identified, privately owned properties within the suitable areas would be identified by considering key factors such as proximity to required infrastructure and site accessibility. These additional private sites should be at least equivalent to the previously identified sites in terms of environmental suitability. To determine suitability, the following criteria will be applied to these sites and compared against results from the other sites identified in Steps 4.1 and 4.2:

1. Proximity (distance) to required infrastructure;
2. Site accessibility; and,
3. Other factors identified by the public, if applicable.

Sites identified in Steps 4.1 and 4.2 will be used to establish a “maximum distance” for the above factors, with the greatest distance to be used to establish maximums. For example, if all of the sites identified in Steps 4.1 and 4.2 are 2 kilometres or less from a major highway, 2 kilometres will be the maximum distance for site accessibility and therefore no additional private sites will be identified outside this 2 kilometres limit. If this Step fails to identify a suitable number of additional sites, the constraints (maximum distances) may need to be reviewed and adjusted.

Since these sites are not on publicly owned lands and were not initially offered through the “willing seller” process, it will be necessary to approach the owners of the identified sites and seek their willingness to offer/sell their property. This purchase would be negotiated. Obtaining sites through expropriation would not be considered at this stage in the process.
2.4.4 Step 4.4: Adjust Screening Criteria and Re-Apply Criteria to Identify New Areas

If Steps 4.1 to 4.3 fail to identify a reasonable number of sites (privately or publicly owned), then Step 4.4 would involve review of the area screening criteria in Step 2 and appropriate adjustments would be made to these criteria. The next tasks would be to repeat Step 2 using the adjusted area screening criteria to identify new areas and then re-start Step 4 (using the new areas combined with the minimum site size (Step 3) to determine if an appropriate range of sites can now be identified (i.e., publicly owned, willing sellers and/or private sites).

The adjustments to be made to the area screening criteria will consider comments received during public consultation on the site selection methodology at Step 1 and professional judgement by the proponents. Any adjustments to the area screening criteria would be done in consultation with relevant stakeholders, agencies and the MOE. For example, if during the consultation process, participants identified that their preference was to locate sites greater than 500 meters from designated residential areas, however they indicated that there could be industrial lands located adjacent to a residential area that could be suitable even though they exist within the 500 meters exclusion zone, the exclusionary zone for this criterion could be adjusted on a case-by-case basis.

If at the end of this stage in the process, a reasonable number of publicly owned, willing seller or offered potential sites have not been identified, consideration would be given to including identified sites that could be obtained through expropriation.

2.5 Step 5: Evaluation of Long List & Identification of Short List of Sites

The purpose of this Step is to initiate the preliminary evaluation of the prospective sites identified in Step 4 to reduce the number of sites that will be compared in greater detail to identify a short list of sites. Step 5 may or may not be required, depending on the number of sites identified in Step 4. If a significant number of sites are identified in Step 4, 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 major technical, social and/or environmental disadvantages relative to other sites on the list. Sites that pass through this evaluation step would be included on a “short list” of alternative sites and will be carried forward to Step 6 for a detailed comparative evaluation.

The factors that will be used to identify sites for the short list are outlined in Table 2-2 below.

<table>
<thead>
<tr>
<th>Item</th>
<th>Constraint</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| 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 | Depending on the technology selected, a maximum distance can be identified from an electrical connection as sites within that range would likely be more economically feasible. |
<table>
<thead>
<tr>
<th>Item</th>
<th>Constraint</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site accessibility</td>
<td>• Maximum distance (to be specified) from major highway, rail line and/or transit system</td>
<td>Sites that are closer to a highway or railway line are preferred since the haul route impacts could be more easily mitigated. As well, preference would be to minimize the distance to an interchange with a 400 series highway.</td>
</tr>
<tr>
<td>Potential impact of the haul route (i.e., traffic, noise, land use, cost)</td>
<td>• Length of haul route (distance to main waste generation source(s))</td>
<td>Sites that would be less preferred would be ones that:</td>
</tr>
<tr>
<td></td>
<td>• Land use along haul route</td>
<td>− are located away from the main source(s) of waste generation and therefore would require longer haul routes;</td>
</tr>
<tr>
<td></td>
<td>• Road type, width and traffic volumes along haul route</td>
<td>− traverse through densely populated areas; and,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>− include narrow and/or congested roads.</td>
</tr>
<tr>
<td>Property size</td>
<td>• Minimum size (determined in Step 3) in comparison with the actual site size (i.e. amount of surplus land available beyond the minimum site size requirement)</td>
<td>The minimum site size was determined in Step 3 but sites that exceed the site size would be preferred since the siting layout would be easier to develop and the potential would exist to have a greater on-site buffer area to mitigate potential impacts.</td>
</tr>
<tr>
<td>Land use compatibility</td>
<td>• Designated industrial or industrial type land use adjacent to the site</td>
<td>Sites that are located within compatible land use areas such as designated industrial areas or industrial type areas would be preferred as it would be easier to mitigate the potential impacts from the facility.</td>
</tr>
<tr>
<td>Availability of site</td>
<td>• Requirement to acquire site through expropriation</td>
<td>Sites that can only be acquired through expropriation are less preferred.</td>
</tr>
<tr>
<td>Potential impacts on unregulated airport operation</td>
<td>• Proximity to unregulated airports</td>
<td>Transport Canada Guidelines identify a concern with waste disposal operations around airport operations. Airport Zoning By-laws govern land use around federally regulated airports. For other operations, a radius of approximately 8 km around airports is identified as a zone of concern regarding waste disposal operations. Sites within this zone should be considered with regard to their proximity to an unregulated airport.</td>
</tr>
</tbody>
</table>

These factors will be used to compare sites to identify the relative advantages and disadvantages of the sites. These are not the same as exclusionary criteria applied in Step 2 to identify suitable areas within the study area, but rather, would be used to identify sites exhibiting major advantages or disadvantages.

### 2.6 Step 6: Engaging Vendors of the Preferred Technology

At Step 6 of the process, prospective Vendors of the preferred technology(ies) will be requested to submit their qualifications and invited to submit their own alternative site(s) or facilities for consideration. In order for an alternative site or facility to be considered:
• It must be located in Ontario.

• If it is not located in Durham or York, it preferably would have a Certificate of Approval that would allow it to receive waste from Durham or York or at a minimum, the proponent offering the site must have an approved EA Terms of Reference and be in the process of completing an Environmental Assessment that would lead to obtaining the required approvals for all required facilities.

• If it is located in Durham or York it must meet all the screening criteria as set out in this document used to identify the Short-List sites.

In the event that prospective alternative site(s) are received from a qualified vendor and are found to comply with the above requirements, the site(s) would be added to the Short-List and included in the Step 7 comparative evaluation.

The short list of sites will then be released for public review and comment together with the evaluation criteria, indicators and methodology to be used in the comparative evaluation of the sites.

2.7 Step 7: Evaluation of Short-List Sites

The purpose of Step 7 is to undertake a detailed evaluation of the short list of sites together with any alternative site(s) submitted by qualified prospective Vendors at Step 6 and found to comply with the “Step 6” requirements, so as 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:

1. Public Health and Safety and Natural Environment;
2. Social and Cultural;
3. Economic / Financial;
4. Technical Suitability; and
5. Legal

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 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 predetermined 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.

4. The rankings will be recorded in a summary table and overall rankings for each of the five categories of criteria will be established based on the advantages and disadvantages of the sites (which generally correlates to the number of “Highs” a site receives). However, the intent is not to count but to use professional judgement to consider the ranking of the criteria. Public consultation activities were held in the development of the EA Terms of Reference to help assist in identifying the priorities of the criteria. This exercise did not result in receipt of definitive input but gave an indication of the public’s concerns and the criteria that they felt should be given greater consideration. Further consultation will be undertaken during Step 1 of the siting process to further refine the criteria and establish the relative priorities of each of the evaluation categories.

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.)
### Table 2-3  Step 6 – Evaluation of Short List of Sites and Identification of Preferred Durham/York Site

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Indicator</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Health &amp; Safety and Natural Environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Air Quality Impacts</strong></td>
<td>Local meteorological conditions</td>
<td>Close proximity of the site to areas with sensitive meteorological conditions could result in negative impacts to the air environment. This indicator would take into consideration prevailing wind directions, existence of sensitive micro-climates, etc.</td>
</tr>
<tr>
<td>Note: The preferred technology must at least meet all applicable air quality regulations.</td>
<td>Distance travelled from main source(s) of waste generation to the site.</td>
<td>Air impacts from transportation of waste along haul routes to the facility are related to the distance travelled from the area of waste generation to the waste processing site. Air impacts associated with the facility are addressed under other criteria related to sensitive uses (i.e., residential areas, institutions, etc.)</td>
</tr>
<tr>
<td><strong>Water Quality Impacts</strong></td>
<td>Relative distance to and type of watercourses (aquatic habitat) present within close proximity of site for wastewater or surface water discharge from facility (if applicable).</td>
<td>Close proximity of site to sensitive watercourses could result in negative impacts to the aquatic environment due to potential discharges from the facility.</td>
</tr>
<tr>
<td></td>
<td>Receiving body for wastewater discharge from the facility (if applicable)</td>
<td>Depending on the location and nature of the receiving body for wastewater discharge, negative impacts could result to the natural environment and/or social cultural environment due to potential discharges from the facility.</td>
</tr>
<tr>
<td></td>
<td>Quality of water in the receiving body based on size and flow of watercourses.</td>
<td>Smaller watercourses with low flow could experience greater impacts from wastewater or surface water discharges from a facility.</td>
</tr>
</tbody>
</table>
### EVALUATION CRITERIA

<table>
<thead>
<tr>
<th>Environmentally Sensitive Areas and Species Impacts</th>
<th>Species of special concern, threatened and/or endangered species identified by Ministry of Natural Resources (MNR) in the area potentially impacted by the site or haul route.</th>
<th>Proximity of site to sensitive environmental features could result in impacts during construction and operation of a facility and along the haul routes.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Distance from site or haul route to areas that are designated Natural Heritage Features and Areas including: Significant Wildlife and Fish Habitat; Significant Areas of Natural and Scientific Interest; Significant Wetlands, Woodlands, etc.; Designated Hazard Lands; and, Conservation Areas</td>
<td>Proximity of site to sensitive features could result in impacts during construction and operation of a facility and along the haul routes.</td>
</tr>
<tr>
<td>Aquatic and Terrestrial Ecology Impacts</td>
<td>Amount of woodlands, hedgerows, etc., affected or removed at the site and the degree of impact on the edge of a woodlot/hedgerow.</td>
<td>Negative impacts to the natural environment could result from removal of woodlands or hedgerows on a site, including edge impacts on a woodlot/hedgerow.</td>
</tr>
</tbody>
</table>

### Social and Cultural Environment

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicator</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatibility with Existing and/or Proposed Land Uses</td>
<td>Consistency with current land use, approved development plans, and proposed land use changes.</td>
<td>Fewer impacts to mitigate if current and future land use plans are consistent with a waste processing facility (i.e., avoid sites with an adjacent land use such as proposed residential development).</td>
</tr>
<tr>
<td>Compatibility with existing land use designations.</td>
<td>Minimize impact on social environment with sites that are compatible with existing land use designations (i.e., industrial lands) and would not require re-zoning.</td>
<td></td>
</tr>
<tr>
<td>Size of buffer zone available on the site.</td>
<td>Sites larger than the minimum site size would be easier to accommodate the facility (including design opportunities) and potential impacts could be mitigated with greater distance between the site and surrounding land uses.</td>
<td></td>
</tr>
<tr>
<td>Opportunity for brownfield development.</td>
<td>Opportunity for beneficial use of existing brownfields, which means that undeveloped land, could be avoided and used for future uses of higher community value than a waste processing facility.</td>
<td></td>
</tr>
<tr>
<td>EVALUATION CRITERIA</td>
<td>Residential Areas</td>
<td>Parks and Recreational Areas</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>EVALUATION CRITERIA</strong></td>
<td>Distance from site to designated residential areas within an appropriate separation distance of the site and within an appropriate separation distance of the haul route(s).</td>
<td>Number and distribution of residences within an appropriate separation distance of the site and within an appropriate separation distance of the haul route(s).</td>
</tr>
<tr>
<td><strong>Greater distances between the facility and residential areas is preferred to reduce the potential impacts.</strong></td>
<td>Along the haul route determining the impacts from emissions and noise from transportation vehicles and the mitigation measures needed.</td>
<td>Impacts on, and the need for, mitigation measures are reduced for sites that are located farther away from residents, so rural or lower density residential areas are preferred surrounding the site and along the haul route(s).</td>
</tr>
</tbody>
</table>
### EVALUATION CRITERIA

<table>
<thead>
<tr>
<th>Traffic Impacts</th>
<th>Type of roadway (i.e., paved, gravel) and access to businesses and/or subdivisions &amp; proximity of site to major arterial roads or highways.</th>
<th>Convenient access to the site will reduce impacts on traffic and to residents/commuters and would ease development of the site as a regional facility.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing and projected volume of traffic along haul route (i.e., high, moderate or low).</td>
<td>Minimizing traffic impacts will improve community acceptance of the facility and haul routes. Generally, the higher the projected traffic volumes along the route, the lower the overall impact along the route and to the community. For example, a road that currently has a low volume of traffic (i.e., 100 vehicles per day), would experience a higher impact if traffic increased by 100 additional trucks per day. Conversely, a major road with thousands of vehicles travelling it daily would experience far less net impact.</td>
<td></td>
</tr>
<tr>
<td>Conformity with Durham’s Goods Movement Network</td>
<td>Specific to Durham Region, conformity with Durham’s Goods Movement Network as outlined in its Transportation Master Plan (currently under review) will ensure that waste transfer vehicles are travelling road networks that have been identified for this type of traffic.</td>
<td></td>
</tr>
</tbody>
</table>

### Economic / Financial

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicator</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Costs</td>
<td>Site development costs, including: infrastructure required, upgrades to existing infrastructure (roads, sewers, etc.), property acquisition and possible site remediation.</td>
<td>Sites with lower development costs would be more economically feasible.</td>
</tr>
<tr>
<td>Operation and Maintenance Costs</td>
<td>Distance from waste generation points, transfer stations (e.g., length of haul route), annual operating costs and maintenance costs.</td>
<td>Impact of facility on Durham and York ’s financial resources must be assessed and deemed affordable.</td>
</tr>
<tr>
<td>Mitigation requirements</td>
<td>Anticipated costs with respect to the mitigation of potential impacts. (i.e., may include site development costs, site maintenance costs, etc).</td>
<td></td>
</tr>
</tbody>
</table>
### EVALUATION CRITERIA

<table>
<thead>
<tr>
<th>Monitoring requirements</th>
<th>Anticipated costs to maintain required monitoring programs. (i.e., sites closer to environmentally sensitive features in a rural environment may require additional monitoring efforts than sites located in a developed urban/industrial area.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from potential markets for sale of marketable materials (i.e. heat, electricity, recovered metals, etc.)</td>
<td>Sites that are closer to potential markets have the potential for reduced O&amp;M costs.</td>
</tr>
</tbody>
</table>

### Technical Considerations

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicator</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatibility with Existing Infrastructure</td>
<td>Distance from required infrastructure (i.e., sewers, hydro, road access, water).</td>
<td>Construction may take additional time and extend beyond site location if site does not have existing access to required utilities.</td>
</tr>
<tr>
<td>Design/Operational Flexibility Provided by Site</td>
<td>Area surplus to minimum requirement provided by site.</td>
<td>Surplus lands will enhance the potential to design a facility capable of managing additional sources of residual wastes (e.g. IC&amp;I wastes or other municipalities) or may be used to enhance the on-site buffer area.</td>
</tr>
</tbody>
</table>

### Legal Considerations

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicator</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity of Required Approvals</td>
<td>Nature of approvals required.</td>
<td>The need for complex approvals and possibly a public hearing present a legal risk to the successful implementation on a particular site. These risks should be considered in the selection of a preferred site.</td>
</tr>
<tr>
<td>Complexity of Required Agreements</td>
<td>Nature of property acquisition (related to the need for expropriation, Region owned or willing seller site).</td>
<td>Sites that have fewer property acquisition issues associated with them would be less costly from the perspective of time and money. The order of preference based on property acquisition timing would be Region owned sites, willing seller sites and sites requiring expropriation.</td>
</tr>
</tbody>
</table>
If applicable, “Alternative Methods” other than siting, may be identified, for development of a preferred site. Examples of the types of alternatives that could be considered at this step include:

- access routes/entry points;
- site configurations; and,
- landscaping/screening concepts.

The scope and methodology for evaluating these types of alternatives would be developed during the EA study, if deemed necessary.

Concurrent with the comparative evaluation of the short list of sites, a Request for Proposals will be prepared and issued to the Vendors qualified at Step 6 of the process. As part of the RFP, qualified Vendors would be asked to bid on the development of a facility on a prospective site that would be described using generic characteristics. These characteristics would include site size, adjacent and surrounding land use and proximity to major roadways and servicing. The generic characteristics would be based on those exhibited by the Short-List sites under evaluation.

The issuance of the RFP at this step represents a component of the process followed to identify then successfully complete negotiations with a preferred Vendor. Finalization of these discussions would likely extend beyond the scope of the EA Study. At the stage where the comparative evaluation of Short-List sites has resulted in selection of a Preferred Site and evaluation of submissions, in response to the RFP, has identified a preferred Vendor, these results will be released by way of a public Notice and request for comments.

It is currently planned that the decision on the preferred vendor would be made prior to the decision on the preferred site. This methodology will be confirmed prior to the evaluation of “Alternative Methods” as discussed in section 2.1.

Ultimately the selection of both the preferred site and preferred vendor will be subject to approval by both Regional Councils.

3. Consultation During Site Selection Process

At Step 1 of the Site Selection Process, the public, stakeholders and agencies will be involved in the review of the proposed methodology, criteria and priorities to be utilized in the evaluation process. Input from this consultation will be used to finalize the proposed site selection process. Public and agency consultation will be undertaken at Step 1 to facilitate a decision-making process that represents the priorities of the community at-large and that considers and addresses the concerns of those potentially impacted by the proposed facility(ies).

Public and agency consultation will also be undertaken following identification of the Short-List sites as well as upon selection of a preferred site and Vendor.

All public and agency consultation processes and events will be communicated to interested parties in accordance with the consultation plan outlined in the Proposed EA Terms of Reference. The results of all consultation will be documented including specific input received and the impact of that input on the study outcomes. This input will be made available to all interested parties upon request.
4. Facility Design and Approvals Considerations

The facility site selection process is intended to be an exclusionary/comparative process that considers the relative advantages and disadvantages of a number of sites leading to the selection of a preferred site. Accordingly, potential environmental impacts, the suitability of a site, and the need for mitigation are considered to the extent that comparative differences between sites can be identified. The absence of detail in the development and application of comparative criteria must not be construed to mean that a detailed assessment of potential effects and the development of design and operation measures to prevent unacceptable impacts are not required or being contemplated as part of the facility commissioning.

Once a preferred site is selected detailed design studies must be initiated for the facility that support the issuance of permits and an operating license under applicable legislation. The most relevant legislation to the establishment of waste processing facilities is the Environmental Protection Act (EPA) that prohibits the cause of "adverse effects" on the environment. With regards to waste processing facilities, Part V of the EPA requires that a Provisional Certificate of Approval be issued permitting the establishment and operation of such facilities and that studies and design plans be completed to a level of detail that demonstrates no "adverse effects" on the environment. Types of detailed site-specific studies that could be completed for the subject waste processing facility include:

1. Noise Impact Study;
2. Site Specific Health Risk Assessment;
3. Air Quality Impact Assessment (including the consideration of odours and dust);
4. Traffic Impact Study;
5. Archaeological Assessment;
6. Detailed Design Studies;
7. Operational Planning; and,

Background Document 2-5 “Relevant Policies and Approval Requirements” outlines in detail the approvals which may be required depending on the specific location of sites and the type of technology(ies) to be developed.

Therefore, once a site is selected, consideration of impacts to the environment and land uses surrounding the site will be initiated and completed to a level of detail required for the issuance of a Certificate of Approval and other potential approvals.