Clarington
Leading the Way

REPORT
PLANNING SERVICES

Meeting: GENERAL PURPOSE AND ADMINISTRATION COMMITTEE

Date: Monday, December 3, 2007

Report #: PSD-141-07 **File #: PLN 33.3.10** **By-law #:**

Subject: **DURHAM/YORK RESIDUAL WASTE ENVIRONMENTAL ASSESSMENT STUDY - SITE SELECTION PROCESS**
MUNICIPAL COMMENTS ON STEP 7 – EVALUATION OF SHORT-LIST OF SITES AND IDENTIFICATION OF PREFERRED SITE

RECOMMENDATIONS:

It is respectfully recommended that the General Purpose and Administration Committee recommend to Council the following:

1. THAT Report PSD-141-07 be received;

2. THAT this Report and Attachments 5, 6, 7, 8 and 9 be adopted as the Municipality of Clarington's comments on Step 7 – Durham/York Residual Waste Environmental Assessment Study – Site Selection Process;

3. THAT the Regions of Durham and York be requested to respond to and address, early in 2008, the issues identified by the peer review consultants that are necessary for the submission of the EA documentation to the Ministry of the Environment;

4. THAT the Regions of Durham and York commit to including in the Request for Proposals and Certificate of Approval, Maximum Achievable Control Technology (MACT) for the emission standards and monitoring that the EFW facility will meet;

5. THAT the Regions of Durham and York be requested to delay the final selection of a preferred site for the Energy from Waste facility until such time as the submissions in response to the Request for Proposals have been reviewed, a preferred technology and vendor has been selected, and the sensitivity analysis in relationship to the site selection and the specific Human Health and Ecological Risk Assessment has been carried out;

6. AND FURTHER THAT the final site selection be delayed until the business case for the Energy from Waste facility clearly indicating the cost to the taxpayers of the Regions of Durham and York has been adopted by the Regional Councils;

7. THAT a copy of Report PSD-141-07 and Council's decision be forwarded to the Durham–York Joint Waste Management Group, the Region of York, the Region of Durham, the Ministry of Environment, and the other area municipalities in Durham Region; and

8. THAT all delegations and interested parties be notified of Council's decision.

Submitted by: _____
David J. Crome, M.C.I.P, R.P.P.
Director of Planning Services

Reviewed by: _____
Franklin Wu,
Chief Administrative Officer

JAS/FL/DJC/sn
27 November 2007

1.0 PURPOSE OF REPORT

1.1 On September 21, 2007, the Regions of Durham and York issued the reports prepared by their Consultants related to Step 7 of the facility siting process for the Durham/York Residual Waste Environmental Assessment (EA). Step 7 involves the evaluation of the Short-List of sites and the identification of a preferred site for the Durham/York energy-from-waste (EFW) facility.

1.2 As a result of their evaluation of the Short-Listed sites, the Regions' Project Team Consultants have identified Clarington Site 01 as the Recommended Preferred Site for the EFW facility. The reports relating to the Step 7 evaluation have been issued for public and agency comments, with December 10, 2007 being the deadline for submitting comments on Step 7 of the site selection process.

1.3. The purpose of this report is to provide the Municipality of Clarington's comments on Step 7 of the facility siting selection process. This report incorporates comments prepared by both staff and the Municipality's peer review consultants. The report discusses and focuses on the over-arching issues related to the EA process, the evaluation of the Short List of Sites and the selection of a Recommended Preferred Site. More detailed comments regarding these and other issues are provided in the reports prepared by the Municipality's peer review consultants, attached to this report as Attachments 5 through 9.

1.4. Clarington's Peer Review Team and Staff met with the Regions' Project Team on October 10, 2007 to review questions and seek clarification on items; the responses provided by the Regions' Project Team Consultants are indicated in Attachment 10. However, for 62 of the 127 issues raised by Clarington, the Regions' Project Team Consultants responded that the issue would be addressed at a later date and/or prior to the submission of the EA documentation in late 2008.

2.0 OVERVIEW OF STEP 7 (SITE EVALUATION PROCESS)

2.1 Steps 1 through 5 of the site selection process resulted in the identification of the following four Short-Listed sites (see Attachment 2), which were then evaluated in Step 7:

Clarington 01	A 12.4 ha parcel owned by the Region of Durham located on the west side of Osbourne Road immediately north of the CN rail line in the Clarington Energy Business Park
Clarington 04	A 14.8 ha privately owned parcel located immediately south of Highway 401 east of the South Service Road
Clarington 05	A 27.2 ha privately owned parcel located immediately south-east of the Highway 401/Courtice Road interchange
East Gwillimbury 01	An 11.5 ha site owned by York Region in the Town of East Gwillimbury, immediately adjacent to York Region's Waste Management Centre.

2.2 The Short-Listed sites were evaluated by the Regions' Project Team Consultants on the basis of criteria grouped into five categories - Public Health & Safety and Natural Environment, Social and Cultural, Economic/Financial, Technical Suitability, and Legal. Each category was assigned a priority on the basis of public consultation undertaken in Step 1 of the facility siting process. The first and last categories were assigned high and low priorities respectively, while the other three were assigned a medium priority. Attachment 3 provides more detail on the evaluation criteria.

2.3 Using these criteria, the Regions' Project Team Consultants undertook a comparative evaluation of the four Short-Listed sites. Potential effects to the environment and reasonable measures to mitigate these effects were identified, resulting in the identification of the net effects for each of the sites. Under each criterion, the net effects for each site were compared and ranked as follows: Major Advantage, Advantage, Neutral, Disadvantage, and Major Disadvantage. The Regions' Project Team Consultants evaluation was primarily qualitative, relying on their professional judgement and using previously established community priorities as noted in 2.2 above. How the evaluation was carried out and the professional judgment applied is not clear.

2.4 The following table summarizes the evaluation of the Short-Listed sites undertaken by the Regions' Project Team Consultants. According to this evaluation, Clarington Site 01 was the only site that was ranked as having an *advantage* in all high and medium priority categories, and the only site ranked as having an overall *advantage*. No site was ranked as having a *major advantage* in any category.

Environmental Category	Clarington 01	Clarington 04	Clarington 05	E. Gwillimbury 01
PRIORITY: HIGH				
Public Health & Safety & Natural Environment	Advantage	Neutral	Major Disadvantage	Disadvantage
PRIORITY: MEDIUM				
Social & Cultural	Advantage	Disadvantage	Disadvantage	Neutral
Economic/Financial	Advantage	Disadvantage	Neutral	Neutral
Technical	Advantage	Neutral	Advantage	Advantage
PRIORITY: LOW				
Legal	Neutral	Disadvantage	Disadvantage	Neutral
OVERALL	**ADVANTAGE**	**DISADVANTAGE**	**DISADVANTAGE**	**NEUTRAL**

Attachment 4 provides a more detailed breakdown of the evaluation undertaken by the Regions' Project Team Consultants.

2.5 The Regions' Project Team Consultants have a number of separate reports attached as Annexes to the main report of the site selection process. These reports, as noted below, provide the detailed information and rationale of how the evaluation criteria were applied and how the indicators were used in the evaluation process:

Annex A	Potential Air Quality Impacts
Annex B	Potential Water Quality Impacts (Surface Water and Groundwater)
Annex C	Potential Environmentally Sensitive Areas and Species Impacts and Aquatic and Terrestrial Ecology Impacts
Annex D	Compatibility with Existing and Proposed Land Uses
Annex E	Report on Archaeological and Cultural Resources
Annex F	Potential Traffic Impacts
Annex G	Capital Costs and Operation and Maintenance Costs
Annex H	Compatibility with Existing Infrastructure and Design/Operational Flexibility
Annex I	Complexity of Required Approvals and Agreements

3.0 CLARINGTON'S PEER REVIEW OF STEP 7 DOCUMENTS

3.1 Clarington's Peer Review Consultants and Staff have prepared brief reports highlighting the substantive issues that have not been adequately addressed to date (Attachments 5 through 9). The focus of this staff report will be the over-arching issues related to the site selection process and those that have previously been identified by Clarington Council through its endorsement of the recommendations contained in PSD-070-07 (Attachment 11) and PSD-097-07 (Attachment 12) as items critical to any decision to be a host community to the EFW facility.

3.2 General Concerns in Site Evaluation Process

3.2.1 A review of the evaluation process used to identify the recommended site has identified a number of deficiencies with the evaluation process. In particular, the evaluation process is not clearly described, and parts of the process do not appear to be consistent with either the *Environmental Assessment Act* or the approved EA Terms of Reference. It is the opinion of Staff and the peer review consultants that the site evaluation process has been inconsistent, as discussed below.

Determination of Advantages and Disadvantages

3.2.2 The *Environmental Assessment Act* requires an EA to describe the advantages and disadvantages to the environment associated with each alternative method (i.e. site). However, the EA study determined the advantages and disadvantages of each site in comparison to the other sites. For example, under some criteria a negative impact on the environment is seen as an "advantage" because the impact is not considered to be as great as for the other sites. This approach creates difficulties in undertaking a consistent comparison and assumes that all of the

Short-Listed sites are suitable for the EFW facility. The peer review consultants note that this assumption has not been justified by the EA study work done to date.

3.2.3 The definitions used for the terms "advantage", "disadvantage", and "neutral" in the main study report are not the same as those used in the technical background documents. For example, the main study report uses the following definition of Major Advantage: "Development of the site would have minimal impact based on the criteria/indicator being applied and in most cases a net benefit would result from facility development." However, in the Annexes (supporting technical documents), a major advantage was identified for any site "with the significant ability to meet the evaluation criteria when compared with the other sites." This lack of consistency in the definitions of the indicators used to evaluate and rank the Short-List of sites remain a concern.

Assessment of Net Effects

3.2.4 The EA Terms of Reference states that each potential effect will be considered with respect to the availability of measures to mitigate a negative effect or to enhance a positive effect, resulting in a "net effect". It is these net effects that are to be considered when evaluating and ranking the sites on the short list. However, it would appear that the Regions' Project Team Consultants ranked an alternative that does not require mitigation as being preferable to an alternative that does require some mitigation, even though the net effects would be the same. This is illustrated by the following example given in the main study report to describe a Major Advantage – "A site that would not require the development of additional infrastructure would be considered a major advantage when compared to a site that does require additional infrastructure development." A proper analysis would consider alternatives that have the same net effect as being equal. Any effect would be more appropriately considered in the relevant criteria group – for example, the costs associated with the various mitigative measures should be considered under the Economic/Financial criteria.

3.2.5 In addition, the Regions' Project Team Consultants did not adequately consider the application of mitigative measures when determining the net effect of an alternative. For example, in the assessment of impacts to surface water quality, Clarington Site 01 was considered to have an advantage over the other Short-List Sites because it is located 600 m from the receiving water course, while Clarington Site 05 was rated as neutral because it is located 250 m from the watercourse. In fact, the net effect for both sites should have been rated the same since surface water runoff from both sites would be collected in a stormwater pond prior to being discharged to the stream.

Transparency and Traceability of the Evaluation Process

3.2.6 The evaluation process undertaken as part of EA process must be transparent and traceable, and readily replicated by others reviewing the EA document. A number of both quantitative and qualitative approaches can be used to ensure that these

objectives are achieved. Quantitative approaches such as the arithmetic method seek to quantify the evaluation by assigning numerical values to the effects associated with an alternative, and thus are generally traceable and replicable. Qualitative approaches, on the other hand, rely on the professional judgment of the reviewers and, by their very nature, are more subjective and less easily traced and replicated or sensitivity assessed. Some EA studies use both approaches, not only to improve the understanding of the evaluation process, but also to confirm the validity of the results (sensitivity testing).

3.2.7 The Municipality's peer review consultants do not necessarily disagree with the use of a qualitative-only approach to the site evaluation. However, in such cases, the rationale used in the evaluation must be clear and sufficiently detailed to enable readers to clearly trace and replicate the process. This information has not been provided in the EA study documents. The Regions' Project Team Consultants have indicated that additional information will be provided before the EA documents are submitted to the Ministry. However, given the deficiencies in the evaluation process discussed above and in Attachments 5 through 9, both Staff and the Municipality's peer review consultants remain concerned that there are flaws in the evaluation process used to identify a preferred site. It is unlikely that they can be addressed by providing more information.

3.2.8 The Regions' Project Team Consultants used a qualitative approach to consider and compare site advantages and disadvantages, identify trade-offs, and select preferences. A quantitative approach was not used to validate the results of their evaluation process. For these and other reasons discussed below, both staff and the Municipality's peer review consultants have not found the evaluation process used in the EA study to be traceable, transparent and replicable.

3.2.9 A deficiency in the evaluation process was the absence of a mechanism to weight the importance of the various criteria. The Regions' Project Team Consultants indicated that, as a result of public consultation early in the EA process, a high priority was assigned to the Public Health & Safety and Natural Environment criteria group, a medium priority was assigned to the Social and Cultural, Economic/ Financial, and Technical Suitability criteria groups, and a low priority was assigned to the Legal criteria group. However, it is not readily apparent how these relative priorities were incorporated into the evaluation process, other than through the professional judgement of the Regions' Project Team Consultants. An appropriate mechanism to accomplish this could have been to assign a relative weight to each criteria group that reflected the priority given to it by the public.

3.2.10 Another deficiency in the site evaluation process results from the combining of diverse criteria into one criteria group. This is most significant in relation to "Public Health and Safety" and "Natural Environment". These criteria were assigned a high priority by the public and each is worthy of its own criteria group. However, the Project Team Consultants combined both into one criteria group entitled "Public Health and Safety and Natural Environment". Given that there are only a total of five criteria groups, this results in the devaluing of public health and safety and natural

environment considerations in the overall evaluation. This effect is further compounded by the absence of a mechanism to assign relative priorities (ie. weight) to the different category groups as discussed above. It is unclear whether the public, when they were asked the questions about weighting of the criteria in March and June of 2005, had a clear understanding of how they would be employed and there has been no mechanism for confirming with the public that they concur with how the evaluation criteria has been applied.

3.3 Separation of Site Selection from Technology Selection

3.3.1 Clarington's peer review consultants have questioned the rationale for separating the site selection process from the competitive vendor selection process. Clarington Staff appreciate that the Request for Proposals (RFP) is being carried out in a confidential and objective manner. However, it would not be compromised by including two (2) geographically separated sites as suggested in PSD-097-07. Carrying two sites forward would allow for a better evaluation of the sites once the specific thermal treatment is selected since there are differences in the background environmental data and emissions control technologies.

3.3.2 This issue was addressed in Section 7.4 of PSD-097-07, as noted below:

> "The Region has committed to revisit the short list site evaluation after a vendor technology has been selected to determine if the site comparison remains valid and if a change in the preferred site is warranted. The Region should consider whether the anticipated cost saving of determining a preferred site prior to knowing the specific thermal technology is adequate justification given the potential costs to revisit the short list site evaluation and the problems that changing the preferred site could involve. The Region should consider whether carrying forward at least two geographically separate sites through the RFP to provide for the option on siting in relation to the specific technology and the specific HHERA may be beneficial."

3.3.3 The comment that the Region should carry at least two geographically distinct sites through the RFP process remains valid, especially given the deficiencies and lack of clarity in the site selection process identified by Staff and the peer review consultants. As such, the benefit of retaining more that one site in the process would allow a detailed rather than a generic evaluation of the sites to be undertaken. In particular, this would allow for the Public Health & Safety concerns discussed below to be addressed when a specific thermal technology is selected.

3.3.4 In the site evaluation process, the indicator "Air Quality Impacts", which is included in the Public Health and Safety and Natural Environment criteria group, has been used as a surrogate for human health and safety. The Municipality's peer review consultants have indicated that there is insufficient information currently available

on both background air quality and the emission controls at the EFW facility to provide for air quality impacts to be adequately addressed at this time (see Attachment 6). Rather, it is only when the background air quality monitoring has been completed and the specific thermal treatment technology has been selected that the issues concerning air quality can be addressed with any degree of certainty.

3.3.5 The underlying assumption used by the Regions' Project Team Consultants throughout the EA study and the site selection process is that any of the thermal treatment technologies being considered will meet MOE's A7 Guidelines, and thus will not adversely affect human health or the natural environment. However, staff note that some areas of potential risk have been identified by the Generic Human Health and Ecological Risk Assessment and will need to be addressed through the evaluation of emissions technology.

4.0 UPDATE ON RFQ/RFP PROCESS

4.1 The Region issued a Request of Qualification (RFQ) to Design, Build and Operate an Energy from Waste Facility on July 12, 2007 with a closing date for submissions of October 11, 2007. The Region received 11 submissions from 9 different bidders being:

1. City of Amsterdam Entity of Afval Energie Bedrijf (Waste and Energy Company AEB)
2. Dongara Pellet Plant LP and Algonquin Power Income Fund
3. Veolia Environmental Services Waste to Energy Inc.
4. Greey CTS Inc.
5. Covanta Energy Corporation
6. WRSI/DESC Joint Venture and the Project Team Members
7. ATCO Power Canada Ltd., Thermoselect
8. Wheelabrator Technologies Inc. (A Waste Management Company)
9. Urbaser SA (Note: 3 submissions were made).

4.2 The Regions RFQ Evaluation Team will be providing a Report to Regional Council in January 2008 indicating which of the bidders have met the 60% threshold and are qualified to proceed to the Request of Proposal (RFP) stage. It is conceivable that all the bidders could qualify. The RFP is to be issued in April 2008 with selection in late-2008. The successful proposal/proponent at the end of the process will determine both the vendor and the specific thermal treatment technology. The Regions' Project Team Consultants will then be able to finalize the EA documentation for submission to the Ministry of Environment by the end of 2008 based on the specific thermal treatment technology.

4.3 The RFP will be formulated by the Regions' Project Team and their consultants. To maintain the confidentiality of the process, Clarington staff are not involved in the review process and do not wish to be. Rather Clarington can recommend certain criteria be included in the RFP which is being drafted at this time.

Council through Resolution # Resolution GPA 632-07 and C-592-07 (Attachment 13) has requested the Region to:

> "Agree to protect the health and safety of the residents of Clarington and Durham by incorporating into the design and installation of the EFW facility the most modern and state of the art emission control technologies that meet or exceed the European Union (EU) monitoring and measurement standards".

At this time Clarington Staff cannot confirm for Council that the Region is committed to including this level of emissions control technology in the RFP; however, there are ongoing discussions in this regard. Clarington's peer review consultants have provided a Maximum Achievable Control Technology (MACT) outline (Attachment 14). MACT is technology-based standards based on the best-performing similar facilities in operation and state of the art monitoring.

4.4 For the EFW facility appearance and site development, regardless of the site selected Clarington staff have recommended that an adequate cost allowance for the architectural finishes and site development be included in the RFP. The qualifications of the architectural design team should be submitted as part of the requirements; however, the evaluation of the bids should not include the "look" of the facility. The RFP evaluation should concentrate on the interior design and function of the facility and its emission controls and ongoing operational improvement. A process for determining the exterior finishes and site development can be part of the Site Plan Requirements and could be carried out in consultation with the host community staff. Since the Region is committed to providing an aesthetically pleasing facility and the architecture is essentially a shell around the mechanical and emission control systems, a process for exterior and site development design can be determined after the vendor and thermal technology are selected. This also maintains the integrity and confidentiality of the evaluation process.

5.0 Conclusions

5.1 The Regions' Project Team Consultants will have the opportunity to address the deficiencies in the site selection process that have been identified by Staff and Clarington's peer review consultants prior to the submission of the EA Study to the Ministry of Environment. Staff and the peer review consultants will continue to work with the Region and assist with the review of the EA documentation prior to its submission to MOE to address the deficiencies.

5.2 Clarington Council has already passed Resolutions GPA 632-07 and C-592-07(Attachment 13) which requests the Region to protect the health and safety of the residents of Clarington and Durham by incorporating the most modern and state of the art emission control technologies and monitoring systems. Clarington's peer review consultants have been working on a Maximum Achievable Control Technology (MACT) outline (Attachment 14) which is a technology-based standard based on the best-performing similar facilities. The MACT and continuous monitoring for key parameters should be included in a Host Community Agreement and the Certificate of Approval from the Ministry of the Environment. In addition, it will be necessary to demonstrate that the actual levels of emissions are acceptable and low risk.

5.3 In Report PSD-097-07, Staff and Clarington's peer review consultants suggested that two geographically separated sites should be carried forward to the Request for Proposals. This is especially important given the anomalies identified in how the site evaluation has been carried out and the significant differences between the sites depending on which specific thermal treatment technology is selected. It is therefore again recommended that two geographically separate sites be carried forward to the Request for Proposals stage. The site specific Human Health and Ecological Risk Assessment can then be used to determine which site is more suitable with respect to public health and safety.

5.4 An area of concern, not just to Clarington but to all residents of Durham and York, is the business case for the EFW. There are significant assumptions, outstanding cost implications and anticipated off-setting revenues that have been used to reach the conclusion that the Clarington 01 site is preferred. However, given that there are concerns regarding the financial analysis, as demonstrated in Attachments 8 and 9 and that the infrastructure cost savings could be off-set by the costs of the emissions control technology required, there does not appear to be a clear advantage for any of the four Short-Listed sites from an economic perspective. A formal business case will have to be approved by Regional Council, including the costs of a Host Community Agreement before the impact on the Regional taxpayers can be estimated.

Attachments:

Attachment 1	Glossary of Terms
Attachment 2	Map – Short List of Alternative Sites
Attachment 3	Table 3.1 Comparative Evaluation Criteria for the Evaluation of Short-Listed Sites
Attachment 4	Table 4.6 Summary of Short-Listed Sites Advantages and Disadvantages
Attachment 5	Review of the Step 7 Draft Report: Durham/York Residual Waste Study, Evaluation of Short-List of Sties and Identification of Consultants Recommended Preferred Site, Steven Rowe
Attachment 6	AMEC Peer Review – Preferred Site Selection Process - Conclusion
Attachment 7	SENES Consultants Limited, Memorandum, Review of Site Selection Study Documents – Main Report/ Annex B and C

Attachment 8	TSH Memorandum, Durham/York Residual Waste Study, Peer Review Comments
Attachment 9	Finance Department Memo
Attachment 10	Jacques Whitford/Genivar response chart
Attachment 11	Resolution for PSD-070-07
Attachment 12	Resolution for PSD-097-07
Attachment 13	Resolution GPA 632-07 and C-592-07
Attachment 14	Maximum Achievable Control Technology (MACT) outline

Interested Parties.

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GLOSSARY OF TERMS

EA	Environmental Assessment
EFW	Energy From Waste
HHERA	Human Health and Ecological Risk Assessment
MOE	Ontario Ministry of the Environment
MACT	Maximum Achievable Control Technology
RFP	Request for Proposals
RFQ	Request for Qualifications

Attachment 2
To Report PSD-141-07

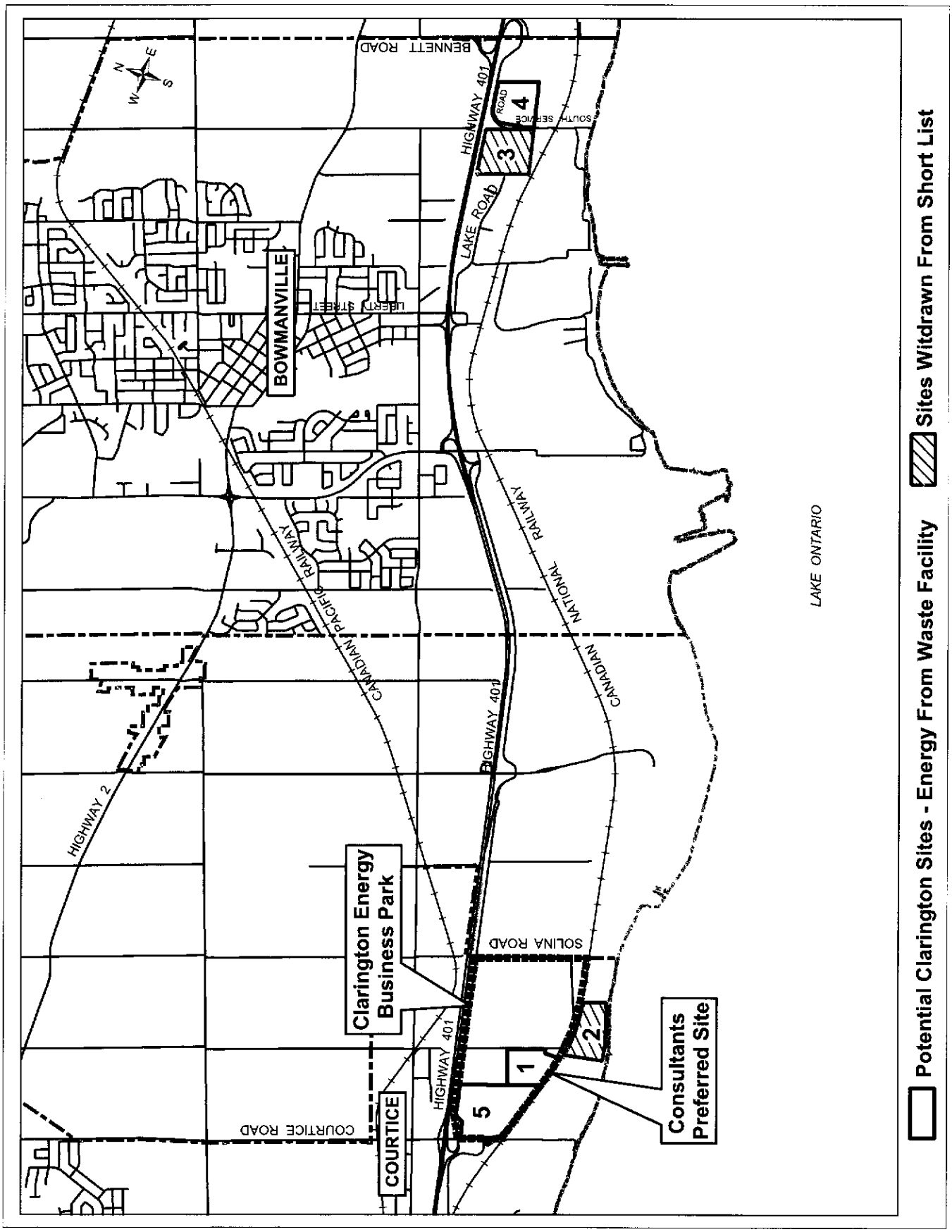

Table 3.1 Comparative Evaluation Criteria for the Evaluation of Short-List Sites

Criteria	Indicator
Public Health & Safety and Natural Environment	
Air Quality Impacts *Note: The preferred technology must at least meet all applicable air quality regulations.*	Local meteorological conditions
	Distance travelled from main source(s) of waste generation to the site.
Water Quality Impacts (Surface Water and Groundwater)	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).
	Receiving body for wastewater discharge from the facility (if applicable)
	Quality of water in the receiving body based on size and flow of watercourses.
Environmentally Sensitive Areas and Species Impacts	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.
	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
Aquatic and Terrestrial Ecology Impacts	Amount of woodlands, hedgerows, etc., affected or removed at the site and the degree of impact on the edge of a woodlot/hedgerow.

Social and Cultural Environment Criteria	Indicator
Compatibility with Existing and/or Proposed Land Uses	Consistency with current land use, approved development plans, and proposed land use changes.
	Compatibility with existing land use designations.
	Size of buffer zone available on the site.
	Opportunity for brownfield development.
Residential Areas	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).
	Number and distribution of residences within an appropriate separation distance of the site and within an appropriate separation distance of the haul route(s).

Social and Cultural Environment	
Criteria	**Indicator**
Parks and Recreational Areas	Number and type of recreational areas (i.e., parkland) within an appropriate separation distance of the site and within an appropriate separation distance of the haul route(s).
Institutional Facilities or Areas	Number and type of institutions within an appropriate separation distance of the site or area and within an appropriate separation distance of the haul route(s).
Archaeological and Cultural Resources	Number and significance of known archaeological and cultural areas at the site based on review of documented sites and the potential for uncovered resources to be located at the site.
Traffic Impacts	Type of roadway (i.e., paved, gravel) and access to businesses and/or subdivisions & proximity of site to major arterial roads or highways.
	Existing and projected volume of traffic along haul route (i.e., high, moderate or low).
	Conformity with Durham's Goods Movement Network
Economic/Financial	
Criteria	**Indicator**
Capital Costs	Site development costs, including: infrastructure required, upgrades to existing infrastructure (roads, sewers, etc.), property acquisition and possible site remediation.
Operation and Maintenance Costs	Distance from waste generation points, transfer stations (e.g., length of haul route), annual operating costs and maintenance costs.
	Mitigation requirements
	Monitoring requirements
	Distance from potential markets for sale of marketable materials (i.e. heat, electricity, recovered metals, etc.).
Technical Considerations	
Criteria	**Indicator**
Compatibility with Existing Infrastructure	Distance from required infrastructure (i.e., sewers, hydro, road access, water).
Design/Operational Flexibility Provided by Site	Area surplus to minimum requirement provided by site.
Legal Considerations	
Criteria	**Indicator**
Complexity of Required Approvals	Nature of approvals required.
Complexity of Required Agreements	Nature of property acquisition (related to the need for expropriation, Region owned or willing seller site).

Table 4.6 Summary of Short-List Sites Advantages and Disadvantages

Criterion	Clarington 01	Clarington 04	Clarington 05	East Gwillimbury 01
Public Health and Safety and Natural Environmental Considerations				
Air Quality Impacts	NEUTRAL	DISADVANTAGE	NEUTRAL	NEUTRAL
Water Quality Impacts (Surface Water and Groundwater)	ADVANTAGE	NEUTRAL	NEUTRAL	DISADVANTAGE
Environmentally Sensitive Areas and Species Impacts	NEUTRAL	ADVANTAGE	DISADVANTAGE	DISADVANTAGE
Aquatic and Terrestrial Ecology Impacts	ADVANTAGE	DISADVANTAGE	MAJOR DISADVANTAGE	DISADVANTAGE
OVERALL:	**ADVANTAGE**	**NEUTRAL**	**MAJOR DISADVANTAGE**	**DISADVANTAGE**
Social and Cultural Considerations				
Compatibility with Existing and/or Proposed Land Uses	MAJOR ADVANTAGE	DISADVANTAGE	DISADVANTAGE	NEUTRAL
Residential Areas	ADVANTAGE	MAJOR DISADVANTAGE	NEUTRAL	DISADVANTAGE
Parks and Recreational Areas	NEUTRAL	ADVANTAGE	ADVANTAGE	ADVANTAGE
Institutional Facilities or Areas	ADVANTAGE	ADVANTAGE	ADVANTAGE	ADVANTAGE
Archaeological and Cultural Resources	DISADVANTAGE	ADVANTAGE	MAJOR DISADVANTAGE	NEUTRAL
Potential Traffic Impacts	NEUTRAL	DISADVANTAGE	NEUTRAL	DISADVANTAGE
OVERALL:	**ADVANTAGE**	**DISADVANTAGE**	**DISADVANTAGE**	**NEUTRAL**
Economic/Financial Considerations				
Capital Costs	NEUTRAL	DISADVANTAGE	DISADVANTAGE	ADVANTAGE
Operation and Maintenance Costs	ADVANTAGE	NEUTRAL	ADVANTAGE	DISADVANTAGE
OVERALL:	**ADVANTAGE**	**DISADVANTAGE**	**NEUTRAL**	**NEUTRAL**
Technical Considerations				
Compatibility with Existing Infrastructure	ADVANTAGE	DISADVANTAGE	NEUTRAL	ADVANTAGE
Design/Operational Flexibility Provided by Site	ADVANTAGE	ADVANTAGE	ADVANTAGE	NEUTRAL
OVERALL:	**ADVANTAGE**	**NEUTRAL**	**ADVANTAGE**	**ADVANTAGE**
Legal Considerations				
Complexity of Required Approvals	DISADVANTAGE	DISADVANTAGE	DISADVANTAGE	DISADVANTAGE
Complexity of Required Agreements	ADVANTAGE	DISADVANTAGE	DISADVANTAGE	ADVANTAGE
OVERALL:	**NEUTRAL**	**DISADVANTAGE**	**DISADVANTAGE**	**NEUTRAL**

REVIEW OF THE STEP 7 DRAFT REPORT: DURHAM/YORK RESIDUAL WASTE STUDY

EVALUATION OF SHORT-LIST OF SITES AND IDENTIFICATION OF CONSULTANTS RECOMMENDED PREFERRED SITE

Prepared for

The Municipality of Clarington

By:

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November 2007

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1. Introduction

1.1 Background

Steven Rowe Environmental Planner was retained by the Municipality of Clarington in May 2007 to review a process being conducted by the Regions of Durham and York to identify a site and vendor/technology for a thermal treatment or energy-from-waste facility. The process forms part of a study being conducted under the Ontario Environmental Assessment (EA) Act to identify an undertaking "to process....the waste that remains after the application of both Regions' at – source waste diversion programmes in order to recover resources – both material and energy – and to minimize the amount of material requiring landfill disposal."

The EA must be conducted in accordance with Terms of Reference (TOR) approved by the Minister of the Environment on March 31, 2006. The TOR outlines a screening and comparative evaluation process for "alternative methods of implementing the undertaking" (i.e. siting alternatives). Preliminary screening and evaluation criteria for alternative methods are provided in Appendix F to the TOR. The TOR and subsequent documentation – including the documents under review here - relating to this process may be found on the project website at http://www.durhamyorkwaste.ca/.

1.2 Adoption of a Preferred Alternative to the Undertaking

In May 2006 the Durham/York Joint Waste Management Group (JWMG) established to oversee the EA process recommended that their respective Regional Councils approve their consultants' recommendations regarding a preferred "alternative to" the undertaking or waste management technology system. The preferred alternative encompassed two generic types of system, both involving heat treatment of waste and production of energy. The exact thermal technology will not be known until Durham and York Regions have identified a preferred vendor through an ongoing Request for Qualifications and Request for Proposals process.

1.3 Short List Report

In March, 2007 the consultants for Durham and York Regions produced a "Draft Report, Thermal Facility Site Selection Process, Results of Steps 1-5, Identification of the "Short-List" of Alternative Sites" (the "Short List Report"). The report describes a process of "screening" lands (i.e. removing from further consideration based on exclusionary criteria) across the two Regions, identifying a "long list" of sites within the unconstrained areas, and evaluating these to identify a "short list" of sites.

The short list comprised Clarington Sites 01 and 05, which are located in the Clarington Energy Business Park south of Courtice, Clarington Site 02 located south of the Energy Park, Clarington Sites 03 and 04 located on industrial land west of Bennett Road and south of Highway 401, and East Gwillimbury Site 01 located north of Davis Drive and east of Woodbine Avenue. Clarington Site 02

was later removed from the list when its "Greenway" land use designation – which was an exclusionary criterion - was confirmed. Clarington Site 03 was removed when its owner withdrew it from consideration. The short listed Clarington sites are shown on Map 1 attached to this report.

In July and August 2007 Steven Rowe Environmental Planner reviewed the Short List Report and produced an "Interim Report: Gap Analysis of the EA Process and Review of the Site Selection Process" that was presented at Clarington's General Purpose and Administration Committee on September 4, 2007 as Attachment 6 to Report PSD 097 07. The Interim Report identified a number of concerns with the Short List Report and found that it did not provide enough information to support the conclusions reached. The following is a list of the issues identified in the conclusions of the Interim Report, with insertions in italics where findings need to be qualified based on present day circumstances.

"Issues in relation to the site selection process conducted to date are:

- The Site Selection Short List Draft Report does not provide screening maps to show which parts of the study area were excluded under each of the criteria, and it does not provide sufficient explanation of how each of the criteria were applied. The process is not traceable as described. *The Regions' consultants subsequently provided Clarington with a set of screening maps, but they have not been provided to the public or other stakeholders.*
- Despite the lack of screening information it is apparent, for example, that not all federally regulated airports were considered in the screening, and it is not clear whether or how federal requirements were applied in relation to organic waste as an attractor for birds, or stack height as an obstruction to aircraft, or both. If all regulated airports are considered under a consistent approach this may result in the exclusion of additional lands from the study area. *The Oshawa Airport was added to the airport constraint mapping, but the remaining concerns are not addressed. Around the proposed Pickering Airport land is shown as constrained when permitted heights of structures based on federal airport zoning are well in excess of the assumed stack height for the facility.*
- The information presented in the Site Selection Short List Draft Report does not describe a comprehensive approach to the identification of public lands. There may be public lands in the study area owned by agencies that were not directly approached as part of the process.
- There is uncertainty regarding the size of the facility being sought by the proponent team and the size of site required to accommodate it. The process as presently structured would give preference (other things being equal) to a large site such as the 27.4 hectare Clarington Site 5, when the site size being sought is around 10-12 ha. There is also ambiguity over the scale of facility that would be required, with a proposal by York Region to scale back its involvement, and by Durham Region to seek expanded capacity. On a large site there may be no physical limitation on the ultimate scale of a thermal treatment facility. *It is now proposed that the facility be constructed with a*

capacity of 150,000 to 250,000 tonnes per year, depending on the outcome of alternative arrangements made for a portion of York Region's waste. The ultimate proposed capacity is 400,000 tonnes per year, which may include waste from other non-GTA municipalities, and industrial, commercial and institutional waste. Site size issues are dealt with further in the Preferred Site Report.

- The sites in the Clarington Energy Business Park are being analyzed as part of a different economic study and could have either a positive or negative affect; the effects are potentially different depending on which site is selected.
- The Report indicates that a change in direction was undertaken to bring lands in the Greenbelt into the site selection process, but it does not describe whether or how lands in the Greenbelt were examined to identify potential public and willing seller sites other than the East Gwillimbury Site 1. There may be other potential sites in the Greenbelt that have not been identified.
- The Site Selection Short List Draft Report does not provide a full description of how consultation on the proposed methodology and criteria affected the approach now being undertaken. *The Regions' consultants subsequently posted a copy of a missing consultation document on the project website.*

In relation to the site evaluation and comparison currently under way (at that time - i.e. the preferred site comparison now completed in draft form):

- The proponent team now proposes to identify a recommended preferred site and to submit an interim environmental assessment planning document to the Ministry of the Environment in the fall of 2007, before a preferred vendor and the exact thermal technology has been identified. This would mean that a site would be selected without knowledge of the facility that would be sited on it or its specific environmental effects. Therefore the assumptions being made by the consulting team must be reviewed in light of information on the specific selected technology and its environmental effects.
- It would be greatly preferred if information on the vendor/technologies and their environmental effects was available for the site comparison. The final EA submission will have to include the vendor and specific technology to meet the EA terms of reference and EA Act.
- There is also concern that the process of selecting a preferred vendor/ technology through the ongoing Request for Qualifications and future Request for Proposals may not meet EA Act requirements.

In relation to the short-listed sites identified in Clarington:

- There are existing and proposed residential uses in close proximity to Sites 3 and 4, which are in the Bowmanville Urban Area. *(Site 3 was subsequently withdrawn)*
- The Durham Region Official Plan and the Clarington Official Plan identify a proposed interchange between Lambs Road and Highway 401 that would likely be displaced by a thermal treatment facility on Site 4.

- A proposed industrial service road passes through both Sites 3 and 4.

  A thermal treatment facility occupying the whole of Site 5 would displace the primary entrance to the Clarington Energy Business Park from the Courtice Interchange, and the western part of the 'spine' route through the Park. The Energy Business Park was initiated, planned and approved in partnership with Durham Region, and there is potential for an EFW facility to compromise the vision and planned function of the Park. The proponents are examining alternative siting concepts for each site and not all of each site will necessarily be required."

Other than the instances noted above, the proponents have not provided information to resolve the identified issues and have not committed to resolve them in an interim environmental assessment planning document that the Regions propose to provide to the Ministry of the Environment at some later date.

2. Identification of a Preferred Site

2.1 The Preferred Site Report

On September 21, 2007 the Regions' consultants produced a "Draft Report, Thermal Treatment Facility Site Selection Process, Results of Step 7: Evaluation of Short-List of Sites and Identification of Consultants Recommended Preferred Site" ("Preferred Site Report"). The report describes the application of criteria derived from those provided in the TOR, priorities identified through consultation and the team's professional judgement in evaluating and comparing the four remaining short-listed sites to identify a preferred site. The preferred site as recommended by the Regions' consultants is Clarington Site 01, located in the Clarington Energy Business Park.

There are a number of technical "Annexes" to the report that describe the evaluations conducted under individual disciplines, as follows:

Annex A:	Report on Potential Air Quality Impacts
Annex B:	Report on Potential Water Quality Impacts (Surface Water and Groundwater)
Annex C:	Report on Potential Environmentally Sensitive Areas and Species Impacts and Aquatic and Terrestrial Ecology Impacts
Annex D:	Report on Compatibility with Existing and/or Proposed Land Uses
Annex E:	Report on Archaeological and Cultural Resources
Annex F:	Report on Potential Traffic Impacts
Annex G:	Report on Capital Costs and Operation and Maintenance Costs
Annex H:	Report on Compatibility with Existing Infrastructure and Design/Operational Flexibility Provided by Site
Annex I:	Report on Complexity of Required Approvals and Complexity of Required Agreements

2.2 Approach to the Review

This document review relates to the broad consistency, transparency and traceability of the EA process and includes the Preferred Site Report and selected parts of the Annexes that relate to the assumptions, information and methodology used in the site comparison.

As part of an ongoing effort to resolve issues to the extent possible, the Municipality of Clarington peer review consultants undertook a preliminary review of the report and the appendices/annexes relevant to their disciplines, and Clarington staff provided their consultants' initial concerns and questions to the Regions and their consultants. A meeting was held (October 10th) between Clarington's and the Regions' staff and consultants, and written responses were provided to Clarington for the majority of the issues by October 26, with further clarification being received by November 7th.. These responses are reflected in the review that follows.

Clarington's peer review consultants met on November 16th to jointly review the Regions' responses and methodology employed in the evaluation of the sites.

2.3 Commentary on the Preferred Site Report

2.3.1 Report Introduction

This review follows the sequence of material in the Preferred Site Report, with references to the technical annexes where appropriate.

Section 1, Introduction, provides an overview of the study and a summary of the Terms of Reference and the process conducted to date. This includes a description of the site selection process up until Step 5, for which comments are provided above and, in more detail, in our earlier report.

Under "Shared Opportunities" **Section 1.1**, states:

> "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 resources that are currently lost by way of landfill in Michigan."

The reference to "as quickly as possible" relates to the 2010 deadline after which Durham and York will no longer have the option of waste disposal at landfill sites in Michigan. The need for an accelerated process to accommodate this deadline has reduced the amount of information available to support decisions at each step of the process, and the ability to respond to issues raised as the process proceeds. As indicated in our earlier review of the Short List Report, details on the specific technology to be used and its environmental effects are not available as the preferred site is being selected. The proponents have made a commitment that when the preferred vendor has been selected a sensitivity analysis would be undertaken to confirm that the process leading to

the selection of the preferred site remains valid. Clarington's Peer Review Team believe it would be prudent to carry more than one site in the Request for Proposals to allow for the sensitivity analysis to have more validity.

The reference to "maximizing environmental protection" raises an issue identified by the Municipality's technical peer review consultants, that the Regions' commitment to environmental protection, the actual level of protection and the means of implementing and monitoring this is very unclear at the present time.

Section 1.2.2 describes the evaluation of "alternatives to" (i.e. technologies). The descriptions of the two selected systems, Systems 2(a) and 2(b) include gasification of mixed waste or solid recovered fuel, respectively, whereas the following description identifies gasification as a "new technology" in relation to System 2(b) only. The proponents have confirmed that both systems could include gasification, however this description could have been written more clearly (i.e. is gasification a new technology when applied to both mixed waste and solid recovered fuel, or to solid recovered fuel only?).

Section 1.3.2 includes a description of facility/site size requirements, and identifies a need for 13.7 ha site with a 100m buffer and 7.3 ha without a buffer, if all required facilities are included within the site. In Appendix E to Annex H ("Technical Memorandum on Facility Site Size") it is assumed that an additional 1 ha would be required for a stormwater pond, however Clarington staff have indicated that shared, off-site stormwater facilities would be required in the Clarington Energy Business Park, and therefore for the preferred Clarington Site 01 and Clarington Site 05. At 12.4 ha, Clarington Site 01 is smaller than the 13.7 ha requirement if a 100m buffer is to be included. The Technical Memorandum includes "Usable Site Area" plans of all the short-listed sites showing how a facility could be configured within each site – Figure 2, the plan for the preferred Clarington Site 01 and Clarington Site 05, is attached as Map 2.

The Technical Memorandum also states that land on Clarington Site 05 south of a watercourse is "unusable", and this is reflected in the above "Usable Site Area" plan. There appears to be an opportunity to sever and dispose of this additional land, and yet the cost of the full area of the site is assumed for the purpose of the cost comparison. When this comment was provided to the proponents' consultants they responded by conducting a cost sensitivity analysis that excludes an estimate of the value of the area south of the watercourse. This is further discussed below.

2.3.2 The Evaluation Criteria

Section 3 of the Preferred Site Report describes the evaluation of the short-listed sites. **Table 3.1** provides the criteria used for the evaluation, with corresponding "indicators" and "rationale". The following comments are provided on the contents of this table:

- The "rationale" under "Compatibility with Existing and/or Proposed Land Uses" mentions a need for rezoning when the evaluations under this criterion state that public uses are generally permitted in all zones in Durham Region.

However, Clarington staff will have to consider whether a rezoning would be required for the proposed facility on lands within the Energy Park.

- There is potential for double- counting between the "Compatibility" and "Residential Areas" criteria. The Regions' consultants response to this concern is that "As the evaluation approach was qualitative in nature the risk of double counting generally does not apply. A qualitative process allows for the evaluation to account for, discount and therefore avoid double-counting. Where necessary, this consideration can be documented and explained in the evaluation text" In practice, the Preferred Site Report limits the use of the "Compatibility" criterion to permitted land uses and future land use changes rather than actual land uses on the ground.
- In our initial comments to the Regions' consultants we noted that there seems to be an inherent conflict in the "Institutional Facilities or Areas" criterion. While the indicator is "number and type of institutions within an appropriate separation distance", the rationale notes that there are some institutional facilities that can benefit from close proximity to the facility. The consultants' response is that there would not be a conflict, but this appears not to be an issue in the actual site comparison.

2.3.3 Description and Approach to the Preferred Site Identification

The description and application of the "advantages and disadvantages" evaluation and the application of mitigation measures in the report generated a number of comments and questions for the Regions' consultants. Overall, it was considered by Clarington's consultants that the description of the evaluation approach in the Preferred Site Report is unclear. For example:

- The description of the net effects analysis on page 3-6 of the Preferred Site Report states that the net effects analysis was done based only on available data, and yet it is clear from the annex documents that the work included field work in a number of instances. In the consultants' initial responses it was suggested that a more accurate description be provided. The Regions' consultants responded that there was only limited field reconnaissance and the field studies were not considered to be sophisticated. They should still have been included in the description, however.
- The description of the process on page 3-6 describes the application of mitigation measures to determine net effects, however Table 4.1 suggests that no site specific mitigation was considered.
- "Advantages and disadvantages" are defined differently in the main report versus the annex documents, suggesting that the technical consultants had a different understanding of this term than those who prepared the main report. The explanations are also unclear. The Regions' consultants reply that "the intent of a relative site comparison is achieved by both".
- The descriptions of advantages and disadvantages appear to be at variance with the meaning of these terms in the EA Act. For example, the definitions in Table 3.2 state that alternatives with a "major advantage" or an "advantage"

under a criterion can have "minimal" or "manageable" effects, respectively. Also, under the "Potential Air Quality Impacts" criterion the effect on air quality based on distance of collection and transfer vehicles travelled to Clarington Site 01 is considered an "advantage". Under the EA Act, however, the proponent is to consider advantages or disadvantages to the environment. An advantage cannot be a negative effect or simply an advantage for one alternative over another.

- The description of the "advantage" ranking in Table 3-1 suggests that if an alternative does not require mitigation, it is preferable to one that does (i.e. where an impact is "manageable"), even though the net effect is the same. In fact alternatives with the same net effect should be assessed equally – if the mitigation itself has an environmental effect (including cost) this can be taken into consideration in the comparison under the appropriate criteria.
- The description of the process does not make a clear distinction between environmental effects and advantages and disadvantages, whereas these are two different concepts in the EA Act. The Regions' consultants have responded that their approach did involve identifying and rating environmental effects first, followed by application of tradeoffs and interpretation of effects in terms of advantages/disadvantages. This is not clear from the report, however.
- There is no demonstration that the "advantages" and "disadvantages" identified represent equivalent or comparable increments or magnitudes of effect. As indicated above, in this process an "advantage" is not necessarily a positive effect but can represent a lower level in a range of negative environmental effects. In the actual evaluation results are traded off against each other as if they are positive and negative effects, which they are not. In some instances a "neutral" and an "advantage" are combined to result in an "advantage", which further distorts the comparison.
- In addition, the evaluation uses a prioritization of criteria categories derived from public consultation as well as "professional judgement" in comparing the siting alternatives, however the application of these priorities is not explained.

The Regional consultants' response to these concerns is to state that a more comprehensive description of the process will be provided in a draft EA document to be submitted to the Ministry of the Environment. It is unclear whether this more comprehensive description will reflect the concerns identified in relation to Steps 1-5 as well as Step 7 of the site selection process.

2.3.4 Review Against the Evaluation Criteria

Public Health and Safety and the Natural Environment

Air quality impacts are dealt with by Clarington's air quality consultant (AMEC).

Water quality impacts: Our initial response to the Regions' consultants asked why there would be different environmental effects resulting from a facility location 600m versus 15m from a watercourse. In response to this concern the

Regions' consultants explained that a lengthy outlet channel that is "shady" is more beneficial than a shorter outlet channel because it can mitigate water temperature effects. We defer to Clarington's technical consultants in verifying this.

Environmentally Sensitive Areas and Species Impacts: In our initial response we asked why species of conservation concern that (p.3-10) that are highly unlikely to occur on the site – Bushy Cinquefoil (occurs on lake beaches) and Red-tailed Hawk (dense deciduous forest) contribute to the identification of environmental impact. The response was that "There is evidence to suggest that these species are known to exist in the areas and therefore, may be potentially impacted by this development.....in a relative comparison of sites, a site without this potential is advantaged over another with no potential impact"

For the Bushy Cinquefoil, the consultants' Annex C states (p. 3-1): "Bushy Cinquefoil is a lakeshore species preferring beach and wet prairie habitats. This type of habitat is not found on the site (Clarington 01), thus it is unlikely this species would occur on site. The NHIC record of this species in the general area is likely a record from the nearby Lake Ontario shoreline." Also, "the Red-shouldered Hawk is a woodland nester that occurs throughout southern Ontario. Given the absence of woodland habitat on the East Gwillimbury 01 site, it is extremely unlikely that this species breeds on or immediately adjacent to the site. There are existing woodlots east and north of the site that may provide suitable habitat for this species. This species was not observed on-site during the site visit." In neither case – and particularly in the case of Clarington Site 01 - does the evaluation establish a potential environmental effect with any degree of certainty.

We also questioned the disadvantages posed by hazard lands if the facility can be accommodated on the rest of the site. The Regions' consultants responded that the presence of hazard land presents a relative disadvantage, and consideration includes the potential need for monitoring of impact to the area during construction and operation. It is still unclear, however, what the potential environmental effects would be, other than those already addressed by other criteria (e.g. water quality impacts, aquatic and terrestrial ecology).

There is a lack of explicit consideration of mitigation, or measures that would reduce potential environmental impact, thereby reducing the net environmental effect. This is illustrated by the "Major Disadvantage" rating given to Clarington site 05 under the "Aquatic and Terrestrial Impacts" criterion. This is based on the presence of woodland and hedgerows, and potential aquatic habitat on site. The woodland and watercourse identified in Annex C, Public Health and Natural Environmental Considerations is 100 metres or more distant from the "site infrastructure" and "site layout" templates shown in Annex H, Infrastructure and Site Size (Appendix 2 to this report). The conceptual facility location also appears to avoid most if not all of the hedgerow. There appears to be an opportunity to mitigate the impact through placement of the facility at a distance from these features, but this was not taken into consideration in the comparison. This places

the site at an unnecessary disadvantage when it is compared with other sites, and similar concerns arise (for different sites) for a number of the other criteria.

The "Public Health and Safety and Natural Environmental Considerations" category has the highest rating in the evaluation. Because of the methodology adopted by the proponent, however, public health and safety and natural heritage "advantages and disadvantages" are traded off against each other in arriving at an overall rating under this category for each site. Clarington Site 1, for example, was assigned a "disadvantage" under "local meteorological conditions". This rating, however, was discounted against an "advantage" assigned in relation to emissions from haul traffic, resulting in a "neutral" level for "Potential Air Quality Impacts". This, when traded off against natural heritage ratings, resulted in an "advantage" overall for Clarington Site 1. Even if the Clarington Peer Review Team's other concerns with the evaluations carried out under the criteria in this category were discounted, the public may not have intended the potential air quality effects of the facility and the haulage effects on air quality to be discounted against each other and for air quality effects overall to be discounted by natural environment considerations when it assigned a high priority to this category as a whole.

Social and Cultural Considerations

Compatibility with Existing and/or Proposed and uses: Table 4.2 states that a Regional Plan Amendment "may" be required to permit a facility at East Gwillimbury Site 01 – the consultants indicated in response to our comment that York Region was not willing to comment or provide clarification as to whether a ROPA would be required.

The land use profile of the East Gwillimbury site in Annex D: Report on Compatibility with Existing and/or Proposed Land Uses does not discuss the Greenbelt Plan, although the Plan is identified in the evaluation tables. The proponents' consultants have indicated that this matter will be addressed in the EA documentation to be submitted to the Minister.

We noted in our initial comments that the 1 km distance for land use compatibility is calculated from the centre of the site and not the edge or a conceptual location as shown in the "Usable Site Area" plans. The Regions' consultants responded that the 1km radius was applied consistently, and that the potential configuration of the facility on the site has little impact on the application of this criterion. At the same time, it is preferable to use a more detailed level of information when this is available.

In relation to the "Archaeological and Cultural Resources" criterion we requested a clearer description of the advantages and disadvantages of the sites with mitigation, and the Regions' consultants committed to review and enhance the material where necessary.

Economic/Financial Considerations

We noted in our initial review that the haul cost analysis is based on savings from existing rather than actual costs, and that this would comprise a saving from costs of haulage to Michigan, which would no longer be available. The consultants responded that a remote Ontario landfill was assumed for the purpose of calculating haul cost savings. Section 3.2.2 of Annex G, Costs, states that "Operating costs are presently incurred to haul residual waste from existing transfer stations and collection areas to remote landfill sites such as Green Lane." We still consider that a comparison of actual costs would have been more appropriate than savings over long distance haulage, which is not an alternative considered in this EA, would not represent the true cost of the alternatives, and would tend to reduce the relative magnitude of difference between the short listed sites.

We also noted that acquisition costs for Clarington Site 01 and East Gwillimbury Site 01 are rated at zero because they are owned by Durham and York Regions, respectively. This is inappropriate because there would be an opportunity cost to the public purse of "losing" either of these sites – they still have value that should be reflected in the site comparison. The Regions' consultants responded to this concern and the concern about including the "unusable" portion of Clarington Site 05 in the cost comparison by undertaking a sensitivity analysis that considers the opportunity costs of using the two publicly owned sites and discounts the "unusable" Clarington Site 05 land. They found that this analysis showed that with these factors considered the overall conclusions do not change.

The findings from the capital cost analysis in the Preferred Site Report and in the sensitivity analysis are compared in the following table:

	Clarington 01	Clarington 04	Clarington 05	E. Gwillimbury 01
Capital Costs: Preferred Site Report	Site specific capital costs range from $7.6 to $11.3 million	Site specific capital costs range from $8.9 to $16.7million	Site specific capital costs range from $10.6 to $15.5 million	Site specific capital costs range from $3.8 to $11.4 million
Overall rating, Preferred Site Report:	Neutral	Disadvantage	Disadvantage	Advantage
Capital Costs: Sensitivity Analysis	Site specific capital costs range from $7.6 to $13.1 million	Site specific capital costs range from $8.9 to $16.7million	Site specific capital costs range from $8.9 to $15.5 million	Site specific capital costs range from $3.8 to $13.1 million
Overall rating, Sensitivity Analysis	Neutral	Disadvantage	Disadvantage	Advantage
Comment	Lower end of range would be $9.4m (second highest) if land cost added	No change (privately owned)	Lower end of range is reduced ("unusable" land discounted) but not the higher range (would be $13.8m)	Lower end of range would be $5.5m if land cost added

It is not clear why the sensitivity analysis applied changes at only one end of each of the cost ranges affected. If the changes were applied to costs at both ends of each range Clarington Site 01 would be seen as roughly equivalent to Sites 04 and 05 from a capital cost perspective. This would, in turn, affect a present value calculation of both capital and operating costs as discussed below.

We also commented to the Regions' consultants that the evaluation treated operational cost and capital cost "advantages and "disadvantages" as equal when there is no basis for comparing them. It was suggested that these costs be "present valued" (i.e. converted to reflect total costs over the long term, rather than capital costs versus annual costs). The Regions' consultants responded by producing a present value calculation that they say shows Clarington Site 01 as preferred under their "lower" and "higher" capital cost assumptions.

	CL 01	CL 04	CL 05	EG 01
Lower Site Specific Capital Costs ($ X1000) Savings +ve and costs –ve)	$23,308	$21,610	$20,455	$22,750
Higher Site Specific Capital Costs	$19,774	$14,163	$15,760	$15,471

This calculation appears to depend on the effects of savings in long term haulage to a remote landfill site over a 20-year term, however. As noted above, actual haul cost figures would have been a more appropriate measure to compare the sites with each other, and may have resulted in a different outcome.

3. Conclusion

Overall, further information is required from the Regions' consultants to demonstrate that their EA planning process is traceable, replicable, logical and systematic, and that Clarington Site 01 is indeed the preferred site.

The most significant issues raised in this review comprise:

- Use of secondary information such as information on species at risk and endangered species for the broader area, rather than site specific data that would have provided more certainty as to actual effects for the purpose of the comparison and would have been more appropriate in the final siting decision for a major public utility use;
- Lack of identification and consideration of reasonable mitigation in identifying rankings, resulting in unnecessary distortions in the site comparison;
- Concerns with the lack of consideration of the opportunity cost of publicly owned sites in the site comparison, and with the consultants' approach in attempting to resolve this in its sensitivity analysis.

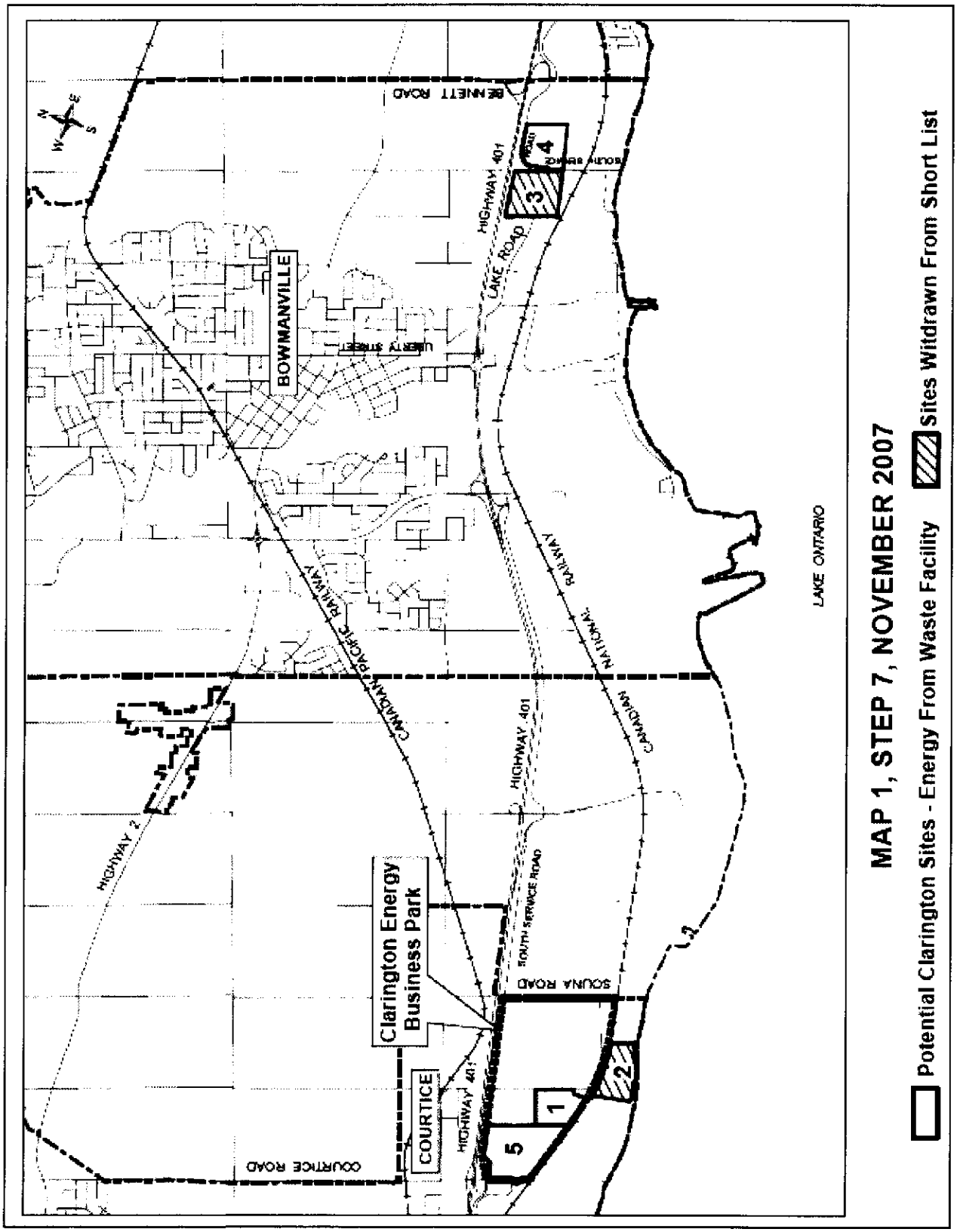
- Concerns with trading off capital against operational costs and the use of "savings" to calculate operational costs, and the consultants' approach in attempting to resolve this in their sensitivity analysis;
- Flaws in the way "advantages and disadvantages" are identified, aggregated and considered in the site comparison. Advantages and disadvantages do not necessarily represent advantages and disadvantages to the environment, as required by the EA Act, and this has the potential to affect the site comparison.
- The effect of the selected evaluation methodology in reducing the relative significance of the air quality and natural environment criteria rated highest by the public through the consultation process, by trading these criteria off against each other.

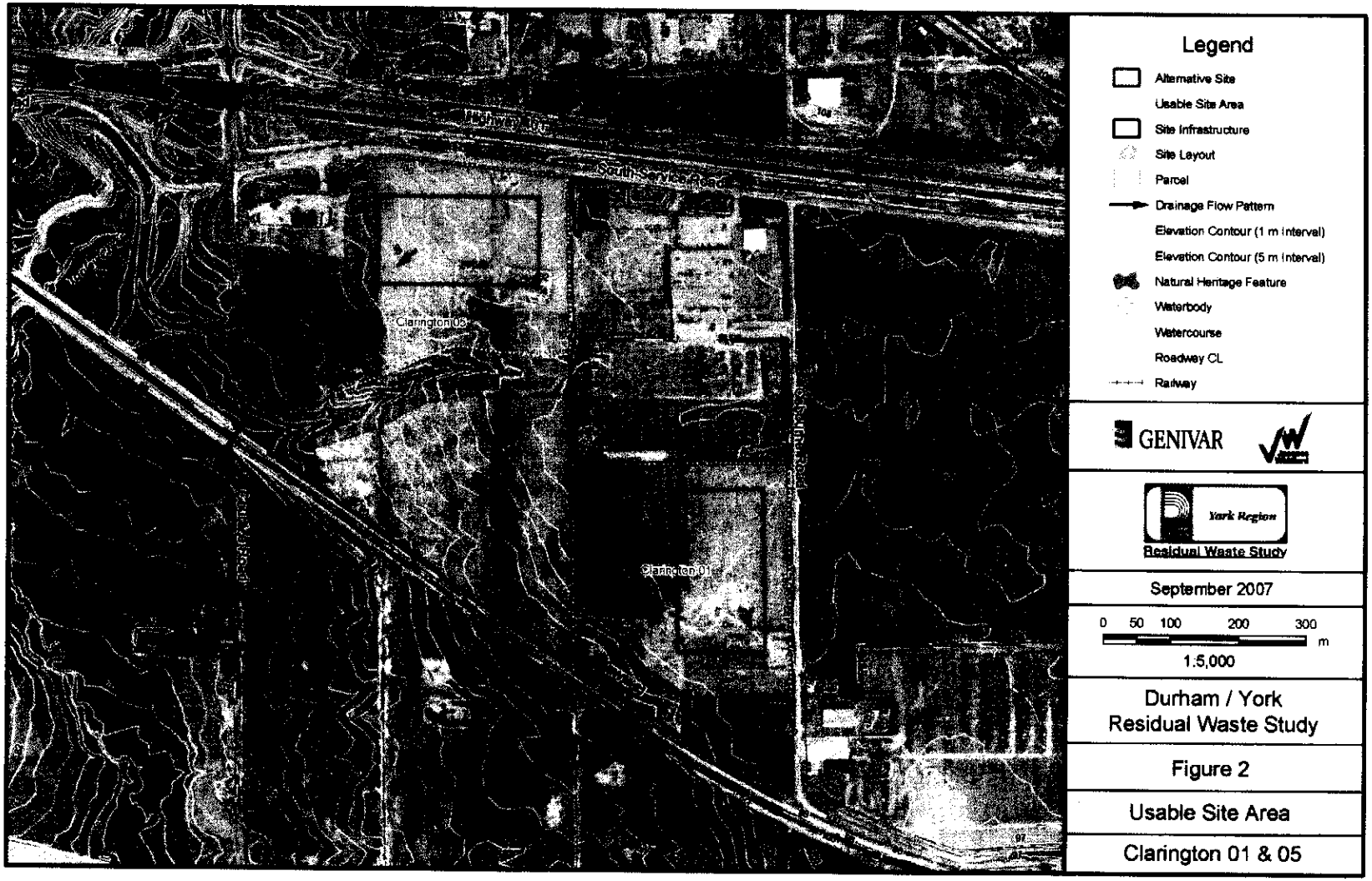
The Regions' consultants have committed to describe the evaluation methodology in more detail in their interim environmental assessment document. In their covering letter to their responses to our comments they state that "we confirm that it is our position that the process we employed is sound and all of the conclusions and findings are valid". They also appear to assume that the finding regarding the preferred site will remain unchanged in the face of the concerns raised earlier in relation to Steps 1-5.

The Regions' consultants have also committed to a sensitivity analysis of the site comparison based on full consideration of the characteristics and environmental effects of the selected technology once it is known. By this time, however, a high degree of commitment will have been reached (for example, the preferred site will be the basis for the Requests for Proposals) and a shift to a different site would be costly and time consuming, especially considering the deadlines imposed on this project. As noted above, the Clarington peer review team has advised that it would be more prudent to proceed with more than one site.

The Regions' consultants responded to concerns expressed by SENES Consultants in their peer review on behalf of Clarington, by saying that the Ontario Ministry of the Environment recognized the potential environmental effects of a thermal treatment as "minimal" when it established Regulation 101/71 and the associated Environmental Screening Process, "and therefore, such facilities can be located on sites selected by proponents outside the historic EA process". As described in our Interim Report, however, the proponents had an opportunity to undertake their EA under the Environmental Screening Process and elected to continue under the full requirements of the EA Act. They therefore have an obligation to consider alternatives and environmental effects as required by that legislation, rather than the Environmental Screening Process.

There are potential uncertainties regarding the process conducted to date, including the potential for a consistent site selection process at an appropriate level of detail to result in a different preferred site. It would be preferable to resolve the outstanding issues now to the extent possible rather than to address them later in the process.


MAP 1, STEP 7, NOVEMBER 2007
Potential Clarington Sites - Energy From Waste Facility
Sites Witdrawn From Short List
BOWMANVILLE
Clarington Energy Business Park
COURTICE
LAKE ONTARIO
HIGHWAY 401
HIGHWAY 2
LAKE ROAD
SOUTH SERVICE ROAD
SOUINA ROAD
COURTICE ROAD
CANADIAN PACIFIC RAILWAY
CANADIAN NATIONAL RAILWAY
1
2
3
4
5


Legend
Alternative Site
Usable Site Area
Site Infrastructure
Site Layout
Parcel
Drainage Flow Pattern
Elevation Contour (1 m Interval)
Elevation Contour (5 m Interval)
Natural Heritage Feature
Waterbody
Watercourse
Roadway CL
Railway
GENIVAR
York Region
Residual Waste Study
September 2007
0 50 100 200 300
m
1:5,000
Durham / York
Residual Waste Study
Figure 2
Usable Site Area
Clarington 01 & 05
Clarington 08
Clarington 01
South Service Road

Map 2

November 20, 2007

Faye Langmaid

Manager of Special Projects
Municipality of Clarington

Dear Faye

Re: Peer Review – Preferred Site Selection Process - Conclusion

AMEC was retained by the Municipality of Clarington to undertake a peer review of the air quality issues for specific aspects of the Environmental Assessment for the proposed thermal treatment plant to be sited in either Durham Region or York Region.

We have reviewed the overall methodology and approach taken by the Region in reaching their selection of the preferred site. There are some serious concerns related to overall process and the current availability of key data and information necessary to make a final determination of the preferred site.

The weighting or ranking of the sites is done on the basis of professional judgment. Professional judgment is used to compare the sites against each other, determining which site is preferred over another site for each criterion and then again using professional judgment as the criterion rankings are combined to give an overall ranking. Though this may be appropriate when all data is available and studies completed, with incomplete data and studies still in progress, it is possible that rankings could change for various criteria and final ranking of the sites may be different. The "judgment" aspects of the system, do not allow for a re-assessment of rankings based on different assumptions or different results of ongoing studies and efforts (e.g.. technology selection). As a result, the current preferred site may not stay preferred as more data and information comes in. We would recommend carrying a second site through the technology selection and the detailed site and background studies.

The Region is currently assuming that any technology and pollution control system can be placed with equal impact on any of the sites. This basically assumes that the emissions from all possible technologies and all potential facility sizes are either trivial or so insignificant that any change to current or future air quality at these sites would be acceptable. This has not been demonstrated. In fact, the HHRA performed for a "generic" site, indicated that a number of parameters (e.g. dioxins and furans) were potentially at unacceptable levels at the generic site. This lead to a statement in the "Generic Human Health and Ecological Risk Assessment" that if the site specific risk assessment shows unacceptable risks that further emission reductions ("enhance the performance of the technology") could be undertaken to reduce the risk. This suggests that different sites might require different air pollution control systems. The level of control, and therefore the cost of the system, could therefore be very site specific. This cannot

be assessed without further selection of a technology and control system, in conjunction with appropriate background air quality[1] studies. As noted previously, the ranking system does not allow for a determining if the rankings of the sites would change based on whether or not technology costs varied from site to site.

The current site selection process has considered background air quality based on existing MOE monitors. The MOE monitors were located in Newmarket, Stouffville, Oshawa and Mississauga. Though these are appropriate to provide a general regional background, these monitors will not pick up specific nearby sources. As a result, the selection process does reflect the regional background air quality, but it does not reflect any significant sources near the short list sites. Key sources in the area that will impact the site specific local air quality in the Clarington sites include St. Marys Cement (SMC), Oshawa urban area, General Motors and major transportation corridors (e.g 401 and 35/115). These are existing sources that will impact the sites and though these have been qualitatively assessed (i.e. the presence of these sources reduces the desirability of the Clarington sites), it has not yet been determined if the absolute level of impact at the sites are acceptable. As part of the air quality assessment and subsequent risk assessment, it will also be necessary to determine a future baseline for these sites. This would include modelling increased traffic and other development in the areas. Again, as with existing air quality, the future air quality will be different at various sites. As noted previously, the ranking system does not allow an assessment of changes in the rankings of the sites based on either actual current background data or future predicted background data.

The MOE monitoring stations only consider a number of the key emissions (e.g. SO2, Nox, PM2.5). These stations do not monitor a number of the contaminants of concern related to thermal waste treatment. These will include dioxins and furans and key heavy metals (e.g. mercury). As noted previously, this background data is important in differentiating cumulative air quality impacts (i.e. health risks) at each site. When combined with the previous discussion above concerning technology options and control; it may be premature to choose a single preferred site.

The Regions assessment recognizes that differences in local meteorology can influence dispersion and as a result, the air quality at each site. The local meteorological conditions need to be assessed with respect to specific impacts. Data is being collected for the sites. The current challenge is that without the specific technology and control, without the site specific background for all key contaminants and without the site specific meteorological data; it is not possible to determine actual differences in air quality impacts at the various sites. As all of these are still under consideration, it is not currently possible to properly assess the sites with respect to air quality; a key component in the potential health impacts at the sites.

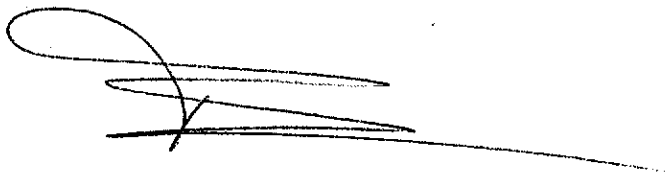
Further, one of the key criterion used by the Region is the air quality impacts related to traffic to and from the site. The current assessment considers traffic for a 150,000 tpy facility and a

[1] It is important to note that my assessment is focused on emissions and air quality impacts. The background assessment needed to complete an appropriate site-specific HHRA would require background data for all media; including water and soil.

250,000 tpy facility. As noted in the TSH review of the Region's traffic assessment report, a proper assessment to adequately compare difference in haul distances and optimizing for road links (e.g. the 407 has not been used in the traffic analysis) and transfer stations, indicate that for the 250,000 tpy case, the ranking of the Clarington and Gwillimbury sites can change. The Gwillimbury site could then go from a "disadvantage" to an "advantage". As discussed above, since the ranking is done on professional judgment, it is not clear how this would translate into final overall rankings. No analysis for truck traffic for the 400,000 tpy has been carried out.

In summary and conclusion, the current site selection process starts with an underlying assumption that all of the potential technologies have air emissions at levels that can see any technology placed on any site at the same costs and impacts. Even though the Regions own consultants state that further control might be needed if site specific risks are present, this potential technology change has not been considered in the site selection process. The Region's consultants also assume that background data (current and future), site specific meteorology and site specific key receptors are such at all sites, that the inclusion of a thermal waste treatment facility is acceptable as a cumulative impact and that once these factors are all taken into account the ranking of the sites will still follow the current ranking based on professional judgment. This has not been conclusively demonstrated. We would strongly recommend that a second site be carried forward into the detailed assessment and technology selection process to allow for a quantitative comparison of the air quality (and human risk) and thereby chose the appropriate preferred site.

Yours truly,
AMEC Americas Limited



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MEMORANDUM

TO:	Faye Langmaid / Janice Szwarz, Municipality of Clarington	34574
FROM:	M. Ganapathy / M. Monabbati / Y. Hamdy/ B. Lebeau	21 November 2007
SUBJ:	Review of site selection study documents – Main Report / Annex B – Potential Water Quality Impacts / Annex C -Terrestrial-Aquatic Biology	

This is the second draft of the SENES's review of site selection study documents which was prepared after receiving the consultant team response to the first draft of the SENES's review.

MAIN REPORT

Our review of the main thermal treatment facility site selection process indicated that there are gaps and shortcomings in the selection process. The conclusion of the assessment that Clarington 01 may be a suitable site for the proposed project could have been arrived at by adopting a more transparent and logical approach to the entire process using the existing information and assumptions. Some key issues are as follows:

1 The study claimed that the initial screening process ensured that unsuitable areas, such as significant natural features, agricultural lands and existing residential areas would not be considered further in the siting process. The main report indicates that some of the selected sites are in fact located near Natural Heritage Features including: Areas of Natural and Scientific Interest (ANSI), Environmentally Sensitive Areas (ESA), Wetlands, community parks and residential areas. This undermines the effectiveness of the initial screening process in reviewing the other sensitive sites.

2. The main report indicates that the areas from the initial screening process consist of primarily industrial and commercial land uses, located away from city centres and suburban communities. However, SENES believes that this statement is not accurate as some of the short-listed sites could be considered as close to suburban communities. The consultant team indicated subsequently that they will "adopt the references description in future documentation to reflect the fact that some areas may abut some sub-urban communities as set-backs were not applied to constraints at Step 2".

3. SENES questioned the validity of the rationale for separating the siting and the competitive vendor selection processes. The report cites the "fairness of the selection process" as a reason to separate the siting and vendor selection processes. It conveys an impression that all thermal technologies are similar. This impression is evident from the Regions' consultant team response that "modern EFW facilities are expected to have minimal environmental effects and, therefore, such facilities can be safely located on sites selected by proponents outside of the historic EA process." This is the stated justification for the separation of the siting and vendor selection processes. In our opinion, the site-specific impacts of a selected technology need to be assessed prior to finalizing the selection of the preferred sites. Given the level of uncertainty in the site selection process, in our opinion the possibility of consideration of two sites for the tendering process should be considered.

4. SENES commented on the inappropriate use of the word "advantage" / "disadvantage"/ "neutral" etc. causing confusion in the comparative site selection study. The consultant team clarified that the actual trade-offs were made during the evaluation process and these will be better documented in the various discussions and tables in the future draft of the EA report and hopefully clarify the usage of these words. However, there is a lack of traceability for the EA process at this time.

5. The siting process uses a qualitative process to identify the preferred site for the project. The consultant team indicated that during the preparation of the EA Terms of Reference, the public was consulted and ultimately a qualitative methodology was specified. The record of public consultation and approval of the selected qualitative methodology should be provided as an appendix to the main report to provide evidence that the community/ stakeholders consented to a qualitative evaluation process of the sites. In addition, weighting of the factors should be clearly identified.

6. The capital cost allocation for site infrastructure is relatively small compared with the capital cost of the thermal treatment facility, and the facility cost is associated with a large uncertainty as it is evident from the Low-Cost and High-Cost estimates in the costing report. The difference in capital infrastructure cost estimates for various sites has no statistical significance with respect to overall capital costs. In addition, some of utility costs may be offset by the capital cost of the project (e.g. cost of wastewater treatment and sewer connection against potentially more expensive dry scrubbing process), thus making the utility costs even less important factor in the site selection process. In

addition, special costs were compared to "distant landfill", which is not a comparative cost among the alternatives. Distant landfill is not one of the alternatives being considered.

Therefore, in our opinion the capital cost of infrastructure has no significant input to the selection process and this cost was not reviewed in detail by us. The consultant's justified inclusion of the costs based on "Approved EA Terms of Reference"; however, our comment is concerned with the fairness of the site selection process and documentation, irrespective of the EA Terms of Reference. It will be desirable to include the record of public consultation and approval of the selected criteria in the main report.

7. SENES had questioned the validity of the criteria considered for Evaluation of Short-Listed Sites, particularly the last three criteria (page 10 of the draft site selection process report) which are closely related to each other. Further, in our opinion, public health and safety and natural environment are separate issues and should have been dealt with as separate criteria for impact and fairness of assessment. In particular, the weight of air quality impact, which is the primary human health concern, is subsumed under natural environment. Both the Clarington 01 and East Gwillimbury 01 sites have been ranked "neutral" for air quality. However, Clarington 01 was ranked "advantage" compared with the East Gwillimbury 01 site which was ranked "disadvantage" for Public Health & Safety and Natural Environment Considerations.

It is also our opinion that utility costs and legal considerations have no role to play (relative to the much larger total capital costs) in selecting a site because communities do not care whether "the legal permitting issues are more or less" or "something costs more or less". SENES comments are concerned with the soundness of the site selection process and selected criteria irrespective of the EA Terms of Reference. The consultant team indicated that the criteria and indicators for these five categories of criteria were all developed as part of the approved EA Terms of Reference. Again, it will be desirable to include the record of public consultation and approval of the selected criteria and EA Terms of Reference in the main report.

8. We disagree with the consultant team's assertion that the qualitative assessment avoids the risk of double-counting. If this were the case, the proponent would not have needed to have multiple criteria and the report could have been much shorter, with all three criteria lumped together as one criterion.

In summary, in our opinion, the site selection process and documentation do not convey the impression that the process was fair and transparent.

ANNEX B - POTENTIAL WATER QUALITY IMPACTS (SURFACE WATER AND GROUNDWATER)

The following peer review considered the responses received from the Region's consultants on the questions previously raised by SENES regarding the report on potential water quality impacts. In general, the responses to SENES' questions have clarified the report and provided explanations. Some of our additional observations are as follows:

- The construction of the thermal treatment facility will result in an increase in paved areas, parking lots, and landscaped areas which in turn will result in an increase in stormwater flows. Stormwater Management facilities are required to detain the excess stormwater flows and release flows which are equivalent to pre-development flows.
- The concern regarding the inclusion of the regional storm was addressed by stating that this event will be added at the detailed design stage. We accept this response.
- The identification of the length of the modeled storm or the CN (a parameter related to the permeability of the soil for penetration of precipitation) values for post development were clarified by stating that the post-developed area was calculated based on an impervious site area of 45% and the DESIGN STANDHYD (a hydrology computer model) was used for the developed area. For the remaining undeveloped area, the post-development conditions are still to be the same as the pre-development conditions and therefore, the CN value of 74 stays the same and the DESIGN STANDHYD.
- The response regarding the need to provide a description of topography and existing drainage is not satisfactory. Although the response indicates that the topography and drainage pattern are illustrated on the maps, a description should be added to the text.
- The response to the availability of 100–yr and regional flood plain mapping under existing and proposed conditions indicated that it will be investigated during the detailed design stage. We concur with this response.
- The response to comment on the removal efficiency indicated that it will be up to the Conservation Authority. However, as per the MOE guidelines, the requirement is 80% removal of solids especially for sensitive streams and hopefully this will be investigated during the detailed design stage.

- Section 3.3 of the report will be revised to include the requirement for Permit-To-Take-Water (PTTW) application for the dewatering activities.
- In Table 4.1, the temperature of the receiving water (cold or warm) was used as one of the criteria for ranking purposes. However, the Stormwater Management facility should provide enhanced treatment, i.e. 80% removal of solids as outlined in the MOE Stormwater Management Planning and Design Manual (2003) regardless of warm or cold fishery in the receiving water. Therefore, the receiving water temperature should not be used as a factor in ranking the sites.

ANNEX C – ESA'S AND SPECIES IMPACTS, AND AQUATIC AND TERRESTRIAL ECOLOGY IMPACTS

Key issues SENES had were primarily the lack of explanations or descriptions as to the methodology and approach of this study, and the quality of technical writeup leading to low confidence in the evaluations. These aspects were addressed specifically in the memo from the consultant team entitled "Clarification Questions" and are not discussed in the present document. The consultant team indicated that they will incorporate changes in the document to address these aspects. The report, as its present condition, does not adequately support the conclusions. SENES expects that the changes in the follow up version of the report would make the methodology acceptable.

1 A key issue with respect to this report is that it was prepared without consultation with (area/district) biologists and experts from government agencies. Only website databases were consulted and these could be out dated. The Natural Heritage Information Centre (NHIC) website was last updated in 2005.

2 The report did not evaluate the plants that are locally and regionally rare and endangered. These plants are as important as those listed by the Natural Heritage Information Centre (NHIC) for the Province of Ontario. We raised this issue in the first version of this review. The report's authors responded that they were not aware of any such list of rare plants listed as locally or regionally significant. Here are the two main references (these plants are now under the jurisdiction of Conservations Authorities):

   a. J.L. Riley (with contributions from Bakowsky, W.D. and 11 other). 1989. Distribution and Status of the Vascular Plants of Central Region. Ontario Ministry of

Natural Resources, Parks and Recreational Areas Section, Central Region, Richmon Hill. Report.

b. Varga, S. and 8 others. 1999. The Vascular Plant Flora of the Greater Toronto Area. Ontario Ministry of Natural Resources, Aurora District. Report.

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MEMORANDUM

TO: Ms. Faye Langmaid, FCSLA, MCIP
Municipality of Clarington

FROM: Will McCrae, P. Eng.
TSH

DATE: November 22, 2007

RE: Durham/York Residual Waste Study
Peer Review Comments

Introduction:

As per the request of the Municipality of Clarington, we have undertaken a peer review of Annex 'F', Annex 'G' and areas of Annex 'H' where it impacted on considerations in Annex 'F' and Annex 'G'.

Our report looks at the approach and economics assigned to the development of a Thermal Treatment Facility (TTF) at each site and the conclusions reached with respect to the assessment of the short-list sites.

Discussion:

ANNEX F – "REPORT ON POTENTIAL TRAFFIC IMPACTS"

The report provides a basic assessment of future traffic operations at the intersections in close proximity to each site for a 2016 horizon year. In summary, the facility would generate low peak hour and daily traffic volumes, and as such would have minimal impacts on adjacent roads or intersections from a traffic volume perspective.

In general, the three Clarington sites were found to be preferred over the East Gwillimbury site, and specifically, the two Clarington sites in proximity to the Highway 401/Courtice Road interchange were preferred to the Clarington site in proximity to the Highway 401/Bennett Road interchange. The key factor that gave the latter site a disadvantage was the uncertainty with respect to maintaining direct access to Highway 401 (via South Service Road) if the Bennett Road interchange were to be replaced in the future by an interchange at Lamb's Road.

1. The lane configuration shown in Figure 3-5 for the Highway 401 eastbound off ramp intersection with Courtice Road shows two eastbound through lanes on the approach to Courtice Road, but it appears that there is only one receiving lane as the South Service Road is shown on the same figure

to be a basic two lane road. There are in fact two receiving lanes on the South Service Road, one of which terminates a few hundred metres from the intersection.

2. Further to the previous point, there is an inconsistency in the related analysis of this intersection. For the existing and future a.m. peak hour analysis, the eastbound approach is analyzed as one left/through lane and one through/right lane, which corresponds to the lanes depicted in Figure 3-5. For the existing and future p.m. peak hour analysis, the same approach is analyzed as one left turn lane and one through/right lane. With the very heavy volume of eastbound left turns that occur during the p.m. peak hour, it is understood that the through/left lane could function as a "de facto" left turn lane and this appears to be what was intended in the analysis. Depending on the actual number of receiving lanes on South Service Road opposite the ramp approach, consideration may be given to designating the eastbound approach lanes as left and through/right as used in the analysis. In terms of the conclusions drawn from the analysis, this inconsistency can be considered inconsequential.

3. The impact of the future Highway 407 extension appears to be limited to detrimental effects to site Clarington 05. At this location, major interchange works will result in property requirements effectively reducing the available area of the Clarington 05 site. The report does not fully reflect the impact of the future Highway 407 with respect to this site. It has not been considered as a possible haul route either.

4. The use of the South Service Road and Osbourne Road as truck routes to service the TTF on Clarington 01 site is not acceptable in terms of the road uses envisaged in the Secondary Plan for the Clarington Energy Business Park.

   A route following Courtice Road with a southerly east/west access road north of the CP Rail corridor is the arrangement envisaged by the Municipality. Osbourne Road, for example, is promoted within the Park Plan as a local street built to an urban standard, complete with sidewalks, landscaped borders and treed boulevards, a street standard hardly conducive to heavy truck traffic.

5. In Section 4.1 of the report, it is indicated that a full build out of the Energy Park will influence traffic patterns and traffic composition. How can the traffic impact of the TTF located in this area, social and otherwise be fully appreciated without some knowledge of traffic trends from the Park development?

   At the time of the preparation of the report, no applications for site plan approvals for the Energy Park had been made. Given this and with no knowledge on timing of the park build up, a traffic impact study in support of the TTF, prepared to support a site plan application in the near future, will have to make assumptions on future park traffic.

6. In Section 7 "Haul Distances", it is indicated that haul distances have not been applied to the report as a factor in determining social and cultural impacts. A conclusion is reached, however, which shows a reduction of 40% in vehicle kilometres for the Clarington 01 and 05 sites under the 150,000 tpy scenario which we understand to only include 20,000 tpy of waste from York Region. This

skews the analysis in favour of the Clarington sites. The advantages of the Clarington sites as compared to the East Gwillimbury site diminish under the 250,000 tpy scenario.

It could be concluded that the Clarington sites only have a social/cultural advantage under the 150,000 tpy scenario and that under the 250,000 tpy scenario, there is no real advantage between the Clarington sites and East Gwillimbury and in fact, the East Gwillimbury site could be considered more favourably because access roads are already exposed to truck traffic carrying municipal waste.

7. Section 8 "Maximum Scenario (400,000 tonnes per year)" – In order to properly assess impacts on each site under the maximum scenario, a traffic impact study should be promoted for each site or are we to assume that the two paragraph discussion on the East Gwillimbury 01 under this section constitutes a study for this site? The fact that further studies are required for the Clarington sites would seem to preclude making a meaningful comparative evaluation of the Clarington 01, 05 sites and East Gwillimbury 01 site from a traffic view point.

   In addition, it should be noted that the EA planning process allows for the proposed thermal facility to receive waste from other non-GTA municipalities such as Peterborough. With regard to the 400,000 tpy scenario, it is our understanding that no agreement has been reached with Kawartha Lakes, Peterborough or Northumberland regarding disposal of waste at the York/Durham facility. No assumptions can be made with respect to potential volumes from these sites or their applicability as potential sources for disposal of ash.

   It is indicated in the report that the origin of additional waste beyond the 250,000 tpy scenario is unknown (Page 8.1). Thus it is difficult to determine the preferred site located under this scenario using haul distance criteria as pointed out by the proponent.

8. The "Significant Findings from the Traffic Study" section should be revised on Page 10-2, in that mitigative measures for the East Gwillimbury site should be addressed.

   Section 12 "Identification of Preliminary Site Advantages/Disadvantages"

   In Table 12.1, it is indicated that there are critical movements affecting waste truck travel associated with the East Gwillimbury site. An assessment of this situation should be addressed in detail including the potential introduction of signalization, which has been promoted at the Clarington 05 and 01 sites. The present use of this site for resource receiving should be highlighted in terms of its potential to handle increased truck volumes.

   It is difficult to relate this "disadvantage" for the East Gwillimbury site to the assessment on Page 10.2, which indicates that no improvements to this site are required to accommodate future truck traffic. This is again emphasized in Table 4.2 of Step 7 – "Evaluation of Short-List Site", which gives a disadvantage rating to East Gwillimbury from a traffic perspective.

9. Haul distances used to assess air quality impacts are detailed in Table 7.2. The following concerns are noted:

- Criteria should be established for different haulage approaches, i.e. trailer or packer truck and utilized consistently in each scenario. In Clarington 01, 04 and 05 scenarios, haul distances of 10 km are used for trailers whereas in East Gwillimbury, haul distances are included up to 60 km for packer truck use.

- In the East Gwillimbury scenario, packer trucks are used to haul waste for Brock and Uxbridge. It is not clear in the Clarington scenarios how this waste is being hauled or if it has been accounted for.

- Haulage distances under "Other Eastern Municipalities" should not be included for the reason outlined in Item No. 7 above.

- For the East Gwillimbury scenario, the haul distance for packer trucks used to haul waste from Aurora, East Gwillimbury, King, Newmarket and Whitchurch-Stouffville are included even though these haul distances are common to all scenarios. For the Clarington scenarios, waste from these locations would be hauled to the East Gwillimbury TS which is adjacent to the proposed location of the East Gwillimbury TTF and then to Clarington by means of transfer trailers.

- The location of a site for disposal of residual materials from the TTF, i.e. ash, has not been decided. Haulage distances associated with this disposal should be reflected in the comparison of vehicle-kilometre costs for the different sites.

- Under the Clarington scenarios, is it practical to continue to operate three transfer stations within a 20 kilometre radius of the TTF, while in East Gwillimbury packer trucks are operating in haul distances from 20 – 60 km?

  Haul costs calculations were well documented in Annex 'G' Appendix 'A. Similar detail should be provided for haul distances summarized in Table 7.2. A more detailed and representative assessment may or may not alter the conclusions, but will remove any concerns regarding bias and misinterpretation.

ANNEX G – "REPORT ON CAPITAL COSTS, OPERATION AND MAINTENANCE COSTS"

Section 2: Methodology of Study

In the "Study Approach and Key Assumptions", capital costs for water supply, sanitary sewer connection, natural gas and electrical grid connections have been estimated on the basis of 250,000 tonnes per year. Given that these facilities may be supplied to the site by installation within reconstructed roads, it would seem prudent to service the site initially for the final capacity requirements of 400,000 tonnes. This is what is proposed for stormwater management facilities. The implications of upgrading services at a later date for

the 400,000 tonne facility have not been assessed due to uncertainty with respect to infrastructure at the time of expansion.

It is important to note that the choice of actual treatment technology has a serious bearing on certain aspects of infrastructure. This is highlighted by the sanitary sewer costs for the East Gwillimbury site as outlined in Item No. 1 of the discussion which follows.

There are a number of areas where infrastructure costs need to be revisited in order that a proper evaluation be given to allow advantage/disadvantage assessment to be attached.

1. There are options with respect to the type of TTF which will eventually be used. In one type, there is no need for sanitary sewer facilities. For an option which requires sanitary sewer facilities, there is a severe cost disadvantage indicated for the East Gwillimbury 01 site. Table 3.4, "Cost of Sewer Connections" indicates a sewer cost for the East Gwillimbury site of approximately $7,500,000.00.

2. Within the Clarington Energy Park, road reconstruction is required to an urban standard. The cost estimates for road works on Clarington 05 and 01 sites should be increased accordingly. The costs are currently estimated for rural standard construction. Standards should conform to the Clarington Energy Business Park Secondary Plan.

3. The analysis revealed that from the traffic operations stand point, the four sites can generally accommodate the future facility without improvements to the study area intersections. However, there is a potential need for signalization of the south ramp terminal intersection of Highway 401 and Courtice Road beyond 2016.

4. Watermain costs for Clarington 01 site and Clarington 04 sites should be revisited. The same unit price has been used for different size mains.

5. Do we need a 450 mm diameter sanitary sewer at each site? In some areas the proper allocation of costs may well change the advantage/disadvantage designation for particular indicators. Apparently the sewer size is based on the TTF vendors' recommendations for a worst case scenario.

   It is important to emphasize that infrastructure costs with respect to the TTF are minor in comparison to the overall cost. As such, it is misleading to emphasize advantages with respect to infrastructure without giving a relative weighting between infrastructure and air quality, for example. We do not feel that infrastructure servicing costs should rate highly in the final analysis. It should also be noted that infrastructure servicing costs cannot be fully estimated until such times as a decision is made on the actual treatment technology to be utilized.

   As an example in Table 4.1, Page 4.1, the site specific-capital cost range for sites Clarington 05 and 01 should be increased to reflect an acceptable route built to standards reflected in the Municipality's Secondary Plan. We would suggest because of this that the designation for Clarington 01 should be altered from neutral to disadvantage, more in line with the other Clarington sites.

6. With respect to the assessment for annual haul cost savings; cost differences are diminished by increased waste haulage volumes. An advantage designation we feel would be a more appropriate assessment for the East Gwillimbury 01 site, given the relative costs for the short-list sites and the cost of this component in the larger cost of the overall project. We question why cost savings are calculated in comparison to the status quo, rather than being calculated for each individual site based on the haul distances and methods detailed in Table 7.2 of Annex 'F'.

7. Under the indicator "Distance from potential markets for sale of marketable materials (i.e. heat, electricity, recovered metals, etc.)", there is considerable advantage (with detailed analysis) given to the Clarington 05 and 01 sites. There is less analysis given for the East Gwillimbury 01 site for direct comparison. (See Section 3.2.2 of Annex 'H')

8. Depending on the scale of operation, i.e. 150,000 tonnes or 250,000 tonnes, the initial potential for heat use by adjoining facilities is small for both the Clarington and East Gwillimbury sites. Accordingly, the cost savings are small compared to, say, a non-sewer TTF option which would reduce the East Gwillimbury site servicing costs to zero with respect to sanitary sewer needs.

   For comparison purposes, it should be noted that if a TTF option is chosen, which does not require sanitary sewers, then the cost difference in servicing costs between Clarington 01 and East Gwillimbury 01 is in the order of $7.5 – 8 million, even allowing for appropriate urban access construction on the Clarington site and signalization in some form on the East Gwillimbury site.

   We feel that the disadvantage assessment in Table 4.1, Page 4.1 given to East Gwillimbury 01 is not sustained by the report discussion. The assessment of Clarington 01 with a "Major Advantage" and East Gwillimbury 01 with a "Disadvantage" based on a heat load indicator, Table 4.1, Page 4.2, Annex 'G', is at odds with this assessment, given that electricity and recovered metals are considered equal for all short-list sites, as indicated in Section 3.2.4, Page 3-7.

9. Further to Item No. 6 with respect to conclusions reached in Table 4.1, Page 4.1, the neutral rating for East Gwillimbury under "Distance from Waste Generation etc." seems somewhat contrived given the small differences in cost savings for annual haulage.

   In addition, there should be a more detailed breakdown on the recovered costs of marketable materials. The disadvantage assessed to the East Gwillimbury site appears to be for its alleged limited market for heat. This component of the assessment effectively rules out the East Gwillimbury site with an overall "neutral" rating.

10. There should be some form of weighing of a "disadvantage" or "advantage" assessment. These appear to be given equal weight in the final summary of the site considerations, i.e. cancelling each other out.

11. We feel there should be a more detailed analysis of the potential "recoverable" costs than that outlined on Page 3.7, given the importance attached to the conclusions in Table 4.1. The assessment in Section 3.2.4 should be expanded to reflect a balanced view.

Conclusion:

It is our conclusion that the methods adopted for site comparison of Annexes 'G' and 'H' do not fully address the economics and other factors related to each site. It would seem appropriate that a decision be reached on the type of Thermal Treatment Facility that will be adopted and then proceed to quantify the logistics of the respective sites. Each site could then be rated in a manner that would allow clearer comparison and remove any elements of guess work or bias that may otherwise skew results.

As examples, please note the following:

- A traffic analysis should be undertaken for the East Gwillimbury site as is proposed for the Clarington 05 and 01 sites. Mitigative measures for the East Gwillimbury site should be outlined.

- The matter of mitigation on a number of issues has not been properly handled in the analysis of the sites and as such is not reflected in the final assessment of advantage/disadvantage under the various indicators.

- It would seem that a decision on the type of TTF to be used should be made early in the process as to establish the level of need for site works.

- The attributing of "advantage" and "disadvantage" to site potentials is too vague and there is no weighting between the various indicators in the analysis.

- There are too many areas in the analysis which are left for future analysis/study once the preferred site selection process is complete.

- Of the questions that we have raised related to servicing and traffic impacts, twelve responses indicate that further study and refinement is required once the site selection process is complete. Where such questions pertain, for example, to capital costs from which an evaluation is derived, it is difficult to respond to the "advantage"/"disadvantage" assessments based on incomplete data.

William McCrae, P.Eng.
Senior Project Engineer

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Cc: Tony Cannella

TMH

Clarington
Leading the Way

MEMO

TO: David Crome, Director of Planning

FROM: Laura Barta, Internal Auditor

DATE: 27 November 2007

RE: Review of EFW Study

Finance staff was asked to review the Durham/York Residual Waste Study, Application of Short-List Evaluation Criteria from a cost analysis prospective. To this end, the Economic and Financial Considerations: Annex G – Report on Capital Costs, Operation and Maintenance Costs was reviewed in some detail. Our review concentrated on reviewing the financial calculations included in a selection of tables. We did our testing based on each new type of table, not on testing every table. During the course of the review, the following discrepancies were noted for Annex G:

CONCERNS:

1. Page 13 and 14 of Appendix A of the report contained calculations that rounded the Total per Truck Minute cost to two decimal places. The resulting value shown in both Table 3.3.1and Table 3.3.2 were not the same number used in the calculation used to arrive at Total Cost per Tonne Minute of Haul in the tables.

2. Page 15 of Appendix A of the report contained an error in the total for the value of Annual Haul Cost. The total York number did not include the value for Georgina Transfer Station of $174,396. This oversight will make the overall total short by this value as well. The effect of missing this value will cause an increase in the relative cost saving between scenarios. It was pointed out that all schedules should be reviewed for this type of error. This value was used an additional four times in our review of the subsequent tables.

3. In an attempt to recreate the Annual Haul cost values shown in table 3.4.1 on page 15, we attempted to cross multiply the numbers and came up with a difference of close to $300,000. We asked that all schedules be restructured to reflect numbers that come closer to those you can multiply out or that more decimals could be shown where necessary to increase the accuracy of the calculation.

DIALOGUE:

Clarington's concerns were forwarded through the Region to be addressed by Betsy Vaghese, E.I.T., GENIVAR Ontario Inc. To ensure the public is able to follow the information in the tables, Clarington staff felt it was important for the tables to accurately reflect the correct data. The following responses were received:

1. Ms. Vaghese agreed with Clarington's comments and made the changes to page 13 and 14 stating that both Table 3.3.1 and 3.3.2 contained a typographical error. She assured us that the actual calculations were done correctly.

2. The missing costs for York's Georgina Transfer Station were also adjusted on the revised tables Ms. Vaghese forwarded. No revisions were provided for tables that would have been subsequently affected by this change. An example is Table 4.1.1 or 4.2.1 in the Appendix, summarizing the Haul Cost Savings for each scenario.

3. Ms. Vaghese has recalculated the Annual Haul Cost Tables to address our concerns related to rounding. These changes have been used to update Tables 3.4.1 to 3.4.4 for both 150,000 tpy and 250,000 tpy as shown in Appendix A. Again, no revisions were provided for tables that would have been subsequently affected by this change

CONCLUSION:

A review of these tables will necessitate a change in section 3.2.2, Table 3.13 page 3-6 of the Annex itself. The East Gwillimbury site will need to be moved to the top of the list with the overall system cost savings for Annual Haul Costs for 250,000 tpy Residual Waste. This rating could then have an effect on the overall ranking of the site. The new shift the Short-List Site Ranking as Follows:

- East Gwillimbury 01 $3,731,775
- Clarington 01/05 $3,641,453
- Clarington 04 $3,525,767

The Values shown in Table 3.12 will also need to be changed although the ranking will remain the same.

Section 4, Table 4.1 on page 4-1 will need to be re-evaluated. With the change in

ranking for East Gwillimbury, their neutral status should revisited.

As mentioned, the changes identified in our review do not appear to have been applied through the balance of the study. We would recommend that this be followed through. We also did not test the calculations on all tables throughout all Annexes and would therefore also recommend that this be done.

Cc: Nancy Taylor, Director of Finance
Fred Horvath, Director of Operations
Tony Cannella, Director of Engineering
Dennis Hefferon
Faye Langmaid

MEMORANDUM

TO: Durham/York Project Team

DATE: **November 9, 2007**

FROM: Durham/York Consultant Team

RE: FINAL - Comments received from Clarington Peer Reviews on the Step 7 Preferred Site Report

The following provides the final Consultant Team's responses to comments received from Peer Review consultants retained by the Municipality of Clarington to review the document entitled "Draft Report – Thermal Treatment Facility Site Selection Process – Results of Step 7: Evaluation of Short-list and Identification of the Consultants Recommended Preferred Site, September 2007".

Comments Received from Steven Rowe on Main Report		
[illegible]	[illegible]	[illegible]
1	General Observation; The "Annexes" generally reflect a more comprehensive approach to data collection and analysis than is reflected in the draft "Results of Step 7" report.	The purpose of the Annexes is to provide the detailed information to support the information presented in the main body of the report.
2	Title Page: Does Clarington need express written consent to "use" this report?	Clarington does not need express written consent to review and provide comments on this report. The note on the title page is provided to ensure that unrelated third parties do not use the information in the documents for purposes other than their intended use (e.g. attempts by a real-estate agent to use the information on Archaeology provided in Annex E in connection with a real-estate transaction in the area).
3	Section 1, Introduction Why does the report refer to gasification as specific to System 2(b) on page 1-4 (1st para) when gasification (and pyrolysis) is common to both Systems 2(a) and 2(b) in the fifth and sixth bullets on page 1-3, and in the RFQ materials? (There seems to have been an evolution whereby gasification and pyrolysis were treated as specific to System 2b when the preferred Alternative "to" was first announced, whereas they are common to both systems now.)	Systems 2(a) and 2(b) are clearly described in the second and third bullets on page 1-3 namely: • System 2(a) – Thermal Treatment of Mixed Waste with Recovery of Materials form the Ash/Char. This system involves the thermal treatment (by combustion, gasification or pyrolysis) of the post diversion waste to produce electricity and heat. The resulting ash would be processed to recover metals for recycling, with the remaining ash disposed in a landfill. • System 2(b) – Thermal Treatment of Solid Recovered Fuel This system includes mechanical and possibly biological processing (composting) of the post diversion waste to recover recyclable materials and produce a solid recovered fuel (SRF). The SRF is then thermally treated (by combustion, gasification or pyrolysis) to produce electricity

Comments Received from Steven Rowe on Main Report		
		and heat. The residues from the processing of the residual waste and ash/char from the thermal treatment process would be disposed in a landfill. In both systems it specifically states that "thermal treatment" includes combustion gasification and pyrolysis. This description of the systems is consistent with the information provided in the consideration of "Alternatives To". The information presented in the RFQ is also consistent with this description of the systems. In the sentence in question namely: *"Many of the technologies that could be used to thermally treat the solid recovered fuel (e.g., gasification) in System 2(b) are regarded as "new technologies", with active research and development, but are less proven than the System 2(a) technologies that are currently available to combust residual waste."* The term "gasification" is used as an example and in no way implies that there has "been an evolution whereby gasification and pyrolysis were treated as specific to System 2b when the preferred Alternative "to" was first announced, whereas they are common to both systems now".
4	The preferred site, at 12.4 ha, is smaller than the 13.7 ha specified on page 1-7 for a site with all required infrastructure and buffering within its boundaries. In Appendix E to Annex H ("technical memorandum on Facility Site Size"), however, the minimum site size is indicated as 7.3 ha plus stormwater management (around 1 ha) – a total of around 8.3 ha. In terms of the earlier Step 1-5 process this could mean that some small sites were missed because prospective "willing sellers" were told that the minimum size is 10-12 ha. This appendix provides quite a lot of information on configuring the facility within each site and provides concept plans. This information could have been more effectively applied in the actual site evaluation and comparison. For example the 1 km circle used for the land use and air quality analyses is centred on the centre of the site and not on the perimeter or the potential location of the facility as set out in this Section. Also, this material states the portion of Clarington Site 05 south of the watercourse is "unusable" for the facility. Presumably this portion of the land could have been severed and disposed of separately, and yet the cost of the entire acreage of the site is utilized in the cost comparison.	The Step 1-5 process to identify willing sellers included a Request for Expressions of Interest (REOI) which identified a conservative site size of 10-12 ha as being the ideal size for a "stand alone" facility with all required features and infrastructure accommodated on the site as well as allowing for adequate on-site buffer zones and set backs. The REOI went on to say that a basic facility could be accommodated on 8-9 ha and further went on to say that if proponents had a site smaller than described, but with potential for sharing infrastructure, buffer zones, or other features with neighbouring property, then those sites could also be submitted for consideration. Accordingly, the intended purpose of identifying a site size requirement (i.e. sufficient capacity) was conveyed. During the short-list site evaluation process, in order to compare the sites, we used a conceptual plan prepared by Ramboll consultants to more accurately determine site size requirements. We noted that Ramboll's plan indicates a size of about 9 ha to accommodate all features with a moderate buffer zone from the building perimeter of approximately 60 m. The calculations based on the Ramboll concept plan indicated firstly that the building footprint requires 3.1 ha and secondly the minimum required site area excluding the stormwater management facility and with no buffering requires 7.3 ha. The total of 8.3 ha, which

Comments Received from Steven Rowe on Main Report		
		includes the stormwater management facility of 1.0 ha, but still with no buffer zone, was then compared with the actual site size to determine surplus area at each of the sites. This surplus area was then used to assess advantages and disadvantages of each of the sites relative to one another. For example, as a rough calculation a site size of 13 ha would provide a buffer zone of approximately 90 m from the building perimeter. Accordingly, the larger site of 13 ha, providing a buffer of 90 m, is advantaged in this regard over the 9 ha site with a 60 m buffer. Given the imprecise nature of the calculation of building size, infrastructure requirements, buffer zone needs, etc, up until the actual site and vendor are determined we feel that the estimated numbers we have used throughout the siting process are consistent and will not have led to the exclusion of any sites because of size. The methodology chosen was to estimate the cost of purchasing land offered by private sellers on the basis of the size of the parcel offered. The possibility of severing unused portions and selling it off at some future date was not considered as there is significant uncertainty regarding the ease with which this could be accomplished and the price that could be realized in such a sale. In response to this question from the reviewer, the implications of selling off the unused portion of Site 5 are considered in a cost sensitivity analysis discussed below.
6	Table 3.1, Evaluation Criteria: The "considerations" included in the circulated evaluation criteria for Step 7 have been replaced by the "rationale" in the Step 7 Report.	Further discussion with the reviewer is required to confirm what is meant by "circulated evaluation criteria"
7	The "rationale" under "Compatibility with Existing and/or Proposed Land Uses" mentions a need for rezoning when the evaluations under this criterion state that public uses are generally permitted in all zones (though I understand Clarington staff consider rezonings to be required for this facility on sites in that municipality). The land use profile of the East Gwillimbury site in the Annex does not discuss the Greenbelt Plan.	The EA documentation to be submitted to the Minister will include a discussion of the Greenbelt Plan as part of the land use profile.
8	There is potential for double counting between the "Compatibility" and "Residential Areas" criteria.	As the evaluation approach was qualitative in nature the risk of double counting generally does not apply. A qualitative process allows for the evaluation to account for, discount and therefore avoid double-counting. Where necessary, this consideration can be documented and explained in the evaluation text.
9	There appears to be a conflict in the rationale for the Institutional Facilities criterion (proximity a bad or a good thing?), though this appears not to be an issue in the actual site comparison.	We do not consider this aspect to represent a conflict but rather the reality that an opportunity may exist for creation of a district heating or distributed energy arrangement which could be consistent with some municipal policies and the overall concept

Comments Received from Steven Rowe on Main Report		
		of sustainability.
10	The haul cost analysis is based on savings from the existing costs of haul to Michigan. This is not a valid "base line" because this option will no longer be available (just as the overall cost evaluation is not done in relation to the cost of landfilling in Michigan). The evaluation should be based on actual costs.	The haul cost analysis was based on the assumption that waste would be hauled and disposed in remote landfills located in southern Ontario.
11	Acquisition costs for Clarington Site 1 and East Gwillimbury Site 1 are rated at zero because they are owned by Durham and York Regions, respectively. This is inappropriate because there would be an opportunity cost to the public purse of "losing" either of these sites – they still have value that should be reflected in the site comparison.	The methodology chosen was to not include the opportunity cost of the public sector sites. In response to this question from the reviewer, the implications of including an opportunity cost for the public sector sites are considered in a cost sensitivity analysis discussed below. Peer reviewers have raised several points with respect to the estimated land acquisition costs included in the Total Site Specific Capital Costs. In particular, these points were: • That a portion of the Clarington 05 site is not required for facility development and that this 13.4 ha portion of the property, could be sold off and thus reduce the lower cost estimate for acquisition of the site from $3.4 million to $1.7 million. • That an opportunity cost be assigned for the value of the publicly owned Clarington 01 and East Gwillimbury 01 sites. For this higher cost estimate, the cost of the Clarington 01 site is estimated at $1.8 million. Because acquisition was not required, an estimate for the land price at the East Gwillimbury 01 site was not developed. If the Clarington higher land price of $60,000/acre were assumed, the East Gwillimbury site would have a value of $1.7 million. With these changes in land prices the comparison of capital costs are summarized in the attached Table 1. In summary, even with taking into consideration, the points regarding land prices raised by the peer reviewers, the overall findings with respect to the capital cost criterion do not change.

Comments Received from Steven Rowe on Main Report		
	Comment	Response
12	Operational cost and capital cost "advantages" and "disadvantages" are treated as equal when there is no basis for comparing them. Suggest that these costs be "present valued" so that they can be compared together, or at least consistently.	The Approved EA Terms of Reference does not specify that capital and operating costs be combined in "Present Value Analysis" so this was not done. The Approved EA Terms of Reference does not specify that capital and operating costs be combined in a "Present Value Analysis" so this was not done. In response to this question a present value analysis was done utilizing the Site Specific Capital Costs from Annex G Tables 3.9 & 3.10 and the Overall System Operating Cost Savings presented in Tables 3.12. The Haul Cost Savings analysis for the 150,000 tpy facility was selected as this is the most likely size for the facility given that the Dongara facility is currently under construction in York Region. It is also noted that the Overall System Cost Savings used in the analysis incorporate a updated set of numbers as a minor error was identified in the underlying calculations of Haul Cost Savings. This arithmetic error did not have any effect on the overall findings presented in Annex G. The analysis was performed over a 20 year operating time frame assuming constant 2007 price levels and using a real (i.e., exclusive of inflation) discount rate of 4%. The results, summarized in the Table below, confirm that the Clarington 01 is preferred to the other sites under both the "Lower" and "Higher" Site Specific Capital Cost Assumptions. Present Value of Lifecycle Costs and Savings ($ X 1,000) (Savings +ve & Costs –ve)

	CL 01	CL 04	CL 05	EG 01
Lower Site Specific Capital Costs	**23,308**	**21,610**	**20,455**	**22,750**
Higher Site Specific Capital Costs	**19,774**	**14,163**	**15,760**	**15,471**

13	Operation and maintenance costs include cost of transportation of ash to a landfill, but the landfill location is not known.	The cost to dispose of ash is included in the estimated facility operating costs presented in Table 3.11 of Annex G. Although the specific site for disposing of these residues has not been identified yet, a variety of options for disposing of these residues do exist (e.g. licensed private sector landfill sites). The estimated costs presented in Table 3.11 include a provision for haul to one of these sites.
14	While complexity of required approvals and agreements was in the TOR, there is a question as to whether this represents an environmental effect under the EA Act.	The consideration of legal aspects such as these are considered to fall within the auspices of the broadly defined environment as required by the Environmental Assessment Act. Through the process to date including preparation of the EA ToR and completion of the EA, the application of this criterion has not been questioned by the public nor commenting agencies. It has, however, been identified as a lower priority compared to other

Comments Received from Steven Rowe on Main Report		
		categories of the environment.
15	Net effects analysis description on page 3-6: The draft Step 7 report states that the net effects analysis was initially done based only on available data, and yet it is clear from the annexes that the work was more sophisticated than that (e.g. full site surveys in the natural heritage report). The Step 7 Report should provide a more accurate description of the process.	The modeling and calculations undertaken as part of the analysis was predominantly based on secondary data sources. Otherwise, limited field reconnaissance is referenced. These field studies were not considered to be sophisticated compared to studies that will be completed in the future to confirm the advantages and disadvantages to the environment (as required by the EAA) and environmental protection provided by the preferred site (as required by other legislation such as the EPA and OWRA).
16	What mitigation measures were considered? Table 4.1 (page 4-12) suggests that there were none – so why describe it as part of the process? The annexes are also very weak on systematic consideration of mitigation (e.g. net effects re: archaeology).In other areas this is probably at least partly a function of the lack of information on the preferred vendor/technology.	The consideration and application of mitigative measures where applicable will be more clearly outlined in the EA documentation to be submitted to the MOE.
17	Why is the description/definition of advantages and disadvantages on page 3-6 different from the descriptions in the Annexes (e.g. Table 2-1, page 2-2 of Annex "A")?	We acknowledge that the description is different between the main text and annexes. However, having reviewed both are of the opinion that the intent of a relative site comparison is achieved by both. The inconsistency will be rectified in the final documentation of this step.
18	Overall I believe the established approach in identifying and rating environmental effects first followed by application of tradeoffs and interpretation of effects in terms of advantages/disadvantages is clearer, more traceable and more consistent with the EA Act than combining all of this into a single operation.	Please be advised that the approach we took did involve identifying and rating environmental effects first followed by application of tradeoffs and interpretation of effects in terms of advantages/disadvantages. In the draft EA document, to be prepared, the text will be modified to provide a more comprehensive description of the actual approach applied.
19	In the Table 3-2 description: For "Advantage", if impact is "manageable", does that mean it is mitigable and that there would be no net effect?	In the more comprehensive description to be provided in the draft EA document, the meaning of what constitutes an advantage and disadvantage will be more clearly described.
20	Table 4.2 shows "neutral" advantage/disadvantage arising from a balance of advantages/disadvantages, which cannot mean there is no benefit or impact. Also, a cost range is shown as "neutral" when this should strictly be applied to zero cost.	In the more comprehensive description to be provided in the draft EA document, the trade-offs between the advantages and disadvantages will be fully described. Where a "neutral" rating has been applied, additional text will be supplied to describe the actual trade-offs made.
21	For "disadvantage" and "major disadvantage", if mitigation measures are required should this not be used to derive a net effect before a ranking is assigned, rather than using it to identify an effect?	The intent in this regard was to establish that those sites that were more reliant on mitigative measures for a particular effect under consideration exhibited, in relative terms, a disadvantage compared to those sites not requiring mitigation. The net effect, after mitigation, was also factored into the determination of whether or not a relative advantage or disadvantage existed.
22	Is ancillary infrastructure considered only under	The nature of the available infrastructure is provided as an

Comments Received from Steven Rowe on Main Report		
Comment		Response
	"major disadvantage"? Does the ancillary infrastructure not form part of the undertaking?	example in Table 3.2. The word "ancillary" is not used in the examples provided in Table 3.2. Perhaps further clarification of this comment is required with respect to the word "ancillary".
23	In the Annex A page 2-2 description: What is "ability" or "inability" to meet the evaluation criteria when the criteria include no values, ranges or thresholds?	In the more comprehensive description to be provided in the draft EA document, the meaning of what constitutes an advantage and disadvantage will be more clearly described.
24	What is the difference between "ability" and "significant ability" / "inability"? If something is not significant, should it be considered?	In the more comprehensive description to be provided in the draft EA document, the meaning of what constitutes an advantage and disadvantage will be more clearly described.
25	In the methodology description: Page 3-7, 3-8: Identification of the preferred site involves an implicit weighting system. While the results of a public survey are provided, the priorities of the study team (other than "professional judgement") and the application of this system is not described.	We disagree with the impression that a weighting system was applied. Priorities were applied in a qualitative sense. In the more comprehensive description to be provided in the draft EA document, the trade-offs between the advantages and disadvantages will be fully described.
26	Page 3-8 and Page 4-18: There is no demonstration that the levels of advantage/disadvantage identified reflect equivalent increments or magnitudes of environmental effects for different criteria and indicators, and yet they are treated as being the same or interchangeable (see above re: capital and operating costs). For example, for Clarington Site 1 a "disadvantage" for stack emissions/ meteorology cancels out an "advantage" in terms of haulage emissions (a positive impact??), to result in a "neutral" overall finding. Impacts are additive and should not be used to cancel each other out to give the appearance of no impact. Net impacts should be identified before tradeoffs are applied.	In the more comprehensive description to be provided in the draft EA document, the trade-offs between the advantages and disadvantages will be fully described.
27	Page 3-8: How was best available technology considered? (page 3-8)	Best available technology was considered as technology capable of achieving, and in some cases exceeding, all regulatory requirements.
28	Page. 3-8: The proponents appear to be responding to the negative aspects of complex computer – generated comparisons by reverting to an essentially intuitive approach with very little in the way of traceability. While much of the work in the Annexes is quite comprehensive, there is often no clear linkage to the tradeoffs in the comparison.	In the more comprehensive description to be provided in the draft EA document, the trade-offs between the advantages and disadvantages will be fully described. In this description additional relevant information from the Annexes will be brought into the Main Report.
29	Page 3-11, second bullet, again, what mitigation measures were considered in assigning potential effects? None are specifically identified in the report.	The consideration and application of mitigative measures will be more clearly outlined in the EA documentation to be submitted to the MOE.
30	Page. 3-11, What was the process for obtaining information from technology vendors?	Information on facilities and associated contact information was obtained from directories such as:

Comments Received from Steven Rowe on Main Report		
		• 2005-2006 municipal waste combustion in the United States, Yearbook and Directory; and, • International Solid Waste Association (ISWA), Working Group on Thermal Treatment of Waste, Energy from Waste State of the Art Report, 5th Edition 2006 In addition, representatives of several key facility owner/operators (potential vendors) were contacted by email to request additional specific information that was not available in the referenced directories.
31	Page. 3-12 – What is the undertaking as understood at present? Is it a facility expanding from 150,000 to 250,000 to 400,000 tpa? – if so should say so.	The size of the proposed facility is explained in Section 3.4.1. In summary, "the initial plan is to build a facility in the range of 150,000 tpy to 250,000 tpy to satisfy the immediate and short-term need, but to seek EA approval for the larger 400,000 tpy facility, should this expansion be required within the planning period". The nature of the undertaking, for which approval is being sought, will be more clearly specified in the EA documentation to be submitted to MOE.
32	Page 4-18 All other things being equal (which they are not), combining a "neutral" and an "advantage" to result in an "advantage" (for example) is a misrepresentation of the data and would distort site comparisons.	Actual trade-offs were made during the evaluation process and these will be better documented in support of the summary table 4.6.
33	Table 4-1, Application of Criteria Air quality Based only on regional level data - still to be verified based on local air quality monitoring.	Comment noted.
34	Water quality: The different environmental effects arising from a location 600 m vs. 15 m from a watercourse should be explained, along with their significance considering mitigation.	Temperature is a major concern in regard to fish and their habitat, especially where the discharge is to a cold water stream. Urbanization causes temperature increases in stormwater and ponds can compound this increase since open water will tend to acclimate with the ambient air temperature. There are a number of reports which indicate that urban development end-of-pipe stormwater facilities increase the temperature of water before it is discharged to the receiving waters (Beland, 1991, Galli 1990, Schueler 1992). In cases where there is a lengthy outlet channel or ditches from the stormwater facility to the receiving watercourse. The shady channel or ditch will help minimize temperature increases of the water discharged to the receiving watercourse. Therefore, the lengthy convey channel or ditch is more beneficial than the short distance travel length.
35	Environmentally Sensitive Areas:	The indicator utilized refers to the identification of potential for these species to be impacted by this proposed development.

Comments Received from Steven Rowe on Main Report		
	Why would species of conservation concern that are highly unlikely to occur on the site - Bushy Cinquefoil (occurs on lake beaches), Red-shouldered Hawk (dense deciduous forest) contribute to identification of environmental impact?	There is evidence to suggest that these species are known to exist in the area and therefore, may be potentially impacted by this development. Again in a relative comparison of sites, a site without this potential is advantaged over another with potential impact.
36	If Annex "C" identifies an effect as "minimal", why is this translated as a "disadvantage"?	In a relative comparison, a "minimal" impact is disadvantage over a site where there is no potential impact identified.
37	Why do sites identified as having "minimal" natural environment effects in Annex "C" (e.g. Clarington 04, East Gwillimbury 01) have different advantage/ disadvantage ratings?	There is no reference in Annex C to either Clarington 04 or East Gwillimbury 01 as having "minimal natural environmental effects". The wording minimal has been used specific to certain features evaluated, however, has not been utilized as outlined in the comment above. Each feature has been assessed on a number of different indicators, some of which identified minimal impact, however the overall evaluation and application of advantages and disadvantages reflects all of the indicators applied not just a specific feature assessed.
38	What disadvantages do hazard lands pose if the facility can be accommodated on the rest of the site? If not, shouldn't the site be rejected?	The presence of hazard lands on-site present a relative disadvantage to other sites without hazard lands regardless of whether the remainder of the site can accommodate the facility. The consideration of hazard lands is more than an land area development consideration but also includes the potential need for monitoring of impact to the area during construction and operation.
39	Land Use Compatibility: Shouldn't the proponents know whether a ROPA would be required for East Gwillimbury Site 01?	At the time of the preparation of this report, the Region of York was not willing to comment or provide clarification as to whether a ROPA would be required on the East Gwillimbury Site 01.
40	Why is a site area of 11.5 ha or 12.4 ha seen as an advantage when 13.7 ha was the optimal size, now apparently reduced to 8.3 ha?	Please see the response above under comment # 4.
41	1 km distance and land use proximity is calculated from the centre of the site, not the edge – potential for inconsistencies depending on where the facility is ultimately located within the site – especially when the site size annex identifies a conceptual location for each site.	Given that this is a relative comparison, the application of a 1km radius from the centre of the site has been applied consistently around each site and therefore the relative comparison holds true. The potential configuration of the facility on the site, has little impact to the application of this particular criterion given the size of the facility itself and the distance within which potential impacts were identified.
42	Archaeological: Advantages/disadvantages with mitigation should be more clearly described in the Step 7 Report and the Annex – land is designated for development, effects are mitigable.	The Report and Annex will be reviewed and the description enhanced where necessary. The mitigative measure applied will be determined based on the results of the Stage 2 Archaeological Assessment which will be completed on the preferred site. The landuse designation does not have any impact on the potential for mitigation. It will be the ultimate determination of archaeological resources that will dictate the potential for mitigation.
43	Economic / Financial and Technical:	The available facts regarding potential heat loads are presented

Comments Received from Steven Rowe on Main Report		
	Heat load sales and usage are dealt with quite well in the Annexes but are still uncertain, cannot be known at this time – how to account for uncertainty in assigning advantages / disadvantages? Also uncertainty re: air quality, ash haul	in the documentation and the associated uncertainty is identified. A potential revenue stream from the sale of heat has not been included. If it were included, the operating cost advantage identified for the Clarington 01 and 05 sites would be enhanced. The cost to dispose of ash is included in the estimated facility operating costs presented in Table 3.11 of Annex G. Although the specific site for disposing of these residues has not been identified yet, a variety of options for disposing of these residues do exist (e.g. licensed private sector landfill sites). The estimated costs presented in Table 3.11 include a provision for haul to one of these sites.

Comments Received from SENES on Main Report		
44	Page 1-5 of the main report - The initial screening process ensured that unsuitable areas, such as significant natural features, agricultural lands and existing residential areas would not be considered further in the siting process. Later in page 1-10, the report says that One (1) site is located near Natural Heritage Features including; Areas of Natural and Scientific Interest (ANSI), Environmentally Sensitive Areas (ESA), Wetlands, community parks and residential areas and was therefore removed from further consideration. This undermines the effectiveness of the initial screening process in removing sensitive sites. The process is not explained adequately in the Step 7 and Step 1-5 Reports. The question is "Could it be possible that potentially suitable sites have been excluded through such a qualitative initial screening process?"	This observation reflects the fact that site selection processes narrowing the area of consideration from a regional to site specific level of detail rely on data that initially can be efficiently applied at a regional scale (recognizing that some site specific anomalies may not be specifically represented) followed by the consideration of more detailed site specific data as the area of consideration is narrowed. At each level of consideration, previously applied considerations are reviewed for the remaining areas based on the more detailed data and adjustments made as required. This is an established and accepted practice in site selection that recognizes the level of detail that may be afforded to and obtained from various data sources.
45	With respect to separation of siting and competitive process, the report on Step 1-5 says: "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)." We do not see any significant benefit in the completion of siting activities in advance of a formal RFQ/RFP process for technology(ies). Conducting the siting process in the absence of technology-specific information, particularly the information regarding the conditions of Certificates of Approval for emission control levels, HHRA and other technical studies, introduce a large uncertainty in the comparative site analysis. Would a fair competitive process, which is an administrative issue and should be dealt with appropriately in a separate process, justify the shortcomings of the analysis due to lack of technology-specific information?	With respect to facility siting, the requirements, properties, effects and impacts of all thermal treatment technologies (i.e. combustion, pyrolysis and gasification) are all similar. Therefore, the site can be selected prior to choosing a specific technology and vendor. This fact was also recognized by MOE when they established Regulation 101/07. The premise for this "Environmental Screening Process" is that modern EFW facilities are expected to have minimal environmental effects and, therefore, such facilities can be safely located on sites selected by proponents outside of the historic EA process. One of the benefits of selecting a site in advance of the RFP process is that firmer prices, and sounder technical proposals will be obtained if these proposals are based on developing a facility on a specific site selected by the Region.
46	Further, in our understanding, the separation of technology selection and site selection processes will mean that the site will selected based on generic criteria and impact assessment. The site specific information will be used only to confirm whether the selected site	With respect to facility siting, the requirements, properties, effects and impacts of all thermal treatment technologies (i.e. combustion, pyrolysis and gasification) are all similar. Therefore, the site can be selected prior to choosing a

Comments Received from SENES on Main Report		
	continues to meet the criteria. However, all sites will not be compared at this stage to select the best site and in our opinion; this site selection process does not necessarily choose the best site.	specific technology and vendor. This fact was also recognized by MOE when they established Regulation 101/07. The premise for this "Environmental Screening Process" is that modern EFW facilities are expected to have minimal environmental effects and, therefore, such facilities can be safely located on sites selected by proponents outside of the historic EA process. One of the benefits of selecting a site in advance of the RFP process is that firmer prices, and sounder technical proposals will be obtained if these proposals are based on developing a facility on a specific site selected by the Region.
47	The report for Steps 1-5 indicates that the areas from initial screening process consist of primarily industrial and commercial land uses, located away from city centres and suburban communities. This statement is not accurate as some of the short-listed sites could be considered as close to suburban communities.	The referenced description will be adopted in future documentation to reflect the fact that some areas may abut some sub-urban communities as set-backs were not applied to constraints at Step 2. It is noted however that this observation is consistent with the intent of the Step 2 area delineation exercise.
48	The capital cost allocation for infrastructure is associated with a large uncertainty as it is evident from the Low-Cost and High-Cost estimates in the cost report. In addition, the cost of water connection may be overestimated (water requirements and the pipe size) while the cost of 44 kV transmission line might be underestimated. All these add to the large uncertainty associated with the estimated cost at this level. The base capital cost estimate for the plant was reported in the order of $200,000,000. At the planning level, in the most optimistic scenario, this cost has at least 30% contingency, which translates to $200 Mil ± $60 Mil. The difference in capital infrastructure cost estimates for various sites have no statistical significance with respect to overall capital costs and therefore infrastructure costs should not be used as criterion for site selection at this stage.	The cost information presented is consistent with the criteria and indicators set out in the EA Terms of Reference and accompanying Background Documents. Table 2-3, Step 6 – Evaluation of Short List and Identification of Preferred Durham/York Site, of the EA Terms of Reference supporting Background Document 2-3, Consideration of Alternative Methods of Implementing the Understanding identified the "indicator" for the capital cost criterion as follows: "Site development costs, including: infrastructure required, upgrades to existing infrastructure (roads, sewers, etc.) property acquisition and possible site remediations." To do what the reviewer suggests - "Infrastructure costs should not be used as a criterion for selection at this stage" would not be consistent with the approved Terms of Reference.
49	Use of word "advantage" creates a lot of confusion in comparative study. While the intention is to compare the advantage of one site or process or procedure, over another, it may tend to imply the improvement in an absolute sense. The use of "Advantage" for Site Clarington 01 under the heading "Public Health and Natural Environment" may imply that the construction of the incinerator improves the environmental quality surrounding that site vis-à-vis Clarington 04, which maybe Neutral!!!!! In our opinion, the sites should have been ranked using numerical weighting factors rather	Actual trade-offs were made during the evaluation process and these will be better documented in the various discussions and tables. We disagree with your opinion on the use of the quantitative methodology. During the preparation of the EA Terms of Reference, the public was consulted and ultimately a qualitative methodology was specified. The rationale for this decision was that qualitative methodologies are more easily understood by the general public and have been successfully used

Comments Received from SENES on Main Report		
	than qualitative comparison criterions and these weighting factors should have been established early on through public opinion polls and information sessions.	in a number of complex, comprehensive individual Environmental Assessments (EA's). The use of quantitative methodologies in complex, comprehensive EA's has not been as successful.
50	The major criteria considered for Evaluation of Short-Listed of Sites were: Public Health and Safety and Natural Environment Considerations Social and Cultural Considerations Economic/Financial Considerations Technical Considerations Legal Considerations The last three criteria (3, 4, and 5) are closely related to each other. For example, larger distance to source of service water with major road crossing would lower the rating of site in all these three categories and this ends up triple-counting the same issue. (Compatibility with Existing Infrastructure; Design/Operational Flexibility; and Legal Considerations) in the overall process and thereby diluting the importance of Public Health and Safety; and Natural Environmental Considerations. Further, in our opinion, the selected criteria are not appropriate for evaluation of sites. Firstly, Public health and safety and Natural environment are two different issues and need varying weightages. Further, issues relating to traffic, noise, air quality, odour, public nuisance etc. would be of much greater importance in the eyes of the community relative to technical considerations or economic issues. Also, cost and legal considerations have no role to play in selecting a site because public does not care for either "the legal permitting issues are more or less" or "something costs more or less".	The criteria and indicators for these five categories of criteria were all developed as part of the approved EA Terms of Reference. Details on these specified criteria and indicators together with the rationale for these indicators are provided in Table 2-3, Step 6 – Evaluation of Short-List and Identification of Preferred Durham/York Site, of the EA Terms of Reference supporting Background Document 2-3, Consideration of Alternative Methods of Implementing the Understanding. As the evaluation approach was qualitative in nature the risk of double counting generally does not apply. A qualitative process allows for the evaluation to account for, discount and therefore avoid double-counting. Where necessary, this consideration can be documented and explained in the evaluation text.

Comments Received from AVIEC		
51	Meteorological Data The study uses two meteorological stations for wind speed and direction (Port Cobourg and Buttonville). Have these two stations be checked to confirm that they are appropriately sited either by the project team or through consultation with MOE?	The Buttonville airport site has been previously reviewed by Jacques Whitford and the wind rose from this station was also compared to Pearson Airport, which showed similar trends. The Port Cobourg meteorological tower siting was not specifically reviewed, however, the wind rose from this site was compared to Toronto Island Airport and the stations show similar trends (i.e. more prominent westerly and easterly winds relative to northerly). The wind roses from both of these sites were obtained from the National Climactic Data Centre and the data has been QA'ed by this organization. The purpose of displaying these wind roses was to examine if there were discernable differences in the winds in the region of the Clarington area versus the East Gwillimbury area. Buttonville and Cobourg wind data will not be used in the dispersion modelling assessment of the preferred site.
52	How will the meteorological data collected at each site be compared against the existing meteorological stations? Will this be done on long-term data for the other two stations, or will this be done by comparing data for the same time period?	The data collected on each site will be compared on both a short-term basis (the same time period as the on-site measurements) and on a long-term basis to the existing meteorological stations. The long-term data (on both an annual and seasonal/monthly basis) from the existing stations will be compared to the site-specific data to examine how closely the measured data matches long term trends. Other available meteorological data will also be included in the analysis.
53	The Port Cobourg station shows very distinct east-west wind trends? Has a sensitivity assessment been done to determine if the predicted maximum impact areas change as a result of this trend?	The data from the Port Cobourg and Buttonville stations were only used to qualitatively assess if there were discernable differences in the winds in the Clarington area versus the East Gwillimbury area. The air quality/HHRA screening assessment that was previously conducted placed the receptors used in the exposure assessment at the location of the maximum ground level concentration (regardless of direction), and thus conservatively ignored wind directionality. The site specific air quality assessment that will be conducted on the final site will utilize meteorological data collected at the site, and the directionality of the winds at the site with respect to maximum impact areas will be assessed.
54	There are other meteorological stations in the area that are maintained by Darlington Nuclear Station, Pickering Nuclear Station and the Port Hope Low	A multi-level meteorological tower is currently collecting data in the immediate vicinity of the Clarington 01-05 sites (to support a potential wind farm study), and due to its

Comments Received from AMEC		
[illegible]		
	Level Waste Office. Have these been obtained to determine if they are more appropriate than the Buttonville and Port Cobourg Stations?	location, is expected to be the most representative data for the site. Durham-York is currently contacting the proponent to acquire data from this tower. Data for the stations listed above may also be collected for use in the detailed air quality assessment of the preferred site.
55	Background Air Quality Is there a rationale or guidance for selecting the 90th percentile as the maximum background level for the criteria (NOx, PM, SO2, CO) contaminants?	The MOE typically requires that 90th percentile ambient monitoring data be added to dispersion model predictions to conservatively account for existing ambient concentrations when assessing the impact of a project plus background. The 90th percentile was therefore considered an appropriate level on which to judge the existing air quality of each region, as this is the level that would be used in the site specific assessment.
56	What monitoring for other parameters is proposed for the final site? How will backgrounds be established for all other parameters in the risk assessment and air quality assessment?	Background monitoring for dioxins (once per month), PAHs (once every 12-days) and metals (every six-days) will be conducted in addition to the continuous monitoring for criteria air contaminants.
57	Page 4-2. "..results of the site specific monitoring will be available prior to the final site selection of the preferred site". This has not happened due to timing. What evaluation will be done of the data and what changes in final site selection might occur as a result of the data collection?	At this stage, the Clarington 01 site has been put forward as the consultant's recommended site, but has not yet been accepted by Durham/York. The data from the monitoring sites will be analysed on an ongoing basis and interim updates provided to Durham/York. If the monitoring data suggests that the assessment presented in the report is not representative of actual conditions, the report and conclusions would be revised.
58	How will the background data collected at each site be compared against the existing air quality stations? Will this be done on long-term data for the other stations, or will this be done by comparing data for the same time period?	We would expect to compare the data collected at each site to the long-term data at the existing monitoring stations (on both an annual and a monthly/seasonal basis). If ambient data for the same time period from the existing stations is available from the MOE at the time of the assessment, direct (same time period) comparisons of the site data to the existing stations will also be conducted.
59	The NPRI summaries provided deal only with criteria pollutants. Has an background assessment of other pollutants been undertaken (e.g. heavy metals, dioxins and furans)?	Other contaminants were not assessed for the Potential Air Quality Impacts report, as the focus of the NPRI review was to supplement the available ambient monitoring data, which were for criteria pollutants only. Other pollutants will be assessed in greater detail during the site-specific air quality study.
[illegible]		
60	Page 3-1. Houses, parks, utilities, commercial and industrial facilities are specifically mentioned. Have schools, daycares and other "sensitive uses" as defined in the MOE D1-D6 Guidelines also been considered?	All surrounding land uses considered potentially sensitive to a thermal treatment facility were considered.

Comments Received from AMEC		
61	The air quality assessment done for the HHERA indicated that the maximum impact zones were on the order of 200 to 300 m from the site. As such, impacts would be greater at that distance than impacts at 1 km (chosen impact zone for assessment). Has a sensitivity analysis been done to see if site rankings would change if a 200 or 300 m impact zone was used?	The Peer Reviewer is directed to the Air Quality Assessment conducted as part of the Generic HHERA where the Maximum Ground Level Concentrations ranged from 300m to less than 800m from the theoretical facility. As such, in order to maintain a level of conservatism in our evaluation a 1km radius was identified to accommodate this range. A sensitivity analysis has not been completed, however, based on the way the criteria were applied we do not believe that the site rankings would change with the use of a smaller radius.
62	In previous documents the site selection criterion "capital costs, operation and maintenance costs" indicated that additional site specific mitigation requirements might be required for some sites. Why has this not been addressed in the current report?	Table 2-3, Step 6 – Evaluation of Short List and Identification of Preferred Durham/York Site, of the EA Terms of Reference supporting Background Document 2-3, Consideration of Alternative Methods of Implementing the Understanding identified "Mitigation Requirements and Monitoring Requirements" as potential indicators for the operation and maintenance cost criteria within the economic/financial category. These indicators were considered and addressed in Section 3.2.3 Mitigation and Monitoring Requirements (page 3-7) of Annex G Report on Capital, Operation and Maintenance Costs. In summary, no unique site-specific mitigation or monitoring requirements were identified and therefore no site-specific costs were included in this indicator. This finding is also summarized in Table 4.1 (page 4-1) of Annex G.
63	There is also a statement in the "Generic Human Health and Ecological Risk Assessment" that if the site specific risk assessment shows unacceptable risks that further emission reductions ("enhance the performance of the technology") could be undertaken to reduce the risk. This suggests that different sites might require different air pollution control systems with associated different financial considerations. The site specific HHERA has not yet been undertaken, nor, as noted above, have the background assessments for criteria pollutants (NOx, SO2, particulate) been completed. In addition, the background assessments for the key parameters of concern in the HHERA (e.g. dioxins and furans) have not been started. When will these issues be assessed?	The site specific HHERA will be completed for the preferred site and preferred vendor technology once selected. This will be completed in support of EAA and other site specific environmental approvals.

Comments Received from AMEC		
	How will this be undertaken and how will decisions be made given the timing of those assessments (background and site specific HHERA)? How will this be linked to the vendor RFP and selection process?	

Comments Received from SENES on Annex B		
64	General Comment: The overall site selection process fails to include the cumulative effects assessment (effects from neighbouring facilities) while assessing the short-listed sites. For example the implications of construction of thermal treatment facility at Clarington 1 close to Darlington NGS and St. Mary cement on the future development of energy park and other land-use categories has not been addressed adequately.	Consideration of cumulative effects related to air quality will be undertaken as part of the site specific air quality impact assessment in support of EA and EPA approval.
65	Annex B: Sections 2.5 and 3.1 The conceptual design of the SWM facilities must include the regional storm in addition to the 2, 5, 20, 25, 50 and 100 years storm. What was the length of modeled storm?	The length of the modeled storm was the SCS 24 hour Type II storm with a time step (DT) of 5 minutes. The Hurricane Hazel storm event will be added at the site specific stage.
66	Was the CN kept the same for post-development conditions? If so, why?	For the post-developed area, we calculated an impervious site area of 45% and the DESIGN STANDHYD was used for the developed area. For the remaining undeveloped area, the post-development conditions are still to be the same as the pre-development conditions and therefore, the CN value of 74 stays the same and the DESIGN STANDHYD was used
67	100–yr and regional flood plain mapping under existing and proposed should be outlined in the report.	We did not obtain any flood plain mapping because the process is extensive and lengthy. Floodplain mappings for the tributary of watercourses may not be available from the Conservation Authorities. This will be investigated at the site specific stage.
68	A description of topography and existing drainage should be documented.	All topography and drainage patterns are illustrated on the mapping provided in Annex B, Appendix D.
69	Why are the drainage areas under post development conditions less than those under pre-development conditions?	The 10 hectare post development drainage area is the area contributing to the stormwater pond. The remaining area is considered as pre-development conditions and was coded as such in the SWMHYMO model, to compute the total flows discharged to the watercourse. The total site area under post-development conditions is still the same as under pre-development conditions.
70	In Table 3.1: Explain calculations for permanent pool and extended detention volumes. i.e., specify requirement guidelines for % imperviousness used.	The calculation uses standard figures from the Ministry of Environment Stormwater Management Planning and Design Manual (Table 3.2), March 2003. We do have backup calculations that could be added (attached in an appendix) if required.
71	The quality control criteria for Clarington 04 must be revised to enhanced level 80% suspended solids removal especially there is a potential for airborne contaminants that are deposited into the top 10cm of the surficial soil (as outlined in Table 4-2) which could be discharged to the SWM facility. In	This would be up to the Conservation Authority (CA). The Central Lake Ontario CA and Lake Simcoe CA has set the protection levels within the watershed as "Enhanced Level" for all Short-Listed sites except for the Clarington 04 site which is set as "Normal Level". Based on the watershed study of Bennet Lake, the Central Lake Ontario

Comments Received from SENES on Annex B		
	addition, MOE design manual did not allow 70% for warm water fishery. You may wish to elaborate on why fish habitat in Bennet Creek is not as sensitive to sediment and siltation.	CA indicated the level of protection as a "Normal" requirement.
72	Table 3.3: "Quality Control Criteria". Clarington 04 was previously mentioned as having "Normal" level removal, while Clarington 05 had "Enhanced" levels. This has been reversed here. Please explain.	This is a typo. Clarington 04 has "Normal" level removal and Clarington 05 has "Enhanced" levels.
73	There is no mention of how outflows from the SWM pond will be conveyed to the water courses (i.e., through channels, culverts, existing ditches)	This will be shown at the detailed design stage of the preferred site.
74	Section 3.3 Include PTTW under Approval requirements (this is for dewatering purpose).	Comment noted. Section 3.3 will be revised.
75	Section 6 Table 6.1: This indicates the relative distance from the SWM pond to watercourses as an indicator but provides no explanation as to the environmental effect of a shorter distance. Please elaborate.	Temperature is a major concern in regard to fish and their habitat, especially where the discharge is to a cold water stream. Urbanization causes temperature increases in stormwater and ponds can compound this increase since open water will tend to acclimate with the ambient air temperature. There are a number of reports which indicate that urban development end-of-pipe stormwater facilities increase the temperature of water before it is discharged to the receiving waters (Beland, 1991, Galli 1990, Schueler 1992). In cases where there is a lengthy outlet channel or ditches from the stormwater facility to the receiving watercourse. The shady channel or ditch will help minimize temperature increases of the water discharged to the receiving watercourse. Therefore, the lengthy convey channel or ditch is more beneficial than the short distance travel length.

Comments Received from SENES on Annex C		
76	Page 1-2. The EA Terms of Reference (ToR). Why not have some descriptions of the EA Terms of Reference that are applicable to this report only. The purpose of these descriptions would be to supplement information on the decision-making process of the indicators and rationales presented in Table 1.2 at page 1-10, as well as Table 2.1 at page 2-2, and throughout the report. The following questions may help the report authors to clearly see this point.	Comment addressed in responses below.
77	Page 1-10. Table 1.2. Why was the Central Lake Ontario Conservation Authority (CLOCA) list of sensitive species (taxa would be a better word) ignored in the evaluation for the sites? Floral and faunal sensitive species on the CLOCA list, usually taxa at a local and regional level, have as much weight in EAs as those found in the Federal and Provincial lists. Also, why is the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) not mentioned at this time?	Comment noted. We are not aware of a list of regionally significant species compiled by Central Lake Ontario Conservation Authority (CLOCA), and therefore it could not be used in the evaluation process. Species of conservation concern ranked as S3, S2 or S1 or those ranked by COSEWIC or MNR as Special Concern (SC), Threatened (THR), Endangered (END) or Endangered-Regulated (END-R) that are known to occur on-site were considered under the environmentally sensitive areas and species impacts criteria.
78	Page 1-10. Table 1.2. 1st column: "Aquatic and Terrestrial Ecology Impacts". Why is the table failing to present aquatic indicators along with an aquatic rationale in the following two columns? Are the sites not relevant to an aquatic evaluation? Nothing is said. Was any effort directed at considering amphibians and reptiles, as well as mammals (other than white-tailed deer)? Was the word "wildlife" defined in the report?	In the final documentation the indicators for the criterion 'Aquatic and Terrestrial Impacts' will be corrected to include the aquatic characteristics actually considered in the evaluation. Section 2.2 and Table 4.1 clearly demonstrate that aquatic indicators were considered along with the types of considerations. The word wildlife was not defined in the report.
79	Page 2-1. Field Work. Field work dates are July 18, 19 and 20. Why field work in that time period? Was there a particular relevance to have biological fieldwork performed in that time period for this project?	Comment noted. Field work is typically conducted between mid-March and November, and the scheduling of this project happened to fall during the summer months. This time period is appropriate, as most plants are in flower, and birds and wildlife are typically active. Although this level of effort was deemed appropriate for the present exercise, more detailed fieldwork will be undertaken for the preferred alternative to fully characterise the environment to be potentially affected.
80	Furthermore, it is said "evaluation of aquatic habitats..."; "an inventory of aquatic habitats". These words provide little understanding of the work that was done. Was electrofishing performed to know whether fish are present (so that fish habitat are present on sites) or not (no fish habitat)? This is most important and has direct implications on this EA.	Comment noted. The sites were surveyed and any potential fish habitat was noted for each site. No electrofishing was performed at the sites, and the presense of fish species has yet to be determined. These watercourses or lagoons were flagged during the field survey as providing potential fish habitat. More detailed fieldwork will be undertaken for the preferred alternative to fully characterise the environment to be potentially affected
81	Furthermore, under this section, it is said that the tasks performed in the field included "calculation of	All distances and lengths of hedgerow were measured using geospatial data and GIS applications.

Comments Received from SENES on Annex C		
	the distance from the site or haul route to the areas designated as Natural Heritage Features and Areas". Was this measured with a tape?; a car odometer?; or with GIS at the office and not in the field? What was measured more exactly in the field? What could be measured in the field? It is said "evaluation of the amount of woodlands, and hedgerows". How was this evaluated exactly? From the above questions, what was done in the field? Is the next paragraph, "This included ..." does it provide any relevant information on the above questions?	
82	Page 2-1. Last line. "where possible, a handheld GPS unit was used". Were there locations with a dense forest canopy at the sites where it was not possible to receive a GPS signal?	There were no areas on-site with dense forest cover.
83	Page 2-2. "Potential net effects to the environment were identified based on the application of the comparative evaluation criteria identified in the approved EA Terms of Reference, to identify the compatibility of existing land uses ... with the proposed undertaking and potential effects on the environment. As a stand alone text, how can I understand and decide on the quality and credibility of the work if something as important as that is elsewhere than in the text where it should be? Are comments above for page 1-10 applicable here? Yes. What was approved exactly in the EA ToR? Could the text help the reader to understand what the report is intended to provide?	The following paragraph in the report and Table 2.1 specifically describe the criteria and indicators used in the subject assessment. The final documentation will be edited to include a reference that these are from the approved EA Terms of Reference.
84	Page 2-3. Table 2.2. Should the words "significant ability", "ability", "inability" and "significant inability" kept for other uses, and be replace by a less anthropomorphic term such as "characters" or "traits", even "parameters"? A site does not have ability, people have abilities.	This adjustment will be considered during preparation of the final documentation. It will not, however, change the relative outcomes of the assessment.
85	Page 3-1. Para 2 and 3. What is the status on aquatic aspects? Nothing is said. A ditch is mentioned later on the next pages.	Comment noted. No watercourses were found on-site, only a small culvert and dry ditch was found running south from the access road constructed on the site.
86	Page 3-1. Table 3.1. Rare species. Is this table well applied to the EA? Such table is assembled before fieldwork to learn what may be found in the general area, and later verified in the field whether the rare species are present or not on site. If present on site, there is a concern? Yes. Would this information be better placed in an appendix to note that the rare species in questions were noted for the general area, but not found at the site? Why would the rare species not found at the site be relevant in the evaluation of the site?	The text and tables presented in Section 3 are intended to document the study results for each site and the rationale (including process logic) for arriving at the relative site advantages and disadvantages described in Section 4. It is our professional opinion that the information presented in Table 3.1 is a requirement of the study and that the supporting text is clear on the role of this information. Whether or not it is presented in the main text or an appendix is a matter of style.
87	In addition, last sighting dates for the rare species are	Comment noted. Any species of conservation concern

Comments Received from SENES on Annex C		
	provided on MNR NHIC website and should be provided in Table 3.1. How often are these dates within the last 25 years? Is it reasonable to mention Bushy Cinquefoil if it was observed in 1914? Was there any discussion with MNR biologist regarding the above, as well as the "hidden" information for the next species written as "Sensitive Species". MNR biologist will tell you if this "sensitive species" is relevant today, or not. According to the above, was this section as presented and used in the evaluation relevant / misleading, and how, to the EA?	known to occur on or in the vicinity of the project area are noted, no matter how old the record. A field survey is then conducted to determine whether that species exists on-site. Sensitive Species generally involve those vulnerable to collection (such as herptiles). No herptiles were noted on-site, and consultation with the MNR has yet to be conducted. With regards to the relevance of the information and its role, please see response provided for previous comment on Table 3.1.
88	Page 3-2. Why 10 km, not 1 or 20 km? Is the answer presented in the methodology section, or is it found in the "approved EA ToR"?	Comment noted. Jacques Whitford typically employs a standard radius of 10 km around any site during ecological impact assessments. This practice has been accepted in past studies as suitable for the purpose of identifying potential impacts at this level of detail.
89	Page 3-3. Significant Wildlife Habitat. Does this para need to be rewritten? The word "vulverable" is not used properly. Are "roosting areas" and "migratory stop-over areas" (should say for birds?) "vulverable points"? No. There may be other aspects to the roosting and stop-over areas that make them important and vulnerable for a species life cycle, but not these as stand alone criteria. The above are rather examples for the next sentence "Significant Wildlife Habitat does not include general areas ...".	Comment noted.
90	Furthermore, considering the proximity of 3 of 4 sites being nearly adjacent to the Lake Ontario shoreline, and knowing how the Lake Ontario shoreline and adjacent land is important to migratory birds, was there any consideration / search whether the general area is flocked by migratory birds in the spring and in the fall as expected? Was there any discussion with MNR area biologists?	Comment noted. Significant topographical features (such as a peninsula) that would concentrate any migrating birds during stopover were not noted in the area. Therefore, birds are not any more likely to flock to this site than any other adjacent land. There was no discussion with an MNR area biologist due to the significant amount of suitable habitat/stopover area available on adjacent lands.
91	Page 3-3, and other pages in the report. What "deer"? Is that not the accepted common name for deer, the "white-tailed deer"? (See NHIC web site). Or was the finding in the field regarding the mouse deer? What species of "rabbits"? Why is the mammal list so short? Was the field survey restricted to visual records of whole animals, or it included remains, scats and tracks as facts to be used to determine presence of mammals at the site?	Deer is an acceptable reference made to White-tailed Deer. We presume the reviewer was trying to reference Deer Mouse in an attempt to show the presence of confusion. The field survey recorded terrestrial wildlife observations and obvious signs of wildlife (such as deer trails or beds). Clarington 01 was the only site where a terrestrial mammal species was observed (a Raccoon). Clarington 01 and 05 showed signs of deer (White-tailed Deer) trails and beds throughout some of the fields. Scat and tracks were not recorded. The lagomorph group (rabbits and hares) was meant by the term "rabbit", which was thought to be a better descriptive term than the technical lagomorph. No lagomorph species (e.g., Eastern Cottontail) was recorded on-site, however, it was

Comments Received from SENES on Annex C		
		noted that the hedgerows contained potential lagomorph and white-tailed deer browse species.
92	Page 3-3. 3rd last line. "wood" is referring to what?	Comment noted. Wood is referring to a wood palate or planks covering the hole located in Clarington 01.
93	Page 3-4. 1st para. Is the "the drainage ditch" connected to a watershed or is it a swale? Could we provide more aquatic information on the ditch? What is the CLOCA status of this ditch? How many small mammal species was seen while walking gently near the ditch?	Comment noted. The drainage ditch is not connected to the local watershed and is therefore not ranked by CLOCA. No small mammal species were noted on-site or within the vicinity of the ditch.
94	Page 3-4. Clarington 01 – Conclusion/Summary. What is the status on the aquatic aspects? Is the information provided allows for an evaluation in the EA? Are birds not wildlife?	Comment noted. No watercourses are located on Clarington 01. Birds are a form of wildlife, but due to the mobile nature of birds, the impact from the loss of habitat is minimal owing to the amount of suitable habitat still available in the area. Birds will be displaced during the construction phase, but as long as clearing is avoided during the nesting season, there should be little or no effect on the local bird population. This would be addressed during the evaluation of the preferred alternative.
95	Page 4-2, Table 4.1 (also applicable to Table 5.1). In consideration for the questions raised above, some of which being applicable to all sites described in the report (questions from pages 3-1 to 3-4 above), what are the changes to be made to table 4.1? Is the table row regarding "species of special concern" not simply showing "ADVANTAGE" in each column? On the next row, "Distance from site…", why not using 3 km as normally done in EAs, instead of 10 km? What is the scientific basis for a 10 km radius? Why is the "Hazard Lands On-Site" or the "Floodplain On-Site" called a "DISADVANTAGE"? Why hazard lands and floodplain areas would disqualify a site from being selected? Usually, these features are incorporated with the design of the undertaking, allowing areas for tree compensation, rehabilitation, and therefore seen as an advantage, not disadvantage.	With regard to what constitutes an advantage or disadvantage for each site under each criterion, it should be understood that the determination is in relative terms between sites based on the full slate of indicators per criterion. We disagree with the reviewers observations on whether or not the presence of hazard lands or floodplain on-site is a disadvantage. Irrespective of the natural or ecological characteristics of these features, where possible, their disturbance is typically avoided as part of planning and land development processes.
96	Page 5-1. The three statements "this site is well suited given the lack of ….waterbodies…". Could we not address early in the text the fact that Lake Ontario is at a leg stretch from sites Clarington 01, 04 and 05? Would a reader not feel at odd with these conclusions?	These statements will be modified in the final documentation to read lack of watercourses on or abutting the property.
97	Table 5.1. See comments for Table 4.1.	See response to comments on Table 4.1 above.

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98	The dates of traffic counts undertaken by URS in Clarington were not specified (may be June 2007 as specified for similar traffic counts undertaken in East Gwillimbury);	The counts were undertaken in June 2007.
99	The lane configuration shown in Figure 3-5 for the Highway 401 eastbound off ramp intersection with Courtice Road shows two eastbound through lanes on the approach to Courtice Road, but it appears that there is only one receiving lane as South Service Road is shown on the same figure to be a basic two lane road; and	The current lane configuration of the eastbound approach at the south ramp terminal intersection includes shared through/left and shared through/right lanes. There are two receiving lanes on South Service Road one of which terminates a few hundred metres downstream from the intersection.
100	Further to the previous point, there is an inconsistency in the related analysis of this intersection. For the existing and future a.m. peak hour analysis, the eastbound approach is analyzed as one left/through lane and one through/right lane, which corresponds to the lanes depicted in Figure 3-5. For the existing and future p.m. peak hour analysis, the same approach is analyzed as one left turn lane and one through/right lane. With the very heavy volume of eastbound left turns that occur during the p.m. peak hour, it is understood that the through/left lane could function as a "de facto" left turn lane and this appears to be what was intended in the analysis. Depending on the actual number of receiving lanes on South Service Road opposite the ramp approach, consideration may be given to designating the eastbound approach lanes as left and through/right as used in the analysis. In terms of the conclusions drawn from the analysis, this inconsistency can be considered inconsequential.	The through/left lane was assumed to operate as a de facto left turn lane in the p.m. peak hour considering the amount of left turns during this peak hour (over 500 left turning vehicles per hour compared to approximately 50 through/rights). In the a.m. peak hour traffic distribution across the two lanes (through/left and through/right) is almost equal. As such, during the a.m. peak period these lanes are likely to function as currently designated: through/left and through/right.
101	Table 1.2, Page 1 – 10 Clarify the statement – "Generally, the higher the projected traffic volumes along the route, the lower the impact along the route and to the community".	With the same amount of additional traffic (site traffic), net impact to a roadway that carries higher traffic volumes (background traffic) would be lower than to a roadway with lower traffic volumes. Please refer to the example provided in the report after the statement in question.
102	Page 4-1 The opening statement in paragraph 4 seems to indicate that the social impact of more trucks and trip generation has not been considered. The overall report has the sub-title "Social and Cultural Considerations". This is confirmed by the statement under the Section "Haul Distances", Page 7.1, last paragraph. Some clarification is required in this section to substantiate the comments.	The main purpose of the traffic assessment was to provide a quantitative and qualitative comparison of the short-listed site locations based on specific criteria rather than preparing a detailed traffic impact assessment for each location under consideration. Social impacts of more trucks/trip generation associated with the future Clarington Energy Business park will be considered in detail at the next stage, should this location be selected and approved as the preferred one. This future assessment will not only incorporate anticipated future auto and truck volumes associated with the full build out

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		of the business park, but also incorporate planned and committed road improvements in the area to accommodate this growth, which have not been considered in the preliminary comparison analysis. This also applies to other sites locations, where a more detailed assessment would be required. The statement on Page 7.1 of the report confirms that the haul distances calculated for each site location were not used in determining impacts along actual haul routes, but rather for comparative purposes amongst all potential site locations provided that longer haul distances would generally result in higher overall impacts to traffic and environment.
103	5.1 Trip Generation In Tables 5.1 and 5.2, the number of packer trucks remains the same for both the 150,000 and 250,000 tonnes per year scenarios for the Clarington sites. Should this not be adjusted for the East Gwillimbury site where packer trucks will not deliver directly to the TTF for the 250,000 tonnes per year scenario?	For a 250,000 tpy TTF at the East Gwillimbury 01 site, waste will be directly hauled in packer trucks from Aurora, King, Newmarket, East Gwillimbury, Whitchurch-Stouffville and Georgina to the TTF. Waste will also be transported to the TTF in packer trucks from northern Durham Region local municipalities (Brock and Uxbridge).
104	Section 8 – "Maximum Scenario (400,000 tonnes per year)" Paragraph 3 opens with the statement: "It is also important to take into account origin of unbound trips.....". The wording then proceeds by stating that at the time of the report preparation, origin of trips associated with additional tonnage was unknown. Clarification of these apparently conflicting statements is required.	The number of additional trucks used in this analysis was based on the maximum tonnage of 400,000 tonnes per year. However, the origin of this additional waste (consequently vehicular trips) is unknown, and haul distances/tonnage-kilometres for each site could not be calculated. Thus, it is difficult to determine the preferred site location under this scenario using the haul distance criteria applied in other annual waste tonnage scenarios.
105	Section 9 – "Other Considerations" 9.3 Summary of Road Improvements Costs in Table 9.1 should be revised to reflect that road construction will be to an urban standard. This is in conformity with the Secondary Plan recommendations for "Clarington Energy Business Park". Rural cross section roads are not acceptable.	Preliminary cost estimates were used to compare the short-listed site locations utilizing existing road infrastructure and determining required upgrades. South Service Road currently has a rural cross-section, which was assumed to require an upgrade to handle more truck traffic associated with the proposed site, similar to other site locations. In the context of the Clarington Energy Business Park Secondary Plan (OPA 46), there will be a need to eventually upgrade all road infrastructure to urban design. As part of this process, there will be/should be a cost sharing agreement in place (e.g. development charge credit) between all future developments within the Clarington Energy Business Park and the municipality. Costs of upgrading/constructing the road(s) to urban design will be in the $1,000,000-$1,500,000 /km range, as mentioned in the comment. However, only a percentage of the total cost would be assumed by the subject

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		development, for reasons discussed above. In addition, there are still many unknown factors, which to some extent may affect roadways currently illustrated in the Clarington Energy Business Park Secondary Plan. These potential changes include widening of Highway 401 with possible realignment of South Service Road, improvements to the Courtice Road interchange with possible changes to the west terminus of the future Energy Drive. Recognizing that access to the subject site may change in the future, for the purpose of this assessment and for consistency purposes, only upgrades/ improvements to exiting roadway infrastructure were considered in all cases. Costs associated with future road construction/upgrades will be determined in more detail at the next stage once the preferred site selection process is completed.
106	The "Significant Findings from the Traffic Study" section should be revised on Page 10-2.	This will be addressed as part of the Traffic Impact Study in support of approval applications, as required.
107	The use of the South Service Road and Osbourne Road as truck routes to service the TTF is not acceptable in terms of the road uses envisaged in the secondary plan for the Clarington Energy Business Park. A route following Courtice Road with a southerly east/west access road north of the CP Rail corridor is the arrangement envisaged by the Municipality. Osbourne Road, for example, is promoted within the Park Plan as a local street built to an urban standard, complete with sidewalks, landscaped borders and treed boulevards, a street standard hardly conducive to heavy truck traffic.	The comparison of short-listed sites was based on specific information available at the time the analysis was completed. The detailed site-specific studies and ultimately documentation for obtaining EPA level and other approvals will consider the best available information at that time.
108	Section 2: Methodology of Study In the "Study Approach and Key Assumptions", capital costs for water supply, sanitary sewer connection, natural gas and electrical grid connections have been estimated on the basis of 250,000 tonnes per year. Given that these facilities may be supplied to the site by installation within reconstructed roads, it would seem prudent to service the site initially for the final capacity requirements of 400,000 tonnes. This is what is proposed for stormwater management facilities. Have the implications of upgrading services at a later date for the 400,000 tonne facility been assessed?	The maximum size for the initial facility is 250,000 tonnes per year. The expansion to 400,000 tonnes per year is a possibility in the future. The site itself is sized to accommodate a facility capable of processing up to 400,000 tonnes per year. The development of the required servicing infrastructure depends on both the nature of the existing infrastructure and the requirements of the facility. Neither the timing of the potential expansion to 400,000 tonnes per year, nor the nature of the existing infrastructure at the time of that expansion is known. Given the uncertainty regarding the potential expansion to 400,000 tonnes per year, the servicing infrastructure was based on the more certain capacity of 250,000 tonnes per year.
109	Table 3.1, Page 3.1	General site work includes provisions for parking and on-site drainage. The estimates for the various facility

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	Does the General Site Works cost include for parking, internal drainage, engineering design and administration costs, etc.?	components listed in Table 3.1 include provisions for the associated engineering and related administration.
110	Section 3.1.2, Page 3.1 Road improvement costs should be adjusted to reflect urban standard construction.	Recognizing that access to the subject site may change in the future, for the purpose of the preliminary assessment of potential site locations (road improvement costs) and for consistency purposes, only upgrades/ improvements to exiting roadway infrastructure were considered. Costs associated with future road construction/upgrades (urban design) will be determined in more detail at the next stage once the preferred site selection process is completed.
111	With respect to Table 3.4, Cost of Sewer Connections, it is not clear why such large diameter sanitary sewers are envisaged. Annex H – "Technical Considerations" indicates waste water discharge of 63 litres per second. A 450 mm dia. gravity sewer seems very large for such relatively small flows.	Vendors operating existing TTF provided facility design data. Vendors suggested a 300 mm diameter sanitary forcemain which without exact design criteria, was assumed to be equivalent to a 450 mm gravity sewer. The assumptions were based on a worst case scenario.
112	The costs in Table 3.4, Page 3.2 should be revisited (i.e. the 450 mm dia. sewer proposed west of Osbourne Street has a projected higher unit price than the Clarington 04 site sanitary sewer which would be constructed within existing roadways and involves an expensive bored/tunnelled crossing of the CPR tracks and a watercourse).	The unit price incorporates the total cost to install the sewer, including connections and manholes. These costs represent a greater proportion of the total cost due to the relatively short length of the sewer required for the Clarington 04 site and therefore, inflating the unit price. This cost will be refined at the detailed design stage.
113	Section 3 – "Results and Findings" We note that the requirement for sanitary sewer connections is predicated on the type of facility design proposed, i.e. 'dry' air pollution control and zero process water discharge. There will however still be a requirement for sewer facilities to accommodate staff "domestic" waste, which may be handled by a tile bed septic system as indicated.	The cost to construct a tile bed septic system would be common to all four sites and were therefore not included in the overall costs.
114	Section 3.1.3 – "Stormwater Management Costs" In the Report on Potential Water Quality Impacts, Annex B, sites Clarington 01 and 05 and East Gwillimbury 01 require enhanced levels of stormwater protection due to receiving waters being cold water fisheries. The costs in Table 3.7 are fairly similar. Has enough costing been included to allow for "enhanced protection", including outlets to receiving waters?	The initial cost estimate in Table 3.7 includes the cost to construct the stormwater pond. The function of the stormwater pond is to provide enhanced or normal protection to the respective watercourses. During the site specific design stage, we will consider the costs from the outlet to the receiving watercourse.
115	Section 3.1.6 - "Summary of Site Specific Capital Costs"	The cost to construct a tile bed septic system would be common to all four sites.

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	As indicated above, same sewage handling capability will be required. Table 3.7 should be revised to reflect the need to provide for staff "domestic" waste disposal.	
116	Appendix 'A' – Technical Memorandum On Page 4, Waste Supply Truck Capacity, it is stated that the location of the TTF facility will determine whether packer trucks will haul directly to the TTF or to a transfer station. In the "Status Quo" situation, Table 3.1.2, for example, all Clarington waste is hauled to the transfer station on Courtice Road. With the construction of the TTF in Scenarios 2 and 3, packer truckers will still haul waste to the proposed TTF. There will be an impact from the establishment of new haul routes for packer truckers if they are to haul directly to a TTF at Location Clarington 04. Clarington 05 and 01 would not alter the haul route patterns for packer trucks. It is our understanding for Tables 3.1.2 – 3.1.4 that packer truck use will still be the preferred haulage method for some areas, i.e. Brock and Uxbridge. What change in truck patterns has been allowed for if a TTF takes the place of a transfer station as the disposal area for packer trucks, i.e. Brock and Uxbridge.	In order to do a comparison of the haul costs, we only looked at the haul costs that changed due to the potential development of the TTF at a particular short-list site. We did not look at haul costs that would be the same across all four scenarios (e.g. waste from Markham will always be hauled in packers to the Miller Waste transfer station in Markham). Depending on where the TTF is located, the haul pattern of transporting waste in Brock and Uxbridge changes. For the Clarington sites, waste from Brock and Uxbridge will be hauled to the Miller Waste transfer station in Pickering (same as the status quo scenario) and transferred to transfer trailer vehicles. But in the case of the East Gwillimbury site, this waste will be directly hauled to the TTF.
[illegible]		
117	As previously indicated, waste water discharge is estimated at 63 litres per second, Section 3.2.2, Page 3.2. How was a 450 mm diameter sewer size arrived at for such a relatively low flow? Are there other considerations that have not been incorporated in the report?	Vendors operating existing TTF provided facility design data. Vendors suggested a 300 mm diameter sanitary forcemain which without exact design criteria, was assumed to be equivalent to a 450 mm gravity sewer. The assumptions were based on a worst case scenario.
118	Section 3.4 – "Road Access and Improvements" Table 3.4, Page 3.4, should be clarified to indicate road reconstruction will be to urban standard. Note also that the South Service Road and Osbourne Road cannot be used for site access.	This will be addressed as part of the Traffic Impact Study in support of approval applications, as required. Only existing road infrastructure was considered for the preliminary assessment and comparison purposes.
119	There has been comment (Steven Rowe) that a large facility on Short-List Site 5 would displace the primary entrance to the Clarington Energy Park and the western part of the "spine" through the park. There is no indication in Section 3.4 that any major road issues exist with respect to the assessment of Site No. 5.	The comparison of short-listed sites was based on specific information available at the time the analysis was completed. The detailed site-specific studies and ultimately, documentation for obtaining EPA level and other approvals, will consider the best available information at

Comments Received from TSH		
		that time.
120	Section 4.2 – "Minimum Required Site Size" The minimum required site size discussed in this section does not appear to take into account the area required for stormwater management facilities (calculated at approximately 1.0 hectare average for all sites). It does appear though that all the Short-List sites have sufficient area for all requirements although the extent of buffering requirements are not clearly defined or what form the buffering will take. We understand that Drawing No. 1-01 in Appendix E represents a footprint for a 400,000 tonne per year facility.	Table 2-1 in the Facility Site Size technical memorandum includes area required for adequate stormwater management.
121	The "Summary of Cost" Table 3.1 should be revised. The watermain size projected for Clarington 01 site is 300 mm dia. The projected size for the Clarington 04 site is 400 mm dia. In the table, the unit costs are indicated as $575/m for each site.	The unit price incorporates the total cost to install the watermain, including full engineering design, connections and valve chambers. The unit price would be slightly lower than $575/m (approximately $525/m) due to the reduction in material costs but would not greatly affect the installation costs. This cost will be refined at the detailed design stage.

Additional Comments Received		
122	From Faye Langmaid: I have just had a review of Annex B and your SWM assumptions. To begin with the assumption that you would be allowed to have the SWM pond on your own site without participating in the master drainage plan for the Energy Park is flawed. This will obviously then affect the anticipated cost estimates and also carries that flaw into the advantage/disadvantage rating. Currently you have site 01 and 05 as advantage and neutral respectively but it is based on the distance to the receiving stream; once you remove the assumption of using your own site for the SWM and participate in the two ponds shown in the master drainage plan I would think that they both become neutral.	The methodology employed in the comparison of all the short-listed sites was to assume the use of, or integration with, existing infrastructure. In the case of stormwater management there are no existing facilities on any of the sites, nor were we aware of specific facilities that had been properly designed and approved for construction in the Energy Park. Given this situation we completed the analysis documented in Annex B. We have reviewed the comment from the peer reviewer but we do not believe it provides a basis for changing our methodology as summarized above. There is therefore no need to revise the cost estimates or the allocation of advantages/disadvantages ratings. The detailed site-specific studies and ultimately documentation for obtaining EPA level and other approvals will consider the best available information on stormwater management available at the time those future studies are completed.
123	Please show transfer stations on overall traffic map in Annex F.	Transfer stations will be shown on the overall traffic map to be provided in the updated EA documentation to be submitted to MOE .
124	In Table 12.1, the East Gwillimbury site (compared to the Clarington sites) was at a disadvantage due to the 2 critical movements at Bales Drive/Woodbine Ave and at Garfield Wright Blvd/Woodbine Ave. The peer reviewer commented that this disadvantage could be mitigated with traffic lights installed at those intersections and then the overall score would be neutral instead of disadvantaged.	It would be possible to mitigate delays to site traffic by placing a traffic signal at one of the site entrances on Davis Drive (EG 01). It is important to note; however, that traffic volumes at this intersection would need to meet the signal warrant criteria in order for traffic signals to be installed (traffic volumes at the south ramp terminal at Courtice Road and Highway 401 are likely to meet the signal warrant criteria sooner). The new signal on Davis Drive will reduce delays to site traffic, although introduce additional delays to through traffic. Similarly, placing a traffic signal at Courtice (south ramp terminal) will also introduce additional delays to through traffic on Courtice Road, although some may argue that due to the fact that the off-ramp carries significantly more traffic than the arterial road, the new signals at Courtice would likely result in an overall reduction in vehicular delays at this intersection, which may not be the case in East Gwillimbury.
125	The haul distances and traffic impacts did not factor in the proposed Highway 407/401 connection.	The methodology employed in the comparison of all the short-listed sites was to assume the use of existing roads . The detailed site-specific studies and ultimately documentation for obtaining EPA level and other approvals will consider the best available information on haul routes available at the time those future studies are completed.

Additional Comments Received		
126	From Faye Langmaid: I've had a look at the report and the main focus of it is on the evaluation of the archaeological potential of each of the sites. The evaluation was done by Colin Varley who is the senior archaeologist with Jacques Whitford. Page 3-1 of the report notes that the 05 site contains an occupied house and farmstead in the south west corner of the site. An abandoned house and remains of a shed and a barn is identified in the north east part of the site. Page 4-1 of the report addresses historic resources and states that the abandoned house may be the dot on the 1861 Tremaine map. The 1878 Belden atlas showed two houses. One is indicated as being the "identified" house. The second house is on site 01 and is now demolished. There is no mention of the south in the north west section that is still occupied. LDO indicates that this house was built circa 1900. Section 4.1.2 concludes that both these buildings were occupied as late as 1973 and there is high potential for the presence of historic period archaeological resources on sites 01 and 05. What is missing from the report is any kind of cultural heritage evaluation of the abandoned and occupied house on site 05, and even the demolished house on site 01. Other than referencing dots on the maps, and the names written on the maps, there's no documented information in the report on the ownership or history of these properties. It is not listed on our heritage resources listing, which means the Municipality does not deem it worthy of preserving.	In the more comprehensive description to be provided in the draft EA document, the application of advantages and disadvantages will be more fully described. In addition, where mitigative measures and professional judgment have been utilized, this will be identified in greater detail as well to provide further traceability. The description, specific to the particular issue raised will include justification based on the available data at the time, however, with the information provided in your comments, it is likely that the major disadvantage applied originally with respect to the existing structure on Clarington 05 will be reduced to a disadvantage, similar to that on the Clarington 01 site. We have reviewed this modification with respect to the overall evaluation and have determined that it will not impact the identification of Clarington 01 as the preferred site.
127	From Laura Barta: During a review of the above mentioned Study, I was attempting to work through the Annual Unit Haul Cost detailed in section 3.3 of Appendix A- 'Technical Memorandum on Haul Cost Analysis' and was experiencing some difficulty in following the flow.	The Haul Cost Analysis was reviewed. The correct cost per truck minute is $1.79 for packer trucks and $2.06 for transfer trailers, which was used in all calculations. There is a typo in the calculation columns for the total cost per tonne minute of haul in both Table 3.3.1 and 3.3.2. This error was corrected. In addition, there was an error in the annual haul cost spreadsheets (150,000 tpy and 250,000 tpy) for the Status

Additional Comments Received		
	In Table 3.3.1 on page 13 the total per truck minute is shown as $1.79. On page 14, your calculation displays the use of a $1.58/truck minute, however the calculated value appears to be based on the $1.79. I am having the same difficulty following the flow in Table 3.3.2. On page 14 the total per truck minute is shown as $2.06, yet your calculation displays the use of a $1.91/truck minute. Can you please provide some clarification on these two tables? In Table 3.4.1 on page 15 the Annual Haul Cost for Scenario 1 – Status Quo, how is the column showing the Annual Haul Cost in ($) calculated? I have been unable to arrive at the total costs for each category by multiplying the Unit Haul Cost x Annual Tonnes x Round Trip Cycle Time. Is another factor included in this calculation? Would the same hold true for Table 3.4.2, 3.4.3, and 3.4.4 under all scenarios? I would appreciate your assistance in clarifying the above mentioned issues.	Quo, Clarington 01/05, and Clarington 04 scenarios (Tables 3.4.1 to 3.4.3). As pointed out by Ms. Barta, a line item was mistakenly excluded in the total York Region costs. This item was the annual haul cost associated with hauling waste from the Georgina Transfer Station to Green Lane Landfill. The haul cost is the same ($174,108) for these three scenarios. Please note that the costs originally reported for the East Gwillimbury 01 scenario are correct. The numbers in the annual haul cost spreadsheets were rounded to make it easier for readers to follow the flow. The following numbers were rounded in Tables 3.4.1 through 3.4.4 for both the 150,000 tpy and 250,000 tpy facility sizes: • Unit cost per tonne – minute ($/tonne-min) was rounded to two decimal places; • Annual tonnes was rounded to zero decimal places; and, • Round trip cycle time (min) was rounded to zero decimal places. Revised Tables 3.4.1 through 3.4.4 for both facility sizes were provided under separate cover. The tables incorporate the corrections with respect to the addition error and the results of rounding the calculations. Please note there was no change to Tables 3.1.2 through 3.1.5 (Summary of Systems and Quantity of Waste Transported) and Tables 3.2.1 through 3.2.4 (Total Round Trip Cycle Time). The corrected versions of the Tables will be included in Draft EA Documentation. None of the above mentioned minor arithmetic changes to the tables affect the findings or conclusions presented in the documents.

Table 1

Criteria	Indicator	Clarington 01	Clarington 04	Clarington 05	East Gwillimbury 01
Capital Costs	Site development costs, including: infrastructure required, upgrades to existing infrastructure (roads, sewers, etc.) property acquisition and possible site remediation	NEUTRAL • Site-specific capital costs range from $7.6 to $13.1 million	DISADVANTAGE • Site-specific capital costs range from $8.9 to $16.7 million	DISADVANTAGE • Site-specific capital costs range from $8.9 to $15.5 million	ADVANTAGE • Site-specific capital costs range from $3.8 to $13.1 million
	OVERALL	**NEUTRAL**	**DISADVANTAGE**	**DISADVANTAGE**	**ADVANTAGE**

Resolution as adopted by Clarington Council on May 28, 2007:

"THAT Report PSD-070-07 be received;

THAT Staff be instructed to carry out the requirements of Resolution #C-211-07 by preparing the studies in accordance with the scope of work set out Report PSD-070-07;

THAT Mr. Steven Rowe be retained to undertake the scope of work as outlined in Section 4.2 (Site Selection) and Section 4.4 (Gap Analysis) of Report PSD-070-07, and further to advise on the scope of work set out in Section 5.1 (Oversight of Technology Procurement Process) and 5.2 (Potential Environmental Effects) of Report PSD-070-07;

THAT SENES Consultants Limited be retained to undertake the scope of work as outlined in Section 5.1 (Oversight of Technology Procurement Process) of Report PSD-070-07, and further to assist with the scope of work set out in Section 5.2 (Potential Environmental Effects) of Report PSD-070-07;

THAT AMEC E&C Services Ltd. be retained to undertake the scope of work as outlined in Section 5.2 (Potential Environmental Effects) of Report PSD-070-07;

THAT C.B. Richard Ellis Ltd. be retained to undertake the scope of work set out in Section 6.1 (Impact on Clarington Energy Business Park) and Section 6.2 (Impact on Assessment Base) of Report PSD-070-07 and further to assist with the scope of work set out in Section 6.3 (Community Stigma);

THAT the Director of Finance be authorized to retain a multi-disciplinary accounting firm to undertake the scope of work set out in Section 6.3 (Community Stigma) and Section 6.4 (Host Community Agreement) of Report PSD-070-07;

THAT the Municipal Solicitor and Consulting Engineer (Totten Sims Hubicki) provide information, professional opinion, estimates and advice as deemed appropriate;

THAT the Directors of Finance and Planning Services be instructed to strike a committee comprised of Clarington staff and consultants similar in composition to the Region of Durham's committee in order to facilitate discussions related to the Host Community Agreement on a without prejudice basis to the Municipality's decision on whether to be a willing host;

THAT the Directors of Finance and Planning Services be instructed to take any additional actions or retain any additional consultants deemed necessary to ensure the Municipality has carried out its due diligence;

THAT the Region be requested to work in cooperation with Clarington Staff to improve the public engagement process as noted in Section 4.3 and the Air Shed Study process as noted in Section 5.2;

THAT the Purchasing By-Law 2006-127 be waived;

THAT the Director of Planning Services and the Director of Finance be authorized to negotiate and approve contracts with the consultants deemed necessary to complete the due diligence for the Municipality as identified in Report PSD-070-07;

THAT Council authorize the Mayor and Clerk to sign the necessary by-laws to engage the consultants and execute the contracts deemed satisfactory by the Director of Planning Services and the Director of Finance;

THAT the peer reviews and studies referenced in Report PSD-070-07 be deemed to be part of the "necessary studies" to complete due diligence as referenced in the motion approved by Durham Region Council on April 18, 2007, and that the Director of Finance be directed to recover these due diligence costs from the Region of Durham as set out in their motion;

THAT Staff report regularly to Council on the progress and findings of the peer reviews and analyses being undertaken, and the Host Community Agreement discussions; and

THAT all interested parties be notified of Council's decision including the Regions of York and Durham Councils and the Joint Waste Management Committee."

Resolution for PSD-097-07
Resolution C-455-07

THAT Report PSD-097-07 be received;

THAT Section 33 and Attachments 6 and 8A to Report PSD-097-97 be approved as the Municipality of Clarington's comments to date for the Site Selection segment of the EA process;

THAT Section 34 and Attachments 7 and 8B to Report PSD-097-97 be approved as the Municipality of Clarington's comments to date on the Generic Human Health and Ecological Risk Assessment, a component of the EA process;

THAT Clarington request that the Region provide the other reports including the Traffic Impact Analysis Archeological Assessment Air and Groundwater Monitoring Environmental Impact Study Land Use Infrastructure and Servicing Assessments with sufficient time given to the Municipality and other store view and comment prior to completing their analysis and selecting a preferred site;

THAT a copy of Report PSD-097-97 be forwarded to the Region of Durham the Region of York and Ministry of Environment; and

THAT all interested parties including the Regions of York and Durham and the Joint Waste Management Committee be notified of Council's decision.

CARRIED AS AMENDED
LATER IN THE MEETING

Resolution C-457-07

THAT the foregoing Resolution C-455-07 be amended by adding a new paragraph 5 as follows;

THAT the Region of Durham be requested to provide to the Municipality of Clarington written confirmation of the minimum guaranteed operating standard for emissions and that a 247 emissions monitoring systems is to be required in the RFP.

CARRIED

Resolutions: GPA 632-07 and C-592-07

WHEREAS the Consultants retained by the Regions of Durham York Proponent to oversee an Environmental Assessment EA to site an Energy From Waste EFW facility have identified a property located in the Municipality of Clarington as the preferred site for said EFW facility

WHEREAS such EFW facility is to be developed and operating on a date that appropriately relates with the scheduled closure of the US State of Michigan border to all Canadian Municipal residual waste shipments

WHEREAS the Municipality of Clarington believes that the Proponent of the EFW facility shall be fully responsible for all costs and risks associated with the development and operation of the EFW facility

WHEREAS the Ontario Ministry of Environment must approve the Environmental Assessment process which includes a site specific Human Health and Environmental Risk Assessment and issue to the Proponent a license to operate the EFW facility

WHEREAS it is standard practice in North America that a Host Community Impact Agreement be entered into between the Proponent and the Host Community for any type of Municipal residual waste processing facility

NOWTHEREFORE the Municipality of Clarington resolves that staff is authorized to Undertake without prejudice negotiations with Durham Region and that the Regions of York and Durham are requested to

1 Agree to protect the health and safety of the residents of Clarington and Durham by incorporating into the design and installation of the EFW facility the most modern and state of the art emission control technologies that meet or exceed the European Union EU monitoring and measurement standards

2 Agree to continue to support an aggressive residual waste diversion and recycling programs in order to achieve and exceed on or before December 2010 a 70 diversion recycling rate for the entire Region and such aggressive programs shall continue beyond 2010

3 The Host Community Impact Agreement shall address but not be limited to the following major areas of concern and requirements

- Provide24/7 emission monitoring systems easily accessible by the public
- Restrict the quantities types and sources of waste i.e. no City of Toronto Waste will be allowed
- Establish a Community Liaison Committee including local Physicians
- Provide infrastructures to facilitate economic development in Clarington
- Absorb all Clarington costs that are related to the development and operations of the EFW facility
- Compensate Clarington for any detrimental costs if any associated to an EFW facility sited within Clarington borders
- Assume all risks and liabilities associated with the EFW facility
- Provide a royalty and/or revenue sharing arrangement to Clarington for the life of the EFW facility in appropriate amounts and suitably indexed
- The project shall have no adverse impacts on payments in lieu of taxes
- No ash from the facility shall be deposited in any landfill site located within Clarington borders

4 To alleviate the concerns of the people of Clarington and Durham by acknowledging the foregoing and agreeing to negotiate with Clarington in good faith.

5 Staff is directed to forward this resolution to the Regions of York and Durham FORTHWITH

Maximum Achievable Control Technology (MACT)

Short Definition

Technology-based standards based on the best-performing similar facilities in operation.

Background

Ontario Ministry of the Environment Guideline A-7 (*Combustion and Air Pollution Control Requirements for New Municipal Waste Incinerators*) indicates that it was developed on the basis of "Maximum Achievable Control Technology," (MACT), human health considerations and the approaches taken by other jurisdictions. However, the A-7 Guideline does not define MACT.

The term MACT seems to have been originally used by the U.S. Environmental Protection Agency (EPA). The EPA originally controlled hazardous air pollutants by setting standards for each pollutant based on an individual basis according to its particular health risk. In 1990, the federal government directed the EPA to replace this original approach with one based on what technology could currently achieve, and that the technology-based approach be followed by a risk-based approach to address any remaining, or residual, risks.

Maximum Achievable Control Technology (MACT)

In 1999, the EPA adopted the MACT approach for controlling hazardous air emissions. Under this approach, the standards for each industry group are based on the emission levels that are already being achieved by the better-controlled and lower-emitting sources within the group.

U.S. MACT standards are designed to reduce hazardous air emissions to a maximum achievable degree, taking into consideration the cost of reductions and other factors. When developing a MACT standard for a particular source category, the EPA looks at the current level of emissions achieved by best-performing similar sources through clean processes, control devices, work practices, or other methods. These emissions levels set a baseline (MACT floor). At a minimum, a MACT standard must achieve, throughout the industry, a level of emissions control that is at least equivalent to the MACT floor. The EPA can establish a more stringent standard when it makes economic, environmental, and public health sense to do so.