



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		
Comment	Response	
1	<p>General Observation;</p> <p>The “Annexes” generally reflect a more comprehensive approach to data collection and analysis than is reflected in the draft “Results of Step 7” report.</p>	<p>The purpose of the Annexes is to provide the detailed information to support the information presented in the main body of the report.</p>
2	<p>Title Page:</p> <p>Does Clarington need express written consent to “use” this report?</p>	<p>Clarington does not need express written consent to review and provide comments on this report.</p> <p>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).</p>
3	<p>Section 1, Introduction</p> <p>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.)</p>	<p>Systems 2(a) and 2(b) are clearly described in the second and third bullets on page 1-3 namely:</p> <ul style="list-style-type: none"> • System 2(a) – Thermal Treatment of Mixed Waste with Recovery of Materials from 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



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	<p>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.</p> <p>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.</p> <p>In the sentence in question namely: <i>“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.”</i></p> <p>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”.</p>
4	<p>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.</p> <p>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.</p> <p>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.</p> <p>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</p>



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	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	
6	<p>Table 3.1, Evaluation Criteria:</p> <p>The “considerations” included in the circulated evaluation criteria for Step 7 have been replaced by the “rationale” in the Step 7 Report.</p>	<p>Further discussion with the reviewer is required to confirm what is meant by “circulated evaluation criteria”</p>
7	<p>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.</p>	<p>The EA documentation to be submitted to the Minister will include a discussion of the Greenbelt Plan as part of the land use profile.</p>
8	<p>There is potential for double counting between the “Compatibility” and “Residential Areas” criteria.</p>	<p>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.</p>
9	<p>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.</p>	<p>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</p>



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	of sustainability.
10	<p>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.</p>
11	<p>The methodology chosen was to not include the opportunity cost of the public sector sites.</p> <p>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.</p> <p>In particular, these points were:</p> <ul style="list-style-type: none"> • 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. <p>With these changes in land prices the comparison of capital costs are summarized in the attached Table 1.</p> <p>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.</p>



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<p>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.</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Present Value of Lifecycle Costs and Savings (\$ X 1,000) (Savings +ve & Costs -ve)</p> <table border="1" data-bbox="824 1255 1507 1409"> <thead> <tr> <th></th> <th>CL 01</th> <th>CL 04</th> <th>CL 05</th> <th>EG 01</th> </tr> </thead> <tbody> <tr> <td>Lower Site Specific Capital Costs</td> <td>23,308</td> <td>21,610</td> <td>20,455</td> <td>22,750</td> </tr> <tr> <td>Higher Site Specific Capital Costs</td> <td>19,774</td> <td>14,163</td> <td>15,760</td> <td>15,471</td> </tr> </tbody> </table>		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
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<p>13 Operation and maintenance costs include cost of transportation of ash to a landfill, but the landfill location is not known.</p>	<p>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.</p>															
<p>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.</p>	<p>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</p>															



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		categories of the environment.
15	<p>Net effects analysis description on page 3-6:</p> <p>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.</p>	<p>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).</p>
16	<p>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.</p>	<p>The consideration and application of mitigative measures where applicable will be more clearly outlined in the EA documentation to be submitted to the MOE.</p>
17	<p>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”)?</p>	<p>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.</p>
18	<p>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.</p>	<p>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.</p>
19	<p>In the Table 3-2 description:</p> <p>For “Advantage”, if impact is “manageable”, does that mean it is mitigable and that there would be no net effect?</p>	<p>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.</p>
20	<p>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.</p>	<p>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.</p>
21	<p>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?</p>	<p>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.</p>
22	<p>Is ancillary infrastructure considered only under</p>	<p>The nature of the available infrastructure is provided as an</p>



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	<p>“major disadvantage”? Does the ancillary infrastructure not form part of the undertaking?</p>	<p>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”.</p>
23	<p>In the Annex A page 2-2 description:</p> <p>What is “ability” or “inability” to meet the evaluation criteria when the criteria include no values, ranges or thresholds?</p>	<p>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.</p>
24	<p>What is the difference between “ability” and “significant ability” / “inability”? If something is not significant, should it be considered?</p>	<p>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.</p>
25	<p>In the methodology description:</p> <p>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.</p>	<p>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.</p>
26	<p>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.</p>	<p>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.</p>
27	<p>Page 3-8: How was best available technology considered? (page 3-8)</p>	<p>Best available technology was considered as technology capable of achieving, and in some cases exceeding, all regulatory requirements.</p>
28	<p>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.</p>	<p>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.</p>
29	<p>Page 3-11, second bullet, again, what mitigation measures were considered in assigning potential effects? None are specifically identified in the report.</p>	<p>The consideration and application of mitigative measures will be more clearly outlined in the EA documentation to be submitted to the MOE.</p>
30	<p>Page. 3-11, What was the process for obtaining information from technology vendors?</p>	<p>Information on facilities and associated contact information was obtained from directories such as:</p>



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	<ul style="list-style-type: none"> • 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 <p>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.</p>
31	<p>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.</p> <p>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”.</p> <p>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.</p>
32	<p>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.</p> <p>Actual trade-offs were made during the evaluation process and these will be better documented in support of the summary table 4.6.</p>
33	<p>Table 4-1, Application of Criteria</p> <p>Air quality</p> <p>Based only on regional level data - still to be verified based on local air quality monitoring.</p> <p>Comment noted.</p>
34	<p>Water quality:</p> <p>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.</p> <p>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.</p> <p>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).</p> <p>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.</p>
35	<p>Environmentally Sensitive Areas:</p> <p>The indicator utilized refers to the identification of potential for these species to be impacted by this proposed development.</p>



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	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



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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	<p>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.</p> <p>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.</p>



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44	<p>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?”</p>	<p>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.</p>
45	<p>With respect to separation of siting and competitive process, the report on Step 1-5 says:</p> <p>“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).”</p> <p>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?</p>	<p>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.</p> <p>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.</p> <p>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.</p>
46	<p>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</p>	<p>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</p>



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<p>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.</p>	<p>specific technology and vendor.</p> <p>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.</p> <p>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.</p>
<p>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.</p>	<p>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.</p>
<p>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.</p>	<p>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.”</p> <p>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.</p>
<p>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</p>	<p>Actual trade-offs were made during the evaluation process and these will be better documented in the various discussions and tables.</p> <p>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</p>



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Comment	Response	
	<p>than qualitative comparison criteria and these weighting factors should have been established early on through public opinion polls and information sessions.</p>	<p>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.</p>
<p>50</p> <p>The major criteria considered for Evaluation of Short-Listed of Sites were:</p> <p>Public Health and Safety and Natural Environment Considerations Social and Cultural Considerations Economic/Financial Considerations Technical Considerations Legal Considerations</p> <p>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".</p>	<p>The criteria and indicators for these five categories of criteria were all developed as part of the approved EA Terms of Reference.</p> <p>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.</p> <p>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.</p>	



Comments Received from AMEC		
Comment	Response	
Comments on ANNEX A		
51	<p>Meteorological Data</p> <p>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?</p>	<p>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.</p> <p>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.</p>
52	<p>How will the meteorological data collected at each site be compared against the existing meteorological stations?</p> <p>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?</p>	<p>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.</p>
53	<p>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?</p>	<p>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.</p> <p>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.</p>
54	<p>There are other meteorological stations in the area that are maintained by Darlington Nuclear Station, Pickering Nuclear Station and the Port Hope Low</p>	<p>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</p>



Comments Received from AMEC		
Comment	Response	
	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 90 th 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 90 th 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.
Comments on ANNEX D		
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		
Comment	Response	
61	<p>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?</p>	<p>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.</p>
Comments on ANNEX G		
62	<p>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?</p>	<p>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.</p> <p>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.</p> <p>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.</p>
63	<p>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.</p> <p>When will these issues be assessed?</p>	<p>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.</p>



Comments Received from AMEC	
Comment	Response
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		
Comment	Response	
64	<p>General Comment:</p> <p>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.</p>	<p>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.</p>
65	<p>Annex B: Sections 2.5 and 3.1</p> <p>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?</p>	<p>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.</p>
66	<p>Was the CN kept the same for post-development conditions? If so, why?</p>	<p>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</p>
67	<p>100-yr and regional flood plain mapping under existing and proposed should be outlined in the report.</p>	<p>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.</p>
68	<p>A description of topography and existing drainage should be documented.</p>	<p>All topography and drainage patterns are illustrated on the mapping provided in Annex B, Appendix D.</p>
69	<p>Why are the drainage areas under post development conditions less than those under pre-development conditions?</p>	<p>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.</p>
70	<p>In Table 3.1: Explain calculations for permanent pool and extended detention volumes. i.e., specify requirement guidelines for % imperviousness used.</p>	<p>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.</p>
71	<p>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</p>	<p>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</p>



Comments Received from SENES on Annex B		
Comment	Response	
	<p>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.</p>	<p>CA indicated the level of protection as a “Normal” requirement.</p>
72	<p>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.</p>	<p>This is a typo. Clarington 04 has “Normal” level removal and Clarington 05 has “Enhanced” levels.</p>
73	<p>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)</p>	<p>This will be shown at the detailed design stage of the preferred site.</p>
74	<p>Section 3.3</p> <p>Include PTTW under Approval requirements (this is for dewatering purpose).</p>	<p>Comment noted. Section 3.3 will be revised.</p>
75	<p>Section 6</p> <p>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.</p>	<p>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.</p> <p>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).</p> <p>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.</p>



Comments Received from SENES on Annex C		
Comment		Response
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 presence 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		
Comment		Response
	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		
Comment	Response	
	<p>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?</p>	<p>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.</p> <p>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.</p> <p>With regards to the relevance of the information and its role, please see response provided for previous comment on Table 3.1.</p>
88	<p>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”?</p>	<p>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.</p>
89	<p>Page 3-3. Significant Wildlife Habitat. Does this para need to be rewritten? The word “vulnerable” is not used properly. Are “roosting areas” and “migratory stop-over areas” (should say for birds?) “vulnerable 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 ...”.</p>	<p>Comment noted.</p>
90	<p>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?</p>	<p>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.</p>
91	<p>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?</p>	<p>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</p>



Comments Received from SENES on Annex C		
Comment		Response
		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.	<p>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.</p> <p>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.</p>
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.



Comments Received from TSH		
Comment	Response	
Annex F		
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



Comments Received from TSH		
Comment		Response
		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	<p>5.1 Trip Generation</p> <p>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?</p>	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	<p>Section 8 – “Maximum Scenario (400,000 tonnes per year)”</p> <p>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.</p>	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	<p>Section 9 – “Other Considerations”</p> <p>9.3 Summary of Road Improvements</p> <p>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.</p>	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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		<p>development, for reasons discussed above.</p> <p>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.</p>
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	<p>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.</p> <p>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.</p>	<p>The comparison of short-listed sites was based on specific information available at the time the analysis was completed.</p> <p>The detailed site-specific studies and ultimately documentation for obtaining EPA level and other approvals will consider the best available information at that time.</p>
ANNEX G		
108	<p>Section 2: Methodology of Study</p> <p>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?</p>	<p>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.</p>
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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Comment		Response
	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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Comment	Response	
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.		
<p>116 Appendix ‘A’ – Technical Memorandum</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	<p>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).</p> <p>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.</p>	
ANNEX H		
117	<p>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?</p>	<p>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.</p>
118	<p>Section 3.4 – “Road Access and Improvements”</p> <p>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.</p>	<p>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.</p>
119	<p>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.</p>	<p>The comparison of short-listed sites was based on specific information available at the time the analysis was completed.</p> <p>The detailed site-specific studies and ultimately, documentation for obtaining EPA level and other approvals, will consider the best available information at</p>



Comments Received from TSH		
Comment		Response
		that time.
120	<p>Section 4.2 – “Minimum Required Site Size”</p> <p>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.</p>	<p>Table 2-1 in the Facility Site Size technical memorandum includes area required for adequate stormwater management.</p>
121	<p>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.</p>	<p>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.</p>



Additional Comments Received	
Comment	Response
<p>122 From Faye Langmaid:</p> <p>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.</p>	<p>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.</p> <p>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.</p>
<p>123 Please show transfer stations on overall traffic map in Annex F.</p>	<p>Transfer stations will be shown on the overall traffic map to be provided in the updated EA documentation to be submitted to MOE .</p>
<p>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.</p>	<p>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.</p>
<p>125 The haul distances and traffic impacts did not factor in the proposed Highway 407/401 connection.</p>	<p>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.</p>



Additional Comments Received		
Comment		Response
126	<p>From Faye Langmaid:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>It is not listed on our heritage resources listing, which means the Municipality does not deem it worthy of preserving.</p>	<p>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.</p>
127	<p>From Laura Barta:</p> <p>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.</p>	<p>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.</p> <p>In addition, there was an error in the annual haul cost spreadsheets (150,000 tpy and 250,000 tpy) for the Status</p>



Additional Comments Received	
Comment	Response
<p>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?</p> <p>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?</p> <p>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.</p> <p>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?</p> <p>I would appreciate your assistance in clarifying the above mentioned issues.</p>	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> • 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. <p>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.</p> <p>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).</p> <p>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.</p>

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	<p><u>NEUTRAL</u></p> <ul style="list-style-type: none"> Site-specific capital costs range from \$7.6 to \$13.1 million 	<p><u>DISADVANTAGE</u></p> <ul style="list-style-type: none"> Site-specific capital costs range from \$8.9 to \$16.7 million 	<p><u>DISADVANTAGE</u></p> <ul style="list-style-type: none"> Site-specific capital costs range from \$8.9 to \$15.5 million 	<p><u>ADVANTAGE</u></p> <ul style="list-style-type: none"> Site-specific capital costs range from \$3.8 to \$13.1 million
	OVERALL	NEUTRAL	DISADVANTAGE	DISADVANTAGE	ADVANTAGE