

APPENDIX A

DRAFT ENVIRONMENTAL REVIEW REPORT COMMENTS AND RESPONSES

**A.1 AGENCY COMMENTS AND TRANSCANADA RESPONSES ON THE DRAFT
ERR AND SUPPORTING DOCUMENTS**

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents

COMMENT	RESPONSE
Ministry of the Environment – Eastern Region	
<i>Environmental Assessment Process</i>	
The first sentence states that all EAs pursuant to the Ontario Environmental Assessment Act, including an Individual EA, are proponent driven. I recommend “proponent driven” be changed to “prepared by the proponent”. MOE typically refers to Class EAs and other streamlined EAs (waste, electricity) as being “proponent driven”, but we don’t refer to individual EAs as proponent driven. This is probably because there is no formal government review of the EA overseen by MOE, no publication of a government review, and no actual EA approval for a project using a streamlined process (unlike the individual EA process).	Noted and revised.
The last sentence states that the EA documents are subsequently reviewed by the Government of Ontario with the MOE as the lead agency. In fact, this is only the case for individual EAs, not for streamlined EAs such as the process for electricity projects. Since the paragraph starts by referring to “all EAs”, a reader may mistakenly conclude that there is a formal government review led by the MOE for the NGS project. I recommend that the last sentence of paragraph 4 be omitted	Noted and revised.
<i>Agency Consultation</i>	
I have reviewed section 6 of the ERR and supporting document 7, and recommend that additional information be included about provincial and federal government review agency consultation. Section 6.4.5 of the ERR and section 3.2.5 of supporting document 7 list federal and provincial agencies that have been consulted, but it is not clear how each of these ministries was consulted and whether any of these agencies provided written correspondence to you in response to notifications or other information. For example, table 3.6 in the supporting document provides a summary of meetings, telephone calls, emails and letters to some of the ministries on the list, but not all. It is not clear whether all of these ministries were sent a copy of the Notice of Commencement, standard information letters/emails, and which ministries were given an opportunity to review the draft ERR and supporting documents. It would be helpful to include a list of the contacts for each ministry and information on how they were notified of the project (i.e. Notice of Commencement, information emails etc.) in addition to the very helpful information in table 3.6.	Noted and revised.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Surface Water</i>	
<p>Section 1.6 outlines the permits and approvals that will be necessary from the MOE. <i>This section indicates that an ECA will be required for the discharges to Lake Ontario, but does not indicate how the domestic sewerage will be addressed (i.e. amendment to existing ECA for LGS or new ECA for NGS). This Section also indicates that it is their intention to operate under the existing LGS Permit to Take Water (PTTW) which I understand was recently (July11, 2013) amended (PTTW 6252-99EHGA) to allow for an increase in LGS water taking to meet the NGS water requirements.</i></p>	<p>The domestic sewage will be discharged to the Lennox GS lagoon which receives domestic sewage from Lennox GS. The ECA for the Lennox lagoon will be amended to allow for the discharges of domestic sewage from the NGS. The PTTW for Lennox GS was amended to include the NGS water take needs in 2013.</p>
<p>Section 3.1.5.1 indicates that raw water takings from the LGS will be used for potable water, cooling water, tempering water, and process needs. <i>This Section should indicate how much raw water (in total) could be taken under the existing PTTW. The PTTW application from LGS indicates that their Permit was being amended to include a water taking (67,903,200 l/day) for the operation of the NGS.</i></p>	<p>Section 3.1.5.1 describes the water needs for the NGS. Under the PTTW, the NGS is allowed a maximum draw of 67,903,200 L/day for all uses. The expected maximum daily water taking from the Lennox GS forebay based on the hot summer day requirements at full operation (see ERR Figure 3.5) is considerably lower at 40,920,000 L/day. Under all other conditions the predicted water taking will be less.</p>
<p>Table 3.2 outlines the proposed monitoring plan for effluents discharging to the environment. This Table and Section 3.1.5.2 indicates the following:</p> <p>Stormwater will be sampled for total suspended solids and oil & grease prior to entering LGS ditching.</p> <p><i>The cooling water discharge has the potential to contain various process and treatment chemicals,, which although the ER indicates will be “neutralized” from the waste stream will have to be verified through sampling. The proposed parameter list should be expanded to verify that cleaning agents/added chemicals have been removed from the discharge water.</i></p> <p>This Section also outlines the process for dealing with Internal Wastewater Collection.</p> <p><i>This section does not indicate the type and nature of the oil to be used (i.e. will it be obvious when present during “visual” inspection), how much oil would it take to raise a concern, what will be done with the collected water should oil be found to be present, how often will clean out be required? Secondly, the proponent should confirm that the Stormceptors would be capable of removing any oil that may inadvertently be discharged. A spill response plan should also be prepared.</i></p> <p><i>The plan to address transformer containment area water is unacceptable as presented.</i></p> <p><i>This Section should detail what the projected domestic sewage volumes would be and verify that the LGS sewage works are capable of treating this volume (under existing approvals), and that the existing sewage works are currently effective in treating sewage to approved limits/criteria (based on annual monitoring reports).</i></p>	<p>The cooling water blowdown will be tested for acute lethality. This test acts as a surrogate parameter for any added chemicals as cleaning agents</p> <p>Stormceptors are capable of removing both oil bonded to sediment and free oil. Oil bonded to sediment would settle at the bottom of the tanks; whereas, free oils would float to the top and be captured. The capacity for oil capture of the STC 6000 Stormceptor system is approximately 3.9m³.</p> <p>Noted.</p> <p>Yes, the wastewater can be treated in the existing Lennox GS lagoon. The existing Lennox GS sewage treatment system was designed to accommodate the construction crew (1,000 plus employees) for the Lennox GS. The Lennox GS has a full time staff of approximately 170 employees, well below the design capacity. The NGS will employ approximately 30 employees during operation. As such, the existing Lennox GS sewage treatment system is sufficiently sized to accommodate the additional number of staff located</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	<p>on site during NGS operation. During construction contractors will provide temporary portable toilet facilities with holding tanks for the construction work force. The sewage will be collected regularly and hauled to a licensed off-site sewage treatment facility.</p> <p>The transformer containment design has been updated and is set out in Section 3.1.5.2 of the ERR.</p>
<p>Section 3.2.4 <i>does not indicate what level of sediment removal will be provided the recommended erosion and sediment controls/stormwater controls during the construction phase. The sizing, placement and type of controls used should ensure, at a minimum, an enhanced level of treatment for total suspended solids, ensure that downstream soil erosion and/or sedimentation does not occur, and that receiving waters and their habitats are not impacted. Monitoring for total suspended solids should be conducted with the objective of achieving no higher than 25 mg/l of total suspended solids in the water leaving stormwater/sediment controls.</i></p>	<p>The siltation basins, used during the construction phase, have been designed to provide at least Enhanced (80% long-term) suspended solid removal as per Table 3.2 of the MOE Stormwater Management Planning and Design Manual.</p> <p>During the construction phase, effluent samples will be collected from the outlet of the temporary siltation basins to ensure quality criteria are met. Samples will be collected following a storm event and tested for oil and grease and Total Suspended Solids..</p>
<p>Section 3.4.2 Water Quality Control Measures indicates that monitoring of stormceptor effluent and at the outlet of the enhanced grassed swale before it enters the LGS ditch will be undertaken. <i>However, no details regarding how often and for which parameters samples will be collected.</i></p>	<p>Effluent quality parameters to be monitored are:</p> <ul style="list-style-type: none"> • Total Suspended Solids • Oil and Grease • Heavy Metals <p>Samples will be collected bi-annually following storm events.</p>
<p>Section 3.8.1 Permit to Take Water indicates that it is TransCanada’s intention to operate under OPG’s existing Permit To Take Water. <i>I understand that LGS has recently been granted a Permit to increase the amount of their water taking; however, I recommend that TransCanada/OPG obtain a legal opinion as to whether one Permit holder can take and grant water rights to another.</i></p>	<p>The application for the amended Permit to Take Water was approved by the MOE and indicated the water draw for TransCanada specifically and the Permit lists the Lennox GS and TransCanada water take amounts separately.</p>
<p>Section 3.8.3 Environmental Compliance Approval (Industrial Sewage) indicates that NGS sewage discharges will be discharged to LGS sewage treatment works. <i>Again, a legal opinion should be obtained to verify that this would be allowable. I recommend consultation with EAAB. In addition, the ER does not provide sufficient information to show that the existing LGS sewage works is in compliance with their ECA and that it could accommodate additional flows.</i></p>	<p>The Lennox GS ECA for the sewage lagoon will be revised to allow the NGS sewage discharge and the appropriate documentation will be provided in making that application such that the MOE can determine that the system is appropriately designed to ensure compliance. Similarly, the ECA for the Lennox GS discharge channel may require amendment to allow the NGS to discharge to it, however,</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	TransCanada will be applying for a separate ECA to allow for the NGS industrial sewage discharge to the channel. The MOE will review and advise as to the appropriateness of the design through the application and review process.
<p>Section 4.6.2.2</p> <p><i>a. The ER should provide documentation to show that the existing LGS sewage works is operating effectively and that the existing discharge are appropriate and being achieved and that additional sewage can be treated without environmental impairment. See also previous comments about the proposed amendments to the existing ECA.</i></p> <p><i>b. This Section proposes effluent limits for industrial wastewater discharges based on the MISA requirements applied to the LGS. These limits appear to be excessively high given the (guaranteed) contaminant concentrations presented in Table 4.22. In addition, the effluent concentrations and loadings would be in excess of those already being discharged by the LGS and should therefore be assessed cumulatively (it appears that only total phosphorus and temperature were considered as cumulative inputs). I suggest that the proponent propose limits which are based on what the LGS can actually achieve while considering what discharge concentrations are being met by the adjacent LGS.</i></p> <p><i>c. In addition to those parameters proposed for effluent limits, the narrative PWQO for Oil & Grease will also be incorporated into an ECA for this facility.</i></p> <p><i>d. The effluents limits for pH should be commensurate with the PWQO (6.5 to 8.5).</i></p> <p><i>e. The concentrations for aluminum in the effluent have not been predicted, however, aluminum effluent limits should be set for a filtered sample (as per the PWQO).</i></p>	<p>See response to comment 1.</p> <p>Concentrations provided in Table 4.22 are predicted concentrations based on the engineering design. These predicted concentrations cannot be used as effluent limits since they may vary during the operation of the NGS. Therefore, it is appropriate to use the MISA regulated limits for compliance purposes. The use of MISA effluent limits, which are based on Best Available Technology Economically Achievable, will ensure a level playing field among all Electric Power Generating stations.</p> <p>Agreed</p> <p>The effluent limits for pH will meet the PWQO (6.5 to 8.5). MISA requirements are met.</p> <p>Noted. Section 4.6.2.2 of the ERR addresses the NGS discharge relative to PWQOs and PWQGs.</p>
<p>Section 4.6.2.4 Thermal Loadings. With respect to this section I have reviewed the modeling results and anticipated impacts only – i.e. not the modeling. This Section indicates that either cumulatively with LGS flows or on its own, the NGS discharge water will not result in a thermal impact on Lake Ontario – when compared to the existing influences caused by the LGS.</p> <p><i>With respect to this Section I have the following comments:</i></p> <p><i>a. It should be indicated in this section whether NGS will have any control over the operation of the tempering pumps. Scenario 2 is predicated on the tempering pumps running while the LGS is not operating.</i></p> <p><i>b. The Summary of Discharge Scenarios is based on an assumed temperature differential of 11 degrees Celsius between the intake water and the cooled discharge water from the LGS.</i></p>	<p>The NGS will not have any control over the operation of the Lennox GS tempering pumps. Since the flow rate of the tempering channel is two orders of magnitude higher than the flow rate of the NGS, the thermal effect of the combined discharge in Lake Ontario will be determined by the flow rate of the tempering channel. A scenario without any flow from Lennox GS was also included (See Section 4.6.2.4 of the ERR).</p> <p>Even though the Lennox GS is required to monitor intake and discharge water temperatures, this monitoring data will</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>It's my understanding that the LGS is required to monitor both intake and discharge water temperatures and therefore this assessment could be undertaken using actual monitoring data.</i>	not be used to assess / model thermal effects in Lake Ontario.
<i>c. The thermal impact study is located in Appendix C, not Appendix B as indicated.</i>	Noted and corrected.
Section 4.7.2.1 Effects During Operation examines the potential impacts which may result from impingement and entrainment (I&E) as a result of the increased water taking and concludes that since the additional taking is equivalent to less than 2% of the cooling water draw from the LGS that no impacts will result. <i>It's not clear that this assessment results from an examination of the actual intake structure (in Lake Ontario), however the intake velocity and screening at the NGS intake at the forebay has been considered. This Section should indicate if the existing LGS intake has been designed to prevent I&E.</i>	Additional detail is provided Section 4.7.2.1.
Section 4.7.2.2 Effects from Thermal Discharges assesses the effects from the thermal discharge from the NGS and concludes that it would not have an impact on the aquatic ecosystem. <i>This Section should propose suitable discharge limits based on effluent temperature maximums and temperature change (between background and discharge temperatures) which could be included in an ECA.</i>	Additional detail is provided in Section 4.7.2.2. A limit for the combined effluent discharge from the Lennox GS, tempering channel and the NGS may be established by the MOE. The purpose of the thermal effects assessment was to identify the extent of the change in temperature in Lake Ontario compared to: <ul style="list-style-type: none"> • Intake temperature in the case of Scenarios 1 & 2 • Average seasonal ambient temperature in the case of Scenario 3
Finally, the ER indicates that groundwater resources may be impacted by the proposed undertaking and as such I recommend that the Groundwater Unit be circulated the ER for review and comment.	Noted.
<i>Supporting Document 1 Air Quality Assessment</i>	
1. <u>Operating Scenarios Considered.</u> Six different emission scenarios were considered. The submission states that these six scenarios represent the maximum annual, 24 hour and one hour emission scenarios. The scenarios are as follows: <u>Scenario 1 – Maximum Annual Operation</u> which represents the maximum number of hours that the NGS would be expected to operate in a year. The report states that the Gas Turbines (GT) would operate for a total of 5,110 hours/year which translates to 58.3% of the year. This maximum annual operating time does not match the stated maximum expected operation time of 67%. This should be clarified; <u>Scenario 2 – Expected Annual Operation</u> which was developed to assess a reasonably high level of expected operation of the NGS throughout the year. The report states that the GT would operate for a total of 4380 hours/year which translates to 50% of the year. This appears reasonable;	The final assessment has been updated such that the number of hours in the Maximum Annual Operation Scenario (SC1) now corresponds to 67%. Noted.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p><u>Scenario 3A – Expected 24-Hour Emission Rates – Staggered Start-Up Operation</u> the submission states that this scenario was developed to assess the expected maximum potential 24-hour concentrations due to operation of the NGS, assuming that the two GT units both operate, but start-up of GT2 will be staggered from GT1 start up by at least three hours. This is reasonable;</p> <p><u>Scenario 3B – Maximum 24-Hour Emission Rates – Simultaneous Start-Up Operation</u> there is the possibility that both units will be called into service at the same time, and will start up simultaneously. This results in a somewhat higher daily emission rate. This is reasonable;</p> <p><u>Scenario 4A – Maximum 1-Hour Emissions – Start-Up Operation (All Sources On)</u> the maximum 1 hour emission rate would occur when both GT units are starting up within the same hour and the Emergency standby Diesel Generator (EDG) is being tested. This is reasonable;</p> <p><u>Scenario 4B – 1 Hour Maximum Emissions – Start-Up Operation (Excluding EDG)</u> this scenario represents a more reasonable maximum 1 hour condition whereby the GT units are starting up within the same hour, but the EDG is not being tested. This is reasonable.</p>	<p>Noted.</p> <p>Noted.</p> <p>Noted.</p> <p>Noted.</p>
<p>2. <u>Contaminants of Concern.</u> The submission states that the contaminants chosen for this assessment was based on previous environmental assessments completed for combined cycle natural gas fuelled electricity production. This is acceptable.</p>	<p>Noted.</p>
<p>3. <u>Emission Rates for Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbon (PAHs) and Metals.</u> The submission indicates that emission factors used to develop emission rates for trace metals, PAHs, and VOCs from the various natural gas fuelled combustion equipment were derived from the 2012 Emissions Calculator for Airborne Contaminant Emissions from Natural Gas Combustion (the Calculator). The Calculator is produced and updated annually by Ortech Environmental for the Canadian Energy Partnership for Environmental Innovation (CEPEI). The Calculator and/or spread sheets developed for this project should be included as an appendix to this document.</p> <p><i>The submission states that benzo(a)pyrene (B(a)P) was used as a surrogate for all PAHs emitted from the facility. This was done since under O. Reg. 419/05, the 2016 B(a)P Schedule 3 standard is used as a surrogate for all PAHs. This is acceptable however it should be clearly indicated that the emissions for all of the other PAHs were combined and then</i></p>	<p>While the “Calculator” was in fact designed to calculate emissions from the noted sources, this tool was not used by SENES in that manner. Instead, it was used as a comprehensive listing of emission factors for the equipment at NGS. Where manufacturer’s data was not used (i.e. all equipment except for the GT/Gs), the Calculator was used to select the most representative EF for use in the assessment. In the final assessment, AP-42 EFs were favoured over all other sources (i.e. if an AP-42 EF was found for the source in question, it was used). If AP-42 EFs did not exist, those from the GRI-HAP were used instead. This additional information (in the form of spreadsheets) was provided to the MOE via e-mail on 5 December 2013.</p> <p>As outlined in the MOE document Ontario Air Standards for Benzo(a)pyrene as a surrogate for Polycyclic Aromatic Hydrocarbons, June 2011 the standard for B(a)P as a surrogate incorporates the cancer risk of being exposed to a</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p><i>modelled and compared to the 2016 B(a)P Schedule 3 standard.</i></p>	<p>PAH mixture to a B[a]P exposure level and states “through this approach, the cancer risks of being exposed to carcinogenic PAHs other than B[a]P, is incorporated in the inhalation unit risk factor generated for B[a]P-as-a-surrogate (e.g., B[a]PS)”.</p> <p>This means that the standard applies only to B(a)P emissions (and hence concentrations) rather than the combined concentration of total PAHs as the comment implies. This is because the carcinogenic effects of other PAHs in the mix are inherently “built-in” to the standard. As such, the assessment included only emissions of B(a)P, and the resulting predicted concentrations (including the addition of baseline) were compared to the standard. Note that naphthalene was also considered individually, as it has its own air standard. Refer to Supporting Document 1 for further clarification.</p>
<p>4. <u>Emission Rates for Conventional Contaminants</u>. Conventional contaminants such as nitrogen oxides (NO_x), carbon monoxide (CO) and suspended particulate matter (SPM) are the typical by-products of combustion. Emission rates for the conventional contaminants which includes emissions from the GT, evaporative coolers, duct burners and Selective Catalytic Reduction (SCR), were provided by the equipment suppliers. Manufacturer specified emissions data (for NO_x, CO, and PM) were also supplied for the auxiliary boiler, dew point heater, and emergency equipment. <i>No information was provided on the details of the manufacturer specified emissions (i.e. was the data derived from testing) and should have been. Emissions rates of SO₂ were estimated using US EPA AP-42 emission factors.</i></p>	<p>As noted in the report, Manufacturer’s supplied emissions data was used in the assessment of emissions from the GT/G units, in addition to the emergency equipment. This data applies specifically to the units (i.e. make and model) being purchased for the NGS, and as such are the most appropriate for use in the assessment. SENES completed a comparison of the manufacturer’s emission data for the GT/G units to that from AP-42, and found that for NO_x and CO the emissions data was more conservative than that from AP-42. Manufacturer’s emissions of PM_{2.5} were found to be 8% lower than that resulting from AP-42. Given that the maximum predicted 24-hour and annual POI concentrations from NGS were both approximately 22% of the respective limits (incrementally) and less than 58% when cumulatively (i.e. when local baseline concentrations are added), this difference is insignificant and will not affect the conclusions of the assessment or that of downstream assessments such as the HHERA. <i>This information was sent to the MOE in a spreadsheet on 5 December 2012 via e-mail.</i></p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>5. <u>Assessment of Data Quality</u>. The submission did not include any discussion on data quality of the emission estimates and should have. An Excel spreadsheet provided by SENES Consultants entitled '350650-NGS Post processing Emissions 20 Sept 2013 – AC' did provide brief comments on the Calculator emission factors data quality. The spreadsheet stated that a data quality of B has been assigned to the Calculator emission factors (which are not from AP-42) based on testing but not over a wide range and not overseen by the ministry. The B rating system is how the US EPA AP-42 emission factor documents rate their emission factors. An AP-42 emission factor with a quality rating of B falls under an above-average data quality in section 8.3 Data Quality in ministry guidance document A-10: Procedure for Preparing an Emission Summary and Dispersion Modelling (ESDM) Report. This above-average data quality would also be assigned to validated source testing at one specific operating condition as described in the Excel spreadsheet. However no details were provided on the manufacturer testing nor was it stated that this testing was validated. So it would be considered un-validated source testing at one specific operating condition which would have a data quality of marginal or uncertain.</p> <p>The Calculator emission factors used for the different sources generally appear to have the same data quality or lower than the US EPA AP-42 emission factors. The Calculator emission factors are generally lower than the AP-42 emission factors. Section 11(1) subparagraph 1 of O. Reg. 419/05 requires that the highest emission estimate be used. The table below compares the Calculator emission factors used for the auxiliary boiler and US EPA AP-42 emission factors for this piece of equipment.</p>	<p>As required by O.Reg.419/05, assessment of data quality will be completed when the ESDM report is prepared and submitted in support of the application for an ECA for the site. In the interim, SENES notes that AP-42 emission factors were used where these were available. When AP-42 EFs were not available, EFs from other sources (i.e. GRI-HAPCalc) with the highest quality rating were selected, if available.</p> <p>As noted in the response to comment 4 the manufacturer supplied emissions data for the GT/Gs is actually more conservative than AP-42 for NOx and CO, and leads to higher maximum emission rates than those from AP-42. As such, the manufacturer's data was used.</p> <p>As noted previously, in the final assessment, the AP-42 EFs in the calculator were used over other sources where these were available, for all sources except those where manufacturer's data was supplied.</p>
6. <u>Fugitive Emissions</u> . Fugitive emissions from the NGS site were not assessed, as it was determined that there will be no significant fugitive emissions. This is acceptable.	Noted.
7. <u>Air Dispersion Modelling</u> . The submission indicates it used the CALMET/CALPUFF modelling system. The ministry's Environmental Monitoring and Reporting Branch reviewed and commented on the modelling.	Noted.
Ministry of the Environment – Environmental Monitoring and Reporting Branch	
<i>Appendix C Supporting Document 3 Aquatic Assessment</i>	
<p><u>Model Setup & Calibration</u>: A very brief description of the setup and calibration of the "ECOMSED" model is provided. This is the model used by SENES to delineate temperature isotherms of their various effluent scenarios.</p>	Noted.
It appears that the grid should have been extended further from the outfall channel to help better delineate the thermal plume at further distances, (for some scenario cases at least).	The grid has been extended to include station C21 (30 m depth), where temperature and current measurements were available and used as boundary conditions.

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COMMENT	RESPONSE
They only used 5 sigma layers. I would recommend probably 2 or 3 times this number for evaluating highly buoyant (heated) plumes within water depths of the vicinity.	The maximum depth in the model domain is 30 m. The addition of 2 or 3 layers to the 5 sigma layers would increase the computational time considerably with no change in the results. Also, the model calibration results for temperature and currents are comparable to nearshore model application in Lake Ontario (Paturi et al., 2012 in JGLR).
It is not clear if they used depth-variable water temperatures and current velocities (as assigned from their “C21” station), to describe boundary conditions for the modeling grid or not. (They should use depth-variable temps and currents, particularly in spring and summer, for boundary conditions and for the simulated water column within the grid).	Depth-variable water temperature and current velocities were provided as boundary conditions from Station C21. This statement was included in Supporting Document 3, Appendix C.
Model calibration: i) This is difficult for me to evaluate, as I do not have the “SENES, 2009” reference, within which it is apparently documented.	The model calibration parameters from “SENES 2009” is included in Supporting Document 3, Appendix C.
ii) The comparisons summarized are for depth-averaged temperatures and velocities. Some depth-specific results should ideally be provided, particularly for the surface current velocity and for the {Surface temp – Bottom temp} differential. (These are important features in the mixing / spreading of (surface) buoyant plumes).	The RMS error comparisons for surface current velocity is provided. Alternatively, Normalised Fourier Norms (Fn) value for current speed and direction is also calculated as a measure of model current accuracy. This parameter has been widely used in Great Lakes literature (Huang et al., 2010 in JGR; Paturi et al., 2012, in JGLR).

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COMMENT	RESPONSE
<p>While I think their basic approach is good, I'm having some difficulties understanding a few things.</p> <p>It is not clear how or why, the “average ambient lake temperature” and the “intake temperature” are different. This perhaps may have something to do with where the intake water exactly comes from. From my limited (and possibly out-of-date) information, the intake for the Lennox GS is located about 300 m offshore in 20 m of water. <u>If</u> so, then the intake temperature should be based on, for example, temperatures measured at station “T03”! As an example, the following (somewhat confusing / conflicting) temperatures are provided / used in the report:</p> <ul style="list-style-type: none"> i) LGS measured intake temperatures, (between January 1, 2006 and February 28, 2013) are as follows: Winter (1 to 2 deg C); Spring (7 to 9.5); Summer (14.5 to 18) ii) Model intake temperatures: Winter (5 deg C); Spring (10.2); Summer (23.7) iii) Measured ambient temperatures (by field measurement between Nov 2012 and June 2013): Winter (~ 1.4 deg C); Spring (~ 9.5 to 11.5 near surface and ~ 5.8 to 9 near bottom) iv) Average ambient temperatures used in modeling assessment: Winter (5 deg C); Spring (6.5) <p>In any event, this needs to be clarified. (Of potential concern is the use of what are likely, ambient temperatures which are too cool, as this would likely tend to result in a quicker than normal cooling-off of the thermal plume via mixing with the cooler than normal ambient water).</p>	<p>The daily average Lennox GS measured intake temperatures (between January 1, 2006 and February 28, 2013) are very much similar to the daily average temperatures measured at the nine stations (RMS error of 1-2°C). This was clarified in the revised thermal loading report located in Supporting Document 3, Appendix C.</p> <p>Noted.</p>
<p>As a general observation, it would be beneficial to at least put a scale (showing metres) within the isotherm plots to make it easier to gauge the size of the plumes (as of now, the x and y scale are described using decimal longitude and latitude).</p>	<p>A scale (in meters) is shown within the isotherm plots.</p>
<i>Supporting Document 1 Air Quality Assessment</i>	
<p>Data for CALMET output surface wind fields were reviewed for 9 days in May 2011 and 5 days in May and June 2008. The wind fields were consistent with data from the National Oceanic and Atmospheric Administration (NOAA) web site for all of the cases.</p>	<p>Noted.</p>
<p>The second aspect of the CALMET output that was reviewed was the stability profiles that affect shoreline fumigation. A total of 6 days were reviewed. The case in May of 2011 was a large stable inversion over the lake which was replicated in the CALMET output. The analyses of the stability profiles over land showed that shoreline fumigation was simulated correctly. The two cases checked in May of 2008 had lower air temperatures where shoreline fumigation was not expected. The CALMET results were reasonable for these days. For the three cases checked in June 2008, one was not a fumigation day which showed good comparison with NOAA data. The two other days had moderate fumigation potential which was not simulated very well in the CALMET output. Overall the CALMET results were acceptable.</p>	<p>Noted.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>The flags used in CALPUFF are reasonable for air concentrations however there is no consideration of dry or wet deposition. Dry and/or wet deposition can be estimated outside of the CALPUFF model run. The health risk report has indicates that deposition was included (page 3.1) and that details are in the air quality assessment report however this does not appear in draft report reviewed. The final report should be revised to include details on how deposition was calculated.</p> <p>With revisions to the draft report to include details on deposition, the modelling would be acceptable.</p>	<p>Dry deposition was incorporated into the final Air Quality Assessment and the results are presented in Supporting Document 1 for the NGS ERR. This was calculated externally to the CALPUFF model, using a representative particle deposition velocity and the maximum predicted air concentrations. Wet deposition is not expected to be significant and as such was not considered. The maximum 24-hour SPM concentrations were used to calculate maximum 30 day dry deposition rates (Conc x Vdep x Time (seconds per 30 days)). The annual average concentrations were used to similarly calculate annual average deposition rates. These were added to baseline deposition rates, which were calculated similarly, using the baseline SPM concentrations.</p>
<p>Ministry of the Environment – Standards Development Branch</p>	
<p><i>Supporting Document 6 Human Health and Ecological Risk Assessment</i></p>	
<p>1. Several references to documents used in this HHRA are dated including Health Canada, MOE, and US EPA documents (eg. such as IRIS and the Exposure Factors Handbook). The most recent versions of documents should be obtained to ensure the HHRA is conducted in a manner consistent with current parameters and risk assessment approaches. As some of these updates include toxicity reference values, it is important that this assessment be reflective of current science. Of specific note the recent 1-hour NAAQS for sulphur dioxide SO₂ (US EPA 2011) should be considered.</p>	<p>Health Canada, MOE and U.S. EPA documents have all been updated to the latest versions including, the Health Canada Guidance on PQRAs (HC 2010a) and TRVs and Chemical-Specific Factors (HC 2010b) and the MOE Rationale for the Development of Soil and Ground Water Standards (MOE 2011a and 2011b). References to the U.S. EPA’s IRIS and ASTDR have been updated to 2013, while dates referring to the specific year in which a particular chemical was updated in the database were retained. The Exposure Factors Handbook was updated to the 2011 version. Other references and documents were also checked and updated where necessary. With respect to the 1-h SO₂ standard, the U.S. EPA standard of 196 µg/m³ (U.S. EPA 2008) has now been adopted and Table 4.3 has been updated to reflect this.</p>
<p>2. Overall the lists and tables of compounds of concern (COC) throughout this document need to be reviewed and edited for consistency. Some COCs only appear once or twice; while in other cases some COCs are missing from some lists and tables (e.g., ethylbenzene, trimethylbenzenes, barium, beryllium etc.).</p>	<p>Lists, tables and text making reference to COC were reviewed and edited for consistency. Changes were made to the text on page 1-24, Table 2-1, and Table 3-2.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>3. The Napanee Generating Station is being built on land immediately adjacent to another gas generating plant, the Lennox Generating Station (GS). An air monitoring station was established on the site to monitor existing background concentrations of criteria air contaminants. However, there are many non-criteria air contaminants that have been carried forward as COCs for this natural gas generating station. Since Lennox GS has been in operation for some time it has already contributed to background oil concentrations and would therefore be further contributing to air and soil concentrations of these non-criteria air contaminant COCs. As a result the cumulative impact of having two gas generating stations side by side should be addressed. The HHRA document itself states several times that: "existing air quality is influenced by local emission sources such as the Ontario Power Generation Inc. (OPG) Lennox Generating Station (GS)."</p>	<p>It is agreed that the Lennox GS is next door; however, the stacks associated with that facility are high and thus the plume from the facility does not intersect the ground in the vicinity of the nearest residences. Background soil measurements were undertaken at the site which would capture any potential inputs from the Lennox GS. The stack height of the proposed NGS is much lower than those of the Lennox GS; thus it is highly unlikely that there will be any cumulative effects on the residences in close proximity to the two facilities. A qualitative discussion has been added to Supporting Document 6.</p>
<p>4. In the annual and 24-hr operating scenarios the diesel generator is only being tested for one hour per week and the emergency diesel fire pump for 30 minutes per week. Only scenario 4A (1-hr) has both of these pieces of equipment on. Although they are back-up emergency equipment, what impact will their use have if they are in operation for more than an hour? Presumably this equipment will be used outside of regular testing.</p>	<p>The diesel generator and the diesel fire pump will only be used in extenuating circumstances for example during a scenario when there is no power in the area (for the diesel generator) or if there is a fire at the facility (fire pump). These are very unlikely scenarios; therefore, the testing of the equipment is the only scenario considered within the ERR. In the case of a fire, the operation of the diesel fire pump will result in a minimal environmental concern in comparison to the fire.</p>
<p>5. In this section and throughout this document the term 'trace' has been used to describe certain COCs (e.g., trace metals, trace PAHs and trace VOCs). This phrasing should be changed. The estimated emission quantity may be trace, but the compounds themselves are not trace.</p>	<p>Throughout Supporting Document 6, the term "trace" was removed from trace VOC, trace PAH, and trace metal(s) but was retained when making reference to a trace amount or the text was edited to reflect that the amounts of these chemicals are trace.</p>
<p>6. Page 2-3. The text references previous environmental assessments used in COC screening, and they should be listed/referenced to enable cross referencing.</p>	<p>The following references were added to the text on page 2-3: SENES 2003, 2008, 2010. The full references were added to the References section: SENES Consultants Limited (SENES) 2010. <i>Draft Environmental Review Report Oakville Generating Station</i>. June. SENES Consultants Limited (SENES) 2008. <i>Draft Environmental Review Report Bradford West Gwillimbury Generating Station</i>. October. SENES Consultants Limited (SENES) 2003. <i>Environmental Review Report for the Portlands Energy Centre</i>.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	November.
7. Page 2-4. Screening compounds out because 'there is not enough toxicological information available to assess these chemicals.' is not an adequate rationale for exclusion in the HHRA. At a minimum a qualitative assessment could be done for these compounds.	<p>This is a natural gas facility and the contaminants of concern related to the operation of this facility are NO_x and PM. All other COC that have been carried through the assessment are found in trace amounts and do not represent a risk to human health and the environment. The lack of toxicological data precludes a quantitative assessment of the risks.</p> <p>A statement has been added to the HHRA uncertainty section (Section 5.6.1) to indicate that these compounds could not be quantitatively assessed but they represent negligible risk.</p>
8. Table 2.1, Chemicals of Concern Selected for this Assessment, is missing COCs listed on page 1-24. Ethylbenzene is incorrectly grouped with PAHs and some PAHs, which are listed in AP-42, are missing from the PAH list.	Table 2.1 and the text on page 1-24 have both been edited to reflect the correct COC and to be consistent as per MOE Comment #2. Ethylbenzene listed in Table 2.1 under PAHs has been moved to the VOC list.
9. Regarding COC selection, there are several compounds listed in AP-42, which was referenced for screening, which have not been listed or carried forward in this assessment. Since AP-42 was used for the selection of COCs an explanation should be provided indicating how some compounds listed in AP-42 were screened out. If the screening was conducted as part of the air quality assessment, appropriate cross referencing should be provided in the HHRA as a stand-alone document.	<p>As indicated in the risk assessment, both AP-42 and CEPEI Combustion Emissions Calculator were used in the selection of COC. All contaminants that were in the calculator were considered in the assessment. Environment Canada has technically reviewed the calculator and accepted this for NPRI reporting across Canada. Reference to the calculator is posted on the NPRI web-site and EC has stopped producing their own calculator for natural gas combustion. The same COCs were used in both the Air and Risk Supporting Documents. It should be noted that the MOE Air Approvals Branch has indicated that the COCs that have been assessed are appropriate.</p> <p>It should be noted that any other contaminants that are reported from AP-42 (which is a dated document) have been evaluated in other Environmental Assessments such as for Halton Hills, Oakville, etc., and have been found to be emitted in quantities such that they represent negligible risks.</p>
10. Table 2.3, Assumed Characteristics of Human Receptors: <ul style="list-style-type: none"> • The water ingestion rates are not consistent with MOE 2011 values. 	In Table 2.3, the soil ingestion rate, water ingestion rate, body weight, and exposure duration have been updated to be

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<ul style="list-style-type: none"> • Exposure duration for toddler is incorrect (3.5 vs 4.5 years). This and any associated calculations should be revised. As a result the averaging time - non- carcinogen is also incorrect for this receptor. • The averaging time- carcinogen is incorrect for all receptors. This and any associated calculations should be revised. 	<p>consistent with MOE (2011a; 2011b). The carcinogen and non-carcinogen averaging times have also been corrected.</p>
<p>11. Table 3.2, Summary of Representative PAH and VOC Background Concentrations, lists 9 VOCs as COCs which do not appear anywhere else in the HHRA. Should these compounds also be considered COCs and assessed? Please provide a rationale and update the document accordingly.</p>	<p>Table 3.2 has been edited to remove all VOC compounds that are not COCs.</p>
<p>12. Also in Table 3.2, for two of the COCs the 24-hour 90th percentile is lower than the annual average concentration. Please confirm these values.</p>	<p>After reviewing the Table as per comment #11, isobutane was removed as it is not a COC. The 24-hour 90th percentile value for 1,3-butadiene was reviewed and adjusted. There are issues with 1,3-butadiene because of limited monitoring data. Environment Canada monitors these contaminants over a 4-hour period and there are years where the data set is more complete than others. In the revision, the same concentration was used for all averaging times which is a conservative assumption.</p>
<p>13. Table 3.5, Maximum Predicted Air Concentration at Various Receptors at Location for N02 and Fine Particulate Matter Emitted for the NGS (Not Including Background, only presents maximum predicted air concentrations for N02 and PM2.s and not all the gaseous air pollutants as identified in Table 3.3, Maximum Predicted Air Concentration for Gaseous Air Pollutants Emitted from the NGS (Not Including Background). For completeness, please add information for missing gaseous air pollutants.</p>	<p>The maximum predicted concentrations of CO, NH₃ and SO₂ occurring in the vicinity of the NGS property boundary that are shown in Table 3.3 do not exceed air quality guidelines (AQAs) for gaseous air pollutants while the AQA for NO₂ and the PM threshold value are exceeded (see Table 4.3 and Section 4.5.1.4). As Table 3.5 only presents maximum predicted air concentrations for those COCs exceeding guideline values at the property boundary, only NO₂ and PM_{2,5} are included in this table. A sentence clarifying this has been added to the text. No additional information is necessary.</p>
<p>14. Tables 3.3 to 3.7 present the incremental concentrations of the various COGs, but do not present the increment plus background. This information should be presented. Furthermore, it should be clear if the maximum/total intake tables include background contributions. Where possible the HHRA should clearly present both the exposure and risks from background/baseline, from the facility and from the sum (or total) of the background/baseline and facility or total).</p>	<p>Tables 3.3 to 3.7 of Supporting Document 6 have been modified to include the incremental, the baseline, and the sum of the incremental and baseline values.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
15. While not likely to impact the conclusions of the assessment, the total intake for the composite receptor (carcinogen) should not be less than for the adult (carcinogen) receptor. Please verify the value in Table 3.9 for 1,3-butadiene.	The values presented in Table 3.9 for 1,3-butadiene are correct. The total intake for the adult in this case is higher than that for the composite receptor because the major pathway of exposure is drinking water and the drinking water ingestion rate for the adult is higher than for the composite receptor (which takes into account all life-stages). It is noted that this result has changed now that the calculations have been updated using information from latest air dispersion model runs and updated human receptor characteristics from MOE 2011a.
16 Table 3. 8, Calculated Maximum Intake from Inhalation from Exposure to COC Emitted from the NGS at the Maximum Concentration Locations, & Table 3.9, Calculated Total Intake from Ingestion from Exposure to COC Emitted from the NGS at the Maximum Concentration Locations, provide intake doses for the cancer endpoint for compounds that are not considered to be carcinogens. These tables, and other associated portions of the document, should be revised.	Tables 3.8 and 3.9 have been edited to remove incorrectly reported intake doses.
17. The hazard assessment section provides some details on toxicity for the COGs as well as a jurisdictional review of available toxicity reference values considered for use in the assessment. This information, and much more, is repeated in Appendix D (Toxicological Profiles). It is not necessary to duplicate this information and it would expedite the review if it was provided in only one place in the document.	The information presented in the Hazard Assessment section (Chapter 4) provides a brief synopsis of what is presented in Appendix D, enough information to justify our methodology and selection of toxicity reference values. This approach is consistent with that being applied to Brownfields risk assessments. This is a style issue and we have not made any changes to the Hazard Assessment section (Chapter 4).
18. The proponent states: "Ambient Air Quality Criteria (AAQC) from the MOE (2008b) are generally available for a 24-hour averaging time and are not protective of chronic exposures and were generally not considered as potential chronic inhalation TRVs unless a more suitable value was not available from other sources." and "MOE reports an AAQC of (value) mg/m3 for health effects, this is for a 24 hour averaging time and is not relevant to this assessment." While the ministry agrees that AAQCs may not always be appropriate as TRVs, the reason presented in the report is not correct and should be revised. Below is an explanation: a. Most AAQCs are based on health effects and all 24-hour AAQCs are set to be protective in long-term continuous exposures. So, for those 24-hour AAQCs that are directly based on health effects, they may be appropriate as TRVs (but would require review and a rationale to support their use). b. Some AAQCs are based on cancer effects and have both an annual averaging time (directly related to a long-term effect caused after a long-term exposure) and a 24-hour averaging times	The text with respect to the AAQC discussion has been edited to reflect the explanation provided.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
(converted from the annual AAQC by a meteorological conversion factor). The 24-hour AAQC is used for assessing 24-hour air monitoring information. When a 24-hour AAQC is set as a conversion from an annual AAQC, it is indirectly tied to the cancer effect and would not be appropriate for use as a TRV.	
19. A review of available air quality guidelines and standards for the criteria air contaminants was not undertaken as it was for the other COCs (omitted from Appendix 0: Toxicological Profiles). An updated review of available guidelines and standards, and their basis, should be undertaken as there are other agencies in addition to the World Health Organization with available limits. Of specific note the recent 1-hour NAAQS for sulphur dioxide SO ₂ (US EPA 2011) should be considered.	Toxicological profiles are not provided for the criteria air pollutants as toxicological data are not available. Rather, air quality criteria that are protective of health are used in the assessment. The recent 1-hr sulphur dioxide NAAQ has been added to the discussion and used in the assessment. It should be noted that the predicted 1-hr sulphur dioxide concentrations from the facility are well below this revised value.
20. Page 5-1: For non-carcinogen air contaminants in which the contaminant is primarily in air, the use of concentration ratio (CR) nomenclature to evaluate acute and chronic health risks is preferred as opposed to the hazard quotient (HQ) nomenclature. Furthermore, it should be made apparent which chemical-specific risk values are represented by a TRV versus an emission reduction target or guidance value (e.g. criteria pollutants). Note the statement on page 5-1 in the 3rd paragraph states "A HQ value for gaseous air pollutant below 1 implies that the health effects associated with the gaseous air pollutants are not significant." This is an incorrect application of the HQ as the health risks associated with exposure to many of the criteria (&other) air pollutants can be significant at any exposure level (e.g., PM).	<p>Although it is agreed that in some cases a concentration ratio can be used to evaluate acute and chronic health risks from contaminants in the air, Health Canada and the U.S. EPA superfund Guidance use the Hazard Quotient nomenclature for contaminants in air. It is also easier for one common nomenclature to be used for the non-carcinogens so that the public is not confused by more than one term. In addition, other HHERAs that have been submitted in support of other EAs for other gas-fired generating stations in Ontario (Halton Hills, Portlands Energy Center, etc.) which have been submitted to the MOE previously have used the HQ nomenclature and no comment has been made.</p> <p>The statement on page 5-1 has been modified to include that for gaseous pollutants a value below 1 is considered to be negligible with the exception of PM. However, it should be noted that the toxicity value used for particulate matter is a threshold value below which epidemiological studies have not been able to discern adverse effects.</p>
21. Pages 5-27 & 5-28 Indicate that ADAF methodology was used to calculate cancer risks, but the data was only presented for the inhalation route of exposure since Table 5.14, Maximum Hazard Quotients Associated with Total Exposure to Short-Term Concentrations of Gaseous Air Pollutants at the Maximum Concentration Location, demonstrates that none of the COC resulted in an increased risk of developing cancer, however, because exposure is from both air	Section 5.6.2 presents a sensitivity analysis to compare cancer risks calculated using a composite receptor to those calculated using age dependent adjustment factors (ADAF). Since this is a sensitivity analysis, it focuses only on the major pathway of exposure resulting from NGS emissions,

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>and soil the risk for exposure via soil should be presented and the total risk for both media presented. Brackets should be added to the equation on page 5-27 so that it is clear the ADAF times the dose for each individual receptor are summed before being multiplied by the TRV. The way it currently appears it looks as if the ADAFs are summed before multiplication. Also the 'i' and 'C' should be defined.</p>	<p>the inhalation pathway. In comparison, the ingestion pathway is insignificant and is assessed qualitatively as discussed in the text: “Additionally, only the inhalation exposure route is presented since, from Table 5.14, none of the COC result in an increased risk of developing cancer by applying the ADAF methodology. Differences are therefore not expected for exposure from the ingestion pathway.”</p> <p>Brackets have been added to Equation 6-1 to indicate that (ADAF x Dose) is summed. Definitions for “i” and “C” have been added to the text.</p>
<p>22 Table 5.14 Maximum Hazard Quotients Associated with Total Exposure to Short-Term Concentrations of Gaseous Air Pollutants at the Maximum Concentration Location, the risk for total PAHs calculated using the ADAF methodology resulted in a risk level of 1 in a million which is equal to the target level used by the MOE. This should be acknowledged in the text.</p>	<p>Table 5.14 actually presents “Cancer Risks Using ADAF Methodology”. Following the revision, all of the recalculated results using the ADAF methodology for total PAHs are now below a risk level of 1 in a million and below the MOE target. As such an acknowledgement was not added to the text.</p>
<p>23. The results for the ADAF methodology for all exposure routes calculated should be presented. In addition exposures for each COC should be summed across all exposure pathways and the total risk presented.</p>	<p>The calculation of cancer risks using the ADAF methodology was completed as a sensitivity analysis focussing on the major pathway of exposure from NGS emissions. Since inhalation is the major pathway of exposure only the results for inhalation are presented. See answer to Comment #21.</p>
<p>24. Section 5.5, Qualitative Assessment of Construction Effects, the proponent addresses the construction phase of the EA as a "qualitative" risk assessment. An expanded written rationale to support a qualitative assessment should be included. Additional considerations that could be considered include but are not limited to; a) existing baseline soil conditions in the context of Ontario Typical Range (OTR) values, b) displacement of significant volumes of dirt being moved or potential for significant dust production c) location of closest sensitive human receptors d) scale or duration of construction especially if this is prolonged. Though outside the purview of a HHRA, ecological considerations may also be considered, such as whether the site is ecologically sensitive, including proximity to surface water and/or hydrogeological considerations.</p>	<p>The qualitative assessment presented in Section 5.5 for the construction effects already makes reference to points (b) and (d) suggested by the reviewer. The fourth paragraph discusses dust emissions while the construction schedule/duration is mentioned in the second paragraph. To address points (a) and (c), the following was added to the text: “Sampling at the site has shown that currently, there are no issues of contamination associated with soil as no soil quality guidelines have been exceeded.” Thus no adverse effects are expected with respect to COC exposures at any nearby residential locations. There are no nursing homes or daycare centers located in the vicinity of the NGS.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
25. For the post-plant closure/decommissioning phase a similarly expanded written rationale as with the construction phase is needed to support a qualitative risk assessment.	The post plant closure/decommissioning phase is not part of the current environmental assessment. The facility may not be decommissioned but retrofitted at the end of the turbine life. At the time of decommissioning an EA maybe required.
26. In many places throughout the HHRA it states that predicted concentrations of COGs will be within the natural variation of existing background levels. However there is no discussion of the variation in background levels (only states that measured levels at Point Petre for PAHs and speciated VOCs have generally decreased over time). Furthermore, it may be more appropriate to refer to background levels as baseline or existing background levels versus "natural" through-out the HHRA.	The COC concentrations in air and soil for non-CACs that are being predicted are so low that they are not even measurable. As such, providing a discussion on the natural variability of background levels will not provide any further context to the results. Throughout the document, references to background levels were changed to baseline.
27. References for equations and selected parameters should be provided. There are many input parameters which are listed to be 'assumed'. Support should be provided for the selection of the assumed parameters.	References for equations and selected parameters and rationale for assumed parameters have been added to the report.
28. Page A-3 equation A-2: Although Flocation defined, it is not clear if it represents bioaccessibility. Additionally the definition indicates that it is receptor specific. Again, it is not apparent whether it is receptor specific and/or chemical specific. Please add additional definition and rational for its use.	As indicated on page A-3 and noted by the reviewer, the parameter $f_{location}$ is receptor specific only, and not chemical specific as well. It does not represent bioaccessibility but rather the fraction of soil, vegetation, dust or drinking water that is contributed from the site.
29. Page A-4 & A-5, equation A-6. The k59 parameter is assumed to be zero. A rationale is required to support this assumption. Does degradation loss constant (k59) include soil degradation and also plant uptake? Please clarify.	The reviewer is referring to the loss constant due to degradation, k_{sg} in Equation A-6. k_{sg} includes soil losses resulting from biotic and abiotic degradation. This has been indicated in the text and a reference has been provided for assuming this value to be zero.
30. The review and verification of risk calculations would be facilitated by providing all necessary inputs/information in the Appendix B (Results of Risk Assessment Calculations). This includes providing the TRV used in the risk calculation in the appropriate place.	The inputs and equations used to carry out the calculations are provided in Appendix A. Appendix B is only meant to provide a summary of the results, all of which would be too redundant to include in the main document. The TRVs are provided in Appendix D and in the main body of the report. Sample calculations are provided in Appendix C.
31. Page C-6. Table C.2-1. Please, provide reference or rationale for assumed parameters.	References for selected parameters and rationale for assumed parameters have been added to Table C.2-1.
32 The second paragraph on page 1-1 states that the land immediately surrounding the NGS site includes a wetland to the north and actively farmed fields to the east. It is not clear why the impact of the proposed Generating Station on the adjacent wetlands and field crops were not assessed in the ERA.	On page 6-14 it is stated that: <i>“For the purposes of this ecological assessment, it is assumed that the land use around the NGS is agricultural, the groundwater is potable and the soil is coarse textured.”</i> As demonstrated in the risk assessment document the concentration of COCs in the soil

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	<p>are so low that they add negligibly to the baseline concentrations. The baseline concentrations are below MOE soil quality guidelines and therefore no further evaluation is necessary.</p> <p>For the gaseous criteria air contaminants (i.e., NO_x and SO_x, etc.) the predicted air concentrations were compared to concentrations that were protective of vegetation and were all found to be below these toxicity values indicating that there will be no adverse effects on vegetation from this facility.</p>
<p>33. It is stated in the second paragraph on page 1-27 and other places in the report that the inhalation pathway for wildlife receptors is insignificant and as such was not quantitatively evaluated. Most ecological risk assessments don't assess this pathway due to lack of toxicity data; however, it may be the most dominant pathway for the proposed generating facility, where air emissions are the main source of contamination. This pathway should be assessed at least indirectly by examining the inhalation TRVs developed for human health airborne contaminants which will most likely be lower than equivalent TRVs for ecological receptors.</p>	<p>To illustrate the insignificance of the inhalation pathway for ecological receptors, a qualitative assessment comparing predicted air concentrations of selected VOCs to human health TRVs was added to Section 6.1.2.</p>
<p>34 It is not clear why a search was not conducted in the areas surrounding the NGS site for the presence of areas of natural or scientific interest and endangered or threatened species habitat. Information regarding the presence of Species-At-Risk (SAR) in the areas surrounding the NGS site should be provided by at least searching the relevant databases.</p>	<p>A search for Species-at-Risk was included in “Supporting Document 4 - Terrestrial Assessment for the Napanee Generating Station” and the results of the search have been added to the document as Section 6.1.1.6.</p>
<p>35. The first paragraph on page 6-14 states that average concentration of surface soil samples collected from the NGS site were used to represent the current off-site surface soil baseline concentrations of the selected COCs. Details such as the number of samples collected, how they were averaged, and number of samples and COCs exceeding the appropriate MOE table of standards if any and their values should be provided in the report.</p>	<p>As requested by the reviewer, some details regarding soil sampling have been added to Section 6.2.1 of the report. Appendix E, which contains the results of the soil sampling campaign, has also been added to Supporting Document 6.</p>
<p>36. Table 6.3 contains local baseline surface soil concentrations of some of the selected COCs while the concentrations of others are missing. It is not clear why the soil baseline concentrations of some of the selected COCs were not measured.</p>	<p>As indicated in the response to Comment #35, some details regarding soil sampling have been added to this section of the report. The soil concentrations were obtained using standard ICP-MS scans and thus may not have captured some of the COCs that were selected since the soil sampling was carried out prior to conducting air dispersion modelling and the risk assessment. As shown in the assessment, the concentrations of all of the COCs are extremely low and do not change the baseline concentrations, therefore the lack of</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	baseline for some of the COCs is not considered to a significant issue and will not change the outcome of the assessment.
37. It is not also clear why the total concentrations in the last column of Table 6.3 for the COCs with no baseline values such as 1,3-butadiene, acetaldehyde and acrolein are different from the predicted incremental soil concentrations in the second column.	The following notes, which were missing, have been added to Table 6.3: f - The lowest PAH guideline of 0.15 mg/kg was assumed. g - Baseline concentration estimated from annual baseline air concentrations (see Table 3.2) and Appendix A (equation A-5). The discrepancy noted by the reviewer is explained with note (g).
38. The second paragraph on page 6-24 mentions the possibility that N02 participates in a photochemical oxidation reaction which leads to the production of the more harmful ozone and peroxyacetyl nitrates (PAN). The impacts of these well documented phytotoxicants on the surrounding vegetation should be discussed in this section. There is a March, 2003 final draft report prepared for the Canadian Council of Ministers of the Environment (CCME) entitled "Effects of Ozone on Vegetation: Update in Support of the Canadian-Wide Standards for Particulate Matter and Ozone". This report should be consulted as it lists a number of studies that evaluate and assess the impacts of ground level ozone on plants.	Secondary chemical formation was discussed in Section 2.1 of the report. As discussed in Section 2.1, ground level O ₃ is formed via a complex, non-linear photochemical reaction involving reactive species of VOCs, NO _x and the hydroxyl radical (OH●). NO _x releases have the potential to affect the formation of ground level ozone downwind of the NGS site. However, due to the small amount of NO _x (see Supporting Document 1, Executive Summary) being released from NGS in comparison to the levels of NO _x in an urban environment (e.g. vehicular, commercial, residential and industrial) and transboundary sources, the effect on ground level ozone from the NGS was deemed to be negligible and will not cause negative effects on plants. Some of this discussion has been added to this section of the report.
39. The synergetic effects of low concentrations of N02 and S02 should also be discussed in this section (Section 6.4.1 Potential Adverse Effects due to Gaseous Air Pollution).	In Section 6.4.1.1 of the report a qualitative discussion has been provided to discuss the synergistic effects of the criteria pollutants.
In general, the ERA was done properly and follows the standard practice which includes typical major components such as problem formulation, exposure assessment, toxicity assessment, risk characterization and uncertainty analysis.	Noted.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
Editorial Comments:	
Many typographical errors were noted but they have not been consolidated in these comments. It is hoped that these could be reviewed in the next version of the HHRA.	Where noted, typographical errors have been corrected.
Equation A-1 reads "dose due to inhalation". Please clarify that this means the exposure dose due to inhalation.	The suggested clarification has been made in the text.
Page ES-5 the first sentence of the section "Predicted Human Health Risks" states: Short-term and long-term health effects related to gaseous air pollutants were compared to established health-based values.." the proponent likely intended to state that the calculated risks were compared as one would not be comparing health effects with values. Please revise accordingly.	The text was revised to say: <i>"Calculated risks resulting from short-term and long-term exposure to gaseous air pollutants were compared to established health-based values."</i>
In the references section it was noted that there are references for MOE 2009a & MOE 2009e. If references are missing they should be added.	The reference list has been reviewed and edited to include only those references that are cited in the text. Also, many of the Health Canada, MOE and U.S. EPA references have been updated to reflect the most recent report versions that were used in the risk assessment.
The following reference Ontario Ministry of the Environment (MOE) 2010. Personal Communication with Marinha Antunes, Air Quality Analyst, Central Region, Technical Support, March, was included in the references section, but was not referred to in the risk assessment document. Please revise accordingly.	After reviewing and editing the reference list this particular reference was removed from the reference list as it is not cited in the main document.
Ministry of Natural Resources (MNR)	
<i>Species at Risk</i>	
Section 3.8.5 of the Environmental Review Report (ERR), Other Authorizations, doesn't identify any requirements under the <i>Endangered Species Act (ESA)</i> .	Noted. See Section 3.7.5 of the ERR.
The proposed development will impact species at risk and their habitat – Eastern Meadowlark and Barn Swallow. Little Brown Myotis is listed as Endangered as of January 24, 2013 and should be addressed in the report.	Text explains no suitable habitat for Little Brown Myotis on site. See Section 2.9 of the ERR.
Based upon this, the development cannot proceed without the proponent fulfilling obligations under the <i>ESA</i> . It appears that as of July 1, 2013, the proponent may be eligible to register for the new Bobolink and Eastern Meadowlark regulatory provision provided under the <i>ESA</i> . This regulatory provision allows eligible development activities within Bobolink and Eastern Meadowlark habitat (≤30 ha) to proceed by registering the activity with MNR and following the rules in regulation under the <i>ESA</i> , instead of applying for an overall benefit permit (s. 17(2)(c) of the <i>ESA</i>). The rules in regulation include, but are not limited to, creating or enhancing habitat outside of the project site, and managing that habitat to benefit Bobolink or Eastern Meadowlark for 5 years.	Steps required by the <i>ESA</i> will be completed prior to construction.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
In addition to the Bobolink and Eastern Meadowlark regulation, there is a new regulatory provision for Barn Swallow provided under the <i>ESA</i> . This regulatory provision allows eligible development activities within Barn Swallow habitat to proceed by registering the activity with MNR and following the rules in regulation under the <i>ESA</i> , instead of applying for an overall benefit permit (s. 17(2)(c) of the <i>ESA</i>). The rules in regulation include, but are not limited to, creating or enhancing habitat outside of the project site, and managing that habitat to benefit Barn Swallow for 3 years.	Steps required by the <i>ESA</i> will be completed prior to construction.
Information on the new <i>ESA</i> regulatory provision that come into effect on July 1, 2013 can be found at http://www.mnr.gov.on.ca/en/About/2ColumnSubPage/STDPROD_104342.html . The amended <i>ESA</i> regulation (O.Reg 242/08) can be found at http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080242_e.htm . Specific details on the Bobolink and Eastern Meadowlark regulatory provision and all the rules in regulation are located in Section 23.6. Specific details on the Barn Swallow regulatory provision and all the rules in regulation are located in Section 23.5.	Noted.
A fact sheet on the Bobolink and Eastern Meadowlark regulatory provision can be found at http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@about/documents/document/stdprod_105276.pdf . A fact sheet on Barn Swallow can be found at: http://www.ontario.ca/environment-and-energy/alter-structure-habitat-barn-swallow .	Noted.
Please note as per the regulatory provision, any activity that is likely to damage or destroy Bobolink and Eastern Meadowlark habitat or kill, harm or harass Bobolink and Eastern Meadowlark is not to occur between May 1 and July 31 of any year. Additionally, no work can occur between May 1 and August 30 of any year in habitat of Barn Swallow habitat. If you have any questions about new regulations for Bobolink and Eastern Meadowlark, or Barn Swallow please contact the Peterborough District Species at Risk Biologist at 705-755-3104. It remains the proponent's responsibility to ensure that contraventions of the <i>ESA</i> do not occur during the course of their activities. It also remains the proponent's responsibility to abide by all other relevant municipal, provincial, and federal legislation.	Noted.
<i>Fisheries</i>	
No comments.	Noted.
<i>Wildlife - General</i>	
Typically development impacts to natural heritage features are assessed within 120 m of a proposed development. The ERR doesn't identify a 120 m boundary, or other suitable area of influence.	Revised. See Section 2.9 of the ERR.
The report doesn't identify and address Significant Wildlife Habitat, which must be identified through site-specific investigations, A number of species were observed on site that could indicate Significant Wildlife Habitat (e.g. Special Concern Species, congregation areas etc.) and	Revised to include information that Monarch Butterflies and other migrating butterfly species could use the site, but it is not a staging area for migrants. See Section 2.9 of the ERR.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>should be assessed as such. Although ELC communities were identified in the report, it does not appear that these were compared to the Ecoregion schedules to determine if there is potential for significant wildlife habitat. The ELC mapping is good for within the site, but it should also be completed within the 120 m boundary as there could be SWH there as well. In general, SWH has not been sufficiently addressed for amphibians, reptiles, birds and butterflies. More information is required.</p> <p>We refer you to Section 9.3.2 of the Natural Heritage Reference Manual (NHRM) and the Significant Wildlife Habitat Technical Guide which was prepared alongside the NHRM. The most recent Ecoregion 6E Criterion Schedule for the identification of Significant Wildlife Habitat (February 2012) can also be found here (http://publicdocs.mnr.gov.on.ca/View.asp?Document_ID=21842&Attachment_ID=45644).</p>	
<i>Terrestrial Assessment Supporting Document</i>	
States that a survey was done in October 2012 to capture the number of migrant species. It would be helpful if Table 3.5 distinguished between migrant and breeding birds.	Table 3.5 of Supporting Document 4 is entitled Breeding Birds. All of the species listed are breeding birds on the site.
It would be helpful to see exactly where the frogs, salamanders, newts and snakes were seen on site or within the 120 m adjacent lands.	<p>No Salamanders or newts were seen on site.</p> <p>Only two observations were made of snakes on site or adjacent, one is ubiquitous (Eastern Gartersnake). The Eastern Milksnake is shown on the figure of terrestrial features. See Section 2.9 of the ERR.</p> <p>Added Eastern Milksnake to Figure 3.3 of Supporting Document 4.</p>
The amphibian survey was conducted in April but the report is not clear as to when the reptile surveys were done (want to make sure congregation areas were considered). Were the surveys conducted in the suitable ELC communities?	It was agreed that one reptile survey to address Blanding's Turtle be undertaken in June. As indicated in Table 3.1, that visit occurred on June 14 th .
The Lennox GS Lagoons appear to be within 120 m and Figure 3.3 indicates a turtle nesting area on the north edge. It only takes one snapping turtle nesting to be considered SWH – this should be discussed in the report.	The nesting area is discussed and mapped in the report. It is off-site, located 200 m from the site boundary as indicated on Figure 3.3 of Supporting Document 4.
Milk Snake (Special Concern) was observed and should be considered under potential SWH. Was any habitat searched for or identified on site? E.g. Hibernacula?	<p>Revised and identified that it is possible that snake hibernacula may be present due to the nature of the bedrock. See Section 2.9 and Supporting Document 4.</p> <p>The following mitigation measures have been added (See Section 2.9 and Supporting Document 4):</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	<ul style="list-style-type: none"> • Prior to construction, the site will be inspected for snakes (or other species) and remove them to a safe place. • During construction, should a concentration of snakes be observed, the project manager shall contact an ecologist to assess the situation. • Snakes shall be moved outside of the construction area to similar suitable habitat by an ecologist as necessary.
Also, section 3-8 states the Dekay's Brown Snake, Eastern Ribbonsnake and Northern Watersnake were all observed in the surrounding area. Surrounding area is not defined - is this the area within 120 m?	<p>The context for the surrounding area is laid out in Section 3.3. It is not defined but extends well beyond 120 m. The intent was to capture any feature or attribute that might reasonably be expected to interact with the proposed undertaking such that an effect could be measured.</p> <p>The citation refers to the Ecological Services report (2010) which examined the entire Lennox GS property as indicated on Figure 1.2 and reported both the 2003 records and the 2010 comment on watersnake.</p>
Is there opportunity to create the same amount of habitat is lost?	It is not usual practice to create habitat to compensate for losses unless those losses are significant, which is not this case.
What kind of habitat will the 0.58 ha be? CUM1 is the habitat that is most affected. Will this be the type of habitat that will be created?	Such a small area of Cultural Meadow would not be ecologically beneficial. We would suggest that this habitat be allowed to succeed. Although CUM is the commonest type of habitat in Table 4.1, we point out that over half of that is sparsely vegetated limestone screenings in an industrial area. Ecologically, cultural thicket is the dominant vegetation type and that is reflected in the breeding bird community.
Where will the alternate osprey nest be? When will the nest be relocated? This nest is considered SWH and should have a buffer of 300 m. Is this nest in the 120 m boundary?	The details of an alternate nesting platform will be established in conjunction with interested parties.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	<p>We do not agree that the 300 m is a buffer (please see comments under heronry in this regard).</p> <p>Agreed that the 300 m is the area in which impacts should be considered. It was clarified that the existing nest will remain and an alternate platform will be provided to mitigate for potential disturbance.</p>
<p>The report states that there was no amphibian breeding habitat within the site. The observations included green frogs, northern leopard frogs, wood frog, gray tree frog, spring peepers, American bullfrogs and western chorus frogs. Were these frogs seen/heard within the 120 m adjacent lands? There is a potential that there could be amphibian breeding habitat for both woodland and wetland amphibians. Location and numbers would be good to have to be able to determine significance.</p>	<p>It was agreed at the pre-scoping meeting that, for amphibian surveys, one confirmatory visit in April was sufficient. This was undertaken and all potential breeding areas were approached so that calling frogs could be heard. All calling frogs were associated with the Lennox Hydro Wetland to the north; none were onsite. We have treated the Lennox Hydro Wetland as significant.</p>
<p>Where were the surveys done in relation to ELC communities?</p>	<p>Please see preceding comment.</p>
<p>Did the Ecological Services point count surveys include the NGS site? If so, is the data available?</p>	<p>The report is available from OPG but terrestrial data can not be extracted for the site area.</p>
<p>Where were the surveys done in relation to the ELC communities?</p>	<p>Surveys were done in every ELC community.</p>
<p>Where was the pair of Green Herons seen? If they were seen in the wetland, it's considered SWH. Were surveys done within MAS-2 in April?</p>	<p>The nest was likely located in an upland thicket not a marsh; therefore it would not meet the criteria for significant Marsh Breeding Bird Habitat.</p>
<p>Lennox Generating Wetland PSW boundary should likely be enlarged to reflect the adjacent unevaluated areas and latest imagery (see Fig.3.3). Is this PSW within 120 m? If so, impacts should be discussed.</p>	<p>MNR is the only authority that can change PSW boundaries, and these data came from MNR through LIO. Regardless, the larger wetland limit indicated on Figure 3.3 is over 180 m from the site boundary.</p>
<p>Why was CUM1 split into 3 sub-types? Savannah Sparrow was observed. The report should identify whether this would be considered significant wildlife habitat.</p>	<p>It was split as the ELC system does an inadequate job of classifying cultural communities which, except for plantations, are lumped into one.</p> <p>On the site there are very different communities which range from very low function to ones that support various wildlife species including SAR. We do not consider two pairs of Savannah Sparrow, an abundant species, to represent a significant wildlife feature.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
The corridor along the drainage feature and cultural thicket could be significant if amphibian breeding woodland and wetland habitat is significant. Were surveys done in this corridor at the right time of year?	The survey dates are provided in Table 3.1 of Supporting Document 4 and they were considered to be seasonally appropriate. Please also refer to the scoping discussions with the MNR. Given that breeding frogs were only observed in the Lennox Hydro Wetland, no changes are proposed.
Were butterflies considered in the surveys?	Only common species were observed incidentally, no surveys were undertaken not identified as necessary. Typically we would only include surveys for insects if there was an identified reason to do so, such as the likelihood of rare species based on habitat types present. (added by BH).
Were amphibians considered in the MAS-2 area? It is being removed completely and could potentially be significant for amphibians. We need to know where the amphibian surveys were conducted.	Given that breeding frogs were only observed in the Lennox Hydro Wetland, no changes are proposed.
Where were the birds observed? How are these habitats going to be compensated for?	The entire site was surveyed and birds were located almost everywhere (very few were in the CUM-ls). Section 3.4.4 provides a summary by habitat guild (woodland, thicket, wetland and open country. While there is no requirement under the Ontario Environmental Assessment Act to compensate for all effects, it is important that efforts be made to mitigate effects and to understand the level of net effects. We believe this has been accomplished.
Where were the amphibians seen? Is this the corridor that will have a passage underneath	No breeding amphibians were recorded, but it is anticipated that they will occur in the riparian corridor during the summer.
The description of significance for a heronry is incorrect. The latest Ecoregion Criterion Schedule states that 5 or more active Great Blue Heron nests is SWH. Criteria also uses 300m buffer not a 100m buffer). The Heronry should be considered significant.	Agreed that the whole Lennox GS Wetland is the area that could be considered potential significant wildlife habitat. Reference to the Draft Ecoregion Criterion Schedule criterion (5 nests) added. See Section 2.9 of the ERR and Supporting Document 4. Regardless of the criterion used, the heronry has been treated as though it were significant.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>The loss of vegetation is estimated at 6.67 ha and 0.29 wetland (and more if other community losses are added). The report proposes to offset this by creation of 0.58 ha of habitat. A 1:1 ratio at minimum should be attained. They should clarify too what that habitat 'creation' might include (i.e type of habitat/species etc). Using the existing riparian buffer area is not considered habitat creation.</p>	<p>There is no minimum requirement for the mitigation of non-significant effects. All areas, even existing buildings and car parks, provide some wildlife habitat and TransCanada will be ensuring habitat impacts are minimized and habitat creation promoted to the extent possible on the NGS site. A Biodiversity Plan is proposed for the NGS site, to be coordinated with the Lennox GS.</p>
<p>It would be helpful if the report clearly indicated on ERR Figure 4.9 all community units to be removed.</p>	<p>The development footprint can be found on Figure 4.1 and a table of communities to be removed in Table 4.1.</p>
<p>On Fig. 4.9 what is to be the end use of the agricultural land? No buildings are shown – just that it is part of the development footprint and possible laydown area? Will this area be paved over? The report indicated that this will be restored to agricultural land after construction, but could some of this area be restored to natural communities to make up for losses of other habitats? E.g. possibly widen the vegetated corridor toward Lake Ontario.</p>	<p>The end use of the lay down area is restoration to agricultural. The laydown area will not be paved over.</p> <p>Any area could be changed from agricultural to natural heritage if there was an identified need or requirement and available resources.</p> <p>TransCanada is undertaking a biodiversity program at the NGS that could be a future vehicle for examining options where TransCanada can commit that the area will not be paved, and that it will go back to original use.</p>
<p>In regards to relocation of the two Purple Martin houses, the consultants should contact local members or chapter of the Purple Martin Conservation Association http://essexpurplemartins.ca/ for the best advice. It appears from Fig. 3.3 that the martin houses may be in an area that will not be directly disturbed (not in the development footprint per say. Perhaps it is assumed that activity and noise will disturb them?</p>	<p>Yes that is correct and noted. Yes, we propose to provide an additional house to eliminate disturbance due to noise (Table 4.4).</p>
<p>Conclusions from Terrestrial Report seem overly optimistic i.e. "effects range from positive to minor"</p>	<p>That is the range of effects that we believe will occur.</p>
<p>The following impacts seem clearly negative: 1) Impact to north –south vegetated riparian corridor. 2) Possible disruption and displacement of heronry colony 3) Added obstruction of clear corridor to wetland from Lake Ontario – will now become obstructed by buildings and whatever is proposed for the AG fields. 4) Loss/displacement of quite a few breeding bird pairs from area, 5) loss of various vegetation communities, 6) loss of agricultural fields. 7) loss or disruption of osprey nest.</p>	<p>See Table 5.1 for a summary of mitigation and net effects.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
Ministry of Tourism, Culture and Sport (MTCS)	
<i>Archaeological Resources</i>	
The ERR indicates that a Stage 1 and 2 archaeological assessment (AA) report has been prepared for this project. As of the date of this letter, MTCS has not yet received the report from the consultant archaeologist. Reports are reviewed on a first in, first out basis, and depending on the contents of the reports, further archaeology may be required. Construction activities cannot proceed until the Ministry has reviewed all AA reports and confirms in writing that it supports the recommendations included in the AA reports.	Noted. A final version of the Stage 1 and 2 Archaeological Assessment has been prepared for the NGS and will be submitted to the MTCS by the archaeologist.
<i>Built Heritage and Cultural Heritage Landscapes</i>	
There is very little documentation of the assessment of built heritage resources and cultural heritage landscapes in the ERR. Section 2 of the ERR states that “the description of the existing environment includes those aspects of the environment which may potentially be affected as a result of the NGS”. Screening Table 4.1, indicates that the NGS could have negative effects on “heritage buildings, structures or sites, archaeological resources, or cultural heritage landscapes”. Therefore, it follows that a description of the presence or absence of known and potential built heritage resources and cultural heritage landscapes should be included in the ERR.	There are no known built heritage resources and cultural heritage landscapes on or adjacent to the NGS site. Screening Table 4.1 was received and will be submitted to the Ministry.
This conclusion in section 4.11, that there are no potential effects on the cultural heritage environment, appears to be supported solely by the archaeological assessment work undertaken to date as part of the Environmental Review. Please be aware that archaeological assessments are generally not intended to address known or potential built heritage resources or cultural heritage landscapes, which are also components of the cultural heritage environment; therefore, it is not sufficient to use only the findings of an archaeological assessment to support the conclusion that these types of cultural heritage resources are not present within the study area and will not be impacted by the proposed project.	Noted.
We had previously provided our checklist for screening potential impacts to known and potential built heritage resources and cultural heritage landscapes in our letter dated April 17, 2013. Please provide further documentation to acknowledge that a comprehensive range of built heritage resources and cultural heritage landscapes were considered in the assessment of the cultural heritage resource environment, and that the local municipality was consulted in determining whether or not the proposed project has the potential to impact these cultural heritage resources.	Screening Table 4.1 and all required documentation that may be required will be submitted to the Ministry.
Section 4.11.2 states that “the operation of the NGS site will not affect archaeological or cultural heritage resources as ground disturbance will not occur”. Please note that ground disturbance is only one of many potential effects that should be considered as part of this Environmental Review. For example, direct or indirect obstruction of significant views or vistas within, from or to built and natural features, shadows created that alter the appearance of a heritage attribute, etc., should also be considered in this assessment.	Noted.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Public and Agency Consultation</i>	
We note that page 3-30 of the Supporting Document No. 7 to the ERR references consultation with the “Ministry of Tourism, Culture and Sport”. We recommend that you specify that our branch is referred to as the Culture Services Unit (which has a mandate under the OHA with respect to cultural heritage resources). We do not have a specific mandate with respect to Tourism or Sport.	Noted and corrected. Refer to Tables 3.7 and 3.8 of Section 3.2.5 of Supporting Document 7.
Please continue to circulate MTCS Culture Services Unit through the Environmental Review process. Kindly remove Karla Barboza, Heritage Advisor (MTCS), from your mailing list, as I will be your Heritage Planning contact for this project.	Noted and revised.
Ministry of Transportation (MTO)	
<i>Environmental Assessment Report</i>	
Overall the EA is well done and includes the appropriate environmental factor assessments. What the study does not cover or discuss specifically are any improvements required within the MTO right-of-way. The assessments were done for the OPG and NGS sites, and not for the area affected by the entrances.	The assessment did include the areas within the MTO right-of-way, including the existing MTO culverts and entrance locations. TransCanada will seek permits from the MTO as appropriate for the work within MTO jurisdiction, and will work with the MTO to ensure their requirements are met.
It is notable that, if improvements are required at any other location(s) within the MTO ROW (e.g. turning lane or shoulder widening), amendment to the EA document (meeting the spirit of MTO Class EA requirement), or addition of MTO Class EA documentation, at these locations is also required.	Noted.
Please note, in reference to EA documentation required for entrance(s) design/construction, that MTO has conducted extensive archaeological investigations for the 'missing mile realignment', and no further archaeology is needed within the Highway 33 MTO right-of-way.	Noted.
MTO has no comment regarding first Nations consultation. The Ministry of Environment will determine if appropriate FN consultation has been done during the review process.	Noted.
<i>Stormwater Management (SWM) Report</i>	
The prefix "S" is used to delineate both pre and post development areas. Although it is understood that the prefix refers to Sub-Basins, its use results in there being areas being labelled the same, such as two "S I" despite, their difference in size. This ambiguity confuses the report	Although the sub-basins have the same label, we have clearly identified pre and post development conditions in the report and tables.
The coefficient used for grassland of 0.8 is too high relative to an impervious surface. Table A-1 indicates that Catchment Area N3-1 has 0% impervious, yet the aerial photo indicates that the area is at least 33% covered by an impervious concrete pad.	Due to the shallow soils over limestone bedrock near the surface, stormwater infiltration potential in the site was deemed to be low, and therefore the soils for this site would fall under soil group D. According to MTO Drainage Manual Chart 1.09 grasslands, over soil group D, would be designated a CN value of 80.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	N3-1 was designated 0% impervious areas during the pre-development calculations. However, for the post-development calculations N3-1 the impervious area was estimated to be 40%. This would provide lower pre-dev flows and higher post-dev flows thus providing a conservative design.
The errors of coefficients and impervious areas are also present in other calculations.	All CN values were based on Soil Group D. The conceptual model has been revised to provide CN value of 93 for all post-development areas. The impervious areas for the conceptual design were estimated to be 40% which would provide for a conservative estimate.
The existing MTO culvert under Hwy 33 is a 2.740 x 1.980 x 30.4 CSPA (corrugated steel pipe arch), not a 2.8m culvert, as reported in the files.	Noted.
Please address the above drainage related/SWM Report concerns, and re-submit for MTO review.	The SWM report has been revised and will be sent to the MTO as part of the final ERR.
<i>Traffic Assessment Report</i>	
Section 3.1.2.2 The South Road Corridor identifies at the top of Page 3-3 that Highway 33 has 1.5 metre bicycle lanes. This is inaccurate. These paved shoulders are multi-use and are not signed exclusively for cycling.	Section 3.1.2.2 of the final report (Supporting Document 5) has been amended to show this correction.
Section 3.1.2.3 The East Road Corridor identifies County Road 4 as former King's Highway 4. This is incorrect. County Road 4 is former Kings Highway 133.	Section 3.1.2.3 of Supporting Document 5 has been amended to show this correction.
The link speed used in the Synchro Analysis is 50 km/hr. However, the posted speed on some of the links analyzed is 80 km/h. Please correct this error.	This has been corrected and the revised Synchro sheets included in the final Technical Appendix
The Synchro Analysis and the report's signal timings do not match. Please review and comment as to why the report recommends different timings than the ones provided by Synchro.	The Synchro signal timings are not specifically included in the report text. This comment requires further clarification. The signal timing provided by the MTO for CR 41/Hwy 401 was applied to existing conditions.
We have no concerns regarding the trip distribution shown.	Noted.
We are pleased to see the in and out traffic volume of employees needed to construct the facility. It is always nice to see information based on previous projects applied to such construction projects to better refine traffic impacts. However, information with respect to the movement of heavy vehicles in and out to remove material such as rock or to bring in material such as concrete is limited to an hourly average broken down by month of construction. While the construction employee side is in our opinion excellent, there is very little on the material side from which to	There was considerable discussion among members of the study team to derive a reasonable estimate of truck traffic at the site entrances. This truck traffic can be highly variable depending on a particular phase of construction and does not necessarily have a coincident peak with employee traffic. The percentages assumed were considered to be representative of

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
go on other than the numbers provided in table 5.1 and 5.2 and in Appendix C. We would like to see more information with respect to the peak construction material traffic volume throughout the project and whether that affects any of the improvements noted. This could be applicable if such volumes significantly affect the heavy vehicle percentages for intersection analysis.	peak hour periods during peak construction employment. In response to the IBI peer review, an upper limit of 20% truck traffic was tested at AREA A entrance. The result was an increase in critical movement delay of a few seconds. The final report will include the sheets and tabular summary for the 20% truck traffic scenario during peak employment.
<u>County Road 4 @ Highway 401 EB Ramp</u> There are inconsistencies in the report with respect to the need for this northbound left turn lane.	Under 2016 total traffic conditions, volumes are forecast to approach a warrant. Clarification has been provided in the report.
Resubmission/clarification is required; as MTO Traffic Section is to review the left turn lane warrant at County Road 4 north at the 401 eastbound ramp. LOS for left turns are reported as A in 2016 and into 2025, and yet the report indicated a left turn lane is warranted during construction.	Following the Peer Review conducted on behalf of the Town at their suggestion a Do-Nothing Scenario was added to the options for this intersection. Since the warrant is only approached and the volumes were developed from very conservative assumptions on vehicle occupancy and arrival rates the final traffic report has been amended to recommend the Do-Nothing alternative.
In Section 6.2.1 Construction Period - Total Summer 2016 there is no mention of the need for a Northbound left turn lane at County Road 4 and the Eastbound 401 off ramp intersection.	Warrant Only is approached. At the suggestion of Peer Review the traffic analysis included a "Do-Nothing" Scenario, which eventually became the recommended scenario, and as such no improvement is required
In Section 6.2.2 The Post-Construction Period - Total Summer 2025 there once again is no mention of a need for a Northbound left turn lane at County Road 4 and the Eastbound 401 off ramp intersection. However, in Section 7.1.1 it mentions that "forecast volumes will approach a warrant for a northbound left turn lane..." It is also recommended in that same paragraph that mitigation measures such as a temporary left turn lane or an all way stop be implemented to address construction traffic at the County Road 4 and Eastbound 401 off ramp intersection.	Based on conservative 2025 total traffic conditions during maintenance periods the left turn warrant is just met. Given the extended time line of the forecasts and potential growth in background traffic the final traffic report has been amended that this intersection should be monitored in the post 2018 time frame to further assess the potential need for this left turn lane.
Similarly, in Section 7.2.1 it is recommended that a left turn lane be installed at the County Road 4 and the Eastbound 401 off ramp intersection as a result of total traffic forecast for 2025. Please confirm: 1) Is the northbound left turn lane at County Road 4/Eastbound ramp warranted? 2) If it is warranted, when is this warrant triggered? i.e: which month in the project does the volumes generated by the site trigger the need for this lane? 3) Is it only warranted temporarily for a month, two months, a year etc.?	See above See above. See above.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>There appears to be an error in the second paragraph: "Highway 33 traffic will only require an eastbound single lane approach: The Highway 33 eastbound direction will require a "through" lane and a temporary right turn lane. It is recommended that this lane be constructed to detour standards." We believe that the second sentence was intended to be for westbound traffic as a right turn lane eastbound would bring traffic into Lake Ontario. Notwithstanding that error, if we take this sentence to read westbound, we do not agree with the use of a temporary detour conditions for the construction of the right tum lane. The length of time that the works will be in place and the type of traffic that will be utilizing the lane will place more wear and tear than a temporary shoulder paving could support over the span of nearly 3 years.</p>	<p>The final traffic report has been corrected for the westbound direction. The reference to detour standards has been removed and revised to standards that are appropriate for the duration use of the right turn lane.</p>
<p>We require that a signal warrant analysis and Synchro analysis for an unsignalized intersection be undertaken for this temporary access, and sent to MTO for review.</p>	<p>The signal warrant analysis for AREA B entrance and the assessment of this entrance as an unsignalized intersection is included in the <u>Technical Appendix</u> and revised report text</p>
<p>Hwy 33 temporary entrance/Area B entrance - need to have confirmation that the entrance will be removed with decommissioning.</p>	<p>This has been noted in the final traffic report text.</p>
<p>No details are provided for Area B Entrance. Require a follow-up with Construction drawings for the entrance.</p>	<p>Construction Drawings will be submitted as requested. They will be prepared by the appropriate section of the study team.</p>
<p>Right turn lane required for Area B Entrance - paving the right shoulder in lieu of constructing a standard right turn lane is not acceptable.</p>	<p>See Comment above.</p>
<p>The first paragraph states that the locations of the two site entrances are generally illustrated in Figure 1.2. That air photo does not show the location of the entrances. Neither does Figure 1.3. While we have no concerns regarding these access locations since their locations were decided upon in consultation with the MTO, it would make sense to have a plan detailing their location as part of the traffic study.</p>	<p>The plan with the construction drawings will be provided with the traffic report at the time of submission.</p>
<p>Report mentions fogging and icing if facility is in use 100%. What are the expected impacts if the facility is only in use 67%? What portion of the highway would be impacted by the icing? The Traffic Report should have details regarding the fogging/icing issue and any mitigation that will be put in place to control this.</p>	<p>Potential fogging and icing issues have been assessed in related studies sent to the approving agencies. Details of these issues are contained Supporting Document 1, Sections 3.1.2 and 6.3.1.</p>
<p>Is this facility anticipated to be in use 100% in the future?</p>	<p>The traffic report is explicit in its description of the post construction period. The traffic analysis is based on the peak demands of the twice yearly two week maintenance period as a worst case scenario.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
Please note. MTO will require that once final design is approved, detailed construction drawings with length details for the right turn lane are to be submitted for MTO Geotechnical Section review. As well, removal / restoration details should be submitted. A Geotechnical Report will be required for the entrances. Additionally, Lighting design is required for the temporary lighting and permanent lighting.	Noted.
Overall the EA is well done and includes the appropriate ate environmental factor assessments. What the study does not cover or discuss specifically are any improvements required within the MTO right-of-way. The assessments were done for the OPG and NGS sites, and not for the area affected by the entrances.	The assessment did include the areas within the MTO right-of-way, including the existing MTO culverts and entrance locations. TransCanada will seek permits from the MTO as appropriate for the work within MTO jurisdiction, and will work with the MTO to ensure their requirements are met.
Town of Greater Napanee – Peer Review Team Comments	
<i>General, Social and Consultation</i>	
Has TCE submitted a Project Description to CEAA, and if so, how has CEAA ruled on the need for a federal EA? If not, when will TCE do so?	A Federal Project Description was submitted to the CEA Agency and posted on CEA Agency’s website on November 1, 2013. On December 16, 2013 the CEAA Agency determined that a federal EA is not required for NGS. The <i>Notice of Environmental Assessment Determination</i> can be found on the Agency web site at http://www.ceaa-acee.gc.ca/050/document-eng.cfm?document=97034
All noise reference criteria apply the MOE exclusionary limits of 45/40 dBA day/night, whereas the measured noise levels are actually lower (38/36). Will the ERR assess the impact of the change in noise levels from background, or just indicate the noise forecasts meet the by-law.	The ERR has assessed the net change in noise levels, not just the above/below criteria metric (per October 24 meeting).
This does not appear to be the case in the draft ERR. Our Noise reviewer has asked a related question	A more definite analysis of the change in noise levels has been presented in the final Acoustic Assessment Supporting Document 2 and the ERR.
Relying on 2007 StatsCan data for unemployment figures. Why not 2012?	2012 unemployment data was not available from StatsCan at the time. The Final ERR has been revised to include the most recent data from StatsCan.
How accurate are the manufacturer specified emission factors (NO _x , CO, PM)?	In terms of the emissions data on NO _x , PM, and CO we have compared the values used to those in AP-42. They are comparable, and for NO _x and CO are more conservative than AP-42.
Do these 24-hour Operation scenarios include operation of ST/G? This is not mentioned in the descriptions.	Each of the 24-hour Operating scenarios includes the operation of ST/G. A statement to this effect is provided in the ERR and Supporting Document 1.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
Scenarios 4A and 4B – are you using cold or warm start-up in the calculation of emissions?	Scenarios 4A and 4B looked at the worst case start up emission rates for each contaminant under four start-up conditions: hot, warm cold and very cold. The worst case start-up condition was determined to occur during either a warm or very cold start-up.
Reference to Table 4.13 should be Table 4.7.	Comment noted and appropriate revisions made to the ERR.
What will be your hours of construction?	Generally speaking, 7 a.m. to 5 p.m, however, there are times during construction that two shifts may be utilized. Based on information supplied by TransCanada staff from their experience with other construction projects, the contractor may use either 8 or 10 hour working days (either 7 am - 3:30 pm/7:30 am - 4 pm or 7 am to 5:30 pm). For the purposes of the traffic assessment two 8-hour shifts a day were assessed in the case that a second shift was added (7 am to 4 pm and then 4 pm to 1 am).
Were these two shifts also considered for the noise assessment?	Yes, these two shifts were considered in the construction noise assessment.
What frequency of blasting is expected (#/da? #/wk?), and over what duration (weeks/months)?	There will be a 6-month blasting phase. The frequency is not yet known. The majority of blasting would likely be completed in a 6 month window. There may be select blasting outside of this period.
Are Equipment Manufacturers' noise ratings enforceable?	The Environmental Compliance Approval that is issued by the MOE prior to a facility being built or operated, specifies the sound level limits for that facility, which will be based on the data submitted in the application. In some cases this Approval also requires that a noise audit be conducted post-construction in order to verify compliance with the requirements.
Is 5.2°C discharge temperature correct (max. per CofA = 32°)?	The discharge temperature at the outlet of the Lennox GS discharge channel, with tempering of the NGS thermal discharge is 5.2°C (based on modelled results). This has been deleted in the revised report (YH).

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
First sentence is incomplete	The sentence has been revised in the ERR to read, “Great Blue Heron colonies consist of concentrated nests occurring in localized areas across the province.”
Construction related traffic and noise impacts are acknowledged, but described as short-term and generally accepted by affected residents. However, it is unlikely that residents will consider a 3-year construction phase to be “short term”. Given their duration, greater consideration should be given to these impacts and possible mitigation, particularly the traffic impacts.	A more detailed analysis of construction impacts is provided in the final Acoustic Assessment Supporting Document 2. This analysis focuses on the various stages of construction and the likelihood of potential noise impacts (as appropriate) during each stage. Generally, construction activities that would generate noise are expected to be relatively short term - i.e. heavy equipment operations during site grubbing / preparation would last for a few weeks rather than the entire 32 month construction period. It is anticipated that construction traffic will be the dominant source of noise rather than other aspects of the construction process.
The statement “No negative effects are anticipated and therefore mitigation will not be required.” Is inconsistent with the finding that mitigation will be required at the intersection of County Rd. 4 and Hwy. 401 (i.e. construction of a temporary left turn lane).	The statement has been revised in the ERR to read, “No negative effects are anticipated and no further mitigation measures are likely to be required.”
A more detailed analysis of construction impacts will be provided in the final Acoustic Assessment SD. This analysis will focus on the various stages of construction and the likelihood of potential noise impacts (as appropriate) during each stage. Generally, construction activities that would generate noise are expected to be relatively short term - i.e. heavy equipment operations during site grubbing / preparation would last for a few weeks rather than the entire 32 month construction period. We anticipate that construction traffic will be the dominant source of noise rather than other aspects of the construction process.	The statement has been revised in the ERR to read, “No negative effects are anticipated and no further mitigation measures are likely to be required.”
Was the HHRA also carried out for NGS workers? If not, why not?	Screening criterion 6.8 refers only to public health concerns, i.e. “cause public concerns related to public health and safety?”
Agreed, but would be preferred if at least some reference to occupational health and safety were included, e.g. the TCE Health and Safety policy and programs.	Noted.
Please provide copies of the emails sent to neighbours February 8, July 17, July 23 and July 26 2013. Please provide notes of meeting with site neighbours held April 6, 2013	February 8 and July 17 e-mails have been previously provided. Please see Attachment A. for July 23 and 26, 2013 e-mails. Note that there was no meeting with site neighbours on April 6, 2013.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
Please provide notes of meeting with site neighbours held April 16, 2013.	This event is characterized as a meeting only in terms of how that table references events. It was not a formal meeting but rather an informal “face to face” discussion and no meeting notes were taken.
Please provide copy of email from MTO to TCE dated May 15, 2013 and the response by TCE.	Copies were provided with all personal information redacted.
Please provide TCE responses to all comments received.	Table 6.1 in Section 6.6 of the ERR provides responses to a summary of the comments received. Many of the comments received were similar so it made sense to respond within the EA in aggregate.
<i>Supporting Document 1 Air Quality Assessment</i>	
<p>The study considers Lennox as part of the monitored baseline and uses the monitored baseline to predict maximum future impacts. The baseline monitoring does not properly capture emissions from Lennox and as a result, cannot provide a maximum impact assessment for the site operations for the following reasons:</p> <ol style="list-style-type: none"> 1. Reports indicated that Lennox only operates about 1.5% of the time. During baseline monitoring (Feb to June), the units only operated a small fraction of the time. The peak months for Lennox were Dec and July (high demand months). As such, peak Lennox emissions were not captured during monitoring. 2. Location. The monitor is not located at the maximum location for Lennox impacts. As such, the background (with Lennox) for other locations would be higher and not correctly considered. 3. Lennox is dual fired (natural gas and residual oil). Lennox would currently be using natural gas due to cost, but that could change in future either as a result of price changes or potential capacity/“interruptible” gas supply forcing Lennox to move towards oil. Lennox is described as burning Residual Fuel Oil. It is not clear which RFO fraction or type is approved. An appropriate assessment of emissions and impacts of Lennox burning RFO is needed. 4. With the cancelation of the nuclear plants, Lennox is likely to run more frequently that it currently does. Again, this would not be captured in current baseline assessment and needs to be addressed for future impacts. <p>Overall, we would recommend that the modelled impacts of NGS include modelled impacts of the Lennox plant at full operations with natural gas and RFO. The current assessment does not adequately consider future cumulative effects.</p>	<p>Additional data on the operations for Lennox GS and other peaking stations has been provided to the Peer Reviewer via email.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>The data confirmed that Lennox was operating very infrequently during the time of monitoring.</p>	<p>Based on limited dispersion modelling (i.e. all operating parameters and scenarios are not known), An assessment has been completed showing the differences in the location and extent of the maximum POI concentrations, which was provided to the Peer Reviewer once the modelling was complete. The future operations (in terms of frequency and extent) are unknown, and as such the assessment focussed on maximum short term effects (1 and 24-hour periods). It would be speculative to attempt to determine a more frequent future operating scenario. Given that there is a significant difference in the stack heights between the NGS and Lennox GS, the maximum point of impingement concentrations from each will occur at different locations. The plumes are therefore not expected to overlap. A semi-quantitative discussion on this is included in Supporting Document 1, but the modelling results are not specifically presented.</p>
<p>Lafarge. Similar to the Lennox OPG station, the Lafarge cement plant is part of the existing and future background air quality. The following should be confirmed and assessed:</p> <ol style="list-style-type: none"> 1. Operations of the Lafarge plant during the monitoring period. 2. Any future expansions or changes proposed for the Lafarge operation. <p>A further assessment of the Lafarge contribution to background air quality is required to ensure that current and future background adequately consider other significant sources in the project area as part of the cumulative air quality impact assessment.</p>	<p>A qualitative discussion of the potential effects due to Lafarge has been provided in the Supporting Document 1. No modelling has been undertaken for the Lafarge facility.</p>
<p>Cooling tower emission calculations. Environment Canada and the U.S. EPA are inconsistent in their approach to calculating particulate emissions from cooling towers. EPA uses total dissolved particulates (TDS) and EC uses total suspended particulates (TSS). It is not clear in the report if the EPA or EC method was used.</p>	<p>The detailed calculations based on the EC approach have been provided. EC has recently changed their approach to be consistent with EPA (i.e. TDS method).</p>
<p>At the site visit it was indicated that construction would be over about 3 years. At present, the air report just handles construction as a short term impact managed through a Best Management Plan (BMP) based on Environment Canada guidance material. There will be a variety of potential emission sources at different times. Further assessment and consideration is required to develop the approach, structure and commitments for the BMP for the site specific activities and potential mitigation required. For example blast scheduling and management, dust suppression in cold</p>	<p>More detail has been added to Supporting Document 1 on the discussion of potential/likely air emissions during construction activities. These will likely differ from phase to phase (i.e. when initial site work commences to clear the areas (and when blasting occurs), when materials and equipment arrive at the site, and when the actual construction</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
condition and managing potential track out from the site (may require municipal approval to allow road cleaning) need careful further consideration and discussion.	of the facility components occurs.
Secondary particulate. The emissions of NO _x , ammonia and SO ₂ can lead to the formation of 'secondary' fine particulate through atmospheric reactions. The impacts are regional in nature as time is required for the reactions to occur. The report does briefly discuss the effect and undertake a limited assessment of impacts for annual average concentrations (page 6-5). We would recommend a further look at secondary PM _{2.5} for shorter term averages (i.e. 24-hour impacts). (Note, we are not recommending a full atmospheric chemistry model. The assessment could use referenced "worst" case conversions and impacts to determine the sensitivity of the modelled impacts to the inclusion of secondary particulate).	A semi-quantitative estimate of potential secondary particulate formation (based on calculations considering the maximum that could be formed, based on the levels of necessary reactants in the exhaust, and background air) has been undertaken. Further discussion on secondary particulate formation has been added to Supporting Document 1, and incorporates the results of the semi-quantitative analysis discussed above.
The calculations for the equipment emissions are based on manufacturers' data. Some of the performance and emissions are guarantees are "enforceable" with the supplier, others are the suppliers' best data/estimates and/or calculations of emissions during various operating conditions (e.g. start up). A summary of which emissions are "guaranteed" would provide assurance for the emissions calculations. Similarly, a summary of non-guaranteed data, the basis of the data and the applicability for this site would be useful in demonstrating the confidence in the emission data. As well, it should be recognized that the scenarios derived in the report need to "bracket" any actual scenarios. If other scenarios are possible or contemplated, emission levels would need to be less than those assessed. The discussion should consider both short-term (1-hour) and longer term impacts.	It was confirmed that the main emissions during full operations are guarantees. The other emission profiles are best estimates provided by the proponent. The detailed calculations on the various operating and start-up scenarios were provided.
These factors are key to the impact assessment. Applicability of these factors to the specific site still needs to be confirmed.	The factors provided by the manufacturer are guaranteed for normal operations for NO _x , PM _{2.5} , ammonia, CO and VOCs. The start up emissions, are not guaranteed. However, there is no other reliable or representative source of start up emissions data (i.e. AP-42 does NOT include start-up) and as such the values provided by the manufacturer are the best estimate of start-up emission rates available.
As well, report should provide assurance that there are no alternate operating scenarios that could lead to higher emission rates.	The scenarios assessed represent max emissions over the corresponding averaging periods, which have been noted in the air SD report.
MOE is very clear in their differentiation of Ambient Air Quality Criteria (AAQC) and O.Reg. 419 standards. The latter are used for single facility compliance. The AAQC are objectives for ambient air that consider all sources. Often these two are the same numerical value and to add to	A discussion has been included in Supporting Document 1 on the difference between O.Reg.419/05 standards and compliance requirements with those in comparison to

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>the confusion, total NO_x is reported as “NO₂”. For clarity, the Air Quality Assessment should consider both the AAQC objectives (for total impacts) and the 419 criteria for single facility ‘compliance’.</p> <p>The discussions in the report should address the differences in the criteria and their use. For example, the AAQC for NO_x is only NO₂. The 419 criteria for compliance, is actually NO_x (i.e. total NO_x, not just NO₂). For NO_x, both NO₂ (for the AAQC) and total NO_x from the site (for 419) need to be addressed. As the assessment was done conservatively for total NO_x, no changes are required to the assessment, but greater clarify of the differences in AAQS and compliance criteria is warranted.</p> <p>Similarly in the monitoring baseline discussion, it is not always clear what form of the NO_x is considered. For example Tables 2.5 and 2.6 show representative levels of NO₂ near the site, but it is not clearly indicated that this is NO₂ and not total NO_x reported as NO₂.</p>	<p>AAQCs.</p> <p>Clarification has been provided in Supporting Document 1 regarding which form of NO_x (NO₂ versus total NO_x) is used to represent background concentrations.</p>
<p>Visible plumes. NGS has undertaken an assessment of the visible plume and potential fogging and icing as a result of cooling tower water vapour emissions. (Note: the particulate emissions from the cooling towers have also been assessed). There can also be occasional visible plumes from the main stack. At most natural gas power plants, short term yellow plumes can be visible during the start-up of the units. These plumes are often very noticeable and can cause concern in the surrounding areas. A discussion on visible plumes from the main stack should be included in the impact assessment.</p>	<p>The ERR now includes a discussion in Supporting Document 1 on visible plumes from the HRSO stacks during start up and normal operations.</p>
<i>Supporting Document 4 Acoustic Assessment</i>	
<p>The introduction to the Acoustic Assessment Report indicates that the purpose of the study is to summarize the anticipated environmental (noise) effects of the NGS. Presumably, the noise effect is the change from what currently exists to what will result when the NGS is either being constructed or when it is in operation. However, the Acoustic Assessment does not clearly state what these effects (or impacts) are nor what the significance of these effects is. The predicted noise impacts need to be clearly outlined within the report.</p>	<p>A more definite analysis of the change in noise levels has been presented in the final acoustic Supporting Document 2. The initial baseline monitoring was only completed over the course of one (1) week and was limited in scope, which we felt was not sufficient enough to establish baseline noise levels in the community for the purpose of assessing potential changes in sound levels. As such, a supplemental baseline monitoring program was completed at POR 1, 2 and 3 from mid July through to September. Additional follow-up monitoring has also been done at POR4. This additional data has been presented in the final Acoustic Assessment (Supporting Document 2).</p>
<p>NPC-300 should be included as a provincial regulatory requirement.</p>	<p>NPC-300 has been referenced in the final document and all relevant aspects of the guidance document considered.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
The assessment was done for the closest noise sensitive receptor in each direction from the proposed facility. Some of these receptors are single storey dwellings. As the ground attenuation is reduced for two storey dwellings, the assessment should also include the closest two storey dwelling in each direction. For example, for POR 3, the next dwelling immediately to the east is a two storey dwelling which will likely receive sound exposures higher than those at POR 3.	The intention is to consider the receptor locations that result in the highest predicted noise levels.
It is expected that the predicted noise levels will be higher at the two storey dwelling located immediately east of POR 3 than at POR 3 due to the reduced ground attenuation. Thus, the analyses should be done at the closest two storey dwellings.	Yes. An additional receptor was added (POR5) at the 2 nd storey window height in response to this comment.
Ambient sound level measurements were not done at POR 2 and POR 4 to determine the existing conditions at these receptors. The ambient measurement data acquired at POR 1 and POR 3 was used to confirm the applicable noise guideline limits at the receptor locations. However, as per the comment directly above, compliance with the approval criteria does not ensure there will be no or little effect or impact. Thus, the acoustic assessment should also define the existing sound environment at POR 2 and POR 4.	See the response above.
Details of the source of the sound power levels used to complete the noise impact assessment are missing from the report.	Available non-proprietary manufacturer's data has been provided in the final SD.
The testing of the diesel fire pump is considered an insignificant noise source based on it being smaller than the emergency diesel generator. However, significant noise attenuation has been proposed for the generator. If similar noise mitigation is not being provided for the fire pump, then it should be included as a noise source in the impact assessment.	This source has been considered in the analysis of emergency sources as per NPC-300 in the final Acoustic Assessment SD. Available manufacturers information on the fire pump has been supplied.
It appears that significant sound exposures could result from the proposed maintenance activities. However, they have been excluded from the assessment. If the noise guideline limits could be exceeded, then these activities must be included in the noise assessment.	Additional clarification has been provided in Supporting Document 2 that better describes the extent of the maintenance activities expected at the NGS. The maintenance activities are not expected to generate noise levels that exceed the predicted noise levels from the normal operating scenario presented in the Supporting Document.
The Best Management Practices that will be utilized to mitigate the noise impacts from construction must be clearly outlined within the report.	See Section 4.3 of Supporting Document 2 for list of Best Management Practices.
Clarification regarding which construction activities will be done at night is needed. In addition, a discussion regarding potential construction traffic noise impacts should be included as part of the impact assessment.	Construction activities are generally expected to occur during the day-time. However, there may be some specific construction activities that are completed at night. In all cases, these activities will comply with the relevant municipal bylaw restrictions (as appropriate). Additional details have been provided in the final Acoustic Assessment Supporting Document that elaborate on the various stages of construction, specific activities and the likelihood of

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	potential noise impacts.
The discussion presented focuses on the Ministry of Environment approval criteria and not the existing acoustical environment at the PORs. More detail about the existing acoustical environment at the noise sensitive receptor locations is needed.	Additional analysis is provided in the final Acoustic Assessment Supporting Document.
The report indicates that construction will be of short duration which limits the potential for nuisance noise effects. Our understanding is that construction is proposed to occur for 32 months which is not considered short duration. Thus, additional detail regarding potential construction noise impacts is needed.	A more detailed analysis of construction impacts has been provided in Supporting Document 2. This analysis focused on the various stages of construction and the likelihood of potential noise impacts (as appropriate) during each stage. Generally, construction activities that would generate noise are expected to be relatively short term - i.e. heavy equipment operations during site grubbing / preparation would last for a few weeks rather than the entire 32 month construction period. It is anticipated that construction traffic will be the dominant source of noise rather than other aspects of the construction process.
Operational noise is indicated as having a negligible effect on residents. Additional details regarding how this conclusion was reached is required since the noise assessment focuses on MOE approval criteria and not the change from the existing acoustical environment.	Additional analysis is provided in the final Acoustic Assessment Supporting Document.
Operational and construction noise is indicated as having a minimal effect. Additional details regarding how this conclusion was reached is required since the noise assessment focuses on MOE approval criteria and not the change from the existing acoustical environment.	Additional analysis is provided in the final Acoustic Assessment Supporting Document.
<i>Supporting Document 5 Traffic Assessment</i>	
The trip distribution assumptions show 10% of trips using Bath Road (CR33) to travel to and from the east. The trip distribution diagram (Figure 5.2) Google Maps suggests Bath Road as the preferred route when travelling between Kingston and the new Station. Based on the information in the report it is not clear what proportions of trips are travelling to and from Kingston. If a significant portion of the trips are to/from Kingston TranPlan may wish to adjust these values.	The Trip Distribution Assumptions were developed through discussions with the three approving agencies and local AECOM engineering staff working for the County providing considerable input. The study team combined their field observations with those of the approving agencies to prepare the final trip distribution assumptions. Discussions were also held with local labour leaders to develop the overall catchment areas for labour sources. The County is developing the CR 23 east-west corridor (Taylor-Kidd Blvd) to provide new road capacity along the Lakeshore Corridor so the Lakeshore component was split between Hwy 33 and CR 23.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
For trips destined to and from the Highway 401 interchange at CR4, the study assumes that most trips will travel to/from this interchange using CR4 and Bath Road. The study also assumes some trips will use CR7 and Highway 2 however the proportion is relatively small. This alternative route (CR7 / Highway 2) is the preferred route by Google Maps. This route also has traffic control signals at Bath Road and CR7 which would more readily facilitate the busy eastbound left turn volume during the PM peak hour.	It is agreed that site traffic will use other minor routes not included in the study road network. However, in developing the trip distribution assumptions, as a worst case scenario, all north-south trips were assigned to either CR 4 or CR 41/8/21. Assigning traffic to other routes would reduce volumes in these main travel corridors. In the example quoted at CR 2/CR4 and CR7/Hwy 33 the overall intersection volumes would still remain the same.
The north-south roads included in the assessment are those which provide direct access to the main highway 401 interchanges in the area. There is a third interchange at Palace Road which may also accommodate some trips from the east and west, in addition to trips using Palace Road from north of Highway 401. Because the new station is at the corner of CR 21 and Bath Road, it may be desirable for some to use this route.	The Palace Road interchange and connecting road linkage were field checked in the early stages of the traffic study. It is recognized that a portion of site traffic may use this route. However, this route is considered an indirect route to/from Highway 401 and therefore little NGS traffic will use it. Again, it was seen as a worst case scenario to assign all of these site trips to the CR 4 corridor.
The cycle lengths at some intersections appear to be very specific (i.e. 102.5 seconds, 61 seconds, 61.5 seconds). These may be correct however the timing plans are not included in the report so cannot be confirmed.	Where available the study team used current intersection signal timing as supplied by the approving agency. This was not specifically referenced in the study report but can be supplied.
Check phases CR 41 & 401 EB ramps to ensure green time extends all the way to amber clearance.	Reviewed and corrected as required. However, it is expected that these changes will have little impact on the LoS and delay time results.
Pedestrian walk time and flashing don't walk times are all defaults; this is likely OK for most intersections where there are few pedestrians, but should be checked for signal within Napanee (Centre Street/Bridge Street and Centre Street/Dundas Street intersections). Pedestrian volumes should be included in the analysis for these two urban intersections.	Pedestrian volumes were collected at these intersections during the July 2013 traffic count program. The observed ped volumes ranged from five to 10, 2-way per hour, at each crossing. Following initial discussions the model incorporated the intersections with 60 peds/hr. This marginally increased the overall intersection delay results from one to four seconds. These changes do not impact the study findings.
Lane configurations at Centre Street and Dundas Street should be confirmed. It appears that there are inconsistencies between Google Street View, Figure 2.1 and the Synchro analysis. Specifically, it appears the lane configurations for the eastbound and westbound approaches have been reversed.	Following initial discussions, the lane configurations for these two intersections were reviewed. The Synchro analysis is correct for both intersections. But the lane configuration for the exhibit in the report was corrected at Dundas (CR 2).

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
Lane configurations at the CR 23 and CR 6 intersection should be confirmed. Figure 2.1 and the Synchro analysis do not include the northbound and southbound right turn lanes.	The intersection geometrics were field checked. The north/south approaches have only right turn tapers. The East/west approaches have full right turn lanes. The analysis assumptions are consistent with the actual lane configurations.
The signal phasing of the temporary signal at access at Highway 33 and Area B is showing a phase conflict between phases 4 and 8 because the eastbound left turn is coded as protected on phase 4. The eastbound left turn should be coded as permissive on phase 4 or, if that does not result in adequate operations, as protected/permissive.	This error has been corrected. The revised results are unchanged from the original calculated LoS and delay times at this intersection.
The report recommends mitigating measure for further consideration by MTO for the intersection Highway 401 EB Off-Ramps and CR4 for the 2016 peak construction scenario. Option 1 is potential all-way stop control (AWSC). Option 2 is a temporary northbound by-pass lane to allow northbound through traffic to pass northbound left turning traffic. As stated in the report, the northbound left turn warrant is not met but is approaching warrant. The Synchro analysis also suggests the intersection will operate under capacity with acceptable levels of delay. As such, TranPlan may wish to consider a third option which is essentially a 'Do Nothing' option which would leave the intersection in its existing configuration. If this third option is pursued, a safety review should be conducted to determine potential warrants for warning features such as signage or a flashing amber beacon.	It is agreed that this third option should be included in the assessment of potential mitigation measures at this intersection.
The trip generation should consider transportation demand management elements such as buses/shuttles which would reduce to overall trip generation of the site.	TDM was considered and discussed in some detail by the study team. Based on the Team's collective experience with similar projects, particularly in rural areas with dispersed worker origins, this is not easy to arrange. Vehicle pooling does take place but it is usually organized by workers from neighbouring areas who organize among themselves. The second key issue is that trades tend to use their own personal tools and equipment transported in their own vehicles. The use of buses/shuttles with these workers is considered not practical particularly in a rural context. Finally, the study analyses with no TDM programs in place, represents a worst case scenario. With no TDM program the study road network will operate at acceptable LoS with residual capacity for additional future growth.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>The trip distribution for trucks would likely be different than the trip distribution for worker traffic. TranPlan should consider truck distribution separately if it is determined that the impacts would alter the recommendations of the report.</p>	<p>The overall trip distribution of truck traffic could be somewhat different than craft/supervisor traffic. However the extent of the study road network to include the Hwy 401 corridor assures that truck traffic travelling to/from supply sources such as Napanee and Kingston have been included in the network analyses. Given the forecast residual capacity in the network and the low volume of truck traffic, a complete second set of assignments for truck traffic will not affect the study findings.</p>
<p>Truck percentages at site driveway A should reflect the actual proportion of trucks anticipated to use this driveway. The trip generation table provided in Appendix C shows that 15 of the 70 peak hour movements are ‘Const Traf’ (i.e. trucks) and so the truck percentages should reflect this proportion.</p>	<p>The “construction traffic” will be a mix of truck sizes. Not all this traffic will be large trucks. The capacity analysis was rerun for Entrance A based on 20% heavy trucks as a worst case. The result was an increase in average delay to the critical movement at Entrance A of 1-3 seconds with no change in Level of Service. These results demonstrate that this variation in percentage of truck traffic has no impact on the findings of the study analyses.</p>
<p>Is there any discussion of hazardous materials moving to the site? If there are hazardous goods destined to the site, there should be some discussion about the risks of this movement. Are there oversized loads and how will these be addressed? Are there half load restrictions on any of the access routes to the site?</p>	<p>The movement of hazardous material has not been included in the traffic report. It was not identified by the approving agencies during any of the discussions on Scope of Study. There have been discussions with both the County and the MTO on the necessary procedures and permits required to move oversize/overweight loads. There are two additional options for moving these loads that are being investigated by the study team. The first is the rail option using the spur line into the present Lennox GS site and the second is using the Lafarge docking facility located east of the study site. The decisions on components, mode to use, permits etc. are being handled by the proponent.</p> <p>The topic of Spring Half Loads has not been included in the traffic study report. However, it has been discussed with the County and members of the project team. The County has requested that the designated haul route to the site from Hwy 401 be defined as CR 4 to Hwy 33 and then to the study site. Since CR 4 was a former Kings Highway it is understood that there will be no half load restrictions on this route.</p>

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
	The transportation of any materials (hazardous or otherwise) will be done according to the Transportation of Dangerous Goods Regulations requirements and by firms licensed to handle those materials. TransCanada will not be transporting these materials.
<i>Economic Assessment</i>	
At page 4-74 in the ERR, it is stated that ‘An influx of transient or temporary workers is not anticipated...’. This section should be updated to reflect the draft Economic Study which estimates that “during the months with the highest construction worker demand, it is likely that all local (motel and hotel) units will be full and overflow into the regional markets will be required”	Noted and revised. See Section 4.9 of the ERR.
Related to the previous point, the Socio-Economic section of the ERR should consider and assess the “impact on people living in poverty...” of the reduced availability of motel accommodation.	Consideration has been given to the availability of temporary accommodations in the ERR. The Economic Study took into consideration the number of rooms currently available to determine the vacancy rate and subsequent demand. This assumes that any person or persons presently using motels for accommodations would continue to do so and as such would not be displaced during the NGS construction phase. The Economic Study also indicates that substantive direct, indirect and induced economic benefits are anticipated for the area and region, consequently, the number of people dependent on motel accommodations is not anticipated to increase.
The EIS has acknowledged that the demand for temporary accommodation will place a strain on temporary housing for low income persons. This should be noted in the ERR.	Noted. See Section 4.9 of the ERR.
Reference is made to anticipated road improvements independent of the proposed undertaking as well as work that may be required as a result of the undertaking. Of note is the potential for significant congestion near the Amherst Island ferry docks during the NGS construction phase Please confirm that all these matters have been taken into consideration in the traffic assessment section and the socio-economic section of the ERR.	The results of the Traffic study show that the Hwy 33 corridor has considerable residual capacity during periods of peak NGS construction. There is nothing to indicate that there should be any traffic operational problems at the ferry car park due to traffic generated by NGS during the construction period. The potential congestion suggested in the report is predicated on the Wind Farm project proceeding. If its approval is successful, the proponent will normally be responsible for the related traffic study and development/financing of any traffic mitigation measures that may be required.

Table A.1 Agency Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p>These sections identify a number of potential impacts of the NGS Project on local infrastructure, emergency services and housing. Figure 11 in S. 2.7 (pg.37-38) provides a summary thereof. These impacts should be assessed in the Socio-Economic section of the ERR.</p>	<p>Noted and revised. See Section 4.9 of the ERR.</p>
<p>Concerns regarding hazards to school children crossing Hwy 33 and County Rd. 8 are identified. Further on Pg. 38 of the Economic Study, the need for additional crossing guards is identified (5th row). These potential impacts should be identified in the Traffic assessment section and assessed in the Socio-Economic assessment section of the ERR.</p>	<p>The scope of the Traffic Study was developed working with the three approving agencies, the MTO, the County, and the Town of Greater Napanee. Specific pedestrian crossing requirements for these two schools were not identified by the agencies. Notwithstanding, TransCanada will remain in contact with these agencies through the construction period and make sure that there is both the appropriate level of awareness as well as a mechanism to address any issues or concerns that are raised as a result of increased traffic due to the project. Given the semi-rural location of the Southview school much of the student population will likely be bused to the school. The Bath school is located on CR 7 on the north side of the community. Students from the Hwy 33 corridor can use and should be directed to use the pedestrian signals at the Hwy 33/CR 7 intersection. In addition, the site traffic peak periods of demand do not coincide with the school peak hours. These schools should have a Safe Routes to School program in place for students who walk to school.</p>

**A.2 PUBLIC COMMENTS AND TRANSCANADA RESPONSES ON THE
DRAFT ERR AND SUPPORTING DOCUMENTS**

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents

COMMENT	RESPONSE
<i>Association to Protect Amherst Island (APAI)</i>	
<p>1. Approval Process - Please clarify the approval process and advise whether the project will be posted on the Environmental Registry for review and public comment. Provide specific information about all approvals required for the project and all opportunities for public comment.</p>	<p>Please see Section 1.0 of the final ERR for information on the approval process. Projects seeking approval under the EA Act are not posted to the environmental registry. There is a 30 day public comment period for the final ERR.</p>
<p>2. Noise from Lennox and Addington Generating Station - Please liaise with Ontario Power Authority to ensure that Lennox and Addington generating Station complies with current noise standards. Install a noise monitoring station on the north-western shore of Amherst Island to establish a baseline of existing noise levels when the generating station is operational in various conditions and times of day. Provide a public report of all data.</p>	<p>All noise data has been included in Supporting Document 2 including information with respect to the noise monitoring station installed on Amherst Island. Questions with respect to compliance of Lennox GS should be referred to OPG.</p>
<p>3. Noise from proposed Napanee Generating Station - Please provide predicted noise levels from the Napanee Generating Station on Amherst Island by a qualified acoustician taking into account the additive effect of the L & A generating station and the proposed Napanee Generating Station and in particular the amplifying effect of transmission of sound across water. Please also take into account proposed industrial wind turbine project proposed by Windlectric.</p>	<p>Please see Supporting Document 2 and Section 4.3 of the ERR.</p>
<p>4. Particulate Emissions - Please install an air monitoring station on northwestern shore of Amherst Island to establish a baseline of air quality and commit to ongoing monitoring and public reporting for the duration of the project. Please provide a list of the particulate emissions and the existing acceptable standards for same along with WHMIS sheets.</p>	<p>Response Provided: “A continuous air monitoring station was set up at the NGS site in February of 2013 to collect local data on current Criteria Air Contaminant concentrations. This monitoring continued until the end of October 2013. We collected air concentration data on PM₁₀, PM_{2.5}, CO, SO₂, Ozone (O₃) as well as NO_x/NO/NO₂. A summary of the data collected is presented Section 2.2.1 of the ERR. A comparison of this data was also conducted according to data gathered at MOE monitoring stations located at Belleville and Kingston (see Table 2.5 of the ERR). Please note that a full set of the monitoring data can be found in Appendix A of Supporting Document 1 of the ERR. It is expected that the measured air concentrations at the site over the 8 month monitoring period are representative of local concentrations in the general vicinity, including Amherst Island. Please see Section 4.2 of the ERR for a summary of the air quality assessment undertaken and Supporting Document 1.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Association to Protect Amherst Island (APAI) (Cont'd)</i>	
5. Safety - Please provide a copy of the emergency and safety plan with particular regard for fire and explosion.	Preliminary emergency and safety plans are being developed in coordination with the Town of Greater Napanee and will be submitted as part of our site planning approvals process, with a commitment to submit a full emergency plan prior to the NGS going into commercial operation. Please note that there is no gas storage on site. We will be conducting regular emergency exercises that include local emergency response personnel/fire services. Please see Section 3.5 of the ERR for more information on safety and emergency response.
6. Vista - Please provide a schematic showing the proposed project from the vista of Amherst Island. Please post copies of all proposals for landscaping and screening for public review and comment for a minimum of sixty days.	Please see Section 6.5 of the ERR and Supporting Document 7 for more information on the Architectural and Landscaping Advisory Committee and Section 3.1.4 of the ERR for artist renderings of the NGS.
7. Contract - Please post a copy of the contract between TransCanada and the Ontario Power Authority on a publicly accessible web site.	All of the commercial agreements related to the NGS are public and can be found at http://www.powerauthority.on.ca/news/contract-finalized-relocate-transcanada-power-plant-napanee .
8. Environmental Assessment - Please post the full environmental assessment including all technical reports (suitably divided for accessibility) of the project on a publicly accessible web site for public review and comment for a minimum of ninety days.	The final ERR is available for public review for 30 days on the project website suitably divided for accessibility.
9. Water - Please provide information about the amount of water that will be used from and discharged into Lake Ontario daily, including temperature, chemicals and relevant WHMIS sheets. Please advise what permits are required and ensure that public notice is given for all environmental postings.	Response Provided: “The water consumption and discharge and its effects are detailed in the ERR Section 4.7 and Supporting Document 3, Aquatic Assessment. This is the same information that will be in the Environmental Compliance Approval application. The NGS will be operating under OPG’s existing Permit to Take Water, which has the capacity for the small incremental increase the NGS will require. As discussed above, an Environmental Compliance Approval will also be required for the wastewater and stormwater discharge components of the NGS. WHMIS sheets for the water treatment chemicals will be available once the ECA application has been completed.

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Association to Protect Amherst Island (APAI) (Cont'd)</i>	
<p>10. Oakville/Mississauga versus Lennox and Addington - Please provide a comprehensive justification as to why the gas plant should be located in Lennox and Addington when it was considered unsuitable for Mississauga/Oakville.</p>	<p>The Lennox site is an ideal location for the NGS. It has an existing robust 500 kV electrical connection to Hydro One on the site which permits the NGS output to be moved efficiently to load centers. It has an existing natural gas connection to Union Gas on the site and existing water supply and return facilities through the adjacent Ontario Power Generation Lennox GS facility. Power generation is a permitted use consistent with Zoning and Official Plan. The site has good road access and on-site rail access. The 95 acre (38 ha) site provides ample room for construction staging and parking with the actual facilities occupying about 25 acres (11 ha) - located largely on previously developed land. The facilities are close to all the major connections and all connections are confined to the Lennox site. Further detail surrounding the role and function of the NGS can be found at: http://www.powerauthority.on.ca/current-electricity-contracts/sc-cc/napanee-generating-station-900-megawatt-mw-napanee-ontario.</p>
<p>11. TransCanada as a good neighbour - Please provide specific information as to how TransCanada will honour its commitment to be a good neighbour to Amherst Island.</p>	<p>“TransCanada is proud of the relationships we have built in the communities where we have operated for over 60 years across North America. We believe that the most important element of being a good neighbour is to operate our facilities safely and responsibly. We also believe that transparency and accessibility is a key to maintaining strong relationships with our neighbours. Throughout the course of the development of the NGS to date, we have sought to ensure that stakeholders have had access to project information and the project team in a number of ways including meeting with neighbours, community leaders, local organizations, and Aboriginal communities, holding informational open houses and a Jobs Information session, and contributing to local organizations which seek to improve the quality of life in the region. We have also opened a community outreach office in Napanee and have hired a local representative to ensure stakeholders have continued access to the project team. We are committed to continuing to foster these relationships as we develop the NGS and would be interested in understanding how we can strengthen our relationship with the community of Amherst Island.”</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE																				
<i>Area Resident</i>																					
<p>Several weeks ago we met at the open house for the Napanee GS. I asked for an overall noise sound power level for the GS, appropriate for a south facing direction. I was assured that this would be done and sent to me. I have heard nothing. Furthermore, I am hearing that sound testing across the water is being prepared or is underway - why was I not informed of this as I was the one who raised the issue and learned that the noise assessment for the island had no basis in approved methodology. If I do not hear from you in good time I will explain to MOE why I need an extension beyond Nov 30th to respond to the Environmental Review documents. My sense from MOE is that it is getting increasingly frustrated that developers are not taking the review process seriously enough. The Costego wind development REA documents were declared incomplete. The Amherst Island wind energy development has been 6 months in the completeness process and MOE has been returning documents to the proponent along the way. As you will know the Ostrander wind energy development was well over a year in the approval process and the approval was rejected by the ERT.</p>	<p>Response Provided: “As per your request, we have prepared the following memo that presents a single sound power level spectrum that is intended to represent Napanee Generating Station (NGS) operations. This data is provided for use in evaluating potential noise impacts generated by the NGS on receptors located on Amherst Island. The sound power level has been derived using the Cadna-A acoustic model under normal operating conditions at the NGS. This acoustic model is based on ISO 9613-2, which is the standard that is accepted by the Ontario Ministry of the Environment for industrial noise assessments of this nature. For the requested south exposure, a single point source was placed at the closest point on the south property line of the NGS site. The source sound power levels were adjusted such that the predicted octave band sound levels at the receptor matched the results of our full acoustic model (consisting of over 300 sources). The coordinates of the point source and the point of reception are summarized in Table 1. The resulting sound power level is summarized in Table 2.</p> <p style="text-align: center;">Table 1: Source and Receptor Coordinates</p> <table border="1" data-bbox="1157 971 1984 1128"> <thead> <tr> <th colspan="2">Source Coordinates¹</th> <th colspan="2">Point of Reception Coordinates¹</th> <th colspan="2">Distance (m)</th> <th rowspan="2">Pr Pr (d)</th> </tr> <tr> <th>X (m)</th> <th>Y (m)</th> <th>Z (m)</th> <th>X (m)</th> <th>Y (m)</th> <th>Z (m)</th> </tr> </thead> <tbody> <tr> <td>352832</td> <td>4889911</td> <td>1.5</td> <td>355579</td> <td>4888846</td> <td>1.5</td> <td>2.9</td> </tr> </tbody> </table> <p>NOTES: 1 Coordinates provided in Universal Transverse Mercator (UTM) reference 2 Sound pressure level prediction does not include adjustments made to account for temperature inversion over the lake at this receptor (using CONCAWE). This adjustment adds approximately 5 dB to the predicted sound level.</p>	Source Coordinates ¹		Point of Reception Coordinates ¹		Distance (m)		Pr Pr (d)	X (m)	Y (m)	Z (m)	X (m)	Y (m)	Z (m)	352832	4889911	1.5	355579	4888846	1.5	2.9
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Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE																											
<i>Area Resident (Cont'd)</i>																												
	<p style="text-align: center;">Table 2: Sound Power Level for Specified Point¹</p> <table border="1" data-bbox="1157 423 1980 548"> <thead> <tr> <th colspan="6" data-bbox="1157 423 1675 483">Octave Band Centre Frequency (Hz); Sound Power Level (dB)</th> <th colspan="3" data-bbox="1675 423 1980 483">Overall</th> </tr> <tr> <th data-bbox="1157 483 1255 516">31.5</th> <th data-bbox="1255 483 1354 516">63</th> <th data-bbox="1354 483 1453 516">125</th> <th data-bbox="1453 483 1551 516">250</th> <th data-bbox="1551 483 1650 516">500</th> <th data-bbox="1650 483 1749 516">1000</th> <th data-bbox="1749 483 1848 516">2000</th> <th data-bbox="1848 483 1946 516">4000</th> <th data-bbox="1946 483 1980 516">8000</th> </tr> </thead> <tbody> <tr> <td data-bbox="1157 516 1255 548">130.1</td> <td data-bbox="1255 516 1354 548">124.6</td> <td data-bbox="1354 516 1453 548">127.8</td> <td data-bbox="1453 516 1551 548">120.3</td> <td data-bbox="1551 516 1650 548">114.1</td> <td data-bbox="1650 516 1749 548">108.8</td> <td data-bbox="1749 516 1848 548">107.2</td> <td data-bbox="1848 516 1946 548">107.8</td> <td data-bbox="1946 516 1980 548">111.</td> </tr> </tbody> </table> <p data-bbox="1157 548 1980 613">NOTES: 1 UTM Source Coordinate as noted in Table 1 (352832, 4889911)</p> <p data-bbox="1157 646 1980 1101">As noted in the footnote to Table 1, an additional step in the modelling was completed for the draft Acoustic Assessment Supporting Document to account for a temperature inversion over the lake, which resulted in a prediction that was approximately 5 dB higher than the above noted sound level. The ISO Standard 9613-2 is only applicable for moderate temperature inversions and specifically states that inversions over water surfaces may result in higher sound levels than those predicted by the standard (ISO, 1996). As such, the results presented in the draft Acoustic Assessment Supporting Document were adjusted using a method derived for CONCAWE (Manning, 1981). In this method, octave band adjustments are provided for various meteorological conditions, which are organized into six possible categories ranging from temperature lapse conditions to temperature inversion conditions. Octave band adjustments for a stable atmosphere, representing a strong temperature inversion, were applied in these calculations (Category 6).</p> <p data-bbox="1157 1133 1980 1341">Please note that modelling a complex multi-source facility as a single point source does not conform to the requirements of ISO 9613-2 or standard industry practice. The NGS consists of many sources of varying strength and elevations, some of which are obstructed fully or partially by on-site buildings and barrier walls. The approach to the calculation of outdoor noise propagation outlined in ISO 9613-2 is intended for application to individual noise sources, using the source-specific octave band sound</p>	Octave Band Centre Frequency (Hz); Sound Power Level (dB)						Overall			31.5	63	125	250	500	1000	2000	4000	8000	130.1	124.6	127.8	120.3	114.1	108.8	107.2	107.8	111.
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31.5	63	125	250	500	1000	2000	4000	8000																				
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Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
	<p>power level in conjunction with the actual source geometry and directivity characteristics, and with consideration to the propagation path between specific source and a defined point of reception. The sound level at the point of reception is a logarithmic sum of these individual source contributions.</p> <p>We should note, however, that The ISO 9613-2 standard does allow for an aggregation of sources into an equivalent single point source if all of the following conditions are met:</p> <ol style="list-style-type: none"> a) the sources have approximately the same strength and height above the local ground plane; b) the same propagation conditions exist from the sources to the point of reception; and c) the distance d from the single equivalent point source to the receiver exceeds twice the largest dimension H_{max} of the sources ($d > 2H_{max}$). <p>If these conditions are not met, then the standard requires that the total sound source is divided into its component point sources. Please also consider the following:</p> <ul style="list-style-type: none"> • The actual source sound power levels of all of the individual sources at the site differ by as much as 50 dB; • The heights above the ground plane range from sources that are located at ground level (i.e., pumps) to the tops of the HRSG stacks at 61 m above grade; and • A number of noise sources are as much as 450 m apart and are obstructed to varying degrees by on-site buildings. <p>References: International Organization for Standardization (ISO). 1996. <i>International ISO Standard 9613-2. Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation</i>. Geneva, Switzerland. Manning, 1981. <i>The Propagation of Noise From Petroleum And Petrochemical Complexes To Neighbouring Communities</i>. CONCAWE, Den Haag”</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>TransCanada’s proposal for the cooling of the Gas Turbines to be located at the Lennox Generating Station site in Greater Napanee proposes to withdraw from Lake Ontario of the order of 5,000 - 6,000 gallons / minute of water, and after use, evaporate into the atmosphere. This quantity will vary, conditional upon the duty cycle of the plant, and the atmospheric conditions during operation. The current proposal for operational time is from 11 to 65%, conditional upon electrical grid requirements. The permit to withdraw Lake Ontario water for the TransCanada plant, has been attached to the existing permit for withdrawal of the Lennox GS. (TransCanada therefore did not have to obtain a separate water withdrawal permit for it’s operation.) The Lennox GS returns cooling water to Lake Ontario; the TransCanada Gas Plant will not return the withdrawn water to Lake Ontario. It is my opinion that given the pressures upon the natural water systems in Ontario, and in particular, Lake Ontario, the approach of TransCanada is inappropriate. TransCanada, should design their cooling system for this plant to return the water to Lake Ontario, or develop a closed system that will not permanently remove this natural resource.</p>	<p>Response Provided: “Firstly we are planning to return some water to Lake Ontario from the proposed NGS. The current design would involve removing in the order of 7500 usgpm and returning about 3000 usgpm (39%) to Lake Ontario when operating at full load in Summer conditions. At lower loads and other times the flows would be less. The water will be discharged to the Lennox GS discharge channel and must meet the Provincial Water Quality Objectives (PWQOs), including all health related parameters, before entering Lake Ontario.</p> <p>Ontario Power Generation sought and received a minor amendment to their Permit to Take Water (PTTW) to permit the additional volumes required by NGS and to permit OPG to provide water to the NGS facility. The amendment increased the water removal limit by 12,000 usgpm over the previously permitted limit of 1,000,000 usgpm (or 1.2% of the existing permit limit).</p> <p>TransCanada reviewed various technologies for its cooling needs for NGS before determining that a cooling tower was the most technically feasible and environmentally responsible solution. Our evaluation of once-through-cooling, as is currently utilized by the Ontario Power Generation Lennox GS facility, demonstrated that it was not technically feasible. The incremental volumes of water required for once through cooling to support NGS could not be provided incrementally from the Lennox GS infrastructure. The incremental volumes in combination with the Lennox GS existing flow exceeded the hydraulic limitations of the existing intake pipe and thus would have required construction of a new intake pipe out into Lake Ontario. This is a substantial undertaking which would have affected the shoreline habitat and increased the risk and uncertainty of permitting the NGS facility.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p><i>Area Resident (Cont'd)</i></p>	<p>Finally with once through cooling the NGS cooling requirement would materialize as heat in Lake Ontario whereas with a cooling tower the thermal rejection is to the atmosphere and quickly dissipated over a large area. By our estimate, the water removal from Lake Ontario is reduced by 97% when a cooling tower is used versus once-through cooling. The thermal loading of Lake Ontario is estimated to be reduced by 99% with the cooling tower versus once-through cooling.</p> <p>The US Environmental Protection Agency (US EPA) requires generating stations to meet impingement and entrainment reduction criteria under the Clean Water Act 316B. The US 316b Rule for New Facilities focuses on protecting fish and other aquatic life from being killed or injured by cooling water intake structures (i.e., entrainment and impingement). Under this rule, the preferred option for new facilities is cooling towers (Track 1) unless the utility can demonstrate through extensive studies that other technology options can be used to reduce adverse environmental impact levels to that expected for cooling towers. (See website links: http://www.gpo.gov/fdsys/pkg/FR-2001-12-18/pdf/01-28968.pdf and http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/prepub_proposed.pdf.) While the US EPA 316B does not apply to NGS, the amended Federal <i>Fisheries Act</i> Section 35 is expected to incorporate guidelines for the reduction of entrainment and impingement. By reducing the amount of water removed from Lake Ontario and the thermal loading rejected to Lake Ontario by NGS through the use of a cooling tower, the potential for harm to fisheries is reduced.</p> <p>One of the environmental benefits of the Ontario coal closure which has not been widely discussed is the substantial reduction in the thermal loading of the Great Lakes. Natural Gas Combined Cycle power plants are almost twice as efficient as the coal fired plants they replaced and thus the thermal rejection to the environment in general is about 1/2 of what the coal plants historically rejected. Where a cooling tower is employed, the thermal rejection is reduced to only 1/4 of 1% of that previously rejected to the Great Lakes by the equivalent coal fired generation.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
	<p>There is a third cooling technology that was also considered for NGS that being the use of an air cooled condenser (ACC) which is a closed cycle. This technology is typically applied where there is limited water available to support a conventional cooling tower as was the case at the Halton Hills GS where the municipal system in that location limited water takes to a level that was insufficient for a conventional cooling tower. While the ACC technology does not require water, for a facility with the capacity of NGS, it would require a massive structure 80 feet high and covering almost 3 acres. The ACC would increase the noise from the NGS facility, almost double the footprint of the facility and increase the visual profile. Lastly an ACC would reduce the output capacity and the fuel efficiency of NGS particularly in summer months. This is as a consequence of the lower thermodynamic efficiency of heat rejection to air versus evaporation and the consumption associated with the fans required to move large amounts of air through the ACC. On an annual basis, NGS would produce approximately 100,000 MWh less electricity – equivalent to the consumption of the Town of Parry Sound if an ACC were installed versus the current cooling tower design.</p> <p>Finally water removed from Lake Ontario and evaporated is not permanently lost. Ultimately the evaporated water returns to the water cycle through precipitation albeit at another location.”</p> <p>Additional Comments: Please see Sections 4.6.2 and 4.7.2 of the ERR.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>I am concerned that there is no mention of shore wells and the effect of discharge on these wells from the proposed plant in the draft ERR report. Can you tell me if the environmental study group was aware of the shore wells that exist on the lake and are downstream from the discharge point? What will the short and long-term effects be on our drinking water? Will the water quality in these wells be monitored on an on-going basis?</p>	<p>The existence of shore wells has been addressed in the final ERR.</p> <p>The NGS discharge enters the Lennox Generating Station (Lennox GS) discharge channel where it will be mixed with Lennox GS flow as well as Lennox tempering flow. The NGS discharge is less than 1% of the flow in the discharge channel. Due to mixing in the channel, the NGS discharge will meet the Provincial Water Quality Objectives (PWQOs), including all health related parameters, before entering Lake Ontario. Therefore, there will be no incremental impact on the existing shore wells as a result of NGS discharges, and the future conditions will be no different from current conditions at the existing shore wells. Please see Supporting Document 3, Appendix C.</p>
<p>Report on the “Acoustic Assessment for the Napanee Gas Station”. Prepared for the Environmental Review John Harrison Ph.D. – November 2013</p> <p>Introduction TransCanada has a contract to build and operate a natural gas electrical generating plant (NGS) on the mainland shore to the north of Amherst Island. The north shore of Amherst Island extends 3 km and beyond from the NGS. On behalf of TransCanada, SENES Consulting has written an assessment of the sound pressure levels to be expected at receptors in the neighbourhood of the NGS. ISO-9613, which is the basis for the CADNA software used by SENES Consultants for the assessment of sound pressure levels to be expected as a result of operating NGS, does not address propagation over water. SENES has arbitrarily added to the sound pressure level calculated with ISO 9613-2. In this way, sound pressure levels on Amherst Island fall within the 40 dBA Ontario noise regulations. This report re-visits the prediction of the sound pressure levels to be expected on the island and finds that, for part of the time, sound pressure levels will exceed the Ontario regulation.</p>	<p>Response Provided: “Thank you for submitting your “<i>Acoustic Assessment for the Napanee Gas Station</i>” (November 2013) report. We appreciate the additional analysis you have completed using the Swedish noise propagation model and were encouraged to see that your average case (between 3-4 km) was in general alignment with our ISO 9613-2 model predictions. We appreciate your concerns with regard to the potential propagation effects over water and would be willing to consider other potential methods to assess these effects when they are approved by the Ontario Ministry of the Environment (MOE). As you are aware, we are currently bound by the existing regulatory requirements of the MOE that oblige us to use the ISO 9613-2 method to predict potential noise impacts.</p> <p>It is also important to note the MOE, does not directly require a cumulative effects assessment for noise but does require that all industrial facilities individually comply with the specific noise limits presented in “<i>Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning Publication NPC-300</i>”. These limits are determined based on the higher of either the applicable exclusionary noise limit (i.e. 45 dBA during the day/evening and 40 dBA at night in Class 3 (Rural) environments), or the minimum background sound level that occurs or is likely to occur during the time period corresponding to the operation of the facility under assessment.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>Sound Propagation over Water (For a more complete account and reference, see the attached report, written for the Ministry of the Environment on the topic of noise from off-shore wind turbines) Sound propagates readily across water as is common experience and knowledge. The reasons are: (a) the high reflection coefficient of water and, in the winter, ice. (b) the positive sound speed gradient that results from a wind speed gradient and a temperature inversion. If there is a positive sound speed gradient then sound is refracted back to the ground. This is described by cylindrical spreading of the sound rather than cylindrical spreading. That is, the sound pressure level decreases by 3 dB rather than 6 dB for each doubling of distance from the source. The high reflection coefficient combined with a large separation between source and receptor results in coherent reflection of the sound from the direct and reflected sound waves. This adds at least 3 dB to the sound pressure level at the receptor.</p> <p>The Swedish Model Propagation of sound over water is important in Europe because of its well-developed off-shore wind energy system. The Swedish propagation model is based upon a parameter d: the distance from the source at which there is a shift from spherical to cylindrical spreading of sound. This parameter had been introduced many years earlier; to the best of my knowledge it was used to describe the propagation of turbine noise over desert sound. The formula to describe the sound pressure level (L) at a receptor at a distance r from the source is: $L = L_s - 20\log(r) - 11 + 3 \Delta L_a + 10\log(r/d)$ where L_s is the source sound power; ΔL_a is the integrated frequency dependent absorption coefficient; the 11 is $10 \log(4\pi) = 11$ dB and derives from the definition of sound power; the 3 is 3 dB for coherent ground reflection. Sondergaard and Plovsing, in figure 17 of their paper, give a graph of ΔL_a as a function of the distance.</p>	<p>These requirements form the basis of the NGS noise impact assessment. TCE is committed to complying with the NPC-300 noise limits and where possible operating at levels that are lower than these limits.</p> <p>In addition, we can report that our continuous background noise monitoring program (over 4-months) has included the regular activities associated with the existing Lafarge and OPG Lennox operations (i.e. cumulative effects) and will be presented in the final Acoustic Assessment Supporting Document. It should also be noted that NPC-300 does not currently require the consideration of future proposed facilities in noise impact assessments.</p> <p>Finally, we can report that a preliminary analysis of low frequency noise (LFN) is currently underway and will be presented in the final Acoustic Assessment Supporting Document. We have also decided to complete a supplemental LFN noise monitoring program (at a similar facility) to validate/improve the results of the noise modelling exercise.</p> <p>If you have any additional comments or questions please don't hesitate to contact me at your convenience."</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE																				
<i>Area Resident (Cont'd)</i>																					
<p>Boué investigated the Swedish propagation model by making sound propagation measurements over sea in the Kalmar Strait between Sweden and the island Öland in the Baltic Sea. The separation between source and receiver was 9.7 km. Measurements of average sound transmission loss showed agreement with the Swedish propagation model with a break between spherical and cylindrical spreading at 700 metres. Furthermore, the measured TL(90), the transmission loss exceeded 90% of the time, was in agreement with the Swedish propagation model with a 200 metre break point. Therefore, Boué’s measurements allow a reliable estimate of the sound pressure level as a function of distance over water from a turbine. Interestingly, Dr. Phillip Dickinson, Emeritus Professor of Acoustics at Massey University, has found the break point of 750 metres for turbine noise propagation over land. (See Sound, Noise Flicker, B. Rapley and H. Bakker, eds.; Atkinson and Rapley (2010), p. 175)</p> <p>Application to the Napanee Generating System</p> <p>The SENES acoustic assessment lists the many noise sources associated with the NGS and their sound power. Having no access to commercial software it is beyond my capacity to apply the Swedish model all sources and all frequencies. TransCanada and its consultants kindly combined all sources into one sound power level, with and without A-weighting. The numbers are 118.7 dBA and 133.2 dB. The following table shows the result of applying the Swedish model to the A-weighted sound power for both the 700 and 200 transition distances and for Amherst Island reception points 3, 4, 5 and 6 km distant from NGS along the north shore of the island. The two transition distances correspond to the average and worst case scenarios respectively.</p> <p>Table 1: Average and Worst Case Sound Pressure Levels for Predicted Sound Generated by the Proposed NGS for Receptors 3, 4, 5 and 6 km from the Generating Station Sited along the North Shore of Amherst Island.</p> <table border="1" data-bbox="191 1182 1014 1372"> <thead> <tr> <th>Distance from NGS (km)</th> <th>ΔL_a (dBA)²</th> <th>Average SPL (dB)</th> <th>Worst Case SPL (dB)</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>6.5</td> <td>40.9</td> <td>46.4</td> </tr> <tr> <td>4</td> <td>8.2</td> <td>38.4</td> <td>43.5</td> </tr> <tr> <td>5</td> <td>9</td> <td>36.3</td> <td>41.7</td> </tr> <tr> <td>6</td> <td>10</td> <td>34.5</td> <td>39.9</td> </tr> </tbody> </table> <p>²Nord2000 Model (Figure 17 of Sondergaard and Plovsing)</p>	Distance from NGS (km)	ΔL_a (dBA) ²	Average SPL (dB)	Worst Case SPL (dB)	3	6.5	40.9	46.4	4	8.2	38.4	43.5	5	9	36.3	41.7	6	10	34.5	39.9	
Distance from NGS (km)	ΔL_a (dBA) ²	Average SPL (dB)	Worst Case SPL (dB)																		
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Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<p><i>Area Resident (Cont'd)</i></p> <p>It is clear that out to 6 km, along the north shore of Amherst Island, the sound power level will be out of compliance with the 40 dBA noise guideline for a class-3 environment, under the worst case scenario.</p> <p>Additionally, there is a large difference between the sound power level with and without A-weighting. This suggests that there is significant low frequency sound expected to be generated by the NGS. Recent research is showing that low frequency sound has a more significant impact on human health than higher frequency sound, particularly when the low frequency sound has amplitude modulation.</p> <p>Cumulative Effect</p> 	

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>Amherst Island is under threat from the impact of wind turbine noise from a proposed wind energy generating project. The cumulative impact can be demonstrated by superposing on the wind turbine noise contour map the predicted worst case 40 dBA noise expected from the proposed NGS, 6 km from the NGS. This is shown by the red star on the map above. The outer green contour is the 40 dBA contour for the wind energy project. There are receptors along the shore there with predicted SPLs between 39 and 40 dBA. The two sources together will push the SPL to between 42 and 43 dBA. At the Ostrander Point ERT we heard that the prior proposal takes precedence and that any neighbouring project must accommodate the first project; in that case the White Pines project needed to accommodate the Ostrander Point project.</p> <p>Conclusion As designed, the sound pressure level from the NGS is going to be out of compliance with the Ontario noise guidelines for the north shore of Amherst Island, out to a distance of 6 km from the plant. The cumulative impact of the NGS and a possible wind energy project on the Island will push the non-compliance well beyond 6 km. The Ministry of the Environment could insist that a full application of the Swedish model to the numerous individual noise sources that make up the NGS, and their octave band, sound powers be made. It is unlikely to make any significant difference because the distances to the receptors on the island are far larger than the extent of the NGS. The Ministry of the Environment also needs to take account of the NGS and Windlectric wind energy project, their cumulative impact and how to prioritize. Certainly the two companies need a joint sound pressure level prediction for the island. Often the Ministry of the Environment has talked of revising the Ontario noise regulations in the light of new science. This is perhaps the first case in Ontario where sound propagation over water is posing a serious noise impact on Ontario residents. The Swedish model and Boué's experimental work were government-initiated and funded research projects to address the acoustic impact of off-shore wind energy projects on European residents. Ontario needs to acknowledge this research and include it in its regulations. The above analysis and discussion has not addressed the uncertainty that is inherent in the specifications of the sound power of the multitude of components of the NGS or the uncertainty in the modelling process.</p>	

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>This report is for the use of TransCanada as part of the environmental review process. The cumulative impact is also relevant to the Windlectric wind energy project. The Windlectric Renewable Energy Approval documents are presently undergoing a completeness check.</p> <p>Therefore this report will also be sent to the Director responsible for completeness of REA documents. As a courtesy, copies will be sent to local government.</p> <p>Mailed copy to be signed John Harrison.</p> <p>John Harrison - Credentials Career: PhD (Leeds, 1964); Post-doctoral Fellow (Cornell 1964 – 67, Sussex 1967 – 69); Faculty at Queen’s University (1969 – 2002); presently retired. Service: Many national and international committees; Co-Editor and then Editor of the (International) Journal of Low Temperature Physics (1978 – 1992). Wind Turbine Issues: Presentations made to community groups; Member of the Ministry of the Environment Stakeholder Focus Group on Wind Turbine Noise Regulations; Invited talk given at the International World Wind Energy Conference held in June 2008 in Kingston, Ontario and paper accepted for the conference proceedings; Invited talk and paper presented on wind turbine noise at the annual conference of the Canadian Acoustics Association in October 2009; Invited talk presented at the International Symposium on The Global Wind Industry and Adverse Health Effects in October 2010, with the paper published in Bulletin of Science, Technology and Society 31, 256 (2011).</p>	
<p>While representing an impressive amount of work, the studies that form the basis of the report appear to have omissions and biases that call their thoroughness and objectivity into question. TransCanada's level of commitment to addressing the findings of concern also appears wanting in certain areas. My comments and concerns include but are not necessarily limited those below:</p>	<p>Comment noted.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>Construction Phase: Many of the mitigation/impact management measures are stated in vague and very general terms, with no monitoring of mitigation efficacy or residual impact specified (e.g. dust, vehicle emissions, efficacy of habitat restoration / nest site relocation, etc.).</p>	<p><u>Dust, vehicle emissions:</u> Emissions from construction are relatively short term, potential nuisance-type effects which will be mitigated using best practices (watering, speed control, etc). Monitoring of such nuisance effects is not necessary unless issues with fugitive dust occur. Vehicle exhaust emissions are minor and are also generally related to nuisance odours (i.e. smell of diesel exhaust), temporary, not continuous and will quickly disperse. As such, monitoring of these temporary emissions is not warranted.</p> <p><u>Efficacy of habitat restoration / nest site relocation:</u> Monitoring is typically used where there is substantive risk regarding the efficacy of mitigation or in the determination of negative effects and where a measurable response due to the project might be anticipated that could be isolated from other causes. The mitigation recommendations are based on best practices and experience in providing mitigative solutions. In addition, we respectfully disagree that there is no monitoring of mitigation efficacy. Section 5 (Monitoring Program) of Supporting Document 4 Terrestrial Assessment outlines two areas of monitoring. In addition, monitoring will also be required for the species that need to be addressed under the <i>Endangered Species Act</i>. In our opinion the mitigation as described is achievable, suitable and adequate to mitigate for the relatively low level of effects resulting from the proposed development.”</p>
<p>Blasting and vegetation clearing ban should extend to Sep. 30 to accommodate later breeding birds and near neighbours ongoing use of outdoors and reliance on open windows to cool residences.</p>	<p>“The nests, eggs, and young of almost all nesting birds in Ontario cannot be disturbed, damaged or destroyed at any time (regardless of the date) in accordance with the federal Migratory Birds Convention Act. However, the majority of breeding birds have finished nesting by mid-July. The clearing of vegetation is recommended after August 15th. Disturbance is less likely as the breeding season progresses and this is why July 15th was identified as the blasting dateline. These dates are reflective of the general guidance provided by Environment Canada for southern Ontario and by MNR for bird species within their jurisdiction. However, in the event that any late nesting birds were present and likely to be disturbed, then they would be protected under law.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
	The majority of blasting will occur during the first year of construction and will be limited to daytime work hours. Local residences will be informed of the blasting schedule well in advance of any blasting activities. Noise and vibration impacts from blasting will be reduced by minimizing charge loads (where possible) and controlling detonation timing. In addition, blast mats will be used to control any potential blasting debris.”
Measures for barn swallows, osprey and purple martin are not specific enough nor provided with rationale for expected success.	These three species almost entirely nest on features provided by humans. Thus there is no reason to believe that appropriate structures provided in suitable locations would not be used. Please see Supporting Document 4 and Section 4.8.1.1 of the ERR.
The mitigation options discussed for traffic congestion at Country Rd 4 with the 401 ramps appears discrepant with the study findings/recommendations.	Please see Supporting Document 5 and Sections 4.10.1 and 4.10.2 of the ERR.
At the open house, I was told my work commute could be up to 10 minutes longer each way during construction, yet no compensation for near neighbours so affected is evident in the draft.	<p>During the Open House it was explained that there may be spikes in the construction traffic during which time total delay along your travel route might reach an estimated 10 minutes. It was also explained that a more detailed review based on the individual capacity analysis for each intersection on his travel route could be computed to provide a more precise forecast of time delay for a typical work day. This route delay analysis has been completed for a route that is assumed to start north of Hwy 33, travel south on CR 21 to Hwy 33, east to CR 4, north to Hwy 401 then easterly along Hwy 401 to a destination north of Kingston. This analysis determined that the increase in travel time on the study road network due to construction traffic during the summer of 2016 will be less than 1 minute in the AM peak hour and just over 1 minute in the PM peak hour. This increase in delay was derived from Tables 10.1A and 10.1 B in the ERR report.</p> <p>We are not aware at this time of any agency providing compensation to road users for increased travel time during temporary increases in traffic due to adjacent construction activities Please see Supporting Document 5 and Sections 4.10.1 and 4.10.2 of the ERR.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
The 10 minute estimate may be low as the traffic model did not consider a possible concomitant traffic increase due to concurrent construction of the wind farm on Amherst Island.	As described above, the route delay analyses has shown that the average route delay under consideration will be about 1 minute for each of the two peak hour periods. As noted in the ERR report, there is considerable residual capacity in the study road network during the 2016 peak construction period. This residual capacity will be available to accommodate additional traffic that may be generated by the proposed Wind Farm activities on Amherst Island. Regardless, the normal traffic study process would dictate that if Wind Farm activities were to create any traffic operational issues, the Wind Farm would be responsible for providing appropriate traffic mitigation measures. Please see Supporting Document 5 and Sections 4.10.1 and 4.10.2 of the ERR.
Operational Phase: Given background particulate levels are above the safe limit already and dispersion is limited due to relatively stable air, SCR etc. mitigation should be enhanced further by dispersing emissions more broadly using taller stacks, rather than dumping the extra risk on employees and near neighbours (also see next item).	We are unsure of what limit you are referring to as a measure of comparison as the onsite measurements of particulate levels are well below Ambient Air Quality Criteria, and Canadian Ambient Air Quality Criteria. The effect of stable air masses on dispersion is part of the meteorology of the area and was certainly considered in the assessment, as was the effect of shoreline fumigation. The particulate emissions from the combustion of natural gas is exceptionally low when compared with other fossils fuels and thus the conversion of power generation from coal and oil fuels to natural gas fired power plants represents a responsible means of providing on-demand electricity while reducing particulate emission.
The timing of the emergency diesel generator is mentioned as a mitigation measure for air quality, when in fact, it is only mitigation for sleep disruption due to noise levels.	Response Provided: “Emissions from the emergency diesel generator are released at a relatively low height in comparison to most of the other on-site sources. As a result, when stable conditions occur at or near ground level (due to calm conditions or temperature inversions (which generally occur during nighttime hours before the sun rises), dispersion is poor and high concentrations can result. As such, testing of the EDG was limited to daytime hours when such nighttime inversions have been broken due to sunrise and thermal mixing. Therefore, the testing of the EDG during the day serves to mitigate the potential for impacts to both air and noise.” Additional Comments: Please see Supporting Document 1 and Section 4.2.2 of the ERR.

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>Daylight testing actually will increase exposure of employees and near neighbours to the toxic exhaust. Further mitigation measures for generator effects on both noise and air quality need to be developed.</p>	<p>Response Provided: “Emission rates used in the assessment were very conservative (i.e. higher than expected), and will likely be lower based on manufacturer’s specifications. The proposed emergency diesel generator will have noise mitigation on the intake and exhaust stack (silencers), which will reduce the sound level impacts associated with the equipment.”</p> <p>Additional Comments: Please see Supporting Document 2 and 4.3.2 of the ERR.</p>
<p>Despite TC’s denials of any fogging or icing risk to Loyalist Parkway, SACTI modeling indicates a clear potential for both. The version of SACTI used is 30 years old and out of date. A new version of SACTI became available in December, 2012.</p>	<p>The Cooling Tower plume will have minimal fogging and icing effects to adjacent roads, and no effects on neighbouring properties. The SACTI modelling assumes NGS will operate 100% of the time at full-capacity when in actuality, NGS is expected to run between 11 % and 67 % of the time and at outputs normally less than full output. Thus the effects summarized below are likely overestimated by a factor of two</p> <ul style="list-style-type: none"> • Plume is expected to be visible up to 10% of the time • Plume is not expected to exceed 2 to 3km in length • Fogging is predicted to be present between 20 and 30 hours per year (about 0.3% of the time) • Icing is expected to be present between 2 and 10 hours a year (about 0.1% of the time) <p>Some of these fogging and icing events will coincide with naturally occurring fogging and icing and thus the net impact is less than these figures.</p> <p>While the current version of SACTI is quite old, there is no new version available. EPRI (the owner of SACTI) is in the process of updating the SACTI model, and released a white paper and progress report in December 2012, related to the proposed incorporation of a new model algorithm for abated towers and plumes. There has been no new model version released to date, and none of the model modifications have been made. The SACTI model used for the purposes of this study was the model approved for use on the project by the Ontario Ministry of the Environment.</p> <p>Please see Supporting Document 1 and Section 4.2 of the ERR.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>This more modern version should also be run and the worst case of the predictions taken as a potential risk index for traffic passing the plant. As has been done in other jurisdictions, mitigation should include non-operation of the plant when these conditions are predicted to occur in this region, including a reasonable safety buffer. TC had access to local meteorological data (Lafarge, weather station) but apparently did not use this. Surely some cogent explanation for or rectification of this is in order.</p>	<p>The proprietary Lafarge meteorological data provides a single point of meteorology near the Bath facility, and does not necessarily provide more accurate or representative data at the NGS facility. The approach used in the assessment incorporates the terrain and land use (including the lake) to represent meteorological conditions on a 3-dimensional grid, specific to the NGS site. This data is highly reflective of both potential conditions for fogging and icing, as well as dispersion conditions.</p> <p>Please see Supporting Document 1 and Section 4.2 of the ERR.</p>
<p>The aquatic studies indicate variable currents and conditions, depending on seasonal, meteorological and other factors that sometimes differ widely between sites only 10s of meters apart. However, none of the study locations included the waters in close proximity to the near neighbours. This is of particular concern given the discharge of phosphorous compounds from NGS into the lake. At the open house the study presenter did not know that all near neighbours rely on shore wells, potentially vulnerable to any local changes in lake or ground water chemistry. Aquatic studies need to be done in proximity to these sites to assess potential risk and need for targeted mitigation of any predicted impacts.</p>	<p>Water quality studies along the Ontario shoreline in the vicinity of the proposed NGS site covered 1.5 km along the shore. It should be pointed out that NGS does not discharge directly to Lake Ontario. Discharges from the NGS are to the Lennox GS discharge channel where mixing will occur. The NGS flow is less than 1% of the Lennox GS discharges and therefore any incremental effect will not be discernible. Modelling of the impact of NGS discharge on Lake Ontario indicated the Provincial Water Quality Objectives are met at the outlet of the discharge channel. Therefore, there is no adverse impact on Lake Ontario in the immediate vicinity of the discharge channel. There is no potential for an adverse effect at a greater distance, for example, the shore wells being utilized by the residences more than 1 km away.” Please see Supporting Document 3 and Section 2.7 of the ERR.</p>
<p>Low water intake approach velocity seems insufficient to protect aquatic wildlife. Further measures to prevent entrainment appear needed in this day and age.</p>	<p>Water being used by NGS is drawn from the Lennox GS forebay, not directly from Lake Ontario. Little volume is withdrawn (less than 2% of the of the total cooling water draw for Lennox GS) and the approach velocities in the Lennox GS forebay are very low. Low approach velocities are critical to reduce fish impingement which are based on the swimming capabilities of fish expected to be impinged. USEPA 316b draft guidelines on methods to reduce fish influx into power plants focus on reducing intake approach velocities similar to what is proposed at NGS. In addition, NGS is using a cooling tower which is considered BTA (best technology available) for reducing fish impingement and entrainment and thermal loading at power plants by the US EPA.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
	<p>As a result of the use of a cooling tower, the NGS intake flow rate is about 2.4% of what would have been required for once through cooling of NGS and less than 2% of the of the total cooling water draw for Lennox GS, thus a substantial reduction in fish impingement and entrainment risk than would otherwise occur.</p> <p>In addition, with the exception of juvenile yellow perch, none of the commercial and recreational species and the forage fish that support them were observed in the forebay during field studies and are unlikely to be drawn into the forebay during NGS operation due to the use of cooling towers and the associated low intake flow velocity. Please see Supporting Document 3 and Section 4.7 of the ERR.</p>
<p>As a self described “good neighbour”, NGS needs to preserve the rural quietude to the full extent possible, not only the MOE default baselines. At the open house, I was told that measures like stack enclosure and moving noisy components such as the compressor building to the rear of the facility would be both possible and effective noise reduction enhancement measures, if only TC management would provide a budget for same. TC needs to walk the talk to be accepted as a good neighbour.</p>	<p>A wide variety of mitigation measures have been employed at the NGS to mitigate noise levels, including stack silencers, acoustic louvres and increasing building insulation ratings</p> <p>Please see Supporting Document 2 and Section 4.3 of the ERR.</p>
<p>Mention needs to be made of the landscaping and architecture committee`s plan to reduce the visual impact of NGS on the parkway and surrounding areas. Making it disappear as competely and quickly as possible is paramount in preserving the scenic and pastoral ambience that invites leisure travel through this area.</p>	<p>Comment noted.</p>
<p>Monitoring: More mention of monitoring of the several specific species at risk recorded on site is needed.</p>	<p>Two of the three species at risk observed during the current field investigations, Eastern Meadowlark and Barn Swallow, are both designated as Threatened and therefore subject to all of the applicable provisions of the Endangered Species Act. The specific provisions of the Act for each species must be achieved. This includes creating or enhancing habitat, monitoring, and providing reporting materials for a number of years. The third species, Eastern Milksnake, is designated Special Concern and is not subject to the regulations of the Endangered Species Act. There is no requirement to monitor this widespread species and they would not typically be the focus of a monitoring effort.”</p> <p>Please see Supporting Document 4 and Section 4.8 of the ERR.</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
Particulate concentrations in stack and diesel generator emissions should also be recorded and reported.	<p>It is virtually impossible to measure particulate levels in the gas turbine exhaust given the very low concentrations of these very small particles. The particulate emissions from the combustion of natural gas are exceptionally low when compared with other fossil fuels and thus the conversion of power generation from coal and oil fuels to natural gas fired represents a responsible means of providing on-demand electricity while reducing particulate emissions. The quantities used for modelled in the ERR assessments were based on guarantees provided by manufacturers which are conservative estimates derived from laboratory testing.</p> <p>The diesel generator will be used for emergency purposes only, to maintain power to essential plant areas in the event of a power outage. It will however be tested on a weekly basis, for a 30 – 60 minute period. A log of the testing periods will be kept.”</p> <p>Please see Supporting Document 1 and Section 4.2 of the ERR.</p>
Cooling tower aerosol discharge and its bacterial load should be continuously sampled and reported.	Please see Sections 3.1.5 of the ERR.
The temperature and humidity of cooling tower discharge at source and nearest receptors should be recorded and reported.	<p>The relative humidity of the cooling tower discharge is expected to be at or near 100% and the discharge temperature will be a function of the external ambient temperature, ambient relative humidity and the thermal load being rejected from NGS. As this is the normal and relatively consistent state of operation it is unclear why it should be reported.</p> <p>As far as measuring humidity at the closest receptors the plume is expected to dissipate quickly and it would be almost impossible to discern any minute change in relative humidity attributable to NGS plume versus the normal natural variation at these locations. To put this into perspective the change in relative humidity is typically 20 to 30% over a 24 hour period in this area. Changes in relative humidity are not considered to be a risk to human health or the environment</p>
Lennox Generating Station is not a retail facility, as stated in the draft ERR.	Noted. Revised and corrected in Section 2.9 of the ERR.

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
<p>Given that the NGS site has so many indicators for archeological potential, and the fact that an arrowhead was found, a more intensive survey seems warranted. Also the fact that old techniques were used when newer more thorough and less invasive techniques such as ground penetrating radar are available, needs further discussion and justification. Otherwise, this archeological assessment is not convincing that due diligence was properly done.</p>	<p>Response Provided: “All testable portions of the NGS site were considered to have high archaeological potential and therefore the correct and appropriate testing methods were employed during the Stage 1 and Stage 2 assessments of the site. All archaeological assessments conducted in the province of Ontario are strictly regulated by the Ministry of Tourism, Culture and Sport (MTCS). All of our background research and, in particular, all of our fieldwork must be carried out in accordance with the lengthy and very detailed document entitled "Standards and Guidelines for Consultant Archaeologists", which was developed and written by the provincial government in 2011. All archaeologists in the province are legally bound to follow these standards and guidelines as a condition of their licensing agreement.</p> <p>Archaeological assessments have been divided into stages and the fieldwork requirements for each stage are spelled out in the Standards & Guidelines document. Based on these government requirements, finds such as single arrowheads (that were likely isolated hunting losses) require intensified survey in that area, which we did. However, if nothing further is found during that intensified survey, the Standards and Guidelines state that the isolated find does not warrant a Stage 3 assessment.</p> <p>With respect to due diligence, at every step in this process, an archaeologist's field methods, background research, and report formatting are dictated by these government standards and are then reviewed by Archaeological Review Officers at MTCS. Any archaeological assessments that do not meet these criteria will not pass the review and will not be accepted into the public register of reports that is controlled by MTCS. Our Stage 1 and Stage 2 archaeological assessments followed the Standards and Guidelines to the letter, especially regarding the types of fieldwork techniques that the Standards state we must use while conducting our work. These techniques are not considered by the government or by consulting archaeologists to be "old", or “invasive” or less thorough; in fact, other techniques such as ground penetrating radar have very limited applications and would be of little or no use in a Stage 2 assessment anyway.”</p>

Table A.2 Public Comments on Draft Environmental Review Report and Supporting Documents (Cont'd)

COMMENT	RESPONSE
<i>Area Resident (Cont'd)</i>	
In the spirit of full disclosure, the final ERR should also mention TC's introduction of Site 1 into the discussion of plant location and provide a comprehensive rationale as to why, from an environmental perspective, it was an unsuitable choice.	As discussed in Section 1.5 of the ERR, a study of alternatives is not part of an Environmental Review process. The Environmental Review is specific to the undertaking being proposed as well as the site on which it is being proposed to be located. As is described in the agreements with Ontario Power Generation, the Ontario Power Authority and the Provincial Government, the site described in the Environmental Review Report was the only option provided to TransCanada for the development of NGS."