4.11 Draft ESR 30-day Review Period - Part II Order Requests

Fifty-six (56) Part II Order request letters were received during the draft ESR review period to elevate the status of the project to an Individual EA. The letters and Hydro One's responses can be found in **Appendix B9**.

Letters from the following parties have been received:

- MPP John O'Toole, Durham
- MPP Michael Harris, Kitchener-Conestoga, PC Environment Critic
- Enniskillen Environmental Association (EEA) – 2 letters
- Save the Oak Ridges Moraine (STORM)
- Area residents – 34 letters
- Students from Kedron Public School – 17 letters

The comments received in the Part II Order Requests are summarized in **Table 4-8**. Comments which were similar in nature have been addressed together as one issue.

Hydro One responded to each of the issues and concerns raised in the Part II Order Request via letters to the requesters. The letters and responses can be found in **Appendix B9**.

Table 4-8: Summary of Part II Order Issues and Hydro One Responses

Issues and Concerns	Hydro One Response
Natural Environment	
Ecological and environmental damages on the general natural environment of the area	With more than 280 transformer stations in Ontario, Hydro One has a strong track record of environmental compliance and stewardship, and is committed to the completion of a comprehensive EA and solid mitigation plan for potential environmental effects. Our project team has completed a number of field studies evaluating habitat with respect to avians, amphibians, fisheries, vegetative communities and species at risk. These field studies have followed Ministry of Natural Resources (MNR) protocols. Hydro One ensures that all assessments or inventories are submitted to the relevant review agencies to ensure we have included their interests and recommendations and comply with all of their requirements. Depending upon the nature of the resource and the effect, Hydro One will work with the respective agencies to undertake the appropriate remedial measures and post-construction monitoring. More details on Hydro One's efforts on the natural environment are located in **Section 3** of the draft ESR. Our projects comply with all environmental requirements. Hydro One applies a 'no net loss' objective to terrestrial and aquatic habitat and, where possible, we try to achieve a 'net gain'. **Section 7** in the draft ESR describes the potential environmental effects for the proposed project and appropriate mitigation. To ensure that predictions of effects are accurate and mitigation measures are effective, an Environmental Specialist will be assigned to the project for the duration of construction to monitor construction activities and provide appropriate guidance. Hydro One is committed to protecting the environment. Hydro One has designed this proposed facility to make efficient use of resources. Following recommendations from the Ministry of Energy that came out of the public inquiry "Report of the Solandt Commission" in 1975, Ontario Hydro received approval to expropriate this property in 1978 with the immediate need to build new 500 kV lines, and the foresight to build a future TS to support the eventual electricity supply and demand in the area. The Provincial Policy Statement (2005) states that "the use of existing infrastructure and public service facilities should be optimized, wherever feasible, before consideration is given to

Issues and Concerns	Hydro One Response
	developing new infrastructure and public service facilities." This property is the most logical and only viable location to accommodate the proposed station because it meets the size requirement, is located where the 500 kV lines and 230 kV lines meet, and it is owned by Hydro One. ***Sources: Draft ESR Sections 3 & 7; Solandt Commission, 1975; Provincial Policy Statement, 2005; MNR & Environment Canada Protocols**
Impacts to water supply / Groundwater Proposed location for the transformer station is on a major recharge area and these are the headwaters for the Harmony and Farewell creeks	The station will be situated on land with a deep overburden of glacial till (10 to over 30 metres) which has very low permeability. The site is not in a significant groundwater recharge area and is classified as having low aquifer vulnerability to contamination from human and natural impact (Central Lake Ontario Conservation Authority [CLOCA], 2011). Based on station design, available information, field data and consultation with regulatory agencies, Hydro One does not believe that the proposed project will have any effect on the wells in the community. We have constructed transmission facilities throughout the province and have yet to find a case where our facilities have negatively affected well water quality or quantity. Hydro One has extended an offer to land owners adjacent to the property to have their well water tested for quality and level before, during and after construction for a period of two years. Station drainage will be subject to an Environmental Compliance Approval (ECA) under the *Environmental Protection Act* (*EPA*). The drainage design of the station will ensure that the pre- and post-construction area drainage is not significantly altered. Monitoring wells installed at the site will be maintained and monitored regularly for groundwater depth and quality. Further details regarding groundwater can be found in the following draft ESR sections. **Section 3.1.3** describes the hydrology and hydrogeology information of the project area. **Section 4.8** provides a summary of the comments and issues raised throughout the consultation process. **Section 7.1.2** provides a description of potential environmental effects associated with liquid discharges and the associated mitigation. **Section 7.2** in the hydrology subsection discusses the potential environmental effects associated with hydrology and the associated mitigation. ***Sources: Draft ESR Sections 3, 4, & 7; CLOCA, 2011**

Issues and Concerns	Hydro One Response
Excavation of soil and impact on groundwater	As indicated in **Section 3.1.3** of the draft ESR, the station will be located above the level of deep wells and the aquifer. Based on the hydraulic gradient at the site, Hydro One believes the proposed station will not impact the shallow wells, deep wells and the aquifer. ***Sources: Draft ESR Section 3**
Open springs and seepage areas on project site	Hydro One has not identified any open springs and seepage areas on the project site. There were photographs taken by local residents and Hydro One has asked for copies to address this concern. Hydro One has no documentation of open springs and seepage areas on the project site.
Impact to creek systems in the area	Central Lake Ontario Conservation Authority (CLOCA) has an agreement (Level 3) with the Department of Fisheries and Oceans (DFO) which allows them to review and assess all projects on behalf of DFO. This includes projects both within and adjacent to the on-site tributaries to the Harmony and Farewell Creeks, both of which are considered fish habitat. Creek crossings and other works within 30 metres of the creek will be reviewed and assessed accordingly. CLOCA will provide guidance to Hydro One to ensure that all aspects of the *Fisheries Act* are addressed appropriately for this project. Further, protection of the creek systems will take place during construction by installing silt fences to protect the stream channel and associated vegetation from mechanical effects and to ensure no sedimentation of the systems. **Section 3.1.4** in the draft ESR discusses the aquatic features of the project area and **Section 7** discusses the associated mitigation. ***Sources: Draft ESR Sections 3 & 7; Correspondence with CLOCA, 2013**
Impacts to wildlife habitat	Wildlife species surveys were conducted for the project area, the results of which are located in **Appendix C** of the draft ESR. Terrestrial wildlife habitats within the project area include agricultural fields, cultural thickets/meadows, dry marsh communities and woodland areas. Hydro One has conducted field studies and an assessment of the features and habitats at the proposed Clarington TS

Issues and Concerns	Hydro One Response
	site. The results of these studies are provided in **Section 3** of the draft ESR. Although the woodlot on site is considered significant, our investigation found that, other than size, no features that would normally support significance were present. Our investigation also indicated that no concentration areas or congregation areas (e.g., deer yards), specialized habitats, species of Conservation Concern nor animal movement corridors were present. As discussed under in **Section 3** of the draft ESR, in the Significant Woodlands subsection, approximately 1.5 hectares of forest would require removal to accommodate the station. In order to offset this loss, Hydro One is committed to enhancing the site with a 2:1 vegetation replacement program and has already identified designated areas within the project area for this purpose. These areas will not only satisfy this 2:1 replacement, but were also chosen to develop and enhance natural linkages within the project area to connect with adjacent natural systems. The development of a restoration planting plan will be fully developed in discussion with CLOCA, the Municipality of Clarington, Ministry of Natural Resources and any other interested parties. Should the area of disturbance be deemed as larger, adjustmants will be made. ***Sources: Draft ESR Section 3 & Appendix C**
Endangered species/ Species at Risk	A search of the Ministry of Natural Resources (MNR) Natural Heritage Information Centre database indicated that no species at risk have been recorded since 1989 within the project area. Hydro One has also undertaken a wildlife species survey for the project area.According to the MNR, butternut, bobolink and eastern meadowlark may be found in the project area given that this is within their natural range. As described in **Section 3.1.6** of the draft ESR, 52 bird species, one of which is the barn swallow was identified during breeding bird surveys. Results of the survey are presented in Table C-6 of **Appendix C**. Barn swallows favour artificial structures (i.e., barns, bridges, etc.) for nesting and roosting of which none are present on the project site and/or being affected by the project. As described in **Section 3.1.6**, bobolink and eastern meadowlark are also native to this area and are both designated as threatened federally (Committee on the Status of Endangered Wildlife in Canada, 2012) and provincially (MNR, 2009). Bobolink is a grassland species which nests primarily in forage crops with a mixture of

Issues and Concerns	Hydro One Response
	grasses and broadleaf forbs. Eastern meadowlark is a ground-nesting species which prefers habitats modified by humans, such as hayfields, meadows, pastures and grasslands. Surveys conducted in spring 2012 found that the agricultural fields within the project area, which consisted entirely of row crops (i.e., corn and soybeans), supported neither bird species and in both cases did not provide the required habitat type. Forty-six butternut (46) were identified during the field surveys. Based upon the butternut health assessment which was undertaken and validated with the MNR; 36 were considered retainable. The reconfiguration of the 230 kilovolt (kV) lines will result in the removal of three retainable butternut. Hydro One will be applying to the MNR for the approval to remove these trees. Hydro One is committed to enhancing the local biodiversity with a program that will see a minimum of 30 butternut planted which exceeds the actual amount required in the approval under Section 17c of the *Endangered Species Act*. Also, associated with this planting will be an equal number of other site-compatible indigenous tree species. More information on the potential environmental effects and the proposed mitigation associated with the natural environment can be found in **Section 7.2** of the draft ESR. ***Sources: NHIC, 2012; Draft ESR Sections 3, 7 & Appendix C; COSEWIC, 2012; MNR, 2009**
Information on depth of groundwater	The information pertaining to the estimated depth of groundwater is described in **Section 3.1.3** of the draft ESR. ***Sources: Draft ESR Section 3**
The compaction or damage to the layers of the aquifers from drilling and construction	The soil strength necessary to support the transformer is 150 Megapascal (MPa). Recent geotechnical investigations have shown the soil strength to vary from 225 MPa to 525 MPa, which is well above the requirement. The depth of the containment and pad for the transformer approximates 2.1 metres below ground surface. As noted in **Section 3.1.3** of the draft ESR, the surficial tills over the site are approximately 10 to 30 metres thick, as confirmed by water well records, geotechnical boreholes and the completed cross sections. Thus, the actual aquifer is substantially below the transformers. Consequently, the installation and weight of the transformers would neither compress the aquifer nor affect flow of water to the aquifer.

Issues and Concerns	Hydro One Response
	***Sources: Exp Services Inc., 2012; Draft ESR Section 3**
Concern that there is no bedrock found on proposed site to support soil	The draft ESR under **Section 3.1.1** states that "bedrock underlying the project area consists of Blue Mountain Formation, consisting of blue-grey non-calcareous shales (MNDM, 2012)." This information was retrieved from the Ontario Ministry of Northern Development and Mines in the Ontario Geological Survey and described the bedrock geology of the area. This bedrock is overlain by the South Slope physiographic region – a surficial deposit of varying depths. Bedrock does not emerge within the study area and was not expected by our geotechnical investigation (i.e., which only extended to 15 metres). This is further supported in **Section 3.1.3** well records, where all of the deep wells adjacent to the project area indicate a surficial overburden of 10 – 100 metres with no bedrock encountered. ***Sources: Draft ESR Section 3; MNDM, 2012**
Spills	Hydro One takes our commitment to the environment very seriously, and wants to assure the community that we have reliable and secure spill containment systems. All transformers will be equipped with spill containment and oil/water separation facilities designed to prevent any loss of transformer insulating oil from entering the surrounding environment. The system is designed to capture and store the oil in precast concrete holding tanks in the event of oil release from a transformer. The only source of station discharge will be runoff from precipitation. The station will be operated remotely from Hydro One's grid control centre. Maintenance personnel will make periodic site inspections and will be dispatched to the station in of the event of an emergency, or for occasional maintenance. The containment and drainage systems are subject to an Environmental Compliance Approval (ECA) under the *Environmental Protection Act* (EPA). The approval covers not only the proposed facilities but also the Emergency Response Plan. Hydro One has obtained several hundred such approvals demonstrating that effects can be readily managed through conventional controls. ***Source: Draft ESR Section 7.1.2**

Issues and Concerns	Hydro One Response
Mineral Insulating Oil	Generally, transformer mineral insulating oil (MIO) poses minimal risk to human health and the environment. MIO contained in electrical equipment is a petroleum hydrocarbon in the same category of mineral oil products, such as oils used directly in food, food packaging and processing, cosmetics, and pharmaceuticals. The chemical, physical and toxiological properties of MIO are very different from those of other petroleum hydrocarbons, such as gasoline, diesel and heating fuels. MIO has a low acute toxicity; low carcinogenic potential; low potential to produce toxic effects through absorption or deposition in the body and a low potential to cause disease in comparison to these other liquids. MIO is not very mobile in soil and groundwater and is not likely to migrate through soil in the vapor phase. ***Source: Insulating Oil Characteristics – Volume 1 Characterization Results, Electric Power Research Institute, TR-106898-V1 4168, 9087, Final Report, December 1996**
Request for lab test results on soil	Hydro One has undertaken a comprehensive drilling investigation at 29 locations across the site. These locations were selected to represent the soil and hydrological conditions for the site as a whole and specifics associated with transmission tower locations and the transformer station. The boreholes were drilled to a depth of up to 15 metres and were used to determine the soil and hydrological conditions that are needed for station and tower design, construction and operation purposes. Results of this investigation, as well as the MOE well records, indicate that the site was overlain with dense sandy silt till ranging from 10 to over 30 metres in depth above the aquifer which supplies the majority of the nearby wells. This till retards water infiltration and is termed an aquitard. The site is not in a significant groundwater recharge area and is classified as having low aquifer vulnerability to contamination from human and natural impact (Central Lake Ontario Conservation Authority [CLOCA], 2011). ***Sources: ; CLOCA, 2011; Exp Services, 2012**
Concerns that a spill like the one at Cherrywood transformer station could	Subsequent to the Cherrywood event, a number of improvements have been made to the containment systems. This includes the use of an oil water separator and improvements to transformer design. The measures taken to manage station drainage and containment are subject to an independent review by the MOE approvals engineers. Given

Issues and Concerns	Hydro One Response
happen again at the Clarington TS	planned improvements, Hydro One is confident that the containment systems will function to protect the environment.
Effect on fish species present on site (Hydro One reported no fish streams on the property)	With respect to fish in the on-site streams, Hydro One supports the findings of CLOCA. In **Section 3.1.4** paragraph 2 of the draft ESR, Hydro One recognizes 33 species of native fish and five introduced species within the Harmony Creek and Farewell Creek watersheds. The report notes that no fish were observed or caught during our investigations because of insufficient water. These findings are not used to dismiss the streams as fish habitat but rather it is concluded that the creeks/streams are considered as fish habitat and that any work in or adjacent to the creeks will be done in consultation with CLOCA. ***Sources: Draft ESR Section 2; CLOCA , 2012**
Wetlands on site not considered provincially significant or key natural heritage features	As stated in **Section 3.1.5** of the draft ESR, two wetlands in the project area were identified during the Ecological Land Classification survey (**Figure 3-4**). Both contain three wetland communities and were measured as 2.0 hectares (ha) and 0.7 ha in size. Neither contained suitable habitat for amphibians or reptiles and no species at risk or rare plant species occur in these wetlands. Furthermore, their wildlife function is also considered minimal as they contain no open water for waterfowl stopovers/staging and they are isolated in the landscape with no linkage to other wetlands. From a hydrological perspective, the wetlands are cumulatively small (2.7 ha) and transition from wet to dry in a very short period of time, thus signifying limited storage and retention in providing a significant hydrologic function. These two wetlands, which have not been previously evaluated by the Ministry of Natural Resources (MNR), are not considered provincially significant because they do not occupy the same watershed (i.e., form a complex), nor do they occur within a distance appropriate to be considered for competing with other Provincially Significant Wetlands found regionally (i.e., 750 metres). In addition, in consideration of the Ontario Wetland Evaluation System (OWES) evaluation method and its four main components (i.e., Biological, Social, Hydrological, Special Feature), the above two wetland areas are not considered Provincially Significant Wetlands. Further, both wetlands are currently crossed by four existing 230 kilovolt (kV) transmission lines. The vegetative

Issues and Concerns	Hydro One Response
	complex of these wetlands is in part due to the presence of the right of way and the operational maintenance which has taken place over the last six decades. This area will remain as a right of way, and the characteristics of the wetlands will be retained. ***Sources: Draft ESR Section 3**
Soil and water contamination	Hydro One will be undertaking a number of measures to ensure that the integrity of the site's water and soil will be protected. As described in **Section 7** of the draft ESR, a project Environmental Specification will be prepared prior to construction which will outline Hydro One's approach to erosion, sediment control and stormwater management. These requirements will conform to the Greater Golden Horseshoe Area Conservation Authorities Erosion and Sedimentation Control Guideline for Urban Construction (2006). Vehicle and equipment refuelling will be conducted in accordance with the *Technical Standards and Safety Act* (O. Reg. 217/01). Construction equipment maintenance, such as refuelling and lubrication, will take place in a designated area at least 120 metres away from a water body. Spill kits will be located in potential spill locations, such as these refuelling locations. During construction, where feasible a 30-metre buffer using sediment and snow fencing will be established along woodlot and creek edges on the property where work is being done. Watercourse crossing permits will be applied for through CLOCA. Care will be taken during the use of these crossings to avoid sedimentation of the streams. ***Sources: Draft ESR Section 7; Greater Golden Horseshoe Area Conservation Authorities, 2006**
Socio-economic Environment	
Impacts to surrounding property values	Residential property value is dependent on many factors including the type of residential property, location/neighborhood factors as well as broader social and economic conditions associated with the overall marketplace. We appreciate that the construction of new a transformer station can be temporarily disruptive to people

Issues and Concerns	Hydro One Response
	living in close proximity. Historically, we have found that although property values may decline during the construction phase of a new transformer station, they typically return to market values consistent with other similar properties in the local area over time. Hydro One's practice is to pay compensation only where new or additional land rights are required to build transmission station projects. No additional property rights are required for Clarington TS with the exception of access rights into the site. This is consistent with the practice used by similar industries, such as natural gas pipelines and major transportation routes (e.g., highways). ***Sources: Hydro One standard**

Issues and Concerns	Hydro One Response
Building on the Oak Ridges Moraine/ Section 41 of ORMP	Hydro One aims to develop transmission infrastructure projects that respect the natural environment while still ensuring the safe and reliable delivery of electricity in Ontario. The proposed site for Clarington TS is zoned as Agriculture and designated as Utility within the Municipality of Clarington Official Plan (1996, April 2012 Office Consolidation). This allows for the development of transmission facilities provided that the need is demonstrated and all reasonable alternatives have been explored. Similarly, the Oak Ridges Moraine Conservation Plan (ORMCP) (2002), and the Greenbelt Plan (2005) also allow for utility infrastructure in all land use designations provided that the need is demonstrated and all reasonable alternatives have been addressed. Where the proposed project is situated on the Oak Ridges Moraine, Hydro One is required to conform to Section 41 of the ORMCP. Electric power facilities are permitted in all Durham Regional land use designations. The project area is designated Prime Agricultural Areas and Oak Ridges Moraine Areas in the Durham Regional Official Plan. Existing transmission lines are also shown on Schedule "A" – Map "A5" of the Regional Structure land use schedule. Key natural and hydrologic features are identified on the subject property and are shown on Schedule "B" – Map "B1E" Greenbelt Natural Heritage System & Key Natural Heritage and Hydrologic Features schedule in the Durham Regional Official Plan. Within the project area, the agricultural land within the ORMCP is designated as Countryside Area, while the natural features within the ORMCP are designated as Natural Linkage Areas. The portions of the project area which are outside the ORMCP are governed by the Greenbelt Plan and are designated as Protected Countryside. The proposed project, as defined under the ORMCP, is not development or site alteration but is an infrastructure/utility use. To conform to the requirements of the ORMCP under Section 41, Hydro One has demonstrated the need for the project (refer to **Section 1.1** of the draft ESR) and there is no reasonable alternative (refer to **Section 5**). Hydro One has also demonstrated that the following requirements, as outline in Section 41 of the ORMCP, will be undertaken for the proposed project (refer to the associated sections within the draft ESR, as described below): 1. The area of construction disturbance will be kept to a minimum (refer to **Section 7.2** and **7.3**) 2. Right of way widths will be kept to the minimum that is consistent with meeting other objectives, such as stormwater management and with locating as many infrastructure and utility uses within a single corridor as possible (refer to **Section 7.2**) 3. The project will allow for wildlife movement (refer to **Section 7.2** for restorative planting) 4. Lighting will be focused downward and away from Natural Core Areas

Issues and Concerns	Hydro One Response
Public safety on busy roadways during the construction phase	Hydro One recognizes that construction activities can be disruptive to residents, and we are committed to mitigating these effects as much as possible and ensuring community safety. Hydro One will develop a construction mitigation plan prior to construction and will hold an open house to provide the community with information on what they can expect during this phase of the project. ***Sources: Draft ESR Section 7**
Stray voltage and resonance a health hazard	Stray voltage is associated with grounding issues on low-voltage distribution lines. The power lines associated with Clarington TS are high voltage (230 kV and 500 kV) and we do not expect stray voltage as a result of the station. Information on stray voltage is available on the Hydro One website http://www.hydroone.com. In general, varying amounts of low-level voltage may exist between the earth and electrically-grounded farm equipment, such as metal stabling, feeders, or milk pipelines. Usually, these voltage levels present no harm to animals. However, if an animal touches a grounded metal object where these low voltages are found, a small electric current may pass through the animal. The voltage that causes this small current is known as "animal contact voltage," "stray voltage" or "tingle voltage." Stray voltage problems can be corrected. ***Sources: Hydro One website**
Dust from construction a health hazard	Hydro One recognizes that construction activities can be disruptive to residents, and we are committed to mitigating these effects as much as possible. Hydro One implements dust control measures on all of our construction sites. These measures are directed not only to on-site activities but also construction vehicles and the surrounding road system. Further, Hydro One has waste management policies and procedures that govern the management of all wastes. Debris or any other type of waste is fully managed and controlled, following relevant legislative requirements. Hydro One will develop a construction mitigation plan prior to construction and will hold an open house to provide the community with information on what they can expect during this phase of the project. ***Sources: Draft ESR Section 7**

Issues and Concerns	Hydro One Response
Safety issues of children gaining access to the station	In regards to safety, perimeter fencing will enclose the station and will be maintained to prevent public access to the transformer station. ***Sources: Draft ESR Section 7.3.1**
Impacts construction noise may have on their horses and the safety of young riders	Hydro One recognizes that construction activities can be disruptive to residents, and we are committed to mitigating these effects as much as possible. Hydro One and its contractor will comply with the Municipality of Clarington Noise By-Law. Hydro One will follow any sound emission standards for construction equipment that are defined by the MOE. These guidelines can be found in the NPC (Noise Pollution Control)-115 publications, listed in the MOE (1978) Model Municipal Noise Control By-Law. Refer to **Section 7.1.1** of the draft ESR for more information. ***Sources: Draft ESR Section 7**
The Clarington site would employ more Hydro One personnel and for a longer period of time than the other sites	The proposed Clarington TS will be an unmanned station and it will not include an office or work station. After construction, Hydro One personnel will occasionally access the site for maintenance purposes, but constructing the station will not result in new full-time on-site employees. ***Sources: Draft ESR Section 1.4.2**
Loss of view	Hydro One understands your concerns and is working to develop a vegetative restoration and screening plan. Although vegetation will not screen the station entirely, our intent is to mitigate as much as possible. Refer to **Section 7.3.3** of the draft ESR. ***Source: Draft ESR Section 7**
Loss of enjoyment and use of property	Hydro One's Landscape Architect is developing a vegetative restoration and screening plan for the station. In your particular case, the majority of the station may not be visible from your property and will be screened by the woodlot on our site. ***Source: Draft ESR Section 7**

Issues and Concerns	Hydro One Response
Impacts to agricultural land/ loss of productive farmland	The total area of cultivated land affected by the proposed Clarington TS project, including the permanent access road and vegetative resoration,area will be approximately 20 ha. Agricultural land that is cleared or damaged during construction, including temporary warehousing areas, will be restored after construction is complete. Current agricultural land located outside of the project area will not be affected by the proposed project. Refer to **Section 7.3.2** of the draft ESR. ***Source: Draft ESR Section 7**
Project will attract large scale industrial development	Regarding this concern, this station is not being built for the purpose of supporting or attracting either current or future industrial/commercial development. As mentioned previously, Clarington TS is required to address the eventual closure of Pickering NGS. Further, any development that might be considered in this area would be subject to approval by the Municipality of Clarington and other approval agencies, as required.
Visual Concerns	I understand that Hydro One's Landscape Architect has taken photos of your property, and is working to develop a vegetative restoration and screening plan. Although vegetation will not screen the station entirely, our intent is to mitigate as much as possible. ***Sources: Draft ESR Section 7**
Technical and Cost	
Concern that weight of transformer will compress the ground under it negatively impacting the flow of underground water	As noted in **Section 3.1.3** of the draft ESR, the surficial tills over the site are in the order of 10 to 30 metres thick as confirmed by MOE well records, geotechnical boreholes and the completed cross sections. Consequently, the installation and weight of the transformers is not a concern. ***Sources: Draft ESR Section 3**
Alternative sites not considered/ not fully	During the course of the Class Environmental Assessment (EA) process, no alternative was considered technically or economically reasonable. The EA Act requires consideration of reasonable alternatives. Please refer to **Section 1.3**

Issues and Concerns	Hydro One Response
considered	of the draft ESR. Other sites were proposed by the Enniskillen Environmental Association: Pickering NGS, Darlington NGS, Whitby TS surrounding lands, Wesleyville GS and "Seaton" lands, and lands surrounding Cherrywood TS. **Section 4.6.2** explains the reasons why these sites do not warrant further consideration. **Section 5.1** provides additional information on rationale of the preferred station location. ***Sources: Draft ESR Sections 1, 4 & 5**
Concern that project is not necessary/ Pickering retirement	As indicated in **Section 1.1** in the draft Environmental Study Report (ESR), Hydro One Networks Inc. (Hydro One) has a responsibility to all energy consumers in the province of Ontario to deliver power in a safe and reliable manner. To that end, the Ontario Power Authority has recommended that Hydro One develops an implementation plan to enable a corresponding amount of power to be transmitted to one million customers in the East Greater Toronto Area when the Pickering Nuclear Generating Station (NGS) is retired. Pickering NGS is approaching its final years of operation and Hydro One must be prudent and have the station in place in advance of the facility's retirement. ***Sources: Draft ESR Section 1**
Request for full cost analysis on Clarington site and alternative site suggestions – have not been evaluated on a cost or savings basis	During the course of the Class EA process, no alternative was considered technically or economically reasonable. The *EA Act* requires consideration of reasonable alternatives. **Section 1.3** of the draft ESR outlines the Alternatives to the Undertaking. Other sites were proposed: Pickering NGS, Darlington NGS, Whitby TS surrounding lands, Wesleyville GS and "Seaton" lands, and area surrounding Cherrywood TS. **Section 4.6.2** explains the reasons why these sites do not warrant further consideration. **Section 5.1** provides additional information on rationale of the preferred station location. ***Sources: Draft ESR Sections 1, 4 & 5**
Noise during construction	Hydro One recognizes that construction activities can be disruptive to residents, and we are committed to mitigating

Issues and Concerns	Hydro One Response
and operation	these effects as much as possible. Hydro One will develop a construction plan prior to construction and will hold an open house to provide the community with information on what they can expect during this phase of the project. Hydro One and our contractor will comply with the Municipality of Clarington Noise By-Law. Hydro One will also follow MOE sound emission standards for construction equipment. These guidelines can be found in the NPC (Noise Pollution Control)-115 publication, listed in the MOE (1978) Model Municipal Noise Control By-Law. Refer to **Section 7.1.1** of the draft ESR. Hydro One will develop a construction mitigation plan prior to construction and will hold an open house to provide the community with information on what they can expect during this phase of the project. ***Sources: Draft ESR Section 7**
Vibration of transformers leading to soil movement and flexing of the containment system	In terms of vibration, the transformer will be fully supported on a full set of springs and the lead sheet. This is similar to many of our installations. The transfer of vibration to the foundations will be minimal. As noted, the soil support quality is very good. The size of the transformer is not an issue since the entire pad area is sized to maintain acceptable pressures.
Adverse health effects from Electric and Magnetic Fields (EMF)	Clarington TS will not result in an increase in Electric and Magnetic Fields (EMF). Any EMF that exist at the site are a result of the existing 230 kilovolt (kV) and 500 kV transmission lines that already exist on the property. EMF are found everywhere electricity is used and come from home appliances, computers, office equipment, wiring in our homes and workplaces, and electric power facilities, such as substations, and transmission and distribution lines. For more than 30 years, research studies have examined questions about EMF and health. Health agencies and a large number of reputable scientific organizations around the world have concluded that the scientific research does not demonstrate that EMF cause or contribute to adverse health effects. Hydro One looks to Health Canada for guidance on EMF issues and has enclosed its Frequently Asked Questions on

Issues and Concerns	Hydro One Response
	this matter in **Appendix E** in the draft ESR. ***Sources: Draft ESR Section 4; Draft ESR Appendix E**
Alternative site locations not considered from an environmental perspective	During the course of the Class EA process, no alternative was considered reasonable from a technical and economic viewpoint. The *EA Act* requires consideration of reasonable alternatives and based on knowledge of the project area and other factors. Hydro One has concluded that there are no other reasonable locations for Clarington TS that will address the retirement of Pickering NGS. **Section 1.3** of the draft ESR outlines the Alternatives to the Undertaking. **Section 5.1** provides additional information on rationale of the preferred station location. Using environmental criteria to identify and assess other site locations that are not reasonable from a technical and economic viewpoint does not add value to the Class EA process and would not change the outcome of the proposed undertaking. Other sites were proposed by the Enniskillen Environmental Association: Pickering NGS, Darlington NGS, Whitby TS surrounding lands, Wesleyville GS and "Seaton" lands, and area surrounding Cherrywood TS. **Section 4.6.2** explains the reasons why these sites do not warrant further consideration. **Section 5.1** provides additional information on rationale of the preferred station location. ***Sources: Draft ESR Sections 1, 4 & 5**
No plan concerning construction data has been supplied nor any cost analysis: • Footings information (size, depth) • Mounting pads for	Environmental assessments are typically conducted at the earlier stages of engineering and consequently, do not include detailed cost information. This level of information is not a requirement of the approved Class EA. A CD was provided to the interest group who requested construction drawings for footings, mounting pads and the containment system. The data was for their information and is not a requirement of the Class EA. ***Source: Hydro One Engineering Drawings, 2012**

Issues and Concerns	Hydro One Response
transformers (size, depth) • Containment system specifications (location, size, depth)	
Lead Sheets used	There will be springs and lead used between the transformer and the concrete pad. The lead sheet is a quarter of an inch thick. The sheet would be the same size as the transformer base. It is placed on the transformer pad to assist in filling any gaps between the concrete pad and the transformer base. Under normal conditions lead does not react with water. We consider that lead used in this situation is normal and expect no issues related to water.
High strike event zone	An array of lightning masts have been designed and strategically located to protect equipment, buswork and buildings from the effects of direct lightning strikes. In addition, the equipment is selected with insulation ratings suitable to withstand lightning impulses. This calculation method is the same that is used successfully on other Hydro One 500 kV and 230 kV stations. All steel in the switchyard is connected to a station ground grid made up of bare conductors arranged in a grid pattern and buried in soil below the grade. Any build up of charge due to electromagnetic induction is drained into the station ground grid where it is dissipated. ***Source: Draft ESR Section 6**
Overloads and short circuit levels at Cherrywood TS	Currently the Cherrywood TS autotransformers carry power from the 500 kV system to the 230 kV system in East Greater Toronto Area. The retirement of Pickering NGS means that flow from the 500 kV system has to increase to meet the load demand. This increased flow results in overloading of the Cherrywood TS transformers. In a power system, similar to the electrical panel in a home, circuit breakers are used to open or interrupt a circuit when the circuit is shorted to ground, also referred to as a short circuit. Short circuit results in very high current flow, known as fault current. The circuit breaker protects the equipment and ensures that no damages are sustained in the event of short circuit or fault current.

Issues and Concerns	Hydro One Response
	The circuit breakers are designed to safely interrupt a certain level of fault current known as the interrupting capability. For example, most of the circuit breakers in the electrical panel in a home are rated at 15 amperes where stoves and dryers are rated at 30 or 40 amperes. The circuit breakers on the power system are rated many times higher than that, but they too have a maximum interrupting capability. At a Transmission Station (TS) the source of short circuit current or fault current is from the circuits and transformers connected to the TS. Over time this short circuit current increases due to a number of factors such as, adding more circuits to the TS for system reinforcement, or the addition of more transformers or generators to meet an increased load demand. The power system is designed to ensure that short circuit current at all transformer stations does not exceed the interrupting capability of its circuit breakers. For example, Hydro One would restrict the number of high voltage transmission lines or transformers, such as at Cherrywood TS, to ensure that the short circuit current does not exceed the design fault current interrupting capability of the circuit breakers. As indicated in **Section 4.6.2** of the draft ESR, Cherrywood TS is not a viable site for the proposed TS due to technical, economic and environmental impact reasons. ***Sources: Draft ESR Section 4**
Power Supply to Cherrywood TS following Pickering NGS closure	Cherrywood TS becomes more critical after the retirement of Pickering NGS. Currently the power in the East Greater Toronto Area is supplied by two main sources: from the 500 kV connected generation, such as Darlington NGS via the Cherrywood TS 500/230 kV autotransformers, and the Pickering NGS. In addition, there is flow coming in on the 230 kV circuits from Eastern Ontario. Once Pickering NGS retires, increased power flow will come through the Cherrywood TS autotransformers. This increased powerflow will result in overloading the Cherrywood TS autotransformers. Clarington TS autotransformers will share the East Greater Toronto Area load and, as a result, reduce the loading on Cherrywood TS.

Issues and Concerns	Hydro One Response
Class EA-related	
Hydro One did not locate all the wells in the area	The well locations provided on **Figure 3-9** on page 42 of the draft ESR were obtained from the Ministry of the Environment (MOE) well records. These records are submitted to the MOE when a new well is constructed or an existing well is being altered or abandoned. Hydro One understands that the records may not account for all of the nearby wells as they may have been installed prior to the required submission of well records. ***Sources: Draft ESR Section 3**
EA process is rushed	The Class Environmental Assessment (EA) process is legislated by the Ministry of the Environment (MOE) and is an effective way of ensuring that transmission projects that have a predictable range of effects are planned and carried out in an environmentally-acceptable manner. The Clarington TS Class EA is undertaken following the requirements set out in the Ontario Hydro (1992) Class EA for Minor Transmission Facilities, approved by the MOE under the EA Act. Following the direction from Ontario Power Authority, Hydro One initiated the steps to plan and execute a Class EA. Since this time, Hydro One has conducted a Class EA which has included rigorous field studies and testing, as well as extensive consultation with the community. Hydro One's project team is confident that we have dedicated the appropriate resources, research and time to satisfy the requirements set out by the Class EA process. In addition, we have consulted extensively with the community and this consultation has included: -Initial Notification and Final Notification of the project -Two Public Information Centres (PIC) -Community Information Meeting -Notification and consultation via public notices, letters, emails, telephone and meetings

Issues and Concerns	Hydro One Response
	-Project website -Dedicated project contact person -Draft ESR Review Period More information on the consultation steps throughout the project is located in **Section 4.0** of the draft ESR. ***Sources: Class Environmental Assessment for Minor Transmission Facilities, 1992; Draft ESR Section 4**
Lack of communication	Hydro One provided hand-delivered notices to property owners within 2 kilometres of site mailboxes regarding the project on the following dates: - May 3, 2012 - August 29, 2012 - November 1, 2012 - November 15, 2012
Project should not be assessed as a "minor transmission facility"	The Class EA process is described in **Section 1.5.1** and **Section 2** of the draft ESR and illustrated in **Figure 1-5.** The EA process is a process that is legislated by the Ministry of the Environment and is an effective way of ensuring that transmission projects that have a predictable range of effects are planned and carried out in an environmentally acceptable manner. The Clarington TS Class EA has been undertaken following the requirements set out in the Class EA, approved by the Ministry of the Environment under the *EA Act*. Hydro One issued the draft ESR on November 15, 2012 for a 30-day public and stakeholder review period. In conformance with the Class EA process, there is not an additional review period for the final ESR. The Class EA process is described in **Section 1.5.1** and **Section 2** of the draft ESR. The Class EA process is illustrated in **Figure 1-5.** Hydro One issued the draft ESR on November 15, 2012 for a 30-day public and

Issues and Concerns	Hydro One Response
	stakeholder review period. The draft ESR was prepared in conformance with the Ontario Hydro (1992) Class EA, which was approved under the *EA Act*. The reports, testing and environmental data listed in the draft ESR are considered final, and are not generally altered once the report is finalized. When the draft ESR is released for the review period, it is the version of the report where First Nations and Metis communities; federal, provincial and municipal agencies and officials; interest groups; affected property owners and the interested public review and provide comments on the undertaking. Once the review period is completed, Hydro One will consider the comments received and incorporate them into the ESR. You note that based on the knowledge acquired by residents that the scope of the proposed Clarington TS exceeds the regulations of our Class EA. This is not consistent with the approved document and extensive past practise. The proposed project, a 500/230 kV transformer station, falls within the class of project defined in the Ontario Hydro (1992) "Class EA for Minor Transmission Facilities" approved by the MOE under the *EA Act*. See **Section 1.5.1** of the draft ESR. ***Sources: Draft ESR Sections 1 & 2**
Soil on site cannot support the weight of the proposed transformers	The soil strength necessary to support the transformer is 150 Megapascal (MPa). Recent geotechnical investigations have shown the soil strength to vary from 225 MPa to 525 MPa, which is well above the requirement. The depth of the containment and pad for the transformer is approximately 2.1 metres below ground surface. As noted in **Section 3.1.3** of the draft ESR and mentioned previously, the surficial tills over the site are in the order of 10 to 30 metres thick as confirmed by water well records, geotechnical boreholes and the completed cross sections. Thus, the actual aquifer is substantially below the transformers. Consequently, the installation and weight of the transformers would neither compress the aquifer nor affect flow of water to the aquifer. The soil conditions do not present new or unique structural conditions affecting the design of the Clarington TS transformer containment facilities relative to many other facilities located with the Hydro One Network. The concrete

Issues and Concerns	Hydro One Response
	pad and the floor of the containment pit are cast together. This method of forming, combined with the relatively high level of reinforcement and concrete strength in both the pad and the containment floor, creates a reliable level of assurance in preventing cracks. ***Sources: Draft ESR Section 3**
Increased traffic during construction phase	Traffic disruptions at the construction entry/exit location may occur during construction. Hydro One will develop a traffic management plan with the Municipality of Clarington and the City of Oshawa, as well as monitor and respond to any resident and motorist complaints. To minimize disruption and/or delays to local traffic and emergency public safety services, advance notice will be provided to municipal emergency response units. Where appropriate, traffic control officers will be assigned to assist construction vehicle entry and exit. Hydro One will make best efforts to schedule construction activities in order to minimize adverse effects on local traffic. More details on Hydro One's efforts regarding public safety and traffic control are located in **Section 7.3.1** of the draft ESR. ***Sources: Draft ESR Section 7**
Hydrogeological features and borehole testing	Hydro One has worked very closely with Central Lake Conservation Authority (CLOCA) and their technical experts throughout the EA process to address potential groundwater issues. As a result of our research and collaboration, we do not anticipate groundwater issues from this project. Hydro One summarizes hydrology and groundwater results and other relevant information in the draft ESR to facilitate better understanding of the planned work associated with the station, its predicted effects and our proposed mitigation. Our assessment, as well as consultation with CLOCA in respect to hydrogeology and groundwater, can be found on pages 35-37 in **Section 3.1.3** (Hydrology and Hydrogeology) of the draft ESR. ***Sources: Draft ESR Section 3; CLOCA, 2012**
Concern about Enfield TS	The need for Enfield TS was to serve forecasted electricity distribution demand (load growth) in the area. Reduction in

Issues and Concerns	Hydro One Response
	electricity demand caused by the 2008 economic downturn and other local factors led to the deferral of the Enfield TS to a future date. Please refer to **Section 1.1** in the draft ESR for information on the Need for the Undertaking. As indicated previously, transmission facilities are permitted within the existing land use on the property and the property is currently designated as Utility use as identified on the Municipality of Clarington's Official Plan (1996, 2012 Office Consolidation). Hydro One entered into consultations with the Municipality of Clarington in April 2012. ***Sources: Draft ESR Section 1, 3, & 4; Municipality of Clarington Official Plan, 1996 (2012 Office Consolidation)**
Is Site 2 of Enfield TS the location for the proposed Clarington TS?	There were concerns that the geotechnical survey for the approved Enfield TS and Enfield TS alternative #2 is not part of this Class EA process. The information was relevant to the comparison of options in the Enfield Class EA process; however, the analysis and conclusions cannot be applied to the Clarington project. Refer to **Section 1.1** of the draft ESR. Please note that Site 2 described in the Enfield TS final ESR is not the location for the proposed Clarington TS. ***Sources: Draft ESR Section 1**
Conflict of interest issues	Conflicts of interest were noted in a Part II Order Request. Hydro One is very confident that the project involves no conflict of interest. Unfortunately, there was insufficient information that the Part II Order request provided to comment further.
Timeline of initial discussion with the Municipality of Clarington regarding this project.	Hydro One and the Municipality of Clarington entered into discussions regarding Clarington TS in April 2012. The proposed site's land designation is "utility" and transmission facilities are of permitted use under the Municipality of Clarington Official Plan (1996, April 2012 Office Consolidation), the Regional Municipality of Durham Official Plan (2008), the Oak Ridges Moraine Conservation Plan (2002), and the Greenbelt Plan (2005). ***Sources: Draft ESR Section 4**
Consultation with the	You indicate that the Municipality of Clarington was not informed about Clarington TS during the planning of Enfield TS. Hydro One did not receive direction to develop an implementation plan for the Clarington TS until October 2011.

Issues and Concerns	Hydro One Response
Municipality of Clarington regarding Clarington TS	***Source: OPA, 2011**
Draft Environmental Study Report	Your letter notes concerns about contradictions and errors in the draft ESR. Corrections will be made, where appropriate, in consultation with individuals or agencies that have identified concerns. Efforts are made to ensure final documentation is complete and accurate.
The Class Environmental Assessment does not address the serious hydrological concerns and the actual size of the project.	The draft ESR describes the existing hydrology and hydrogeology of the site in **Section 3.1.3**. The size of the proposed station is 300 metres x 410 metres as stated in **Section 6.** ***Sources: Draft ESR Sections 3 & 6**
The ESR is incomplete and does not contain data necessary for our analysis	The draft ESR provides a summary of relevant information to facilitate better understanding of the planned work associated with the station, its predicted effects and our proposed mitigation. Opportunities were provided for your Association and regulatory agencies to discuss issues, predictions, and other concerns. This is consistent with Class EA requirements and long standing Class EA practise. The Hydro One project team has made best efforts to respond to your information requests.

4.12 MOE Part II Order Review Period Consultation and Minister's Decision

4.12.1 MOE Part II Order Review Period Consultation

The 30-day review period of the draft ESR concluded on December 17, 2012. The MOE subsequently conducted an extensive review of the fifty-six (56) Part II Order requests that it received. During this review period, Hydro One not only had continual interchange with the MOE, but also communicated with MPPs, various government agencies and the EEA. The following provides a summary of the communications that took place. Copies of the correspondence that occurred during this period are provided in **Appendix B10**.

MPPs

A meeting was arranged by Hydro One and the OPA, with MPPs John O'Toole and Michael Harris on January 28, 2013. The purpose of the meeting was for Hydro One to meet with the MPPs and to brief them on the Project. Members of the EEA were also present. The main topics covered at the meeting were:

- Need for the Project
- Impact to Oak Ridges Moraine
- Impact to groundwater and area wells
- Transformer spills and spill response
- Location of the Clarington TS
- Class EA process

The concerns raised in this meeting were those identified by the EEA in their Part II Order Request. A majority of these concerns had been addressed in the draft ESR. A letter was sent to the EEA and was copied to the MPPs on April 23, 2013 which reiterated Hydro One's responses to the issues raised by EEA at the meeting (see **Appendix B-10**).

Central Lake Ontario Conservation Authority

During the MOE review period CLOCA was involved in the provision of clarifications required by the MOE, and through consultation with Hydro One regarding the hydrogeology and hydrology report and the Habitat Creation and Enhancement Plan.

CLOCA provided information to MOE that clarified their questions regarding source protection of drinking water and whether DFO had been consulted in the assessment of the fisheries. CLOCA confirmed that no well head protection areas (WHPAs) occurred within the CLOCA Source Protection Area as all Municipal water is supplied from Lake Ontario. CLOCA confirmed that it acts as an agent for DFO under a Level 3 agreement and that CLOCA has reviewed project materials and commented on behalf of the DFO. Consequently, CLOCA was in the position to inform the DFO and request their involvement if necessary.

In CLOCA's review of the draft ESR, they had asked for 1) a consolidated Hydrogeology and Hydrology Report and 2) that our assessment of adverse effects to vegetative communities and any subsequent planting take into consideration their Natural Heritage Systems Mapping including opportunity areas for planting.

Hydro One provided a draft Hydrogeology and Hydrology report as requested by CLOCA. This report was compiled by Hydro One's consultant using information collected during the Class EA process and development of the Draft ESR. CLOCA provided comments which were incorporated into the final hydrogeology and hydrology report.

Hydro One provided CLOCA a detailed assessment of vegetative communities affected as they relate to the Natural Heritage Systems and a draft Habitat Creation and Enhancement Plan for their review. CLOCA responded to both and meetings were arranged to meet with their staff and finalize the submissions. Hydro One will continue to work with CLOCA, and any other interested parties, throughout the Project.

Ministry of the Environment

The MOE during their review period posed a number of requests to Hydro One which included:

- Provision of all Part II Order Request responses
- Provision of reports - geotechnical, hydrogeology and hydrology
- Review comments by CLOCA of the hydrogeology and hydrologic report
- Clarification to the following sections of the ESR:
    - Parts of **Sections 1.0 and 1.3** related to MOE Code of Practice and alternatives to the undertaking
    - **Section 2.4** regarding the identification and evaluation of alternative methods for carrying out the undertaking, and
    - **Section 4.4.7** regarding the undertaking's conformance with the ORMCP.
- Clarification on a number of items – number of permanent and temporary creek crossing, consideration of well head and source protection areas, safety of these facilities, MSDS for mineral insulating oil, role of CLOCA/DFO in the fisheries assessment, size and capacity of transformers, station size, consideration of other sites, construction timing, impact of Pickering NGS license extension, offset of new 230kV lines from existing location
- Provision of all correspondence with MNR and MTCS
- Mapping – existing transmission lines and improved legibility

All revision and points of clarification have been included in this report.

On April 18, 2013, Hydro One provided to MOE responses to all of the Part II Order Requests. In this letter, Hydro One confirmed that it had addressed all of the issues and concerns raised, that further consultation was not warranted, and requested that the Minister deny the requests. This letter is provided in **Appendix B-10**.

The MOE requested a site visit to gain a better understanding of the project area and environmental setting. Hydro One staff met with MOE for this visit on June 12, 2013.

Following the conclusion of the draft ESR 30-day Review Period, MOE received an independent review of Hydro One's hydrogeology and hydrology report. The hydrogeology and hydrology report (described in the previous subsection) was compiled at CLOCA's request to summarize technical information that had been collected by Hydro One in the planning and design of the station. The independent review was commissioned by EEA, and was provided to MOE for their consideration. MOE asked both their internal technical group and CLOCA to review the EEA submission and provide comments. On August 28, 2013, Hydro One provided the following comments:

- The independent review was conducted late in the Class EA process (approximately seven months after the completion of the draft ESR review period) and did not include any discussion or consultation with Hydro One or our consultants.
- The independent review consisted entirely of secondary (desktop) site information and no field investigations were undertaken by the authors prior to or during its development.
- The draft hydrogeology and hydrology report was prepared at CLOCA's request, was more detailed than information typically presented in ESR documents and was not intended to be part of the draft ESR submission.
- Both CLOCA and the Region of Durham have provided comments on the draft hydrogeology and hydrology report and, after requesting minor clarifications, have supported its conclusions that no further investigations are necessary.
- The reviewers appear to have based most of their recommendations for further investigation on United States Environmental Protection Agency requirements (USEPA, 1993) for hazardous waste management sites. It is Hydro One's view that project characteristics and approval legislation differs substantially and additional investigation or consultation would not alter the conclusions of Hydro One and our expert consultants.
- The independent review refers to the Project being subject to "an application for development" and further provides an opinion on municipal requirements. Hydro One's electrical transmission facilities are designated as Utility within the

Municipality of Clarington OP and Utility Infrastructure in the ORMCP and the Greenbelt Plan (see **Section 3.2.1**). The Project does not require an "application for development".

- The wetland located at the north end of the Project area is located almost entirely within an existing transmission corridor. New tower footings in this location will not alter any flow of surface or groundwater to the wetland. The wetland has contained the existing transmission towers for several years and has continued to function since their construction.

- The independent review recommends a costly model to address the unlikely event of a release of oily water to the environment. Hydro One has presented a multi-layered approach to oil containment design, including transformer rupture plate features, sufficiently sized secondary containment and an oil-water separator. These features, combined with an emergency response plan and remote monitoring and warning systems and alarms will ensure that mineral oil is not released into the environment. These proposed technologies have been successfully utilized in Ontario and are subject to an Environmental Compliance Approval (ECA) under the *Environmental Protection Act*.

- Hydro One has committed in this ESR to implement a monitoring program to address shallow groundwater quality and quantity prior to, during and following construction. Had Hydro One been given the opportunity to discuss the various elements of this shallow groundwater monitoring program, it is likely that many of the independent reviewers' concerns would have been resolved. Hydro One will continue to work with CLOCA and the EEA throughout the implementation of the shallow groundwater monitoring program.

- Based on these comments, Hydro One is of the opinion that a desktop study conducted late in the Class EA process and without discussion or input from Hydro One should not be considered relevant to the Clarington TS Class EA process.

Hydro One's comments are provided in **Appendix B-10**.

Ministry of Natural Resources

The MNR provided two comments to Hydro One during the MOE Part II Order review period. With respect to the lines reconfiguration alternatives, MNR reiterated a previous request that they would like to see public and agency support for Alternative 1, which removed retainable Butternut trees. Descriptions of public and agency comments are provided throughout **Chapter 4.0**. A summary of CLOCA's comments on alternative 1 can be found in **Table 4-7**.

MNR informed Hydro One that changes to the *Endangered Species Act* came into effect on July 1, 2013. Retainable Butternut may now be considered genetically archivable (Category 3), based upon their size and proximity to non-retainable Butternut. Removal of archival trees requires a Section 17(2)(c) permit (overall benefit) under the *Endangered Species Act*. Hydro One does not anticipate that any archivable (Category 3) butternut trees will be removed as part of the Project, although the removal of three retainable (Category 2) butternut trees will require Hydro One to register this activity with the MNR and undertake mitigation, which will be included in the Habitat Creation and Enhancement Plan. Hydro One will obtain all requisite permits prior to the commencement of work.

Regional Municipality of Durham

Although the Region of Durham provided comments during the 30-day draft ESR Review Period, Durham staff also prepared a report from the Commissioner of Planning and Economic development to their Planning and Economics Development and Works Committee. In developing this report, the Regional Chair and CEO requested a meeting with Hydro One and requested the provision of information to prepare the report.

Hydro One met with Region of Durham staff on April 10, 2013 to discuss the undertaking and answer any questions they had. **Table 4-9** provides a summary of the information requested by the Region and Hydro One's response/actions

Table 4-9: Summary of Information Requested by Durham Region and Hydro One Responses

Region of Durham Request	Response/Action
Geotechnical Reports for station and the lines	Sent April 5, 2013
Rationale for the station and the location	Referred to sections within the ESR which provided this information
Information on how we will conform with ORMCP s. 41 and Durham OP	Comments sent have been incorporated into the final ESR
Request clarification of property size	Information provided March18, 2013
How have the EA concerns been handled and addressed	Provided the consultation Log April 15, 2013
What are the construction affects	Provided our answers to the Part II order requests as found in Table B-8
What is the difference between an Individual and Class EA	Provided an explanation as per MPOE definitions
What are Hydro One's responses to the public regarding the oil/water separator and spills concerns?	Provided our answers to the Part II order requests as found in Table B-8
What are Hydro One's responses to the public regarding groundwater	Provided our answers to the Part II order requests as found in Table B-8
Request clarification of property size	
Provision of Part II Order Requests	Provided

A copy of the staff report is provided in **Appendix B-10**

City of Oshawa

Hydro One met with Oshawa Mayor John Henry on April 2, 2013, to brief Mayor Henry on the need for the Project as well as the size and layout of the proposed TS. After the presentation by Hydro One, Mayor Henry expressed concerns about effects on groundwater and drinking water supply in the Oshawa area. Hydro One provided Mayor Henry with information about the field studies conducted during the Class EA, as well as correspondence from CLOCA expressing support for the findings of the hydrological studies. Mayor Henry requested that Hydro One provide further information on the project and related field studies to the Regional Council.

Municipality of Clarington

The Municipality of Clarington Planning Services Department contacted Hydro One via email on September 27, 2013 and requested that Mayor Adrian Foster be kept informed of Hydro One's consultation activities with members of the EEA.

Hydro One received an email from the Municipality of Clarington Planning Services Department on December 5, 2013 to request an update on the status of the draft ESR review process, and also to express concern over an apparent misunderstanding regarding previous Hydro One correspondences. Hydro One responded via email on December 18, 2013 and stated that the MOE was still reviewing the Part II Order Requests and Hydro One's responses, and had not yet issued a decision regarding the acceptance or denial of the requests. Hydro One also corrected the misunderstanding regarding its previous correspondence.

Enniskillen Environmental Alliance

Correspondence between Hydro One and the EEA continued following the submission of the Part II Order Requests. The issues raised by EEA during the MOE Part II Order Requests review period were similar to those that they had raised during the Class EA process and in their Part II Order Requests, and included:

- Comments regarding Hydro One's construction practices;
- Comments and questions regarding the potential need for additional permits;
- Concerns regarding the operation of Clarington TS with respect to the health and safety of adjacent residents;
- Comments on Hydro One's consultation process and answers to pas questions from EEA;
- Concerns regarding construction of Clarington TS on the Oak Ridges Moraine and potential effects on the hydrology and hydrogeology of the area;
- Comments on the effects of the project on SAR;
- Requests to provide Project financial information such as costs and sources of funding;

- A request for Hydro One to provide funding for an independent review of hydrogeological information;
- Questions regarding technical specifications of the transformers and equipment to be installed at Clarington TS; and
- Questions concerning financial compensation for adjacent residents.

Hydro One has responded to all of EEA's questions and concerns.

The EEA requested that they be kept informed of the progress of Hydro One's well monitoring program (see **Sections 4.12.2, 7.3.1** and **Table 7-1**) and to accompany Hydro One staff and consultants to observe monitoring events. Hydro One agreed and two members of EEA accompanied Hydro One staff and consultants to the Clarington TS site on September 4, 2013 to observe a preliminary investigation of existing monitoring wells. The purpose of this investigation was to gather information to assist in the development of the pre, during and post-construction well monitoring program. During the site visit Hydro One described the purpose of the well monitoring program and answered questions from EEA. Hydro One will continue to work with EEA as well as government agencies and other interested parties to implement the well monitoring program.

4.12.2 Project Commitments

During the EA process, a number of commitments have been made and are referenced throughout the ESR within the text and appendices.

1. A well monitoring programme be undertaken to assess water levels and quality pre, during and post construction for two (2) years both on Hydro One property and adjacent residential properties.
2. Hydro One will work with the EEA regarding the implementation of the surface and shallow groundwater monitoring programme.
3. CLOCA will review the site grading, drainage and stormwater management plan.

4. Hydro One will undertake a Habitat Creation and Enhancement Plan that meets a 2:1 replacement ratio. Hydro One will work with CLOCA and any other interested parties to develop the Habitat Creation and Enhancement Plan.
5. Hydro One will include, in any lease agreements for continued farming on Hydro One property, that the areas planted will be identified and excluded from the lease.
6. Hydro One will undertake, on its lands, planting to provide visual screening. This planting will be included in the Habitat Creation and Enhancement Plan.
7. Hydro One will seed the agricultural area between the station and the wooded valley and woodland, and maintain to the degree possible a 30 m setback from the Harmony Creek tributaries.
8. Hydro One will consider the draft Clean Equipment Protocol for Industry during construction.
9. Hydro One will hold a pre-construction PIC and develop a Communication Plan to cover the period of construction.
10. Hydro One will replace any residential wells proven to be adversely affected by the Project.
11. Hydro One will submit an Emergency Response Plan to Durham Region and the Municipality of Clarington for review.
12. Hydro One will comply with the conditions imposed by the Minister of the Environment in his decision to deny the Part II Order requests (see **Section 4.12.3**).

4.12.3 Minister's Decision

After consideration of the Part II Order requests and Hydro One's responses, the Minister of the Environment decided that an Individual EA was not required. Both Hydro One and the requesters were notified about the decision in letters dated January 2, 2014.

In the letter addressed to Hydro One, the Minister of the Environment imposed six (6) conditions onto Hydro One which are to be undertaken as the Project proceeds into the detailed design and construction phases. Many of the conditions imposed by the minister

have been addressed within this ESR and/or communications to stakeholders during the Class EA. The conditions are as follows:

1. Prior to construction the Proponent *(Hydro One)* shall submit a Groundwater Monitoring Plan to the Regional Director in Central Region *(MOE)* for review and approval. The Plan shall be in accordance with the Hydrogeological & Hydrological Assessment Report prepared for the Project by Stantec (2013) and shall include water level and quality sampling from on-site wells and adjacent private wells in order to document pre and post construction conditions to confirm no impacts. Once approved, the final report shall be posted on the Proponent's website

   *Hydro One has previously committed to undertaking a Groundwater Monitoring Plan in the ESR (**Sections 4.11, 4.12** and **7.2**) and in correspondence with provincial government agencies, CLOCA and members of the EEA. Hydro One intends to retain four (4) intermediate depth monitoring wells (approximately 10 – 15 m in depth) paired with four (4) shallow groundwater monitoring wells (approximately 1 – 3 m in depth) at appropriate locations in the project area. Water quality and quantity will be analyzed pre, during and post construction for a minimum two year period both within the project area and at drinking water wells of adjacent participating residents. In addition, drive point piezometers will be installed in the wetland (north), creek (west) and drainage swale (south) to monitor surface water and shallow groundwater. The Monitoring Plan will be submitted to the MOE Central Region Director and will be posted to Hydro One's web page for the Project following submission of the final ESR.*

2. As part of the *Ontario Water Resources Act (OWRA)* application for Sewage Works, the Proponent must submit to the Director of the Environmental Approvals Branch a Contingency and Pollution Prevention Plan for the Project in accordance with the Ministry's requirements.

   Hydro One has previously committed to obtaining all requisite permits and approvals for the project prior to construction, including an Environmental Compliance Approval (ECA) for

Industrial Sewage, in this ESR (see ***Sections 1.4.2, 1.5.2, 4.8*** *and* ***7.2****). As stated in* ***Section 1.4.2****, the Industrial Sewage ECA covers not only the proposed facilities (station drainage and containment systems) but also an Emergency Response Plan (ERP). The ERP will outline Hydro One's course of action to eliminate or minimize the danger to members of the public, Hydro One staff and the environment in the event of an emergency situation at Clarington TS. Hydro One prepares an ERP for all its transmission stations as a condition of approval under the ECA. Hydro One has obtained several hundred of these approvals, demonstrating that effects can be readily managed through conventional controls. As per* ***Section 4.12.2*** *of the ESR, Hydro One has also committed to providing the ERP for Clarington TS to Municipality of Clarington and Durham Region staff for their review.*

Issuance of the Industrial Sewage ECA by the MOE will serve as acknowledgement that Hydro One has met all MOE requirements with respect to the drainage and containment design and ERP for Clarington TS.

3. As part of the Environmental Compliance Approval (ECA) for noise, the Proponent shall prepare a detailed Acoustic Assessment Report (AAR) and submit it to the Director of the Environmental Approvals Branch for review as part of the application. The Acoustic Assessment Report must document all sources of noise at the facility, as well as any proposed noise control measures, and demonstrate that the Project is capable of operating in compliance with the applicable sound level limits at all affected Points of Reception.

Hydro One has previously committed to obtaining all requisite permits and approvals for the project prior to construction, including an Environmental Compliance Approval (ECA) for Noise, in this ESR (see ***Sections 1.4.2, 1.5.2, 3.2.6, 4.10*** *and* ***7.1.1****). Hydro One includes an AAR as part of the Noise ECA application for all stations where noise is anticipated to be an issue. Since one or more receptors are less than 500 metres from the TS, an acoustic assessment will be undertaken to predict potential sound levels at the receptors and recommend mitigation measures if required. The final AAR will*

be included in the Noise ECA application for Clarington TS. A Preliminary Noise Evaluation checklist is included in ***Appendix D*** *of the ESR.*

Issuance of the Noise ECA by the MOE will serve as acknowledgement that Hydro One has met all MOE requirements with respect to noise levels and mitigation (if required) for Clarington TS.

4. For information purposes, the final Acoustic Assessment Report and Contingency and Pollution Prevention Plan shall be posted on the Proponent's website upon submission of the Environmental Compliance Approval application.

Upon their completion, the final AAR and ERP for Clarington TS will be posted to Hydro One's web page for the Project.

5. The Proponent shall:

5.1. …be responsible for the formation of a Community Liaison Committee (CLC), should members of the public or other parties be interested in participating. The CLC shall be established by the Proponent within 6 months of the Minister's decision on the Part II Order requests for the Project. The CLC shall be established for the purposes of disseminating and exchanging information and monitoring results relevant to the project during detailed design and construction, and discussing any issues or concerns raised by CLC members.

5.2. …invite representative(s) of the Enniskillen Environmental Association (EEA) and members of the public that expressed interest in the Project. Meetings shall be held as may be required or on an annual basis until project operation. A notice of the CLC meeting shall be posted on the Proponent's website two weeks prior to the meeting, and sent to all CLC members.

Hydro One will establish a CLC for the purposes and within the timelines described by the Minister. Hydro One has committed to hosting a pre-construction Public Information Centre (PIC) in the ESR (see ***Sections 4.12.2, 6.5*** *and* ***Table 6-1****), which is currently anticipated to be held in April of 2014. Representatives of the EEA and interested members of the public, as well as other Project stakeholders will be invited to attend the pre-construction PIC, and a notice of the pre-construction PIC will be posted to Hydro One's web page for the Project at least two weeks prior to the PIC being held.*

As stated in ***Section 4.12.2*** *of the ESR, Hydro One will develop a communication plan for the construction phase of the Project in order to ensure that representatives of the EEA and members of the public are kept informed of the status of Project activities throughout the course of construction. The communication plan for the construction phase of the Project will include the CLC as the primary mechanism for interaction between Hydro One and members of the public and EEA.*

6. Once conditions 1 – 5 have been satisfied, the Proponent shall notify the Director of the Environmental Approvals Branch.

Upon meeting the above-listed conditions set by the Minister, Hydro One will submit a formal notice to the Director of the MOE Environmental Assessment and Approvals Branch.

The Minister's letters informing Hydro One and the Part II Order requesters of his decision can be found in **Appendix B11**.