ENVIRONMENTAL ASSESSMENT
TERMS OF REFERENCE
(DRAFT)

Bruce to Milton
Transmission Reinforcement Project

hydro one

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Bruce to Milton Transmission Reinforcement Project

July 2007

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TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

1. Introduction

The Bruce to Milton Transmission Reinforcement Project (Bruce to Milton Project) is one of several projects that Hydro One Networks Inc. (Hydro One) is undertaking to meet Ontario's electricity needs for the 21st century. As Ontario's population and economy continue to grow and prosper, the Province's electricity needs continue to increase. Even with aggressive Conservation and Demand Management (CDM), the Bruce to Milton Project would still be required to transmit approximately 3,000 megawatts (MW) of additional electricity from wind and nuclear generation facilities in the Bruce area to the provincial power grid including the Greater Toronto Area (GTA).

Before this project can be built, a number of approvals are required, including those from the Ontario Energy Board (OEB) under the *Ontario Energy Board Act* 1998 (*OEB Act)* and the Ontario Ministry of the Environment (MOE) under Ontario's *Environmental Assessment Act* (*EA Act*) in accordance with Ontario Regulation (O. Reg.) 116/01, the Electricity Projects Regulation. The Electricity Projects Regulation requires that this project follow the process set out in the *EA Act*. The *EA Act* requires submission of an application (consisting of a Terms of Reference (ToR) and an EA document) for approval by the Minister of Environment. (Environmental Assessment approval is required prior issuance of other project permits and approvals, see Section 2.2.)

This ToR sets out in detail the requirements for the preparation of the EA document for the Bruce to Milton Project. Hydro One will develop this project consistent with Provincial direction and all relevant legislative requirements, policies and guidelines.

This ToR is prepared in accordance with the Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario, draft issued by MOE in October 2006 and final in July 2007.

1.1 Background on the Electricity Sector in Ontario

This section summarizes the background to the current project. Further details are provided

in Supporting Documentation 1 of this ToR submission.

In October 1998, the Ontario legislature enacted the *Energy Competition Act* authorizing the restructuring of Ontario Hydro with the aim of introducing competition in the wholesale and retail electricity markets in Ontario. On April 1, 1999, in accordance with the *Energy Competition Act,* Ontario Hydro was restructured principally into three separate entities: (1) Ontario Power Generation (OPG), (2) Ontario Hydro Services Company Inc., later renamed Hydro One Inc., and (3) the Independent Electricity Market Operator (IESO).

Subsequent to this restructuring of Ontario Hydro, the Ontario Power Authority (OPA) was established by the *Electricity Restructuring Act*, 2004. This statute made three changes in the institutional arrangements of the electricity sector in Ontario with respect to long-term planning. In this legislation:

- the OPA was given the mandate to develop an Integrated Power System Plan (IPSP) and address the looming supply–demand imbalance in Ontario through conservation and generation procurements. O. Reg. 276/06 designates and exempts the IPSP from the *EA Act*. Undertakings resulting from this planning process, however, are required to complete an EA if they would otherwise be required to do so;
- the Government was given the discretion to determine the future "supply mix" for the Province as a starting point for the IPSP; and
- the Ontario Energy Board (OEB) was given the authority to review and approve the IPSP. [1]

Under the *Electricity Restructuring Act*, Hydro One was assigned responsibility for the planning, design, construction, operation, and maintenance of transmission and distribution facilities in Ontario. The OPA now has the responsibility to identify the need for any new generation or transmission projects and Hydro One's role is to implement OPA transmission recommendations.

[1] OPA website – System Planning

1.2 Background on the Bruce to Milton Project

The total demand for electricity generation in Ontario is expected to continue increasing over time and is estimated to reach approximately 40,000 MW by 2027. The OPA is developing the IPSP to identify the long-term needs of the people of Ontario through generation, transmission and CDM of electrical power to the year 2027 and beyond. Even with aggressive CDM targets provided in the draft IPSP, there is still a need to install additional transmission capacity in Ontario. The OPA has reviewed various options to increase the capacity of the electricity transmission system to meet this need. The OPA process considered technical requirements, total system capacity, provincial land use policy and the overall cost to Ontario electricity consumers (see Supporting Document 1.) In regard to provincial land use policy, making use of existing infrastructure is in accordance with the Provincial Policy Statement (s 1.6.2) and, in the case of the Bruce to Milton Project, will result in a requirement for 20 percent less land in contrast to utilizing a totally new ROW.

Many of the existing generating stations in Ontario will need replacement or refurbishment during the draft IPSP planning period. As well, the Province of Ontario has developed an "Off-Coal" initiative, which accelerates the retirement of the existing coal-fired generating stations to the year 2014. These factors, combined with increasing demand, result in the need for new generating capacity. The new generation to be developed in Ontario will involve renewable and clean generation technologies including wind, hydroelectric and natural gas powered generation while emphasizing CDM. The reliance on nuclear generation is expected to remain approximately at its current level.

Transmission facilities in Ontario have not been significantly expanded since the early 1980s. Many new transmission facilities including ROW expansions will be required as the result of OPA planning recommendations for increasing clean supply of electrical generation and transmission capacity. The Bruce area is a major source of energy supply for Ontario. The OPA has stated that reinforcement of the Bruce to Milton line is urgently needed to transmit electric power from new wind generation and from Bruce Units 1 and 2, which are to be returned to service in the near future. The OPA and the IESO state that a new 500 kV line

out of the Bruce area is required as soon as possible. Due to this urgency, the EA process has been initiated ahead of the final IPSP report.

The two "laid-up" generating units, Units 1 and 2, at the Bruce A nuclear plant which Bruce Power is in the process of refurbishing are each rated at 750 MW and are scheduled to return to service in 2009. They will add 1,500 MW of base load generation to the Ontario system, which will improve the Province's reliability of supply. Coincidental with the return of the two Bruce units, Bruce Power is scheduling the outage of another unit at the Bruce A plant for extended maintenance work from 2009 to 2011. Thus, in effect, an equivalent of one Bruce unit is added between 2009 and the end of 2011, and two units thereafter.

Also, a commitment has been made for approximately 725 MW of wind generation for the Bruce area during the period up to 2011. OPA's latest studies for preparation of the IPSP identify the potential for approximately another 1,000 MW of wind generation in this area. Together, these new wind and nuclear generation resources would add up to approximately 1,500 MW by 2009, approximately 2,225 MW by 2012 and over 3,000 MW in the longer term with the addition of further potential wind development (see Supporting Documentation 1).

In addition to the OPA's request to build the new line as soon as possible, Hydro One anticipates that the in-service date for the new line could be as early as December 1, 2011. Failure to place the Bruce to Milton Project in service by December 1, 2011 may prevent available generation capacity in the Bruce area (about 2,225 MW from wind turbine and nuclear power) from being connected to the Ontario transmission grid, i.e. "stranded generation". The Ontario government would be required to pay Bruce Power $63/MWh (over $600 million per year) for power from Bruce A Units 1 and 2 after they are refurbished and returned to service. This fee will apply whether the Units are connected to the transmission grid or if they are "stranded". Similarly, the contracts for 750 MW of committed windpower would also require payment or some form of penalty regardless of whether the power can be transmitted or not.

Also, if the Bruce to Milton Project is not in service on schedule, this would prevent

installation of over 1000 MW of new wind turbine power proposed for the Bruce area for after 2012.

The loss or stranding of all the above generation would be costly and it would force continued reliance on coal-fired generation beyond the government's "Off-Coal" target date of 2014 and would result in increased reliance on power purchases from the northeast USA, much of which is based on coal-fired generation.

To meet the need, OPA initially identified a number of potential options in the draft IPSP which could potentially increase the transmission capacity between the Bruce Area and the GTA. The OPA concluded that only one option, the Bruce to Milton Project, could meet the need to provide the necessary capacity by the required in-service date. Five points of connection to the provincial grid were initially considered, including four existing transformer or switching stations (Essa TS, Milton SS, Kleinburg TS and Longwood TS). The fifth location was an undeveloped site currently identified as Crieff TS, located south of Guelph.

Upon analyzing these potential options, OPA concluded that only the Bruce to Milton Project could provide the necessary increased transmission capacity and be placed in service by December 1, 2011 (see Appendix 1).

1.3 Proponent

Hydro One has a mandate to design, build and operate the Provincial transmission network. Hydro One is the proponent for the Bruce to Milton Project and is responsible for the development of the ToR and subsequent EA document.

1.4 Purpose of the Undertaking

The purpose of the Undertaking is to increase the capacity of the Bruce to Milton line to transmit electrical power from committed and future sources in the Bruce area to the provincial grid and the GTA by December 1, 2011, or as soon as this can be achieved. This

will increase energy security and transmission grid stability for the people in the Province of Ontario.

1.5 Outline of the Terms of Reference

This ToR sets out the detailed requirements for the preparation of the EA document for the reinforcement of transmission from the Bruce area to Milton in accordance with the requirements of the *EA Act*. Once approved by the Minister of Environment, the ToR will set out the detailed requirements that must be satisfied in conducting the EA and preparing the EA documentation.

The ToR details the key issues and activities to be addressed in the EA. In addition to the introductory chapter, this ToR provides information on the following:

- EA framework (Section 2);
- overview of EA requirements for the Bruce to Milton Project (Section 3);
- purpose and description of the undertaking (Section 4);
- existing environmental conditions in the study area (Section 5);
- identification and evaluation of the alternative methods (Section 6);
- commitments and monitoring (Section 7); and
- consultation plan for the EA (Section 8).

Taken together, Sections 3 to 8 fulfill the requirements in section 6(2)(c) of the *EA Act* to set out in detail the requirements for the EA for the Bruce to Milton Project.

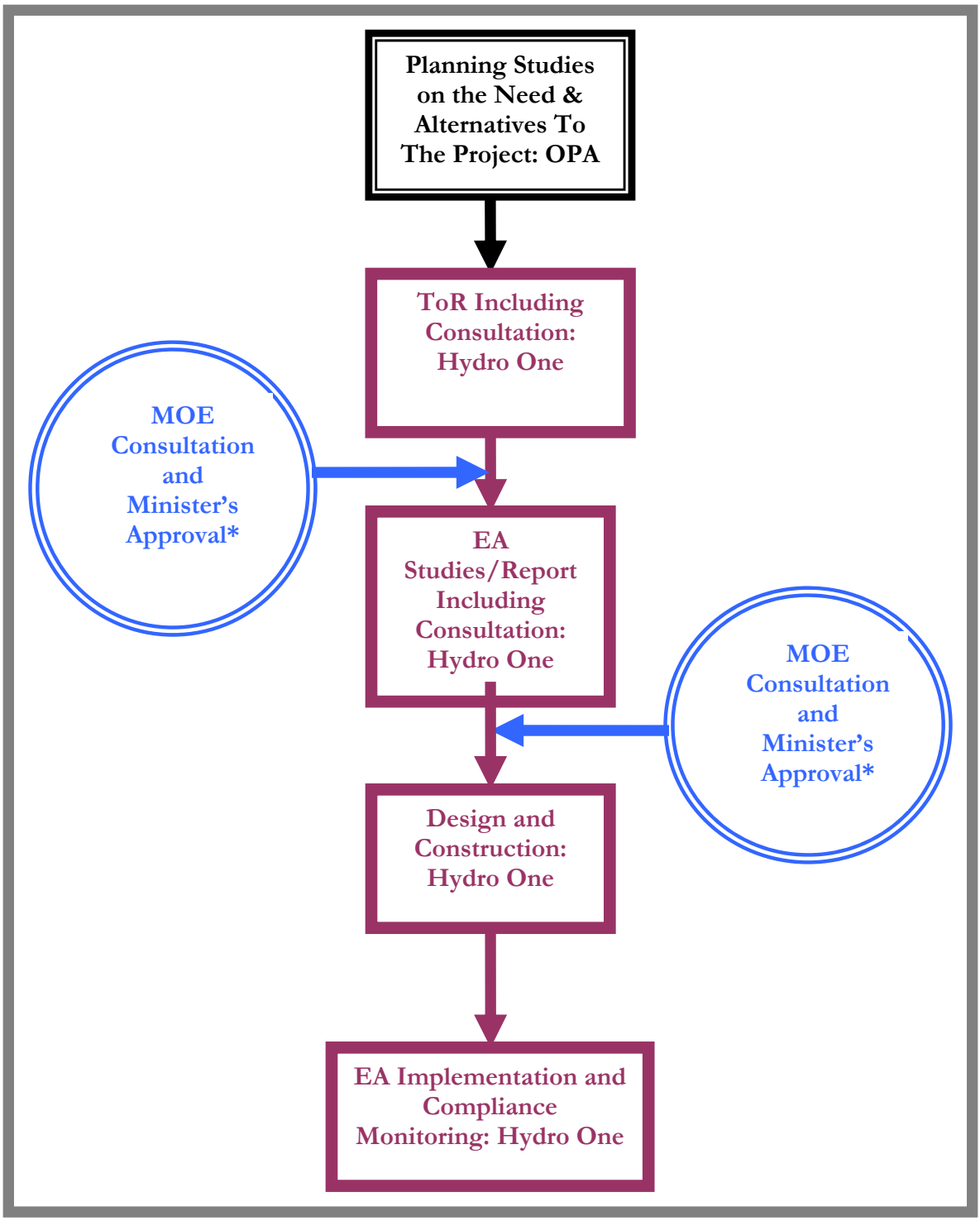
2. Environmental Assessment Framework

2.1 Ontario's Environmental Assessment Act

In Ontario, new and expanded transmission lines are subject to the *EA Act*. Ontario's Electricity Projects Regulation (O. Reg. 116/01), made under the *EA Act,* stipulates the EA requirements for electricity projects in Ontario on the basis of the project type (e.g., transmission lines, transformer stations, power generation plants, etc.) and, in the case of transmission lines, the voltage level and distance traversed. The voltage level and length of the Bruce to Milton Project requires that an application be prepared and submitted under s.5 of the *EA Act* to the Minister of the Environment for approval. There are two key documentation requirements for the application:

1. the development, submission, review and approval of the ToR; and,
2. the preparation, submission, review and approval of the EA document in accordance with the steps and methodology set out in the MOE approved ToR (Figure 2-1).

Under the *EA Act*, an EA can proceed under section 6.1(2) which requires a full assessment of "need", "alternatives to" the undertaking and "alternative methods" of carrying out the undertaking or it can proceed in accordance with subsections 6(2)(C) and 6.1(3) of the *EA Act*, which allow focusing of the EA. The need for the Bruce to Milton Project has been established by the OPA. The Undertaking is consistent with Provincial Land Use Policy and the "Off-Coal" program targets. It avoids the high cost of stranded power supplies in the Bruce area. The OPA concluded that the Bruce to Milton Project is the only practical alternative to deliver contracted power to the growing GTA. As such, this ToR is being prepared in accordance with subsections 6(2)(c) and 6.1(3) of the *EA Act*.



*Upon approval by the Cabinet and Order in Council by the Lieutenant Governor

Figure 2-1: The EA Process and Responsibility for Each Step

2.2 Other Approvals

Through consultation with the public, government agencies and various stakeholders, Hydro One will identify all necessary approvals that may be required during project planning and construction. Listed below are a number of potential approval requirements that have already been identified.

For this project, Hydro One will make best efforts to begin preparation of construction-related applications concurrent with the EA process. *EA Act* approval must precede all other approvals. However, it will be necessary to initiate some permit and approval activities or applications during the EA process. Additionally, it should be noted that some permits and approvals for construction typically rely on more detailed engineering and design information than is available during the EA process. In the latter case, Hydro One will perform studies necessary to support other approvals prior to start of construction.

2.2.1 Ontario Energy Board Act

The Bruce to Milton Project requires OEB approval. The OEB regulates Ontario's natural gas and electricity industries and is responsible for ensuring construction and operation of proposed transmission facilities are in the public interest. The OEB's role is to review a transmission project's effect on consumers with respect to prices, reliability and quality of electricity service. The OEB operates as an adjudicative tribunal and carries out its functions through oral or written public hearings. In March 2007, Hydro One filed the following two applications with the OEB related to this undertaking:

- Leave to Construct - The project is subject to "Leave to Construct" approval under section 92 of the *OEB Act.* The OEB review of Hydro One's application for Leave to Construct approval examines technical aspects and consumer protection related to a project proposal and also includes provisions for public consultation.

- Early Access to Land (Subsection 98 (1.1) of the *OEB Act*). Early access would allow Hydro One employees and representatives to access properties affected by the proposed project and undertake a limited number of activities (including biological and archaeological field studies, data collection, legal surveys and soil testing) while the section 92 approval is under consideration at OEB. This early access is required to gather seasonal data for the EA and other approvals.

Early access is required to facilitate the approval process and bring the project in-service by the required due date of December 1, 2011.

2.2.2 The Expropriation Act

Hydro One's primary intent is to negotiate easement rights with landowners, to the extent possible, for the portion of properties to be utilized for the transmission line. In some cases, it will be necessary to purchase entire properties where current uses are incompatible with a transmission corridor e.g., a permanent structure or residence under a transmission line.

Due to the number of properties involved, Hydro One intends to apply for expropriation of all properties under the *Ontario Expropriation Act*, 1990. Chapter E.26 outlines the conditions and restrictions under which a claim for expropriation can be submitted, and the rights of residents facing the claim. The expropriation plan must be approved and registered under both the *OEB Act* and the *Expropriation Act* prior to commencement of construction of the new line in 2009.

2.2.3 Canadian Environmental Assessment Act

An electricity project subject to the *EA Act* may also be subject to the *Canadian Environmental Assessment Act* (*CEA Act*).

Hydro One will provide a project description to the Canadian Environmental Assessment Agency (CEAA), and will work closely with federal authorities to provide specific details about the location and extent of the project to enable a determination of any permit or authorization requirements.

If the *CEA Act* is triggered, the harmonization process developed by CEAA and the MOE Environmental Assessment and Approvals Branch (EAAB) will be followed when practical to ensure that requirements of both levels of government are fully addressed.

2.2.4 Other Provincial Approvals and Permits

Based on current information, a number of permits, licences and approvals under provincial legislation may be required, including but not limited to, the following:

- permits under O. Reg. 42/06 "Regulation of Development, Interference with Wetlands and Alteration to Shorelines and Watercourses" and Generic Regulations from local Conservation Authorities under the *Conservation Authorities Act*;
- a Consolidated Work Permit under the *Lakes and Rivers Improvement Act* from the Ministry of Natural Resources (MNR) to undertake work on shorelands and works within a waterbody;
- approval for ownership/easement of land on which structures are built from the MNR under the *Public Lands Act*;
- permits from MNR under the *Public Lands Act* for works over beds of navigable waters;
- requirement to seal off old gas wells for public safety from the MNR Land and Water Branch under the Plugging Code,
- work permit controls, at all times of the year, for clearing within 300 m of a forest or woodland from the MNR Forest Management Branch under the *Forest Fires Prevention Act*;
- Niagara Escarpment Commission (NEC) Development Permit for the construction of new facilities within NEC lands;
- permits for application of pesticides from the MOE under the *Pesticides Act* for vegetation management during the operation phase;
- under the *Ontario Heritage Act*, an archaeological assessment(s) is required to obtain Ministry of Culture clearance;
- approval of new structures or construction that may affect existing and planned highways from the Ministry of Transportation under the *Provincial Highways Act*;

- compliance with industrial design/construction safety regulations, including filing notice of project before construction commences, of the Ontario Ministry of Labour under the *Occupational Health and Safety Act*; and
- compliance with health regulations of the Ministry of Health under the *Public Health Act*.

2.2.5 Other Relevant Provincial Policies and Legislation

Other relevant provincial policies and legislation include, but are not limited to:

- Provincial Policy Statement (Ministry of Municipal Affairs and Housing (MMAH), 2005a);
- *Endangered Species Act* (2007); and,
- *Greenbelt Act* (MMAH, 2005b).

2.2.6 Other Relevant Federal Legislation, Permits, and Policies

Other relevant federal legislation and policies include, but are not limited to:

- *Species at Risk Act;*
- *Migratory Birds Convention Act;*
- *Navigable Waters Protection Act;*
- *Fisheries Act;*
- *Aeronautics Act;* and,
- *Canadian Transportation Act*

Federal policies regarding species and habitat protection include:

- Policy on Wetland Conservation;
- Canadian Biodiversity Strategy;
- Convention on Biological Diversity; and
- Wildlife Policy for Canada.

All approvals that are necessary for the project to proceed will be outlined in the EA

document. It may not be possible to complete all required surveys prior to submission of the EA document, however Hydro One will commit to continue and complete all required surveys before construction.

3. Overview of the EA Requirements for the Proposed Project

The EA study will be consistent with the approach and requirements set out in the *EA Act*. Hydro One will submit the EA for review and approval to the Minister of the Environment, following an extensive consultation process. The EA will have the following components:

- statement of need for the Undertaking based on the recommendations and decisions of the OPA (need will be considered to have been determined);
- statement of the purpose for the Undertaking;
- description of the Undertaking
- description of the route
- description and rationale of alternative methods (design configurations) of carrying out the Undertaking;
- description of the environment that might reasonably be expected to be affected by the Undertaking and the alternative methods considered;
- description of the effects that might reasonably be expected to be caused to the environment as a result of the Undertaking, and the alternative methods of carrying out the Undertaking;
- description of the actions necessary or that may be reasonably expected to be necessary to prevent, change, remedy or mitigate any effects;
- description of the advantages and disadvantages of the alternative methods for the Undertaking;
- description of the public, agency and stakeholder consultations and Aboriginal engagement undertaken during the EA process;
- pre- and post- development environmental monitoring plan (as necessary); and,

- any supporting documents, maps, etc., as required under the *EA Act*.

4. Description of the Undertaking

This section presents a technical overview of the Bruce to Milton Project and defines the project study area.

4.1 Technical Overview of the Undertaking

The Undertaking is to implement of the OPA recommendation "to construct a new double-circuit 500kV line between the Bruce Power Complex and Hydro One's existing Milton SS located in the Town of Milton, to be in-service by December 1, 2011" (OPA letter to Hydro One, March 2007, Copy in Appendix A).

Hydro One proposes to construct a new line approximately 180 km long by widening the existing 500 kV/230 kV corridor from Bruce to Milton by approximately 53 to 61 m (175 to 200 feet). It will be necessary for Hydro One to obtain additional property rights, including both easement and property purchases, as necessary. Figure 4-1 shows the route of the proposed transmission line.

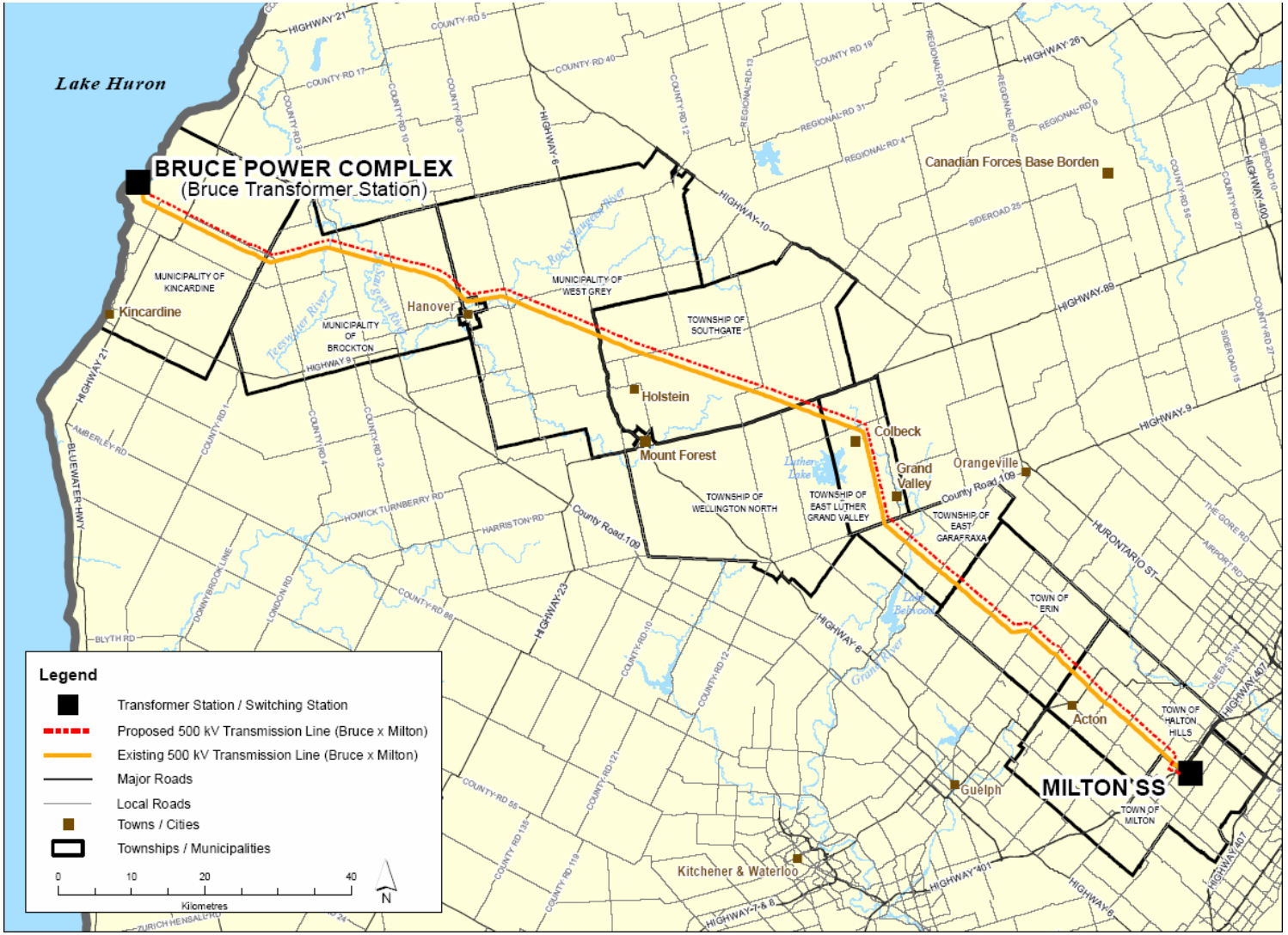


Figure 4-1: Reference Route for the Bruce to Milton Transmission Line

The north and east side of the existing ROW was determined to be the reference route, based on technical constraints including connection points, the location of existing transmission lines, need for line outages, maximization of existing property rights, minimization of crossovers and related economic considerations (see Supporting Documentation 1).

The final alignment for the expanded corridor will be determined during the EA process. Local refinements may be made by Hydro One to the reference route to mitigate potential environmental effects and address stakeholder issues, for example, Hydro One's consultation process identified two areas (Hanover and Halton Hills) where local refinements will be considered as part of the EA study. Any refinements, if required, will be made in consultation with local land owners and officials.

The proposed transmission line will be owned and operated by Hydro One, and will include the following facilities:

- a 3 km 500 kV single-circuit from the Bruce A TS to Bruce Junction (Jct) along a widened multi-line corridor within the Bruce Power Complex;
- a 3 km 500 kV single-circuit line from the Bruce B SS to Bruce Jct along the widened multi-line corridor within the Bruce Power Complex;
- a 173 km 500 kV double-circuit line from Bruce Jct to Milton SS along a widened multi-line corridor, with local refinements as appropriate;
- modifications at the Milton SS, Bruce A TS, Bruce B SS, and Bruce Jct to accommodate the new transmission line; and,
- modifications to the existing transmission circuits as required to accommodate new circuits.

Specific details on the upgrades will be provided in the EA document.

4.2 Study Area

The Bruce to Milton Project will cross through five upper tier municipalities (Bruce, Grey, Dufferin, and Wellington Counties and the Regional Municipality of Halton) and eleven

lower tier municipalities (Kincardine, Brockton, Hanover, West Grey, Southgate, Wellington North, East Luther Grand Valley, East Garafraxa, Erin, Halton Hills and Milton).

The Bruce to Milton Project will comprise a new double-circuit 500 kV line generally adjacent to and overlapping the existing transmission corridor from Bruce to Milton. To the maximum extent possible, the transmission line will make use of the widened existing ROW including lands owned by the Province immediately east of the Bruce Power Complex and north of the Milton SS.

Study area boundaries will be based on specific indicators (See Appendix B), and will be refined and finalized during the EA with input from the public, government agencies, Aboriginal Groups and other stakeholders to ensure that areas potentially affected by the Bruce to Milton Project are identified and studied. This is expected to occur early in the study process and for most indicators is typically expected to be the expanded ROW for this project. Potential effects on the natural, socio-economic, cultural, and agricultural environment in the study area will be analyzed and measures will be considered to eliminate, avoid, or mitigate negative effects or enhance positive effects.

5. Existing Environmental Conditions in the Study Area

The purpose of this section is to briefly describe the environmental baseline conditions in the study area (Section 4.2). A more comprehensive description of the baseline conditions in the study area will be provided as part of the EA.

Hydro One has filed an Early Access to Land application with the OEB to facilitate site-specific surveys that include environmental baseline information acquisition, see Section 2.2.1 for more information on Early Access. It is anticipated that the OEB will make its decision on the application in September 2007 to permit data collection for the EA. If, during consultation, reasonable requests for additional studies are received, Hydro One will consider these requests.

5.1 Natural Environment

This section describes the baseline natural environment conditions in the study area.

5.1.1 Physical Characteristics of the Study Area

The general physical characteristics of the study area will be documented as part of the EA. This section provides an overview of the physical and natural setting in the study area, and outlines the more detailed information that will be provided in the EA.

Climate

The Bruce to Milton Project traverses four Climatic Regions, as defined by Brown et al. (1974): Lake Huron-Georgian Bay, Huron Slopes, Dundalk Upland and South Slopes. The EA will provide climatic data for these four Climatic Regions, as well as mean monthly and annual temperature, precipitation and wind data for representative meteorological stations in the study area.

Air Quality

In southern Ontario, poor air quality is most often the result of high levels of ground-level ozone (O_3), the primary component of smog, and airborne particulate matter (PM). The EA document will provide 2003-2005 (and 2006 if available) ambient air quality statistics for the MOE air quality monitoring stations near or in the study area.

Sound/noise is a component of the air environment. The major sources of noise in the rural environment are road traffic and agricultural activities. The EA will characterize baseline or background noise conditions, based on published information.

Geology/Physiography

The bedrock underlying the study area consists of several southeast-to-northwest trending formations which decrease in age toward the west (Hewitt, 1972). The EA will provide mapping and a description of the geological formations traversed by the Bruce to Milton Project.

The EA also will provide a description of the effects of glaciation on southern Ontario

physiography and drift thickness based on Ontario Geological Survey mapping, as well as mapping and descriptions of the nine physiographic regions traversed by the Bruce to Milton Project.

Surface and Groundwater Hydrology

The study area crosses three drainage basins, and associated watersheds: Lake Huron, Lake Erie and Northern Lake Ontario (Chapman and Putnam, 1984). The EA will map the watersheds including their tributaries, as well as discharge and water quality data from the Water Survey of Canada, the MOE, and published Conservation Authority data.

During the fisheries surveys of watercourses designated as potential temporary crossings, hydrologic and surface water parameters will be measured and recorded on-site. Surficial sediment type will also be recorded. The hydrologic data will be provided in the post-EA applications for watercourse crossing permits from the Conservation Authorities.

The EA will also provide a description of groundwater resources including groundwater levels, yields and quality based on MOE well records and published information.

5.1.2 Environmentally Significant Areas

Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), and Regional Environmentally Sensitive Areas (ESAs) are traversed by or proximate to the reference route. The expanded ROW and possibly access roads will also affect a number of natural areas designated by municipalities (e.g., Dwyer, 2006), Conservation Authorities and MNR.

The EA will map the environmentally significant and natural areas traversed by or proximate to the reference route. A description of each area will be provided based on the MNR Natural Heritage Information Centre (NHIC) (2007a) database, published information and site-specific studies. Boundaries will also be confirmed, as well as status, particularly for Regionally Sensitive Areas.

(Niagara Escarpment Commission and Greenbelt issues are covered in s.5.2.1.2. Existing

Land Use and Proposed Developments. Any ESA's which fall within the NEC or Greenbelt areas will be discussed as Environmental Significant Areas in the EA.)

5.1.3 Wildlife and Habitat

Lands within the study area provide agricultural, woodland, wetland and riparian habitat for wildlife. In this area, most wildlife species are habituated to human activities and are concentrated in specialized habitats.

The EA will identify the mammal, breeding bird and herpetofauna species present in the study area based on published information and available databases. Any significant or specialized wildlife habitat, e.g., deer yards, will be mapped and described.

Site-specific studies of vegetation communities along the proposed ROW will be undertaken in environmentally significant areas and designated natural areas. During the vegetation surveys, any significant or specialized wildlife habitat will be identified and any casual observations of wildlife species recorded.

The EA document will also map the general locations of species at risk (e.g. endangered and threatened species) as well as endangered and threatened species in the study area based on Environment Canada, CWS (2004) and NHIC (2007b) databases (including their identification if available), as well as known locations based on published and unpublished information and personal communications. All general locations overlapping or proximate to the reference route that would be directly affected by construction activities will be field inspected to confirm presence/absence of any species at risk (if possible) and evaluate habitat potential to support species at risk.

5.1.4 Vegetation and Forest Resources

The study area includes forested areas and woodlots. For the study area, the EA will describe and map vegetation communities and delineate plant species in ESA's, as well as natural areas, such as municipally-designated significant woodlands and significant valleylands, based on the NHIC (2007a) database, published information, and site-specific field studies.
Site-specific field studies will be undertaken in environmentally significant areas, designated

natural areas, and the route of proposed access roads, with surveys to facilitate identification of sedge and other plant species. Ecological Land Classification (ELC) systems will be used during field studies to identify and delineate vegetation communities (Lee et al, 1998).

5.1.5 Water Bodies, Fish Habitat and Aquatic Ecosystems

Most of the larger watercourses within the study area provide coldwater and warmwater fish habitat. The EA will map coldwater and warmwater watercourses, as well list fish species present in the watercourses along the proposed ROW based on MNR Field Collection Records, Conservation Authority databases and published information. Any significant fish habitat (e.g., Sanctuary Areas) will be identified and described. All watercourse locations designated as temporary crossings for access roads will be field inspected prior to construction to confirm presence/absence of fish habitat and fish species present.

5.2 Socio-economic, Cultural and Agricultural Environment

The following section describes the socio-economic, cultural, and agricultural environment in the study area.

Existing and designated land uses along the reference route will be studied e.g., settlements, land use patterns, key areas of future development, proximity to towns and villages, and land use types traversed by the line. The existing transmission line has been in place for decades and land use practices have adjusted to its presence.

5.2.1 Socio-economic Environment

5.2.1.1 Existing Land Use and Proposed Developments

The study area crosses eleven municipal boundaries, including the Municipalities of Kincardine and Brockton in Bruce County; the Town of Hanover, the Municipality of West Grey and the Township of Southgate in Grey County; the Townships of Wellington North and Erin in Wellington County; the Townships of East Luther Grand Valley and East Garafraxa in Dufferin County; and the Towns of Halton Hills and Milton in the Regional Municipality of Halton. Agriculture is the dominant land use in the rural countryside, but other land uses occur within the study area, including rural, residential, commercial,

industrial and institutional and government uses.

The EA document will map all land use designations from Official Plans and draft approved plans of all municipalities within the study area. This information will be confirmed through meetings with municipal/regional/county planners. Plans for development in these municipalities will be identified through discussions with planners and municipal officials.

5.2.1.2 Niagara Escarpment and the Greenbelt

The Niagara Escarpment has been named a World Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization (UNESCO) due to the importance of the geological features and ecology of the Escarpment. The Niagara Escarpment is known for its scenery, and is an important outdoor recreation area in the Province of Ontario. The Niagara Escarpment's size and location in the middle of the study area make it an important feature. The proposed Bruce to Milton Project crosses NEC (2005) lands designated as Escarpment Natural Area, Escarpment Protection Area, Escarpment Rural Area and Mineral Resource Extraction Area.

The study area also crosses Protected Countryside lands consisting of an Agricultural System and a Natural (Natural Heritage and Water Resource) System that have been identified by the Province of Ontario as part of the Greenbelt of the Greater Golden Horseshoe (MMAH, 2005b). These lands are under policies established for their protection and use in the *Greenbelt Act* (MMAH, 2005b). The *Greenbelt Act* and Plan were established to provide protection for the agricultural land base and the ecological features and functions of the natural areas and parklands surrounding the Greater Golden Horseshoe.

The EA will map the NEC (2005) and Greenbelt (MMAH, 2005b) designated lands crossed by or proximate to the widened ROW. A description of these lands will be provided based on information from the NEC, published information and site-specific studies.

5.2.1.3 Commercial Activities

The study area for the Bruce to Milton Project is largely rural, interspersed with small population clusters in the northern section of the ROW, including towns such as Hanover,

and larger population centres closer to the GTA, such as Halton Hills. Major existing commercial/industrial activities in the northern portions of the study area include wind and nuclear power generation. Throughout the study area, the predominant commercial activity is agricultural production, with mineral and aggregate production, retail and other commercial activities occurring on a smaller scale. The EA will document the commercial/industrial activities in the study area

5.2.1.4 Community Profile

The Bruce to Milton Project will involve the widening of an existing corridor. The EA will identify the existing and proposed residential development within 500 m of the proposed ROW through consultation with municipal planners and review of secondary sources such as municipal plans and zoning information. The EA will document the property takings and disruption to residents, businesses and social features and character of the communities along its route.

5.2.1.5 Community and Regional Infrastructure

During the EA, the project team will identify and map community infrastructure in the study area such as roads, railways, airports, major recreational trails, etc., through reconnaissance and/or from secondary sources. The project team will consult with municipal officials and utilities to obtain information on pipelines, mains, drains, etc that are within the study area.

5.2.1.6 Community Services

During the EA, the project team will identify and map community services and facilities in the study area such as educational facilities, health facilities, retirement homes, places of worship, recreational features, camp grounds, and the location and coverage of emergency services, etc.

5.2.1.7 Landscape and Visual Assessment

During the EA, the project team will prepare a description of the landscape character along the proposed ROW, identifying landscape settings and features of importance within the study area. The team will also determine the type and degree of visual effect that will likely occur. This assessment will focus on vistas valued by the public and those identified by the project team as contributing to the aesthetic character of an area (e.g., Niagara Escarpment,

ESAs and river valleys).

5.2.1.8 Traditional/Aboriginal Land Use

While there are no reserve lands which will be crossed by this project, the project will affect lands for which there are aboriginal interests and treaty rights, including traditional uses. Initially, Hydro One contacted the Ontario Secretariat for Aboriginal Affairs and the Department of Indian and Northern Affairs to identify the Aboriginal Groups (includes First Nations and Métis Groups) who may have an interest in, or may be potentially affected by the project. They advised that the Chippewas of Saugeen, the Chippewas of Nawash, Mississaugas of New Credit, Six Nations of the Grand River including both the Elected Band Council and the Haudenosaunee Six Nations Confederacy Council (Haudenosaunee), could have a potential interest in the study area and/or may be potentially affected by the project. In addition, Hydro One became aware that the Hurone Wendat could also potentially have an interest in the study area. Hydro One has also identified the following Métis Groups who may have an interest in the project: the Georgian Bay Métis Council, the Grey Owen Sound Métis Council and the Saguingue Métis Council.

The Chippewas of Saugeen and the Chippewas of Nawash (both part of the Saugeen-Ojibway Nation) reserve lands are located approximately 15 km north of the Bruce Power Complex in Bruce County. Mapping provided by these Nations to Hydro One indicates that the study area overlaps with a large portion of their traditional use territories.

The Mississaugas of New Credit are located in Hagersville. They have a land claim which covers the GTA. In addition, their traditional use territories cover the south-easterly portions of the study area.

The Six Nations of the Grand River Reserve is located near Brantford and is not directly affected by the project. However, the Haldimand Tract (six miles on either side of the Grand River, from its mouth to its source), is part of the Haudenosaunee's asserted traditional territory. In addition to this, the Haudenosaunee have, in the past, advised Hydro One of their ongoing interest in southern Ontario, owing to the NanFan (1701) Treaty.

The Hurone Wendat currently have reserve land north of Quebec City; however, they have historical ties to southern Ontario and as the Seaton decision points out, have an interest in the archaeological resources, including potential burial sites that might be discovered during construction, that may have originated with their ancestors.

Hydro One has identified the Georgian Bay Métis Council, the Saguingue Métis Council and the Grey Owen Sound Métis Council as having a potential interest in the project; however, discussions with these groups will be required to ascertain if an interest in the project area does exist and if any potential effects could be expected.

The EA will document concerns and issues raised by the Aboriginal Groups, and how Hydro One will address these concerns through consultation or in liaison with the Aboriginal Groups and appropriate agencies. The EA document will describe Aboriginal Groups, their community, their traditional uses of the land and their established and asserted claims.

5.2.2 Cultural Environment

To describe and assess potential effects on heritage resources and archaeology in the study area, the EA will draw upon the results of archaeological assessments and cultural heritage studies. Archaeology will be done in consultation with Aboriginal Groups.

A Stage I archaeological study has been completed and Stage II will be conducted. Results from these studies will be incorporated into EA decision-making and construction planning.

A background historical study will be undertaken of the municipalities along the transmission route to describe their development history and the transmission route development history. Existing cultural heritage resources conditions will be documented. Built heritage resources and cultural landscape resources that could potentially be affected by the proposed corridor will be identified. If human remains are identified during the EA study or during the construction phase of the project, Hydro One will cease work in the immediate area, notify the Ministry of Culture as required under the *Cemeteries Act* and simultaneously notify Aboriginal Groups with an interest in the area.

5.2.3 Agriculture

The EA will analyze of Statistics Canada 2001 and 2006 Census of Agriculture data for agricultural land use, number and type of farms, farm operation arrangements, agricultural systems, livestock capabilities and gross farm receipts. Agricultural land use data will be confirmed/updated and farming infrastructure will be identified by windshield and helicopter surveys. Specific farming activities and special requirements will be determined by landowner questionnaires.

The EA also will map the Canada Land Inventory (CLI) agricultural soil capability within the study area, and determine/confirm of the extent and type of artificial tile drainage and municipal drains on properties directly affected by the Bruce to Milton Project, through discussions with landowners, the OMAFRA, the OFA and readily available secondary source mapping.

6. Alternative Methods

The alternative methods that will be considered in the EA relate to minimizing or avoiding significant negative effects of the Undertaking. The EA document will provide a description and rationale for the alternative methods. The alternative methods to be considered are:

(i) localized refinements of reference route including diversion around sensitive features, location of potential crossovers of adjoining transmission lines;

(ii) design considerations:

- span length between the towers to avoid environmental features, where required;
- tower height to avoid environmental features, where required;
- access road specifics, including alignment, location, retention after construction is complete, if required, etc.;
- construction methods and timing to minimize potential effects on the natural environment and farming operations; and,

- tower design and placement of towers for specific applications to minimize aesthetic effects on the local public and the travelling public or disturbances to farming operations.

Hydro One will evaluate of each alternative method considering avoidance, minimization or prevention of significant negative environmental effects and enhancement of positive effects where practical. For the purposes of the EA, the term "environment" reflects the definition in the *EA Act*, which includes natural, socio-economic, cultural and agricultural features.

During the EA, reasons to refine the ROW alignment in localized areas may be identified, as given in (i) above. Hydro One will consult on these refinements and will apply the Reasoned Argument Method to conduct the evaluation.

Hydro One will seek opportunities to enhance those environmental components which may have been affected during the course of the project including e.g., re-establishing habitat for terrestrial or aquatic species or implementing tree planting and replacement programs.

Hydro One will seek to provide employment and economic benefits as much as practical to the local communities along the ROW during the course of constructing the project.

6.1 Evaluation of Alternative Methods

During the EA, opportunities for refinement of the ROW alignment in specific localized areas may be identified, as in Section 6.(i) above. In some circumstances, it may be possible to do so to reduce social-economic or environmental effects. Hydro One will consult on these refinements and will apply the Reasoned Argument Method to conduct the evaluation.

All other alternative methods, in Section 6.(ii), will be evaluated with input from individual landowners or review agencies, such as the MNR and Conservation Authorities.

Published secondary source data for the evaluation of alternative methods, such as aerial photos and GIS data, will be obtained from agencies and municipal Official Plans. This

information will be supplemented, as required, by primary data collected from interest groups, agencies, utilities, members of the public, ministries, Aboriginal Groups and field surveys, as appropriate.

These following general principles will be applied by Hydro One during the EA in the evaluation of alternative methods:

- utilizing existing infrastructure efficiently and effectively to reduce or mitigate significant negative effects on natural, social and economic features (minimizing the amount of affected land);
- minimizing significant negative effects on existing and designated land uses;
- minimizing significant negative effects on agricultural lands and operations;
- avoiding or minimizing significant negative effects on natural systems, with particular emphasis on natural features, functions and communities;
- minimizing significant negative effects on built-up areas that generally provide a focus for cultural, recreational, social and economic activities; and,
- minimizing significant negative potential effects on affected farmers and landowners.
- maximizing opportunities to enhance positive effects on the environment (natural socio-environment, cultural and agricultural).

These principles for evaluating alternative methods are intended to minimize significant environmental effects. Refinements to the project design will occur throughout project planning in conjunction with discussions with property owners, Aboriginal Groups, businesses, agencies and other stakeholders as appropriate.

6.2 Evaluation Methods

6.2.1 Reference Route Alignment

Data will be collected and mapped for environmental features within the study area to identify the preferred location for the final route alignment. Effects will be described qualitatively or quantitatively according to the preliminary list of criteria and indicators shown in Table 6-1 and *Appendix B*. These criteria are intended to assist in determining the

overall effect of the ROW alignment on the natural, socio-economic, cultural and agricultural environment and to develop appropriate mitigation measures. These evaluation criteria and indicators may be subject to refinement and modification during the EA based on study findings and provincial policy. Cost and technical criteria will also be considered in this process.

The project team will highlight specific areas where the reference route could be refined to reduce or eliminate negative local area effects. The evaluation (using the Reasoned Argument Method) will then examine the differences in significant net effects associated with local alignment configurations. The project team after consultation with landowners, agencies, municipalities, First Nations, and interest groups may refine the reference alignment. The decision-making process will be clearly documented and presented for stakeholders' comment, to ensure issues and concerns have been considered.

6.2.2 Design Considerations

The project will enhance safety and security of electrical supply in the Province and design considerations will be evaluated consistent with this purpose. Alternative methods involving span length, tower height, alignment of access roads, timing of construction and tower design will be evaluated based on site-specific environmental and technical considerations and landowner and review agency input. The criteria and principles defined above will also be used to evaluate design considerations. Changes to project design will be made to accommodate landowner concerns if it is practicable to do so without negatively affecting other landowners, environmental features or significantly negatively affecting overall project costs. Hydro One will document landowner issues, how these decisions were made, and the results.

6.3 Effects Evaluation and Mitigation Measures

Table 6.1 identifies the environmental and technical aspects that will be considered in the evaluation of potential environmental effects for the route alignment and design method. The development of criteria and indicators for the effects evaluation have been developed utilizing the general principles detailed in Section 6.1. A more detailed description of the

environmental features criteria and indicators is provided in *Appendix B*.

Table 6-1: Environmental and Technical Considerations During Project Planning

COMPONENT	FEATURES/CONSIDERATIONS
Natural Environment	• Wetlands, Areas of Natural and Scientific Interest (ANSIs) • Species at Risk (Endangered or Threatened) • Water bodies, fisheries and aquatic ecosystems • Forests, woodlots, vegetation
Socio-economic Environment	• Existing and approved land uses (reference to OP) • Approved developments • Commercial activities • Mineral and aggregate resources • Community profile (including effects to landowners) • Community services • Community infrastructure • Landscape and visual assessment • Greenbelt and Niagara Escarpment lands • Traditional/Aboriginal Land Use
Cultural environment	• Historical • Archaeological • Heritage and cultural sites and landscapes • Parks • Conservation areas • Recreational facilities
Agricultural lands	• Agricultural soil capability • Crop and livestock production • Agricultural capability • Agricultural infrastructure, including tile drainage • Agricultural land use
Technical and cost considerations	Safety and adherence to design standards: • Compatibility with the transmission network

COMPONENT	FEATURES/CONSIDERATIONS
	• Utilization of existing infrastructure corridors (e.g., roads and ROWs) • Minimize changes in transmission line directional heading (angles) • Shortest length of line • Soil stability for transmission towers • Suitable terrain • Good access for line maintenance • Minimizing other transmission circuit crossings (especially 500 kV lines) • Minimizing effects on other utilities (e.g., pipelines, railways)

Mitigation measures will be developed to incorporate relevant technical guidelines and standards to minimize any significant negative effects of construction and operation. Appropriate technical and economically feasible mitigation measures will be developed for specific characteristics and sensitivities of the environmental features and the related significance (e.g., magnitude, duration, certainty) of the potential effect. The EA will recommend pre- and post-operational monitoring programs designed to verify effects prediction, the effectiveness of mitigation measures and the need for any remedial measures, should they be necessary.

6.3.1 Evaluation of Effects on the Natural Environment

As indicated in Section 4.1, the proposed Bruce to Milton Project adds a new double-circuit 500 kV transmission line utilizing available rights and additional easement requirements along the Hydro One ROW from the Bruce Power Complex to the Milton SS. Maximization of the use of the existing ROW will reduce potential negative effects on environmental features i.e., by reducing land requirements for width of the ROW by about 20%.

Construction activities associated with the Bruce to Milton Project that may have an effect on the natural environment include:

- brushing, clearing and grading;
- construction of access roads including stream crossings;
- delivery of equipment and materials;
- auguring and pouring tower foundations;
- delivery, assembly and installation of new towers;
- stringing of conductors; and,
- rehabilitation/restoration.

Potential significant negative effects of the proposed undertaking on the natural environment, e.g., soils, surface water and groundwater resources, vegetation, wildlife, fisheries resources and environmentally significant areas, will be assessed and appropriate mitigation/remedial measures will be recommended to reduce or eliminate those effects.

Potential effects due to construction are as follows: soil compaction and erosion; loss of vegetation from clearing and associated loss of wildlife habitat; displacement of wildlife or effects to nesting birds and species at risk; incidental spills of oil, gasoline and other chemicals; water quality and fish habitat degradation due to temporary stream crossings; and degradation of environmentally significant areas. Agricultural infrastructure can be affected by changes to site drainage.

Potential effects due to operation are related to maintenance access and vegetation management (approximately 7-year cycles).

To reduce or eliminate potential significant negative environmental effects associated with the construction and operation of the proposed facilities, proven environmentally sound guidelines and best management practices (BMPs) will be implemented using:

- "Environmental Guidelines for the Construction and Maintenance of Transmission Facilities" (Hydro One, 2007);
- "Guidelines for Culvert Installations in Wetlands" (Mulamoottil, 1987);

- "Ontario Operational Statement, Habitat Management Program, Overhead Line Construction" (DFO, 2007a);
- "Ontario Operational Statement, Habitat Management Program, Maintenance of Riparian Vegetation in Existing Rights-of-Way" (DFO, 2007b);
- "Ontario Operational Statement, Habitat Management Program, Culvert Maintenance" (DFO, 2007c);
- "Guidelines for Evaluating Construction Activities Impacting on Water Resources" (Persaud and Jaagumagi, 1995);
- "Utility Vegetation Management" (Cieslewicz and Novembri, 2004); and
- "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities" (Cheminfo, 2005).

In addition, all other relevant environmental requirements and policies will be identified and taken into account in the EA, e.g., NEC (2005), MMAH (2005a,b) and Conservation Authority plans and policies (e.g., GRCA, 2003; Saugeen Conservation, 2005).

Hydro One will assign an environmental specialist to support construction and to advise on environmental requirements. Pre-construction monitoring will be completed to delineate boundaries of natural features, flag the limits of work areas, and identify stick nests for removal prior to breeding bird season. Construction-phase monitoring will be undertaken to confirm compliance, to ensure that mitigation is implemented according to plan and is effective, and to ensure appropriate post-construction restoration is carried out.

As a standard requirement, Hydro One will prepare "Environmental Specifications" for the Bruce to Milton Project which will detail how project environmental protection will be achieved by describing all project commitments, government legislation, Hydro One policy and special mitigation procedures to be implemented. The Environmental Specifications will take into account the environmental guidelines and BMPs listed above to control the effect that the Bruce to Milton Project may have on the environment. It will also take into account commitments made during the EA and conditions of approval for licences and permits.

The Environmental Specifications will delineate appropriate construction procedures and associated mitigation measures for:

- brushing and clearing;
- access road construction and removal;
- construction noise and nuisance dust control;
- erosion and sediment control;
- watercourse crossings;
- environmentally significant areas;
- site cleanup and restoration to pre-construction conditions;
- spills and spill reporting; and
- waste management practices.

As indicated in Sections 4.1 and 5.1, the widened ROW would cross a number of environmentally significant areas. Some of these may be avoided in the Bruce to Milton Project by alignment of access roads off-ROW and/or by tower placement on either side of the environmentally significant area. Pre-construction surveys of these areas will be completed to:

- identify vegetation communities and inventory flora directly affected;
- clearly identify and flag the limits of working areas, adjacent to important environmental features;
- identify flow regime across the working area at wetland locations and flag preferred surface water control zones as required:
- identify any stick nests for removal prior to the breeding season; and
- clearly mark the limits of vegetation clearing.

As indicated in Section 5, all known and general species at risk locations in the study area will be ground-truthed to confirm presence/absence of any species at risk (if possible) and/or evaluate habitat potential to support species at risk. Protection/mitigation measures would be developed, as necessary, including alignment of access roads or transmission towers,

transplantation, and/or habitat compensation. When possible, selected cutting will be timed to avoid the breeding bird season. Otherwise a bird nesting survey will be undertaken to identify, prior to construction, the presence of any migratory bird nests.

In addition to the implementation of appropriate construction procedures and associated mitigation measures for site cleanup and restoration to pre-construction conditions, Hydro One will identify opportunities for habitat enhancement in environmentally significant areas.

Finally, an "Environmental Emergency Preparedness and Response Plan" will be prepared prior to the start of any field construction work. The plan will clearly identify project-specific emergency contacts and accountabilities.

6.3.2 Evaluation of Effects on the Socio-economic Environment

Social impacts can be positive or negative; and can occur at various units of social order: individuals, businesses, communities, economic sectors; however, the overall objective of the Bruce to Milton Project is to provide an overall benefit to the Province of Ontario. The goal of the social impact assessment is to predict and understand the effects of the project on those who live, work and play where the actual physical project activities occur. Key indicators for this study are:

- displacements of business, property and residents;
- displacements of social features (institutional, recreational, etc);
- disruption to business, property and residents;
- disruption of social features;
- community and neighbourhood effects (Community character, cohesion, function)
- changes to land use patterns, including existing and planned development
- displacement or disruption to farm infrastructure and type;
- displacement or disruption to mineral and aggregates resources;
- displacement or disruption to cultural resources;
- displacement or disruption to community services and infrastructure;
- disruption to traditional/Aboriginal land use; and,

- changes to the existing landscape and visual character.

Data Collection

Social information will be collected from the following sources:

- Secondary published sources;
- Windshield surveys;
- PIC comments and input;
- Stakeholder consultation (to be defined as project planning progresses but may include municipalities, social features, ratepayer groups, business community, agricultural community); and
- Consultation with affected community residents.

The social impact assessment will include:

- An assessment of the socio-economic character and profile of the area potentially affected by the project;
- An evaluation of the alternatives including identification of issues and concerns;
- The identification and assessment of effects on the socio-economic environment by indicator; and
- The identification of protective or mitigation measures.

Potential effects of the proposed undertaking on the socio-economic features identified will be assessed and appropriate mitigation/remedial measures will be recommended to reduce or eliminate the significant negative effects.

The project may have potential effects on businesses, community services, infrastructure and facilities. It may also affect potential development plans in those communities. Construction activities associated with the Bruce to Milton Project will also be assessed at a broad level due to the potential to displace and affect access to properties, businesses and

community features. Other potential effects due to construction that will be considered are road diversions/detours, and nuisance effects such as dust and noise during construction activities.

The assessment of effects will be based on data collected from primary and secondary sources. A broad assessment of potential socio-economic considerations of the alternative methods both during and after construction on existing land use, potential development, businesses and community features shall be prepared and will identify proposed mitigation measures. To assist in providing a description of the environment, the EA document will provide supporting technical studies, surveys and environmental inventories to collect the following types of information within the study area and in the vicinity of the ROW:

- description of land use;
- development characteristics and patterns;
- inventory of community services and facilities;
- business characteristics and access considerations; and,
- landscape and visual assessment.

To reduce or eliminate potential significant environmental effects associated with the construction and operation of the proposed facilities, proven environmentally sound guidelines and best management practices (BMPs) will be implemented.

6.3.2.1 Effects on Traditional/Aboriginal Land Use

Aboriginal groups may have an interest in a project in addition to or apart from any potential effects on aboriginal interests and treaty rights. Through discussions with Aboriginal Groups, Hydro One will attempt to determine the extent and nature of any interests in the project as well as any potential effects on Aboriginal interests and treaty rights. Both the Saugeen Ojibway Nation and Six Nations of the Grand River (including both the Elected Band Council and the Haudenosaunee) have expressed an interest in project archaeological activities as well as effects on the natural environment. It is not clear at this time the extent

of any potential effects on aboriginal interests and treaty rights for these groups or any of the others which have been identified for engagement in the project area.

Hydro One is currently negotiating a consultation protocol with the Saugeen Ojibway Nation and the Six Nations of the Grand River (including both the Elected Band Council and the Haudenosaunee) which includes providing resource capacity to gain information on traditional values as they relate to the project, specifically in the fields of archaeology and ecology.

6.3.2.2 Effects on the Cultural Environment

The study area consists mainly of previously disturbed lands, as it is largely situated adjacent to an existing transmission line ROW. Expanding the ROW for the Bruce to Milton Project could potentially have effects on:

- areas of archaeological potential;
- built heritage and cultural landscape;
- churches and cemeteries;
- recreational trails;
- waterways;
- conservation areas;
- camp grounds; and,
- other cultural uses.

To assess the potential effects of the Bruce to Milton Project on heritage, archaeology and cultural resources, the EA will draw upon the results of a Stage 1 archaeological study (and future archaeological work, as required) and cultural and heritage assessments. Information and data will also be obtained from Municipal Heritage Groups, heritage planners, Aboriginal Groups, secondary source information, and discussions during the consultation process.

6.3.2.3 Effects on the Agricultural Environment

Hydro One will consult with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and the Ontario Federation of Agriculture (OFA) and farmers regarding effects on the agricultural environment.

Construction and pre-construction (including archaeological assessments and surveying) activities associated with the Bruce to Milton Project that may have an effect on the agricultural environment include:

- brushing and clearing;
- construction of access roads;
- delivery of equipment and materials;
- auguring and pouring foundations;
- delivery, assembly and installation of new towers;
- stringing of conductors; and
- soil and drainage restoration.

Potential effects of the proposed undertaking on the agricultural environment, e.g., artificial drainage systems, surface and subsurface improvements, agricultural structures (farms, laneways, etc.), agricultural capability of the land (surface and subsurface soil characteristics), removal of land from active production through placement of towers, surface water and groundwater resources, etc., will be assessed and appropriate mitigation/remedial measures will be recommended to reduce or eliminate potentially significant effects.

Potential effects due to construction may include fugitive dust, noise emissions, topsoil/subsoil mixing, damage to drainage systems, soil compaction and erosion, crop clearing, incidental spills of oil, gasoline and other liquids, degradation of water quality, and degradation of soil productivity.

To reduce or eliminate potential significant agricultural effects, construction and operation of the proposed facilities would be subject to proven environmentally sound guidelines and

BMPs. In addition, all other relevant requirements and policies will be identified and taken into account in the EA.

As indicated in Section 6.3.1, Hydro One will prepare an "Environmental Specifications" document for the Bruce to Milton Project. The Environmental Specifications will take into account standard environmental guidelines and BMPs to ensure that the Bruce to Milton Project will have minimal effect on the agricultural environment. All Hydro One staff and their Contractors will follow these Specifications for the Bruce to Milton Project.

Pre-construction surveys of agricultural lands to be affected by the Bruce to Milton Project will be completed to identify extent and type of agricultural operations; and clearly identify and flag the limits of working areas, with consideration for adjacent agricultural operations, tile drainage systems and soil.

6.4 Other Issues

6.4.1 Property Values

During the consultation process, landowners have raised the issue of potential effects on property values. Contacts have been initiated with all landowners who will be directly affected by the project crossing their property and compensation will be provided. In a situation where existing residential and major farm buildings are located in the proposed widened corridor, options include "buyout" of the total holding or, in a limited number of situations, relocation of buildings when deemed appropriate. For all other properties which are directly affected by the proposed ROW widening, independent appraisals will be conducted and landowners will be offered 75% of market value for the area of the proposed widened corridor. Hydro One will ensure that all affected landowners will be treated in a fair and consistent manner.

6.4.2 Electric and Magnetic Fields

Electric and magnetic fields (EMF) are invisible lines of force produced by the flow of electricity in a wire or electrical device. The strength of these fields rapidly weakens away from their source. Everyone is exposed daily to EMF from many sources, including

household wiring, power lines and appliances.

Hydro One recognizes the public concerns over potential health effects from exposure to EMF and takes seriously its responsibility to understand, appropriately address and communicate the scientific data/developments on this issue. Therefore, Hydro One will:

- continue to communicate accurate and timely information to its employees and customers;
- continue to provide, upon request, EMF measurement services at no cost to direct customers of Hydro One and individuals and/or organizations whose property is adjacent to Hydro One distribution and/or transmission facilities;
- monitor worldwide scientific research, judicial decisions and regulatory requirements relating to EMF, and make necessary adjustments to its policies, programs and practices;
- support collaborative research; and,
- consider EMF research when sitting, designing, and communicating about new and upgraded facilities and when operating its facilities.

6.4.3 Cost and Technical Considerations

The total cost of the project is estimated to be $635 million, which includes an allowance for contingencies, the assessment of which is based on past experience of Hydro One and addresses a number of risks such as:

- system safety and reliability;
- constructability analysis;
- line outages to enable connections for the new line;
- availability of tower and infrastructure materials;
- timely regulatory and agency approvals;
- material differences or design changes arising from the EA or other approvals;
- design changes to accommodate requirements from Alternative Methods analysis;
- land costs variability;

- poor or contaminated soil conditions;
- unexpected site drainage requirements;
- adverse weather conditions; and
- conflicts with other utility ROW that intersect or parallel the proposed facilities.

Issues that could potentially affect project construction and implementation costs will be addressed as part of the EA.

7. Commitments and Monitoring

Hydro One is committed to environmental protection and responsible environmental management. This project will be carried out in compliance with environmental legislation, corporate policies, Best Management Practices, and corporate environmental procedures. Facilities will be designed, constructed and operated in a manner that makes efficient use of resources, prevents pollution and reduces environmental effects to the extent that is reasonably achievable. Hydro One strives for the continual improvement in its management system, processes, activities and services. Therefore Hydro One will:

- identify, assess and manage potentially significant environmental risks and integrate environmental considerations into decisions,
- identify, anticipate and report potential potentially significant environmental effects in accordance with reporting protocols. The emphasis will be on prevention of environmental incidents and significant negative effects,
- train employees and contractors so that they understand their roles, responsibilities and Hydro One's environmental requirements and have the skills, knowledge and resources necessary to perform their duties,
- promote continual improvement by setting environmental objectives and targets, monitoring performance and taking corrective and preventive actions when required,
- work cooperatively with governments, customers, suppliers and other stakeholders to develop programs that contribute to the achievement of Hydro One's environmental objectives and targets, and

- support the investigation and use of new methods of environmental protection that will help achieve Hydro One's business objectives.

The Hydro One Environmental Policy and Environmental Commitment form the overarching foundations for commitments made in this EA.

Environmental Specifications will be prepared to guide project construction. An environmental specialist will be assigned to support and monitor construction activities. As noted, pre- and post-operational studies will be carried out to confirm project compliance, the accuracy of environmental effects predictions, the effectiveness of mitigation measures and the need for any remedial action.

7.1 EA Document Preparation and Submission

In accordance with the discussions above, the EA will document need, the purpose for the undertaking, alternative methods and their rationale, consultation undertaken, a description of and rationale for the Undertaking, environmental baseline, environmental effects and proposed mitigation measures associated with the Undertaking, commitments to compliance monitoring, and future commitments to be satisfied at subsequent design stages. Further information will be included if warranted. The EA will also provide an executive summary.

In addition to the EA, reference reports will be prepared at appropriate stages of the EA to document technical work that is undertaken to support the decision-making process.

A draft EA will be made available to the public, federal and provincial government agencies, municipalities and Aboriginal Groups for review prior to formal submission to the MOE. The documentation will be available at government offices, public libraries and on the project web site.

Subsequent to the pre-submission review and consideration of any comments received, the EA will be formally submitted to the MOE for an approval decision.

The EA will provide a comprehensive list of all commitments made during the study to guide future environmental work and consultation as well as effects and compliance monitoring. All monitoring will be consistent with MOE requirements.

7.2 Project Effects Monitoring

During the later stages of the EA process, a monitoring program will be developed. The program (to be included in the EA) will describe the project environmental management system that will ensure compliance with the commitments set out in this assessment plus other environmental requirements (e.g., terms and conditions of EA approval and other legislation).

Pre- and post-operational monitoring will identify actual effects, assess the effectiveness of the mitigation/restoration/enhancement measures to reduce or eliminate these effects, and evaluate the need for any additional action to ensure commitment realization.

Appropriate commitments to compliance monitoring will be reflected in study documentation. The duration of the monitoring and follow-up programs will vary and will depend on the conditions of permits and approvals granted by regulatory agencies.

7.3 EA Process Monitoring

During the planning and design processes, compliance with EA process commitments will be reviewed prior to project implementation. External notification and consultations will be consistent with EA commitments.

8. Record of Consultation

8.1 Consultation Plan for the ToR

A draft Record of Consultation for preparation of this ToR is available as Supporting Document #2. This Record describes the consultation tools utilized, and includes a

summary of the issues and concerns raised during the consultation activities, the response to these issues and how concerns were considered in the development of the ToR.

8.2 Consultation Plan for the EA

The *EA Act* s. 5.1 requires consultation to be undertaken during the preparation of an EA. The various consultation activities that will take place during the preparation of the EA need to be outlined in the ToR, and should include consultation with:

- the general public;
- the government review team; and
- people who declared an interest in the proposed undertaking during the ToR stage.

This Consultation Plan outlines the general consultation methods proposed for the EA including:

- a description of the plan objectives;
- identification of who will be consulted and the methods to be used to obtain input from interested persons;
- the delineation of key decision-making milestones during the preparation of the EA where consultation will occur; and
- provision of an issues resolution strategy.

The objectives of the consultation plan are to:

- consult with all potentially affected and interested stakeholders;
- provide sufficient information in a user-friendly format;
- provide opportunities for input before decisions are made;
- provide appropriate, flexible and convenient opportunities for consultation that meet the needs of stakeholders;
- be responsive by listening to comments, giving them careful consideration, making changes where appropriate and providing a rationale where no change is made;

- document the consultation program as well as the issues raised by stakeholders and provide written responses to key issues; and
- evaluate the effectiveness of the program on an ongoing basis and make changes for improvement.

8.2.1 Stakeholder Identification

There are a wide range of project interests and stakeholders. The following stakeholders will be consulted:

- owners and occupants (tenants) of property within the ROW of the proposed transmission line;
- residents within 500 m of the ROW;
- non-government organizations and groups with an interest in the project;
- agencies with an interest in the project including the Government Review Team; and
- municipalities affected by the project.

In addition to the specific consultation activities planned for each group (public and agency), several on-going consultation activities have been initiated and will continue throughout the EA process. The following on-going consultation activities are planned for the project:

- **Web Site** – The web site will continue to be updated throughout the EA process and will offer visitors the opportunity to comment on the proposal. The purpose of the web site is to provide a widely accessible venue for a large number of stakeholders to obtain and download a wide range of information in a timely manner throughout the life of the project. However, internet access is not universally available and thus, alternative options for obtaining information will be available.

- **Hot-Line** – The project hot-line, 1-877-345-6799, will provide 24 hour voice mail access throughout the life of the project. This will give stakeholders another opportunity to leave comments or request information regarding the project.

- **Frequently Asked Questions (FAQs)** – A list of FAQs has been posted to the

project web site and will be updated periodically to reflect new issues and concerns

- **Media** – Media will be provided with project information, including a letter, contact card, newsletter, FAQs and technical briefings if needed.

- **Documents Distributed and Posted in Public Places** – Draft and final EA documents will be distributed to agencies, key interest groups, and municipal officials and staff of affected communities. Hydro One will make documents available at local libraries and at municipal offices for review by members of the public. Documents will also be available for download from the project web site for those with internet access.

8.3 Public Consultation Plan

This section of the ToR presents consultation activities that are planned for the EA.

8.3.1 Public Consultation Plan and Methods

Figure 8.1 identifies the key decision-points in the project and the proposed consultation activities for each. Specific consultation activities are described below.

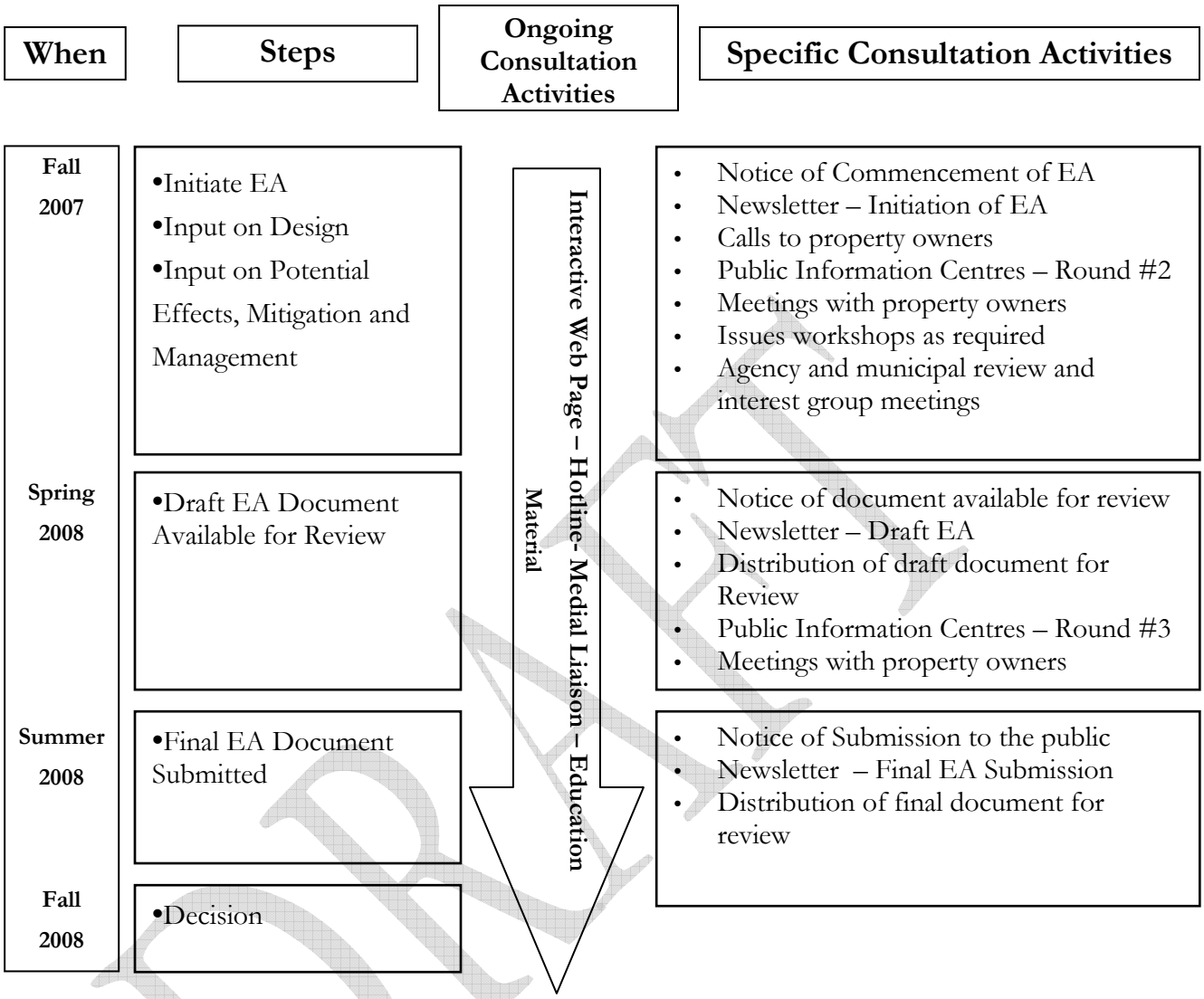


Figure 8-1: Key Decision Points during the EA

- **Notice of Commencement of EA** – After ToR approval the Notice will announce the initiation of the EA. The Notice will be published in local newspapers, and include a brief explanation of the project, key contact information and notification of upcoming PICs. This activity is a mandatory requirement of the EA process.

- **Newsletter** – Newsletters will continue to be produced at each key decision point to keep stakeholders up to date on the progress of the EA. Newsletters will be made

available on the project web site and will be mailed to directly affected property owners (within ROW) and within 500 m of the ROW and others on the mailing list. Approximately 20,000 newsletters will be produced and distributed via addressed mail to property owners within the ROW and via unaddressed ad mail to properties within 500 m of the ROW. Newsletters to be produced during the EA phase of the project are as follows:

- Initiation of the EA – providing information on upcoming public consultation activities including the second round of PIC; details on the EA phase of the EA process; and information on how the public can comment and get involved in the process,
- Draft EA Document – providing information on the third round of PICs where the draft document can be reviewed and how to comment and participate in the process, and
- Final Submission of the EA – providing information on where the final document is available for review; how to comment and participate in the process; and what to expect if the EA is approved.

- **Issues Workshops** – Workshops provide an opportunity for interested members of the public to assist in the EA process. Workshops may be held as appropriate with property owners to confirm and develop design alternatives, apply evaluation criteria and establish the relative importance of criteria. If specific issues are identified during the EA process, workshops may be utilized to address the issues.

- **Public Information Centres (PICs)** – The purpose of the PICs will be to provide an opportunity for face-to-face discussion among affected property owners, interested individuals and the project team. Two series of up to seven PICs are proposed during the EA; one during the EA preparation, and another once the draft EA document is available for review. Each of the two series of PICs will be held in up to seven different locations along the corridor recognizing the large size of the study area and the diversity of interests. Comment Forms will be distributed at the PICs to acquire responses to specific questions and to allow an opportunity for participants to provide

further comments on the proposal. PIC panels and any handouts available at the PICs will also be posted on the project web site for review by those unable to attend the PICs. The first series of EA PICs will be scheduled shortly after the EA is initiated. This series of PICs will allow members of the public to provide input on design (towers design and location, access road location and construction), mitigation and effect management. The second series will provide an overview of the draft EA document.

- **Meetings with Property Owners** – Property agents and EA team members will meet with directly affected property owners where environmental effects have been identified to provide updated information on the project, identify issues and discuss the property acquisition process. This will provide another opportunity for affected property owners to meet face-to-face with project staff and identify any outstanding issues and concerns. Property owners will also be notified directly of upcoming PICs and that the draft EA document is available for review through a mailing. The mailings will include a project newsletter informing effected landowners of dates and locations of scheduled PICs and where and when they can review the draft EA document.

- **Interest Group Meetings** – Meetings will be held with agencies and key interest groups to identify issues and discuss options for resolution of issues at EA initiation and as issues arise during the EA process. In addition, agencies and key interest groups may request meetings with the project team during the EA process. Agencies and key interest groups will also be provided with a copy of the draft EA document for review. Project staff will call these groups to set up meetings to review the draft document and to identify any outstanding or emerging issues. Input from these meetings will be incorporated into the draft document before it is finalized.

- **Public Notice of Submission of EA to MOE** – Hydro One will notify affected property owners and others on the mailing list by mail, and residents and businesses within 500 m of the corridor by ad mail that the EA document has been submitted to

the Minister of the Environment for approval. The Notice will be published in local newspapers along the route. The Notice will also indicate:

- that a government and public review has been initiated and the length of the minimum review period; and
- the date that comments are to be submitted to the MOE EAAB contact.

8.4 Aboriginal Groups Engagement Plan

The courts have established that the constitutional duty to consult rests with the Crown. However, government can delegate some of the procedural aspects of the duty to consult upon project proponents. Also, government may coordinate consultation activities of agencies and proponents. Project proponents are obliged under the *EA Act* to consult with all interested parties. In addition the public consultation process is also open to the Aboriginal Groups.

Hydro One recognizes the importance of engaging the First Nations and the Métis regarding the Bruce to Milton Project. As noted earlier, there are no reserve lands directly affected (crossed) by the Bruce to Milton Project; however, six First Nations and three Métis Groups were identified as having a potential interest in the project: the Chippewas of Nawash, the Chippewas of Saugeen (together the Saugeen Ojibway Nation), the Six Nations of the Grand River including both the Elected Band Council and the Haudenosaunee Six Nations Confederacy Council (Haudenosaunee), the Mississaugas of New Credit, the Hurone Wendat, the Georgian Bay Métis Council, the Grey Owen Sound Métis Council and the Saguingue Métis Council. Groups Hydro One's engagement process for Aboriginal Groups is designed to provide relevant information on the project to the Aboriginal Groups in a timely manner and to respond to and consider issues, concerns or questions raised by the Aboriginal Groups in a clear and transparent manner throughout the completion of the regulatory approval processes (e.g., the EA process). Engagement with Aboriginal Groups will:

- provide project-related information, including ensuring that all publicly available information is also made available to the Aboriginal Groups;

- seek relevant information from the Aboriginal Groups that may be applicable to the ROW, including information on aboriginal interests and treaty rights including archaeological sites, and sacred sites and burial grounds;
- offer information centers or meetings with Aboriginal Groups to provide project-related information and to address any concerns, issues or questions about the project;
- provide information, where requested, on the OEB regulatory process and the EA process regarding the project;
- give consideration to all issues and concerns raised by Aboriginal Groups and to how the project may affect these interests,
- consider any potentially affected interests, and clearly communicate the results; and,
- record all forms of engagement with Aboriginal Groups, including the creation of a list of concerns and issues raised regarding the project and Hydro One's responses.

Hydro One has provided information to Aboriginal Groups identified as having a potential interest in the Bruce to Milton Project. For a summary of activities and results from engagement of Aboriginal Groups to date, please see Results of Aboriginal Engagement in Supporting Documentation 2.

Hydro One has provided draft engagement protocols to the Saugeen Ojibway Nation, the Six Nations Elected Band Council and the Haudenosaunee. Meetings will be held to further discuss these protocols.

Hydro One has offered to meet with all Aboriginal Groups identified or who have expressed an interest in the project. Hydro One will continue to offer to meet and will continue to circulate information packages and notifications to these groups throughout project.

Meetings and communications are continuing as part of the project planning process.

8.5 Agencies Consultation Plan

The purpose of the agency consultation is to:

- identify concerns and collect information related to the project;
- identify aboriginal concerns and issues related to the Project, and where appropriate, proposed mitigation or responses directly to the relevant Crown representatives/agencies.
- identify relevant guidelines, policies and standards;
- facilitate the development of a list of all required approvals, licences or permits; and
- list all possible commitments/obligations and responsibilities to the proponent.

Following the Notice of Commencement of the EA, an agency consultation package will be sent to all agency stakeholders from the federal, provincial and municipal governments and conservation authorities soliciting their input and feedback on the Hydro One initiative. The consultation package will include a letter describing the project, a map of the project area and a feedback form for completion. Follow-up communications will occur with those agencies that request further meetings/involvement to discuss their input. The feedback forms would capture general comments, while the meetings if necessary would allow probing of specific issues in greater detail.

Other agency consultation activities are as follows:

- **Newsletter** – Newsletters will be made available on the project web site and will be mailed to all agency stakeholders. Proposed contents of each newsletter are described under Section 8.3.1, Public Consultation Plan and Methods.

- **Issues Workshops** – Workshops may be held as appropriate with agencies, interest groups and municipal staff to confirm and develop design alternatives, apply evaluation criteria and establish the relative importance of criteria. If specific issues are identified during the EA process, workshops may be utilized to address the issues.

- **Municipal Advisory Group (MAG) –** If it is determined that there is sufficient interest on the part of the municipalities, a MAG will be formed and will meet during the draft EA document preparation and review phases of the process. Members will receive briefings on the project and will be notified of key issues and how they have been addressed. They will also have an opportunity to provide further advice on the process and notify project staff of any other outstanding issues they may have identified.

- **Notice of Submission of EA to MOE** – Hydro One will notify agencies by mail that it has submitted the EA to the Minister of Environment for approval.

Aside from the arranged meetings/interviews, agency consultations will also dovetail with PIC events as avenues for further input to the process. Engagement with the various stakeholders is expected to be ongoing throughout the EA and into the project implementation process. All agency submissions and meetings will be documented and included in the Record of Consultation.

8.6 Documentation and Issues Resolution Strategy

All comments and input received throughout the EA from the public and review agencies will be documented in a summary table and included in the EA document. The summary table will provide a response to each issue. Where resolution of issues has not been possible, this will be noted along with a record of all attempts to resolve the issue. Hydro One will develop an issues resolution strategy for the EA. EA supporting documentation will also include a detailed Record of Consultation containing detailed records of comments received, and materials distributed in a format matching that for the ToR.

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Acronyms

ANSI	Area of Natural and Scientific Interest
BMP	Best Management Practices
CEAA	Canadian Environmental Assessment Agency
CEA Act	*Canadian Environmental Assessment Act*
CLI	Canada Land Inventory
COSSARO	Committee on the Status of Species at Risk in Ontario
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Department of Fisheries and Oceans
EA	Environmental Assessment
EA Act	*Ontario Environmental Assessment Act*
EAAB	Environmental Assessment and Approvals Branch (MOE)
ELC	Ecological Land Classification
EMF	Electric and Magnetic Fields
ESA	Regional Environmentally Sensitive Areas
GIS	Geographic Information Systems
GTA	Greater Toronto Area
HADD	Harmful Alteration Disruption or Destruction of fish habitat
Hydro One	Hydro One Networks Inc.
IESO	Independent Electricity System Operator
IPSP	Integrated Power Systems Plan
MOE	Ontario Ministry of the Environment
MNR	Ontario Ministry of Natural Resources
NWPA	*Navigable Waters Protection Act*
NEC	Niagara Escarpment Commission
NHIC	Natural Heritage Information Centre
NPCC	Northeast Power Coordinating Council Inc.
OEA	Ontario Energy Association
OEB	Ontario Energy Board

OEB Act	*Ontario Energy Board Act*
OFA	Ontario Federation of Agriculture
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
OPA	Ontario Power Authority
OPG	Ontario Power Generation
O. Reg.	Ontario Regulation
PIC	Public Information Centre
PPS	Provincial Policy Statement
PSW	Provincially Significant Wetland
ROW	Right-of-Way
SS	Switching Station
ToR	Terms of Reference
TS	Transformer Station
UNESCO	United Nations Educational Scientific and Cultural Organization

Abbreviations

km	Kilometres
kV	Kilovolts
m	Metre
MW	Megawatts-electric

Glossary

Aboriginal Groups	The *Constitution Act*, 1982 specifies that Aboriginal peoples include Indian, Inuit and Métis peoples of Canada.
Alternative Design	Alternative ways of designing or carrying out the preferred solution.
Alternative Methods	Alternative methods of carrying out the proposed undertaking are different ways of doing the same activity. Alternative methods could include consideration of one or more of the following: alternative technologies; alternative methods of applying specific technologies; alternative sites for a proposed undertaking; alternative design methods; and, alternative methods of operating any facilities associated with a proposed undertaking.
Alternatives	Both alternative methods and alternatives to a proposed undertaking.
Alternatives To	Alternatives to the proposed undertaking are functionally different ways of approaching and dealing with a problem or opportunity.
Application	An application for approval to proceed with an undertaking under subsection 5(1) of the *Environmental Assessment Act*.
Commitment	Represents a guarantee from a proponent about a certain course of action, that is, "I will do this, at this time, in this way." Proponents acknowledge these guarantees by documenting obligations and responsibilities, which they agree to follow, in environmental assessment documentation (terms of reference and environmental assessment). Once the Minister and Cabinet approve an application, the commitments within the document are often made legally binding as a condition of approval.
Consultation	A two-way communication process to involve interested persons in the planning, implementation and monitoring of a proposed undertaking.
Do Nothing Alternative	An alternative that is typically included in the evaluation of alternatives that identifies the implications of doing nothing to address the problem

	or opportunity that has been identified.
Environment	The *Environmental Assessment Act* defines environment to mean: (a) Air, land or water; (b) Plant and animal life, including human life; © The social, economic and cultural conditions that influence the life of humans or a community; (d) Any building, structure, machine or other device or thing made by humans; (e) Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities; or, (f) Any part or combination of the foregoing and the interrelationships between any two or more of them.
Environmental Assessment	Environmental assessment is a study, which assesses the potential environmental effects (positive or negative) of a proposal. Key components of an environmental assessment include consultation with government agencies and the public; consideration and evaluation of alternatives; and, the management of potential environmental effects.
Environmental Assessment Act	The *Environmental Assessment Act* (and amendments and regulations thereto) is a provincial statute that sets out a planning and decision-making process to evaluate the potential environmental effects of a proposed undertaking. Proponents wishing to proceed with an undertaking must document their planning and decision-making process and submit the results from their environmental assessment to the Minister for approval.
Environmental Effect	The effect that a proposed undertaking or its alternatives has or could potentially have on the environment, either positive or negative, direct or indirect, short- or long-term.
Environmentally Significant Areas (ESAs)	Natural areas that have a significant natural resource value and/or important ecological function and are also susceptible to disturbance by human activities. Under the Class Environmental Assessment for Management Board Secretariat/Ontario Realty Corporation Activities, ESAs include: class 1, 2 and 3 wetlands, Areas of Natural and Scientific Interest,

	ESAs identified by municipalities and conservation authorities, certain land designations under the Niagara Escarpment Plan, habitats of threatened, rare and endangered species, and groundwater recharge sites.
Individual Environmental Assessment	An environmental assessment requiring the submission of a document for approval by the Minister, pursuant to subsections 6(1) and 6(2) of the *EA Act* and which is neither exempt from the *EA Act* nor covered by a Class EA approval.
Interested Persons	Individuals or organizations with an interest in a particular undertaking.
Land Use Planning	Includes identifying problems, defining objectives, collecting information, analysing alternatives, and determining a course of action for the use(s) of land within a geographical area.
Mitigation	To moderate (a quality or condition) in force or intensity; to alleviate.
Native Species	Organisms that occur naturally in a particular area instead of being introduced, directly or indirectly, by human activity.
Niagara Escarpment	Ontario's Niagara Escarpment is a provincially and internationally significant geological landform. The Escarpment is a forested ridge travelling 725 km from Queenston, near Niagara Falls, to Tobermory, at the tip of the Bruce Peninsula.
Noise	Unwanted sound.
Policy	A program, plan or objective and includes guidelines or criteria to be used in making decisions about the issuance, amendment or revocation of instruments.
Proponent	According to the *Ontario Environmental Assessment Act*, a person who carries out or proposes to carry out an undertaking, or is the owner or person having charge, management or control of an undertaking.
Provincial Policy Statement (PPS)	The PPS is issued under the *Planning Act* and sets out policies on matters such as economic development, land use patterns, infrastructure, protection of agricultural lands and natural heritage.
Provincially Significant Wetland	As defined in the Provincial Policy Statement, 1996, wetlands are lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. The four

	major types of wetlands are swamps, marshes, bogs and fens. A wetland is identified as provincially significant by the Ministry of Natural Resources using evaluation procedures established by the province, as amended from time to time.
Public	The general public, individual members of the public who may be affected by or have an interest in a project and special interest groups.
Published Notice	A notice published in a local newspaper having general circulation in the area of the project.
Record of Consultation	A document submitted with the proposed terms of reference that describes the consultation carried out during the preparation of the terms of reference and the results of that consultation.
Review Agencies	Government agencies, ministries or public authorities or bodies whose mandates require them to have jurisdiction over matters affected or potentially affected by projects planned under EAA. This includes municipalities other than the proponent.
Route	When referring to the Bruce to Milton transmission line: the alignment which is generally adjacent to the existing 500 kV/230 kV transmission line, allowing for local refinements to be determined through the EA process.
Species at Risk	An extirpated, threatened or endangered species or a species of special concern.
Supporting Documentation	Documentation that is submitted to the Ministry of Environment, in addition to the proposed Terms of Reference, which provides further information on issues discussed in the proposed Terms of Reference.
Tile Drains	Underground perforated pipes, installed under crop fields to remove excess water from soils. Collected drainage water is channelled through ditches to waterways.
Undertaking	An enterprise, activity or a proposal, plan, or program that a proponent initiates or proposes to initiate.

Appendices

Appendix A:
OPA's Letters to Hydro One

Ontario Power Authority™

December 22, 2006

Ms. Laura Formusa
Acting CEO, Hydro One
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Mr. Duncan Hawthorne
President & CEO, Bruce Power
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Dear Sirs/Madam:

Re: Transmission from Bruce Area

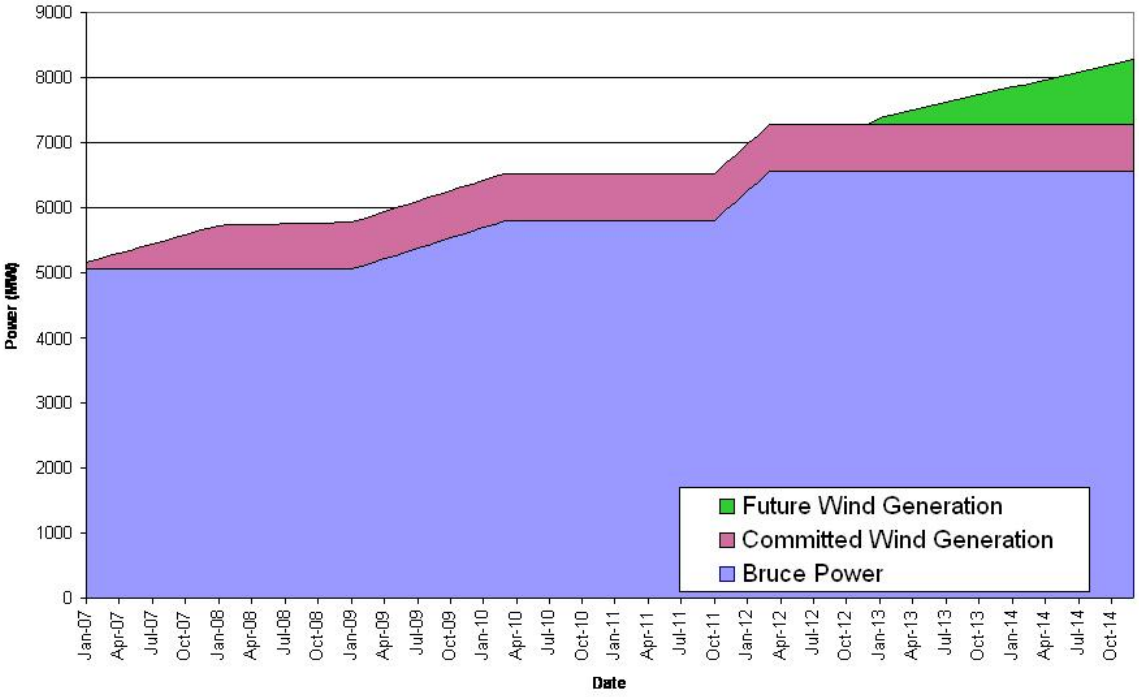
The OPA is writing, in keeping with its mandate to plan the electricity system in Ontario and support the goal of ensuring adequate, reliable and secure electricity supply in Ontario, to bring a matter of concern to the OPA to your attention. The OPA believes that action must be urgently taken to ensure that there is adequate system capacity to permit all available generation in the Bruce area to be transmitted. The OPA's analysis of this matter is found in section 2.3.6 of the OPA's Discussion Paper 5 on Transmission, issued as part of OPA's stakeholder process on the IPSP. This Paper was released on November 13, 2006 and was discussed as part of a workshop on the IPSP held by the OPA on November 22-24, 2006.

Summary of OPA Analysis:

As you are aware, Bruce Power is refurbishing and returning to service the two "laid-up" generating units, Units 1 and 2, at the Bruce A nuclear plant. These units, each rated at 725 MW, are scheduled to be returned to service in 2009. They will add 1450 MW of base load generation to the Ontario system, which will improve the province's reliability of supply. Coincidental to the return of the two Bruce units, Bruce Power is scheduling the outage of other units at the Bruce A plant for extended maintenance work from 2009 to 2011. Thus, in effect, an equivalent of one Bruce unit is added between 2009 and the end of 2011, and two units thereafter.

Additionally, about 725 MW of wind generation has been committed for the Bruce area. Our latest studies done for preparation of the Integrated Power System Plan identify a potential for another 1000 MW or more of wind generation that could be developed in this area. Together, these new resources add to about 1500 MW by 2009, about 2250 MW by 2012, and over 3000 MW in the longer term. The generation increases in the Bruce area between now and 2012, and the possible amount to 2014 are shown in Figure 1.

Figure 1 - Bruce Area Generation



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The existing transmission system that transmits power from the Bruce area to the Greater Toronto Area (GTA) was last expanded around 1990 and has sufficient capacity for the existing generation there now, namely 4 units at Bruce B and two units at Bruce A, with a combined output of about 5060 MW. There is some additional capacity to incorporate the committed wind generation in the Bruce area once the critical sections of two of the Bruce 230 kV circuits, between Hanover and Orangeville, have been uprated and additional static or dynamic shunt reactive sources installed at the Middleport, Orangeville and Detweiler stations. OPA staff has discussed these system reinforcements with Hydro One and IESO staff. Hydro One is currently assessing the extent of the work required to uprate the 230 kV circuits. The OPA recommends that this uprating work should proceed immediately to enable an in-service date of mid 2009. The OPA also recommends that project development work for the addition of static or dynamic

shunt reactive sources be commenced in accordance with any requirements that may be established by the IESO or the OPA.

As stated in the OPA's Transmission Discussion Paper #5, a new 500 kV line from the Bruce area to the GTA is required to address the long term transfer capability requirements out of the Bruce area. However, following the determination of the optimum route, expected approval timelines for a project of this magnitude will not enable the required in-service date of 2009 to be met. Therefore, further measures are required beyond the immediate transmission enhancements described above to bridge the two year gap between the return to service of the Bruce Units 1 and 2 in 2009 and the expected in-service date of late 2011 for the new 500 kV line.

Staff of the OPA and the IESO have worked together in the past year to identify and assess interim measures for increasing the transfer capability between Bruce and the GTA. The interim measures that were found to be the most effective are:

- generation rejection (GR) of up to 1500 MW (two Bruce units or one Bruce unit and wind generation), and

- subject to confirmation from the due diligence study noted below, 30% series compensation of the Bruce to Longwood and Longwood to Nanticoke 500 kV circuits.

The IESO has assessed these interim measures. Their results show that the immediate enhancements combined with GR, which can be placed in service in 2009, will allow the output from seven Bruce units and committed wind generation to be transmitted. Thirty percent (30 %) series compensation may be used as a stop-gap measure to further expand transmission capability to accommodate eight Bruce units if approvals for the new 500 kV line are unduly delayed.

The interim measures are not alternatives to the long-term solution since they increase the risk to the security and reliability of the power system. The use of GR as an interim measure until a more permanent solution is in place is subject to NPCC approval. With regard to the use of series compensation, a new technology for Ontario, for increasing the transmission capability out of Bruce, Hydro One Networks has expressed concern regarding the system and equipment risks. The OPA appreciates this concern and will retain third party experts to undertake a due diligence study to assess the suitability and risks associated with the use of series compensation for this application. Staff of Hydro One Networks and the OPA have drafted a document that addresses the scope of technical issues and concerns to be covered by this study. The process to retain an appropriate consultant has commenced.

Conclusion:

We recommend that:

- Hydro One Networks proceeds as quickly as possible with the work to upgrade the Hanover x Orangeville 230 kV circuits and install static or dynamic shunt reactive sources as identified by the IESO or the OPA, and
- Hydro One Networks, IESO and Bruce Power proceed as quickly as possible with the work to install generation rejection for the Bruce generation.

Further, the OPA is committed to undertaking the due diligence study on series compensation as quickly as possible. OPA staff will attempt to assist you in providing any other information that you may require on these matters.

If you have any questions, I would be happy to discuss them with you.

acting for
Jan Carr
CEO, OPA

cc. Howard Wetston, Chair of OEB

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March 23, 2007

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483 Bay Street
Toronto, ON
M5G 2P5

Dear Laura:

Re: A New Transmission Line from the Bruce Area to the Greater Toronto Area

The purpose of this letter is to urge Hydro One Networks Inc. to initiate the activities necessary to construct a new double-circuit 500 kV line between the Bruce Nuclear Power Complex and Hydro One's existing Milton switching station located in the Town of Milton in the western part of the Greater Toronto Area (GTA) for in-service by December 1, 2011. These activities include, but are not limited to, seeking and acquiring required permits, regulatory and environmental approvals, and conducting engineering work and prudent purchase of materials needed to meet the required in-service date.

Our letter to you, Mr. Paul Murphy of the IESO, and Mr. Duncan Hawthorne of Bruce Power, dated December 22, 2006, provided the background, basis and rationale for the need for a long-term solution to reinforce the transmission system out of the Bruce area. The OPA has determined that this long-term solution is a new 500 kV line from the Bruce area to the GTA.

Recognizing that the time needed to complete a project of this magnitude would not meet the timing required to fully tap into additional generation capacity available in the Bruce area, the December 2006 letter recommended that a set of near-term and interim measures should also proceed as soon as possible. These measures are expected to provide the required increase in transmission capability to permit the available power in the Bruce area to be transmitted to Ontario load centres until a long-term solution is in place.

The long-term solution for reinforcing the Bruce transmission must (a) meet the need to deliver the existing, committed and forecast renewable and other resources in the Bruce area in a safe, reliable and cost-effective manner, and (b) be consistent with Ontario's land use policy. The need and rationale for this line are discussed in more detail in the OPA's Transmission Discussion Paper #5 and Discussion Paper #7, the OPA's preliminary IPSP, which were presented to stakeholders in the OPA's Integrated Power System Plan (IPSP) Stakeholder Workshop held in Toronto last November 22 to 24.

Existing resources in the Bruce area total about 5,000 MW. The committed resources will increase the total to about 6,500 MW between 2009 and 2012, and to 7,300 MW after 2012. The OPA, in the development of the IPSP, also identified the potential for another 1,000 MW of renewable generating resources in the Bruce area. Thus, the long-term solution must be able to increase the transmission capability of the Bruce system from today's 5,000 MW level to about 8,300 MW. From this perspective, the only technically acceptable and practical solution is a new 500 kV double-circuit line from the Bruce area directly to the GTA.

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Provincial land use policy requires that existing transmission corridors be utilized to the extent possible for new transmission lines. This policy narrows the transmission options to two alternatives – from Bruce to Milton or from Bruce to Essa via Orangeville, as shown in Figure 1.

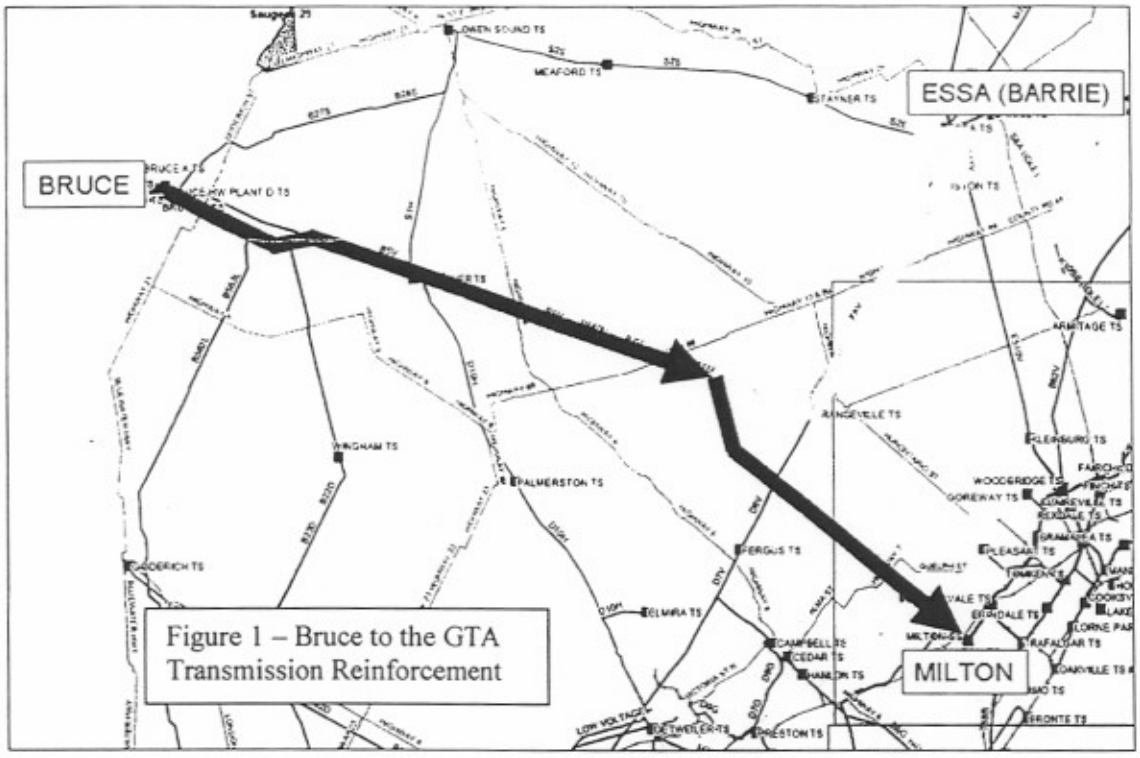

Figure 1 – Bruce to the GTA Transmission Reinforcement

In the past months, OPA, Hydro One, and IESO staff assessed the technical impacts of the two options - Bruce to Milton, and Bruce to Essa. These studies revealed:

- the Bruce to Essa option increases transmission capacity to deliver committed future generation in the Bruce area, including approximately 700 MW of renewable energy capacity. However it does not accommodate the additional 1,000 MW of forecast renewable generating resources, and

- the Bruce to Milton option offers greater capability to deliver future, renewable, generation developments in the Bruce area. Furthermore, unlike the Bruce to Essa option, it does not consume transmission capacity of the Essa (Barrie) to Claireville (GTA) transmission path that is required to accommodate future renewable generation developments north of Barrie.

The feedback from the OPA's IPSP stakeholder workshop has been generally positive concerning the Bruce transmission proposal. Most participants concurred that the transmission capability out of Bruce should be reinforced, particularly to permit the development of renewable generation potential in the Bruce area. Some also commented that, if the new transmission is built, it should have sufficient capability to deliver the existing, committed and future generation in the area. As well, the transmission capability between Barrie and the GTA should be preserved for generation developments north of Barrie.

Since early December 2006, OPA and Hydro One staff have consulted with regional/municipal planners in communities that are impacted by the proposed Bruce to Milton line. In total, eleven municipalities, four counties and one region were contacted. During those consultations, OPA and Hydro One staff explained the need for the line and the rationale for routing the new line within a widened existing Bruce to Milton corridor.

Conclusion:

We have concluded that the Bruce to Milton option is the only transmission alternative that meets the overall need to transmit the existing and committed generation in the Bruce area, to facilitate the development of future resources both in the Bruce area and north of Barrie, to be consistent with provincial land use policy; and to reflect the general support to date from stakeholders for a long-term solution within a widened existing transmission corridor.

We believe that it is crucial that implementation work on the Bruce to Milton transmission line project proceed as quickly as possible. This project was included in the OPA's preliminary IPSP. Although this project is consistent with the IPSP, we do not believe that it can await the outcome of the IPSP proceeding if it is to meet the earliest possible in-service date, which Hydro One staff have indicated is December 1, 2011. If you choose to proceed with this project as the project proponent, you will have the support of the OPA in the regulatory process for this project.

Please feel free to contact us should you require any clarification or additional information.

Yours truly,

Jan Carr
Chief Executive Officer

cc Howard Wetston, Chair - OEB
Paul Murphy, CEO - IESO

Appendix B:
List of Criteria and Indicators

Environment	Features Considered	Indicators	Rationale for Selection of Indicator	Data Source
Natural Environment	Environmentally significant areas	Area of Provincially Significant Wetlands Crossed	Provincial designation Potential for short and long-term effects on wetland habitats	MNR, NHIC
		Area of Provincially Significant ANSIs Crossed	Provincial designation Potential for short and long-term effects on natural features	NHIC
		Number of species at risk (COSSARO and COSEWIC)	Provincial designation Potential for short and long-term effects on species at risk habitat	NHIC
		Area of Non-provincially Significant and/or Unevaluated Wetlands Crossed	Potential for short and long-term effects on wetland habitats	NHIC
	Potential effects on forest resources	Number of woodlots > 2 Ha crossed	Potential for short and long-term effects on woodlots	MNR Municipalities (where significant woodlots have been identified)
		Area of woodlots > 2 Ha crossed	Potential for short and long-term effects on woodlots	MNR

Environment	Features Considered	Indicators	Rationale for Selection of Indicator	Data Source
	Water bodies, fish habitat and aquatic ecosystems	Number of coldwater streams crossed	Provincial designation Potential for short and long-term effects on fisheries resources and habitat	MNR
		Total number of streams crossed	Potential for short and long-term effects on fisheries resources and habitat	MNR
Socio-economic Environment	Existing land use	Existing uses and types	Potential for conflict with existing land uses	Municipal planning and zoning information
	Approved development	Sub-division and development plans	Potential for conflict with sub-division and development plans	
	Commercial activities	Types of business activities	Potential to disrupt or displace businesses	Local Departments of Economic Development
		Tourism related activities	Potential to disrupt or displace tourist attractions	
	Mineral and aggregate resources	Area of mines within the ROW (Ha)	Potential effects may occur on mining operations	MNDM
		Area of pits/quarries within the ROW (Ha)	Potential effects may occur on pits/quarries operation	
	Community profile	Number of potential property removals (buyouts)	Hydro One Policy prohibits homes or family residences from being located within the proposed ROW	GIS shape files, Site Visits

Environment	Features Considered	Indicators	Rationale for Selection of Indicator	Data Source
		Number of potential diagonal severances of properties	Diagonal crossings are considered more disruptive because they limit other uses of land	
		Number of potentially affected properties	Crossings of properties are disruptive to family residences and businesses	
	Community services	Number of health care facilities	Potential for project to disrupt or displace facilities	Local health department
		Number of educational facilities	Potential for project to disrupt or displace educational facilities	School boards and local road maps
		Number of places of worship	Potential for project to disrupt or displace places of worship	Local road mapping, site visits
		Number of other important community facilities	Potential for project to disrupt or displace facilities.	
	Community infrastructure	Number of natural gas pipelines	Potential effects on utility pipelines operations and maintenance	Utility companies
		Number of roads crossed	Potential effects on the driving public, aesthetic and visual	GIS shape files

Environment	Features Considered	Indicators	Rationale for Selection of Indicator	Data Source
		Number of railways crossed (segments)	Potential effects can occur on railway lands and crossings due to the ROW towers, span and overhead clearance	
		Number of airports within 3.2 km of the ROW centerline	Transport Canada requirements for distance separation between transmission routes and runways	Local municipalities, private airport operators
	Landscape and visual assessment	Number of residences, farm residences within 0.8 km from the ROW. Number of trails, waterways, and roads crossed	Proximity of the ROW to residents and recreational users (of scenic landscapes/features) could potentially affect viewer expectations in the vicinity of the lines.	MNR NEC Conservation Authorities Municipalities Heritage Advisory Committees Site visits
		Area of land crossed in the Greenbelt	Provincial designation Potential for short and long-term effects	
		Area and type of land crossed in the Niagara Escarpment	Provincial designation Potential for short and long-term effects	

Environment	Features Considered	Indicators	Rationale for Selection of Indicator	Data Source
Cultural Environment	Built Heritage Resources (BHR)	• Buildings and/or structures of 40 years or older in age. • Building or structures recognized by one or more levels of government, e.g., listed, designated, or included on a register of heritage properties, or commemorative plaque.	Identify built heritage resources of cultural interest or value requiring protection from displacement and/or disruption effects.	• Windshield survey • Municipal Heritage Committees (MHC) • Municipal heritage lists/registers and designations under the *OHA*. • Provincial and federal registers of heritage properties. • Local or regional historical societies or heritage groups • Historical mapping • Secondary sources

Environment	Features Considered	Indicators	Rationale for Selection of Indicator	Data Source
	Cultural Heritage Landscapes (CHL)	• Cultural heritage landscapes of 40 years or older in age. • Landscapes recognized by one or more levels of government, e.g., listed, designated, or included on a register of heritage properties, or commemorative plaque	Identify cultural heritage landscapes of cultural interest or value requiring protection from displacement and/or disruption effects.	• Windshield survey • Municipal Heritage Committees • Provincial and federal registers of heritage properties Local or regional historical societies or heritage groups • Historical mapping • Secondary sources
	Archaeological sites	Area with high archaeological potential under the ROW (Ha)	Identify areas requiring protection due to their important archaeological value	Stage 1 Archaeological Study
	Parks	Number of local parks	Identify and protect natural recreational features	MNR
		Area of local parks		

Environment	Features Considered	Indicators	Rationale for Selection of Indicator	Data Source
		Number and area of conservation areas		
		Number of recreational facilities		
	Conservation areas	Number of trails (segments)	Identify natural areas and ecosystems within the ROW to measure potential effects on use of these facilities	MNR, and Conservation Authorities
	Recreational facilities (camp ground, park, sport field, golf course)	Area of Class 1, 2 and 3 agricultural land within the ROW (Ha)	Identify and protect natural recreational features	MNR and Conservation Authorities, Municipalities, Site visits
		Distance of Class 1, 2, and 3 agricultural lands crossed (Km)		
Agricultural Environment	Class of land	Area of Class 1, 2 and 3 land within the ROW.	Provincial Policy requires that use of Class 1, 2 3 lands for ROW be avoided as much as possible	OMAFRA

Environment	Features Considered	Indicators	Rationale for Selection of Indicator	Data Source
	Tile drains	Area of tile drained land (Ha) Systematic Random	Agricultural drainage could be potentially affected by the ROW	
	Specialty Crops	Area of specialty crop land within the ROW	Specialty crops could potentially be affected by the ROW	Field surveys