ENVIRONMENTAL REPORT: PIPELINE TO SERVE THE PROPOSED THOROLD COGEN L.P.

File No. 160960284

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Executive Summary

Enbridge Gas Distribution Inc. ("Enbridge") is proposing to install a Nominal Pipe Size ("NPS") 12-inch (305- millimetres ("mm")) diameter steel pipeline to supply natural gas to serve the proposed Thorold CoGen L.P., a Gas-Fired Cogeneration Station in Thorold, Ontario. The proposed pipeline begins where TransCanada PipeLine's existing natural gas pipeline crosses Townline Road in Thorold, Ontario, and ends at the site of the proposed gas-fired power generation station to be located on the property of Abitibi Consolidated Inc. - Thorold Division. The approximate length of the proposed pipeline route is 2.9 kilometres ("km").

Enbridge retained Stantec Consulting Ltd. ("Stantec") to prepare an Environmental Report ("ER") for construction and operation of the proposed pipeline, to meet the intent of the Ontario Energy Board's ("OEB') *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2003) ("*OEB *Guidelines (2003)")*. The ER accompanies Enbridge's application to the OEB for Leave to Construct the proposed pipeline.

The ER describes the process used to identify and evaluate route alternatives for the proposed pipeline, in order to select a preferred route. The ER also considers the environmental and socio-economic setting associated with the pipeline, and the potential environmental and socio-economic effects of the proposed pipeline. Based on these potential impacts, mitigation measures are recommended to minimize these effects.

In preparing the ER, input was received from interested parties and stakeholders through a public consultation program, including local, provincial, and federal government agencies, First Nations and residents within or in close proximity to the Study Area. This information provided important data concerning local environmental and socio-economic features. Stantec has considered this information during route selection to address the potential environmental effects of the proposed pipeline and recommend appropriate mitigation measures.

A Study Area was established based on a general review of the area and preliminary assessment of routing opportunities and constraints between the project endpoints. The principal objective in defining the Preferred Route was to select an acceptable route in consideration of environmental, technical, and economic factors.

The preferred and alternative routes were identified and analyzed by Enbridge and Stantec using published information, field reconnaissance, aerial photo interpretation and information provided by landowners, tenants, agencies and members of the general public through direct contact with Stantec or at one of the Public Information Sessions.

Physical, natural, and socio-economic features were identified along the Preferred Route. A detailed review of the potential effects of the project on these features is provided in the ER. An

analysis of the cumulative effects relating to construction and operation of the proposed pipeline along the Preferred Route are also summarized within the report.

In the opinion of Stantec, the recommended program of mitigation, monitoring, and contingency measures addresses the concerns raised to date during the public consultation program. It also addresses any effects, including potential cumulative effects, identified during the detailed technical review of the Preferred Route. With the implementation of all of the above-noted measures during the construction and operation phases of the project, Stantec is of the opinion that no significant adverse environmental or socio-economic effects will occur.

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1.0 Introduction

1.1 DESCRIPTION AND PURPOSE OF THE PROPOSED PIPELINE

Enbridge Gas Distribution Inc. ("Enbridge") is proposing to install a Nominal Pipe Size ("NPS") 12-inch (305 millimetres ("mm")) diameter steel pipeline to supply natural gas to serve the proposed Thorold CoGen L.P., a Gas-Fired Cogeneration Station in Thorold, Ontario. The proposed pipeline begins where TransCanada PipeLine's existing natural gas pipeline crosses Townline Road in Thorold, Ontario and ends at the site of the proposed gas-fired power generation station to be located on the property of Abitibi Consolidated Inc. – Thorold Division. The approximate length of the proposed pipeline is 2.9 kilometres ("km"). This Environmental Report ("ER") prepared by an independent environmental consultant, Stantec Consulting Ltd. ("Stantec"), accompanies Enbridge's application to the Ontario Energy Board ("OEB") for Leave to Construct the proposed pipeline.

1.2 PURPOSE AND ORGANIZATION OF THE REPORT

Companies planning to construct and operate natural gas pipelines in Ontario must consider the OEB's *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines (2003) ("OEB's Guidelines (2003)")*. When seeking Leave to Construct approval, pipeline companies may apply to the OEB under appropriate sections of the *Ontario Energy Board Act, 1998*. Applications to the OEB must include information that allows the OEB to make an informed decision, including:

- Engineering design and construction plans for the proposed pipeline;
- An ER including a route evaluation study and mitigation plans in support of the Application; and,
- Easement acquisition and landowner and tenant relations' considerations.

In order to fulfill these criteria, the information presented in this ER has relied on technically sound and consistently applied procedures that are replicable and transparent. This report provides documentation of the ER activities undertaken for development of the proposed pipeline; it is organized into eleven sections:

- **Section 1** provides a description of the proposed facilities, the approval process, and the role of the ER study;
- **Section 2** details the study process for the ER;

- **Section 3** provides a summary of the inventory of existing environmental conditions (physical, natural, agricultural, and socio-economic) within the Study Area. Detailed background information pertaining to the Study Area is provided in **Appendix C**;

- **Section 4** describes the public consultation program for the ER;

- **Section 5** describes the route evaluation methodology;

- **Section 6** describes existing environmental conditions (physical, natural, and socio-economic) along the Preferred Route; identifies potential impacts of construction and operation of the proposed pipeline; and recommends mitigation measures;

- **Section 7** describes the potential impacts associated with hydrostatic testing, and the recommended mitigation measures;

- **Section 8** provides an analysis of potential cumulative effects associated with the proposed project;

- **Section 9** describes monitoring and contingency plans to address potential impacts of the proposed pipeline; and,

- **Section 10** provides a summary and conclusions.

The ER also includes a list of references (**Section 11**) and appendices for supporting documentation. Environmental features maps and environmental alignment sheets are also compiled in the appendices.

1.3 OBJECTIVES OF THE ER

The primary objective of this ER is to ensure environmental protection during construction and operation of the proposed pipeline, and at the same time meet the intent of the *OEB's Guidelines, (2003)*. To meet these objectives, the ER study:

- Identifies existing environmental and socio-economic features that could be affected by the project;

- Identifies an environmentally acceptable route for the proposed pipeline;

- Identifies stakeholder interests (including regulatory and landowner issues) and appropriate mitigation measures to ensure concerns raised by interested parties are addressed; and,

- Establishes the mitigation and protective measures required to avoid or minimize any potential environmental effects associated with construction and operation of the proposed pipeline.

In addition, this ER study considered relevant provincial and federal guidelines and regulations. The documents reviewed included:

- The Technical Standards and Safety Authority ("TSSA") mandate derived from the Technical Standards and Safety Act (2000), specifically *Oil and Gas Pipeline Systems* Ontario Regulation 210/01 and the TSSA *Guidelines for Development in the Vicinity of Oil and Gas Pipeline Facilities* (1998a) and *Guidelines for Locating New Oil and Gas Pipeline Facilities* (1998b); and,

- The Ministry of the Environment's ("MOE") technical mandate derived from the Environmental Protection Act (1990b), and the Ontario Water Resources Act (1990c).

The *OEB's Guidelines (2003)* define the major steps in selecting a Preferred Route for a proposed pipeline. Based on these requirements, this report has been prepared to:

- Define a Study Area and compile an inventory of physical, natural, and socio-economic features and conditions within this area;

- Identify and evaluate potential pipeline route alternatives in light of their individual and comparative environmental impacts;

- Identify an environmentally acceptable route that minimizes environmental impacts and meets Enbridge's operating system requirements;

- Complete a detailed review of environmental features along the proposed route and assess the potential effects of the pipeline on these features;

- Define mitigation measures that may be utilized to minimize any potential environmental impacts of pipeline construction;

- Develop a consultation program to contact, record and reflect the concerns and comments of area residents, landowners, federal and provincial ministries and agencies, First Nations, municipalities and conservation authorities having jurisdiction within the Study Area and along the proposed routes; and,

- Identify an environmental protection plan that includes monitoring, contingency plans, an inspection program, and commitments to additional work.

Key features of this study have been early and frequent contact with the public and regulatory agencies, and their continued involvement throughout all stages of the process, including:

- Notice of study commencement and Study Area definition;
- Invitation to attend the First Public Information Session to discuss the accuracy of environmental mapping and the ER study process, and to present the alternative routes;
- Invitation to attend the Second Public Information Session to discuss the Preliminary Preferred Route and potential mitigation and protection measures;
- Invitation to attend the Third Public Information Session to discuss the alternative Preferred Route and to confirm the Preferred Route;
- Specific input through discussions with affected residents concerning mitigation needs along the Preferred Route; and,
- Telephone discussions and meetings with representatives from various environmental regulatory agencies.

Throughout the project, contacts were made via letters, email and phone calls. A history of contacts with agencies, First Nations, stakeholders and the public is assembled in **Appendices B1, B3** and **B4**.

1.4 APPROVAL PROCESS AND REGULATORY REQUIREMENTS

In order to obtain approval to construct a pipeline, proponents must submit an application to the OEB to establish that the project is in the public interest. As a regulatory body, the OEB must be assured that project sponsors meet all standards and regulations relating to both the protection of the environment and public health and safety.

This ER is consistent with the *OEB's Guidelines (2003)*, which must be considered when applicants, such as Enbridge, seek approval from the OEB. The *OEB's Guidelines (2003)* provide direction as to the content of the ER with respect to project description, route selection process, environmental and socio-economic descriptions, environmental impact assessment, and mitigation. Other requirements of the *OEB's Guidelines (2003)* include compliance and effects monitoring programs, specific mitigation and contingency plans for implementation during construction, and public participation throughout the planning process.

Once completed, the ER report is circulated or made available to the Ontario Pipeline Coordinating Committee ("OPCC"), other federal and municipal government agencies, interest groups, landowners, and other interested parties for their review and comment prior to a hearing before the OEB.

2.0 ER Study Process

This ER study was initiated and prepared in 2007 and the winter of 2008 by a multidisciplinary team of environmental planners. Enbridge provided additional environmental support and engineering expertise throughout the study, as required.

As described, the study has been completed with consideration to the requirements of the *OEB's Guidelines (2003)*. The various steps outlined in the process have been divided into three phases, as presented in **Figure 2-1**.

2.1 PHASE I – INVENTORY AND MAPPING OF ENVIRONMENTAL FEATURES

The study commenced with delineation of the Study Area and notification to relevant federal, provincial, and municipal agencies as well as First Nations, and public interest groups. Environmental features and conditions in the Study Area were mapped and characterized based on published and unpublished literature, and maps. All geographically based environmental features and conditions were incorporated onto a series of digital base maps. Discussions with the Niagara Peninsula Conservation Authority ("NPCA"), and the City of Thorold, as well as information collected from relevant sources, provided information essential to compilation of the environmental inventory.

2.2 PHASE II – PIPELINE ROUTE SELECTION PROCESS

Phase II involved the identification of feasible route alternatives, identification of a Preliminary Preferred Route, and public consultation regarding the Preliminary Preferred Route. The identification of the Preliminary Preferred Route was carried out following discussions with Enbridge, a review of the data collected in Phase I, field surveys of the Study Area, and consideration of significant environmental features identified in the Study Area. To evaluate route alternatives, environmental constraints and opportunities were identified and used in conjunction with environmental features mapping, as well as Enbridge's criteria such as engineering, operations and cost.

The First Public Information Session was held at the beginning of Phase II, on May 16, 2007. Government agencies, the general public, and interested parties were invited to attend the First Public Information Session by newspaper notices and a mailing to all residences in the Study Area through admail. The First Public Information Session provided attendees an opportunity to review and comment on the study process, environmental features mapping, the alternative routes and the proposed evaluation measures. **Appendix B3** includes copies of all correspondence relating to the First Public Information Session.

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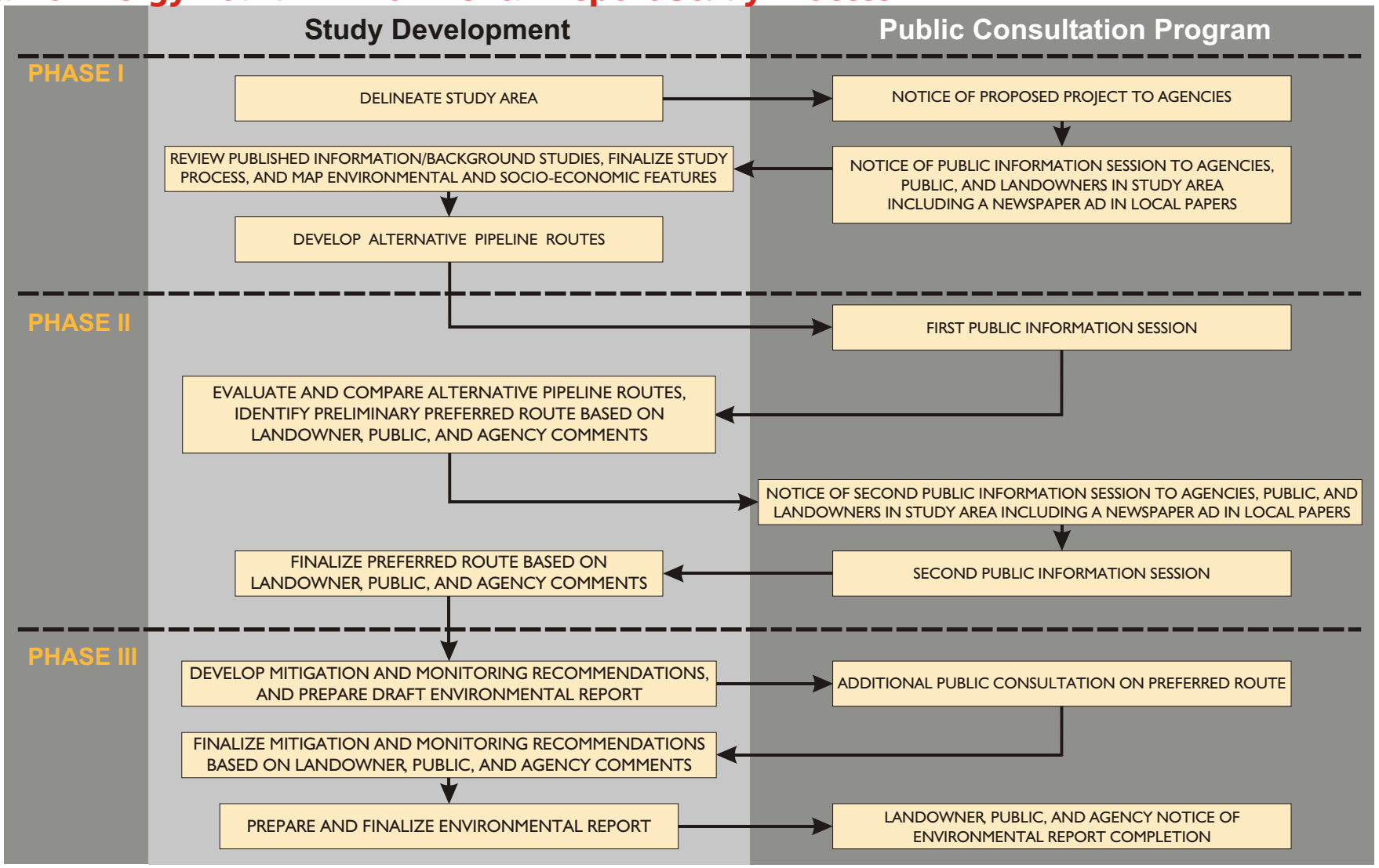
Ontario Energy Board Environmental Report Study Process



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Stantec

PREPARED FOR:
ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

FIGURE NO.
2.1

TITLE
ENVIRONMENTAL REPORT
STUDY PROCESS

Initiated: July, 2007
Revised: April, 2008

There were five attendees to the First Public Information Session that resided in or owned property within the Study Area. Attendees to the First Public Information Session expressed concern about safety and trying to decrease the potential for disruption to previously undisturbed areas.

Following the First Public Information Session, through the months of May and June, 2007, Enbridge and Stantec completed a more detailed analysis of the alternative routes to confirm the selection of the Preliminary Preferred Route. The Preliminary Preferred Route is illustrated in **Appendix A, Figure A-2.**

There were no concerns expressed by agencies that related to the alignment of the Preliminary Preferred Route.

2.3 PHASE III – PREFERRED ROUTE ALIGNMENT AND RECOMMENDED MITIGATION MEASURES

Following the detailed analysis, residents of the Study Area, agencies and interested parties were notified of the selection of the Preliminary Preferred Route through an invitation to attend the Second Public Information Session. The purpose of the Second Public Information Session was to introduce the Preliminary Preferred Route and to confirm the selection of the Preferred Route, as well as to discuss potential mitigation measures with members of the public and to provide information about route-specific mitigation techniques. In addition, the Second Public Information Session afforded further opportunities for stakeholders to review and comment on the study process. There were no comments received from the public that indicated that the Preliminary Preferred Route was not preferred by the public. Thus, the alignment of the Preliminary Preferred Route was selected as the original Preferred Route. The location of the original Preferred Route is illustrated in **Appendix A, Figure A-3.**

The original Preferred Route was presented to Enbridge in August 2007 for their review and approval. Enbridge determined the original Preferred Route to be acceptable from an engineering and construction perspective; however after further consultation with landowners during easement acquisition Enbridge sought Stantec's opinion of the environmental acceptability of an alternative Preferred Route that did not require extensive easements from private landowners.

A third Public Information Session was held on March 18, 2008 to provide an opportunity for agencies, First Nations, stakeholders, landowners and the general public to review the alternative Preferred Route. There were no concerns regarding the alignment of the alternative Preferred Route.

After conducting a windshield survey, further examination of previously collected materials, and considering public input, Stantec has determined that the alternative Preferred Route proposed by Enbridge is an environmentally and socio-economically acceptable route. The alternative Preferred Route ("Preferred Route") is illustrated in **Appendix A, Figure A-4.**

Mitigation measures to address specific concerns along the Preferred Route are discussed in **Section 6**. **Section 6** describes the environmental features along the route, locations where relevant construction specifications apply, and locations where additional site-specific mitigation measures are recommended.

A cumulative effects analysis was carried out for the Preferred Route. The ER report will be distributed to relevant agencies, directly affected landowners, and to all others who request a copy.

3.0 Environmental Features in the Study Area

3.1 DATA SOURCES AND MAPPING

Information provided by various agencies, residents and other stakeholders within the City of Thorold was used to identify environmental and socio-economic features within the Study Area.

By necessity, the analysis, integration, and synthesis of data are iterative processes, as information becomes available at various stages of the study and at different mapping scales. The level of detail of data and mapping increases as the study progresses from analysis of the Study Area, to analysis of route alternatives, and finally, to a site-specific survey of features along the Preferred Route.

The base for features mapping (**Appendix C1, Figures C1-1** through **C1-3**), has been generated from air photos provided by Google Earth (2007). Scales have been adjusted from the original to better represent the features mapped. Further mapping sources are identified in **Section 11 and Appendix C2**. Stantec has digitally reproduced features added to the base map.

The environmental and socio-economic information presented in this ER is based on data provided by individuals and agencies during the Public Consultation Program, documented in published reports cited throughout the ER, and collected through ground surveys conducted by Stantec and Enbridge. Where agencies requested that information remain confidential, such as the precise location of rare, threatened, vulnerable or endangered species and archaeological sites, such information has been withheld from the report or mapped in such a way that specific site locations are not identified.

A field survey of specific locations within the Study Area was completed prior to preparation of the ER. This information was used to confirm that the background information was sufficient to select a route and develop the mitigation measures presented in the report.

3.2 STUDY AREA

The Study Area for the Pipeline to Serve the Proposed Thorold CoGen L.P. Project is located in the City of Thorold, Ontario. Municipal zoning within the Study Area ranges from residential to general agricultural.

The Study Area encompasses approximately 28.5 km^2. Watersheds, existing linear corridors, and environmental and socio-economic features were considered when establishing the Study Area boundaries. The Study Area accommodates enough area for the generation of a reasonable number of alternative routes of reasonable length.

Study Area boundaries were also established by considering the potential impacts of the proposed pipeline. The northern boundary is established by the banks of the Beaver Dams inlet for the Welland Canal; the southern boundary incorporates the lots on the south side of Lundy's Lane (Highway 20); the western boundary is west of Allanburg Road to incorporate some of the businesses and residences along that road; and, the eastern boundary is east of Thorold Townline Road (**Appendix A, Figure A-1**). The locations of existing natural and socio-economic features within the Study Area are illustrated on **Appendix C1, Figure C1-2**.

3.3 SUMMARY OF SIGNIFICANT ENVIRONMENTAL FEATURES IN STUDY AREA

The environmental and socio-economic inventory of the Study Area is described in detail in **Appendix C2**. The most significant features in the Study Area, including physical, biophysical, and socio-economic features are summarized below.

3.3.1 Physical Features

The Study Area is located in the Haldimand clay plain physiographic region of Southern Ontario (Chapman and Putnam, 1984). Lying between the Niagara Escarpment and Lake Ontario, the Study Area has little topographic relief. The Study Area lies at approximately 180 meters ("m") above sea level.

The surficial soils of the Study Area consist mainly of glaciolacustrine clays over till with relatively poor drainage. Bedrock underlying these surficial deposits consists of Paleozoic bedrock of the Lockport Formation from the Silurian period. This formation consists of various forms of dolostone, limestone and shale (Ontario Geological Survey, 2006).

Climate in the Study Area is influenced by the proximity to Lake Erie and Lake Ontario, which moderates temperature and provides moisture-laden air to adjacent lands. Summers tend to be humid and warm to hot while winters are relatively mild and snowy. The average yearly temperature is 8.4 degrees Celsius with average temperatures above freezing occurring for eight to nine months of the year.

3.3.2 Agricultural Features

The Soil Capability Classification for Agriculture (Canada Land Inventory ("CLI")) is an interpretative classification that groups mineral soils with similar limitations or similar productivities into seven classes. Class 1 to 3 soils are considered to be suitable for sustained productions of common field crops, hay and pasture. Class 4 soils are marginal for sustained production of common field crops but capable of use for hay and pasture. Class 5 soils are capable for use only for permanent pasture and hay, whereas Class 6 soils can be used only for wild pasture. Class 7 soils have no capability for agriculture.

Applying the CLI system of soil classification, the entire Study Area falls under the class 2d. The number 2 implies that soils have moderate limitations that restrict the range of crops or require moderate conservation practices. The letter "d" indicates that undesirable soil structure and/or low permeability are limitations for agriculture (OMAFRA, 1983). As can be seen on **Appendix C1, Figure C1-1,** there are four soil types in the Study Area. The Ontario Ministry of Food and Rural Affairs (OMAFRA) soil information (Ontario Institute of Pedology, 1989) separates the area further into polygons containing varying degrees of two soil types.

None of the agricultural lands in the Study Area have been artificially drained for agricultural use (OMAFRA, 1981).

3.3.3 Biophysical Features

The Study Area is located in the Deciduous Forest Region. Forest type is mixed deciduous with few coniferous species (MNR, 2002).

A portion of a Provincially Significant Wetlands ("PSW") exists in the Study Area. The Welland Canal Turn Basins are identified as a PSW by the Ministry of Natural Resources ("MNR") (MNR, 2007). There are 21 plant and animal species of national concern, as listed under the Species at Risk Act ("SARA"), which have habitats that overlap with the Study Area (Environment Canada, 2004). There are four plant and animal species found within the Study Area that have been identified by the MNR as species exhibiting some level of concern (NHIC, 2005). No Areas of Natural or Scientific Interest ("ANSI") exist within the Study Area. Refer to **Appendix C2, Tables 3-1, 3-2 and 3-3** for more information on the species found in the Study Area.

The Preferred Route crosses Beaver Dams Creek twice. Beaver Dams Creek itself serves as a displacement basin for the Welland Canal in that it receives water being displaced from the canal by freight ships as they pass. All of the watercourses in the Study Area have been designated as Type 2: Important. Type 2 habitats are moderately sensitive to development and, although important to the fish population, are not considered critical (e.g. feeding areas and open water habitats of lakes). These watercourses are all part of the Beaver Dams Creek Subwatershed (NPCA pers. comm., 2007) and the Lake Ontario Waterfront Watershed.

3.3.4 Socio-Economic Features

The Study Area is located within the Municipality of the City of Thorold, Ontario, in a neighbourhood called Thorold South. Planning is accomplished by the City of Thorold who are responsible for maintaining and constructing roads. The population of the City of Thorold was 18,244 in 2006, a 1% increase from 1996 (Statistics Canada, 2006). The Rolling Meadows Development has 350 residential lots in their plans, which would result in a 2% increase in population from the 2006 census.

There are three churches, one school, one community centre, and the Niagara Detention Centre in the Study Area.

Aside from the community centre, there are other recreation and tourism opportunities in the Study Area. The Welland Canal is one of Ontario's most impressive man-made structures. Over 3,000 vessels pass through the canal each year. The canal also offers recreational pleasure, as it links the many lakes and waterways in the area and also has a multi-use trail that parallels it.

Existing Natural and Socio-Economic Features within the Study Area are illustrated in **Appendix C1, Figure C1-2**.

According to the City of Thorold Official Plans (City of Thorold, 2005, 2007), land use designations in the Study Area includes Dry Industrial, Employment (Highway Industrial, Light Industrial, Prestige Industrial), Environmental Protection Area, General Agriculture, Highway Commercial, Institutional, Natural Environment, Open Space and Recreation, Residential, Rural Residential, Serviced Industrial, Stormwater Management Facility, and Village Square Industrial. The area east of Davis Road (Highway 58) is planned to become a housing development called Rolling Meadows. The land use in this community is designated as residential, industrial and commercial, among others, and includes plans for a golf course and village centre. **Appendix C1, Figure C1-3** depicts land use, as documented by the City of Thorold's Official Plans (2005 and 2007).

The Study Area is located in South Thorold which is a neighbourhood within the City of Thorold, Ontario. Thorold supports a diversified economic base with a range of manufacturing, industry, service, government and tourism activities. Major employers include the RM of Niagara, Dana Canada Corp., ACCC, E. Spencer Fox, Lafrate Machine Works and Georgia-Pacific Canada Inc. Industries within the Study Area include the Abitibi Consolidated inc. – Thorold Division recycled paper mill, and several mechanic and scrap metal shops.

4.0 Public Consultation Program

Public consultation is a critically important component of an environmental assessment, and an essential requirement of the *OEB's Guidelines (2003).* Public consultation is the process of identifying and informing the public about the project, soliciting information regarding their values and the local environmental and socio-economic circumstances, and receiving advice about key project decisions before those decisions are finalized. This study included the meaningful participation of government agencies, interest groups, the general public, and potentially affected landowners through various communication channels including three Public Information Sessions. Additional communication about the project was undertaken through direct agency and landowner meetings, as well as telephone, email, facsimile and written correspondence.

The public consultation program included the following objectives:

- Identify interested and potentially affected parties;
- Inform and educate the public about the nature of the project, potential impacts and how to participate in the public consultation process;
- Provide a forum for the identification of issues;
- Identify how public input will be used in the planning stages of the project; and,
- Summarize issues for resolution, and resolve as many issues as possible.

The public consultation process for the project was divided into three phases. The main goal of the first phase was to identify and notify the relevant public and stakeholders about the project and to present the alternative routes to the public and to solicit their input. The focus of the second phase was to present the Preliminary Preferred Route to the public and to solicit their input. The third phase involved the presentation of the alternative Preferred Route to the public, the development of the specific mitigation measures, and confirmation of the Preferred Route.

The main goal subsequent to the presentation of the Preferred Route focuses on the review of the ER and ongoing availability of the study team for questions and concerns from agencies and landowners.

4.1 IDENTIFYING, NOTIFYING, AND UPDATING THE PUBLIC

Newspaper advertisements and mailings were used to notify residents within the Study Area about the project, and to invite them to become involved in the ER study through the Public Information Session held on May 16, 2007. Newspaper advertisements also helped identify other groups, persons, associations, or government agencies that could be affected, either directly or indirectly, in a positive or negative manner, during the planning, construction, or operation stages of the pipeline.

Agency contact letters and project newsletters were developed to notify and introduce the public and agencies to the project, and to identify how they could be included in the decision-making process.

The Study Area is located entirely in the City of Thorold. The parties listed below were considered when identifying the initial relevant public:

- All residents in the Study Area (through newspaper advertisements, mailbox drop-off (unaddressed admail) and Public Information Sessions);
- The general public and businesses in and around the Study Area (through newspaper advertisements and Public Information Sessions);
- Agencies, First Nations, stakeholders and institutions *e.g.* NPCA, MNR, and Indian and Northern Affairs Canada ("INAC") (through direct mailing, and newspaper advertisements);
- Interest groups in the Study Area (through direct mailings, newspaper advertisements, and Public Information Sessions); and,
- Members of Municipal, Provincial, and Federal government (through direct mailings).

4.1.1 Project Newsletters

Newsletters were developed for distribution at each of the three Public Information Sessions to inform the public of the study process. Each newsletter identified key issues on which public and agency advice was being sought, and included important contact information for members of the project team.

The first newsletter was provided to First Public Information Session attendees on May 16, 2007. The first project newsletter introduced the project, outlined a tentative project schedule, described the purpose of the First Public Information Session, and presented the alternative routes. Through the first newsletter, Stantec asked for input into selection of the Preliminary Preferred Route and the study process. Issues discussed in the first newsletter included an introduction to the project, how to get involved, and route selection possibilities. A copy of the first project newsletter can be found in **Appendix B5**.

The second project newsletter was provided to Second Public Information Session attendees on June 26, 2007. The second project newsletter explained what occurred at the First Public Information Session, what is to be presented at the Second Public Information Session, where attendees could obtain information about the project, the events that will occur after the Second Public Information Session as well as general project information and details for contacting project representatives. A copy of the second project newsletter can be found in **Appendix B5**.

The third project newsletter was provided to Third Public Information Session attendees on March 18, 2008. The third project newsletter explained what occurred since the Second Public Information Session, what is to be presented at the Third Public Information Session, where attendees could obtain information about the project, the events that will occur after the Third Public Information Session as well as general project information and details for contacting project representatives. A copy of the third project newsletter can be found in **Appendix B5**.

4.1.2 Mailouts

Unaddressed admail, distributed on May 7, 2007, invited recipients to attend the First Public Information Session. Direct mailouts were sent to all agencies, First Nations and stakeholders that potentially had an interest in the project. Residents in the Study Area received letters of invitation that were delivered door to door through unaddressed admail. A copy of the landowner and agency invitations can be found in **Appendix B5**. For the Second and Third Public Information Sessions the same delivery methods were used as described above. These letters were sent out on June 12, 2007, and March 3, 2008.

4.1.3 Newspaper Ads

Notices of the Public Information Sessions for the project were published in three local newspapers within the Study Area. The First Public Information Session was advertised on May 4, 2007 (Niagara This Week) and May 11, 2007 (Niagara This Week, Thorold - Niagara News, and The Standard). The advertisements identified the project and the Study Area. They were intended to generate public interest in the proposed pipeline and the Public Information Session.

The Second Public Information Session was advertised on June 15, 2007 (Niagara This Week) and June 22, 2007 (Niagara This Week, Thorold - Niagara News, and The Standard). The advertisement identified that a Preliminary Preferred Route had been chosen. The advertisement also invited all interested parties to attend the Second Public Information Session, to give them an opportunity to indicate any areas where site-specific protection or mitigation measures are required, and to comment on the project and construction procedures.

The Third Public Information Session was advertised on March 12, 2008 (Thorold - Niagara News) and March 14, 2008 (Niagara This Week, and The Standard). The advertisement identified that an alternative Preferred Route was being considered.

Copies of all newspaper notices are included in **Appendix B5**.

Once Enbridge has applied to the OEB for Leave to Construct the proposed pipeline, they will be directed by the OEB to publish a Notice of Application in local newspapers.

4.2 RECEIVING INPUT FROM THE PUBLIC

The public provided invaluable input through two key mechanisms: the three Public Information Sessions and exit questionnaires. The public provided input regarding important features within the Study Area and which routing factors were most important in the route selection process. All comments and input were considered in the route selection and ER process.

4.2.1 Agency Contacts

An agency contact letter requested all interested agencies to provide Stantec with pertinent information that may affect the routing, construction, or operation of the proposed natural gas pipeline. This letter was circulated to agencies on April 25, 2007. Specific information was sought regarding policies, guidelines, and legislation that may affect the outcome of the ER. A copy of this letter is provided in **Appendix B2**.

A copy of all correspondence between Stantec and agencies is attached in **Appendix B3** and a summary of all correspondence between Stantec and stakeholders can be found in **Appendix B1**. Recommendations and findings from corresponding agencies have been incorporated into the ER as required.

Enbridge sent correspondence announcing the project to local municipal and business leaders, MPs, MPPs, councillors, and adjoining municipalities in a letter dated April 25, 2007.

4.2.2 First Public Information Session

The First Public Information Session was held at Fire Station Two - Thorold South, just inside the western border of the Study Area, on May 16, 2007, from 6:00 p.m. to 9:00 p.m. The purpose of the Information Session was to provide landowners, agencies, First Nations and other stakeholders an opportunity to:

- View the environmental features mapping and background data collected to date;
- Ask questions and provide comments on the planning process; and,
- Comment on the study methodology and the alternative routes.

Stantec and Enbridge representatives were present at the First Public Information Session to provide information, answer questions, and receive comments. The sign-in book for the Information Session contained 10 signatures. Each attendee was offered a newsletter and an exit questionnaire, the questionnaire was to be completed and returned to Stantec.

Analysis of the Information Session registration book indicates that five attendees recorded an address within the Study Area. Questions and comments discussed with members of the public regarding the pipeline were mainly related to the proposed timing of the project and location of the Preliminary Preferred Route. A representative from Rolling Meadows Developments attended the Public Information Session and updated Enbridge and Stantec on details of a proposed development within the Study Area. This development consists of residential, industrial and commercial land uses and includes the construction of a golf course and a village centre. Subsequently, the land use mapping presented at the First Public Information Session was updated to include the land use mapping outlined in the Rolling Meadows proposal and was presented at the Second Public Information Session.

Exit questionnaires were developed to solicit input from attendees at the First Public Information Session. The questionnaire requested input regarding the route selection process, site-specific features, route preference and any other comments or feedback. The questionnaires were distributed at the First Public Information Session (with self-addressed stamped envelopes for return to Stantec). A total of two questionnaires were returned either during the First Public Information Session or by mail.

Out of the two exit questionnaires received at the First Public Information Session, no responses indicated that there were environmental features in the Study Area which were incorrectly mapped, omitted, or that were important to consider. The main concerns addressed were safety and the potential for disruption to previously undisturbed areas.

A summary of the returned questionnaires from the First Public Information Session is included in **Appendix B6**.

4.2.3 Second Public Information Session

The Second Public Information Session was held at the Fire Station Two - Thorold South on May 16, 2007, from 6:00 p.m. to 9:00 p.m. The sign-in sheet recorded that 8 people attended the Second Public Information Session and this number was confirmed by counting the attendees as they entered the facility. There were six attendees who registered their attendance on the sign-in sheet that are landowners within the Study Area. There was one attendee who registered their attendance on the sign-in sheet that owns land along the Preliminary Preferred Route. The purpose of the Second Public Information Session was to discuss the Preliminary Preferred Route, to give the public an opportunity to identify any necessary site-specific protection or mitigation measures and to provide an opportunity to address concerns with directly affected stakeholders.

Questions and comments discussed with attendees related to the duration of construction and potential impacts to property.

Exit questionnaires were developed to solicit input from attendees of the Second Public Information Session. The questionnaire requested input regarding the alignment of the Preliminary Preferred Route, any environmental features that require special consideration, and

any other comments or feedback. The questionnaires were distributed at the Second Public Information Session (with self-addressed stamped envelopes for return to Stantec). Three questionnaires were returned either during the Second Public Information Session or through the mail.

Exit questionnaire responses indicated that the potential impact of the pipeline on property value was a concern. A summary of the complete questionnaires received from Second Public Information Session attendees is included in **Appendix B6**.

4.2.4 Third Public Information Session

The Third Public Information Session was held at the Fire Station Two - Thorold South on March 18, 2008, from 6:00 p.m. to 9:00 p.m. The sign-in sheet recorded that four people attended the Third Public Information Session and this number was confirmed by counting the attendees as they entered the facility. There were three attendees who registered their attendance on the sign-in sheet that are landowners within the Study Area. The purpose of the Third Public Information Session was to discuss the alternative Preferred Route, to give the public an opportunity to identify any necessary site-specific protection or mitigation measures and to provide an opportunity to address concerns with directly affected stakeholders.

Questions and comments discussed with attendees related to the duration of construction and potential impacts to property mainly dealt with the construction of the proposed Thorold CoGen L.P.

Exit questionnaires were developed to solicit input from attendees of the Third Public Information Session. The questionnaire requested input regarding the alignment of the alternative Preferred Route, any environmental features that require special consideration, and any other comments or feedback. The questionnaires were distributed at the Third Public Information Session (with self-addressed stamped envelopes for return to Stantec). One exit questionnaire was returned during the Third Public Information Session.

The exit questionnaire response provided information relating to the Regional trunk watermain to be constructed along Allanburg Road commencing north of the water tower southward. A summary of the completed questionnaire received from the Third Public Information Session is included in **Appendix B6**.

4.2.5 Stakeholder Consultation

Following distribution of the agency contact letters, Stantec made and received various phone calls and letters from interested parties including representatives of the City of Thorold, the MNR, and the Ontario Realty Corporation (“ORC”).

The City of Thorold indicated that they were in support of the project, and provided Stantec with information relating to a housing development within the Study Area. The City provided Stantec with a basic map of the new development showing the location of proposed roadways within the

development. They stated that they would like more detailed plans with respect to sections of the pipeline that may be utilizing the municipal road allowance.

The MNR informed Stantec that there is Type 2 fish habitat within the Study Area. They also informed Stantec that there are wooded areas within the Study Area that are approximately 10 hectare ("ha") in size and suggested that a complete flora/fauna survey is completed if vegetation clearing is required as part of the project. The MNR also stated that the alternative Preferred Route appears as though it would have less impact than the original Preferred Route since it follows existing road allowances.

The ORC provided information to Stantec regarding potential negative impacts to ORC tenants and lands, and indicated that mitigation measures and avoidance of negative impacts should be included in the ER. They also indicated potential triggers related to ORC's class EA and stated that if the ORC Class EA is triggered, consideration should be given to the ORC's undertaking in Stantec's ER. The ORC also provided a map illustrating the location of the Niagara Detention Centre.

A summary table displaying information, questions, and concerns received from stakeholders, as well as responses, is located in **Appendix B1**. Copies of correspondence with stakeholders and landowners are located in **Appendix B3** and **Appendix B4**.

4.2.6 First Nations Consultation

To ensure that any adverse effects on existing or asserted Aboriginal treaty rights were identified during the course of the study, Stantec consulted with First Nations proximal to the Study Area, as well as various departments within INAC. The consultation approach adopted by Stantec is consistent with the OEB's proposed Aboriginal Consultation Policy (EB-2007-0617).

INAC was contacted on June 12, 2007 to seek information regarding the status of lands within the Study Area. INAC replied to Stantec's letter request on July 11, 2007. The letter notified Stantec that INAC no longer responds to these types of letters by providing contact information for First Nations groups who may have an interest in the project. They now ask that potentially interested First Nations groups are identified and notified by the proprietor of the project. Stantec followed up with this request by investigating if there are any First Nations interests in the Study Area.

An email with a map showing the Study Area was sent to INAC's Litigation Management and Resolution Branch on July 12, 2007, INAC's Comprehensive Claims Branch on July 13, 2007, and INAC's Specific Claims Branch on July 17, 2007. A response from INAC's Specific Claims Branch was received on July 19, 2007, indicating that there are no land claims in the Study Area that they are aware of. A response from INAC's Comprehensive Claims Branch was received on July 23, 2007, indicating that there are no lands claims in the Study Area that they are aware of. A response from INAC's Litigation Management and Resolution Branch was received on July 30, 2007, indicating that their inventory does not include active litigation in the Study Area.

A fax was received from the Association of Iroquois and Allied Indians ("A.I.A.I.") on September 6, 2007 stating that they do not have any information to provide to us regarding site selection or technological alternatives and that the existence of land claims and other First Nation activities should be sought. This information has been collected; therefore no further action is required.

A summary of agency correspondence is included in **Appendix B1** and copies of this correspondence are included in **Appendix B3**.

4.3 COMPILATION AND INCORPORATION OF INPUT

At each stage in the public consultation process, input received from the public and agencies was compiled, reviewed, and incorporated into project mapping and ER decision-making. Responses were provided to relevant agency comments and all questions and concerns received from the public, either by letter, email, or telephone. Information and input provided by the public and agencies were considered throughout the process in identifying and describing environmental features within the Study Area, evaluating the route alternatives, selecting and refining the Preferred Route, and developing appropriate mitigation measures. Incorporation of public input assisted in decision making throughout alternative route generation, Preferred Route selection and fine-tuning, and development of mitigation plans.

4.3.1 Follow-up

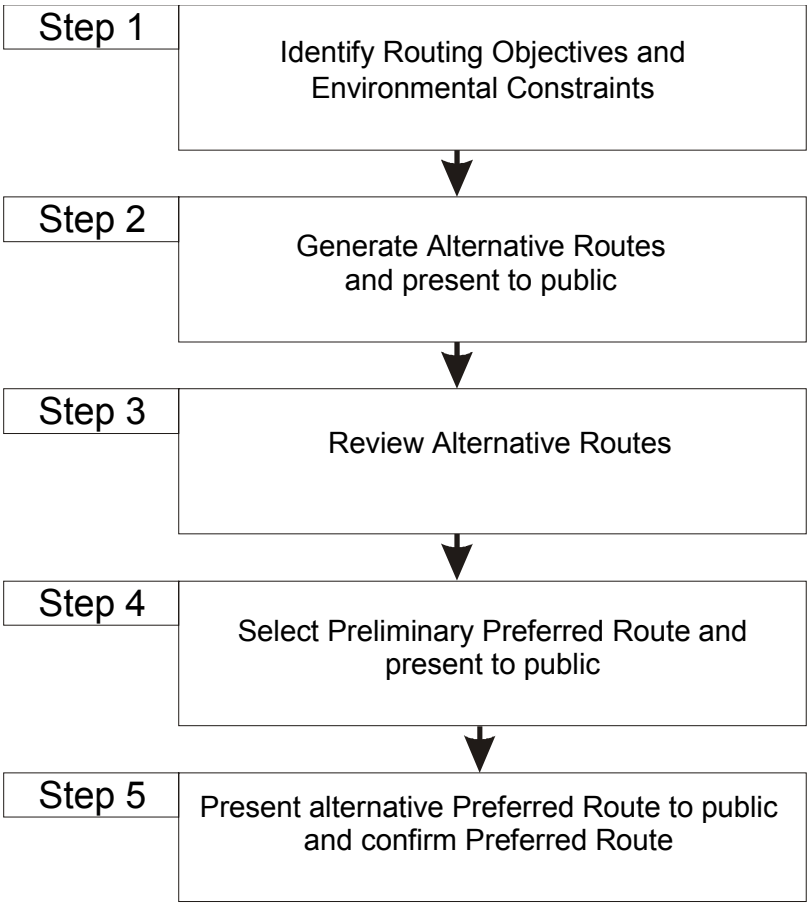
Known issues identified during the public consultation program have been resolved through clarification by project team members, or through selection of a Preferred Route that minimized potential impacts upon environmental or socio-economic features. Ongoing meetings with directly affected landowners are expected to resolve any outstanding issues.

Following completion, the ER will be circulated to relevant agencies, directly affected landowners, and members of the public who have requested a copy for review. Enbridge will continue to work to resolve issues of interest and concern to landowners and other stakeholders, through a combination of individual meetings with landowners and interested parties and through other project initiatives. Communication channels will remain open throughout the regulatory, construction and operational phases of the project.

5.0 Route Evaluation Methodology

The Preferred Route for the proposed pipeline was selected through a five-step process, illustrated in **Figure 5-1**. The five-step process confirmed many findings and assumptions made by the study team through the implementation of a public consultation program.

Figure 5.1 Route Evaluation Methodology



5.1 STEP 1: ROUTING OBJECTIVES AND ENVIRONMENTAL CONSTRAINTS

5.1.1 Routing Objectives

The process of developing alternative routes commenced with the identification of routing objectives. Routing objectives are the general principles used to create reasonable and/or feasible alternative routes. The following objectives were used to assist in the generation of alternative routes within the Study Area:

1. Existing linear features should be utilized or paralleled to the greatest extent possible in order to minimize impacts to previously undisturbed land;

2. Where new easements are required, existing lot/property lines should be followed to avoid diagonal crossings of properties;

3. Routes should avoid sensitive environmental features to the extent possible, where they cannot be avoided, routes should be located to minimize impacts; and,

4. Routes should follow a reasonably direct path between end-points, minimizing length as well as potential for environmental and socio-economic impacts.

Consideration was also given to provincial planning policies, guidelines, and regulations as described in **Sections 1.3 and 1.4** of this report.

5.1.2 Environmental Constraints and Opportunities

Environmental constraints are features that would be adversely affected by pipeline construction or operation, or features that possess unique attributes. Opportunities are existing features, such as a linear corridor or physical boundary, which provides a suitable location for the alignment of a pipeline. The environmental inventory, undertaken in Phase I of the study process, identified many of the features considered either as pipeline routing constraints or opportunities.

The identification of sensitive environmental features (*i.e.* constraints) was based on the following criteria:

- Site-specific mitigation measures would be required to minimize potential impacts;

- The feature has been selected or designated for protection; or,

- The feature has been recognized through local, regional, provincial, or federal policy, plan, or statute, or is otherwise valued as a social or economic resource.

Considering the criteria listed above, examples of significant environmental and socio-economic features in the Study Area include:

- Businesses and industrial facilities;
- Residential homes; and,
- Socio-economic features such as Niagara Detention Centre, Welland Canal, community centres and churches, etc.

The configuration of the Study Area, combined with the presence and location of these significant environmental features, resulted in the identification of several logical alternative routes adjacent to existing linear features.

5.2 STEP 2: GENERATE ALTERNATIVE ROUTES

Paralleling existing linear features presents opportunities to reduce the area of land potentially impacted by construction and operation of the proposed pipeline. This opportunity allowed the study team to generate individual route segments that were interconnected to create alternative routes that could be considered for the alignment of the proposed pipeline. The alternative routes are shown in **Appendix A, Figure A-2**.

Generation of the alternative routes was based on the routing objectives and environmental constraints and opportunities identified in Step 1. The route segments were interconnected to create alternative routes between the end points. Linear features within the Study Area that met the first routing objective, while avoiding and/or minimizing impacts to sensitive environmental features, were considered as route segments that could eventually form part of an alternative route.

Once the alternative routes were generated, they were presented to the public for their comment at the First Public Information Session. Comments made by the public were considered during the selection of the Preliminary Preferred Route.

5.3 STEP 3: ALTERNATIVE ROUTE SCREENING AND SELECTION OF THE PRELIMINARY PREFERRED ROUTE

The alternative routes were subject to preliminary screening and comparative evaluation. This process consisted of discarding route segments with significantly greater environmental or socio-economic impacts and comparatively evaluating the effects of the remaining segments using biophysical and socio-economic criteria. The primary goal of the comparative evaluation was to determine the potential environmental or socio-economic impacts of each alternative segment.

A total of eleven route segments were created, the combination of the route segments resulted in the generation of five alternative routes. Only reasonable, or logical, interconnections of route segments were considered in the generation of the alternative routes. Route segment

combinations, which have been linked to create the alternative routes, are identified in **Table 5-1** below. Each alternative route is comprised of various route segments, the routes can be defined by referring to **Appendix A, Figure A-2,** and the shaded cells within **Table 5-1**. For example, Route 1 is formed by joining Route Segments A, D, and K.

Table 5.1 Preliminary Alternative Routes and Route Segments

	A	B	C	D	E	F	G	H	I	J	K
Route 1											
Route 2											
Route 3											
Route 4											
Route 5											

Following generation of the preliminary alternative routes, Stantec completed a field review of the Study Area to determine the alignment of each alternative route and to identify a Preliminary Preferred Route. The Preliminary Preferred Route and alternative routes can be seen on **Appendix A, Figure A-2**. This component of the route selection process is referred to as the Preliminary Route Screening.

The purpose of the Preliminary Route Screening is to eliminate the least acceptable alternative route segments from further consideration. During this step, Stantec eliminated from further consideration Routes Segment A, B, C, D, and E. The rationale, provided below, for eliminating each of these segments is subjective and based on the past experiences and professional judgment of Stantec.

Route Segments A, B, C, and E

Route Segment A travels south from Enbridge's Blackhorse Gate Station to Lundy's Lane (Highway 20). It then travels west along Lundy's Lane (Highway 20) until Davis Road (Highway 58) where it then travels north adjacent to the road until the start point of Route Segment C. Route Segment B travels north along an existing Hydro One corridor from Enbridge's Blackhorse Gate Station and ends at the start point of Route Segment E. Route Segment C begins at the end point of Route Segment A and travels northeast adjacent to Davis Road (Highway 58) and ends at the start point of Route Segment E. Route Segment E travels northeast adjacent to David Road from the end points of Route Segments C and B and ends at the start point of Route Segment H. These route segments have been excluded from further consideration because it was decided by Enbridge that their Blackhorse Gate Station was not a suitable start point due to the need for an expansion of the existing facility in order to accommodate the proposed pipeline. It was determined that constructing a new facility at the point where TransCanada PipeLine's existing natural gas pipeline crosses Thorold Townline Road was a better option. In addition, routes commencing at Enbridge's existing Blackhorse Gate Station would have potentially greater impacts on the residential component of the proposed Rolling Meadows development than routes commencing from Thorold Townline Road. In Stantec's opinion this was a suitable decision with respect to the environmental and socio-economic features within the Study Area.

Route Segment D
Route Segment D travels north from the end point of Route Segment A adjacent to Allanburg Road and ends at the start of Route Segment K. Route Segment D has been excluded from further consideration due to potential socio-economic impacts. This route travels adjacent to the entrance of a fire station, an elementary school and within 100 m of several homes and businesses.

5.3.1 Route Screening Summary

Alternative routes that utilized Route Segments A, B, C, D, and E (**Appendix A, Figure A-2**), were excluded from advancing to a more detailed route comparison and evaluation. The Alternative Routes eliminated through the Preliminary Route Screening were Routes 1, 2, and 3.

5.4 SELECTION OF THE PRELIMINARY PREFERRED ROUTE

The remaining Alternative Routes, 4 and 5, were subject to a comparative analysis. The comparative analysis identified a Preliminary Preferred Route that was presented on June 26, 2007 at the Second Public Information Session.

Enbridge and Stantec considered several factors prior to identification of the Preliminary Preferred Route. The comparison of the routes considered the advantages and disadvantages of each route both quantitatively (measurable) and qualitatively (professional judgment from an environmental, engineering, lands, and economic perspective).

5.4.1 Common Route Segments

The first step in selecting the Preliminary Preferred Route was to focus the evaluation process. Alternative Route Segments G, J, and K were the common segments to each of the remaining alternative routes under evaluation. At this point of the study it was determined that these route segments would each form a section of the Preliminary Preferred Route.

Route Segment G
Route Segment G commences at the point where TransCanada PipeLine's existing natural gas pipeline crosses Thorold Townline Road and travels north to the start point of Route Segment's F and I.

Route Segment J
Route Segment J commences at the end point of Route Segment H and travels west along Niagara Falls Road to the start point of Route Segment K.

Route Segment K
Route Segment K commences at the terminal point of Route Segment J. Route Segment K extends north onto Abitibi-Consolidated – Thorold Division's property and ends at the future location of the Thorold CoGen L.P.

5.4.2 Preliminary Preferred Route Interconnection

Interconnection of the Preliminary Preferred Route remained to be determined between the end of Route Segment G and the start point of Route Segment J. The selection of the Preliminary Preferred Route between these points is discussed below.

Connecting the end of Route Segment G and the start point of Route Segment J

Either a combination of Route Segments F and H or Route Segment I can achieve the connection between the end of Route Segment G and the start point of Route Segment J. Route Segment F travels south west along an existing Hydro One corridor, until it reaches Davis Road (Highway 58). Route Segment H travels north along Davis Road (Highway 58) until it reaches Niagara Falls Road and the start point of Route Segment J. Route Segment I travels west along Beaverdams Road from the terminal point of Route Segment G until reaching the start point of Route Segment J.

The quantitative evaluation revealed that the combination of Route Segments F and H resulted in a longer route length than Route Segment I. An increase in route length usually results in an increase in environmental and socio-economic disturbance; however, Route Segment I actually has a greater socio-economic disadvantage because of the disruption to Thorold Townline Road and Beaverdams Road. Route Segment F travels adjacent to an already disturbed area, the Hydro One corridor. The area adjacent to the Hydro One corridor has been designated as Open Space and Recreation in the Rolling Meadows Plan; therefore, the presence of the proposed pipeline will not affect future residential lots. From a qualitative perspective, Route Segment I has a greater potential to disrupt traffic and local residents and business owners because it travels within road allowance. In addition, the crossing of Beaver Dams Creek at Thorold Townline Road along Segment I is believed to be very difficult from a construction perspective. Following the quantitative and qualitative comparisons between interconnections, the combination of Route Segments F and H were determined to be the routing option that would cause the least disturbance to environmental and socio-economic features.

The consideration of qualitative data, collected at the onset of the route selection process, such as field observations and the professional judgment of Stantec, did not provide any information that did not support the decision to use Route Segments F and H for the interconnection.

Following careful consideration of all of the factors involved, the project team selected the combination of Route Segments H and F to interconnect Route Segment G to Route Segment J.

5.4.3 Preliminary Preferred Route

The interconnection of Alternative Route Segments G, F, H, J, and K, formed the aligned Preliminary Preferred Route presented at the Second Public Information Session on June 26, 2007. This alignment appears as a solid blue line on **Appendix A, Figure A-2.** The selection of the Preliminary Preferred Route was presented to agencies and the public through written correspondence and public consultation.

There were no agency or landowner comments or concerns relating to the alignment of the Preliminary Preferred Route.

5.5 SELECTION OF THE PREFERRED ROUTE

There were no revisions made to the Preliminary Preferred Route based on comments or concerns from agencies and the public. The alignment of the Preliminary Preferred Route became the original Preferred Route. **Appendix A, Figure A-3** illustrates the alignment of the original Preferred Route.

The original Preferred Route was presented to Enbridge by Stantec in August 2007 for their review and approval. Enbridge determined the original Preferred Route to be acceptable from an engineering and construction perspective; however after further consultation with landowners during easement acquisition Enbridge sought Stantec's opinion of the environmental acceptability of an alternative Preferred Route that did not require easements from private landowners. The alternative Preferred Route is comprised of the interconnection of Route Segments G, I, J, and K (revised). The only difference between the original Preferred Route, and the alternative Preferred Route, is the use of Route Segment I, and the slight revision to Route Segment K.

Route Segment I was not selected to become part of the original Preferred Route due to the potential for socio-economic disturbance during construction and it was originally believed that crossing Beaver Dams Creek along Thorold Townline Road would be very difficult. Upon further examination, performed by Stantec in March 2008, it was determined that there will not be a significant increase in socio-economic impact, and the constructability issues associated with the water crossing will be offset by the savings incurred by not needing to acquire land from the ORC to allow for aligning the pipeline within the existing Hydro One corridor. The alternative Preferred Route will also avoid the potential disruption to the cemetery on Thorold Townline Road because it will be aligned along the east side of the road until well north of the cemetery. Since the majority of the alternative Preferred Route will be aligned within road allowance, there will be less potential for socio-economic impact on the Rolling Meadows Development.

Route Segment K was revised in order to fulfill the needs of Abitibi Consolidated Inc.'s construction plans.

A Public Information Session was held on March 18, 2008 to provide an opportunity for agencies, First Nations, stakeholders, landowners and the general public to review the alternative Preferred Route. There were no concerns regarding the alignment of the alternative Preferred Route. In a letter dated March 17, 2008, the MNR stated that the alternative Preferred Route would probably have less impact than the original Preferred Route as it appears to follow existing road allowance.

After conducting a windshield survey, further examination of previously collected materials, and considering public input, Stantec has determined that the alternative Preferred Route proposed by Enbridge is an environmentally and socio-economically acceptable route. The alternative Preferred Route ("Preferred Route") is illustrated in **Appendix A, Figure A-4.**

6.0 Route Alignment and Mitigation Measures

This section describes the physical, natural, and socio-economic features that occur along the Preferred Route. The potential impact of construction and operation of the proposed pipeline on those features and recommended mitigation measures to reduce potential negative effects are also described. Specific construction methods and timing are recommended to minimize potential impacts. The photomosaics, included as **Appendix D**, illustrate the proposed alignment of the pipeline, as well as providing a summary of the outlined mitigation measures.

Constructing within or adjacent to road allowance can significantly reduce potential negative impacts of pipeline construction. There are, however, a number of recommended mitigation measures that will further reduce potentially adverse effects of constructing and operating the proposed pipeline. No significant adverse effects are expected from the construction and operation of the proposed pipeline.

6.1 PHYSICAL FEATURES

6.1.1 Physiography

Potential Impacts

Physiography is a description of physical features. Typically, the greatest impacts to physiographic features occur on slopes adjacent to watercourses. Potential impacts to watercourses may include surface soil erosion, trench slumping, and in extreme cases, sedimentation. Much of the topography along the Preferred Route is virtually flat; however, the Preferred Route involves two watercourse crossings involving Beaver Dams Creek. These two crossings will be horizontal directionally drilled (“HDD”) to minimize effects to the watercourse. However, construction along the Preferred Route alignment could potentially cause the slopes of the watercourses to lose stability.

As stated, the topography along the Preferred Route is generally flat. During construction, soils on flat land are also more prone to soil and wind erosion as a result of the loss of vegetative cover, intensity and duration of rainfall events, antecedent soil moisture, surface soil cover, slope, soil texture, soil structure, and organic matter levels.

Mitigation and Protective Measures

The Preferred Route crosses Beaver Dams Creek at two separate locations. The southerly crossing is within the road allowance of Thorold Townline Road, and the other crossing is within the road allowance of Niagara Falls Road. At this point, grading may be required to accommodate installation of the drill rig and associated equipment. Grading involves the “stripping” of topsoil from the banks and “cutting” into the subsoil to create grades that are practical and safe for construction. To reduce the risk of complications associated with grading the slopes of the waterways, site-specific mitigation measures are required. Preparation for

grading, which includes vegetation clearing, should not be initiated until the date of the actual watercourse crossing is imminent. Retaining trees and grasses on the approach slopes of watercourses will minimize the risk of slope failure and siltation for as long as possible.

Similarly, clearing, topsoil stripping, and grading activities within the crossing area, should be initiated as close as possible to the date of a crossing. Prior to any construction activity, sediment control fence, fronted with a row of straw bales, should be securely installed on both banks of the watercourse parallel to the water edge. The sediment control fence should be set back at least 15 m from the waters edge or as directed by the Environmental Inspector. This barrier will protect the identified watercourse from receiving deleterious sediment.

All soil removed from the slope of the watercourse should be separated by layer and temporarily stockpiled a minimum of 15 m from the edge of the watercourse. The section of bank immediately adjacent to the creek bed (i.e. between the erosion control fences) should not be disturbed during grading activities.

As soon as possible following completion of the crossing, the slopes of the watercourse should be restored to their original grade. Topsoil should be replaced at a depth similar to preconstruction conditions. Seeding should follow immediately. Once sown, seed should be protected with a layer of erosion control straw matting that will assist in stabilizing the slope and propagating the seed mixture. In the event that broadcast seeding is not feasible due to climatic or seasonal restrictions, hydroseeding should be considered. The sediment control fence, fronted with a row of straw bales, should remain securely installed on both banks of the watercourse throughout construction, restoration, and rehabilitation of the slopes. It should remain, in good repair, until stabilizing vegetation has re-established.

Seeding should be completed after the construction phase and prior to September 30th, in order to allow for germination prior to winter. Seeded areas should be protected with appropriate stabilizing techniques. In the event that broadcast seeding is not feasible, hydroseeding should be considered. If installed, sediment control fencing should be maintained throughout construction, restoration, and rehabilitation until vegetative cover is fully established. The requirement for, and location of, sediment control fencing should be determined by Enbridge's Environmental Inspector.

With the effective implementation of the mitigation measures recommended above, construction activities should have no adverse environmental effects on the physiographical features traversed by the Preferred Route.

6.1.2 Bedrock Geology

Potential Impacts

The Study Area consists of Paleozoic bedrock of the Lockport Formation, which is comprised of blue and grey shale with limestone interbeds. Interpretation of water well records within the Study Area report that the depth to bedrock varies from 12 m to 27 m (MOE, 2005); therefore, it is unlikely that bedrock will be encountered. However, bedrock outcrops exist north of the Study

Area (Ontario Division of Mines, 1976). In the event that bedrock is encountered during trench excavation, a hoe-ram will be used to achieve sufficient trench depth and width. Where bedrock material is excavated by hoe-ram, potential effects are limited to increased noise and vibration in the immediate vicinity.

Mitigation and Protective Measures

Since bedrock is not anticipated to be encountered, specific mitigation measures have not been developed.

6.1.3 Climate

Potential Impacts

As the pipeline is proposed to be constructed almost entirely within road allowance, potential impacts associated with inclement weather are not anticipated to be significant. For the most part, impacts to surficial soils have been avoided through careful route planning and aligning the pipeline largely within road allowance. Subsequently, impacts associated with wet soils are not anticipated to occur during construction.

High winds may generate airborne dust, which, if persistent, may become a nuisance to residents adjacent to construction areas. Persistent, uncontrolled airborne dust is an irritant to residential and business properties located in close proximity to the proposed pipeline.

A period of heavy rainfall may cause a significant increase in the surface and ground water levels. High water levels and rapid flows may result in flooding of the trench line and flooding of adjacent lands.

Mitigation and Protective Measures

Erosion associated with high winds, resulting in soil loss and nuisance dust, can be reduced or eliminated by stabilizing temporary soil storage piles with straw mulch. Furthermore, applying a low energy water spray to the work area can temporarily control nuisance dust. In extreme cases, a dust suppressant can be applied to contain soil particles onsite.

During periods of excessive rainfall or saturated soil conditions, construction activities should be monitored to ensure that excavated soils remain on-site and do not migrate off the work area. If excessive amounts of rain continue to fall, excavated soils should be secured by the use of sediment control fencing and straw bales where appropriate.

If the mitigation measures recommended to reduce the impact of inclement weather are followed, there should be no adverse environmental effects from climatic events that occur during construction.

6.1.4 Seismicity

Potential Impacts

The Preferred Route is within the second lowest rated seismic ground motion zones with respect to relative seismic risk (Natural Resources Canada, 2005a; Natural Resources Canada, 2005b). The probability of significant seismic activity in the area traversed by the proposed pipeline is extremely low.

Mitigation and Protective Measures

Since seismicity is not a concern along the Preferred Route, mitigation and protective measures have not been developed.

6.1.5 Hydrology

Surficial Watercourses

Potential Impacts

The Preferred Route crosses Beaver Dams Creek in two locations.

As detailed in **Appendix C**, Beaver Dams Creek serves as a displacement basin for the Welland Canal. It receives water displaced from the canal by ships as they pass. Water levels rise and fall with the passing of ships; however, the creek always contains some water and is known to support a wide variety of fish.

The potential exists for water quality to be affected during construction of the pipeline through the following means:

- Accidental spills from construction vehicles working in or adjacent to the watercourses, and due to inappropriate handling or storage of fuel, dust suppressants, lubricants or other potential contaminants; and,
- Erosion resulting from the unavoidable removal of stabilizing vegetative cover.

Specific issues related to hydrostatic testing are discussed in **Section 7**. Other potential effects related to watercourses are discussed in **Section 6.2.1**.

Mitigation and Protective Measures

General mitigation measures to protect the surficial hydrology of Beaver Dams Creek during pipeline construction are described below and can be seen on the mitigation mosaics (**Appendix D**). Both crossings will be HDD thus avoiding potential impacts on flow rate and fisheries. It is anticipated that this crossing method will eliminate effects to the watercourse.

Horizontal Directional Drill

Potential Impacts

The two Beaver Dams Creek crossings will be completed using HDD technology. Directional control of the drill bit is achieved using pressurized water and bentonite (an inert, non-toxic clay

that eliminates concerns related to toxicity) directed through jets mounted on the drill bit. As the drill bit progresses, a series of sections of drill pipe will be attached to the drill head. Once the pilot hole is successfully drilled, the hole will be shaped and widened to its final diameter using a series of progressively larger 'cutters' and 'reamers', which are run from one end of the hole to the other. The pre-welded pipe will then be attached to a pull head and pulled into position under the river.

The main environmental issues pertaining to surficial water quality associated with the HDD of the Beaver Dams Creek include:

- Sedimentation and contamination of the watercourse through the release of 'inadvertent returns' of drilling mud through the bed of the watercourse. Inadvertent returns occur when a significant amount of drilling fluid returns to the surface via a route other than the entry or exit point due to migration of the pressurized fluid through cracks or fractures in the soil;
- Sedimentation and contamination of the watercourse through the release of 'inadvertent returns' of drilling mud onto the surface and the subsequent flow of this mud into the channel; and,
- Disposal of drilling mud that is collected at the entry and exit points of the HDD.

Mitigation and Protective Measures

In order to minimize the effects of erosion and sediment deposition during the directional drill of the Beaver Dams Creek, standard erosion and sediment control measures must be implemented around the drill and pipe staging areas.

Once vegetative cover is removed and soil is disturbed at the drill exit site the potential for erosion and sediment deposition increases. Topsoil stripped from the drill exit site must be stockpiled in a location designated by the Environmental Inspector. The topsoil stockpile must be located as far as possible from adjacent surface receptors such as bar ditches, municipal drains and culverts, and it must be protected against migration by using sediment control fencing.

Additional supplies should be maintained onsite, in a readily accessible location, for maintenance and contingency purposes. Prior to construction, the contractor must obtain adequate quantities of the materials listed below in order to control erosion and sediment deposition.

- Sediment control fencing;
- Straw bales;
- Wooden stakes;
- Sand bags;

- Water energy dissipater;
- Filter cloth;
- Water pumps (including stand-by pumps and sufficient lengths of hose); and,
- Snow fencing with sufficient quantities of t-bars.

Prior to construction, sediment control fencing must be erected to protect each surface receptor situated in close proximity to the drill exit site.

Sediment control fencing must be properly keyed-in and maintained at all locations in order to work effectively and achieve maximum sediment control. Sediment control fencing must be inspected on a daily basis for wear and tear. Damaged or worn sediment control fencing must be replaced immediately. Additional protection, as required by the Environmental Inspector, can be achieved by placing straw bales against the uphill side of sediment control fencing.

Spill Response

Enbridge's approach to spill response places a strong emphasis on prevention and preparedness and involves many organizations, including federal and provincial agencies, private industry, and volunteer groups. With respect to the HDD, the potential exists for hazardous substance spills to occur, as well as the release of inadvertent drilling fluid returns.

a) Hazardous Substance Spills

Hazardous substances refer to any substance, which, by its chemical, physical, or biological nature represents a hazard to the public, property, or the environment. There are many operations that can involve hazardous substances during pipeline construction. Fuelling and lubrication of construction equipment associated with directional drilling activities must be carried out in a manner that parallels the procedures recommended above.

b) Drill Slurry Release

On land, inadvertent returns of drilling fluids are most likely to occur where the pressure from the drilling fluid shears the soil and allows the fluid to escape to the ground's surface. The following materials should be maintained onsite in an accessible location to assist in the management of a drill slurry release on land:

- Sediment control fencing;
- Straw bales;
- Wooden stakes;
- Sand bags;
- Shovels and squeegees;
- Numerous 5 gallon pails;

- Water pump, spare water pump, and sufficient lengths of hose;
- Rubber tired backhoe with front end loader; and,
- 24-hour access to a local vacuum truck.

During drilling operations, areas in proximity to the exit point must be monitored for indications of above-ground seepage of drilling fluid. If inadvertent drilling fluids are observed above-ground, the following procedures should be followed:

- Evaluate the release to determine if containment structures are warranted and can effectively contain the release;
- Install containment structures (i.e. berms or sediment control fence) around the area affected by the return to prevent drilling fluid from migrating across the ground's surface;
- If significant volumes are released, excavate a small sump pit and remove fluid by vacuum truck to be disposed of at a pre-approved disposal facility; and,
- Terminate drilling operations in the event that returns pose a threat to public health and safety.

Designing the directional drill so that drilling slurry pressure is minimized and the drilling rate is reduced in porous materials will minimize the chance of loss of circulation of the drilling slurry. Other measures to ensure that lost circulation does not occur are as follows:

- Maintain smooth operation of the drilling string and slurry pumping systems to avoid pressure surges;
- Minimize slurry viscosity through appropriate filtering of drilled material to reduce the pressure gradient along the drill path due to frictional effects; and,
- Continually monitor slurry volumes to enable a quick response to any indications of lost circulation.

In the event of a loss of circulation, the drilling slurry pressure should be reduced to a level that will enable the opening, through which slurry is escaping, to seal while ensuring drill cuttings are transported back to the surface at a rate sufficient to prevent accumulation in the drill hole. Increasing the viscosity and density of the drill slurry may also be necessary to seal the opening through which the drilling slurry is escaping.

Any drill slurry that escapes onto land should be immediately contained and transferred into the onsite containment system. If leakage into the channel is suspected, water users within 2 km of the drill location should be notified as soon as possible.

All drilling fluid that returns to the surface following completion of drilling and reaming and during pipeline pull back operations should be contained and disposed of by an approved disposal method. Methods that should be considered for slurry disposal include hauling the slurry to a disposal site. Drill slurry contained within holding tanks or sumps should be analyzed in accordance with MOE regulations and guidelines prior to disposal.

Additional mitigation measures for hydrology are presented in **Section 6.2.1**. No significant adverse effects upon surface water hydrology along the Preferred Route are expected with proper implementation of these measures.

Groundwater

Potential Impacts

As discussed in **Appendix C2**, and as can be seen in **Appendix C1, Figure C1-2**, there are 20 reported water wells within the Study Area. The average depth at which the water was found is 11.7 m ranging from 4.9 m to 23.8 m. There are several reported uses for the wells including domestic, public supply, commercial, industrial and not used. There are four wells situated in close proximity (within 100 m) to the Preferred Route.

Due to the shallow depth of a normal pipeline excavation, approximately 2 m, construction is not anticipated to affect groundwater; however, in wet areas dewatering may be required to lower the near-surface water table to enable excavation of a trench.

Mitigation and Protective Measures

Dewatering has the potential to affect nearby wells. To determine preconstruction quality and quantity conditions, nearby well owners should be given the option to participate in a water well monitoring program prior to construction.

Associated dewatering should be discharged in a vegetated area or into a filter system to eliminate ground scouring. An MOE Permit to Take Water is required if more than 50,000 litres per day is withdrawn as a result of sand pointing activities.

Fuels, chemicals, and lubricants should be stored on level ground in properly contained/sealed storage areas. Refueling activities should be monitored at all times; vehicles should never be left unattended while being refueled and refueling and maintenance of vehicles should occur at a minimum distance of 100 m from the edge of a watercourse. In the unlikely event of a spill, the MOE Spills Action Centre should be contacted and spills containment and clean-up procedures implemented immediately.

The potential for effects to groundwater quality and quantity is low; however, the water-bearing zone may occur within the potential zone of impact for normal pipeline trenching operations. It is possible that water-bearing overburden may be encountered during the two HDDs of Beaver Dams Creek. With proper implementation of these mitigation and protective measures, construction related activities should have no significant adverse effects upon hydrology along the Preferred Route.

6.2 BIOPHYSICAL FEATURES

6.2.1 Watercourses and Fisheries

Potential Impacts

The Beaver Dams Creek is crossed twice by the Preferred Route (see **Appendix C1, Figure 2**). Beaver Dams Creek is known to contain a variety of fish species.

The primary concern regarding potential effects of pipeline construction on fish and fish habitat is species viability and potential impacts to spawning/nursery activities. Construction effects including siltation and sedimentation, erosion of stream banks, and maintenance of downstream flow are addressed in **Section 6.1.5**.

Mitigation and Protective Measures

Both crossings of Beaver Dams Creek will be completed by HDD. This will reduce potential impacts to flow rate, fisheries and navigation. A permit must be obtained from the NPCA prior to the commencement of watercourse crossings.

No work will be conducted in either watercourse and as such, with the implementation of the appropriate mitigation measures, no effects to the watercourse are anticipated resulting from these crossings.

The following mitigation measures should be taken for all watercourse crossing types, including HDD, when constructing in or proximal to fish habitat:

- Watercourse crossings are preferred to be performed during the summer months when fish are not migrating or spawning and water flow is low;
- Prior to removal of the vegetation cover, effective mitigation techniques for erosion and sediment must be in place to protect water quality. Limit disturbance to the area during construction and delay grubbing activities until immediately prior to grading operations;
- Materials removed or stockpiled during construction (e.g. excavated soil, backfill material) must be deposited and contained in a manner to ensure sediment does not enter the watercourse;
- There must be no fording of any flowing stream;
- Enbridge or any subcontractor will not obstruct any watercourse in a way that impedes the free movement of water and fish;
- All exposed mineral soil must be graded to a stable slope and treated as quickly as possible to prevent erosion and sediment from entering the water; and,
- Enbridge is to have additional materials (e.g. rip rap and sediment control fencing) readily available in case there is an urgent need for erosion and sediment control.

6.2.2 Forest and Vegetation Cover

Potential Impacts
Road allowance undergo continual management by municipal and provincial road crews. Grass and brush cutting, pesticide spraying, and salt deposition are also common occurrences. As a result, vegetative cover within road allowance generally consists of common, hardy plant species that are adaptable to disturbed environments.

Most trees situated adjacent to the Preferred Route have been previously cleared for agricultural purposes and for road construction and maintenance. Consequently, minimal tree removal will be required as part of this project.

A review of the NHIC (2005) and National Species at Risk (Environment Canada, 2004) databases identified seven plant species that are of national concern or provincial concern that could possibly exist in the Study Area. The exact locations of these species are kept confidential, but it is not anticipated that any will be affected by the Preferred Route alignment.

Mitigation and Protective Measures

Tree clearing is anticipated to be minimal. To the greatest extent possible, trees have been avoided by selecting a route almost entirely within road allowance. Where trees are adjacent to the Preferred Route, protective measures such as using snow fence to control access and working only outside the tree drip line should reduce impacts. If a significant tree is situated in the path of the pipeline, protective measures such as HDD should be considered.

To minimize the extent of disturbance to forest and vegetative cover, vehicular movement and material/equipment storage should be confined to the right-of-way.

It is anticipated that a quick re-establishment of herbaceous ground cover will result due to natural in-growth from adjacent areas. Seed mixes, fertilizer, and application rates should be determined in consultation with the City of Thorold and highway Superintendent, as appropriate. Should any trees require to be cut, Enbridge will implement their Tree Replacement Program.

Since pipeline construction will occur largely within existing road allowance, the amount of vegetation to be cleared should be minimal and the effects should be short term. In the event that a significant species is encountered during construction, Enbridge should cease work on the effected portion of the right-of-way and consult the MNR regarding appropriate protective measures.

No significant adverse impacts are anticipated to vegetation adjacent to the Preferred Route, provided the measures described above are followed.

6.2.3 Wetlands

Potential Impacts
The Preferred Route does not impact any provincially significant or municipally designated wetland areas.

Mitigation and Protective Measures

Since no provincially significant or municipally designated wetlands are affected along the Preferred Route, no mitigation or protective measures are necessary.

6.2.4 Natural Heritage and Areas of Natural and Scientific Interest ("ANSI"s)

Potential Impacts
The Preferred Route for the proposed pipeline does not affect any provincially recognized natural heritage or environmentally significant areas.

Mitigation and Protective Measures

Since no provincially recognized natural heritage or environmentally significant areas are crossed by the Preferred Route, no mitigation or protective measures are necessary.

6.2.5 Wildlife

Potential Impacts
Due to the urban and industrial surroundings, the limited number of fence lines and watercourse valleys, and a lack of woodlots adjacent to the Preferred Route, minimal opportunities for the habitat of birds, mammals, reptiles or amphibians exist within the Study Area. Species that could possibly be encountered during construction include raccoons, groundhogs, squirrels, skunks and various avian species including wild turkey.

A review of the NHIC (2005) and National Species at Risk (Environment Canada, 2004) databases identified eighteen wildlife species of national concern or provincial concern that could possibly inhibit the Study Area. Lists of these species are provided in **Appendix C2, Tables 3.2 and 3.3**. The exact locations of these species are kept confidential; however, it is not anticipated that any will be affected by the Preferred Route alignment.

Mitigation and Protective Measures

As pipeline construction will occur largely within existing road allowance, the amount of vegetation to be cleared and the impact on wildlife habitat should be minimal and short term. In the event that significant species are encountered during construction, Enbridge should cease construction of the affected portion of pipeline and consult the MNR regarding appropriate protective measures.

6.3 SOCIO-ECONOMIC CHARACTERISTICS

6.3.1 Municipal Structure

Potential Impacts
The Preferred Route traverses road allowance, and industrial lands. As well, it is within close proximity to residential homes and businesses. Locating the proposed pipeline within road allowance is anticipated to minimize any potential impact on these areas.

After short-term disruption and use of municipal roads during the construction phase, it is expected that the overall impact to this area will be positive. The anticipated municipal taxes paid by Enbridge on an annual basis to the City of Thorold will be a significant long-term economic benefit of the pipeline. The amount of these taxes has not yet been determined, but will be based upon provincial assessment standards for the length of the pipeline.

While the increased number of personnel present in the area during pipeline construction will demand some services from the local municipality, the demand is expected to be minimal and short-term. Once the pipeline is in operation, it will require minimal municipal services.

Mitigation and Protective Measures

Prior to commencing construction of the proposed pipeline, Enbridge should consult with municipalities to identify specific concerns and potential mitigation measures to eliminate present and future problems. Concerns expressed during construction and operation of the proposed pipeline by effected municipalities should be addressed in an expeditious and courteous manner.

No significant adverse impacts on municipal structure are anticipated.

6.3.2 Existing Linear Facilities

Linear facilities may be affected along the Preferred Route, including railways, roads, telecommunication and hydroelectric transmission lines.

Potential impacts include access limitations to businesses, emergency vehicle access, and general impedance to traffic. The potential also exists for the temporary disruption of services such as telephone and hydro due to accidental severance of these services during trench excavation or working under overhead lines.

Prior to construction, Enbridge must coordinate with the appropriate agencies to determine the location of all buried utilities, and potential future utilities, in areas of excavation and construction activity. Heavy machinery should cross underground utilities to the least extent possible. All heavy machinery operators should by advised of the location of all buried utilities and the concerns associated with construction in their vicinity.

Roadways

Potential Impacts

Much of the Preferred Route is being constructed within road allowance. Impedance to vehicle transportation is the largest potential impact to residents and vehicles using the roadways. **Table 6-1** lists roads that may be impacted during construction.

Table 6.1 Location of Preferred Route Relative to Roads

Road Name	Road Type	Location of Pipeline Relative to Road
Thorold Townline Road	Municipal	Adjacent and Crossing
Beaverdams Road	Municipal	Adjacent
Davis Road (Highway 58)	Provincial	Crossing
Niagara Falls Road	Municipal	Adjacent and Crossing
Allanburg Road	Municipal	Adjacent

Road crossings represent the construction activity with the most potential to disrupt traffic flow. The potential impact of constructing within a road allowance and road crossings includes the temporary disruption of traffic flow throughout construction. Boring horizontally or directionally drilling under the road surface may be used for road crossings. Open cut road crossings are used for roads without significant traffic volumes. Although bored crossings allow traffic flow to continue across the work area throughout construction, these require additional temporary workspace on either side of the crossing location to accommodate excavation of the bore bays. Construction activities required to excavate bore bays result in additional disturbance at each crossing. Increased movement of construction equipment and materials on paved roads may also result in some deterioration of road surfaces.

Mitigation and Protective Measures

Depending on the frequency of use, road crossings may be directionally drilled, bored, or open cut. Directional drilling and boring are the preferred methods for roadways with high traffic volumes, such as those designated as highways. Should a road be open cut, it should be returned to its original condition or better following construction. The period of time that a road is closed should be reduced to the shortest extent possible. Enbridge should meet with representatives of the Ministry of Transportation (“MTO”) (for a provincial highway) or the City of Thorold Transportation and Works Department (for a municipal road) to address the following issues:

- Deterioration of roadways due to increased traffic;
- Preferred method of road crossings;
- Crossing procedures including resurfacing or grading of roadways, and traffic safety;
- Road restrictions and haul routes; and,
- Road surface and municipal drain restoration.

Equipment should be stored and operated only within the shoulder or curb lane portion of the roadway to the extent possible. To reduce the risk of vehicle accidents or pedestrian injury, warning signs and construction barricades should be erected at all areas of construction activity near road crossings. Appropriate traffic control measures should be used if construction activity occurs before dawn or after dusk.

Although a short-term disruption in traffic will result from construction of the proposed pipeline, no long-term significant adverse impacts on roadways are anticipated with proper implementation of the measures described above.

Railways

Potential Impacts

The Preferred Route under crosses a Canadian National Railway ("CNR") at Niagara Falls Road. During construction there is potential for access or service disruption provided by this railway line as well as potential to encounter contaminated soils adjacent to the railway line. Potential for contaminated soil to exist along the alignment of the Preferred Route should be confirmed prior to construction.

Mitigation and Protective Measures

Enbridge should discuss crossing procedures with CNR to determine if any mitigation measures are required. Typically, railways are bored or directionally drilled rather than open-cut; as a result, no disruption to railway traffic is anticipated.

To determine the potential to encounter contaminated soils during construction an assessment of soil and groundwater conditions along the alignment of the Preferred Route should be completed. The MOE *Guideline for Use at Contaminated Sites in Ontario* (1997) and supporting documentation should be used to determine sampling methods, criteria for contaminate levels, and rehabilitation (if required). If contaminate levels exceed MOE criteria for surface and subsurface soil for industrial/commercial land use for nonpotable groundwater conditions, work on the affected portion of the pipeline should cease immediately. Appropriate rehabilitation measures should be discussed with the MOE and carried prior to resuming construction activities.

Electric Transmission Lines

Potential Impacts

Several portions of the Preferred Route cross under high voltage transmission lines. The presence of these high voltage transmission lines presents a potential safety concern to equipment operators, workers, and the public. Distribution lines may also exist along the municipal and provincial highways adjacent to the Preferred Route.

In some cases, voltage may be induced in ductile iron pipelines and construction equipment when they are located close to high voltage transmission lines. Voltage can be induced through capacitance (electrostatic charge), conductance (direct contact or ground fault), and induction. The potential for capacitance or conductance increases if a steel transmission tower happens to be hit by lightning. Capacitance or conductance is unlikely in coated pipes buried in the earth, because electrical contact with the ground is more likely than contact with the earth. In addition,

current pipe coating technology acts as an insulator. However, coated metal pipes represent the greatest concern for inductance because the contact with the ground is mainly through points where the coating has been damaged (Bonds, 1999).

Mitigation and Protective Measures

During construction, all machine operators should be informed that power lines are present overhead. Lines that may interfere with the operation of construction equipment should be identified with overhead red flags. Signs should be posted along the alignment of the Preferred Route stating "Danger - Overhead Power Lines." The final alignment of the Preferred Route should consider the location of existing utility poles and their supporting guy wires.

The most effective way to mitigate construction adjacent to a high voltage hydroelectric corridor is by increasing the separation distance between the pipeline and the transmission line. When this is not feasible, special monitoring and grounding procedures must be followed to prevent electrostatic voltage from reaching levels where it presents a shock hazard to workers who may contact any large, insulated metallic objects including coated pipe joints, rubber-tired vehicles, etc.

Pipelines, Sewers and Water Mains

Potential Impacts
The Preferred Route crosses several natural gas distribution pipelines and various buried utilities. Sewer, water, and gas lines may be located along all roadways in proximity to the Preferred Route. Careless trenching or horizontal boring activities during construction may affect the operation of existing buried utilities. Heavy machinery crossing these utilities may potentially impact the integrity of the pipelines and disrupt their operation. The buried utilities traversed by, or in close proximity to, the proposed pipeline provide a vital service to the Thorold area. Severing any of these utilities would result in disruption to a number of industries, businesses, or residents.

Mitigation and Protective Measures

Prior to construction, Enbridge should make every effort to identify the location of all buried utilities, and potential future utilities, in the area of excavation and construction activity. Heavy machinery should cross underground utilities as little as possible. All heavy machinery operators should by advised of the location of all buried utilities and the concerns associated with construction in the vicinity of buried utilities.

6.3.3 Population and Institutional Facilities

Potential Impacts

A portion of the Preferred Route comes in close proximity to a residential area in Thorold. Several residences have been identified to occur within 100 m of the Preferred Route.

During construction, residents may experience a temporary disruption in the use and enjoyment of their property. This disruption may result from noise, dust, or additional traffic volume.

Mitigation and Protective Measures

Enbridge should address concerns expressed by residents, businesses, and institutions in an expeditious and courteous manner. Prior to construction, Enbridge should provide residents and businesses along the Preferred Route with a construction communication procedure and every reasonable effort should be made by Enbridge to address concerns and maintain good landowner relations.

Measures that reduce noise and dust on the effected properties, and requirements to replace or repair driveways and post-construction landscaping, and ornamental trees, should be established.

Should landowners express concerns during construction or operation of the pipeline, every effort should be made by Enbridge to address concerns and maintain landowner relations.

To minimize inconveniences brought on by excessive noise, all engines associated with construction equipment should be equipped with mufflers. Nuisance dust can be minimized by proper maintenance of road surfaces. Traveled surfaces should be kept moist during excessively dry and/or windy conditions by frequently applying a low energy water spray. Road surfaces should be cleared of debris as required by the Chief Inspector. Following standard traffic safety guidelines as recommended by the City of Thorold and the MTO can minimize occasional disruptions.

Public safety is a primary focus of Enbridge. Safety issues, both perceived and real, can be mitigated by implementing proven safety measures during construction, ensuring that the pipeline is constructed and operated in accordance with all applicable codes and regulations, and monitoring pipeline integrity once it is service.

According to the Technical Standards and Safety Authority (TSSA, 1998b) guidelines, a pipeline can be constructed within 20 m of a residence, depending on certain engineering factors. The pipeline will be constructed and operated safely, allowing mitigation of perceived risks by implementation of risk communication strategies during construction and operation.

6.3.4 Land Use

Potential Impacts

The Preferred Route traverses an urban area of the City of Thorold. Urban land use includes road allowance and industrial lands.

Routing of the proposed pipeline has minimized potential impacts to other land uses by locating the proposed pipeline within in road allowance to the greatest extent possible.

Short-term impacts associated with disturbance, disruption, or loss of use may occur during construction due to noise, dust, or additional traffic volumes. Residents and businesses may experience a temporary disruption in the enjoyment and use of their property during pipeline construction.

Temporary disruption of commercial and industrial activities may occur where the Preferred Route crosses entrances and exits to businesses.

Construction activity and construction crews may pose an undesirable presence during pipeline construction. Furthermore, increased traffic along municipal roads may increase potential for vehicle accidents. Residents may experience occasional inconveniences where local purchases and pipeline purchases are from the same retail outlet. A temporary increase in economic activity, particularly at local restaurants, can be expected during pipeline construction.

Mitigation and Protective Measures

While the Preferred Route generally avoids direct impacts on urban areas, it does travel close to residences and businesses. Dust, noise, or disruption related to construction can be expected to dissipate within 100 m of the construction area. Consequently, a 100 m distance was used as the environmental and socio-economic inventory boundary within which most features were identified.

Safety issues, both perceived and real, can be mitigated by implementing proven safety measures during construction, ensuring that the pipeline is constructed and operated in accordance with all applicable codes and regulations, and monitoring pipeline integrity once it is in service.

To minimize disruption, the preferred method of crossing commercial and industrial entrances and exits during pipeline installation is horizontal boring. In cases where this method is not suitable, “plugs” (such as metal plates) capable of supporting a loaded tractor-trailer should be installed over the trench to allow access. Residential laneways may be open cut provided that asphalt driveways are sawed rather than dug. Residential laneways that are excavated should be restored to their pre-construction condition. Access to and from residential homes and businesses must be maintained at all times. During trench excavation, steel plates should be available on-site in the event a homeowner or tenant requires access.

Traffic safety planning, public access barriers to construction sites, and other construction safety measures should be in place and minimized during construction. Signs indicating the presence of a buried pipeline should be placed at all road and watercourse crossings.

An Enbridge Chief Inspector or other designated representative will be available to assist in maintaining good relations throughout construction and operation of the proposed pipeline. Concerns expressed during construction by residents and businesses in the area of the Preferred Route should be addressed in an expeditious and courteous manner.

To minimize inconveniences brought on by excessive noise, all engines associated with construction vehicles should be equipped with mufflers. Where possible, noise levels arising from equipment should be below the maximum acceptable limits at the nearest residence as recognized by the MOE.

Construction activities that could create noise should be restricted to daylight hours and adhere to any local noise by-laws. If construction activities must be carried out which cause excessive noise outside of these time frames, adjacent residents and the appropriate municipality should be notified.

Occasional disruptions at construction access locations can be minimized by providing advance notice to local police (Thorold Police Service), posting construction signs to warn oncoming motorists of construction activity, assigning a traffic control duty officer to assist with truck entry and exit where possible, and providing proper training, safety attire and equipment to the traffic control officer.

Another potential effect on land use is the temporary removal of fences. Fences cut on, or adjacent to, the pipeline alignment should be repaired to their pre-construction condition when access is no longer required.

6.3.5 Waste Disposal and Potentially Contaminated Sites

Potential Impacts

There are no known registered active or inactive waste transfer or landfill sites within the Study Area (MOE, 1991).

Historical land use in the Study Area suggests that some of the lands crossed by the Preferred Route on Abitibi Consolidated Inc.'s property may contain contaminated soils. Potential for contaminated soil to exist along the alignment of the Preferred Route should be confirmed.

Mitigation and Protective Measures

To determine the potential to encounter contaminated soils during construction an assessment of soil and groundwater conditions along the alignment of the Preferred Route should be completed. The MOE *Guideline for Use at Contaminated Sites in Ontario* (1997) and supporting documentation should be used to determine sampling methods, criteria for contaminate levels, and rehabilitation (if required). If contaminate levels exceed MOE criteria for surface and subsurface soil for industrial/commercial land use for nonpotable groundwater conditions, work on the affected portion of the pipeline should cease immediately. Appropriate rehabilitation measures should be discussed with the MOE and carried out prior to resuming construction activities.

6.3.6 Heritage and Archaeological Features

Potential Impacts

D.R. Poulton & Associates Inc. ("DPA") conducted a Stage 1 Archaeological Assessment under Archaeological Consulting License #P053, issued by the Province of Ontario. The Stage 1 assessment consisted of background research to identify known or potential archaeological planning constraints within the Study Area. A variety of sources were consulted in the course of this work. These included a thorough review of published and unpublished reports on past

archaeological surveys and excavations, a review of the history of land-use in the area, and an examination of archaeological site inventories and archival materials.

It was indicated in this report that 60% of the Preferred Route will be placed in previously disturbed areas, and therefore is unlikely to retain potential for extant archaeological remains. The 800 m portion of the route that travels adjacent to the south side of Beaverdams Road is considered to have some potential for archaeological remains. DPA also expressed concern with regards to the lands where the excavated materials from the directional drilling operation will be placed. Recommendations were made by DPA to perform a Stage II Archaeological Assessment.

The full Archaeological Assessment can be found in **Appendix E.**

Mitigation and Protective Measures

Prior to construction, additional archival research and a Stage 2 Archaeological Assessment should be undertaken along the Preferred Route by a licensed archaeologist. The survey should be undertaken in accordance with the Ontario Ministry of Culture ("MOC") guidelines. The survey will serve to confirm the presence of significant archaeological resources subject to potential impact from the proposed pipeline. In addition, the Stage 2 assessment should determine the extent to which the inherent archaeological potential of the alignment has been degraded by previous disturbances. Recommendations for mitigation and protection, outlined in the Stage 2 report, should be implemented during construction.

If deeply buried cultural remains are encountered during construction, all activity should be suspended and the archaeological staff of the MOC should be notified immediately to determine an appropriate course of action. It is similarly recommended that if any human remains are encountered, John MacDonald, Heritage Planner, MOC (519-675-7742) and Michael D'Mello, the Registrar of the Cemeteries Section of the Ministry of Consumer and Business Services (416-326-8404).

6.3.7 Land Claims

Potential Impacts

INAC was contacted on June 12, 2007 to seek information regarding the status of lands within the Study Area. INAC replied to Stantec's letter request on July 11, 2007. The letter notified Stantec that INAC no longer responds to these types of letters by providing contact information for First Nations groups who may have interest in the project. They now ask that potentially interested First Nations groups are identified and notified by the proprietor of the project. Stantec followed up with this request by investigating if there are any First Nations interests in the Study Area.

An email with a map showing the Study Area was sent to INAC's Litigation Management and Resolution Branch on July 12, 2007, INAC's Comprehensive Claims Branch on July 13, 2007, and INAC's Specific Claims Branch on July 17, 2007. A response from INAC's Specific Claims Branch was received on July 19, 2007 indicating that there are no land claims in the Study Area

that they are aware of. A response from INAC's Comprehensive Claims Branch was received on July 23, 2007 indicating that there are no lands claims in the Study Area that they are aware of. A response from INAC's Litigation Management and Resolution Branch was received on July 30, 2007, indicating that their inventory does not include active litigation in the Study Area.

A fax was received from the Association of Iroquois and Allied Indians ("A.I.A.I.") on September 6, 2007 stating that they do not have any information to provide to us regarding site selection or technological alternatives and that the existence of land claims and other First Nation activities should be sought. This information has been collected; therefore no further action is required

Mitigation and Protective Measures

Since there are no known First Nations claims within the Study Area, no specific mitigation or protective measures have been developed.

6.3.8 Conservation Lands

Potential Impacts

The Preferred Route traverses areas under the jurisdiction of the NPCA. There are no Conservation Areas in the Study Area.

Mitigation and Protective Measures

Although the Preferred Route is located largely within road allowance, Enbridge should consult with the NPCA to identify specific concerns and potential mitigation measures to eliminate present and future problems. Concerns expressed during construction and operation of the proposed pipeline by the NPCA should be addressed in an expeditious and courteous manner.

6.4 PERMITS REQUIRED

Permits should be secured prior to construction of the pipeline. Permits may be required from federal and provincial levels of government.

7.0 Hydrostatic Testing

The required hydrostatic test is proposed to be completed for the complete pipeline. The required volume of water (approximately 212,000 L) may be obtained from either a municipal or natural source. It is recommended in this situation that Beaver Dams Creek be used as the source of water.

When the hydrostatic test is complete, the discharge water is released. This water can be discharged into a municipal drain, with the City of Thorold and the NPCA's approval, or a natural water source. This flow has the potential to impact downstream domestic users, as well as, fish, aquatic and waterfowl habitats. An uncontrolled discharge of water from the hydrostatic test could cause downstream flooding, erosion or sedimentation. Other potential effects associated with uncontrolled discharge include introduction of foreign aquatic organisms to a drainage basin and introduction of hazardous materials or pollutants to soils or bodies of water. Careless refueling or failure of pumps adjacent to watercourses could result in watercourse contamination. In addition, the high pressures associated with testing could potentially endanger the general public or construction personnel in the event of line failure.

Nearby residents may experience temporary inconveniences related to noise associated with the operation of pumps utilized to fill the pipeline with test water, as well, lighting may inconvenience residents if pumping and testing continues into the night.

A Permit to Take Water from the MOE should be obtained should water be withdrawn from a natural source and the volume exceeds 50,000 L/day. Prior to the withdrawal of water from a municipal source, the City of Thorold should be contacted to confirm the maximum rate of withdrawal.

Temporary lighting should be turned on at dusk and extinguished at dawn. Lighting should be directed towards the work site but away from the direction of any nearby residences. To reduce noise levels all pumps should be properly muffled.

The MOE and the NPCA should be consulted to determine the discharge method of the hydrostatic test water. To reduce the potential for erosion and scouring at dewatering points, appropriate energy dissipation techniques should be utilized. At all dewatering points, discharge piping should be free of leaks and should be properly anchored to prevent bouncing or snaking during surging. The rate of discharge should be monitored to ensure no erosion or flooding occurs. If energy dissipation measures are found to be inadequate, the rate of dewatering should be reduced or ceased until satisfactory mitigation measures are in place.

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8.0 Cumulative Effects

Policy makers are increasingly seeing Cumulative Effects Assessment ("CEA") as representing a *best practice* for effects assessment (IAIA, 1999). Consequently, the recognition of CEA as a best practice is now reflected in many provincial regulatory documents. With regard to development of hydrocarbon pipelines in Ontario, this best practice principle is reflected in the *OEB's Guidelines (2003)*, which notes that cumulative effects of pipeline construction should be identified and discussed in the EA as an integral part of the assessment.

Building upon the intent of the *OEB Guidelines (2003)*, the OEB clarified the assessment of cumulative effects associated with a new pipeline system to serve proposed generation facilities (RP-2005-0022 and RP-2005-0478). The OEB (RP-2005-0022) specified that only those effects that are additive or interact with the effects that have already been identified as resulting from the pipeline construction are to be considered under cumulative effects. If the environmental impacts are compounded, it will be necessary to determine whether these effects warrant mitigation measures such as alterations in routing, timing of construction or other measures that can address the cumulative impacts.

In OEB Decision RP-2005-0478 the Board clarified that it has no inherent jurisdiction over environmental matters relating to the construction of new generation or electrical transmission facilities.

This CEA has been prepared with consideration of the above noted decision as well as the *OEB's Guidelines (2003)*.

8.1 METHODOLOGY

This CEA describes the potential cumulative effects of pipeline construction in combination with the existing environment and the effects of unrelated existing or approved projects that have a high likelihood of proceeding. Cumulative effects include the temporal and spatial accumulations of change that occur within an area or system due to past, present, and future activities. Change can accumulate within systems in either an additive (*i.e.*, cumulative) or interactive (*i.e.*, synergistic) manner.

In terms of CEA methodology, it is generally accepted that due to the uncertainty and complexity of cumulative effects, no standard method of assessment exists. There are two distinct approaches to CEA: i) analytical and ii) planning. Analytical approaches focus on information generation using evaluation tools such as research design and scientific analysis, whereas planning approaches extend beyond analysis, applying planning principles and procedures to set values and address multiple objectives.

Selection of an appropriate approach and evaluation tools depends upon the objectives and issues surrounding the CEA. For construction of the proposed pipeline, the OEB suggests the

use of a planning based approach. By applying the best practice principles of avoidance, minimization, and compensation to limit project-specific effects (**Chapters 6 and 7**), potential adverse effects on socio-economic features and the natural environment have been greatly minimized prior to accounting for the effects of other unrelated projects (*i.e.*, cumulative effects).

Specifically, this CEA methodology is designed to evaluate and manage the additive and interactive effects from the following sources:

- Existing infrastructure, facilities, and activities as determined from available data sets;
- The proposed pipeline and associated infrastructure as described in **Section 1.1** of this ER; and,
- Future activities where the undertaking will proceed, or has a high probability of proceeding.

This planning approach facilitates a landscape level analysis that supplements the regional analysis discussed in **Appendix C2**, and is consistent with recommendations to evaluate potential cumulative effects at various levels. This level of analysis allows the CEA to focus on the issues that are pertinent to the project, and to avoid the generation and evaluation of information that is of little diagnostic value.

8.2 STUDY BOUNDARIES

8.2.1 Spatial

The spatial study boundaries for the CEA were extended beyond the Preferred Route alignment. To make conservative assumptions about the magnitude and probability of possible effects, the original Study Area boundary that was used for the ER was also used for the CEA. The Study Area boundary is beyond the *zone of influence* of pipeline construction and operation activities (*e.g.*, dust and noise), and consequently, the identified effects will diminish to background levels within the Study Area. The Study Area is also considered conservative in terms of managing both effects and risks.

8.2.2 Temporal

The temporal boundaries for this CEA reflect the nature and timing of pipeline activities and the availability of information surrounding future projects that have a high probability of proceeding. The project schedule identifies three key milestone activities; including, i) ER and technical design - 2008; ii) construction - 2009; and, iii) operation - 2009 through 2059. Fifty years of pipeline operation is used as an assumption for the purpose of this CEA, although the pipeline may be operational beyond fifty years. Based upon these milestone activities, three time periods were selected for evaluation in the CEA: 2008, 2009, and 2013.

Existing conditions were considered as those that existed and were identified during the EA process (*i.e.*, 2008). In some cases, published data were not current to 2008 and thus the assessment relied on a combination of best available information, public input, and field

investigations. The year 2009, covering post construction clean-up activities, was selected to represent the construction and reclamation period, and the year 2013 was selected to represent the operation and maintenance period. Forecasting beyond 2013 increases the uncertainty in predicting whether projects will proceed, and the effects associated with these unrelated projects.

Although rare in occurrence, it is plausible that accidental or emergency events may arise due to an unforeseen chain of events during the pipeline's operational life. As a result of the rarity and magnitude of such events, they have not been assessed here, as they are extreme in nature when compared to the effects of normal maintenance activities, and require separate response plans. Pipeline retirement is another event that is beyond the temporal boundaries of this CEA and will not be assessed here.

8.3 ANALYSIS OF CUMULATIVE EFFECTS

Section 6 of this ER considered the potential effects of construction and operation of the pipeline on specific features and conditions, and proposed mitigation measures to avoid or reduce the potential for impact. This cumulative effects assessment evaluates the significance of residual effects (after mitigation) of the construction and maintenance of the pipeline along with the effects of unrelated projects.

A number of agencies were contacted to determine the nature of any unrelated projects planned in the Study Area that are in the final stages of implementation or approval. The agencies and companies contacted include:

- City of Thorold;
- Regional Municipality of Niagara;
- Niagara Peninsula Conservation Authority;
- Rolling Meadows Developments; and,
- Enbridge Gas Distribution Inc.

Construction activities associated with development of the proposed pipeline and its associated facilities, between 2008 and 2009, will include:

- Field investigations as required along the Preferred Route (winter 2008 through spring 2009);
- Mainline Construction - pipe installation, tie-ins, and commissioning (summer and fall 2009); and,
- Post construction clean-up activities (fall 2009).

8.3.1 Year 2008: Baseline Conditions

The Study Area comprises a mix of existing land uses including agricultural (cash crop fields), commercial (service stations, hotels, convenience stores), industrial (paper recycling /manufacturing, concrete plant), municipal services (fire station, school) and residential uses (Community of Thorold South and rural residences). Significant socio-economic features include:

- Residences along the Preferred Route on Thorold Townline Road (1 - rural), Beaverdams Road (4 – rural) and Niagara Falls Road (Urban area in Thorold South);
- Ontario Public School (District School Board of Niagara);
- Agricultural lands;
- Welland Canal;
- Enbridge Gas Distribution pipelines and facilities;
- TransCanada PipeLines natural gas transmission corridor;
- Hydro One Electrical Transmission corridors;
- Canadian Nation Railway;
- Abitibi Consolidated Inc., Paper Recycling Mill;
- Georgia Pacific Paper Mill; and,
- Local businesses.

Enbridge and TransCanada PipeLines both operate and maintain networks of natural gas pipelines throughout the Study Area. The existing pipeline system has been operational for several years, and residual impacts on vegetation outside of pipeline easements no longer exist. Detailed environmental and socio-economic conditions within the Study Area are provided in **Appendix C2**.

The Study Area falls within the jurisdiction of the NPCA and is subject to the NPCA Regulations. The Preferred Route crosses Beaver Dams Creek twice. The Study Area is located within the watershed region known as the Lake Ontario Waterfront. The Study Area is within the Great Lakes-St. Lawrence forest region and contains deciduous and coniferous species in the few areas where trees have the ability to grow.

8.3.2 Year 2009: Construction

Based on information provided by the agencies and companies contacted, there are several projects, unrelated to the construction of this proposed pipeline, which have been identified as having a high probability of proceeding concurrently with construction of this proposed pipeline.

Construction of Thorold CoGen L.P. Project

Thorold CoGen L.P. is planning to construct a natural gas co-generation plant at the site of Abitibi Consolidated Inc.'s Pulp and Paper Mill in Thorold South commencing in 2008. Local residents may experience a larger than normal amount of construction traffic on local streets for the duration of the construction phase. Assessments of the potential environmental and socio-economic impacts associated with the construction of this plant are outside the scope of this study.

Sanitary Sewer Replacement on Allanburg Road

The City of Thorold is planning to replace the sanitary sewer line within the road allowance of Allanburg Road between Davis Road (Highway 58) and Niagara Falls Road in Thorold South. The project is tentatively scheduled for 2008, with potential for it to be delayed. Likely, this project will potentially involve a temporary increase in traffic on local streets and temporary traffic stoppages.

Regional Trunk Watermain on Davis Road (Highway 58) and Allanburg Road

The Region of Niagara is planning to construct a new Trunk Watermain along Davis Road (Highway 58) and Allanburg Road between Lundy's Lane (Highway 20) and the water tower just south of Niagara Falls Road. This project is tentatively scheduled for construction in 2008-2009. This project will potentially involve a temporary increase in traffic on local streets and temporary traffic stoppages.

Ground Breaking at Rolling Meadows Development

Rolling Meadows Developments is planning to construct a development in the south eastern half of the Study Area, east of Davis Road (Highway 58). The project is scheduled for groundbreaking in 2008. Work will begin with grades and infrastructure development and progress to house construction in that year. The plan shows 3500 residential lots and approximately 150 acres of employment lands. Employment lands include commercial, highway, light industrial, and heavy industrial land-use designations. Construction is expected to continue for several years because there is no completion date requirement for this development.

During the construction of this proposed development, traffic on local streets and highways is anticipated to increase. Demand for building materials and general supplies are also expected to increase for the duration of construction. Local businesses may experience an increase in sales resulting from this development.

Discussion

To consider the additive and interactive effects at their maximum intensity, it is assumed that construction of the Thorold CoGen L.P. Project, the sanitary sewer replacement (if delayed), the trunk watermain (if delayed), and the Rolling Meadows Development would occur concurrently. Presumably, this approach yields a worst case scenario of the potential cumulative effects. An example of a potential cumulative effect could be increased noise and dust resulting from the interaction of vehicular traffic, construction vehicles using Allanburg Road to transport materials and machinery to the Thorold CoGen L.P. construction site, the sewer and water main projects, the residential development, and this proposed pipeline construction project.

During the construction of this proposed pipeline, vehicular traffic on local streets and proximal highways is anticipated to increase with the importation of materials and machinery and the normal movement of construction related vehicles. Similarly, local vehicular traffic is anticipated to increase as a result of the other unrelated projects. The cumulative effects of these projects on the local traffic patterns are considered to be low.

Largely, the significant effects associated with construction of the proposed pipeline have been minimized through the route selection process and the recommended mitigation measures. By paralleling existing road allowance restrictions on urban expansion and disruption to agricultural lands have been minimized. By limiting the project-specific effects, the potential interaction of effects from construction of the proposed pipeline with other unrelated projects has been considerably reduced.

The majority of impacts associated with construction of the proposed pipeline and interaction with the construction of other projects are considered to have no cumulative significance. Noise and dust disturbances are localized and can be largely dissipated through mitigation. Once construction is complete, noise and dust will no longer be issues relating to these projects.

Vegetation removal, including loss of terrestrial habitat, is also considered to have no cumulative significance since no fragmentation of woodlots will result from the proposed pipeline. The effects of any vegetation impacts, such as effects upon roadside screening, will be minimized through careful pipeline alignment and implementation of Enbridge's Tree Replanting Program.

No cumulative effects are anticipated concerning archaeological resources because none are anticipated to be associated with the proposed pipeline, although a Stage 2 Archaeological Assessment will confirm this. The approval of the other proposed developments are contingent on archaeological assessments uncovering no resources.

Physical and chemical transport, on groundwater, surface water, and aquatic organisms, has not been included in this analysis because of the hydrologically isolated nature of the unrelated projects and the proven success of the mitigation measures to be implemented during pipeline construction.

The developments explained above will increase the impervious surface area within the Study Area thereby increasing runoff from these areas, which may represent a transport mechanism for the movement of both physical (*e.g.*, sediment) and chemical (*e.g.*, grease and pesticides) contaminants. In the case of groundwater, the simultaneous construction of the projects may result in a short to medium term disturbance to this feature, but recovery to baseline conditions is ultimately expected since the projects are spatially dispersed.

The Preferred Route crosses Beaver Dams Creek in two locations. Surface waters are not expected to experience any disturbance due to the extensive mitigation measures outlined in this report to protect water bodies during pipeline construction.

Many of the labour requirements and project supplies associated with pipeline construction are unique to the pipeline construction industry and, typically, are not available at a local or regional scale. Accordingly, construction of the proposed pipeline is anticipated to have cumulative effects of very low significance on the local economy.

Another cumulative effect of low significance is the impact of multiple construction projects, such as the Thorold CoGen L.P. Project. For example, construction of these developments will result in a short-term increase in demand, both locally and regionally, for labour and project supplies such as food, accommodation, steel, gravel, and equipment. All projects, including the proposed pipeline, are anticipated to have long-term effects on the economy through their tax contribution to local governments, with limited demand on government services and resources, and their periodic demand for supplies and services.

8.3.3 Year 2013: Maintenance

The pipeline construction is planned for completion in 2009; therefore, pipeline related activities will be limited to the establishment and initiation of routine maintenance efforts. In addition to pipeline maintenance activities, there are several potential projects that may be ongoing or take place within the Study Area in the future. These potential projects include:

Construction of Thorold CoGen L.P. Project on the site of Abitibi Consolidated Inc.

Construction is expected to be complete by the third quarter of 2009. Since this proposed pipeline project is required for the cogeneration project, no direct effects from the cogeneration plant are expected.

Construction of Rolling Meadows Development

Construction of the Rolling Meadows Development is anticipated to be ongoing for several years. Runoff from developments may represent a transport mechanism for the movement of both physical (*e.g.*, sediment) and chemical (*e.g.*, grease and pesticides) contaminants. The construction of the proposed pipeline is planned to be completed in 2009. Once construction is complete no direct effects from the development and relating to ongoing maintenance of the pipeline are expected.

Regional Trunk Watermain on Davis Road (Highway 58) and Allanburg Road

The Region of Niagara is planning to construct a new Trunk Watermain along Davis Road (Highway 58) and Allanburg Road between Lundy's Lane (Highway 20) and the water tower just south of Niagara Falls Road. This project is tentatively scheduled for construction in 2008-2009. As previously discussed, the construction of the proposed pipeline is planned to be completed in 2009 and once construction is complete no direct effects from the construction of the Trunk Watermain and relating to ongoing maintenance of the pipeline are expected.

Discussion

Once construction is complete, at the end of 2009, the proposed pipeline will be primarily located adjacent to existing roadways and utility corridors. It will not place significant restrictions, outside of the easements, on the commercial and residential growth of Thorold. At that time, activities related to the proposed pipeline will include maintaining vegetation growth on easements that are not leased back and other routine operation and maintenance activities.

The road allowance adjacent to the proposed pipeline will experience limited vegetation removal in 2009 to facilitate construction. Since the proposed pipeline will be constructed mainly within road allowance, no woodlots will be fragmented. Any replanting of trees outside the corridor cleared to accommodate pipeline construction will not be re-established to baseline conditions by 2013.

Potential cumulative effects to terrestrial fauna will diminish between 2009 and 2013, since re-establishment of trees will be underway and dust, noise, and other disturbances will be limited to very infrequent occurrences associated with maintenance activities.

Potential cumulative effects to aquatic fauna are expected to be negligible because Beaver Dams Creek will be directionally drilled at the crossing along Thorold Townline Road and at the crossing of Davis Road (Highway 58). Under these conditions, cumulative effects should dissipate to the 2008 baseline conditions.

Considered collectively, the above cumulative effects are expected to be low in magnitude by 2013. Consequently, no significant cumulative effects are predicted based upon the available data and conservative assumptions made.

Effects to the economy from the proposed project and the other unrelated projects might result in cumulative effects of moderate significance. Each project will provide local governments with an additional tax base with limited demand on government services and resources. An increase to local economies, based on periodic demand for supplies and services, will also be experienced with each project.

8.4 SUMMARY

The potential cumulative effects of construction and maintenance of the proposed pipeline were assessed by considering several other construction projects that have a high probability of occurring at the same time and projects that may continue into the future. The Study Area boundary was used to assess the potential for additive and interactive effects of the proposed pipeline and the unrelated projects on environmental and socio-economic features. By paralleling the existing road allowance, and implementing site-specific mitigation measures, the potential for cumulative effects between this proposed pipeline and other planned construction projects is considered to be insignificant.

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9.0 Monitoring and Contingency Plans

9.1 MONITORING

The primary objective of compliance and effects monitoring is to ensure mitigation measures are effectively implemented and to measure the effects of activities associated with development on environmental and socio-economic features. Ultimately, the knowledge gained from monitoring is used to avoid or minimize problems during subsequent construction projects.

Previous pipeline construction experience and review of post-construction monitoring reports from other pipeline projects indicates that effects from pipeline construction are, for the most part, temporary. The mitigation measures to reduce and avoid effects are well known and have been shown to be effective. With this in mind, Enbridge should adhere to the following general monitoring practices:

- Trained staff should be on-site to monitor construction and should be responsible for ensuring that the mitigation and monitoring requirements within this report are executed effectively. Enbridge should implement an orientation program for inspectors and contractor staff to provide information regarding Enbridge's environmental program and commitments, as well as Safety Education measures;
- Mitigation recommendations made in this report should be incorporated into the contract specifications;
- Contact between landowners and company liaison should be maintained to ensure that the concerns of landowners are quickly addressed; and,
- An inspection of the route should be conducted approximately one and two years after construction to determine whether any areas require further rehabilitation.

9.1.1 Watercourse Crossing

An Environmental Inspector should be on-site during watercourse crossings to ensure adherence to specifications and site plans. In particular, the Environmental Inspector should ensure that pre-construction preparation is complete prior to commencement of any work and that the floodplain conditions are restored to preconstruction conditions. The Environmental Inspector should be responsible for monitoring weather forecasts prior to the crossing.

Follow-up inspections, one year after construction following spring run-off, should be completed to review effectiveness of the bank and slope re-vegetation program, to check bank and slope stability and to ensure floodplain drainage has been maintained. Appropriate remediation measures should be completed as necessary, and additional follow-up monitoring should be conducted.

9.1.2 Municipal Roads

Municipal roads affected by pipeline construction should be restored to their pre-construction conditions to the satisfaction of municipal engineers. Road Superintendents should be given an opportunity to inspect any repairs or modifications. Once re-established, the crossing location of roads should be monitored following heavy rain events and a year after construction following spring runoff, to ensure no road subsidence or major rutting has occurred and that the drainage system is functioning properly.

9.1.3 Vegetation

During pre-construction clearing and construction, the Environmental Inspector should ensure that the contractor respects the limit of clearing and does not damage adjacent vegetation. The Inspector should identify any trees that pose a potential hazard and that might require removal.

Establishment of vegetative cover should be monitored. Sediment control fencing and other protective measures should be retained in place until cover is fully established.

A year following construction, new woodlot edges should be inspected for any potential hazard trees. Planted trees should also be inspected for survival; in areas of severe dieback or in areas important environmental functions (*e.g.* riparian or slope cover), dead and diseased trees should be replaced. Enbridge's inspection program should include annual monitoring until a "free-to-grow" condition is reached.

9.1.4 Landowner and Community Relations Program

Social effects should be monitored through a communications program. As part of this program, all residents and absentee landowners affected by construction should be notified in advance of construction activities in their area. The notification should indicate the name and contact number of Enbridge's Project Manager and should invite the resident or landowner to contact the Chief Inspector should concerns arise.

The Chief Inspector should file a report detailing time and date of any call, the nature of the concern, the corrective action taken where appropriate, and the time and date of follow-up contact. The Project Manager should establish contact with the local police force indicating the nature of the work to be undertaken, traffic management plans, and the size and origins of the workforce. In this manner, any traffic and security concerns will be brought directly to the attention of Enbridge's Project Manager for corrective action, and a report will be filed.

Following completion of construction, Enbridge should contact all residents along the easement to continue ongoing communications where necessary. During the first two years, particular attention should be paid to monitoring and documenting any effects associated with construction and operation of the pipeline.

9.2 CONTINGENCY

Contingency planning is necessary to prevent a delayed or ineffective response to unexpected events or conditions that may occur during construction of the proposed pipeline. An essential element of contingency planning is the preparation of emergency plans and procedures that can be activated if unexpected events occur. The absence of contingency plans may result in short or long term environmental effects and possibly threaten public safety.

Unexpected events requiring contingency planning that may occur during construction of any pipeline include: extreme climatic events, changes to the construction schedule and human error. Although these problems are not anticipated to occur during construction, Enbridge and the pipeline contractor should be prepared to take appropriate action quickly. The Environmental Inspector should identify situations where contingency plans should be implemented. The Contractor should also know when to immediately cease operations, for example in the case of watercourse siltation. All staff should be made aware of and know how to implement contingency emergency response measures.

Watercourse Siltation

Even with appropriately installed erosion and siltation control measures, extreme runoff events could result in the collapse of sediment control fencing, slope or trench failures and other problems which could lead to siltation of watercourses. If siltation to a watercourse occurs, construction should cease immediately until the situation is rectified. Immediate action should be taken to install temporary measures to contain the extent of erosion and siltation as quickly as possible. Temporary protection measures such as sediment control fencing, sand bags, riprap, logs or planks should be utilized.

When site conditions permit, permanent protection measures should be installed on erodable surfaces including hydroseeding, erosion control matting, rip-rap, and willow staking. Additional layers of sediment control fencing or a more sturdy type of base fencing may be appropriate in erosion prone areas until vegetative cover is established.

If siltation has occurred, due to a construction related activity (*e.g.* dewatering), the activity should be halted immediately until the situation is rectified. A supply of emergency materials (*i.e.,* sediment control fencing, rip rap, shovels *etc.*) should be available on-site. The Contractor should be fully prepared to respond quickly to siltation events.

Vegetation Damage

Potential for damage to vegetation situated adjacent to Preferred Route increases during wet soil conditions. In the event of flooding and/or siltation of lands adjacent to the right-of-way, small swales should be hand dug to direct water away from the pipeline easement. In areas where topography will not allow natural drainage, it may be necessary to use pumps to prevent prolonged standing water.

If the Contractor damages woody vegetation beyond the identified limit of clearing, the Environmental Inspector should assess the damage and recommend appropriate measures. The Contractor should be shown the damage to ensure the problem does not reoccur.

9.2.1 Construction Delays

Delays in the construction schedule may be necessary due to field conditions, work progress or land acquisition issues. To minimize the impact of a construction delay, and if field conditions permit, equipment should be moved and construction should be resumed in a more suitable location. Once field conditions permit, construction should commence or resume at problem areas.

9.2.2 Accidental Spills

During construction, an accidental spill of construction fluids may occur. Fluids may include fuels, lubricating oil and grease, as well as hydraulic fluids. Upon release of a hydrocarbon-based construction fluid, Enbridge should immediately determine the magnitude and extent of the spill and rapidly take measures to contain it. Release of sediment should also be treated as a potential spill depending on the magnitude and extent. All spills should be immediately reported to the Chief Inspector, Environmental Inspector and Enbridge's environmental department. Where an adverse effect may occur as a result of a spill, the MOE Spills Action Center should be notified at 1-800-268-6060.

A Spills Response Plan should be developed by the Contractor, reviewed with staff and posted in site trailers. Appropriate spill containment apparatus and absorbent materials should be available on-site, especially near water or sensitive wells. Staff should be trained in the use of spill containment equipment and materials.

9.2.3 Unexpected Finds

Heritage and Archaeological

Every reasonable effort should be made to identify archaeological or heritage resources along the Preferred Route prior to construction; however, it is possible that such resources could be encountered along the route during construction. Should buried archaeological material and/or human remains be encountered during construction, construction in the vicinity should cease immediately. The MOC and an archaeologist licensed in the Province of Ontario should be notified immediately. An appropriate site-specific response plan should then be employed following further investigation of the specific find.

Contaminated Sites

Efforts have been made to identify potential sites in the vicinity of the Preferred Route through a review of landfill records and contact with MOE. Through circulation of the ER, the MOE will have further opportunities to review the route in the event that other unknown areas of potential contamination may exist.

Regardless, the potential still exists for unknown material to be encountered during construction. If evidence of potential contamination is found, such as buried tanks, drums, oil residue or gaseous odour, construction should cease until the source of the material is further investigated. MOE should be notified if the source is not immediately obvious or containable in the opinion of the Environmental Inspector.

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10.0 Conclusion

This ER report describes the process to select an appropriate route for the proposed Enbridge pipeline, and identifies and addresses potential impacts associated with the construction and operation of the proposed pipeline. Public input was integral to finalizing the alternative Preferred Route and developing mitigation measures.

The alternative routes were selected based on an evaluation of the environmental and socio-economic features of the Study Area and were presented at the First Public Information Session. A Preliminary Preferred Route was selected and presented at the Second Public Information Session. Input from the public was received from both Public Information Sessions and was used to confirm the original Preferred Route.

The original Preferred Route was presented to Enbridge in August 2007 for their review and approval. After considering public input, Enbridge reviewed the original Preferred Route and considered an alternative Preferred Route. A Third Public Information Session was held to provide an opportunity for agencies, First Nations, stakeholders, landowners and the general public to review the alternative Preferred Route. After conducting a windshield survey, further examination of previously collected materials, and considering public input, Stantec has determined that the alternative Preferred Route proposed by Enbridge is an environmentally and socio-economically acceptable route and that its alignment would become the Preferred Route.

In the opinion of Stantec, the recommended comprehensive program of mitigation, restoration, inspection, monitoring and contingency measures addresses all of the concerns raised during the public consultation process, as well as impacts, including potential cumulative effects, identified during a detailed review of the Preferred Route (**Section 6**).

No significant adverse effects on environmental and socio-economic features are likely to occur as a result of the Enbridge pipeline project, with the implementation of the recommended mitigation and related programs. Furthermore, the mitigation measures presented are consistent with the construction of a 12-inch (305 mm) diameter pipeline.

Monitoring and contingency measures are important components of the mitigation program to ensure mitigation measures have been effective in both the short and long term. In addition, knowledge gained throughout this process can be used to better identify and prevent and/or rectify problems in the future.

The mitigation, inspection and monitoring, recommended additional studies and contingency programs outlined in **Sections 6, 7, and 9**, supported by Enbridge's construction specifications, practices and policies, should form part of the contract specifications. Pre-construction meetings and liaison between Enbridge staff and the contractor, Environmental Inspector(s) and landowners and agencies, and/or their representatives, should be conducted to ensure full

understanding of responsibilities, importance of the various environmental issues and details regarding the measures proposed to address them. With the implementation of the recommended mitigation and related programs in conjunction with on-going landowner and agency communication and consultation, the adverse environmental effects of the proposed pipeline are not likely to be significant.

STANTEC CONSULTING LTD

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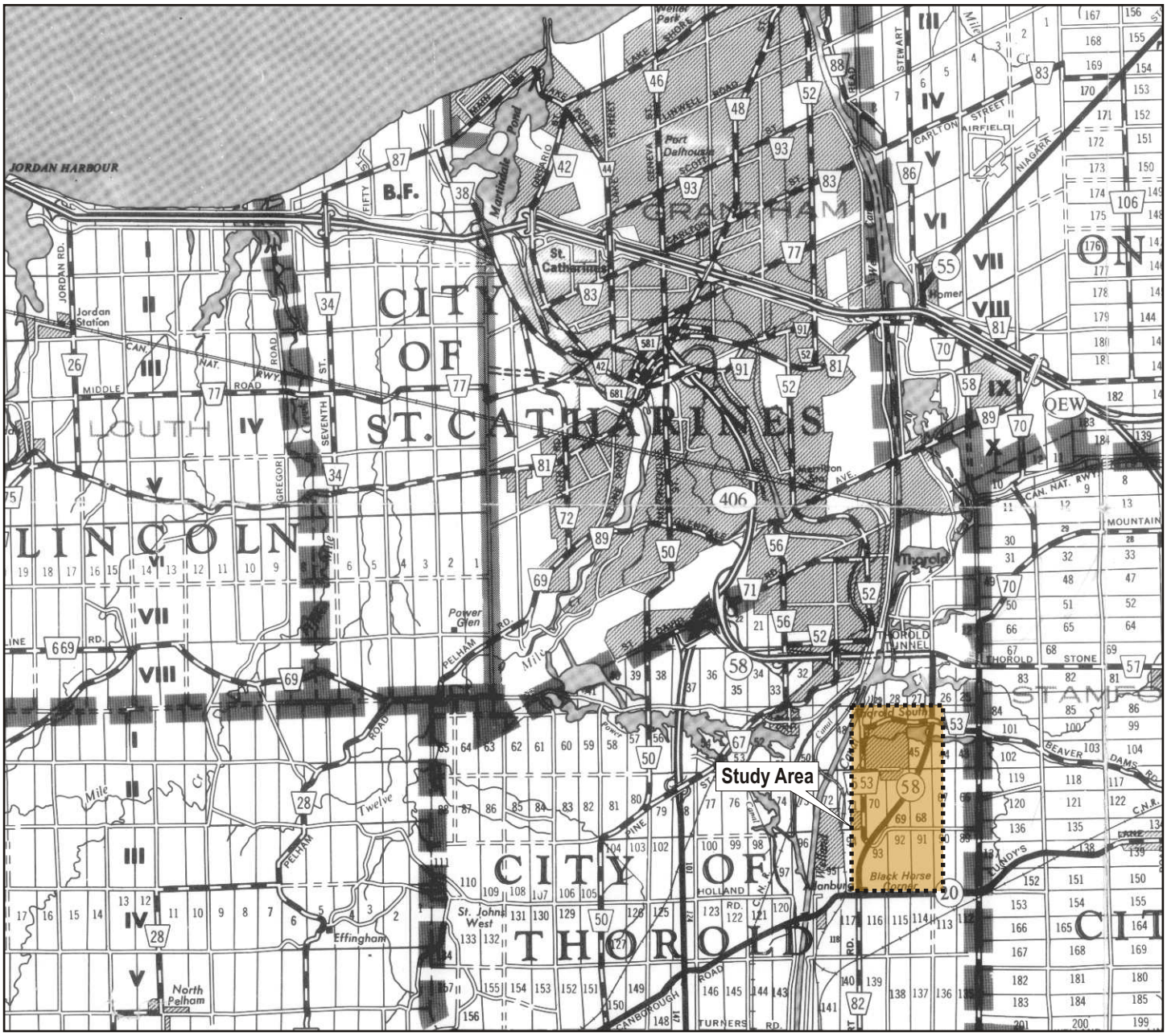
Technical Standards and Safety Authority (TSSA). 1998b. Guidelines for Locating New Oil and Gas Pipeline Facilities. Reviewed October 2005. Available: http://www.tssa.org/corporate/corporateResource.asp.

Appendix A

Report Figures



FILENAME: W:\active\60960284\graphics\Corel\60960284_01.cdr

Source: Ontario Ministry of Transportation and Communications, 1981.

N
W E
S

0 1 2 3 4 Kilometres

Scale 1:100,000

INDEX MAP OF SOUTHERN ONTARIO

Stantec

PREPARED FOR:

ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED THOROLD COGEN L.P.

FIGURE NO.

A-1

TITLE

STUDY AREA LOCATION

Initiated: March 16, 2007
Revised: April, 2008

File: W:\active\60960284\graphics\GIS\MXD\60960284_08.mxd

Source: Google Earth, 2007.

Routes
1 = A + D + K
2 = A + C + E + H + J + K
3 = B + E + H + J + K
4 = G + F + H + J + K
5 = G + I + J + K

Study Area Boundary
Potential Start Point
Termination Point
Existing Hydro One Corridor
Existing Pipeline Corridor

Route Segments
A
B
C
D
E
F
G
H
I
J
K

* Preliminary Preferred Route = G+F+H+J+K

0 100 200 300 400 Meters

1:20,000

Stantec

PREPARED FOR:
ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

FIGURE NO. A-2

PRELIMINARY PREFERRED ROUTE AND ALTERNATIVE ROUTES

Initiated: February, 2007
Revised: April, 2008

File: W:\active\60960284\graphics\GIS\MXD\60960284_07.mxd

Source: Google Earth, 2007.

Study Area Boundary

Preferred Route

Termination Point

Start Point

N

W E

S

Stantec

0 100 200 300 400

Meters

1:20,000

PREPARED FOR:

ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

FIGURE NO. A-3

ORIGINAL PREFERRED ROUTE

Initiated: February, 2007

Revised: April, 2008

File: W:\active\60960284\graphics\GIS\MXD\60960284_09.mxd

Source: Google Earth, 2007.

Study Area Boundary

Alternative Preferred Route

Start Point

Termination Point

N
W
E
S

0 100 200 300 400
Meters

1:20,000

Stantec

PREPARED FOR:

ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

FIGURE NO. A-4

PREFERRED ROUTE

Initiated: March, 2008
Revised: April, 2008

Appendix B

Public Consultation

Appendix B1

Summary of Stakeholder Communication

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response
Jim Bradley, MPP	Letter	05/11/07	• Informed Stantec that he would be unable to attend Public Information Session but that any printed material could be forwarded to his constituency office	Email	07/31/07	• Forwarded newsletter from the First and Second Public Information Session
Indian and Northern Affairs Canada – Ontario Region	Email	05/11/07	• Notification of new process of determining Aboriginal interest in projects • Suggested contacting INAC's Litigation Management and Resolution Branch, Comprehensive Claims Branch and Specific Claims Branch to determine if there are any First Nation's claims within the Study Area			• No response required
Ontario Realty Corporation	Letter	05/11/07	• Notified Stantec of potential negative impacts to ORC Tenants and Lands			• No response required
City of Thorold	Letter	05/18/07	• Notification that Notice of Commencement was received			• No response required
Rick Dykstra, MP	Email	05/24/07	• Notification that the MP office did not have any concerns regarding this Project and no phone calls have been received by them in regards to the Project • Inquired about results of public meeting	Email with letter attachment	07/31/07	• Was informed of comments received at the First Public Information Session and that there were no issues that they should be aware of
Ministry of Natural Resources	Email	06/01/07	• Provided information regarding fish habitat and the existence of wooded areas that are larger than 10 ha in size, and suggest to perform flora/fauna surveys before vegetation clearing			• No response required

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response
City of Thorold	Letter	06/21/07	• Notified Stantec that the Notice of Commencement correspondence sent by Stantec was forwarded to Tom Doherty, Director of Operations and Adele Arbour, Director of Planning and Building Services			• No response required
City of Thorold	Letter	07/03/07	• Notification that they are in support of the project • Notification of residential development proposal within Study Area and requested detailed plans of any section of pipeline that will utilize the road allowance			• No response required
City of Niagara Falls	Letter	07/12/07	• Notification that the alternate routes, including the Preliminary Preferred Route, is outside the municipal boundaries of Niagara Falls			• No response required
Indian and Northern Affairs Canada – Ontario Region	Email	07/11/07	• Notification that although Preliminary Preferred Route has been selected, their position has not changed			• No response required
Regional Municipality of Niagara – Public Works Department	Email	07/12/07	• Notification that letter was received and that response will be following			• No response required
Stantec	Email	07/12/07	• Sent INAC's Litigation Management and Resolutions Branch an inquiry about any claims within the Study Area that they are aware of	Email	07/30/07	• No claims within the Study Area that they are aware of
Stantec	Email	07/13/07	• Sent INAC's Comprehensive Claims Branch an inquiry about any claims within the Study Area that they are aware of	Email with letter attachment	07/23/07	• No claims within the Study Area that they are aware of

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response
Stantec	Email	07/17/07	• Sent INAC's Specific Claims Branch an inquiry about any claims within the Study Area that they are aware of	Email	07/19/07	• No claims within the Study Area that they are aware of
Ministry of Natural Resources	Letter	08/03/07	• Provided information regarding watercourses, wetlands, woodlots, and rare or threatened species within the Study Area			• No response required
Association of Iroquios and Allied Indians	Fax	09/06/07	• Stated that they do not have any information to provide to us regarding site selection or technological alternatives • Stated that the existence of land claims and other First Nation activities should be sought			• No response required
Ministry of Natural Resources	Letter	03/17/08	• Stated that there is no new information since their last response on August 2, 2008 • Stated that of the two proposed routes, the alternative Preferred Route would probably have the least impact since it follows existing road allowances			• No Response required
Niagara Region	Email	03/18/08	• Advised Stantec about the trunk watermain that they plan to tender and commence construction of • Wishes to be added to the stakeholder contact list • Would like to review an engineering drawing to determine potential impacts of this project on the trunk watermain			• No response required
City of Thorold	Letter	03/19/2008	• Stated that the Thorold City Council referred correspondence with respect to this project to Tom Doherty			• No response required

APPENDIX B1 - SUMMARY OF STAKEHOLDER COMMUNICATION

Stakeholder	Type of Correspondence	Date	Issue or Concern	Type of Correspondence	Date	Response
Ministry of the Environment	Letter	03/19/2008	• Commented that due to the closer proximity of the route to Beaverdams Creek, all accepted measures should be taken to ensure this surface water is protected from deleterious materials			• No response required
City of Thorold	Email	03/20/2008	• Stated that they have no objections to the Alternative Preferred Route • Will require additional details with respect to specific locations within municipal rights-of-ways once they have been established • Stated that the bridge on Niagara Falls Road just west of Hwy 58 is owned by Ontario Power Generation			• No response required
Niagara Peninsula Conservation Authority	Letter	03/25/08	• Stated that they have no objections to the alternative Preferred Route			• No response required
City of Niagara Falls	Letter	03/31/08	• Notification that the alternative Preferred Route is within the municipal boundaries of Niagara Falls • Stated which land uses will be affected and noted that these designations permit essential utility structures if no other reasonable location is available and provided that impacts are minimized			• No response required

Appendix B2

Agency Contact List and Notice of Commencement

Notice of Environmental Report Commencement Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Proposed Northland Power Plant
Contact List – March 12, 2007

Agency	Title	First	Last	Position	Address	City	Prov.	Postal	Phone	Fax
Federal Department of Fisheries and Oceans	Ms.	Elaina	Gendron	Administrative Assistant	3027 Harvester Road, Unit 304	Burlington	Ontario	L7R 4K3	905-639-1835-	905- 639-3549
Ontario Ministry of Culture, St. Catharines Office	Ms.	Sue	Morrison	Regional Advisor	9th Floor 301 St. Paul St.	St. Catharines	Ontario	L2R 7R4	905-704-3951	905-704-3955
Ontario Ministry of Natural Resources, Niagara District Office	Mr.	Joad	Durst	Niagara Area Supervisor	P.O. Box 5000, 4890 Victoria Avenue North,	Vineland Station	Ontario	L0R 2E0	905- 562-1175	905-562-1154
Ontario Ministry of the Environment, Niagara District Office Vineland Area	Ms.	Linda	Gabriele	Environmental Officer	9th Floor 301 St. Paul St.	St. Catharines	Ontario	L2R 3M8	905-704-3901	905- 704-4015
City of Thorold	Mr.	Eldon	Darbyson	Planning and Building Services Department	3540 Schmon Parkway, P.O. Box 1044	Thorold	Ontario	L2V 4A7	905-227-6613 x.247	905- 227-8137
City of Thorold	Mr.	Henry	D'Angela	Mayor	3540 Schmon Parkway, P.O. Box 1044	Thorold	Ontario	L2V 4A7	905-227-6613 x. 230	905- 227-8137
Regional Municipality of Niagara	Mr.	Peter	Partington	Regional Chairman	2201 St. David's Road P.O. Box 1042	Thorold	Ontario	L2V 4T7	905-685-1571	905-687-4977
MPP – St. Catharines	Hon.	James	Bradley	MPP	2-2 Secord Drive	St. Catharines	Ontario	L2N 1K8	905-935-0018	905-935-0191
MP – St Catharines	Hon.	Richard	Dykstra	MP	61 Geneva Street	St. Catharines	Ontario	L2R 4M2	905-934-6767	905-934-1577
Niagara Peninsula Conservation Authority, Environmental Services Section	Mr.	Paul	Bond	Watershed Planner	3rd Floor, 250 Thorold Rd. W.	Welland	Ontario	L3C 3W2	905-788-3135 x.234	905-788-1121
Ontario Pipeline Coordinating Committee	Mr.	Bruce	Curtis	Planning Manager	London Municipal Services Office 659 Exeter Rd., Second Floor	London	Ontario	N6E 1L3	519-873-4026	519-873-4018
Ontario Pipeline Coordinating Committee	Ms.	Zora	Crnojacki	Project Advisor	Ontario Energy Board 2300 Yonge St. Suite 2601, P.O.	Toronto	Ontario	M4P 1E4	416-440-8104	416-440-7656

Notice of Environmental Report Commencement Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Proposed Northland Power Plant
Contact List – March 12, 2007

Agency	Title	First	Last	Position	Address	City	Prov.	Postal	Phone	Fax
					Box 2319					
Ontario Pipeline Coordinating Committee	Ms.	Donna	Mundie	Land Use Policy Specialist, Ministry of Agriculture and Food	Ministry of Agriculture, Food and Rural Affairs 1 Stone Road West	Guelph	Ontario	N1G 4Y2	519-826-3120	519-826-3109
Ontario Pipeline Coordinating Committee Ministry of Citizenship, Culture and Recreation	Mr.	Michael	Johnson	Manager, Heritage Operations Ministry of Culture	Operations Unit Heritage and Libraries Branch 400 University Avenue, 4th floor	Toronto	Ontario	M7A 2R9	416-314-7144	416-314-7175
Ontario Pipeline Coordinating Committee	Mr.	Doug	Peeling	Senior Policy Adviser, Ministry of Transportation	301 St. Paul Street 2nd Floor	St. Catharines	Ontario	L2R 7R4	905-704-2916	905-704-2030
Ontario Pipeline Coordinating Committee	Mr.	Oscar	Alonso	Technical Standards and Safety Authority, Fuel Safety Programme	Technical Standards and Safety Authority 3300 Bloor St. W., 4th Floor	Etobicoke	Ontario	M8X 2X4	416-734-3300	416-326-8248
Ontario Pipeline Coordinating Committee	Ms.	Sharon	Rew	Environmental Assessment Coordinator Ministry of Natural Resources	300 Water Street 5th Floor North Tower PO Box 7000	Peterborough	Ontario	K9J 8M5	705-755-5870	705-755-1971
Ontario Pipeline Coordinating Committee	Mr.	Mike	Parker	Supervisor, Air, Pesticides & Environmental Planning	Ministry of the Environment, South-western Region 733 Exeter Road, 2nd Floor	London	Ontario	N6E 1L3	519-873-5041	519-873-5020
Ontario Pipeline Coordinating Committee	Mr.	Ernie	Hartt	Supervisor, APEP	Ministry of the Environment, Central Region 5775 Yonge St. 8th Floor	North York	Ontario	M2M 4J1	416-326-4835	416-325-6345
Ontario Pipeline Coordinating	Mr.	Sing-	Louie	Advisor, Natural	880 Bay Street 3rd	Toronto	Ontario	M7A 2C1	416- 325-	416-325-

Notice of Environmental Report Commencement Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Proposed Northland Power Plant
Contact List – March 12, 2007

Agency	Title	First	Last	Position	Address	City	Prov.	Postal	Phone	Fax
Committee		Gin		Gas Distribution, Ministry of Energy	Floor				6836	6981
Ontario Pipeline Coordinating Committee	Mr.	Bruce	Singbush	Manager	Provincial Planning and Environmental Services Branch Ministry of Municipal Affairs 777 Bay Street, 14th Floor	Toronto	Ontario	M5G 2E5	416-585-6564	416-585-4245
Ontario Pipeline Coordinating Committee	Mr.	Graham	Martin	Acquisition Manager	Ontario Realty Corporation 77 Wellesley St. West, 11th Floor, Ferguson Block	Toronto	Ontario	M7A 1N3	416-326-9792	
Hydro One	Mr.	Brian	McCormick	Manager of Environment	483 Bay St., 11th Floor, North Tower	Toronto	Ontario	M5G 2P5	416-345-6597	416-345-6919
Department of Indian and Northern Affairs, Environmental and Natural Resources Unit	Mr.	Shawn	Green		25 St. Clair Ave. East, 5th Floor	Toronto	Ontario	M4T 1M2	416-973-1298	416-954-4328
Ontario Federation of Agriculture	Mr.	Peter	Jeffery	Member Service Specialist	40 Eglinton Ave. East, 5th Floor	Toronto	Ontario	M4P 3B1	416-485-3333	416-485-9027
Association of Iroquois and Allied Nations	Grand Chief	Denise	Stonefish		387 Princess Avenue	London	Ontario	N6B 2A7	519-434-2761	519-679-1653
									519-445-2201	519-445-4208

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050 Fax: (519) 836-2493
stantec.com

Stantec

April 25, 2007
File: 160960284

First Name Last Name, Position
Agency
Address
City Province Postal Code

Dear Title Last Name

Reference: Notice of Environmental Assessment Commencement:
Enbridge Gas Distribution Inc. –
Natural Gas Pipeline and Gate Station to Serve the Northland Power Plant

Stantec Consulting Ltd. has been retained by Enbridge Gas Distribution Inc. ("Enbridge") to prepare an Environmental Report (ER) for a proposed natural gas pipeline and gate station to serve the gas-fired cogeneration power plant in Thorold, Ontario called the Northland Power Plant (see attached map). The proposed project involves the construction of a gate station north of Enbridge's existing Black Horse Gate Station and either an NPS 12 (12-inch/305-millimetre) steel natural gas pipeline that will connect Enbridge's pipeline network to the proposed plant.

A Public Information Session regarding the proposed pipeline project is scheduled:

6:00 pm - 9:00 pm
May 16, 2007
Fire Station Two - Thorold South
701 Allanburg Rd
Thorold, Ontario, L2V 1B1

Additionally, notice of the session will be advertised in local newspapers.

At this time, we invite you to provide or coordinate comments on behalf of your respective agency to assist us in the preparation of the ER. Information regarding other proposed developments in the area of the proposed pipeline is also requested to assist us in the assessment of cumulative effects.

Stantec

April 25, 2007
Northland Pipeline Project

If you have any questions regarding the ER for this pipeline project, please do not hesitate to contact me by calling collect to the number listed below.

Sincerely,

STANTEC CONSULTING LTD.

David P. Wesenger, B.E.S.
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
dwesenger@stantec.com

Attachment: Study Area Map
cc. Edwin Makkinga – Enbridge Gas Distribution Inc.

Appendix B3

Agency Correspondence

Jim Bradley, M.P.P.
St. Catharines

May 7, 2007

Mr. David P. Wesenger
Senior Project Manager
Stantec Consulting Limited
361 Southgate Drive
Guelph, Ontario
N1G 3M5

Dear Mr. Wesenger:

I would like to thank you very much for providing me with notice of the public information session regarding your proposed pipeline project involving Enbridge Gas Distribution Inc. - Natural Gas Pipeline and Gate Station to serve the Northland Power Plant in Thorold.

Unfortunately, because of previous commitments, I will be unable to attend the information session on Wednesday, May 16, 2007.

Should you be providing any printed material to participants that you believe will be of interest and assistance to me, please do not hesitate to forward this to my constituency office.

Yours sincerely,

Jim Bradley, MPP
St. Catharines

Main Legislative Building, Queen's Park, Toronto, ON M7A 1A4 • T - (416) 325-7194 E - jbradley.mpp@liberal.ola.org
2 Secord Drive, Unit 2, St. Catharines, ON L2N 1K8 • T - (905) 935-0018 E - jbradley.mpp.co@liberal.ola.org

May 11, 2007

Your file / Votre référence
160960284
Our file / Notre référence
5010-4
#164961

David Wesenger, B.E.S.
Senior Project Manager
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON
N1G 3M5

Dear Mr. Wesenger:

RE: Notice of EA Commencement: Enbridge Gas Distribution Inc. – Natural Gas Pipeline and Gate Station to Serve the Northland Power Plant

This letter is in response to your letter of May 4 2007 addressed to Shawn Green regarding the above project.

For all provincial and/or municipal undertakings, Indian and Northern Affairs Canada requests that the proponent of such projects make efforts directly from the initiation of a project to identify and notify all potentially interested First Nation communities and other Aboriginal groups. It is recommended that this identification and notification occur at the earliest planning stages of the undertaking and if requested by any group(s), maintain communication with such groups. To assist with identifying First Nations and other Aboriginal groups within the vicinity of a specific proposed project, Indian and Northern Affairs Canada can provide the following information sources:

- The Chiefs of Ontario website (http://www.chiefs-of-ontario.org) provides a directory of contact information for all First Nations and Chiefs, as well as a map of the locations of all Ontario First Nations.

- Natural Resources Canada produced provincial maps, showing all First Nation reserve lands, are available for purchase at: http://cccm.nrcan.gc.ca/english/canada_lands_index_e.asp

- Natural Resources Canada's online *Historical Indian Treaties* map, showing historical First Nation treaties across Canada, is available at: http://atlas.nrcan.gc.ca/site/english/maps/historical/indiantreaties/historicaltreaties

- A search by place name at the Canadian Geographical Names database (http://geonames.nrcan.gc.ca/search/search_e.php) will generate a map which shows any nearby Indian reserve lands in grey.

- The Métis Nation of Ontario (http://www.metisnation.org/) may be able to provide information regarding Métis interests with respect to a particular project.

- The Ontario Federation of Indian Friendship Centres website provides a list of all friendship centres in Ontario, at: http://www.ofifc.org/Centres/OfficeList.asp?Region='ON'

- For enquiries regarding land claims in Ontario, please contact the Director General of the Comprehensive Claims Branch at (819) 994-7521, the Director General of Specific Claims Branch at (819) 994-2323 and the Director General of Litigation Management and Resolution Branch at (819) 997-3582.

If, however, the proponent believes that the proposed project is likely to also trigger a requirement for a federal environmental assessment under the *Canadian Environmental Assessment Act* (CEAA), we advise that the proponent contact the Canadian Environmental Assessment Agency early in the planning process, and provide a project description to them. The Agency will notify federal agencies, including INAC, of the proposed project as appropriate, in accordance with the requirements of the *Regulations Respecting the Coordination b y Federal Authorities of Environmental Assessment Procedures and Requirements*. INAC will, in turn, provide input to the Agency regarding our interest in the project.

Thank you for your time and consideration.

Miranda Lesperance
Jr. Environmental Officer
Environment Unit
INAC - Ontario Region
25 St. Clair Avenue E. 8th Floor
Toronto, Ontario M4T 1M2
lesperancem@inac.gc.ca

This letter has been distributed electronically. If you require a signed copy, please contact the author at the address provided above.

Canada

Ontario Realty Corporation / Société immobilière de l'Ontario

Ferguson Block
Queen's Park
Toronto, Ontario
M7A 2G3

Edifice Ferguson
Queen's Park
Toronto, Ontario
M7A 2G3

May 11, 2007

To Mr. D.P. Wesenger,

RE: ORC Initial Comments on the Notice of EA Commencement – Enbridge Gas Distribution Inc. – Natural Gas Pipeline and Gate Station to Serve the Northland Power Plant

Thank you for circulating Ontario Realty Corporation (ORC) on your notice of commencement. The ORC is the strategic manager of the government's real property with a mandate of maintaining and optimizing value of the portfolio, while ensuring real estate decisions reflect public policy objectives of the government.

Our preliminary review of your notice and supporting information indicates that the Niagara Detention Centre is in the study area. As a result, your proposal may have the potential to impact these lands and/or the activities of tenants present on ORC managed lands. Attached please find a map that identifies this property to assist you in identifying and avoiding potential impacts.

Potential Negative Impacts to ORC Tenants and Lands

General Impacts
Negative environmental impacts associated with the project design and construction, such as the potential for dewatering, dust, noise and vibration impacts, and impacts to natural heritage features/habitat and functions, should be avoided and/or appropriately mitigated in accordance with applicable regulations best practices and MNR and MOE standards. Avoidance and mitigation options that characterize baseline conditions and quantify the potential impacts should be present as part of the EA project file. Details of appropriate mitigation, contingency plans and triggers for implementing contingency plans should also be present.

Impacts to Land holdings
Negative impacts to land holdings, such as the taking of developable parcels of ORC managed land or fragmentation of utility or transportation corridors, should be avoided. If the potential for such impacts is present as part of this undertaking, you should contact the undersigned to discuss these issues at the earliest possible stage of your study.

If takings are suggested as part of any alternative these should be appropriately mapped and quantified within EA report documentation. In addition, details of appropriate mitigation and or next steps related to compensation for any required takings should be present. ORC requests circulation of the draft EA report prior to finalization if potential impacts to ORC managed lands are present as part of this study.

Cultural Heritage Issues
If proposed alternatives may impact cultural heritage features on ORC managed lands, we would request that the examination of cultural heritage features be enhanced to include issues such as cultural landscapes, archaeology and places of sacred and secular value.

Potential Triggers Related to ORC's Class EA

The ORC Class Environmental Assessment (ORC Class EA) applies to a range of realty and planning activities including leasing or letting, planning approvals, selling, demolition and property maintenance/repair. For details on the ORC Class EA please visit the Environment and Heritage page of our website found at http://www.orc.on.ca/Page133.aspx. If the ORC Class EA is triggered consideration should be given to explicitly referring to the ORC's undertaking in your EA study.

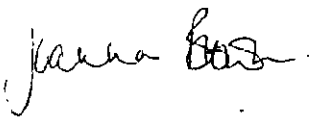
The purchase of ORC lands or disposal of rights and responsibilities (e.g. easement) for ORC lands triggers the ORC's Class EA. If any of these are being proposed as part of any alternative, please contact the Sales and Marketing Group through ORC's main line (Phone: 416-327-3937, Toll Free: 1-877-863-9672) at your earliest convenience to discuss next steps.

The undertaking of physical work on ORC lands triggers the ORC Class EA. If any work is proposed on ORC lands, please contact the undersigned at your earliest convenience to discuss next steps.

Concluding Comments

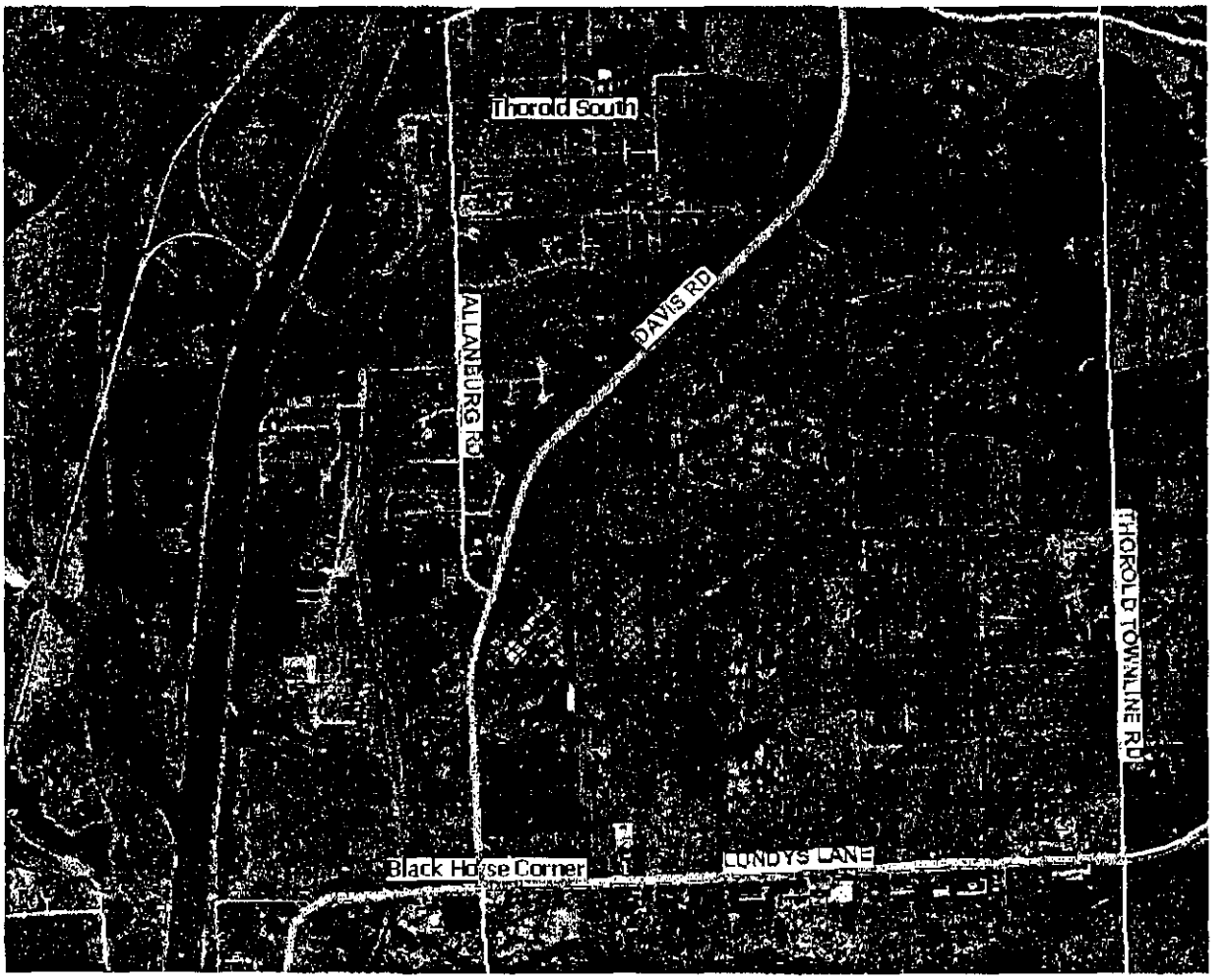
Thank you for the opportunity to provide initial comments on this undertaking. If you have any questions on the above I can be reached at 613-530-4512 or by email at joanna.brown@orc.gov.on.ca.

Sincerely,



Joanna Brown, BScH, MES
Environmental Assessment Facilitator
Portfolio Strategy and Asset Management Department
Ontario Realty Corporation

Appendix 1: Location of the Niagara Detention Centre



Thorold

Where Ships Climb The Mountain

Office of the City Clerk

May 18, 2007

RECEIVED
MAY 2 3 2007

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario N1G 3M5

Attention: David P. Wesenger, Senior Project Manager

Dear Mr. Wesenger:

Re: Notice of Environmental Assessment Commencement:
Enbridge Gas Distribution Inc. -
Natural Gas Pipeline and Gate Station to Serve the Northland Power Plant

Please be advised that Thorold City Council, at its May 15, 2007 meeting, received for information your correspondence with respect to the above noted subject.

Yours truly,

Susan Daniels, AMCT
Deputy City Clerk

SMD:hhm

em: M. Weir, Chief Administrative Officer
J.K. Bice, City Clerk
A. Arbour, Director of Planning and Building Services

Adamson, Melanie

From: Wesenger, David
Sent: Monday, May 28, 2007 10:32 AM
To: Adamson, Melanie
Subject: FW: Notice of Environmental Assessment Commencement: Enbridge Gas Distribution Inc. - Natural Gas Pipeline and Gate Station to Serve the Northland Power Plan

Sensitivity: Confidential

-----Original Message-----
From: Dykstra, Rick - Riding 1 [mailto:DykstR1@parl.gc.ca]
Sent: Thursday, May 24, 2007 4:37 PM
To: Wesenger, David
Subject: Notice of Environmental Assessment Commencement: Enbridge Gas Distribution Inc. - Natural Gas Pipeline and Gate Station to Serve the Northland Power Plan
Sensitivity: Confidential

David P. Wesenger
Senior Project Manager
Stantec Consulting Ltd.

Reference File: 160960284

Thanks for your letter regarding the Public Information Session. Our office didn't have any immediate concerns regarding this assessment, and haven't received any calls on the matter from Constituents. I am following up with you to see what the results of the public meeting were, and whether there are any outstanding issues arising that Mr. Dykstra should be aware of.

I look forward to hearing from you on this matter.

Best Regards,

David Schulz
Special Assistant - Information Services, Municipal and Regional Affairs Liaison Rick Dykstra M.P.
905-934-6767
dave@rickdykstra.ca

Adamson, Melanie

From: Wesenger, David
Sent: Monday, June 04, 2007 1:01 PM
To: Adamson, Melanie
Subject: Fw: Endridge Gas Pipeline and Gate Station, Northland Power Plant, Thorold

----- Original Message -----
From: Stone, Mike (MNR) <mike.stone@ontario.ca>
To: Wesenger, David
Cc: Durst, Joad (MNR) <joad.durst@ontario.ca>; Yagi, Anne (MNR) <anne.yagi@ontario.ca>
Sent: Fri Jun 01 13:35:22 2007
Subject: Endridge Gas Pipeline and Gate Station, Northland Power Plant, Thorold

Dear Mr. Wesenger,

Thank you for providing the Ministry's Niagara Area Office with the Notice of Commencement for the above study. The Ministry has reviewed the proposal and study area and offers the following information and comments for your consideration at this early stage in the process.

For your information, the Ministry has identified Type 2 fish habitat within the study area. The Welland Canal, which is adjacent to the study area, is classified as Type 3 fish habitat.

The Ministry notes there are wooded areas within the study area. At least two of these are approximately 10ha in size. The Ministry suggests it would be appropriate to complete flora/fauna surveys if vegetation clearing will be required as part of this project. Site-level assessment can help determine if there are significant natural heritage features/values present, and which should be considered in the assessment of impacts.

Future correspondence concerning this project may be directed to the attention of the undersigned.

Kind Regards,

Mike Stone

--

Mike Stone

District Planner

Ministry of Natural Resources

Guelph District

1 Stone Road West

Guelph, ON N1G 4Y2

T: 519-826-4912

F: 519-826-4912

Thorold

Where Ships Climb The Mountains

Office of the City Clerk

June 21, 2007

RECEIVED
JUN 2 5 2007

Stantec Consulting Inc.
361 Southgate Drive
Guelph, Ontario N1G 3M5

Attention: David Wesenger, Senior Project Manager

Dear Mr. Wesenger:

Re: Enbridge Gas Distribution Inc. - Natural Gas Pipeline to Serve the Northland Power Plant

Please be advised that Thorold City Council, at its June 19, 2007 meeting, referred your correspondence on the above noted subject to Tom Doherty, Director of Operations and Adele Arbour, Director of Planning and Building Services.

For further information regarding the status of this matter please contact Mr. Doherty at (905) 227-3521 or Ms. Arbour at (905) 227-6613, ext. 245.

Yours truly,

Susan Daniels, AMCT
Deputy City Clerk

SMD:hhm

em: M. Weir, Chief Administrative Officer
J.K. Bice, City Clerk
T. Doherty, Director of Operations
A. Arbour, Director of Planning and Building Services

Where Ships Climb The Mountain...

Thorold

July 3, 2007

RECEIVED
JUL 0 6 2007

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON N1G 3M5

Attention: Mr. David P. Wesenger, B.E.S.,
Senior Project Manager

Dear Sir:

Re: Enbridge Gas Distribution Inc.
Natural Gas Pipeline to serve
Northland Power Plant

In response to your letter of June 14, 2007 regarding the above captioned project, please be advised that the City of Thorold has supported and encouraged the Northland Cogeneration Power Plant as a means to provide a new clean energy sources, since its inception.

We are currently reviewing a residential development proposal in the area between Hwy. 58 (to the west) Townline Road (to the east) Hwy #20 - Lundy's Lane (to the south) and Beaverdams Road (to the north) as shown on the attached map.

The development area is known as "The Neighbourhood of Rolling Meadows" and is expected to accommodate approximately 2,600 residential units.

The Operations Department would have no any objection to the proposed alignment of the preliminary preferred route, however, we will require more detailed plans with respect to sections that may be utilizing the municipal road allowance.

The City of Thorold Planning Department will be providing their comments in due course.

Should you require anything further, please advise.

Yours very truly,

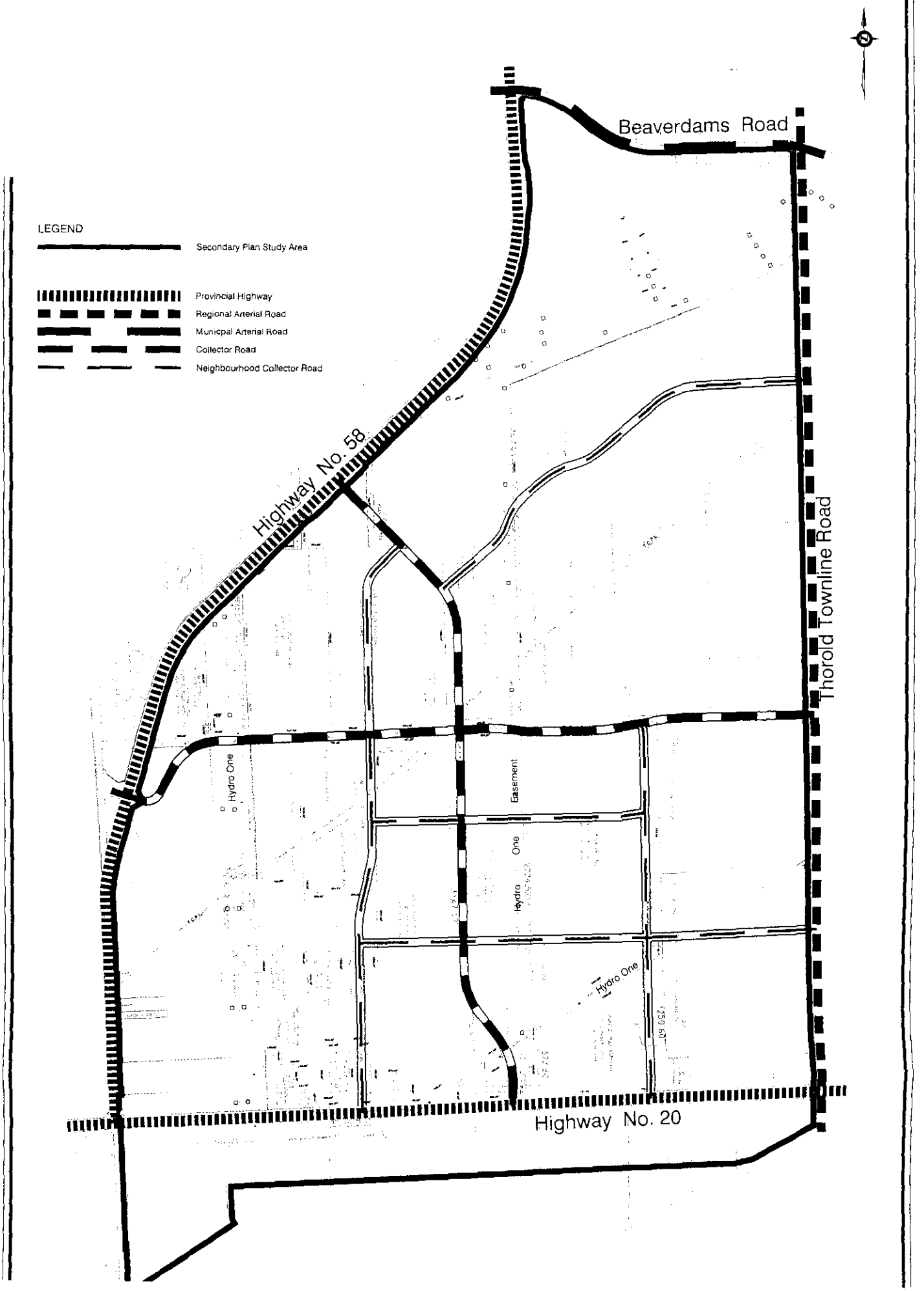
TD:am
Attach.

Tom Doherty, C.E.T.,
Director of Operations

c.c. Mayor & Members of Council ('C' Item)
A. Arbour, City Planner

Operations Department - Location - 1543 Beaverdams Road, Thorold, Ontario L2V 3Y7
Public Works: 905-227-3521 Engineering: 905-227-3535 Fax: 905-227-3666
email: pubworks@thorold.com

H:\ENG\COGENERATION PROJECTS\stantec gas lines.wpd


LEGEND
Secondary Plan Study Area
Provincial Highway
Regional Arterial Road
Municipal Arterial Road
Collector Road
Neighbourhood Collector Road
Beaverdams Road
Highway No. 58
Thorold Townline Road
Hydro One
Easement
Hydro One
Hydro One
Highway No. 20

NiagaraFalls
CANADA

RECEIVED
JUL 1 2 2006

July 9, 2007

Mr. David P. Wesenger, B.E.S.
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON N1G 3M5

Dear Mr. Wesenger:

Re: Enbridge Gas Distribution Inc. - Natural Gas Pipeline for Northland Power Plant

With regard to your request for comments about the proposed Preliminary Preferred route for the pipeline, it appears the alignment is on the west side of Thorold Townline Road and therefore outside the municipal boundaries of Niagara Falls. Accordingly, the City of Niagara Falls has no comments from a land use planning perspective.

Please note that the lands on the east side of Thorold Townline Road are designated Good General Agriculture and Environmental Protection Area according to the Niagara Falls Official Plan and zoned Agricultural (A) and Hazard Land (HL) in Zoning By-law No. 79-200.

Please continue to advise the City of the progress of this project.

Yours truly,

Alex Herlovitch
Deputy Director of Planning and Development

PB:bs

S:\ENVIRO\EREQ_LTR\2007\Northland PowerPlant - Thorold.wpd

Community Services Department
Planning & Development
Ext 4231 Fax 905-356-2354
aherlovitch@niagarafalls.ca

Adamson, Melanie

From: Wesenger, David
Sent: Wednesday, July 11, 2007 3:46 PM
To: Adamson, Melanie
Subject: FW: Enbridge Gas Distribution Inc. Natural Gas Pipeline

Attachments: TORONTO-#164961-v1-ENBRIDGE_GAS_NATURAL_GAS_PIPELINE_AND_GATE_STATION_TO_SERVE_NORTHLAND_POWER_PLANT.DOC; Miranda Lesperance.vcf


TORONTO-#16496
-v1-ENBRIDGE_GA...


Miranda
sperance.vcf (443 B)

-----Original Message-----
From: Miranda Lesperance [mailto:lesperancem@inac-ainc.gc.ca]
Sent: Wednesday, July 11, 2007 3:04 PM
To: Wesenger, David
Subject: Enbridge Gas Distribution Inc. Natural Gas Pipeline

Good Afternoon,

Thank you for your letter of June 12, 2007 addressed to Shawn Green regarding the Enbridge Gas distribution Inc. - Natural Gas Pipeline to Serve the Northland Power Plant.

Although the Preliminary Preferred Route has been selected, Indian and Northern Affairs Canada's position has not changed. Therefore, I am attaching a copy of our original response dated May 11, 2007 for your reference.

Thank you for the opportunity to provide additional comments.

Sincerely,

Miranda Lesperance
Environment Officer
Environment Unit
INAC - Ontario Region
25 St. Clair Ave E 8th Floor
Toronto, ON M4T 1M2
Phone (416) 973-5899
Fax (416) 954-4328

Adamson, Melanie

From: Wesenger, David
Sent: Thursday, July 12, 2007 8:45 AM
To: Adamson, Melanie
Subject: Fw: ER

----- Original Message -----
From: Eckhart-Oettinger, Donna <donna.eckhart-oettinger@regional.niagara.on.ca>
To: Wesenger, David
Sent: Thu Jul 12 06:37:56 2007
Subject: ER

Dear Mr. Wesenger:

We have received your correspondence addressed to Regional Chairman Peter Partington regarding the ER on the natural gas pipeline to serve the Northland power plant.

We are currently collecting information and anticipate responding on Monday, July 16.

Donna Eckhart-Oettinger

Administrative Assistant to the Director

Waste Management Services

Public Works Department

The Regional Municipality of Niagara

2201 St. David's Road

Thorold, ON L2V 4T7

905-685-4225 ext. 3312 fax 905-687-8056

Adamson, Melanie

From: Adamson, Melanie
Sent: Thursday, July 12, 2007 4:32 PM
To: 'Jonathan Allen'
Subject: Information Request

Attachments: 60960284_07.pdf

Hello Jonathan,

I received a letter from Miranda Lesperance from Indian and Northern Affairs Canada indicating that I should contact INAC's Litigation Management and Resolutions Branch for further information relating to First Nations Claims within this Study Area.

Please find attached a map showing the location of the Study Area within Thorold South, County of Niagara, Ontario.

A response by July 24, 2007 would be greatly appreciated.

60960284_07.pdf
(3 MB)

Thank you,
Melanie.

Melanie Adamson, B.Sc., CEPIT
Environmental Scientist
Stantec
361 Southgate Drive
Guelph ON N1G 3M5
Ph: (519) 836-6050
Fx: (519) 836-2493
melanie.adamson@stantec.com
stantec.com

Adamson, Melanie

From: Adamson, Melanie
Sent: Friday, July 13, 2007 3:42 PM
To: 'moringa@ainc-inac.gc.ca'
Subject: Information Request

Attachments: 60960284_07.pdf

Hello Guy,

I received a letter from Miranda Lesperance from Indian and Northern Affairs Canada indicating that I should contact INAC's Comprehensive Claims Branch for further information relating to First Nations Claims within this Study Area.

Please find attached a map showing the location of the Study Area within Thorold South (just south of St. Catharines), County of Niagara, Ontario.

A response by July 24, 2007 would be greatly appreciated.

60960284_07.pdf
(3 MB)

Thank you,
Melanie.

Melanie Adamson, B.Sc., CEPIT
Environmental Scientist
Stantec
361 Southgate Drive
Guelph ON N1G 3M5
Ph: (519) 836-6050
Fx: (519) 836-2493
melanie.adamson@stantec.com
stantec.com

Adamson, Melanie

From: Adamson, Melanie
Sent: Tuesday, July 17, 2007 4:51 PM
To: 'Don Boswell'
Subject: Information Request

Attachments: 60960284_07.pdf

Hello Don,

I received a letter from Miranda Lesperance from Indian and Northern Affairs Canada indicating that I should contact INAC's Specific Claims Branch for further information relating to First Nations Claims within this Study Area.

Please find attached a map showing the location of the Study Area within Thorold South, County of Niagara, Ontario.

A response by July 26, 2007 would be greatly appreciated.

60960284_07.pdf
(3 MB)

Thank you,
Melanie.

Melanie Adamson, B.Sc., CEPIT
Environmental Scientist
Stantec
361 Southgate Drive
Guelph ON N1G 3M5
Ph: (519) 836-6050
Fx: (519) 836-2493
melanie.adamson@stantec.com
stantec.com

Adamson, Melanie

From: Don Boswell [boswelld@ainc-inac.gc.ca]
Sent: Thursday, July 19, 2007 11:26 AM
To: Adamson, Melanie
Subject: Re: Information Request

Melanie Adamson, B. Sc., CEPIT
Environment Scientist
Stantec
361 Southgate Drive
Guelph, ON N1G 3M5

Re: Enbridge Gas Distribution Inc. Proposed Northland Pipeline

Dear Ms. Adamson:

I am responding to your e-mail of July 17, 2007 inquiring as to whether there were any First Nation land claims in the area of the above project, more particularly in the area of Throld South, County of Niagara, Ontario.

We have conducted a search of our records and determined that no specific claims have been submitted in the area of interest. Although no specific claims affecting the indicated property have been filed to date, we cannot make any representations regarding potential or future claims.

Please rest assured that it is the policy of the Government of Canada as expressed in Outstanding Business: A Native Claims Policy that "In any settlement of specific native claims the government will take third party interests into account. As a general rule, the government will not accept any settlement which will lead to third parties being dispossessed."

We can only speak directly to claims filed under the Specific Claims Policy for the Province of Ontario. We cannot make any comments regarding potential or future claims, or claims filed under other departmental policies. This includes claims under Canada's Comprehensive Claims Policy or legal action by the First Nation against the Crown. You will have to contact the Comprehensive Claims Branch at (819) 994-7521 or the Litigation Management and Resolution Branch at (819) 934-2185 directly for more information.

Specific Claims has developed a "Public Information Status Report" on all claims which have been submitted to date. This information is available to the public on the Indian and Northern Affairs Canada website and can be found at http://www.ainc-inac.gc.ca/ps/clm/pis_e.html

It should be noted that the reports available on the Indian and Northern Affairs website are updated quarterly and therefore, you may want to check this site at regular intervals for updates. In accordance with legislative requirements, confidential information has not been disclosed.

To the best of our knowledge, the information we have provided you is current and up-to-date. However, this information may not be exhaustive with regard to your needs and you may wish to consider seeking information from other government and private sources (including Aboriginal groups). In addition, please note that Canada does not act as a representative for any Aboriginal group for the purpose of any claim or the purpose of consultation.

I hope this information will assist you in any further queries. I trust that this satisfactorily addresses your concerns. If you wish to discuss this matter further please contact me at (819) 953-1940.

Yours sincerely,

Don Boswell
A/Senior Claims Analyst
Ontario Research Team
Specific Claims Branch
1-819-953-1940

>>> "Adamson, Melanie" <melanie.adamson@stantec.com> 07/17/07 4:51 PM
>>> >>>

> Hello Don,
>
> I received a letter from Miranda Lesperance from Indian and Northern
> Affairs Canada indicating that I should contact INAC's Specific Claims
> Branch for further information relating to First Nations Claims within
> this Study Area.
>
> Please find attached a map showing the location of the Study Area
> within Thorold South, County of Niagara, Ontario.
>
> A response by July 26, 2007 would be greatly appreciated.
>
> <<60960284_07.pdf>>
> Thank you,
> Melanie.
>
> Melanie Adamson, B.Sc., CEPIT
> Environmental Scientist
> Stantec
> 361 Southgate Drive
> Guelph ON N1G 3M5
> Ph: (519) 836-6050
> Fx: (519) 836-2493
> melanie.adamson@stantec.com
> stantec.com
>

> immediately.
>
>

Affaires indiennes et du Nord Canada | Indian and Northern Affairs Canada

Ms. Melanie Adamson
Environmental Scientist
Stantec
361 Southgate Drive
GUELPH ON N1G 3M5

RE: Information Request

Dear Ms. Adamson,

I am responding to your request for information sent to the Comprehensive Claims Branch, by email, on July 13, 2007.

We can confirm that there are no comprehensive claims in Thorold South, County of Niagara, Ontario. We cannot make any comments regarding potential or future claims, or claims filed under other departmental policies. This includes claims under Canada's Specific Claims Policy or legal action by the First Nation against the Crown. For more information, I suggest you contact the Director General of Specific Claims Branch at (819) 994-2323 and the Director General of Litigation Management and Resolution Branch at (819) 997-3582.

INAC- Comprehensive Claims Branch does not have any specific interest in the project and would request to be taken out of the mailing list.

Yours truly,

Jean-François Tardif, Director
for
Lynn Bernard, Director General
Comprehensive Claims Branch

and private sources (including Aboriginal groups) should be sought, to ensure that the information you have is accurate and complete.

Adamson, Melanie

From: Jonathan Allen [AllenJO@ainc-inac.gc.ca]
Sent: Monday, July 30, 2007 4:23 PM
To: Adamson, Melanie
Cc: Leah Lloyd
Subject: Re: Information Request

Ms. Adamson,

I am writing in response to your e-mail of July 12, 2007, regarding the area of Thorold South, County of Niagara.

We can advise that our inventory does not include active litigation in the vicinity of this property. Please note that we are unable to make any representations regarding potential or future claims.

We cannot make any comments regarding claims filed under other departmental policies. For information on any claims you should also contact Luc Lavigne of the Specific Claims Branch at (819) 953-2228 to inquire about any Specific Claims, and Guy Morin of the Comprehensive Claims Branch at (819) 956-0325 to inquire about any current Comprehensive Claims.

If you have any further questions please do not hesitate to contact me at (819)956-3181.

Sincerely,

Jonathan Allen
A/Litigation Team Leader
Litigation Portfolio Operations East
Litigation Management and Resolution Branch

>>> "Adamson, Melanie" <melanie.adamson@stantec.com> 07/12/07 4:32 PM
>>>
Hello Jonathan,

I received a letter from Miranda Lesperance from Indian and Northern Affairs Canada indicating that I should contact INAC's Litigation Management and Resolutions Branch for further information relating to First Nations Claims within this Study Area.

Please find attached a map showing the location of the Study Area within Thorold South, County of Niagara, Ontario.

A response by July 24, 2007 would be greatly appreciated.

<<60960284_07.pdf>>
Thank you,
Melanie.

Melanie Adamson, B.Sc., CEPIT
Environmental Scientist
Stantec
361 Southgate Drive
Guelph ON N1G 3M5
Ph: (519) 836-6050
Fx: (519) 836-2493
melanie.adamson@stantec.com
stantec.com

Adamson, Melanie

From: Adamson, Melanie
Sent: Tuesday, July 31, 2007 2:38 PM
To: 'jbradley.mpp@liberal.ola.org'
Subject: Northland Pipeline Project: An Enbridge Gas Distribution Pipeline Project

Attachments: 60960284_NL_01_May2007.pdf; 60960284_NL_02_June2007.pdf

Greetings,

This email is in response to comments that you provided for the Northland Pipeline Project: An Enbridge Gas Distribution Pipeline Project in a letter dated May 7, 2007. In this letter you indicated that you would not be able to attend the Public Information Session, but that any printed material provided to the public could be forwarded on to you. Please find attached the two newsletters that were made available to attendees to the First and Second Public Information Sessions for this project.

Thank you for your interest in this project.

Kind Regards,
Melanie.

60960284_NL_01_May2007.pdf (31... 60960284_NL_02_June2007.pdf (2...

Melanie Adamson, B.Sc., CEPIT
Environmental Scientist
Stantec
361 Southgate Drive
Guelph ON N1G 3M5
Ph: (519) 836-6050
Fx: (519) 836-2493
melanie.adamson@stantec.com
stantec.com

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

July 31, 2007

Dear David Schulz:

Reference: Northland Pipeline Project: An Enbridge Gas Distribution Pipeline Project

Thank you for your interest in the Northland Pipeline Project: An Enbridge Gas Distribution Pipeline Project. This letter is in regards to the email you sent us on May 24, 2007 indicating that your office did not have any immediate concerns regarding our Environmental Report and that you had not received any calls from your Constituents. You had requested for the results of this public meeting and whether there were any outstanding issues that arose that Mr. Dykstra should be made aware of.

Questions and comments discussed with members of the First Public Information Session regarding the pipeline were mainly related to the proposed timing of the project and location of the Preliminary Preferred Route. A representative from Rolling Meadows Developments was in attendance. He updated Enbridge and Stantec on details of a proposed development within the Study Area. This development consists of residential, industrial and commercial land uses and includes the construction of a golf course, and a village centre. Subsequently, the land use mapping presented at the First Public Information Session was updated to include the land use mapping outlined in the Rolling Meadows proposal and was presented at the Second Public Information Session.

There were no issues presented by the public that Mr. Dykstra should be aware of.

For more information relating to the Project, please contact me using the information found below.

Sincerely,

STANTEC CONSULTING LTD.

Melanie Adamson
Environmental Scientist
Tel: (519) 836-6050
Fax: (519) 836-2493
melanie.adamson@stantec.com

Ministry of Natural Resources

Box 5000
4890 Victoria Avenue N.
Vineland Station, Ontario
L0R 2E0

Ministère des Richesses naturelles

Tel: (905) 562-4147
Fax: (905) 562-1154

Ontario

Guelph District

August 3, 2007

Mr. David P Wesenger
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON N1G 3M5

Dear Mr. Wesenger:

Re: Request for Natural Heritage Features and Species at Risk information
Natural Gas Pipeline to Serve the Northland Power Plant, Thorold ON

Staff of the Niagara area office have had the opportunity to review the above noted information request for natural heritage features located within or in the vicinity of the subject property. The following comments have been provided for the Scoped Environmental Impact Study you are conducting:

- Beaverdams Creek and its tributaries flow directly through the subject property and is identified as having Type 2 Fish Habitat. Shriners Creek and Ten Mile Creek are located north of the property and identified as having Type 2 Fish Habitat. Additional fisheries information is available for review at the MNR office upon appointment.
- The Welland Canal Turn Basins are identified as Provincially Significant Wetlands and are located along the northern boundary of the property along Shriners Creek and directly on the northeast portion of the property along Beaverdams Creek. Lake Gibson and Moodie Wetlands are found adjacent to the property, west of the Welland Shipping Canal.
- There are areas located adjacent to and directly on the subject property identified as woodlot and deer wintering areas.
- There are areas identified as Aggregate Extraction Areas and Escarpment Rural north of the subject property.
- This ministry has records of rare or threatened species adjacent to and directly on the subject property. The following table is a summarization of the Species at Risk which are within one kilometer of the proposed work area:

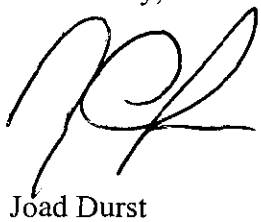
.../2

Common Name	Provincial/Sub national Rank (S1,S2,or S3)	MNR Rank	COSEWIC	Date	Accuracy
Grey Fox	SZB?	THR	THR	Historical	1km
Longleaf Dropseed	S1S2	-	-	1995	1km
Milksnake	S3	SC	SC	Historical	10km
Southern Tickseed	S2	-	-	-	1km

As noted, the proposed development has areas identified as woodlot and provincially significant wetland. In an effort to ascertain potential environmental impacts, inventories and site level assessments are recommended to determine the presence of sensitive species.

If you have any further questions, please feel free to contact Martine Esraelian at (905) 562-8253.

Yours truly,



Joad Durst
Niagara Area Supervisor

Association of Iroquois and Allied Indians
Ontario Environmental Assessment Act
Fax Back Form

Date: September 6, 2007

David P. Wesenger
Senior Project Manger
(519) 836 2493

Re:

Notice of Second Public Information Session: Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Notherland Power Plant

We are in receipt of documentation produced under the Ontario Environmental Assessment Act for our review and comment. Please accept this letter as a response to your invitation and not an act of consultation. We cannot and do not consider this response letter to be consultation as we are not mandated to consult on behalf of our member nations. Our involvement as a representative for the First Nations occurs when invited by one of our member First Nations to do so. Consultation should always occur with the First Nation(s) specifically impacted.

As an association, we understand that your role in the environmental assessment process is primarily technical and that our concerns, which are Aboriginal rights, socio-economic and indigenous knowledge-based, are to fit within established scientific, technological and policy frameworks established by the Province of Ontario. We are of the view that this framework is invalid as it has been developed without input or consultation with First Nations.

Our organization receives no federal or provincial funding in helping to facilitate a mutual understanding of environmental concerns between proponents and our member First Nations. Based on this lack of understanding, funding and resources, we are only able to state that we do have member First Nations whose traditional hunting and gathering areas may be affected by this project.

Our organization and Member Nations are usually open to participating in sustainable planning processes. However, the current federal and provincial practices in this policy area are left to the goodwill of proponents, in terms of collaborating with First Nations, and in identifying potential First Nation issues and incorporating these into the overall planning processes.

Aboriginal people are listed as "stakeholders" in environmental assessment processes, however this is only partially correct. First Nations people have collective constitutional rights, including land rights, hunting, gathering and fishing rights. The practice and recognition of these rights in southern and central Ontario is an outstanding issue between the provincial and federal governments and our member Nations. Therefore, in proposed land use situations, First Nations can seek legal remedies before the courts, including legal injunctions and other judicial intervention.

Our comments on documents produced under the current Environmental Assessment Act are as follows:

- It is our experience that when First Nations are approached respectfully and referenced in an appropriate way, that this overall approach tends to lead to more positive dialogue.

- We currently do not have the capacity to address the methodology developed for the site selection criteria and technological alternatives, at this particular time. The Proponent should use discretion in considering the selection of a site and technology that may interfere with the exercise of First Nations rights, including treaty and rights to access to wild game, water, plants, fish and ceremonial areas etc. Consideration should be put towards treaty boundary lines, real and potential land claims, and First Nations communities in the surrounding area.

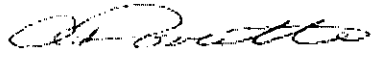
- While the provincial EA legislation and EA practice may put the onus on the Proponent to consult First Nations, federal and provincial Crowns do have a constitutional obligation to uphold the rights of First Nations, and a duty to consult. The provincial and federal governments may not be forthcoming regarding this duty, as this duty currently exists in common law and is not reflected in Ontario EA legislation; which needs to be updated.

- As a safeguard, we suggest that First Nations be directly involved in the development and application of the Terms of Reference to accommodate for any potential First Nation intervention or interests. This approach would be ideal for addressing any First Nation issues that may arise. For example, where there may be archaeological discoveries at a site, First Nations customs vary and the Proponent should be ready to address that situation with the appropriate First Nations, in an innovative or other culturally appropriate manner.

- Based on archeological finds, it may be necessary to consult with other First Nations that have not been presently identified by the Ministry of the Environment or the Ontario Aboriginal Affairs Secretariat. First Nations that currently reside in the Province of Quebec may also have an interest in projects located in Ontario.

We thank you for taking the time to contact our organization and regret that we are not able to provide you with more assistance. If you have further questions or concerns please contact our office by phone (519) 434-2761 or fax (519) 679 1653.

Sincerely,



Adriana Poulette B.A., M.A.
Senior Policy Analyst and Government Relations Advisor
The Association of Iroquois and Allied Indians

Ministry of Natural Resources

Box 5000
4890 Victoria Avenue N.
Vineland Station, Ontario
L0R 2E0

Ministère des Richesses naturelles

Tel: (905) 562-4147
Fax: (905) 562-1154

Ontario

Guelph District

March 17, 2008

Ms. Melanie Adamson
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON N1G 3M5

Dear Ms. Adamson:

Re: Request for Natural Heritage Features and Species at Risk information
Natural Gas Pipeline to Serve the Northland Power Plant, Thorold ON

Staff of the Niagara area office have had the opportunity to review the above noted information request for natural heritage features located within or in the vicinity of the subject property. The following comments have been provided for the Environmental Impact Study you are conducting:

- There has been no new information added to our natural heritage files since our last response of August 2, 2007.
- Of the two proposed routes, the alternative Preferred Route would probably have the least impact as it appears to follow existing road allowances.

If you have any further questions, please feel free to contact Greg Belmore at (905) 562-1176.

Yours truly,

Joad Durst
Niagara Area Supervisor

Adamson, Melanie

From: Wesenger, David
Sent: Tuesday, April 01, 2008 9:26 AM
To: Adamson, Melanie
Subject: FW: Pipeline to Service the Proposed Northland Power Plant - Preliminary Plans
Attachments: EAad080318.tif; watermainroute.pdf; Bill Slack.vcf

---

From: Slack, Bill [mailto:bill.slack@regional.niagara.on.ca]
Sent: Tuesday, March 18, 2008 12:54 PM
To: Wesenger, David
Cc: eugene.chajka@hatchmott.com; Sharma, Sunil
Subject: Pipeline to Service the Proposed Northland Power Plant - Preliminary Plans

<<EAad080318.tif>> <<watermainroute.pdf>> <<Bill Slack.vcf>>

David:

I am employed by Niagara Region as a Project Manager. I was given a copy of the attached Notice of Public Information Session this morning.

I wish to advise you that in 2008, we intend to tender and commence construction of a new trunk watermain along the route depicted as a dashed white line on the attached PDF document.

Please include Niagara Region on your list of stakeholders for this project, and as such I will be the contact person for Niagara Region. I have attached my V-card with my contact information.

Niagara Region has retained Hatch Mott MacDonald (HMM) to provide the necessary engineering services for the new trunk watermain. Eugene Chajka of HMM will try to attend the information session tonight.

We would like to review an engineering drawing to determine the impacts (if any) on our project. Subsequent to our review of the drawings we will forward a written submission to you.

In the mean time we look forward to further communication with you and Enbridge staff on this project.

Regards,

Bill.

send this communication to the sender and permanently delete the original and any copy of it from your

Ministry of the Environment
West Central Region

119 King Street West
12th Floor
Hamilton, Ontario L8P 4Y7
Tel.: 905 521-7640
Fax: 905 521-7820

Ministère de l'Environnement

119 rue King ouest
12e étage
Hamilton (Ontario) L8P 4Y7
Tél. : 905 521-7640
Téléc. : 905 521-7820

March 19, 2008

Ms Melanie Adamson
Project Manager
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario
N1G 3M5

Dear Ms Adamson:

Re: Notice of Public Information Session
Enbridge Gas Distribution Inc.
Natural Gas Pipeline to Serve the Proposed Northland Power Plant

Thank you for you recent Notice and for advising that an alternative route for the gas pipeline has been determined in response to public input. We have reviewed the alignment for the alternative route and have only one comment to offer: given the closer proximity of this route to Beaverdams Creek, we would expect that in the construction of the pipeline, all accepted measures be taken to ensure that this surface water is protected from any deleterious impacts.

Should you have any questions or wish to discuss these comments, please feel free to contact me at (905) 521-7864 or at Barbara.slattery@ontario.ca.

Sincerely,

Barbara Slattery
Environmental Assessment and Planning Coordinator

Where Ships Climb The Mountain...

Office of the City Clerk

Thorold

RECEIVED
MAR 2 5 2008

March 19, 2008

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario N1G 3M5

Attention: Melanie Adamson, Project Manager

Dear Ms. Adamson:

Re: Notice of Public Information Session: Enbridge Gas Distribution Inc.
Natural Gas Pipeline to Serve the Proposed Northland Power Plant

Please be advised that Thorold City Council, at its March 18, 2008 meeting, referred your correspondence with respect to the above noted subject to Tom Doherty, Director of Operations.

For further information regarding the status of this matter please contact Mr. Doherty at (905) 227-3521.

Yours truly,

Susan Daniels, AMCT
Deputy City Clerk

SMD:hhm

em: M. Weir, Chief Administrative Officer
J.K. Bice, City Clerk
T. Doherty, Director of Operations

Adamson, Melanie

From: Pubworks@thorold.com
Sent: Thursday, March 20, 2008 8:35 AM
To: Adamson, Melanie
Subject: Re: Verification

Attachments: Text.htm


Text.htm (3 KB)

Melanie,

We would have no objection to the "Alternative Preferred Route", however we will require additional details with respect to specific locations within the municipal rights of way. Niagara Falls Road is a City of Thorold Road and the bridge structure just west of Hwy. 58 on Niagara Falls Road is owned by Ontario Power Generation.

Regards,

Tom Doherty, C.E.T.,
Director of Operations
City of Thorold

>>> "Adamson, Melanie" <melanie.adamson@stantec.com> 3/18/2008 2:07 pm
>>> >>>

Hello again,

Could you please verify that you have received the figure, and that it is suitable for your needs at tonight's meeting, and also provide me with your contact information so I can record who I sent this information to?

Thank you,
Melanie.

Melanie Adamson, B.Sc., CEPIT
Environmental Scientist
Stantec
361 Southgate Drive
Guelph ON N1G 3M5
Ph: (519) 836-6050
Fx: (519) 836-2493
melanie.adamson@stantec.com
stantec.com

NIAGARA PENINSULA
CONSERVATION
AUTHORITY

250 Thorold Road West, 3rd Floor
Welland, Ontario L3C 3W2
Tel (905) 788-3135
Fax (905) 788-1121
E-mail: npca@conservation-niagara.on.ca

March 25, 2008

REG 9.9.F

Ms. Melanie Adamson,
Project Manager,
Stantec Consulting Ltd.,
361 Southgate Drive,
Guelph, Ontario.
N1G 3M5

Dear Ms. Adamson;

RE: PREFFERED ROUTE FOR A NATURAL GAS PIPELINE, AT THE PROPOSED NORTHLAND POWER PLANT, IN THE TOWN OF THOROLD

The Niagara Peninsula Conservation Authority (NPCA) has reviewed your February 29, 2008 Notice of Public Information Session detailing the proposed route for a natural gas pipeline to serve the property of Abitibi Consolidating Inc..

Based upon our understanding of this project, the NPCA offers no objection to the proposed pipeline route.

Do not hesitate to contact this office should you have any questions.

Yours truly,

Lisa Moreira, B.Sc.Env.,
Watershed Engineering Technician

NiagaraFalls
CANADA

RECEIVED
MAR 3 1 2008

March 26, 2008

Mr. David P. Wesenger, B.E.S.
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, ON N1G 3M5

Dear Mr. Wesenger:

Re: Environmental Information Request
Enbridge Gas Distribution Inc.
Natural Gas Pipeline to serve the Proposed Northland Power Plant

Further to your request for comments regarding an Alternative Preferred Route for the pipeline, it would appear that this alternate route would begin on the east side of Thorold Townline Road, putting this pipeline within the boundary of Niagara Falls.

As was previously noted in comments submitted in July 2007, this land is designated Good General Agriculture and Environmental Protection Area according to the City's Official Plan and zoned Agriculture (A) and Hazard Land (HL) in Zoning By-law No. 79-200.

Each of the above noted designations permits essential utility structures if no other reasonable location is available and provided impacts on the area are minimized.

Please continue to keep the City advised of any status changes to this project.

Yours truly,

John Barnsley
Manager of Policy Planning

JB:yb

S:\ENVIRO\EREQ_LTR\2008\Northland Power Plant.ltr.wpd

Community Services Department
Planning & Development
Ext 4247 Fax 905-356-2354
barnsley@niagarafalls.ca

Appendix B4

Landowner Correspondence

Adamson, Melanie

From: John Buckland [john.buckland@sympatico.ca]
Sent: Tuesday, July 17, 2007 6:37 PM
To: Adamson, Melanie
Subject: Re: Northland Pipeline Project

I prefered Route #1 ADK as the most direct and cost effective.

This could be completed in conjunction with the re-digging of the ditch line to improve water runoff.

I understand the problem of the creek but that must exist on all the routes.

> ----- Original Message -----
> **From:** Adamson, Melanie
> **To:** johnbuckland@sympatico.ca
> **Sent:** Friday, June 15, 2007 3:10 PM
> **Subject:** Northland Pipeline Project
>
> Greetings Mr. Buckland,
>
> I am writing in regards to the Exit Questionnaire that you kindly filled out for us during the Public Information Session held on May 16, 2007 for the Northland Pipeline Project: An Enbridge Gas Distribution Pipeline Project. While reading over your Exit Questionnaire responses, I am unsure as to which route you would prefer.
>
> I have attached a map indicating the alternate routes that were displayed at the Public Information Session. If you could please take a moment and review this map and clearly indicate the letters that make up the route that you prefer, that would be a great help to us. I am currently writing the section of the Environmental Report that details the Public Consultation Program, and the comments that we receive from the Public Information Sessions play an important part in the decisions we make, especially when considering routing options.
>
> Please also note that you will soon be receiving an invitation in the mail to the upcoming Second Public Information Session. We hope that you will be able to attend and will be kind enough to provide us with your comments on the Preliminary Preferred Route.
>
> If you would prefer to discuss this matter over the telephone, please feel free to call me collect at the number below.
>
> Thank you very much for your time and consideration in this matter.
>
> Kind Regards,
> Melanie.
>
> <<60960284_PIS-1_14_AlternativeRoutes_MAP.pdf>>
> **Melanie Adamson, B.Sc., CEPIT**
> Environmental Scientist
> Stantec
> 361 Southgate Drive
> Guelph ON N1G 3M5
> Ph: (519) 836-6050
> Fx: (519) 836-2493
> melanie.adamson@stantec.com

stantec.com

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

July 31, 2007

Dennis Delaney
233 ½ Beaver Street
Thorold ON

Dear Mr. Delaney:

Reference: Northland Pipeline Project: An Enbridge Gas Distribution Pipeline Project

Thank you for your interest in the Northland Pipeline Project: An Enbridge Gas Distribution Pipeline Project. This letter is in regards to the questions or comments you provided on the Exit Questionnaire from a Public Information Session for this project.

With regards to your comment relating to single family dwelling property values, Enbridge has completed detailed studies to determine if there are any effects on value or price of single family residential dwellings that are within the vicinity of natural gas pipelines. One such study, completed in 1995, involved the examination of single family dwellings in comparable neighbourhoods within Scarborough, Ontario. It was concluded after the completion of this study, and after a review of other published studies, that single family properties which were adjacent to a natural gas pipeline had values similar to comparable properties which were not adjacent to a natural gas pipeline.

For more information relating to the Project, please contact me using the information found below.

Sincerely,

STANTEC CONSULTING LTD.

Melanie Adamson

Melanie Adamson
Environmental Scientist
Tel: (519) 836-6050
Fax: (519) 836-2493
melanie.adamson@stantec.com

Appendix B5

Public Information Session Notifications and Newsletters

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050 Fax: (519) 836-2493
stantec.com

Stantec

May 7, 2007

Dear Resident:

Reference: Enbridge Gas Distribution Inc. – Pipeline to Service Northland Power Plant

Stantec Consulting Ltd. ("Stantec") has been retained by Enbridge Gas Distribution Inc. ("Enbridge") to prepare an Environmental Report (ER) for a proposed pipeline project to provide natural gas to the Northland Power Plant to be located at the site of Abitibi Consolidated Inc. The proposed project involves the construction of a natural gas pipeline to originate from the TransCanada Pipelines natural gas transmission corridor (Lundy's Lane at Blackhorse Gate Station or Townline Road) in Thorold South to the Northland Power Plant located on Niagara Falls Road in Thorold South.

Stantec's ER will accompany Enbridge's Leave-To-Construct application to the Ontario Energy Board expected in the summer of 2007. The Ontario Energy Board is the body that regulates the energy sector in the province and whose review and approval is required before this project can proceed.

To learn more about the project and to provide input to the planning process, we invite you to attend an upcoming Public Information Session hosted by Stantec. Input received at the Public Information Session will be used to help develop or confirm route selection, and site-specific protection and mitigation measures. Representatives from Enbridge will also be available at the Public Information Session to answer your questions.

Details regarding the Public Information Session are as follows:

Fire Station Two – Thorold South
701 Allanburg Rd
Thorold, Ontario
May 16, 2007
6:00 pm to 9:00 pm

We hope that you will attend the Public Information Session. If you or a representative are not able to join us, as always, we welcome your call (519) 836-6050.

Sincerely,

STANTEC CONSULTING LTD.

David Wesenger
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Notice of Public Information Session

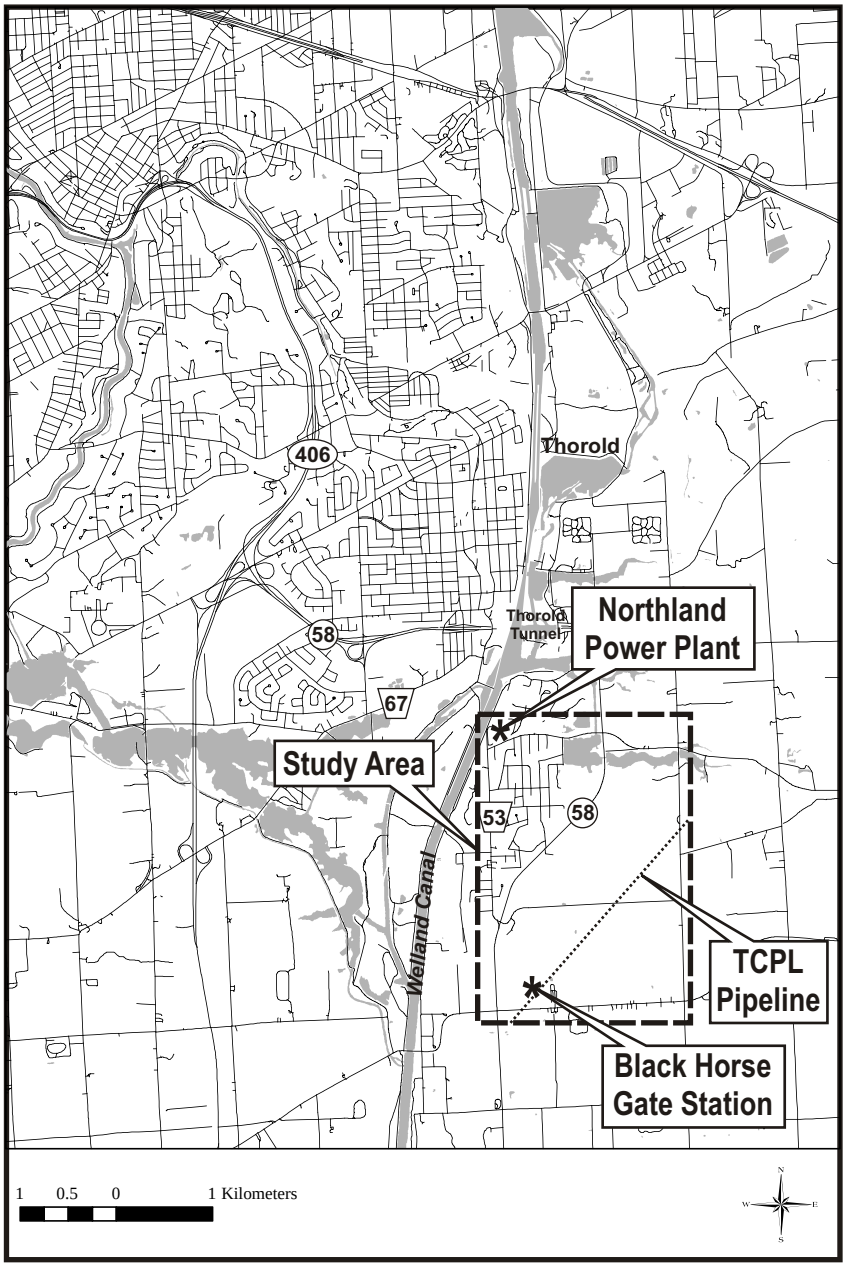
NOTICE OF PUBLIC INFORMATION SESSION

Northlands Pipeline Project

Enbridge Gas Distribution Inc. ("Enbridge") provides safe, reliable delivery of environmentally preferred natural gas to approximately 1.8 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner. As such, Enbridge is proposing to construct a natural gas pipeline to meet the demand for natural gas at the Northlands Cogeneration Power Plant, a Gas-Fired Cogeneration Station in Thorold, Ontario.

The proposed project includes constructing a Nominal Pipe Size (NPS) 12 (12-inch/305 mm) diameter steel pipeline. The proposed pipeline begins along the TransCanada Pipelines (TCPL) transmission pipeline in Thorold, Ontario and ends at the Northlands Cogeneration Power Plant to be located on the property of Abitibi Paper Products.

To assist with the environmental and planning aspects of this project, Enbridge has retained Stantec Consulting Ltd. ("Stantec") to prepare an Environmental Report ("ER"). The ER is being completed as required under the Ontario Energy Board's "Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (May 2003)."



Enbridge is hosting a Public Information Session to provide you with an opportunity to review the project and provide input to the planning process. A Public Information Session regarding the proposed project is scheduled:

When: May 16, 2007
Time: 6:00 pm - 9:00 pm
Where: Fire Station Two - Thorold South
701 Allanburg Rd
Thorold, Ontario, L2V 1B1

At this Public Information Session, representatives from Stantec and Enbridge will be available to explain the project and answer questions regarding the route selection process, construction procedures, and specific mitigation measures.

Input received from the Public Information Session will be used to determine the Preferred Route alignment and help develop site-specific protection and mitigation measures. Anyone having interest in this study is encouraged to contact Stantec at david.wesenger@stantec.com or call collect to (519) 836-6050. Written comments can also be mailed to:

David Wesenger
Senior Project Manager
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario
N1G 3M5

Edwin Makkinga, B.Sc., CCEP
Environmental, Health & Safety Specialist
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario
M2J 1P8

Enbridge will make additional information about the Northlands Pipeline Project available as the project progresses. At this time, it is intended that information will be distributed through local newspapers.

Information will be collected and used in accordance with the Freedom of Information and Protection of Privacy Act, and solely for the purpose of assisting Enbridge in meeting environmental assessment and local planning requirements. This material will be maintained on file for use during the study and may be included in project documentation. With the exception of personal information all comments will become part of the public record.

Pipeline to Service Northland Power Plant

An Enbridge Gas Distribution Inc. Pipeline Project

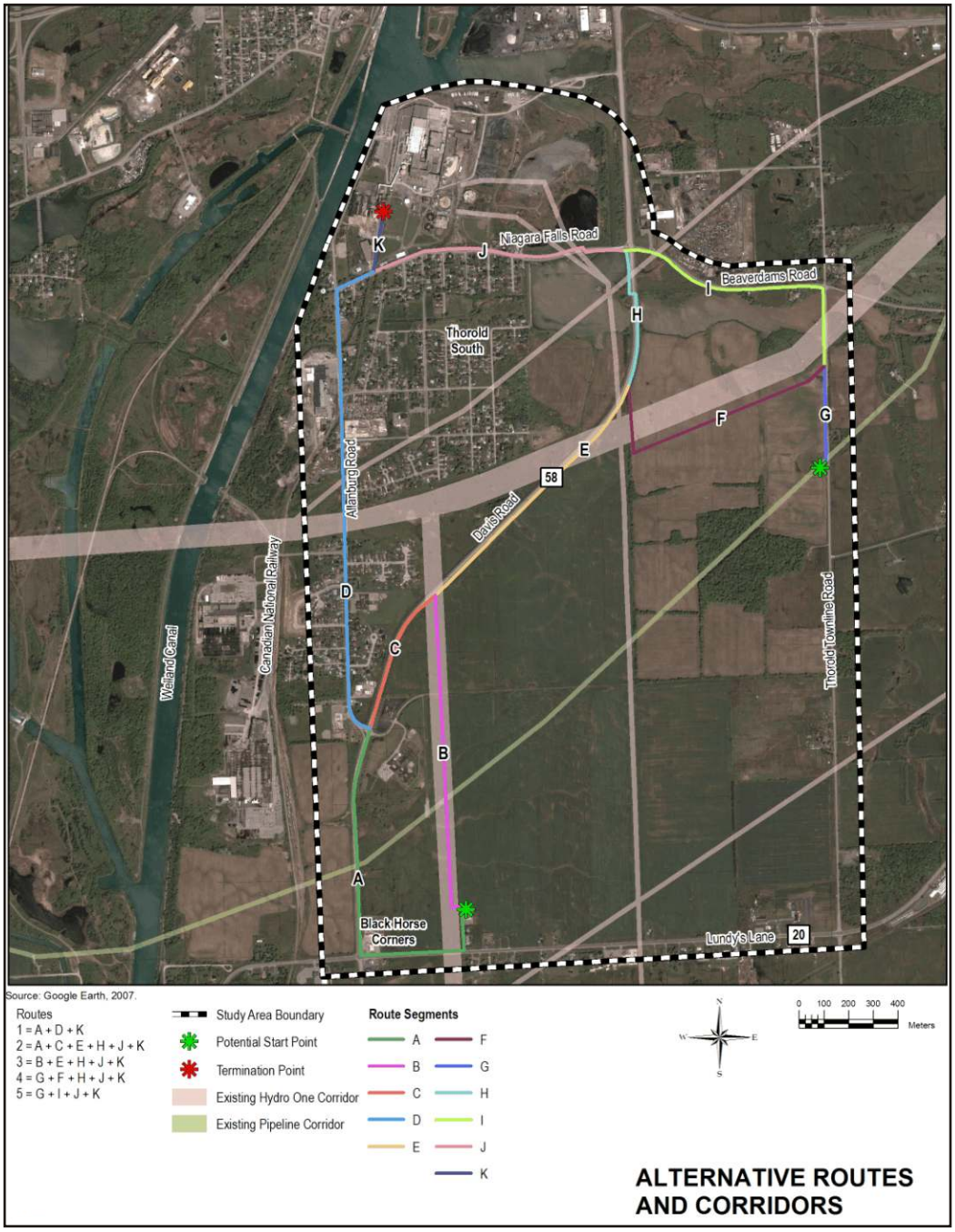
Information Newsletter May 16th, 2007.

THE PROJECT

Enbridge Gas Distribution Inc. ("Enbridge") is proposing to provide natural gas pipeline to serve the Northland Power Plant, to be located at the site of Abitibi Consolidated Inc. The proposed project involves the construction of a natural gas pipeline to originate from the TransCanada Pipelines natural gas transmission corridor (Townline Road) to the Northland Power Plant located on Niagara Falls Road in the (Township of Thorold South, County of Niagara).

The proposed project involves the construction of a 12-inch (305 millimetre) steel natural gas pipeline. The take off point is either at TransCanada Pipeline's corridor at Townline Road or at Enbridge's Black Horse Gate Station on Lundy's Lane where it runs north. The termination point is at the site of Abitibi Consolidated Inc. and the future location of Northland Power's Cogeneration Plant.

Enbridge Gas Distribution Inc., provides safe, reliable delivery of environmentally preferred natural gas to approximately 1.8 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.



PUBLIC INFORMATION SESSION

This Public Information Session aims to provide interested and potentially affected parties with an opportunity to review and comment on the proposed Enbridge pipeline project. Input received at this Public Information Session will be used by Stantec Consulting Ltd. ("Stantec"), an independent environmental consultant, to develop or confirm route selection, and site-specific protection and mitigation measures, which will be detailed in an Environmental Report (ER). Stantec's ER will be part of the Leave-to-construct application by Enbridge to the Ontario Energy Board (OEB) expected in Spring 2007. The OEB is the body responsible for reviewing and approving all pipeline projects.

Pipeline to Service Northland Power Plant

An Enbridge Gas Distribution Inc. Pipeline Project

Information Newsletter May 16th, 2007.

LET US KNOW WHAT YOU'RE THINKING

We are interested in hearing your comments, addressing questions, and working with the communities and residents along the preferred route to ensure the smooth and orderly development of the project.

Our ongoing approach to public communications and consultation includes a mix of providing information on the project plans and receiving input from interested people through the Public Information Session, exit questionnaires provided at the Public Information Session, and newsletters. Meetings with individual property-owners or groups who may be directly affected by the proposed project can be arranged to discuss project details and concerns.

At the Public Information Session, we particularly want your input on a preferred route, the study process, and any other interests you might have regarding this project. You may provide comments at any point in the ER process.

WHAT HAPPENS AFTER THE PUBLIC INFORMATION SESSION?

After the Public Information Session, Stantec will evaluate the exit questionnaire results and other input and use this information to determine a preliminary preferred route. It is Enbridge's hope that meetings with directly affected landowners can be scheduled to obtain information about individual property concerns related to the project.

The ER (to be completed in June 2007) will outline the plans to reduce and control effects of the pipeline on the environment, identify plans to monitor the project, and any other contingencies.

WHAT'S NEXT?

- Analysis of public input (May 2007)
- Identification of preferred route (June 2007)
- ER report completion (June 2007)
- Application to OEB (Summer 2007)
- Ongoing public consultation (Summer 2007)
- Land agent contact with directly affected landowners (Summer 2007)
- OEB hearing (Fall 2007)
- Construction subject to OEB approval (2008)
- Pipeline operation and maintenance (2008-onwards)

CONTACT THE PROJECT TEAM

For general inquiries contact:
Edwin Makkinga
Enbridge Gas Distribution Inc.
500 Consumers Road, 5th Floor
North York, Ontario M2J 1P8
Ph: 416-495-6789
Fax: 416-495-5523
Email: edwin.makkinga@enbridge.com

David Wesenger
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario N1G 3M5
Ph: 519-836-6050 (call collect)
Fax: 519-836-2493
Email: david.wesenger@stantec.com

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

June 12, 2007
File: 160960284

«First»«Last», «Position»
«Agency»
«Address»
«City» «Prov» «Postal»

Dear «Title» «Last»:

Reference: Notice of Second Public Information Session: Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Northland Power Plant

In response to the Government of Ontario's request for new clean energy sources, Enbridge Gas Distribution Inc. ("Enbridge") is currently working on preliminary plans for a natural gas pipeline to serve the Northland Cogeneration Power Plant to be located on the property of Abitibi Paper Products. The project will require the construction of a new natural gas pipeline that would travel northwest from the point where TransCanada PipeLine's existing pipeline crosses Townline Road in Thorold, Ontario, and will predominantly follow existing right-of-ways (ROW).

Since our last correspondence on April 25, 2007 the Preliminary Preferred Route has been selected. This route is shown in the enclosed figure.

An independent consultant, Stantec Consulting Ltd. ("Stantec"), is conducting the Environmental Report (ER) for this project. Stantec's role will be to collect baseline natural environment and socio-economic data, and to prepare a report that will accompany Enbridge's application to the Ontario Energy Board expected in the summer of 2007. The Ontario Energy Board is the body that regulates the energy sector in the province and whose review and approval is required before this project can proceed. If approved, construction for the pipeline would begin in the spring of 2008.

Stantec is presently compiling an environmental, socio-economic and archaeological inventory of the study area. As an agency with jurisdiction or an interest in developments in the Study Area, you are invited to provide comments, or co-ordinate comments, regarding the proposed pipeline. Specifically, Stantec is seeking information regarding other projects in the Study Area that are proposed for development. This information will be incorporated into the ER study as a component of a cumulative effects assessment. Please contact us to discuss the most efficient way to obtain this information.

Your agency's response by July 13, 2007 would be appreciated.

Stantec

June 12, 2007

Reference: Notice of Second Public Information Session: Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Northland Power Plant

A Second Public Information Session will be held to explain the proposed pipeline project, and present an opportunity for any interested parties to provide input on the Preliminary Preferred Route. This Second Public Information Session will be held at:

Fire Station Two – Thorold South
701 Allanburg Road
Thorold, Ontario
June 26, 2007
6:00pm – 9:00pm

Additionally, notice of the session will be advertised in local newspapers.

At this time, we invite you to provide or coordinate comments on behalf of your respective agency to assist us in the preparation of the ER. Information regarding other proposed developments in the area of the proposed pipeline is also requested to assist us in the assessment of cumulative effects.

If you have any questions regarding the ER for this pipeline project, please do not hesitate to contact me by calling collect to the number listed below.

Sincerely,

STANTEC CONSULTING LTD.

David P. Wesenger, B.E.S.
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Study Area Map

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

June 12, 2007
File: 160960284

Dear Resident:

Reference: Notice of Second Public Information Session: Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Northland Power Plant

In response to the Government of Ontario's request for new clean energy sources, Enbridge Gas Distribution Inc. ("Enbridge") is currently working on preliminary plans for a natural gas pipeline to serve the Northland Cogeneration Power Plant to be located on the property of Abitibi Paper Products. The project will require the construction of a new natural gas pipeline that would travel northwest from the point where TransCanada PipeLine's existing pipeline crosses Townline Road in Thorold, Ontario, and will predominantly follow existing right-of-ways (ROW).

Since our last correspondence on May 7, 2007 a Preliminary Preferred Route has been selected. This route is shown in the enclosed figure.

An independent consultant, Stantec Consulting Ltd. ("Stantec"), is conducting the Environmental Report (ER) for this project. Stantec's role will be to collect baseline natural environment and socio-economic data, and to prepare a report that will accompany Enbridge's application to the Ontario Energy Board expected in the summer of 2007. The Ontario Energy Board is the body that regulates the energy sector in the province and whose review and approval is required before this project can proceed. If approved, construction for the pipeline would begin in the spring of 2008.

This pipeline may be built adjacent to, opposite from, or across property owned by you. To learn more about the project and to provide input to the planning process, we invite you to attend an upcoming Second Public Information Session hosted by Stantec. Input received at the Second Public Information Session will be used to help confirm the alignment of the Final Route, and site specific protection or mitigation measures. Representatives from Enbridge will also be available at the Second Public Information Session to answer your questions. Details regarding the Second Public Information Session are as follows:

Fire Station Two – Thorold South
701 Allanburg Road
Thorold, Ontario
June 26, 2007
6:00pm – 9:00pm

Additionally, notice of the session will be advertised in local newspapers.

Stantec

June 12, 2007

Reference: Notice of Second Public Information Session: Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Northland Power Plant

We hope that you will attend the Public Information Session. If you or a representative are not able to join us, as always, we welcome your call (519) 836-6050.

Sincerely,

STANTEC CONSULTING LTD.

David P. Wesenger, B.E.S.
Senior Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
david.wesenger@stantec.com

Attachment: Study Area Map

NOTICE OF SECOND PUBLIC INFORMATION SESSION

Northlands Pipeline Project

Enbridge Gas Distribution Inc. ("Enbridge") provides safe, reliable delivery of environmentally preferred natural gas to approximately 1.8 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner. As such, Enbridge is proposing to construct a natural gas pipeline to meet the demand for natural gas at the Northland Cogeneration Power Plant, a Gas-Fired Cogeneration Station in Thorold, Ontario.

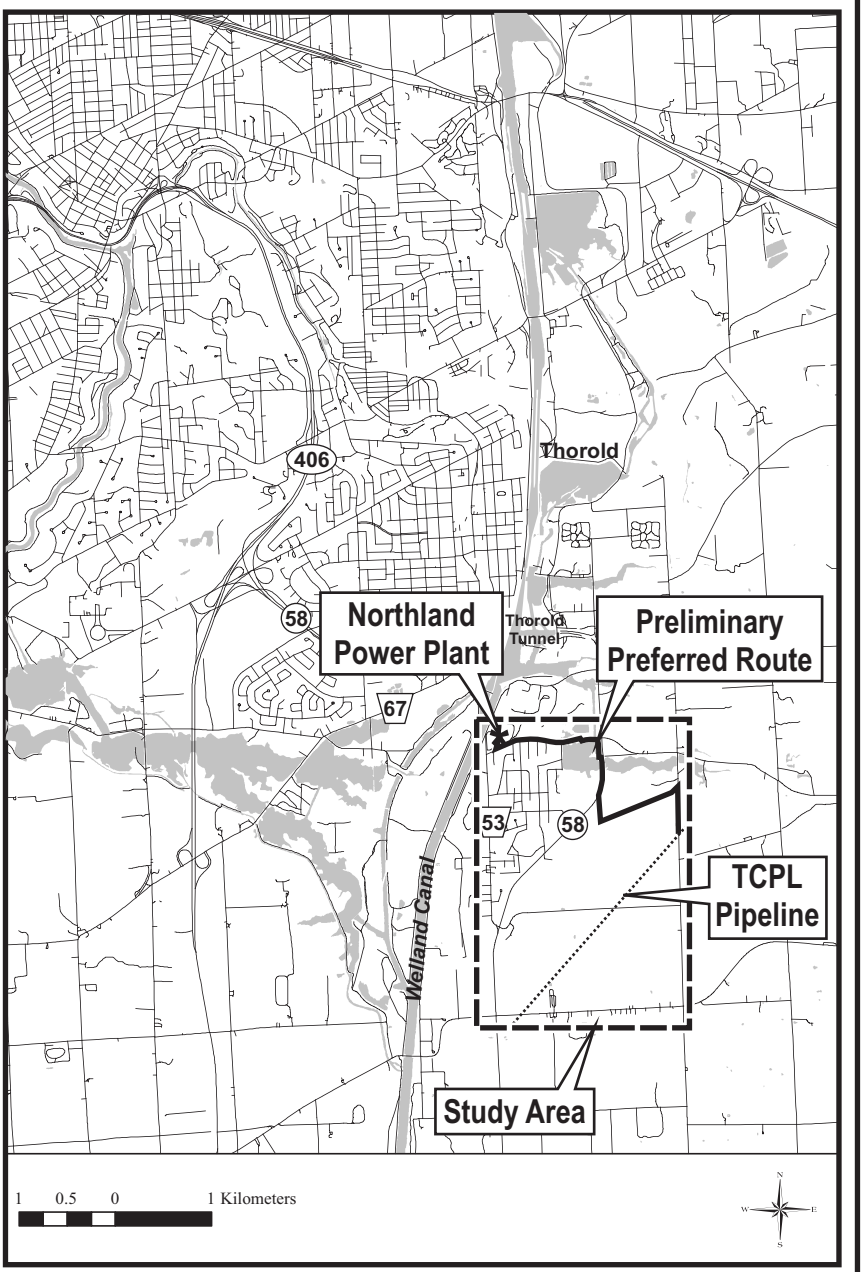
The proposed project includes constructing a Nominal Pipe Size (NPS) 12 (12-inch/305 mm) diameter steel pipeline. The proposed pipeline begins where TransCanada PipeLine's existing pipeline network crosses Townline Road in Thorold, Ontario, and ends at the Northland Cogeneration Power Plant to be located on the property of Abitibi Paper Products.

To assist with the environmental and planning aspects of this project, Enbridge has retained Stantec Consulting Ltd. ("Stantec") to prepare an Environmental Report ("ER"). The ER is being completed as required under the Ontario Energy Board's "Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (May 2003)."

Enbridge is hosting a Second Public Information Session to provide you with an opportunity to review the project and provide input regarding the alignment of the Preliminary Preferred Route and the planning process. A Second Public Information Session regarding the proposed project is scheduled:

Fire StationTwo - Thorold South
701 Allanburg Road
Thorold, Ontario
June 26, 2007
6:00pm - 9:00pm

At this Second Public Information Session, representatives from Stantec and Enbridge will be available to explain the project and answer questions regarding the route selection process, the alignment of the Preliminary Preferred Route, construction procedures, and specific mitigation measures.



Input received from the Second Public Information Session will be used to determine the Preferred Route alignment and help develop site-specific protection and mitigation measures. Anyone having interest in this study is encouraged to contact Stantec at **david.wesenger@stantec.com** or call collect to (519) 836-6050. Written comments can also be mailed to:

David Wesenger
Senior Project Manager
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario
N1G 3M5

Edwin Makkinga, B.Sc., CCEP
Environmental, Health & Safety Specialist
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario
M2J 1P8

Enbridge will make additional information about the Northland Pipeline Project available as the project progresses. At this time, it is intended that information will be distributed through local newspapers.

Information will be collected and used in accordance with the Freedom of Information and Protection of Privacy Act, and solely for the purpose of assisting Enbridge in meeting environmental assessment and local planning requirements. This material will be maintained on file for use during the study and may be included in project documentation. With the exception of personal information all comments will become part of the public record.

Pipeline to Service Northland Power Plant

An Enbridge Gas Distribution Inc. Pipeline Project

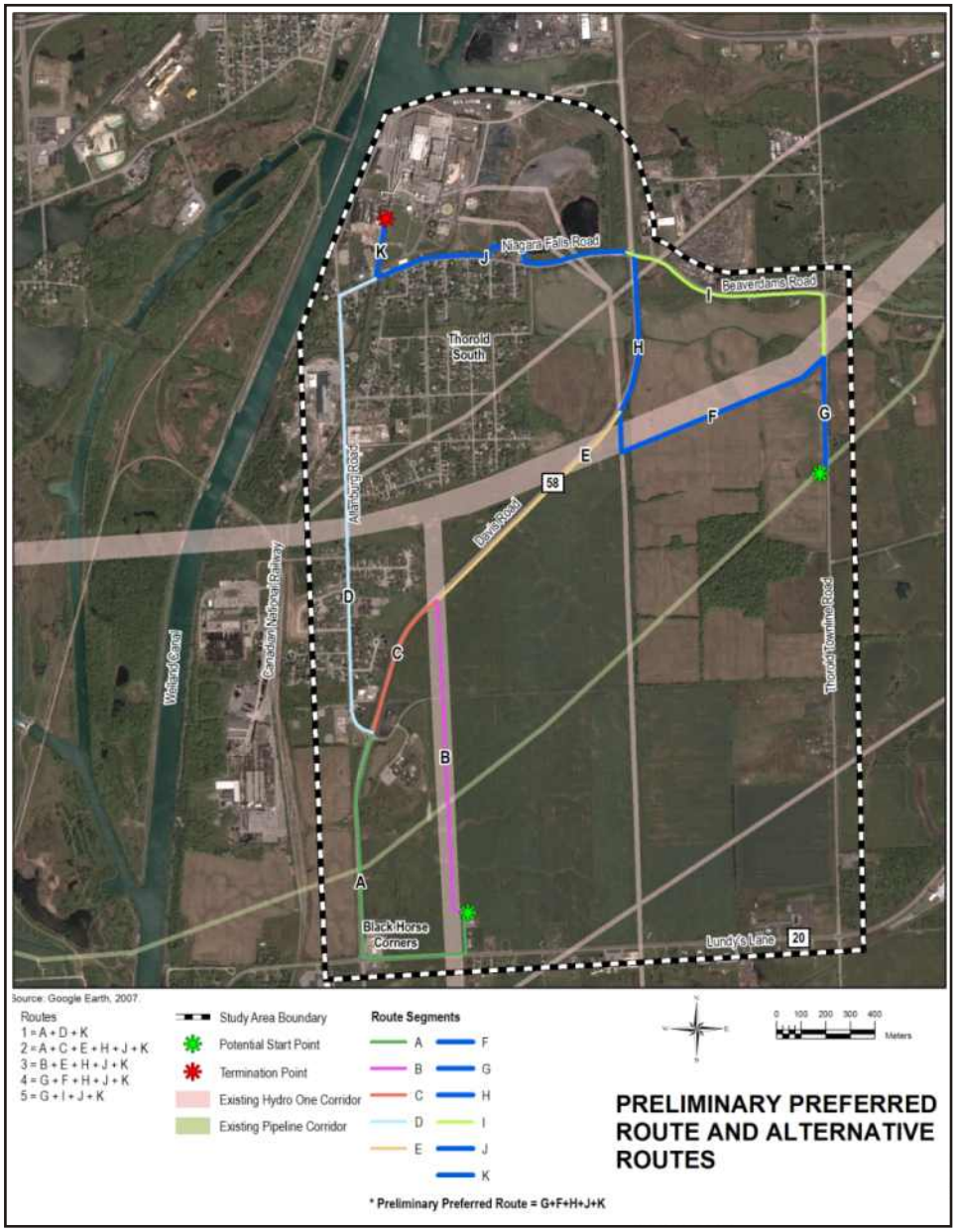
Information Newsletter June 26th, 2007.

THE PROJECT

Enbridge Gas Distribution Inc. ("Enbridge") is proposing to provide natural gas to serve the Northland Power Plant, to be located at the site of Abitibi Consolidated Inc. The proposed project involves the construction of a natural gas pipeline to originate from the TransCanada PipeLine's natural gas transmission corridor (Townline Road) to the Northland Power Plant located on Niagara Falls Road in the Township of Thorold South, County of Niagara.

The proposed project involves the construction of a 12-inch (305-millimetre) steel natural gas pipeline. The take off point is either at TransCanada PipeLine's corridor at Townline Road or at Enbridge's Black Horse Gate Station on Lundy's Lane. The termination point is at the site of Abitibi Consolidated Inc. and the future location of Northland Power's Cogeneration Plant.

Enbridge Gas Distribution Inc. provides safe, reliable delivery of environmentally preferred natural gas to approximately 1.8 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.



SECOND PUBLIC INFORMATION SESSION

At the First Public Information Session, interested and affected parties were invited to review and comment on the proposed Enbridge pipeline project. Input received from the First Public Information Session, as well as agency and stakeholder meetings, was used by Stantec Consulting Ltd. ("Stantec"), an independent environmental consultant, to develop the Preliminary Preferred Route, and site-specific protection and mitigation measures.

The Second Public Information Session aims to provide interested and affected parties with an opportunity to review and comment on the proposed Enbridge pipeline project. Information pertaining to the Preliminary Preferred Route and site-specific protection and mitigation measures are especially appreciated at this time. Input received from the Second Public Information Session will be used by Stantec to confirm the Preferred Route, and develop site specific protection and mitigation measures. This information will be detailed in an Environmental Report (ER). Stantec's ER will be part of an application by Enbridge to the Ontario Energy Board (OEB) expected in the summer of 2007. The OEB is the body responsible for reviewing and approving all pipeline projects.

Pipeline to Service Northland Power Plant

An Enbridge Gas Distribution Inc. Pipeline Project

Information Newsletter June 26th, 2007.

LET US KNOW WHAT YOU'RE THINKING

We are interested in hearing your comments, addressing questions, and working with the communities and residents along the Preliminary Preferred Route to ensure the smooth and orderly development of the project.

Our ongoing approach to public communications and consultation includes a mix of providing information on the project plans and receiving input from interested people through the Public Information Sessions, exit questionnaires provided at the Public Information Sessions, and newsletters. Meetings with individual property-owners or groups who may be directly affected by the proposed project can be arranged to discuss project details and concerns.

At the Second Public Information Session, we particularly want your input on the Preliminary Preferred Route, site-specific protection and mitigation measures, and any other interests you might have regarding this project. You may provide comments at any point in the ER process.

WHAT HAPPENS AFTER THE PUBLIC INFORMATION SESSION?

After the Public Information Session, Stantec will evaluate the exit questionnaire results and other input and use this information to confirm the Preferred Route. It is Enbridge's hope that meetings with directly affected landowners can be scheduled to obtain information about individual property concerns related to the project.

The ER (to be completed in July 2007) will outline the plans to reduce and control effects of the pipeline on the environment, identify plans to monitor the project, and any other contingencies.

WHAT'S NEXT?

- Analysis of public input (May 2007)
- Identification of the Preliminary Preferred Route (June 2007)
- ER report completion (July 2007)
- Application to OEB (Summer 2007)
- Ongoing public consultation (Summer 2007)
- Land agent contact with directly affected landowners (Summer 2007)
- OEB hearing (Fall 2007)
- Construction subject to OEB approval (2008)
- Pipeline operation and maintenance (2008-onwards)

CONTACT THE PROJECT TEAM

For general inquiries contact:

Edwin Makkinga
Enbridge Gas Distribution Inc.
500 Consumers Road, 5th Floor
North York, Ontario M2J 1P8
Ph: 416-495-6789
Fax: 416-495-5523
Email: edwin.makkinga@enbridge.com

David Wesenger
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario N1G 3M5
Ph: 519-836-6050 (call collect)
Fax: 519-836-2493
Email: david.wesenger@stantec.com

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

February 29, 2008
File: 160960284

«First»«Last», «Position»
«Agency»
«Address»
«City» «Prov» «Postal»

Dear «Title» «Last»:

Reference: Notice of Public Information Session: Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Proposed Northland Power Plant

In response to the Government of Ontario's request for new clean energy sources, Enbridge Gas Distribution Inc. ("Enbridge") is currently working on preliminary plans for a natural gas pipeline to serve the proposed Northland Cogeneration Power Plant to be located on the property of Abitibi Consolidating Inc.

An independent consultant, Stantec Consulting Ltd. ("Stantec"), has been retained by Enbridge to prepare an Environmental Report (ER) for the proposed pipeline project. The proposed project involves the construction of a natural gas pipeline to commence at the location of TransCanada Pipelines natural gas transmission corridor and Townline Road, and will terminate at the proposed Northland Power Plant to be located on the property of Abitibi Consolidating Inc., on Allanburg Road, in Thorold South, Ontario.

Since our last correspondence on June 12, 2007 a Preferred Route was selected by Stantec and presented to Enbridge. After considering public input, Enbridge is reviewing the Preferred Route and considering an alternative Preferred Route. Stantec is now determining the acceptability of the alternative Preferred Route. The original Preferred Route and the alternative Preferred Route are illustrated on the enclosed figure.

Stantec is presently reviewing environmental, socio-economic and archaeological information within the Study Area that was collected during the original ER study process, April 2007 to August 2007, and determining if new information is available. As an agency with jurisdiction or an interest in developments in the Study Area, you are invited to provide comments, or co-ordinate comments, regarding the alternative Preferred Route. Any new information collected will be incorporated into the ER.

A response by **March 20, 2008** would be appreciated.

Stantec

February 29, 2008

Reference: Notice of Public Information Session: Enbridge Gas Distribution Inc. – Natural Gas Pipeline to Serve the Proposed Northland Power Plant

A Public Information Session will be held to explain the need for the alterations made to the original Preferred route, and present an opportunity for any interested parties to provide input on the alternative Preferred Route. This Public Information Session will be held at:

Fire Station Two – Thorold South
701 Allanburg Road
Thorold, Ontario
March 18, 2008
6:00pm – 9:00pm

Additionally, notice of the session will be advertised in local newspapers.

We hope that you will attend the Public Information Session. If you or a representative is not able to join us, as always, we welcome your call (519) 836-6050.

Sincerely,

STANTEC CONSULTING LTD.

Melanie Adamson
Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
Melanie.adamson@stantec.com

Attachment: Study Area Map

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5
Tel: (519) 836-6050 Fax: (519) 836-2493
stantec.com

Stantec

February 29, 2008

Dear Landowner/Tenant:

Reference: Notice of Public Information Session: Enbridge Gas Distribution Inc. – Pipeline to Service Northland Power Plant

In response to the Government of Ontario's request for new clean energy sources, Enbridge Gas Distribution Inc. ("Enbridge") is currently working on preliminary plans for a natural gas pipeline to serve the proposed Northland Cogeneration Power Plant to be located on the property of Abitibi Consolidating Inc.

An independent consultant, Stantec Consulting Ltd. ("Stantec"), has been retained by Enbridge to prepare an Environmental Report (ER) for the proposed pipeline project. The proposed project involves the construction of a natural gas pipeline to commence at the location of TransCanada Pipelines natural gas transmission corridor and Townline Road, and will terminate at the proposed Northland Power Plant to be located on the property of Abitibi Consolidating Inc., on Allanburg Road, in Thorold South, Ontario.

Since our last correspondence on June 12, 2007 a Preferred Route was selected by Stantec and presented to Enbridge. After considering public input, Enbridge is reviewing the Preferred Route and considering an alternative Preferred Route. Stantec is now determining the acceptability of the alternative Preferred Route. The original Preferred Route and the alternative Preferred Route are illustrated on the enclosed figure.

Stantec's ER will accompany Enbridge's Leave-To-Construct application to the Ontario Energy Board expected in the summer of 2008. The Ontario Energy Board is the governing body that regulates the energy sector in the province and whose review and approval is required before this project can proceed.

To learn more about the project and provide input regarding the alteration made to the original Preferred Route, and the alignment of the alternative Preferred Route, we invite you to attend an upcoming Public Information Session hosted by Stantec. Input received at the Public Information Session will be used to help confirm route selection, and site-specific protection and mitigation measures. Representatives from Enbridge will also be available at the Public Information Session to answer your questions.

Details regarding the Public Information Session are as follows:

Fire Station Two – Thorold South
701 Allanburg Rd
Thorold, Ontario
March 18, 2008
6:00 pm to 9:00 pm

Additionally, notice of the session will be advertised in local newspapers.

Reference: Notice of Public Information Session: Enbridge Gas Distribution Inc. – Proposed Pipeline to Serve Northland Power Plant

We hope that you will attend the Public Information Session. If you or a representative is not able to join us, as always, we welcome your call (519) 836-6050.

Sincerely,

STANTEC CONSULTING LTD.

Melanie Adamson
Project Manager
Tel: (519) 836-6050
Fax: (519) 836-2493
Melanie.adamson@stantec.com

Attachment: Figure A.4 - Original and Alternative Preferred Routes

NOTICE OF PUBLIC INFORMATION SESSION

Enbridge Gas Distribution Inc.
Pipeline to Service the Proposed Northland Power Plant

Enbridge Gas Distribution Inc. ("Enbridge") provides safe, reliable delivery of environmentally preferred natural gas to approximately 1.8 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner. As such, Enbridge is currently working on preliminary plans for a natural gas pipeline to serve the proposed Northland Cogeneration Power Plant to be located on the property of Abitibi Consolidating Inc.

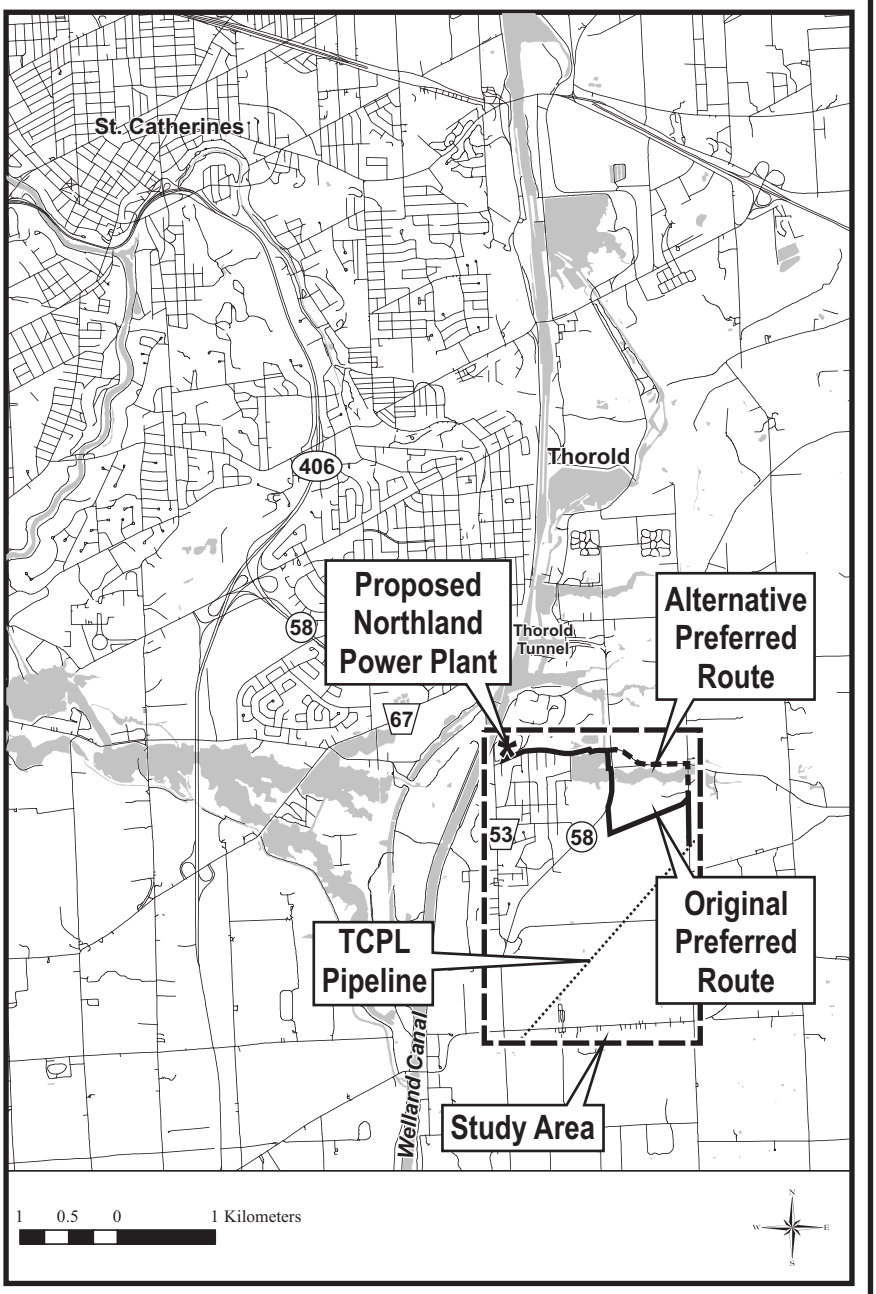
An independent consultant, Stantec Consulting Ltd. ("Stantec"), has been retained by Enbridge to prepare an Environmental Report (ER) for the proposed pipeline project. The proposed project involves the construction of a natural gas pipeline to commence at the location of TransCanada Pipelines natural gas transmission corridor and Townline Road, and will terminate at the proposed Northland Power Plant to be located on the property of Abitibi Consolidating Inc., on Allanburg Road, in Thorold South, Ontario.

In August of 2007, a Preferred Route was selected by Stantec and presented to Enbridge. After considering public input, Enbridge is reviewing the Preferred Route and considering an alternative Preferred Route. Stantec is now determining the acceptability of the alternative Preferred Route. The original Preferred Route and the alternative Preferred Route are illustrated on the enclosed figure.

Stantec's ER will accompany Enbridge's Leave-To-Construct application to the Ontario Energy Board expected in the summer of 2008. The Ontario Energy Board is the body that regulates the energy sector in the province and whose review and approval is required before this project can proceed.

Stantec is hosting a Public Information Session to provide you with an opportunity to review the project and provide input regarding the alignment of the alternative Preferred Route and the planning process. Details regarding the Public Information Session are as follows:

Fire StationTwo - Thorold South
701 Allanburg Road
Thorold, Ontario
March 18, 2008
6:00pm - 9:00pm



At this Public Information Session, representatives from Stantec and Enbridge will be available to explain the project and answer questions regarding the route selection process, the alignment of the alternative Preferred Route, construction procedures, and specific mitigation measures.

Input received from the Public Information Session will be used to confirm the alternative Preferred Route alignment and help develop site-specific protection and mitigation measures.

Anyone having interest in this study is encouraged to contact Stantec at david.wesenger@stantec.com or call collect to (519) 836-6050. Written comments can also be mailed to:

David Wesenger
Senior Project Manager
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario
N1G 3M5

Edwin Makkinga, B.Sc., CCEP
Environmental, Health & Safety Specialist
Enbridge Gas Distribution Inc.
500 Consumers Road
North York, Ontario
M2J 1P8

Enbridge will make additional information about the Enbridge Gas Distribution Inc. Pipeline to Service Northland Power Plant available as the project progresses. At this time, it is intended that information will be distributed through local newspapers.

Pipeline to Service the Proposed Northland Power Plant

An Enbridge Gas Distribution Inc. Pipeline Project

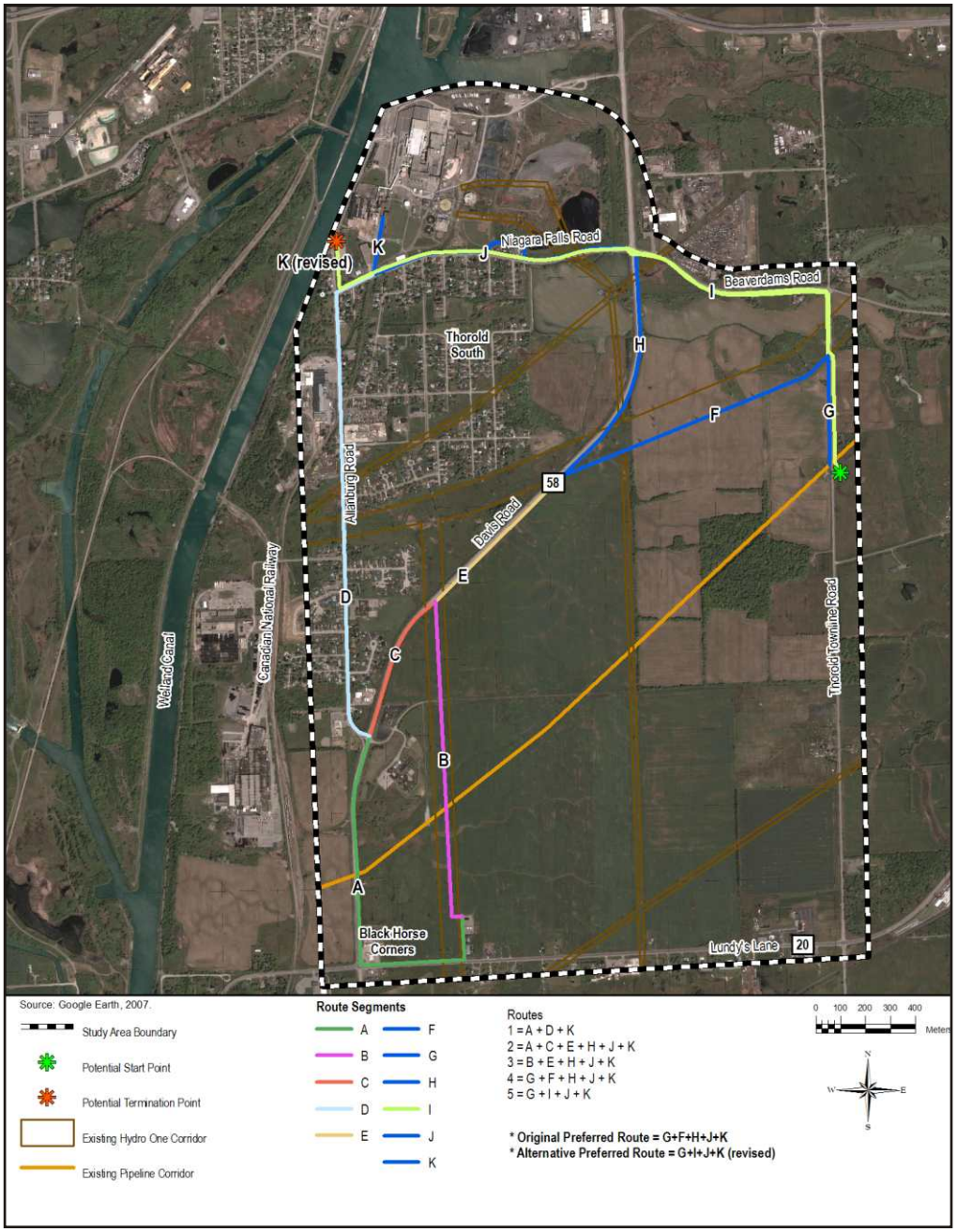
Information Newsletter March 18th, 2008.

THE PROJECT

Enbridge Gas Distribution Inc. ("Enbridge") is proposing to provide natural gas to serve the proposed Northland Power Plant, to be located at the site of Abitibi Consolidated Inc. The proposed project involves the construction of a natural gas pipeline to originate from TransCanada PipeLine's natural gas transmission corridor (Townline Road) to the proposed Northland Power Plant to be located on Allanburg Road in Thorold South, County of Niagara.

The proposed project involves the construction of a 12-inch (305-millimetre) steel natural gas pipeline. The take off point is at TransCanada PipeLine's corridor at Townline Road. The termination point is at the site of Abitibi Consolidated Inc. and the proposed location of Northland Power's Cogeneration Plant.

Enbridge provides safe, reliable delivery of environmentally preferred natural gas to approximately 1.8 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.



THIRD PUBLIC INFORMATION SESSION

Since the Second Public Information Session, that was held on June 26, 2007, a Preferred Route was selected by Stantec Consulting Ltd. ("Stantec") and presented to Enbridge. After considering public input, Enbridge is reviewing the original Preferred Route and considering an alternative Preferred Route. Stantec is now determining the acceptability of the alternative Preferred Route.

The Third Public Information Session is being held to provide interested and affected parties with an opportunity to review and comment on the alternative Preferred Route. Input received from the Third Public Information Session will be used by Stantec to confirm the Preferred Route, and develop site specific protection and mitigation measures. This information will be detailed in an Environmental Report (ER). Stantec's ER will be part of an application by Enbridge to the Ontario Energy Board (OEB) expected in the summer of 2008. The OEB is the body responsible for reviewing and approving all pipeline projects.

Pipeline to Service the Proposed Northland Power Plant

An Enbridge Gas Distribution Inc. Pipeline Project

Information Newsletter March 18th, 2008.

LET US KNOW WHAT YOU'RE THINKING

We are interested in hearing your comments, addressing questions, and working with the communities and residents along the Preferred Route to ensure the smooth and orderly development of the project.

Our ongoing approach to public communications and consultation includes a mix of providing information on the project plans and receiving input from interested people through the Public Information Sessions, exit questionnaires provided at the Public Information Sessions, and newsletters. Meetings with individual property-owners or groups who may be directly affected by the proposed project can be arranged to discuss project details and concerns.

At this Public Information Session, we particularly want your input on the alternative Preferred Route, site-specific protection and mitigation measures, and any other interests you might have regarding this project. You may provide comments at any point in the ER process.

WHAT HAPPENS AFTER THE PUBLIC INFORMATION SESSION?

After the Public Information Session, Stantec will evaluate the exit questionnaire results and other input and use this information to confirm the Preferred Route. It is Enbridge's hope that meetings with directly affected landowners can be scheduled to obtain information about individual property concerns related to the project.

The ER (to be completed in April 2008) will outline the plans to reduce and control effects of the pipeline on the environment, identify plans to monitor the project, and any other contingencies.

WHAT'S NEXT?

- Analysis of public input (March 2008)
- Identification of the Preferred Route (March 2008)
- ER report completion (April 2008)
- Application to OEB (Spring 2008)
- OEB hearing (Summer 2008)
- Construction subject to OEB approval (2009)
- Pipeline operation and maintenance (2009-onwards)

CONTACT THE PROJECT TEAM

For general inquiries contact:
Edwin Makkinga
Enbridge Gas Distribution Inc.
500 Consumers Road, 5th Floor
North York, Ontario M2J 1P8
Ph: 416-495-6789
Fax: 416-495-5523
Email: edwin.makkinga@enbridge.com

David Wesenger
Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario N1G 3M5
Ph: 519-836-6050 (call collect)
Fax: 519-836-2493
Email: david.wesenger@stantec.com

Appendix B6

Public Information Session Exit Questionnaire Summaries

Northland Pipeline Project:
An Enbridge Gas Distribution Pipeline Project

Environmental Assessment
Public Information Session Questionnaire

Please complete this questionnaire and return it to a Stantec representative or mail it to Stantec Consulting Ltd. by May 31, 2007. Postage paid, self-addressed envelopes are available at the sign-in table. Thank you for your assistance.

Please read the newsletter and look over the displays before completing this questionnaire. If you require any assistance or clarification while completing the questionnaire please contact a Stantec or Enbridge representative.

1. Please describe your interest in this project (please check one).

   Property Owner __2___ Member of Special Interest Group _____
   Interested Citizen _____ Government Official _____

   Other (please specify) _____

2. How did you find out about tonight's meeting? (please check one)

   Letter of Invitation __2__ Newspaper _____

   Other (please specify) _____

3. Please identify any environmental features in the study area which are either incorrectly mapped, omitted or that you feel are important to consider during the study (please state your reasons).

4. Which factors do you feel are most important to compare and evaluate alternate routes for the proposed pipeline (i.e., agricultural capability, artificial drainage, residential properties, landowner preference, etc.)?

   - Cost, access to lines and ability to monitor
   - You are the professionals, make up your mind! Peons can't do it for you

5. Considering the location of the routes as shown on the displays, please indicate whether there are any potential effects to you, your property, or business that Enbridge would need to address prior to construction and operation of the pipeline.

Preferred Route: Take off from Trans Canada Pipelines corridor at Townline Road.
- Good one

Alternate Routes: Take off from Enbridge Gas Distribution corridor at Black Horse Gate Station.

- A-D-K route appears most direct and simplest. Unfortunately my property rests on that route, but if we are to prosper we share hard times.
- Poor

6. Which route do you feel has the least environmental and socio-economic impact? Why do you think this route has the least impact?

- Route 1 uses established serviced corridor so should be simplest and direct
- Preferred Route. More of it on their property

7. Do you have any other concerns about this proposed project that you would like to bring to our attention?

- Safety of school children during installation. Route 1 is main access to school
- Do your usual job

8. If you would like to meet or be contacted to discuss any questions or concerns please provide us with your contact information:

Name: _____

Address: _____

Phone: (home) _____ (work) _____

Email: _____

Convenient time you can be reached: _____

Thank you for completing this questionnaire.

Do you consent to these comments being included in the public record?

Yes _____ Yes, but anonymously _____ No _____

Signature: _____

Date: _____

Northland Pipeline Project:
An Enbridge Gas Distribution Pipeline Project

Environmental Assessment
Public Information Session Questionnaire

Please complete this questionnaire and return it to a Stantec representative or mail it to Stantec Consulting Ltd. by July 13, 2007. Postage paid, self-addressed envelopes are available at the sign-in table. Thank you for your assistance.

Please read the newsletter and look over the displays before completing this questionnaire. If you require any assistance or clarification while completing the questionnaire please contact a Stantec or Enbridge representative.

1. Please describe your interest in this project. (Please check one)

Property Owner	2	Member of Special Interest Group	_____
Interested Citizen	2	Government Official	_____

Other (please specify) _____

2. How did you find out about tonight's meeting? (Please check one)

Letter of Invitation 3 Newspaper 1

Other (please specify) _____

3. Please identify any environmental features in the Study Area which are either incorrectly mapped, omitted or that you feel are important to consider during the study (please state your reasons).

- None
- Nothing that I could spot

4. Which factors do you feel are most important to compare and evaluate alternate routes for the proposed pipeline (i.e., agricultural capability, artificial drainage, residential properties, landowner preference, etc.)?

   - Artificial drainage
   - Residential property values

5. Considering the location of the Preliminary Preferred Route shown on the displays, please indicate whether there are any potential effects to you, your property, or business that Enbridge would need to address prior to construction and operation of the pipeline.

   - There was nothing in your proposal that should impact me or my property
   - None
   - Downward real estate value

6. Do you feel that the Preliminary Preferred Route would have the least environmental and socio-economic impact? (Please check one) Yes _2_ No _1_

   If no, why?
   - Appears to be well planned

7. Do you have any other concerns about this proposed project that you would like to bring to our attention?

   - not at this time
   - none

8. Would you like to meet or be contacted to discuss any questions or concerns? (Please check one) Yes __1__ No __2___

Please provide us with your contact information:

Name: _____

Address: _____

Phone: (home) _____ (work) _____

Email: _____

Convenient time you can be reached: _____

Thank you for completing this questionnaire.

Do you consent to these comments being included in the public record?

Yes _____ Yes, but anonymously _____ No _____

Signature: _____

Date: _____

Stantec

Northland Pipeline Project:
An Enbridge Gas Distribution Pipeline Project

Environmental Assessment
Public Information Session Questionnaire

Please complete this questionnaire and return it to a Stantec representative or mail it to Stantec Consulting Ltd. by March 28, 2008. Postage paid, self-addressed envelopes are available at the sign-in table. Thank you for your assistance.

Please read the newsletter and look over the displays before completing this questionnaire. If you require any assistance or clarification while completing the questionnaire please contact a Stantec or Enbridge representative.

1. Please describe your interest in this project (please check one).

   Property Owner _____ Member of Special Interest Group _____
   Interested Citizen _____ Government Official _____

   Other (please specify) :

   - Consultant representing Niagara Region

2. How did you find out about tonight's meeting? (Please check one)

   Letter of Invitation _____ Newspaper __1__

   Other (please specify) _____

3. Please identify any environmental features in the Study Area which are either incorrectly mapped, omitted or that you feel are important to consider during the study (please state your reasons).

   _____

   _____

   _____

   _____

4. Which factors do you feel are most important to compare and evaluate alternate routes for the proposed pipeline (i.e., agricultural capability, artificial drainage, residential or commercial properties, landowner preference, etc.)?

5. Considering the location of the alternative Preferred Route shown on the displays, please indicate whether there are any potential effects to you, your property, or business that Enbridge would need to address prior to construction and operation of the pipeline.

6. Do you feel that the alternative Preferred Route would have the least environmental and socio-economic impact? (Please check one) Yes __ No __

   If no, why? _____

7. Do you have any other concerns about this proposed project that you would like to bring to our attention?

    - Regional trunk watermain to be constructed on Allanburg Road form North Water tank southward

8. Would you like to meet or be contacted to discuss any questions or concerns? (Please check one) Yes _____ No _____

Please provide us with your contact information:

Name: _____

Address: _____

Phone: (home) _____ (work) _____

Email: _____

Convenient time you can be reached: _____

Thank you for completing this questionnaire.

Do you consent to these comments being included in the public record?

Yes _____ Yes, but anonymously _____ No _____

Signature: _____

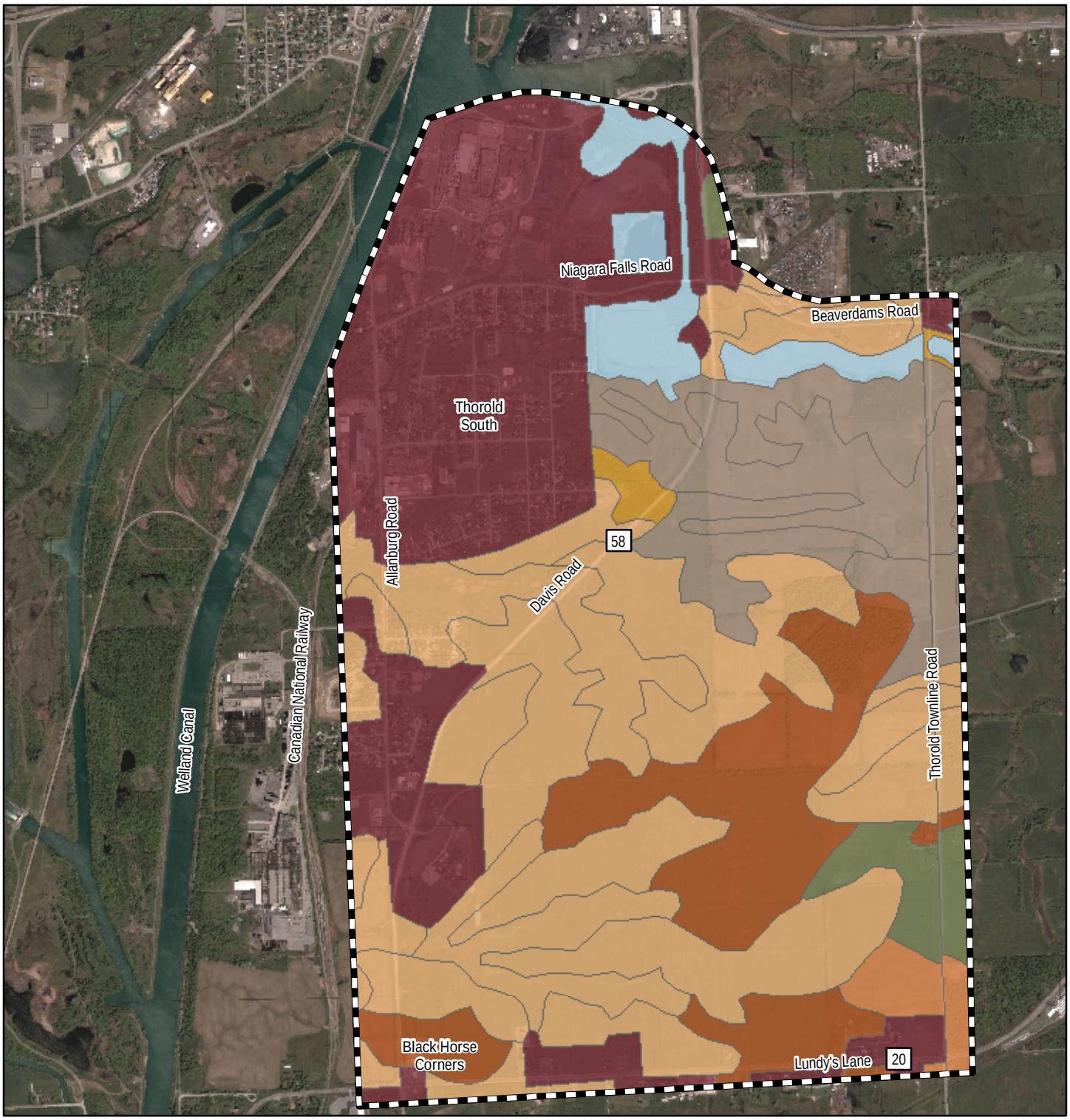
Date: _____

Appendix C

Environmental and Socio-Economic Features

Appendix C1

Features Mapping



File: W:\active\60960284\graphics\GIS\MXD\60960284_06.mxd

Source: Google Earth, 2007, Ontario Institute of Pedology, 1989.

Study Area Boundary

Soils

- Alluvium
- Beverly
- Niagara
- Toledo
- Beverly - Loamy Phase
- Not Mapped
- Toledo - Loamy Red Phase
- Water

N
W
E
S

0 100 200 300 400
Meters

1:20,000

Stantec

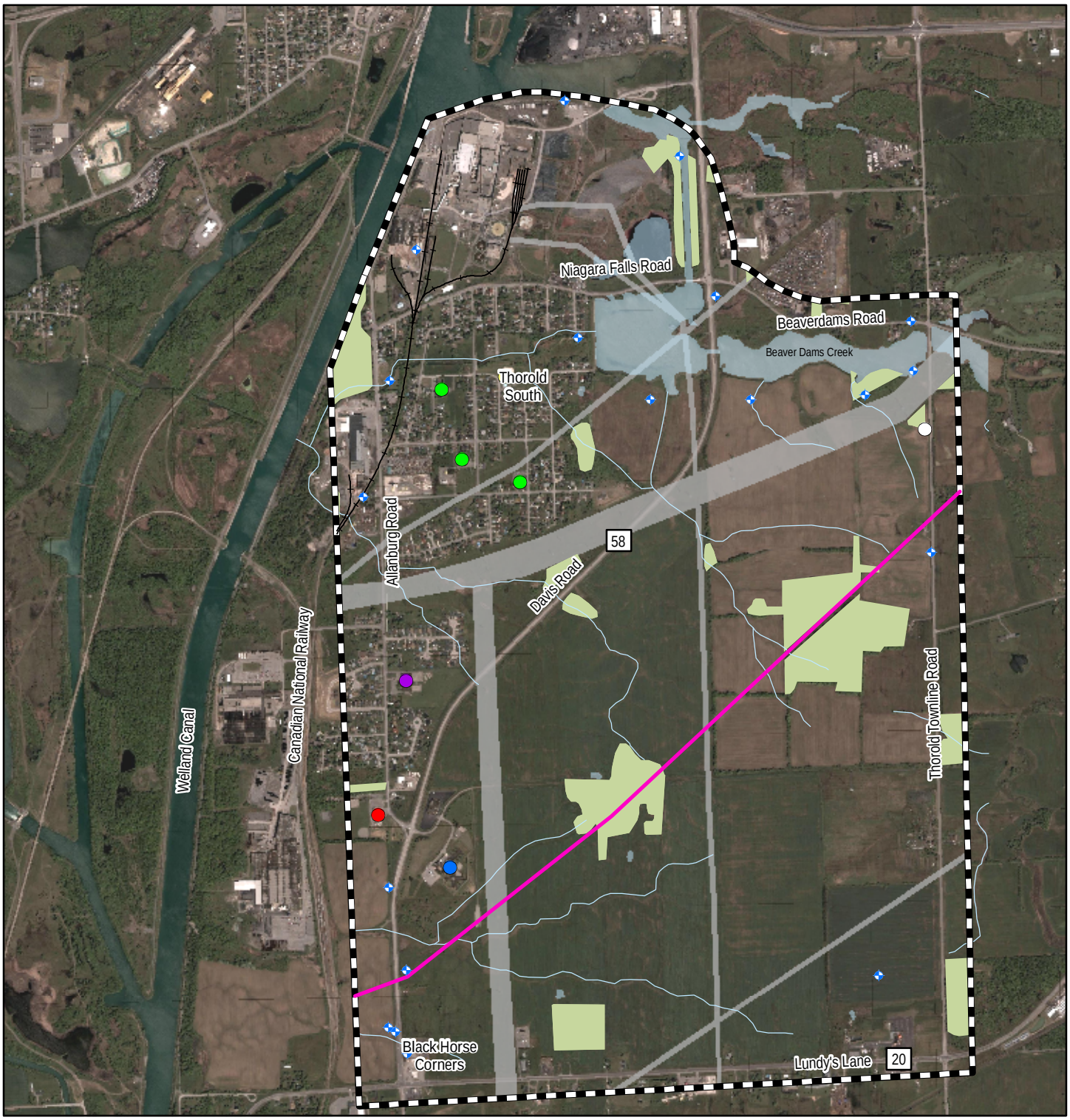
PREPARED FOR:

ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

FIGURE NO. C1-1

SOILS OF THE STUDY AREA

Initiated: February, 2007
Revised: April, 2008



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Source: Google Earth, 2007; LIDS, 2006; City of Thorold, 2005; MOE, 2005

- Study Area Boundary
- Existing Pipelines
- Railways
- Streams
- Vegetation
- Existing Hydro One Corridor
- Cemetery
- Church
- Community Centre
- Fire Hall
- Niagara Detention Centre
- School
- Water Wells

N W E S

0 100 200 300 400 Meters

1:20,000

Stantec

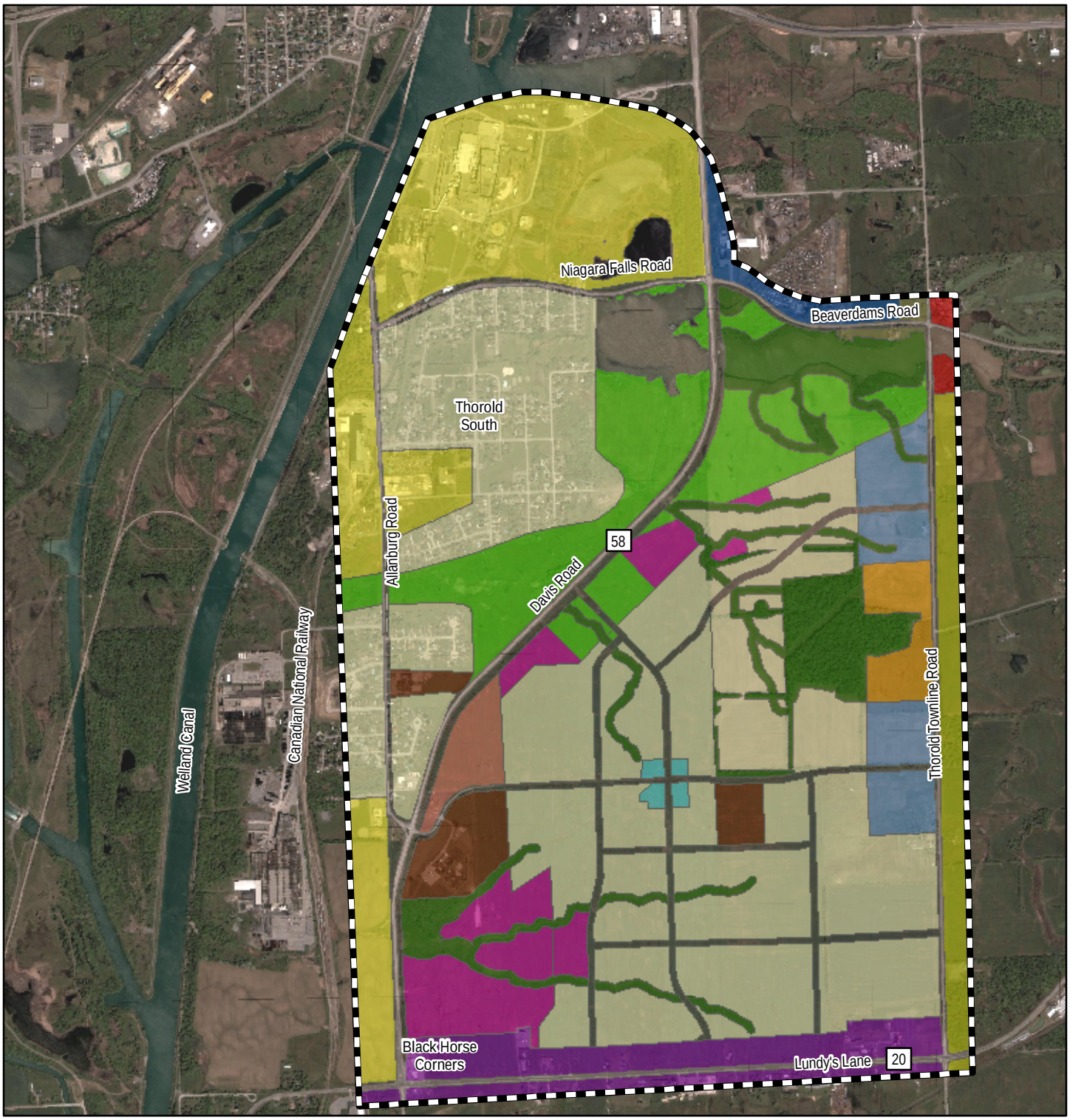
PREPARED FOR:

ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

FIGURE NO. C1-2

EXISTING NATURAL AND SOCIO-ECONOMIC FEATURES

Initiated: February, 2007
Revised: April, 2008



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Source: Google Earth, 2007; City of Thorold, 2005 and 2007; City of Niagara Falls, 2002.

Land Use Designations (boundaries approximate)

- Dry Industrial
- Employment - Highway Commercial
- Employment - Light Industrial
- Employment - Prestige Industrial
- Environmental Protection Area
- General Agriculture
- Highway Commercial
- Institutional
- Natural Environment
- Open Space and Recreation
- Residential
- Rural Residential
- Serviced Industrial
- Stormwater Management Facility
- Village Square Commercial

Study Area Boundary

0 100 200 300 400 Meters

1:20,000

Stantec

PREPARED FOR:

ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

FIGURE NO. C1-3

LAND USE DESIGNATIONS

Initiated: February, 2007
Revised: April, 2008

Appendix C2

Environmental and Socio-Economic Setting
Text

APPENDIX C2 – NORTHLAND PIPELINE PROJECT ~ ENVIRONMENTAL AND SOCIO-ECONOMIC SETTING TEXT

File No. 160960284

Prepared by:

Stantec Consulting Ltd.
361 Southgate Drive
Guelph ON N1G 3M5

April 2008

APPENDIX C2 – NORTHLAND PIPELINE PROJECT ~ ENVIRONMENTAL AND SOCIO-ECONOMIC SETTING TEXT

Table of Contents

APPENDIX C2 – NORTHLAND PIPELINE PROJECT ~ ENVIRONMENTAL AND SOCIO-ECONOMIC SETTING TEXT

Table of Contents

List of Tables

List of Figures

1.0 Physical Features

1.1 PHYSIOGRAPHIC CHARACTERISTICS AND RESOURCES

1.1.1 Physiography and Surficial Geology

The Study Area is within the Haldimand clay plain physiographic region of Southern Ontario (Chapman and Putnam, 1984). Lying between the Niagara Escarpment and Lake Erie, the Haldimand clay plain covers most of the Niagara Peninsula. It is characterized by intermixed stratified clay and till deposits in the north and level relief lake plains in the south. The Study Area is characteristic of the southern level clay plains. The relatively flat topography of the Study Area lies at approximately 180 m above sea level.

The underlying bedrock consists of series of Paleozoic beds that slope under Lake Erie (Chapman and Putnam, 1984). The Paleozoic beds are sedimentary limestones, shales and sandstones that overlie the more ancient Precambrian bedrock. They originated as marine sediments of marl, clay and sand and are the oldest rocks to harbour the petrified remains of saltwater organisms.

Based on the data provided by water well records (MOE, 2005), the overburden profile is composed primarily of approximately 1 m to 5 m of clay, either brown or yellow, 5 m to 13 m of blue, brown, grey or occasionally red or regular clay, and 8 m to 15 m of material with either sand or gravel mixed in.

1.1.2 Bedrock

The Study Area consists of Paleozoic bedrock of the Lockport Formation from the Silurian period, which consists of various forms of dolostone. There are four different members of the Lockport Formation within the Study Area. These are the Goat Island Member, light brown dolostone, the Gasport Member, blue-grey dolostone and limestone, the Eramosa Member, dark brown or black bituminous dolostone and an unnamed member, (Vinemount shale beds) argillaceous dolostone and shale (Ontario Geological Survey, 2006). Interpretation of the reported water well logs within the Study Area, the depth to bedrock varies in depth from 12 to 27 m (MOE, 2005).

1.1.3 Surficial Deposits

Soils within the Study Area are a reflection of their geology and physiography. The Study Area is part of the Haldimand Clay Plain as classified by Chapman and Putnam (1984). Soils are glaciolacustrine clays over till with relatively poor drainage. The relatively poor drainage is a result of the soil texture combined with gently sloping lands of the area. Four soil types are found within the Study Area, as identified in the Soils of The Regional Municipality of Niagara (Ontario Institute of Pedology, 1989). These are Alluvium, Beverly, Niagara, and Toledo. The characteristics of these soil types are summarized in **Table 1.1**.

Table 1.1 Soil Characteristics and Agricultural Capability

Symbol	Soil Series Name	Surface Texture	Parent Materials/ Drainage	Capability Class
ALU	Alluvium	Silty Clay	Variable floodplain deposits on an active floodplain/ Variable	2d
BVY	Beverly Soil	Silty Clay	Mainly lacustrine silty clay/Imperfect	2d
NGR	Niagara Soil	Silty Clay	Mainly reddish-hued lacustrine heavy clay/Imperfect	2d
TLD	Toledo Soil	Silty Clay	Mainly lacustrine silty clay/Poor	2d

Alluvium

Alluvium is a soil type that is created by alluvial processes which are silts and clays deposited from flowing water. They have various drainage conditions, but most are imperfectly or poorly drained because of the close proximity of the water table to the ground surface for long periods each year (Kingston and Presant, Vol. 1, 1989). Approximately 0.8% of the Study Area is Alluvium.

A typical profile of Alluvium contains the following composition over the various soil horizons:

Ah 0-16 cm — horizon consists of silty clay with 3.9 % partially decomposed organic matter and an average pH of 6.6. The soil structure is granular;

Bg 16-63 cm — horizon consists of silty clay with 2.7% organic matter and an average pH of 6.7. The soil structure is columnar;

IIAb 63-80 cm — horizon consists of clay with 4.0% organic matter and an average pH of 7.1. The soil structure is subangular blocky; and,

IICkg 80-100cm — horizon consists of silty clay loam and has an average pH level of 7.7. The soil structure is subangular blocky.

Alluvium soils are commonly more prone to flooding than those found within the Study Area. The CLI rating of 2d displays that they are potentially productive soils with low permeability as a constraint.

Beverly

Approximately 39.5% of the Study Area consists of Beverly soil (including the Beverly – Loamy Phase). This soil is the imperfectly drained member of the Gleyed Brunisolic Gray Brown Luvisol Great Soil Group and occurs on nearly level till plains (Kingston and Presant, Vol. 1, 1989).

The Beverly soil profile typically includes:

Ap 0-17 cm	horizon consists of silty clay loam with 3.6% organic matter and an average pH of 6.2. The soil structure is granular;
Bmgj 17-42 cm	horizon consists of silty clay loam with 1.4% organic matter and an average pH of 6.3. The soil structure is subangular blocky;
Btgj 42-45 cm	horizon consists of silty clay with 1.1% organic matter and an average pH of 6.3. The soil structure is columnar; and,
Ckgj 45+ cm	horizon consists of silty clay with 0.1% organic matter and an average pH of 7.6. The soil structure is granular.

The CLI rating of 2d describes potentially productive soils with low permeability as a constraint.

Niagara

The Study Area has approximately 13.2% Niagara soil. It is the imperfectly drained member of the Gleyed Gray Brown Luvisol Great Soil Group that occurs on nearly level lacustrine clay plains. The water table associated with this soil is likely at or close to the surface until late spring (Kingston and Presant, Vol. 1, 1989).

The Niagara soil profile typically includes:

Ap 0-18 cm	horizon consists of silty clay loam with 3.8% organic matter and an average pH of 6.1. The soil structure is columnar;
Btgj1 18-42 cm	horizon consists of hard clay with 1.2% organic matter and an average pH of 6.3. The soil structure is prismatic;
Btgj2 42-57 cm	horizon consists of hard clay with 0.8% organic matter and an average pH of 6.7. The soil structure is prismatic; and,
Ckgj 57+ cm	horizon consists of hard clay with an average pH of 7.7. The soil structure is prismatic.

The CLI rating of 2d describes potentially productive soils with low permeability as a constraint.

Toledo

The Study Area has approximately 13.8% Toledo soil (including the Toledo – Loamy Red Phase). It is the poorly drained member of the Orthic Humic Gleysol Great Soil Group that occurs on nearly level to gently sloping lacustrine clay plains. The water table associated with

this soil typically requires tile drainage to be useful for agriculture (Kingston and Presant, Vol. 1, 1989).

The Toledo soil profile typically includes:

Ap 0-18 cm	horizon consists of silty clay loam with 4.8% organic matter and an average pH of 6.2. The soil structure is subangular blocky;
Bg1 18-43 cm	horizon consists of silty clay with 1.3% organic matter and an average pH of 6.3. The soil structure is columnar;
Bg2 43-59 cm	horizon consists of silty clay with 1.0% organic matter and an average pH of 6.6. The soil structure is columnar;
Ckgj 59+ cm	horizon consists of silty clay with 0.1% organic matter and an average pH of 7.6. The soil structure is subangular blocky;

The CLI rating of 2d describes potentially productive soils with low permeability as a constraint.

Appendix C-1, Figure C1-1, shows the type and location of soils within the Study Area.

1.2 SEISMICITY

The probability of seismic activity (i.e. earthquakes) in the Study Area is extremely low. Seismic activity and risk is recorded and estimated by Natural Resources Canada. Zone maps describe relative risk on a scale of 0 to 6. The probability of exceeding specific acceleration (Za) and velocity (Zv) values by ten percent over 50 years is described as well.

The Study Area is located in risk zone 1 for ground acceleration and risk zone 0 for ground velocity. The probability of exceeding 0.04 to 0.08 times the force of gravity during horizontal ground acceleration is ten percent in fifty years (Natural Resources Canada, 2005a). The probability of exceeding 0 to 0.04 metres per second horizontal ground velocity is also ten percent in 50 years (Natural Resources Canada, 2005b).

1.3 CLIMATE

The climate of southern Ontario is moderated by the proximity of the Great Lakes, which differs from location to location and from one year to another. The climate of the Study Area is influenced by its proximity to Lakes Erie and Ontario, which moderate temperatures and provide moisture-laden air to adjacent lands. Flows of cold dry air from the Arctic, moist warm air from the Gulf of Mexico and dry prevailing winds from the Pacific are the resulting air masses that affect the climate in this area. Weather statistics for the area are displayed in **Table 1.1**.

On the Niagara Peninsula, prevailing trends produce humid and warm to hot summers, with winters being relatively mild and snowy. There are four weather stations in Hamilton, Ontario. The station at a location and elevation most similar to the Study Area is at the Hamilton Psychiatric Hospital. The statistics are compared below:

Table 1.2 Weather Site Comparison

Location	Latitude	Longitude	Elevation (metres)
Hamilton Psychiatric Hospital	43*13'N	79*54'W	198
Thorold, Ontario	43*07'N	79*12'W	180

The mean annual temperature, taken from the Hamilton Psychiatric Hospital, is 8.4 degrees Celsius. Average temperatures above the freezing mark occur during the majority of the year (March through November). Precipitation, in the form of rain and snow, occurs throughout the year. Mean monthly precipitation varies between a high of 94.7 millimetres in September to a low of 58.1 millimetres in February.

Table 1.3 Weather Statistics from the Hamilton Psychiatric Hospital[1,2]

	J	F	M	A	M	J	J	A	S	O	N	D
Average Temperature (°C)	-5.3	-4.3	0.1	7	13.6	18.6	21.7	20.7	16.4	9.7	4.1	-2
Average Rainfall (mm)	26.2	32.2	59.9	69.3	80.3	81	76.5	91.7	94.7	77.7	80.1	52.2
Average Snowfall (cm)	38.8	26.0	14.4	3.2	0.0	0.0	0.0	0.0	0.0	0.0	5.7	31

[1] Source: Environment Canada, 2004
[2] Years of record: 1971 to 2000

1.4 HYDROLOGY

1.4.1 Surficial Hydrology

The Study Area is located within the Beaver Dams Creek Subwatershed (NPCA, 2007) which is part of the Lake Ontario Waterfront Watershed. As can be seen on **Appendix C1, Figure C1-2**, within the Study Area, Beaver Dams Creek is in the north with three unnamed tributaries flowing northward into it. A fourth connected creek flows out of Beaver Dams Creek. It flows southwest toward the canal where it is reportedly pumped under the canal to maintain flow into Lake Gibson west of the Study Area. In the south, two unnamed tributaries flow directly into the Welland Canal. Beaver Dams Creek itself serves as a displacement basin for the Welland Canal, in that it receives water being displaced from the canal by the freight ships as they pass.

There are numerous storm sewers located in the Study Area. Storm water runoff during rainfall events enters into these storm sewers, most of which directly discharges into the Welland Canal.

The Study Area falls under the jurisdiction of the Niagara Peninsula Conservation Authority (NPCA). The NPCA manages watercourses and natural habitat and reviews development proposals within or adjacent to natural areas. It also regulates construction in valley and stream corridors. Issues relating to flooding and erosion are also managed by the NPCA.

1.4.2 Groundwater

Water well records obtained from the Ontario Ministry of the Environment (MOE) (2005) indicate that approximately 20 wells have been drilled in the Study Area. Groundwater is found at an average depth of 11.7 m ranging from 4.9 m to 23.8 m. Thin localized gravel and sand pockets also act as a discontinuous conduit for groundwater (MOE, 1988). Static water levels are variable but average 5.3 m and range between 3 m to 10.7 m.

The well water supply is predominantly fresh and potable. Well water quality is summarized in **Table 1.4**.

Table 1.4 Well Water Quality

Water Quality	Fresh	Sulphur	Unknown/Not Recorded
Number of Wells	10	2	8

(Source: MOE, 2005).

Susceptibility of groundwater to contamination in the area is generally low (MOE, 1980). The deep bedrock-overburden aquifer is protected from surface contamination by a thick layer of finely textured clay materials that has a low permeability and a high capacity for attenuation of contaminants. The low relief and low permeability of the overburden prevent contaminants from moving in the groundwater to deeper depths.

2.0 Agricultural Features

Information about agricultural features in the Study Area is derived from the Canada Land Inventory (CLI) Capability for Agriculture, and data from the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA).

2.1 CANADA LAND INVENTORY CAPABILITY FOR AGRICULTURE

The Soil Capability Classification for Agriculture also known as the CLI is an interpretative classification that group's mineral soils with similar limitations or similar productivities into seven classes. Classes 1 to 3 soils are considered to be suitable for sustained productions of common field crops, hay and pasture. Class 4 soils are marginal for sustained production of common field crops but capable of use for hay and pasture. Class 5 soils are capable for use only for permanent pasture and hay, whereas Class 6 soils can be used only for wild pasture. Class 7 soils have no capability for agriculture.

Applying the CLI system of soil classification, the entire study area is classed 2d. The number 2 implies that soils have moderate limitations that restrict the range of crops or require moderate conservation practices. The letter “d” indicates that undesirable soil structure and/or low permeability are limitations for agriculture (OMAFRA, 1983).

2.2 ARTIFICIAL DRAINAGE

None of the agricultural properties in the Study Area are reported to have been artificially tile drained, random or systematic, for agricultural use (OMAFRA, 1981).

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3.0 Biophysical Features

3.1 WATERCOURSES AND FISHERIES

Water quality and fisheries data were obtained through discussions with the NPCA (2007), analysis of aerial photography, and relevant background documents.

As mentioned in **Section 1.4.1**, the Study Area is located within the Beaver Dams Creek Subwatershed (NPCA, 2007). Beaver Dams Creek itself serves as a displacement basin for the Welland Canal, in that it receives water being displaced from the canal by the freight ships as they pass. Within the Study Area, Beaver Dams Creek is in the north with four unnamed tributaries flowing northward into it. In the south, two unnamed tributaries flow directly into the Welland Canal. The Final Route crosses four watercourses: Beaver Dams Creek twice and two unnamed tributaries to Beaver Dams Creek.

The Ontario Ministry of Natural Resources (MNR) has classified the majority of the watercourses in the Niagara area into three types, and each type has a respective setback requirement for development projects. This setback is necessary to protect fish habitat from being degraded due to development. All of the watercourses in the Study Area have been designated as Type 2: Important. Type 2, important habitats are moderately sensitive to development and, although important to the fish population, are not considered critical (e.g. feeding areas and open water habitats of lakes). For Type 2 - Important watercourses, a minimum of 15 m of buffer is recommended.

Beaver Dams Creek is known to support the following species: alewife; Bigmouth Buffalo; Black Crappie; Bluegill; Bluntnose minnow; Brook silverside; Brown Bullhead; Freshwater drum; gizzard shad; white sucker; Channel Catfish; Common carp; Common Shiner; Cyprinidae, Golden shiner; Goldfish; Green Sunfish; Johnny darter; Largemouth bass, Log perch; Northern pike; Emerald shiner; Pumpkinseed; Quillback; Rock bass; Round Goby; Smallmouth bass; Spottail shiner; Spotted gar; White crappie; White perch; White sucker; and Yellow perch (Stantec, 2000, 2004). All of these fish are commonly found in appropriate environments within the Great Lakes except the Spotted gar. The Spotted gar is classified, by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), as threatened. Beaver Dams Creek contains fish habitat; however, the two unnamed tributaries only flow when they receive surface flows from agricultural lands.

3.2 FORESTRY

The Study Area is within the Deciduous forest region. This region lies along the northern shores of Lake Erie and Ontario, and the southeastern shore of Lake Huron. The Deciduous region is a mixed forest influenced by the mild, lake moderated climate (MNR, 2003). Characteristic species include Black walnut (*Juglans nigra*), Butternut (*Juglans cinerea*), Cucumbertree (*Magnolia acuminata*), Tulip tree (*Liriodendron tulipifera*), Sassafras (*Sassafras albidum*), Eastern redbud (*Cercis canadensis*), and several species of oaks (*Quercus sp.)*(Armson, 2001).

Within Canada, southern Ontario is the only area where the Deciduous region is found. It contains virtually all of the main species found in the Great Lakes – St. Lawrence Region; however, in the south there exist broadleaved species that occur nowhere else in Canada (Armson, 2001).

There are many factors that have resulted in a lack of forested areas in the Study Area; however, numerous smaller plots of treed areas remain. The majority of the Study Area is agricultural land with the exception of the northwest portion that is a residential subdivision. Most of the trees found in the Study Area have been left due to nonproductive agricultural land or they stand on parks and vacant lots resulting from successional processes.

3.2.1 Wetlands

The Welland Canal Turn Basins are identified as Provincially Significant Wetlands (PSW) by the MNR. Within the Study Area, a very small portion this PSW exists on the northeast corner of Abitibi Consolidated Inc.'s property along Beaver Dams Creek (MNR, 2007).

3.3 WILDLIFE

Wildlife depends on specific habitat types for survival, but some species are more sensitive to disturbance than others. For example, raccoons are highly adaptable to urban environments while grey wolves are usually found in large tracts of relatively undisturbed forest. Species that are less adaptable may experience a population decline if habitat is lost or if major artificial disturbance occurs. Usually, habitat type is indicative of the types of species that occur in the area.

Table 3.1 lists species that are commonly found in the vicinity of the Study Area. Common wildlife species were determined through the use of the *Atlas of the Mammals of Ontario* and the *Ontario Herpetofaunal Summary Atlas* (Dobbyn, 1994; MNR, 2002).

Table 3.1 Common Species Found in the Vicinity of the Study Area[1]

Common Name	Scientific Name
Bats	
Big Brown Bat	*Eptesicus fuscus*
Little Brown Bat	*Myotis lucifuga*
Silver-haired Bat	*Lasionycteris noctivagans*
Carnivores	
Coyote	*Canis latrans*
Long-tailed Weasel	*Mustela frenata*
Raccoon	*Procyan lotor*
Red Fox	*Vulpes vulpes*
Mink	*Mustela vison*
Striped Skunk	*Mephitis mephitis*
Deer	
White-tailed Deer	*Odocoileus virginianus*
Opossum	
Virginia Opossum	*Didelphis virginiana*
Rabbits and Hares	
Eastern Cottontail	*Sylvilagus floridanus*
European Hare	*Lepus europaeus*
Rodents	
Eastern Chipmunk	*Tamias striatus*
Woodchuck	*Marmota monax*
Gray Squirrel and Grey and Black Phases	*Sciurus carolinensis*
Red Squirrel	*Tamiasciurus hudsonicus*
Southern Flying Squirrel	*Glaucomys volans*
White-footed Mouse	*Peromyscus leucopus*
Meadow Vole	*Microtus pennsylvanicus*
Muskrat	*Ondatra zibethicus*
Norway Rat	*Rattus norvegicus*
Shrews and Moles	
Northern Short-tailed Shrew	*Blarina brevicauda*
Star-nosed Mole	*Condylura cristata*
Salamanders	
Common Mudpuppy	Necturus maculosus
Red-Spotted Newt	Notophthalmus viridescens viridescens
Blue-spotted Salamander	*Ambystoma laterale*
Jefferson-Blue Spotted Salamander Complex	*Ambystoma jeffersonianum – laterale "complex"*
Jefferson-Blue Spotted Salamander Polyploids	*Ambystoma jeffersonianum – laterale polyploids*
Spotted Salamander	*Ambystoma maculatum*
Four-toed Salamander	*Hemidactylium scutatum*
Northern Redback Salamander	*Plethodon cinereus*
Frogs and Toads	
Eastern American Toad	*Bufo americanus americanus*
Northern Spring Peeper	*Pseudacris crucifer*
Western Chrous Frog	*Pseudacris triseriata*
Grey Treefrog	*Hyla versicolor*
Wood Frog	*Rana sylvatica*

Table 3.1 Common Species Found in the Vicinity of the Study Area[1]

Common Name	Scientific Name
Northern Leopard Frog	*Rana pipiens*
Pickerel Frog	*Rana palustris*
Green Frog	*Rana clamitans melanota*
Bullfrog	*Rana catesbeiana*
Lizard	
Five-Lined Skink	Eumeces fasciatus
Turtles	
Common Snapping Turtle	*Chelydra serpentina*
Midland Painted Turtle	*Chrysemys picta marginata*
Snakes	
Eastern Garter Snake	*Thamnophis sirtalis sirtalis*
Northern Water Snake	*Nerodia sipedon sipedon*
Northern Redbelly Snake	*Soreria occipitomaculata occipitomaculata*
Brown Snake	*Storeria dekayi*
Northern Ringneck Snake	*Diadophis punctatus edwardsi*
Eastern Milk Snake	*Lampropeltis triangulum triangulum*

[1]Source: Dobbyn, 1994; MNR, 2002.

Bird species that were commonly recorded within the Study Area included mourning dove, American kestrel, American crow, song sparrow, black-capped chickadee, red-winged blackbird, and European starling (Ontario Breeding Bird Atlas, 2001-2005). See **Attachment 1** for a full list of birds common to the Study Area. Due to the relatively small size of the fragmented woodlots, the avifauna is likely dominated by edge species that are relatively tolerant of some disturbance. Species requiring larger and more continuous forest tracks (forest interior and area sensitive species) will tend to concentrate in the more extensive forests, Environmentally Sensitive Areas (ESA), and river valleys that are not common to the Study Area.

The MNR has indicated the presence of deer wintering areas within the Study Area (MNR, 2007).

3.3.1 Rare, Threatened, or Endangered Species

Rare and at-risk species may be determined at national, provincial, and municipal levels. Species that have been determined to be at risk by COSEWIC are rare or threatened throughout Canada. COSEWIC ranks species as endangered, threatened, or special concern. The provincial Committee on the Status of Species at Risk in Ontario (COSSARO) identifies endangered, threatened or special concern species in Ontario. Additionally, the MNR assigns "S-Ranks" to species based on rarity, from extremely rare (S1) to very common (S5). A review of the National Species at Risk (Environment Canada, 2006) and provincial Natural Heritage Information Centre databases (NHIC, 2005) identified eighteen vulnerable or rare species whose habitat ranges overlap with the Study Area. Other species of local concern may also be present.

Designated species at risk that could be found within the Study Area include:

Table 3.2 Species at Risk[1]

Common Name	Scientific Name	National Status	Provincial Status
Carnivores			
Grey Fox	*Urocyon cinereoargenteus*	Threatened	Threatened
Woodland Vole	*Microtus pinetorum*	Special concern	Special concern
Turtles			
Northern Map Turtle	*Graptemys geographica*	Special concern	Special concern
Blanding's Turtle (Great Lakes/St. Lawrence Population)	*Emydoidea blandingii*	Threatened	Threatened
Snakes			
Eastern Hog-nosed Snake	*Heterodon platirhinos*	Threatened	Threatened
Eastern Ratsnake	*Elaphe obsoleta*	Threatened	Threatened
Eastern Ribbonsnake (Great Lakes population)	*Thamnophis sauritus*	Special concern	Special concern
Milksnake	*Lampropeltis triangulum*	Special concern	Special concern
Birds			
Acadian Flycatcher	*Empidonax virescens*	Endangered	Endangered
Barn Owl (Eastern population)	*Tyto alba*	Endangered	Endangered
Cerulean Warbler	*Dendroica cerulean*	Special concern	Special concern
Hooded Warbler	*Wilsonia citrine*	Threatened	Threatened
Least Bittern	*Ixobrychus exilis*	Threatened	Threatened
Peregrine Falcon anatum subspecies	*Falco peregrinusanatum*	Special concern	Endangered
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Threatened	Special concern
Yellow-breasted Chat virens subspecies	*Icteria virens virens*	Special Concern	Special concern
Plants			
American Ginseng	*Panax quinquefolius*	Endangered	Endangered
Butternut	*Juglans cinerea*	Endangered	Endangered
Red Mulberry	*Morus rubra*	Endangered	Endangered
Round-leaved Greenbrier (Great Lakes Plains population)	*Smilax rotundifolia*	Threatened	Vulnerable
Butterflies			
Monarch	*Danaus plexippus*	Special Concern	Not in any category of risk

[1] Source: Environment Canada, 2006.

Species in the Study Area that are extremely rare and very rare in Ontario:

Table 3.3 Species of Provincial Concern[1]

Common Name	Scientific Name	Rank
Birds		
Northern Bobwhite	*Colinus virginianus*	S1S2 – Critically Imperiled to Imperiled
Plants		
Southern Tickseed	*Bidens coronata*	S2 – Imperiled
Round-leaved Greenbrier	*Smilax rotundifolia*	S2 – Imperiled
Swamp Rose-mallow	*Hibiscus moscheutos*	S3 – Vulnerable
Longleaf Dropseed	*Sporobolus asper*	S1S2 – Critically Imperiled to Imperiled

[1] Source: NHIC, 2005.

3.4 ENVIRONMENTALLY SENSITIVE AREAS

ESAs are areas of land and water that require special protection because of natural landscapes, wildlife or historical value. There are no ESA's in the Study Area (NHIC, 2005).

4.0 Socio-Economic Features

The Study Area is located in the City of Thorold, which straddles the Welland Canal, and is a relatively small community that has the benefits of both an urban centre and rural land uses. The City of Thorold is within the Regional Municipality (RM) of Niagara. It lies approximately 2 km west of the City of Niagara Falls, 5.5 km north of the City of Welland, 7 km east of the Town of Pelham and 2.5 km south of the City of St. Catharines. The main city centre is north-west of the Study Area. The Study Area is located in a neighbourhood called Thorold South. Information collected from Statistics Canada's 2001 census and 2006 census, used for portions of the following Socio-Economic Analysis, will be for the entire City of Thorold.

4.1 MUNICIPAL STRUCTURE

The City of Thorold is an incorporated municipality, responsible for providing road networks, waste and sewage services, planning, and so on for its citizens. The provincial highways (20, 58 and 406) are patrolled by the Niagara Detachment of the Ontario Provincial Police based in Niagara Falls. Fire protection is provided by the City of Thorold Fire and Emergency Services through four stations. One station is located within the Study Area, Fire Station 2, located at 701 Allanburg Road in Thorold South.

4.2 POPULATION

In 2006, Thorold's population was 18,244. The population change from 1996 (18,048) to 2001 was only a 1% increase (Statistics Canada, 2006). Therefore, it can be assumed that in the near future, the number of people living in the Study Area is likely to remain at about the same level it is now.

4.3 INSTITUTIONAL CHARACTERISTICS

Institutional characteristics (e.g. schools, churches, hospitals, community centres, detention centres) are an important part of a community's social fabric. The Study Area contains three churches, one school, one community centre, and the Niagara Detention Centre.

4.4 PARKS AND RECREATION

The closest Conservation Area lies northeast of the Study Area. It is named Shriner's Creek Conservation Area and it is run by the NPCA. It is a 32 ha Conservation Area managed as a Nature refuge Area and it also serves a storm water management role in the community. No Public Access is permitted on this property (NPCA, 2007).

There are no provincial parks in the Study Area.

4.5 CULTURE AND TOURISM

There are no major tourist attractions in the Study Area, although, there are attractions close to the Study Area. The Study Area is adjacent to the Welland Canal and Niagara Falls is approximately 8 km east.

Thorold is located at Lock 7 of the Welland Canal, the highest and last lift up the escarpment. The canal serves as a recreational feature where people can watch large cargo ships pass through a series of locks, as well as fish, hike, bike or rollerblade on the mutli-use trail that parallels the canal.

4.6 ECONOMY AND EMPLOYMENT

4.6.1 Economy

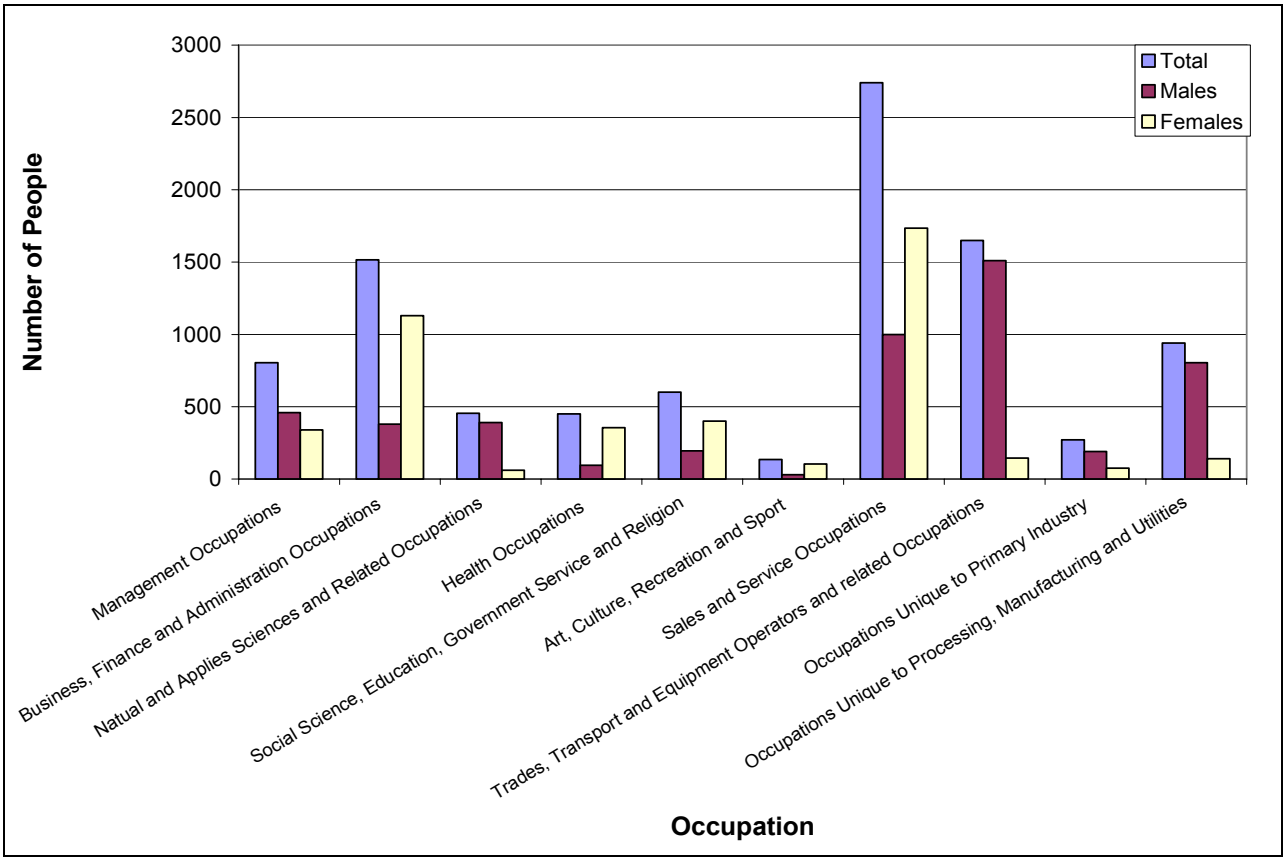
The Study Area is located in South Thorold which is a neighbourhood within the City of Thorold, Ontario. Thorold supports a diversified economic base with a range of manufacturing, industry, service, government and tourism activities. Major employers include the RM of Niagara, Dana Canada Corp., ACCC, E. Spencer Fox, Lafrate Machine Works and Georgia-Pacific Canada Inc. Industries within the Study Area include the Abitibi-Consolidated – Thorold Division recycled paper mill, and several mechanic and scrap metal shops.

4.6.2 Employment

The City of Thorold had an employed labour force (15 years and over) of 9,560 in 2001. It was composed of 5,065 males and 4,495 females. The unemployment rate for Thorold is 6.2% (6.8 male/5.5 female), which is slightly higher than the provincial average of 6.1% (5.8 male/6.5 female) (Statistics Canada, 2001). Refer to **Figure 4.1** to see the experienced labour force categorized by sex and occupation.

The main occupation that employed people in Thorold is “sales and service occupations”, followed by “trades, transport, and equipment operators and related occupations”.

Figure 4.1 Thorold Labour Force by Occupation, 2001



Source: Statistics Canada, 2001

4.7 LAND USE

The majority of the population of the City of Thorold is concentrated within several neighbourhoods, including; Old Town, Confederation Heights, Thorold South, Allanburg, and Port Robinson East and West (City of Thorold, 2007). Land use designations and policies are derived from topographic maps, aerial photographs, and the Official Plan of the City of Thorold Planning Area, and the Amended Official Plan of the City of Thorold. **Appendix C1 Figure C1-3,** shows land use.

Planning responsibilities including the preparation and adoption of an Official Plan for the City of Thorold falls upon the Council of the City of Thorold. This was established in “The Regional Municipality of Niagara Act R.S.O. 1980” (City of Thorold, 2005).

Land use designations within the Study Area include; Dry Industrial, Employment (Highway Industrial, Light Industrial, Prestige Industrial), Environmental Protection Area, General Agriculture, Highway Commercial, Institutional, Natural Environment, Open Space and Recreation, Residential, Rural Residential, Serviced Industrial, Stormwater Management Facility, Village Square Industrial (City of Thorold, 2005, 2007).

4.7.1 Land Use Planning and Policy Affecting Pipelines

Pipelines must meet Ontario Pipeline Coordinating Committee (OPCC) standards, guidelines, and policy. The City of Thorold Official Plan (2005) outlines requirements for gas and oil pipelines within the Planning Area's boundaries. Pipelines are encouraged to be located within existing easements, provided that obligations to the Environmental Assessment Act are met, impacts to adjacent land uses are considered throughout the development stages, and lastly, for safety purposes, significant works will not be permitted within a working strip falling on either side of the pipeline right-of-way, and TransCanada and Inter-Provincial Pipelines will be consulted on proposed developments adjacent to pipelines.

4.8 FIRST NATIONS INTERESTS

Indian and Northern Affairs Canada (INAC) were contacted on June 12, 2007 to seek information regarding the status of lands within the Study Area. INAC replied to Stantec's letter request on July 11, 2007. The letter notified Stantec that INAC no longer responds to these types of letters by providing contact information for Aboriginal groups who may have interest in the project. They now ask that potentially interested Aboriginal groups are identified and notified by the proprietor of the project. Stantec followed up with this request by investigating if there are any First Nations interests in the Study Area.

An email with a map showing the Study Area was sent to INAC's Litigation Management and Resolution Branch on July 12, 2007, INAC's Comprehensive Claims Branch on July 13, 2007, and INAC's Specific Claims Branch on July 17, 2007. A response from INAC's Specific Claims Branch was received on July 19, 2007 indicating that there are no land claims in the Study Area that they are aware of. A response from INAC's Comprehensive Claims Branch was received on July 23, 2007 indicating that there are no lands claims in the Study Area that they are aware of. A response from INAC's Litigation Management and Resolution Branch was received on July 30, 2007 indication that there inventory does not include active litigation in the Study Area.

A fax was received from the Association of Iroquois and Allied Indians (A.I.A.I.) on September 6, 2007 stating that they do not have any information to provide to us regarding site selection or technological alternatives and that the existence of land claims and other First Nation activities should be sought. This information has been collected; therefore no further action is required

A summary of agency correspondence is included in **Appendix B1** and copies of this correspondence are included in **Appendix B3**.

4.9 HERITAGE AND ARCHAEOLOGICAL RESOURCES

D.R. Poulton & Associates Inc. (DPA) conducted a Stage 1 Archaeological Assessment under Archaeological Consulting License #P053, issued by the Province of Ontario. The Stage 1 assessment consisted of background research to identify known or potential archaeological planning constraints within the Study Area. A variety of sources were consulted in the course of this work. These included a thorough review of published and unpublished reports on past

archaeological surveys and excavations, a review of the history of land-use in the area, and an examination of archaeological site inventories and archival materials.

It was indicated in this report that 60% of the Preferred Route will be placed in previously disturbed areas, and therefore is unlikely to retain potential for extant archaeological remains. The 800 m portion of the route that travels adjacent to the south side of Beaverdams Road is considered to have some potential for archaeological remains. DPA also expressed concern with regards to the lands where the excavated materials from the directional drilling operation will be placed. Recommendations were made by DPA to perform a Stage II Archaeological Assessment.

If any significant sites are found during construction of the pipeline, the archaeological staff of the Ontario Ministry of Culture should be notified immediately. It is similarly recommended that if any human remains are encountered, John MacDonald, Heritage Planner, Ontario Ministry of Culture (519-675-7742) and Michael D'Mello, the Registrar of the Cemeteries Section of the Ministry of Consumer and Business Services (416-326-8404).

The full Archaeological Assessment can be found in **Appendix E.**

4.10 EXISTING LINEAR CORRIDORS

Linear corridors include road networks, hydrocarbon transmission lines, hydroelectric transmission lines, telephone lines, and railways.

4.10.1 Roads

The Province of Ontario is responsible for maintenance of major highways in the City of Thorold. There are two provincial highways within the Study Area: Davis Road (Highway 58) and Lundy's Lane (Highway 20). The municipality is responsible for maintaining the other roads within the city including Niagara Falls Road, Beaverdams Road, Allanburg Road, and Thorold Townline Road. **Appendix C1, Figure C1-2** displays major roadways.

4.10.2 Hydrocarbon Transmission Lines

Enbridge operates and maintains a network of natural gas transmission and distribution pipelines throughout the Study Area. As well, there is a TransCanada Pipeline natural gas pipeline flowing west to east through the approximate middle of the Study Area.

4.10.3 Electricity Transmission Lines and Facilities

There are approximately 11 major electrical transmission lines within the Study Area. Generally, they lie in a west to east orientation. Since they are considered high voltage, metal towers are used and corridors are comparatively wide. Other corridors may also exist that operate below 115 kilovolts, using metal, concrete, or wooden poles. These service local communities, industry, and residential neighbourhoods (Hydro One, 2005).

4.10.4 Railways

Canadian National Railway (CNR), a major Canadian railway company, has rail lines, running north/south on the west side of the Study Area. These lines exist to serve the industrial businesses in the Study Area. There are several railway spurs throughout the Study Area.

4.11 WASTE DISPOSAL

The location and classification of active and closed landfill sites in the Study Area was determined through a site visit and search of appropriate background information. The location and type of waste disposal site is used to identify potentially contaminated areas that may be disturbed during pipeline construction.

There are no known registered active or closed landfills in the Study Area (MOE, 1991).

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e=Begins&SearchPR=01&B1=Work&Custom=.

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Attachment 1

Region	Square	Species	Breeding Evidence			Point Counts			
			Max BE	Categ	#Sq	#PC	%PC	Abun	#Sq
11	17PH47	Pied-billed Grebe	FY	CONF	1				
11	17PH47	Double-crested Cormorant	X	OBS	1				
11	17PH47	American Bittern	H	POSS	1				
11	17PH47	Least Bittern	T	PROB	1				
11	17PH47	Great Blue Heron	H	POSS	1	1	3.57	0.0357	1
11	17PH47	Green Heron	T	PROB	1				
11	17PH47	Black-crowned Night-Heron	X	OBS	1				
11	17PH47	Turkey Vulture	NY	CONF	1				
11	17PH47	Canada Goose	NY	CONF	1	2	7.14	3.4286	1
11	17PH47	Mute Swan	P	PROB	1				
11	17PH47	Wood Duck	AE	CONF	1				
11	17PH47	Gadwall	X	OBS	1				
11	17PH47	Mallard	FY	CONF	1				
11	17PH47	White-winged Scoter	X	OBS	1				
11	17PH47	Hooded Merganser	H	POSS	1				
11	17PH47	Northern Harrier	H	POSS	1				
11	17PH47	Sharp-shinned Hawk	H	POSS	1				
11	17PH47	Cooper's Hawk	FY	CONF	1				
11	17PH47	Red-tailed Hawk	NE	CONF	1	1	3.57	0.0357	1
11	17PH47	American Kestrel	FY	CONF	1				
11	17PH47	Peregrine Falcon	NE	CONF	1				
11	17PH47	Ring-necked Pheasant	FY	CONF	1	1	3.57	0.0357	1
11	17PH47	Wild Turkey	FY	CONF	1				
11	17PH47	Virginia Rail	S	POSS	1				
11	17PH47	Sora	FY	CONF	1				
11	17PH47	Common Moorhen	FY	CONF	1				
11	17PH47	American Coot	FY	CONF	1				
11	17PH47	Am. Coot/C. Moorhen	S	POSS	1				
11	17PH47	Killdeer	FY	CONF	1	4	14.29	0.1786	1
11	17PH47	Spotted Sandpiper	FY	CONF	1	2	7.14	0.0714	1
11	17PH47	American Woodcock	T	PROB	1				

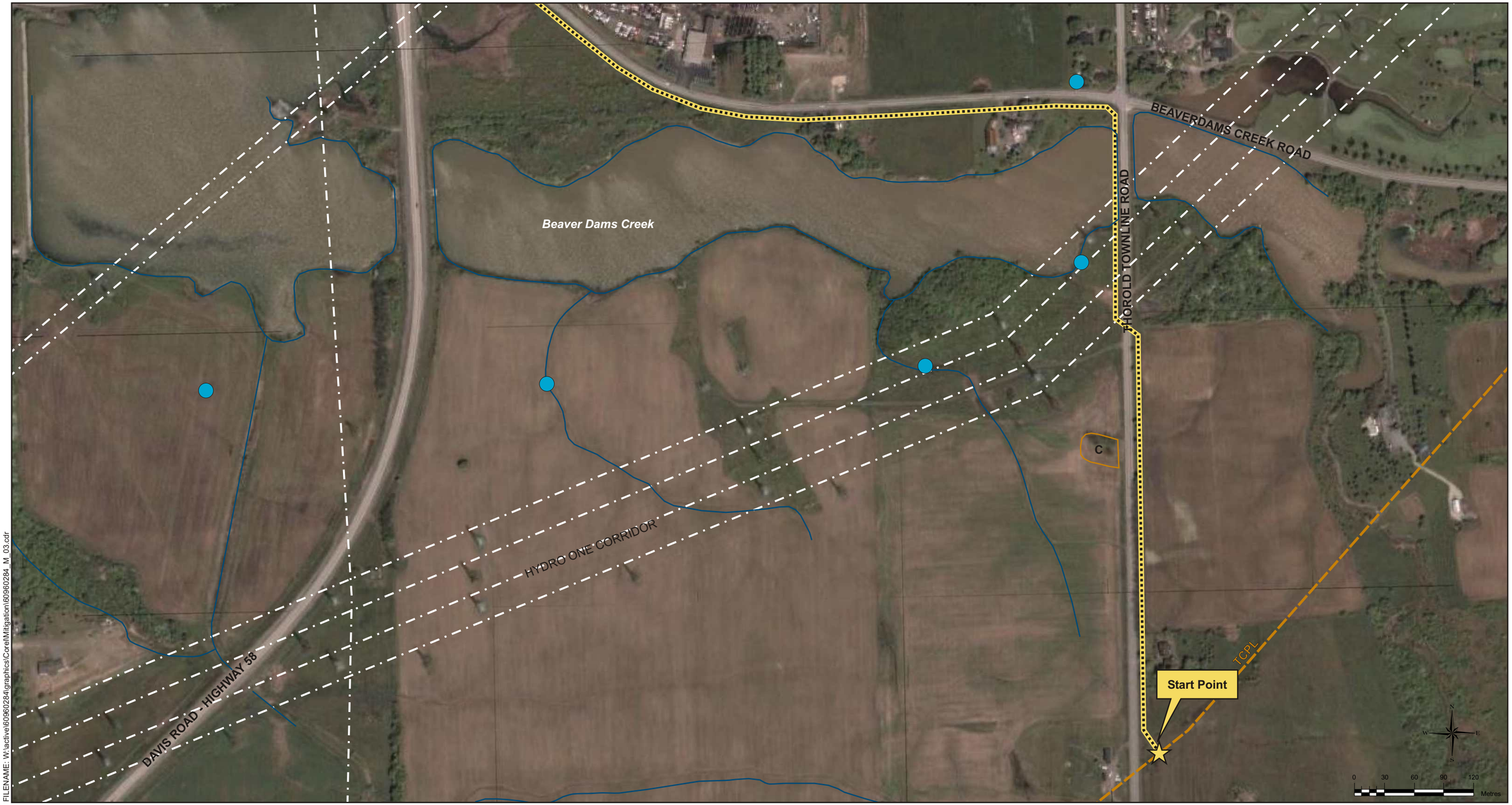
Region	Square	Species	Breeding Evidence			Point Counts			
			Max BE	Categ	#Sq	#PC	%PC	Abun	#Sq
11	17PH47	Ring-billed Gull	X	OBS	1				
11	17PH47	Herring Gull	X	OBS	1				
11	17PH47	Caspian Tern	X	OBS	1				
11	17PH47	Rock Pigeon	NE	CONF	1	5	17.86	0.6786	1
11	17PH47	Mourning Dove	NE	CONF	1	14	50.0	0.9286	1
11	17PH47	Black-billed Cuckoo	H	POSS	1				
11	17PH47	Black/Yellow-billed Cuckoo	H	POSS	1	1	3.57	0.0357	1
11	17PH47	Eastern Screech-Owl	T	PROB	1				
11	17PH47	Great Horned Owl	NE	CONF	1				
11	17PH47	Common Nighthawk	T	PROB	1				
11	17PH47	Chimney Swift	AE	CONF	1				
11	17PH47	Ruby-throated Hummingbird	NY	CONF	1				
11	17PH47	Belted Kingfisher	CF	CONF	1	1	3.57	0.0357	1
11	17PH47	Red-headed Woodpecker	CF	CONF	1				
11	17PH47	Red-bellied Woodpecker	CF	CONF	1				
11	17PH47	Downy Woodpecker	AE	CONF	1	2	7.14	0.0714	1
11	17PH47	Hairy Woodpecker	T	PROB	1				
11	17PH47	Northern Flicker	AE	CONF	1	2	7.14	0.0714	1
11	17PH47	Eastern Wood-Pewee	FY	CONF	1	3	10.71	0.1786	1
11	17PH47	Acadian Flycatcher	S	POSS	1	1	3.57	0.0357	1
11	17PH47	Willow Flycatcher	T	PROB	1	2	7.14	0.0714	1
11	17PH47	Least Flycatcher	NB	CONF	1				
11	17PH47	Eastern Phoebe	AE	CONF	1				
11	17PH47	Great Crested Flycatcher	T	PROB	1	2	7.14	0.0714	1
11	17PH47	Eastern Kingbird	NE	CONF	1	1	3.57	0.0357	1
11	17PH47	Warbling Vireo	T	PROB	1	2	7.14	0.0714	1
11	17PH47	Red-eyed Vireo	T	PROB	1	4	14.29	0.25	1
11	17PH47	Blue Jay	AE	CONF	1	6	21.43	0.3929	1
11	17PH47	American Crow	NE	CONF	1	2	7.14	0.1071	1
11	17PH47	Horned Lark	CF	CONF	1	2	7.14	0.1071	1

Region	Square	Species	Breeding Evidence			Point Counts			
			Max BE	Categ	#Sq	#PC	%PC	Abun	#Sq
11	17PH47	Purple Martin	AE	CONF	1				
11	17PH47	Tree Swallow	NY	CONF	1	4	14.29	0.1429	1
11	17PH47	Northern Rough-winged Swallow	T	PROB	1				
11	17PH47	Bank Swallow	AE	CONF	1				
11	17PH47	Cliff Swallow	NB	CONF	1				
11	17PH47	Barn Swallow	NE	CONF	1	6	21.43	1.0357	1
11	17PH47	Black-capped Chickadee	FY	CONF	1	3	10.71	0.1786	1
11	17PH47	Tufted Titmouse	S	POSS	1	2	7.14	0.0714	1
11	17PH47	White-breasted Nuthatch	T	PROB	1				
11	17PH47	Carolina Wren	CF	CONF	1				
11	17PH47	House Wren	NE	CONF	1	1	3.57	0.0357	1
11	17PH47	Marsh Wren	S	POSS	1				
11	17PH47	Eastern Bluebird	AE	CONF	1				
11	17PH47	Wood Thrush	FY	CONF	1	3	10.71	0.1429	1
11	17PH47	American Robin	NY	CONF	1	15	53.57	0.9643	1
11	17PH47	Gray Catbird	CF	CONF	1	2	7.14	0.0714	1
11	17PH47	Northern Mockingbird	NY	CONF	1	4	14.29	0.1786	1
11	17PH47	Brown Thrasher	H	POSS	1				
11	17PH47	European Starling	NE	CONF	1	19	67.86	2.7857	1
11	17PH47	Cedar Waxwing	D	PROB	1	3	10.71	0.1071	1
11	17PH47	Yellow Warbler	CF	CONF	1	7	25.0	0.3214	1
11	17PH47	Chestnut-sided Warbler	H	POSS	1				
11	17PH47	American Redstart	T	PROB	1				
11	17PH47	Ovenbird	T	PROB	1				
11	17PH47	Common Yellowthroat	DD	CONF	1	1	3.57	0.0357	1
11	17PH47	Hooded Warbler	T	PROB	1				
11	17PH47	Scarlet Tanager	T	PROB	1	1	3.57	0.0357	1
11	17PH47	Eastern Towhee	T	PROB	1				
11	17PH47	Chipping Sparrow	NE	CONF	1	5	17.86	0.1786	1
11	17PH47	Field Sparrow	T	PROB	1				
11	17PH47	Vesper Sparrow	T	PROB	1	2	7.14	0.1071	1

Region	Square	Species	Breeding Evidence			Point Counts			
			Max BE	Categ	#Sq	#PC	%PC	Abun	#Sq
11	17PH47	Savannah Sparrow	FY	CONF	1	5	17.86	0.5	1
11	17PH47	Song Sparrow	FY	CONF	1	16	57.14	0.9643	1
11	17PH47	Swamp Sparrow	T	PROB	1				
11	17PH47	Northern Cardinal	FY	CONF	1	8	28.57	0.5357	1
11	17PH47	Rose-breasted Grosbeak	FY	CONF	1	3	10.71	0.1429	1
11	17PH47	Indigo Bunting	CF	CONF	1	2	7.14	0.1071	1
11	17PH47	Bobolink	S	POSS	1				
11	17PH47	Red-winged Blackbird	CF	CONF	1	12	42.86	1.0357	1
11	17PH47	Eastern Meadowlark	FY	CONF	1				
11	17PH47	Common Grackle	CF	CONF	1	18	64.29	1.0357	1
11	17PH47	Brown-headed Cowbird	FY	CONF	1	7	25.0	0.4286	1
11	17PH47	Orchard Oriole	T	PROB	1				
11	17PH47	Baltimore Oriole	AE	CONF	1	5	17.86	0.2857	1
11	17PH47	House Finch	FY	CONF	1	4	14.29	0.4643	1
11	17PH47	American Goldfinch	NY	CONF	1	16	57.14	1.0714	1
11	17PH47	House Sparrow	AE	CONF	1	16	57.14	1.5357	1

Appendix D

Photomosaics



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Traveling within 100 m of residences and businesses. Contact landowners prior to construction to discuss pre-construction concerns. Refer to Environmental Report Section 6.3.3 Population and Institutional Facilities.

Traveling within 100 m of a water well Potential Disturbance to water well. Consult with landowner to determine the specific location and characteristics of their water well. Refer to Environmental Report Section 6.1.5 Hydrology.

Traveling within 100 m of a water well Potential Disturbance to water well. Consult with landowner to determine the specific location and characteristics of their water well. Refer to Environmental Report Section 6.1.5 Hydrology.

Crossing Municipal Road Thorold Townline Road. Contact road superintendent prior to crossing to discuss crossing timing and method. Refer to Environmental Report Section 6.3.2 Existing Linear Features.

Watercourse Crossing Beaver Dams Creek. Inform appropriate agencies prior to commencing crossing. Refer to Environmental Report Section 6.1.5 Hydrology, and Section 6.2.1 Watercourses and Fisheries.

Under crossing of hydroelectric transmission line. Hydro One. Contact Hydro One to discuss safety and distance requirements. Refer to Environmental Report Section 6.3.2 Existing Linear Features.

Stantec

PREPARED FOR:
ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

Initiated: March, 2008
Revised:

TITLE
MITIGATION

FIGURE NO.
1.0

- Proposed Route
- Hydro Corridors
- Water Wells
- Streams
- C Cemetary

FILENAME: W:\active\60960284\graphics\CorelMitigation\60960284_M_03.cdr

Traveling within 100 m of residences and businesses. Contact landowners prior to construction to discuss pre-construction concerns. Refer to Environmental Report Section 6.3.3 Population and Institutional Facilities.

Crossing of railway. CNR. Contact CNR to discuss construction methods and timing. Potential to encounter contaminated soils. Refer to Environmental Report Section 6.3.3 Population and Institutional Facilities.

Traveling within 100 m of a water well Potential Disturbance to water well. Consult with landowner to determine the specific location and characteristics of their water well. Refer to Environmental Report Section 6.1.5 Hydrology.

Crossing Municipal Road Niagara Falls Road. Contact road superintendent prior to crossing to discuss crossing timing and method. Refer to Environmental Report Section 6.3.2 Existing Linear Features.

Watercourse Crossing Beaver Dams Creek. Inform appropriate agencies prior to commencing crossing. Refer to Environmental Report Section 6.1.5 Hydrology, and Section 6.2.1 Watercourses and Fisheries.

Under crossing of hydroelectric transmission line. Hydro One. Contact Hydro One to discuss safety and distance requirements. Refer to Environmental Report Section 6.3.2 Existing Linear Features.

Crossing Provincial Highway Highway 58 (Davis Road). Contact road superintendent and MTO prior to crossing to discuss crossing timing and method. Refer to Environmental Report Section 6.3.2 Existing Linear Features.

Traveling within 100 m of residences and businesses. Contact landowners prior to construction to discuss pre-construction concerns. Refer to Environmental Report Section 6.3.3 Population and Institutional Facilities.

Stantec

PREPARED FOR:
ENBRIDGE GAS DISTRIBUTION INC.
PIPELINE TO SERVE THE PROPOSED
THOROLD COGEN L.P.

Initiated: March, 2008
Revised:

TITLE
MITIGATION

FIGURE NO.
1.0

- Proposed Route
- Hydro Corridors
- Water Wells
- Streams
- C Cemetary

Appendix E

Archaeological Assessment

The 2007-2008 Stage 1 Archaeological Assessment of the Proposed NPS 12 Natural Gas Pipeline to Service, the Northland Power Plant, City of Thorold, Niagara Regional Municipality, Ontario

Submitted to

Stantec Consulting Ltd.
360 Southgate Drive,
Guelph, Ontario
N1G 3M5
Telephone 519 836-6050
Facsimile 519 836-2493

and

The Ontario Ministry of Culture

Prepared by

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CIF #s P053-090-2007 & P053-123-2008: Corporate Project #s 2007-43

March 2008

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Project Personnel

Consulting Archaeologist	Dana R. Poulton
Project Archaeologist	James A. G. Caldwell
Report Preparation	Dana R. Poulton James A. G. Caldwell
Draughting	Christine F. Dodd
Photography	Dana R. Poulton James A. G. Caldwell

Acknowledgments

This assessment was facilitated by the following individuals and their agencies:

- ***Melanie Adamson***, Project Manager, Stantec Consulting Ltd.; and
- ***Robert von Bitter***, Archaeological Data Coordinator, Heritage and Libraries Branch, Heritage Operations Unit, Ministry of Culture.

EXECUTIVE SUMMARY

Enbridge Gas Distribution Inc. is proposing to install a Nominal Pipe Size (NPS) 12-inch (305-mm) diameter steel pipeline to supply natural gas to serve the proposed Northland Power Plant, a Gas-Fired Cogeneration Station in the City of Thorold, Ontario. The power plant is being developed by Northland Power Inc. (NPI), in association with Abitibi Consolidated Company of Canada Inc. (ACCC).

In 2006 D.R. Poulton & Associates Inc. carried out a Stage 1 background study of the proposed power plant (D.R. Poulton & Associates 2006). In August 2007 the firm completed a Stage 1 archaeological assessment of the preferred route for the proposed NPS 12 pipeline to service the power plant (D.R. Poulton & Associates 2007). The alignment of the corridor passed by a small cemetery located in a copse of trees on a knoll immediately west of Thorold Townline Road. The cemetery was identified as a potential constraint. Stantec Consulting Ltd. subsequently revised a portion of the proposed alignment to avoid the cemetery. D.R. Poulton & Associates has completed a Stage 1 archaeological background study of the updated preferred route. This report details the rationale, methods and results of the 2007-2008 archaeological assessment of the updated preferred route for the proposed pipeline.

The archaeological assessment involved a Stage 1 level of assessment as defined in the technical guidelines for archaeological assessment formulated by the Ontario Ministry of Culture, Tourism and Recreation (now Ministry of Culture) (MCTR 1993). It also included a visual examination of the preferred alignment of the proposed pipeline.

The study determined that no past archaeological surveys have been carried out in the immediate vicinity of the proposed pipeline, and that no archaeological sites have been documented within several hundred metres of the alignment. The results of the background study and visual examination indicate that segments of the alignment with a combined length of approximately 1680 metres have been impacted to the extent that they are unlikely to retain a potential for extant archaeological remains. Those segments represent 60% of the length of the updated preferred route for the proposed pipeline.

The study also determined that corridor segments with a combined length of approximately 1020 metres are inferred to have some potential for extant archaeological remains and to warrant archaeological survey. Those segments represent 40% of the length of the updated preferred route. The other concerns for archaeological survey are the lands subject to impact from the directional drilling for the proposed Beaverdams Creek crossing and related land farming. It remains to be determined whether the directional drilling for the crossing of the channel west of Davis Road and the related land farming will be a concern for archaeological survey. Given the above comments, it is recommended that a Stage 2 survey be conducted once the detailed design for the proposed pipeline has been formulated. The purpose of the survey will be to effect a field-based assessment of any and all lands that are confirmed to be subject to impact from the undertaking and to retain a potential for extant archaeological remains.

1.0 INTRODUCTION

Enbridge Gas Distribution Inc. is proposing to install a Nominal Pipe Size (NPS) 12-inch (305-mm) diameter steel pipeline to supply natural gas to serve the proposed Northland Power Plant, a Gas-Fired Cogeneration Station in the City of Thorold, Ontario. The power plant is being developed by Northland Power Inc. (NPI), in association with Abitibi Consolidated Company of Canada Inc. (ACCC). The 255-megawatt (MW) (nominal) Thorold Cogeneration Project (TCP) is to be located at the ACCC paper mill. The facility will be owned by a single purpose company, Thorold Cogen L.P., and will be managed and operated by NPI.

In 2006 D.R. Poulton & Associates Inc. carried out a Stage 1 background study of the proposed power plant (D.R. Poulton & Associates 2006). In August 2007 the firm completed a Stage 1 archaeological assessment of the preferred route for the proposed NPS 12 pipeline to service the power plant (D.R. Poulton & Associates 2007). The alignment of the corridor passed by a small cemetery located in a copse of trees on a knoll immediately west of Thorold Townline Road. The cemetery was identified as a potential constraint. Stantec Consulting Ltd. subsequently revised a portion of the proposed alignment to avoid the cemetery. D.R. Poulton & Associates has completed a Stage 1 archaeological background study of the updated preferred route. This report details the rationale, methods and results of the 2007-2008 archaeological assessment of the updated preferred route for the proposed pipeline.

The 2008 archaeological assessment involved a Stage 1 level of assessment as defined in the technical guidelines for archaeological assessment formulated by the Ontario Ministry of Culture, Tourism and Recreation (now Ministry of Culture) (MCTR 1993). It also included a visual examination of the updated preferred route for the proposed pipeline.

The purpose of the study was to obtain information on past archaeological investigations and known and potential sites in the study area containing the proposed pipeline. More specifically, the study was intended to obtain information on potential archaeological constraints to the construction of the proposed pipeline, and on the requirements of any more detailed Stage 2 archaeological survey that might be required.

The Ministry of Culture designated this assessment as CIF#P053-090-2007 and #P053-123-2008. The assessment was conducted under Archaeological Consulting Licence P053, issued by the Province of Ontario to Christine Dodd of DPA. It was carried out in accordance with the provisions of the Ontario Heritage Act (Government of Ontario 1990) and with the technical guidelines for archaeological assessment formulated by the Ontario Ministry of Culture, Tourism and Recreation (now Ministry of Culture) (MCTR 1993).

The records pertaining to this project are currently housed in the corporate offices of D.R. Poulton & Associates Inc. In the event the opportunity arises, however, the project archive will be transferred to a suitable long-term repository.

2.0 LOCATION AND DESCRIPTION

The proposed pipeline has a length of approximately 2820 metres. It begins at the point where TransCanada PipeLine's existing natural gas pipeline crosses Thorold Townline Road in the rural portion of the City of Thorold, Ontario and ends just off Allanburg Road at the site of the proposed gas-fired power generation station to be located on the property of Abitibi-Consolidated – Thorold Division. Figure 1 shows both the preferred route assessed in 2007 and the updated preferred route assessed in 2008.

The 2007 archaeological assessment of the proposed pipeline included a visual examination of the route. It was carried out on July 31, 2007 by the Consulting Archaeologist, Dana Poulton of D.R. Poulton & Associates Inc. A visual examination of the updated preferred route for the proposed pipeline was carried out on March 17, 2008 by James Caldwell of D.R. Poulton & Associates Inc. Photographs from both visual examinations are illustrated in this report. They show existing conditions along the updated preferred route for the proposed pipeline.

From the starting point on the west side of Thorold Townline Road, the proposed pipeline will cross over to the east side of the road. The initial leg of the updated preferred route travels north from the start point along the east side of Thorold Townline Road for a distance of approximately 340 metres, to a point just north of the small cemetery described in the Stage 1 report of August 2007. Most of this segment parallels agricultural fields but the north end of it parallels the frontage of mid to late 20th century residential lots; in addition, another existing residential lot is located near the starting point for the proposed pipeline. As illustrated in Plate 1, the east side of the road right-of-way along this segment consists of a narrow graveled shoulder of the road and an adjacent shallow ditch. The ditch is partially filled with gravel from the shoulder of the road.

Thorold Townline Road is transected on a southwest to northeast axis by a hydro transmission corridor and the aforementioned cemetery is located in a small copse of trees on a knoll immediately west of Thorold Townline Road, to the south of the transmission corridor. At a point just north of the cemetery the proposed pipeline corridor switches to the west side of Thorold Townline Road. The route then continues northward approximately 220 metres to the proposed crossing of Beaverdams Creek. This segment of the route will require directional drilling under Beaverdams Creek to Beaverdams Road. It will also require land farming to accommodate the soils from the drilling. Plate 2 shows a view looking south from the hydro access road located south of the proposed Beaverdams Creek crossing; the cemetery is located in the small copse of trees atop the rise in the distance in this view.

From the intersection with Thorold Townline Road the updated preferred route for the proposed pipeline extends west for a distance of approximately 800 metres along the south side of Beaverdams Creek to the intersection of Davis Road (Highway 58). A 19th century limestone house is located adjacent to the corridor just west of the intersection of Thorold Townline Road and Beaverdams Road. A 19th century red brick house is located adjacent to the corridor in the segment west of Beaverdams Road. Plate 3 illustrates that segment of the corridor.

Just west of Davis Road the corridor crosses a channel about five-metres wide; it contains a tributary of Beaverdams Creek. From that point the corridor crosses over to the north side of Niagara Falls Road and onto the Abitibi property, then turns west. It extends westward to a series of existing residences, where it rejoins the road allowance, then continues west to Allanburg Road. The various segments from Davis Road to Allanburg Road have a combined length of approximately 1140 metres. Plate 4 illustrates the segment of the corridor on Niagara Falls Road just west of the channel. Plate 5 illustrates the segment of the corridor on Niagara Falls Road at the Norton Street intersection.

The last leg of the route extends north along the east side of Allanburg Road for a distance of approximately 200 metres to the site of the proposed power generation plant. Plate 6 illustrates the segment of the corridor on Allanburg Road, looking south toward the Niagara Falls Road intersection.

The area containing the proposed pipeline generally consists of low relief. As described above, the segment that parallels Thorold Townline Road transects Beaverdams Creek south of Beaverdams Road. It also transects a tributary of Beaverdams Creek just west of the intersection of Davis Road and Niagara Falls Road. The segments of the corridor west of Davis Road lie between Beaverdams Creek and a second stream course that was mapped in the 19th century. Both stream courses were interrupted by the construction of the Welland Canal in the 19th century.

3.0 STAGE 1: BACKGROUND RESEARCH

3.1 Methods

The initial element of an archaeological assessment of a proposed development undertaking consists of background research. This is defined as a Stage 1 level of assessment in the archaeological guidelines formulated by the Province of Ontario (MCTR 1993). Background research is carried out in order to:

- amass all of the readily available information on any previous archaeological surveys in the area;
- determine the locations of any registered and unregistered sites within and adjacent to the property;
- identify areas of archaeological potential which represent concerns for Stage 2 field survey; and
- develop an historical framework for assigning levels of potential significance to any new sites discovered during fieldwork.

The framework for assigning levels of potential archaeological significance is drawn from provincial environmental assessment guidelines (Weiler 1980). The information includes the identification and evaluation of any feature that has one or more of the following attributes:

> it has the potential through archaeological exploration, survey or fieldwork to provide answers to substantive questions (i.e. relate to particular times and places) about events and processes that occurred in the past and therefore add to our knowledge and appreciation of history;
>
> it has the potential through archaeological exploration, survey and fieldwork to contribute to testing the validity of general anthropological principles, cultural change and ecological adaptation, and therefore to the understanding and appreciation of our man-made heritage; or
>
> it is probable that various technical, methodological, and theoretical advances are likely to occur during archaeological investigation of a feature, alone or in association with other features, and therefore contribute to the development of better scientific means of understanding and appreciating our man-made heritage (Weiler 1980:8).

Preferred and alternative routes for the proposed pipeline were contained within a study area defined by Stantec Consulting Ltd. As illustrated in Figure 1, it is bounded to the north by the banks of the Beaverdams inlet for the Welland Canal, to the south by the lots fronting on the south side of Lundy's Lane, to the western by some of the businesses and residences along the west side of Allanburg Road, and to the east by lands just east of Thorold Townline Road.

Two collective sources were examined in the course of the background research. The first was the Archaeological Sites Database (ASDB) of the Ministry of Culture. It houses site record forms for registered sites as well as published and unpublished reports on past surveys, assessments and excavations. At the request of the consultant, Robert von Bitter, the Archaeological Data Coordinator of the Ministry of Culture, provided data on registered archaeological sites within the study area.

The other collective source for Stage 1 research was the library/archives of D.R. Poulton & Associates Inc. This source includes an extensive inventory of published and unpublished reports, as well as inventories of both registered and unregistered archaeological sites in the area.

The above sources included some documentation on potential Euro-Canadian archaeological planning concerns. They were supplemented by reference to the 1876 Historic Atlas of Lincoln and Welland Counties (Page 1876).

3.2 Results

The background research obtained information of relevance to the potential for historic and prehistoric sites within the study area containing the alignment of the proposed pipeline. For reference purposes, a cultural chronology of the region is presented in Table 1.

The results of the Stage 1 study may be divided into two separate but related categories: information on past archaeological investigations and known sites in the study area; and information on the history of land use in the area. These will be considered in turn.

Past Archaeological Investigations and Known Sites

The Stage 1 background study determined that three past archaeological studies have been conducted in the study area containing the proposed pipeline. The first was a 1992 Stage 1-2 assessment of a proposed TransCanada PipeLines Limited natural gas pipeline. The second was a 2005 Stage 1-2 assessment of a proposed residential subdivision. The third was the 2006 Stage 1 assessment of the proposed Northland Power Plant.

The Stage 1 background study determined that 14 archaeological sites have been registered within the 2-kilometre study area for the proposed pipeline. Based on the distribution of known sites, none of these assessments or sites was located within 200-300 metres of the alignment of the proposed pipeline.

Data on the archaeological inventory are presented in Table 2. Summary data on the inventory are presented in Table 3. As indicated in Table 3, the majority of the sites (10 of 14) are First Nations components; the exceptions are four Euro-Canadian components.

The Euro-Canadian components are all 19th century homesteads. The First Nations components are all of unknown age and cultural affiliation; they include six isolated find spots and four lithic scatters.

Table 1 Cultural Chronology for Southwestern Ontario

PERIOD	**GROUP**	**TIME RANGE**	**COMMENT**
PALEO-INDIAN			
	Fluted Point	9500 – 8500 B.C.	Big game hunters; small nomadic groups
	Hi-Lo	8300 – 7900 B.C.	
ARCHAIC			
Early	Nettling	7700-6900 B.C.	Nomadic hunters and gatherers.
	Bifurcate Based	6800 – 6000 B.C.	
Middle	Laurentian	3500 – 2500 B.C.	Transition to territorial settlements.
Late	Lamoka	2500 – 1800 B.C.	Polished/ground stone tools
	Broad Point	1800 – 1400 B.C.	
	Crawford Knoll	1500 - 500 B.C.	
	Glacial Kame	*ca*. 1000 B.C.	Burial ceremonialism
WOODLAND			
Early	Meadowood	1000 - 400 B.C.	Introduction of pottery
	Red Ochre	1000 – 500 B.C.	
Middle	Saugeen		Long distance trade networks. Incipient horticulture
	Princess Point	500 – 800 A.D.	
Late	Glen Meyer	800 - 1280 A.D.	Transition to village life and agriculture
	Uren	1280 – 1330 A.D.	Large village sites
	Middleport	1330 – 1400 A.D.	Widespread stylistic horizon
	Neutral	1400 – 1650 A.D.	Tribal differentiation and warfare
HISTORIC			
Early	Odawa, Ojibwa	1700 – 1875 A.D.	Social displacement
Late	Euro-Canadian	1800 A.D. – present	European settlement

Lithic scatters are among the most common types of archaeological sites found in southern Ontario. The term “lithic scatter” is used by archaeologists to refer to ploughed sites where most or all of the artifacts consist of chipped stone tools and debitage, the waste product of chipped stone tool manufacture and maintenance. In practice, lithic scatters and camp sites tend to be synonymous in that both refer to sites that are generally small in size and were occupied by small groups of people for relatively short periods of time. In most cases, lithic scatters represent temporary occupations by small groups of people, such as hunting camps.

Table 2 Inventory of Registered Archaeological Sites in the Study Area

Site Name	Borden Number	Site Type	Cultural Affiliation
Blackhorse Valve	AgGt-72	Find spot	Indeterminate Prehistoric
T. Brown	AgGt-130	Homestead	Euro-Canadian
Robert Spencer	AgGt-131	Homestead	Euro-Canadian
B. Williams	AgGt-132	Homestead	Euro-Canadian
K. Smith	AgGt-133	Homestead	Euro-Canadian
	AgGt-134	Find spot	Indeterminate Prehistoric
	AgGt-135	Find spot	Indeterminate Prehistoric
	AgGt-136	Find spot	Indeterminate Prehistoric
	AgGt-137	Find spot	Indeterminate Prehistoric
	AgGt-138	Find spot	Indeterminate Prehistoric
Glen Gordon 1	AgGt-139	Lithic scatter	Indeterminate Prehistoric
Glen Gordon 2	AgGt-140	Lithic scatter	Indeterminate Prehistoric
Glen Gordon 3	AgGt-141	Lithic scatter	Indeterminate Prehistoric
Glen Gordon 4	AgGt-142	Lithic scatter	Indeterminate Prehistoric

Table 3 Summary Data on Registered Archaeological Sites in the Study Area

Age & Culture		Site Type	Total
First Nations Components	Indeterminate Prehistoric	Find Spot	6
		Lithic scatter	4
	Subtotal – First Nations		***10***
Euro-Canadian	19th Century	Homestead	4
	Subtotal – Euro-Canadian		***4***
Total			**14**

19th Century Land Use in the Study Area

Figure 2 illustrates the location of the proposed pipeline alignment relative to a composite of the 1876 Historic Atlas maps of Thorold and Stamford Geographic Townships (Page 1876). As illustrated, the pipeline alignment as of 1876 was located in what was a rural area between the communities of Thorold and Allanburg. However, the Old Welland Canal and the New Welland Canal were prominent features in the landscape of this region in the 19th century, as they are today. The original Welland Canal was built between 1824 and 1829 and was an immediate success. In 1870, plans were initiated to build the new canal with a greater depth, capable of taking vessels with a larger draught. The New Welland Canal was still under construction by the mid 1870s, when the 1876 Historic Atlas illustrated in Figure 2 was published.

As illustrated in Figure 2, the 1876 Historic Atlas mapped four structures in proximity to the alignment. One is a church; it was situated on the west side of Thorold Townline Road, south of the proposed Beaverdams Creek crossing. This church is no longer standing. The mapping indicates that it was probably situated within the hydro transmission corridor or between the hydro transmission corridor and Beaverdams Creek. The cemetery described in Section 2.0 of this report and illustrated in Plate 2 appears to have been associated with this church. The cemetery occupies a rise overlooking the inferred site of the church. The updated preferred route for the proposed pipeline has been changed to avoid the cemetery. However, the site of the church is in close proximity to the segment of the corridor that follows the west side of Thorold Townline Road south of the Beaverdams Creek crossing (Plate 2). Whether any part of the structure extended into the corridor remains to be determined, although that does not seem likely as the church was more likely to have been set back from the road right-of-way.

The other three mapped structures depicted in the 1876 Historic Atlas map are farmsteads with associated orchards. All are situated on the north side of Beaverdams Creek and are oriented to Beaverdams Road and Niagara Falls Road (Figure 2). Two of them are on the same side of the road right-of-way as the updated preferred route for the proposed pipeline. Those structures, the 19th century the red brick house (Plate 3) and the limestone house described in Section 2.0 of this report, are still standing. Other 19th century structures located in proximity to the alignment are a farmhouse situated in Lot 47, at the southeast corner of Niagara Falls Road and Allanburg Road, and a toll booth that was located on the west side of the intersection of Allanburg Road and Niagara Falls Road.

4.0 EVALUATION OF ARCHAEOLOGICAL POTENTIAL

There are two basic categories of possible archaeological planning concerns for any property subject to impact from a proposed development. The first consists of known sites that are of demonstrable or potential significance as cultural resources and planning concerns. The second consists of the potential for as-yet undiscovered sites. These two categories will be addressed in turn.

4.1 Known Sites of Demonstrable or Potential Significance

The original framework for assigning levels of archaeological significance in Ontario was drawn from Provincial environmental assessment guidelines (Weiler 1980). The information included the identification and evaluation of any site that met one or more of the following criteria:

> *it has the potential through archaeological exploration, survey, or fieldwork to provide answers to substantive questions (i.e. relate to particular times and places) about events and processes that occurred in the past and therefore add to our knowledge and appreciation of history;*
>
> *it has the potential through archaeological exploration, survey, and fieldwork to contribute to testing the validity of general anthropological principles, cultural change and ecological adaptation, and therefore to the understanding and appreciation of our man-made heritage; or*
>
> *it is probable that various technical, methodological, and theoretical advances are likely to occur during archaeological investigation of a feature, alone or in association with other features, and therefore contribute to the development of better scientific means of understanding and appreciating our man-made heritage (Weiler 1980:8).*

The document quoted above was prepared a quarter of a century ago and while the principles it was based upon are still current, some of the language is now dated, including phrases such as "*man-made*". The issue of archaeological site significance is also covered in a more recent publication entitled *Conserving a Future for Our Past: Archaeology, Land Use & Development in Ontario* (Ministry of Citizenship, Culture and Recreation 1997). As stated in that document, the key factors an archaeologist considers in evaluating the significance of an archaeological site include the following:

1. The Integrity of the site (e.g. is it in pristine or near pristine condition; despite past disturbances; can important data still be recovered from it?).

2. The Rarity or Representativeness of the site (e.g. is it one of a kind, locally, regionally or provincially; is it a good comparison to similar sites from other regions, etc?).

3. The Productivity of the site (e.g. does it have the potential to contain large quantities of artifacts or exceptionally detailed data about what occurred there; etc?).

4. The Age of the site.

5. The Potential for Human Remains within the site.

6. The Geographic or Cultural Association (e.g., does the site have a clear and distinct relationship with the surrounding area or to a particular geographic feature, such as a unique rock formation, historic transportation corridor, etc.; is the site associated with a distinctive cultural event, ceremony or festival, etc.?).

7. The Historic Significance of the site (i.e., is the site associated with a renowned event, person or community?).

8. Community Interest (e.g., is the site important to a particular part of the community; does it represent a significant local event; etc.?).

As summarized in Section 3.2 of this report, no past archaeological investigations have ever been carried out within the lands transected by the updated preferred alignment for the proposed pipeline. Accordingly, possible archaeological planning concerns for the proposed pipeline were limited to the potential for as yet undiscovered or unconfirmed archaeological remains. That potential is discussed below.

4.2 Potential for as-yet Undiscovered Sites

The inherent potential for prehistoric and historic archaeological resources in an area subject to impact from a proposed development is generally evaluated on the basis of three factors. One is the presence of known sites in the area. The second is the intrinsic nature of the property itself, including factors such as topography and drainage. The third factor is the extent to which past impacts may have degraded or altogether eradicated the potential of the property to contain extant archaeological remains.

The proposed pipeline has not been staked and detailed plans are not available at this time. Given the diameter of the proposed pipeline, however, it is assumed that the construction easement will be relatively narrow. It is further assumed that the existing roads can be used as the working easement for the entire length of the proposed pipeline.

The visual examinations conducted on July 31, 2007 and March 17, 2008 indicate that most of the length of the updated preferred route has been disturbed to the extent that it is unlikely to retain a potential for as-yet undiscovered archaeological remains and does not warrant archaeological survey. That is the case for the 340-metre segment that follows the east side of Thorold Townline Road, the 1140-metre length of the route that extends along Niagara Falls Road and the 200-metre long segment that follows Allanburg Road. These segments have a combined length of approximately 1680 metres and represent 60% of the length of the proposed pipeline.

Notwithstanding the above comments, it should be noted that deeper archaeological deposits could potentially survive even in areas that have been graded, such as existing road rights of way. That would be the case for features such as root cellars relating to houses that were oriented to historic roads such as Allanburg Road, Niagara Falls Road, Beaverdams Road and Thorold Townline Road, the road rights-of-way the updated preferred route follows. It would also be the case for unmarked graves in the cemetery on Thorold Townline Road, the cemetery that the updated preferred route is avoiding.

Subject to a review of the detailed design for the proposed pipeline, there are certain segments or areas along the updated preferred route that are considered to have a potential for archaeological remains and to warrant a definite or possible Stage 2 survey. They have a combined length 1,020 metres, representing approximately 40% of the length of the proposed pipeline.

One is the segment of the corridor on the west side of Thorold Townline Road south of the proposed Beaverdams Creek crossing. This segment has a length of approximately 220 metres.

Further to the above, it is assumed that the proposed Beaverdams Creek crossing itself will require land farming for the soils from the directional drilling. The area involved in the land farming will presumably be located in the field south of the proposed Beaverdams Creek crossing (Plate 2). That area may contain the site of the church depicted on the 1876 Historic Atlas map of Thorold Township (Figure 2). It has archaeological potential and, were it to be subject to possible impact by the land farming, would also be a concern for Stage 2 archaeological survey.

The 800-metre long segment of the updated preferred pipeline route along the south side of Beaverdams Road from Thorold Townline Road to Davis Road is also considered to have some potential for archaeological remains and to warrant a definite or possible Stage 2 survey. Potential remains for that segment include artifacts and below-ground structural remains of outbuildings related to the two standing 19th century residences on the south side of Beaverdams Road: the red brick house (Plate 3); and the limestone house.

As described in Section 2.0 of this report, just west of Davis Road the corridor crosses a channel containing a tributary of Beaverdams Creek. If that crossing is to be done by directional drilling and if it will involve land farming, an archaeological survey of the area of impacts may be required, depending on the extent of past impacts in the lands in question.

5.0 RECOMMENDATIONS

As detailed in Section 4.2 of this report, the results of the background study and visual examination indicate that segments of the alignment with a combined length of approximately 1680 metres have been impacted to the extent that they are unlikely to retain a potential for extant archaeological remains. Those segments represent 60% of the length of the updated preferred route for the proposed pipeline.

The study also determined that corridor segments with a combined length of approximately 1020 metres are inferred to have some potential for extant archaeological remains and to warrant archaeological survey. Those segments represent 40% of the length of the updated preferred route. The other concerns for archaeological survey are the lands subject to impact from the directional drilling for the proposed Beaverdams Creek crossing and related land farming. It remains to be determined whether the directional drilling for the crossing of the channel west of Davis Road and the related land farming will be a concern for archaeological survey.

Given the above comments, it is recommended that a Stage 2 survey be conducted once the detailed design for the proposed pipeline has been formulated. The purpose of the survey will be to effect a field-based assessment of any and all lands that are confirmed to be subject to impact from the undertaking and to retain a potential for extant archaeological remains. In the event that the survey should discover archaeological sites that represent significant planning concerns, it is recommended that measures for mitigating the concern be implemented. Options for those sites include preservation by avoidance or mitigation by salvage excavation in advance of development.

The above conclude the site-specific recommendations of this report. Nevertheless, it should be emphasized that no archaeological survey can be considered to totally negate the potential for deeply buried cultural remains, including human burials. In recognition of that fact, the archaeological assessment technical guidelines formulated by the Province of Ontario require that all reports on archaeological assessments include recommendations to address the possibility that deeply buried remains may be encountered during grading and construction (MCTR 1993:12).

In accordance with the above, it is recommended that archaeological staff of the Ontario Ministry of Culture be notified immediately if any deeply buried archaeological remains should be discovered during earthmoving or construction within the proposed pipeline alignment. It is similarly recommended that in the event that human remains should be encountered, the proponent immediately contact Shari Prowse, Heritage Planner, Ontario Ministry of Culture (519 675-6898) and Michael D'Mello, the Registrar of the Cemeteries Regulation Unit of the Ministry of Government Services (416 326-8404).

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FIGURES

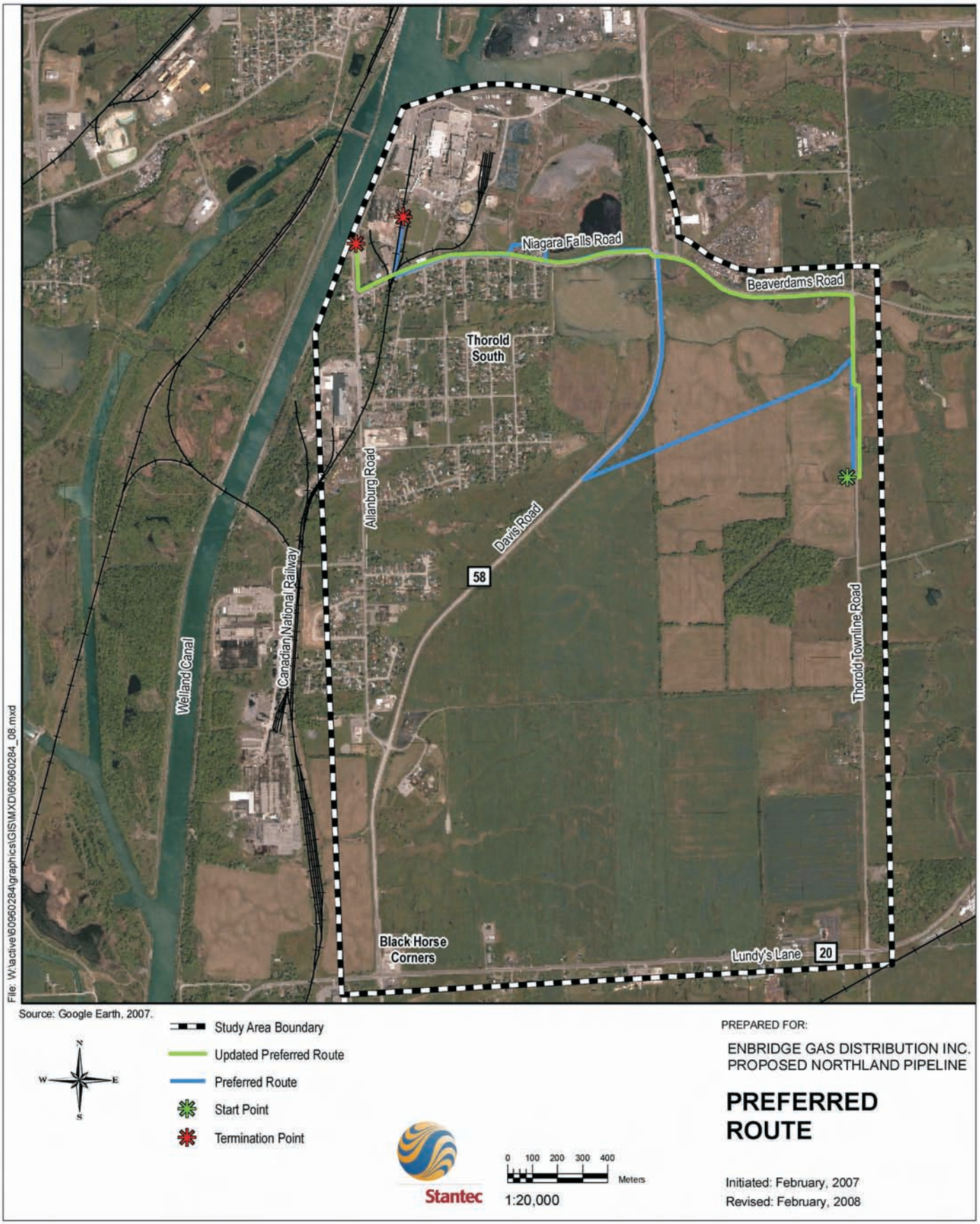

Figure 1 Aerial Photograph of the Preferred Pipeline Route

Figure 2 Composite Facsimile of the 1876 Historical Atlas Maps

PLATES

Plate 1 South End of Thorold Townline Road Segment, View North

Plate 2 Thorold Townline Road Segment, View South

Plate 3 19th Century Red Brick House on Beaverdams Road

Plate 4 Niagara Falls Road Segment West of Davis Road, View West

Plate 5 West End of Niagara Falls Road Segment at Norton Street, View West

Plate 6 Segment along Allanburg Road, View South to Niagara Falls Road