Eastern Mainline Project

Project Description

May 2014

Submitted to:
The Secretary
National Energy Board
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Calgary, Alberta T2P 0X8

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May 8, 2014

Filed Electronically

National Energy Board
444 Seventh Avenue SW
Calgary, Alberta T2P 0X8

Attention: Ms. Sheri Young, Secretary of the Board

Dear Ms. Young:

Re: TransCanada PipeLines Limited (TransCanada)
Project Description for the Eastern Mainline Project (Project)

TransCanada proposes to construct and operate new natural gas pipeline facilities along its existing Canadian Mainline in southeastern Ontario. A project description (PD) for the Project is provided under cover of this letter.

The Project is needed to enable TransCanada to continue to meet its commercial obligations following the proposed transfer of certain Canadian Mainline facilities to Energy East Pipeline Ltd. (Energy East) and the subsequent conversion of those facilities to crude oil from natural gas service. A separate PD was submitted to the Board for the Energy East Project on March 4, 2014 (NEB Filing ID: A59129).

The Project includes the following main components:

- up to approximately 370 km of 914 mm (NPS 36) pipeline loop
- compression facilities at existing compressor stations
- mainline valve sites

The scheduled in-service timing for the Project begins in fourth quarter 2016.

TransCanada plans to file an application for a *Certificate of Public Convenience and Necessity* to construct and operate the Project, pursuant to Section 52 of the *National Energy Board Act* (NEB Act), in third quarter 2014 as part of the comprehensive Energy East application. Previously, in the PD provided for the Energy East Project, TransCanada indicated that an application for gas facilities would be filed separately. Based on a number of considerations, including progress in development of the applications, the need to move ahead with construction of new gas facilities in a timely manner and providing the Board with all relevant information, TransCanada has chosen to file the certificate applications together. In the interim, TransCanada is proceeding with field studies, environmental and socio-economic assessments, engineering design, Aboriginal and stakeholder engagement, regulatory consultation and other activities needed to support the Project application.

Environmental assessment will be required under both the NEB Act and the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), as the preferred pipeline route involves construction on more than 40 km of new right-of-way.

The enclosed PD is intended to:

- facilitate efficient regulatory review of the Project by the Board
- facilitate determination of the scope of the Project, as well as the scope and type of assessment required pursuant to the NEB Act
- provide the Crown with sufficient information to begin consultation with Aboriginal communities that might potentially be affected by the Project
- provide the Board with sufficient information to initiate its Participant Funding Program, Enhanced Aboriginal Engagement and public consultation activities
- inform other regulatory authorities, Aboriginal communities, landowners and stakeholders

Accordingly, in addition to providing the enclosed PD for consideration by the Board, TransCanada also requests that the Crown begin any necessary consultation with Aboriginal communities as soon as possible.

Yours truly,

Original Signed By

Robert Tarvydas
Vice-President, Regulatory Affairs

Enclosures

cc. Distribution List
Director General, MPMO Operations

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1.0 INTRODUCTION

1.1 NAME AND NATURE OF PROJECT

TransCanada PipeLines Limited (TransCanada) proposes to construct and operate new natural gas pipeline facilities along its existing Canadian Mainline between Markham, Ontario and the community of Iroquois, Ontario. These facilities will be known collectively as the Eastern Mainline Project (Project).

The Project will enable TransCanada to continue to meet its commercial obligations following the proposed transfer of certain Canadian Mainline facilities to Energy East Pipeline Ltd. (Energy East) and conversion of those facilities to crude oil from natural gas service. A separate Project Description (PD) was submitted to the National Energy Board (NEB) for the Energy East Project (Energy East) on March 4, 2014.[1]

1.2 REGULATORY APPROACH

TransCanada plans to file an application for a *Certificate of Public Convenience and Necessity* (CPCN) to construct and operate the Project, pursuant to Section 52 of the *National Energy Board Act* (NEB Act), in third quarter 2014 as part of the comprehensive Energy East application. Previously, in the PD provided for Energy East, TransCanada indicated that an application for gas facilities would be filed separately. Based on a number of considerations, including progress in development of the applications, the need to move ahead with construction of new gas facilities in a timely manner and providing the Board with all relevant information, TransCanada has chosen to file the certificate applications together. In the interim, TransCanada is proceeding with field studies, environmental and socio-economic assessments, engineering design, Aboriginal and stakeholder engagement, regulatory consultation and other activities needed to support the Project application.

1.3 SCOPE AND TIMING

The preliminary scope of the Project includes up to approximately 370 km of 914 mm (NPS 36) outside diameter pipeline loop and related components, including valve sites and new and modified compression facilities at existing compressor stations along the proposed route. The final scope of the Project will be determined by ongoing consultation with customers and system capability in the service area. Figure 1-1 shows the Project location.

[1] The Energy East PD is available on the NEB website at http://www.neb-one.gc.ca/clf-nsi/rthnb/pplctnsbfrthnb/nrgyst/nrgyst-eng.html.

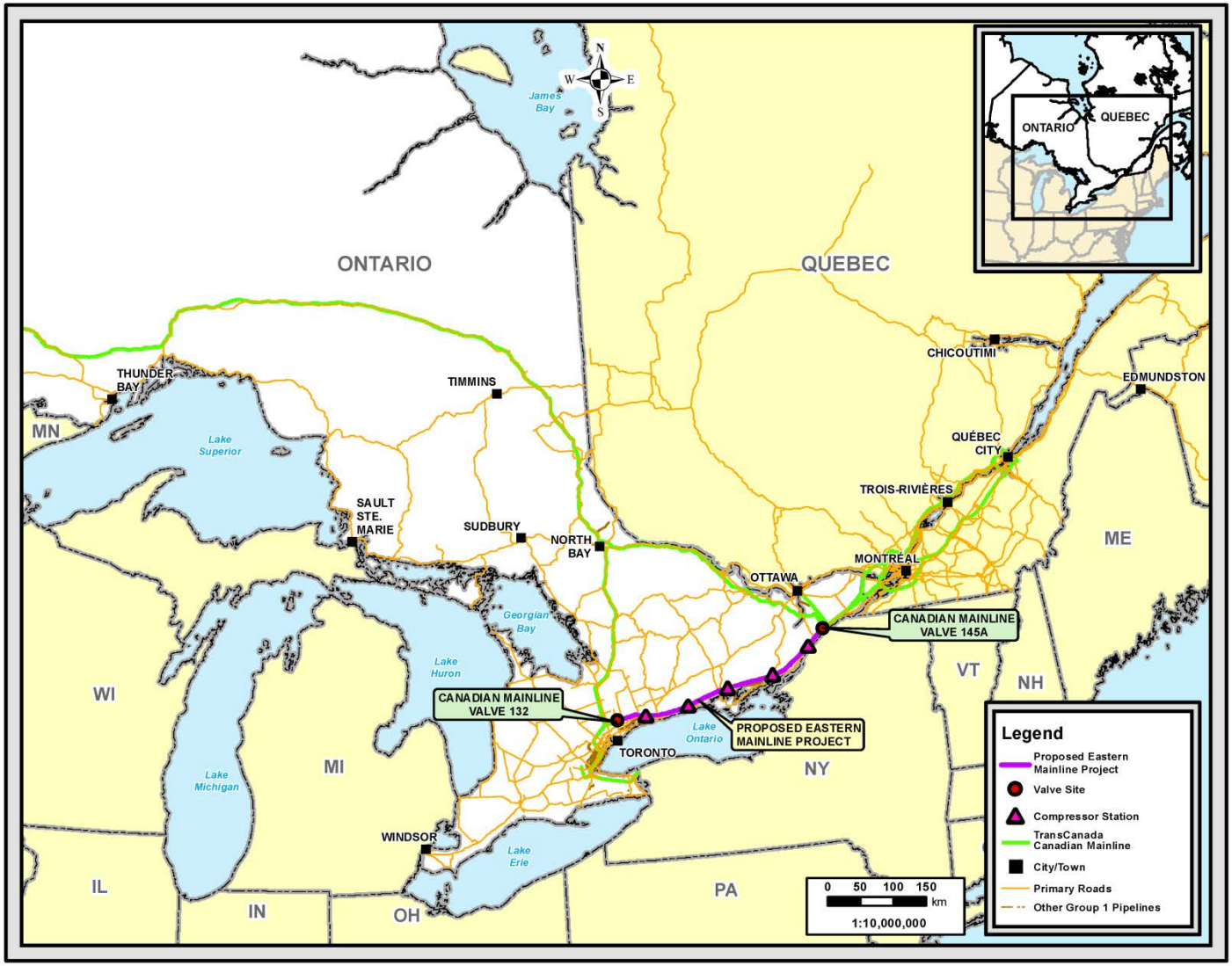

Figure 1-1: Overview Map of Proposed Project

The scheduled in-service timing for the Project starts in fourth quarter 2016. Some construction activities could continue into 2017.

Temporary infrastructure, such as access roads, construction camps, stockpile sites and contractor yards might be required during construction. Some new permanent access roads might also be needed for pipeline operations. New electrical power lines and facilities might be required to operate the new compressor units and cathodic protection (CP) sites. These power lines and facilities would be constructed, owned and operated by third-party power providers.

1.4 FEDERAL WORK AND UNDERTAKING

In addition to a requirement for a CPCN under the NEB Act, other permits and approvals might be required under applicable federal and provincial legislation. An environmental assessment will be required under both the NEB Act and the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), as the proposed route involves construction of more than 40 km of new pipeline regulated by the NEB.

This PD was prepared in accordance with guidance from the NEB website and the *Prescribed Information for the Description of a Designated Project Regulation* enacted under CEAA 2012. It is intended to:

- facilitate efficient regulatory review of the Project by the NEB
- facilitate determination of the scope of the Project, as well as the scope of assessment required pursuant to the NEB Act and CEAA 2012
- provide the Crown with sufficient information to begin consultation with Aboriginal communities that might potentially be affected by the Project
- provide the NEB with sufficient information to initiate its Participant Funding Program (PFP), Enhanced Aboriginal Engagement and public consultation activities
- inform other regulatory authorities, landowners, stakeholders and Aboriginal communities (also referred to as First Nations and Métis in this PD)

1.5 PROJECT PROPONENT

The Project will be constructed and operated by TransCanada PipeLines Limited.

TransCanada is a leader in the responsible development and reliable operation of North American energy infrastructure, including:

- natural gas pipelines
- oil pipelines
- power generation
- gas storage facilities

With more than 60 years of experience building pipelines safely and reliably, TransCanada has an established track record for operational excellence and has developed and maintained relationships with landowners, stakeholders, and First Nations and Métis across its entire pipeline system.

TransCanada's network of approximately 68,500 km wholly owned and 11,500 km partially owned pipelines connects virtually every major natural gas supply basin and market, transporting approximately 20% of the gas consumed in North America.

1.6 ENVIRONMENTAL ASSESSMENT

1.6.1 Scope of Project and Scope of Assessment

The following physical works and activities will be included in the scope of the Project for the purpose of environmental assessment pursuant to the requirements of the NEB Act and CEAA 2012:

- construction and operation of up to approximately 370 km of pipeline loop and related facilities, including:
  - pipeline valves (mainline block valves [MLV] and tie-overs)
  - launcher and receiver facilities to accommodate cleaning and in-line inspection (ILI)
  - CP
  - miscellaneous works (e.g., integration with communication and control systems)
- new and modified compression facilities at existing compressor stations
- construction-related temporary infrastructure, such as:
  - access (e.g., roads and travel lanes)
  - pipe and equipment storage sites
  - contractor offices and yards
  - camps, if required
- permanent access roads to facility sites

Construction and operation of new power lines and interconnects might be required to supply or augment existing power to compression and CP sites. These facilities are distinct physical works that will be constructed and operated by other parties and will be subject to a provincial regulatory regime distinct from that governing the proposed construction and operation of the Project. Accordingly, such physical works should be considered only in the context of the cumulative effects assessment.

The factors to be considered relative to these Project components will be determined by, and will reflect the requirements of, both the NEB Act and CEAA 2012.

1.6.2 Other Assessment Regimes

As a federal work and undertaking subject to the regulatory jurisdiction of the NEB, the Project will not be subject to provincial environmental assessment processes. Nevertheless, the Government of Ontario might choose to participate in the federal assessment or regulatory processes to facilitate consideration of any concerns or to provide technical expert advice.

1.7 CROWN CONSULTATION WITH ABORIGINAL GROUPS

TransCanada respects the legal and constitutional rights of Aboriginal groups, and recognizes that their relationships with Aboriginal groups are separate and different from the relationships those groups have with the Crown.

To the extent that the Project triggers the need for Crown consultation with Aboriginal groups, it is critical that such consultation be initiated and completed in a timely way. A key objective of this document is to enable the Crown to begin any necessary consultation as soon as possible.

1.8 PARTICIPANT FUNDING PROGRAM

The Project will require a public hearing under the NEB Act and will trigger the NEB-administered PFP. This program helps fund timely and meaningful participation by eligible parties, such as individuals, landowners and Aboriginal groups, in the NEB's oral hearing process for facility applications.[2]

Given the nature and number of steps that will be required to complete the PFP, TransCanada requests that the NEB's public announcement of PFP availability is made within two months of this PD filing, consistent with the timing that the Board used for other recent applications for a CPCN.[3]

[2] See the *Guide to the National Energy Board Participant Funding Program under the National Energy Board Act*, as revised.

[3] Refer to the NEB's PFP availability announcements for the Northwest Mainline Expansion, Leismer to Kettle River Crossover and North Montney projects (NEB Filing ID: A1X3Y5, A1X2D4 and A53359).

1.9 PROPONENT CONTACT INFORMATION

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2.0 PROJECT INFORMATION

2.1 MAIN COMPONENTS AND STRUCTURES

2.1.1 Permanent Structures

The Project will have permanent facilities, including:

- up to approximately 370 km of 914 mm (NPS 36) pipeline loop as required
- new and modified compression facilities at existing compressor stations
- mainline valve sites
- launcher and receiver facilities
- CP facilities
- permanent access roads

Table 2-1 provides the approximate geographical coordinates of the main Project components and Figure 2-1 shows these locations. Appendix A is a larger map that shows the proposed pipeline route and primary facility sites.

Table 2-1: Coordinates of Main Project Components

Component	Easting	Northing	UTM Zone
Start: Mainline Valve Site 132 (MLV 132)	632312	4864714	17
Bowmanville Compressor Station 134 – Unit Additions	674938	4869725	17
Cobourg Compressor Station 136 – Unit Additions	739704	4881352	17
Belleville Compressor Station 139 – Unit Additions	321793	4900075	18
Kingston Compressor Station 142 – Unit Additions	391385	4911319	18
Brockville Compressor Station 144 – Unit Additions	450787	4947970	18
End: Mainline Valve Site 145A (MLV 145A)	476657	4970701	18

2.1.2 Pipeline Routing and Facilities

Pipeline Route Selection

TransCanada employs a systematic and thorough route selection process using a variety of tools, such as:

- desktop studies
- helicopter reconnaissance
- ground verification and field surveys
- engineering, geotechnical and environmental field studies

This route selection process assesses overall cost and constructability while taking into account the total route length, paralleling existing linear developments, meeting applicable regulatory requirements and reducing the environmental footprint.

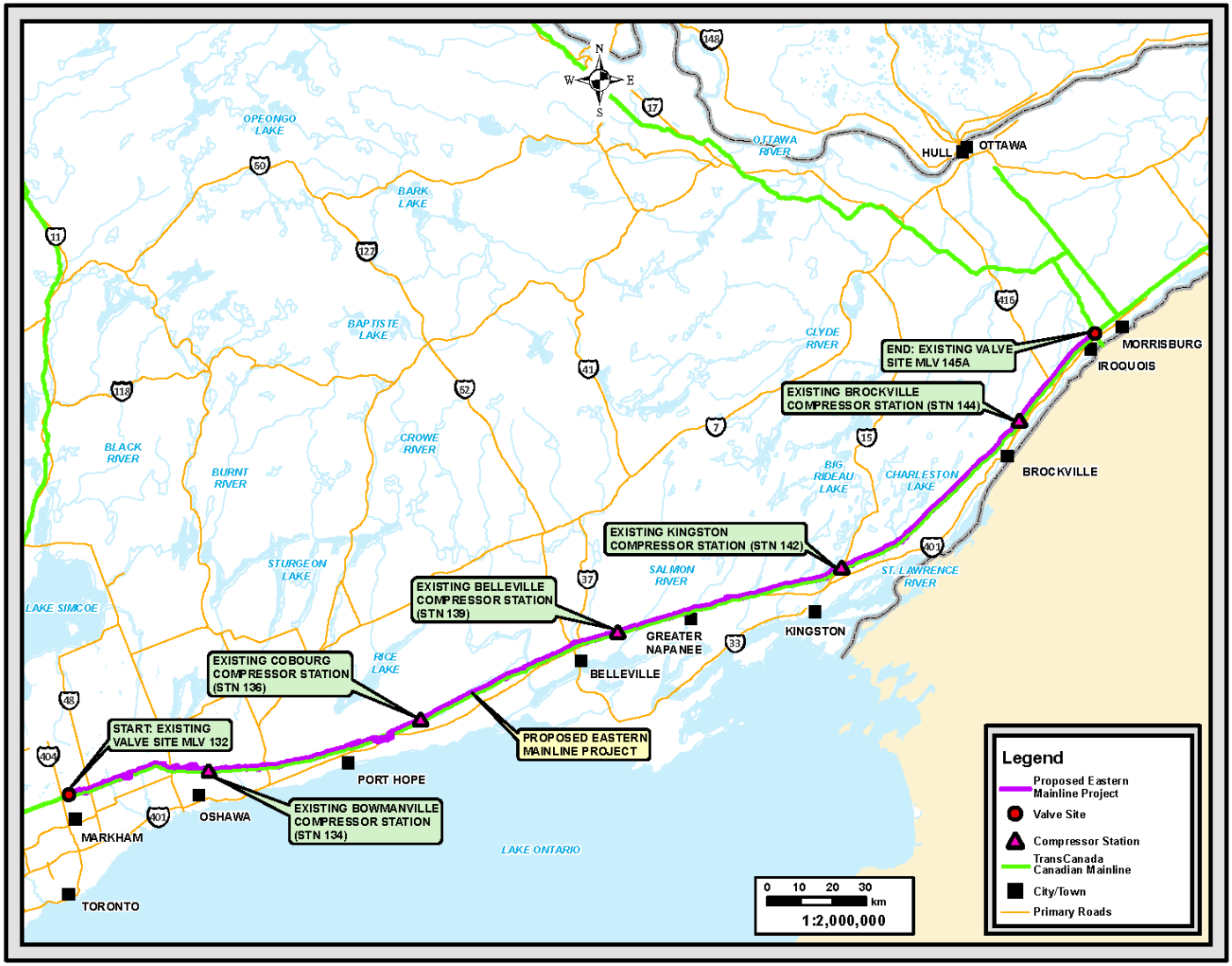

Figure 2-1: Location of Main Project Components

Feedback through the stakeholder as well as First Nation and Métis engagement programs is also considered.

Proposed Pipeline Route

Starting from an existing valve site on the Canadian Mainline near the City of Markham, the proposed pipeline route will travel eastward for up to approximately 370 km, generally following the Canadian Mainline to an existing valve site near the community of Iroquois in the Township of South Dundas. The route passes through 23 municipalities, including Markham, Oshawa, Port Hope, Belleville, Greater Napanee, Kingston and Brockville. Seven regions and counties are also crossed.

Parallel and New Right-of-Way

Approximately 320 km of the proposed pipeline route parallels the existing Canadian Mainline right-of-way (ROW) or other existing linear disturbances such as pipelines, roads and electrical power lines. Deviations from existing rights-of-way will be required by the proposed route as a result of physical constraints, including to:

- accommodate crossing watercourses with pipeline
- reflect stakeholder, landowner, and First Nation and Métis feedback
- avoid sensitive terrain and environmental areas
- address potential construction issues and requirements

Previously disturbed areas will be used, where feasible, during construction.

Figure 2-2 depicts the parallel and new ROW associated with the proposed route. Table 2-2 provides the approximate length of both parallel and new ROW.

Table 2-2: Approximate Parallel and New Right-of-Way Lengths

Right-of-Way	Distance (km)[1]
New ROW	47
Canadian Mainline ROW	315
Power line ROW	3
Road ROW	0
Other Pipeline ROW	2
Total	367

Note:
1. The numbers in this column have been rounded.

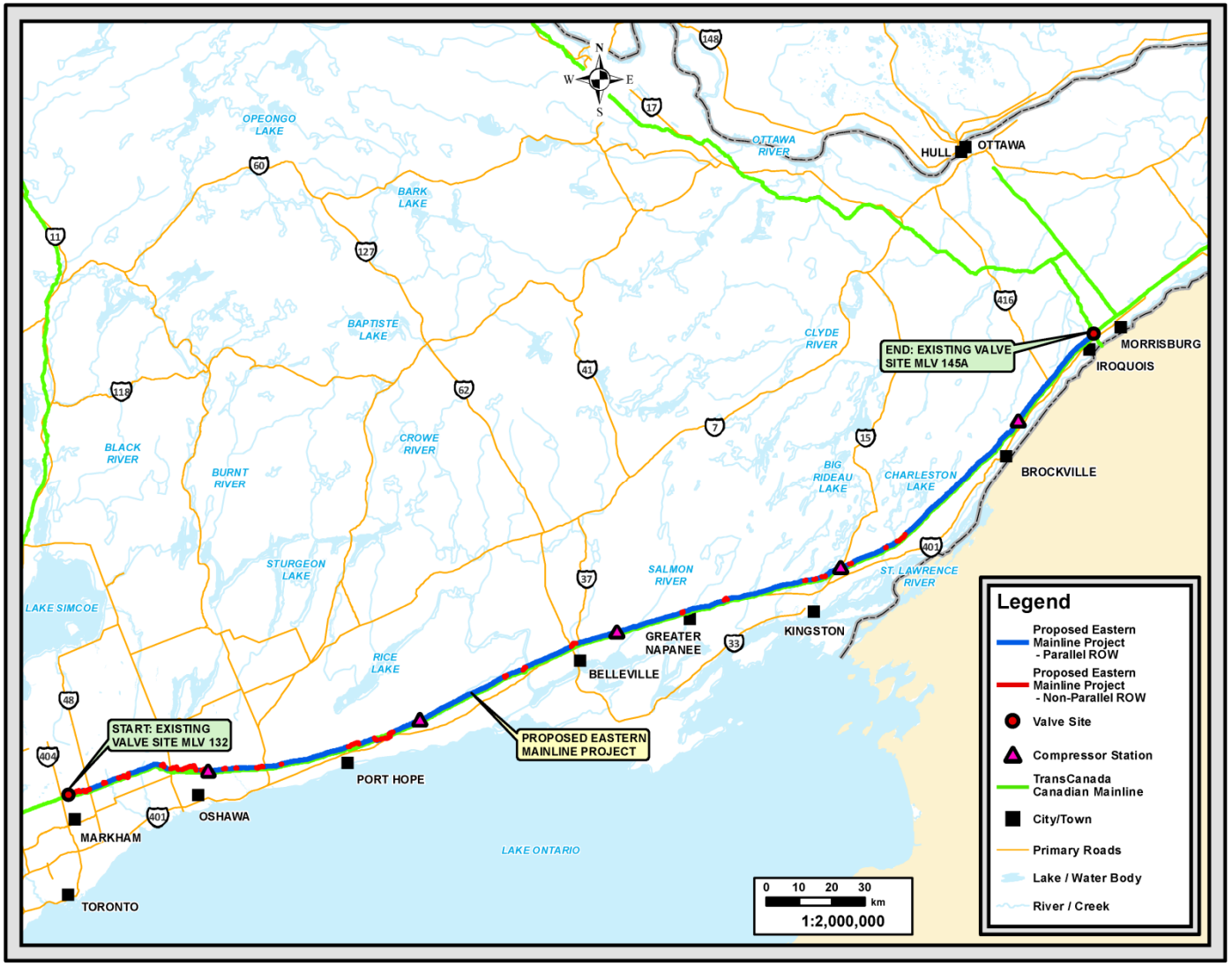

Figure 2-2: Parallel and New Right-of-Way

2.1.3 Compressor Stations

Additional compressor units will be required to offset pressure losses as the gas travels through the pipeline. These units will be located at existing compressor stations along the Canadian Mainline and will be described in TransCanada's Section 52 application to the NEB.

2.1.4 Mainline Block Valves

Mainline block valves will be installed at existing valve sites along the pipeline route with spacing up to 34 km apart.

2.1.5 In-Line Inspection Facilities

Launcher and receiver facilities will be installed for ILI purposes. Information on these facilities will be provided in the Project's Section 52 application.

2.1.6 Cathodic Protection

The Project will share the CP system that currently protects the Canadian Mainline and as a result, it will not require a new dedicated system. Upgrades to the existing CP system might be needed and new test stations will also be installed at appropriate intervals and locations along the Project. These will be needed to monitor the effectiveness of the applied CP current, and permit access to the pipeline for other corrosion-control monitoring activities.

2.1.7 Supervisory Control and Data Acquisition System

The Project will include modifications to the existing Canadian Mainline supervisory control and data acquisition (SCADA) system, which will allow for remote monitoring and operation of Project facilities. The Project SCADA system will be integrated in TransCanada's Operation Control Centre (OCC) located in Calgary, Alberta. The OCC is staffed 24 hours per day.

In addition, the Project will include modifications to the existing local SCADA system to allow for local monitoring and operation of the facilities.

2.2 PRELIMINARY FOOTPRINT OF MAIN PROJECT COMPONENTS

2.2.1 Construction Right-of-Way and Temporary Workspace

The Project requires a construction ROW of generally 42 m width. The width of the pipeline construction ROW will vary based on site-specific factors.

Where available and practical, temporary workspace (TWS) will also be obtained from existing parallel ROW to reduce potential disturbance.

In addition to the construction ROW, additional site-specific TWS will be required at highway, railway, road, pipeline and watercourse crossings and at other locations to accommodate pipeline construction activities.

The construction ROW will be reclaimed after construction, with a permanent easement maintained for pipeline operations.

2.2.2 Compressor Station Sites

The proposed compression facilities will be located on existing TransCanada-owned property. The compressor stations will be powered by gas turbine engines, equipped with air and noise attenuation equipment.

In addition to remote monitoring by the OCC, a local safety system will automatically shut down the compressor units in the case of abnormal operating conditions. These permanent sites are fenced.

2.2.3 Mainline Valve Sites

Mainline valve sites will be located within the permanent ROW. TWS will be required at these sites for construction. The permanent sites will be fenced.

Access to the valve sites will typically be via the permanent ROW.

2.2.4 Temporary Infrastructure for Construction

During construction, use of lands for temporary infrastructure such as construction camps, access roads, pipe storage sites, contractor yards and similar construction-related activities, might be required.

3.0 PROJECT ACTIVITIES

The Project will have the following phases:

- proposal and definition
- construction and commissioning
- operations and maintenance
- decommissioning, abandonment and site reclamation

The preliminary Project schedule is shown in Figure 3-1.

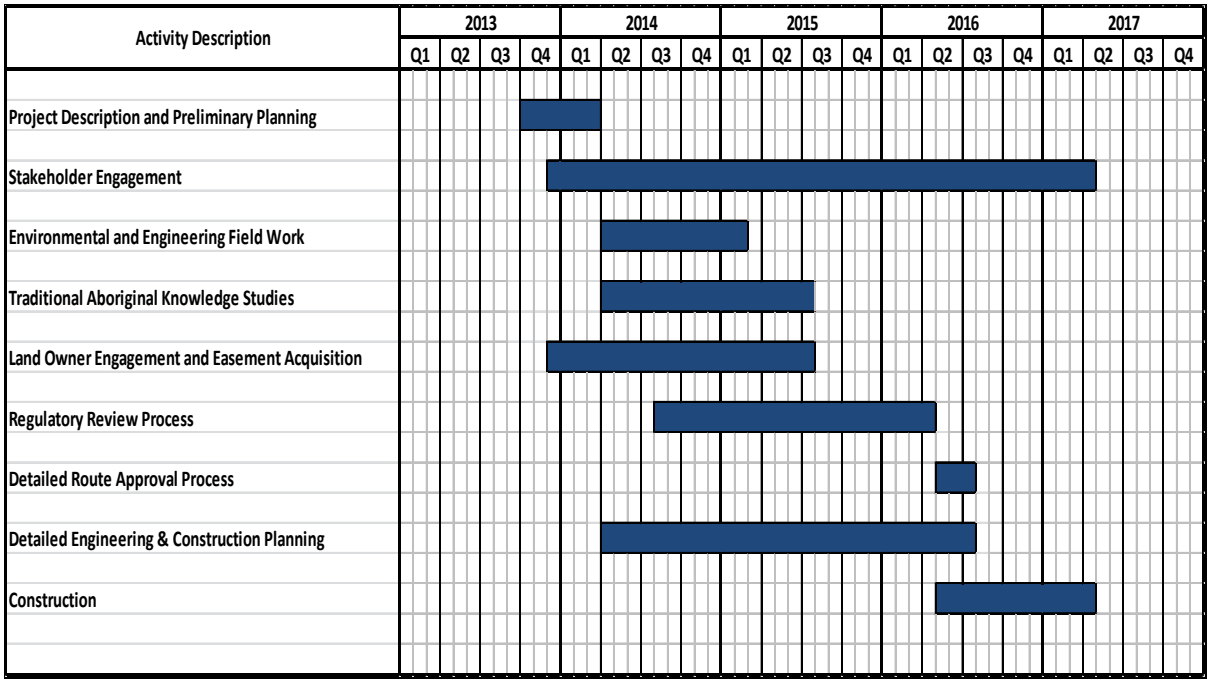

Figure 3-1: Preliminary Project Schedule

3.1 PROJECT PROPOSAL AND DEFINITION

The Project proposal phase began in 2013. The Project definition phase will begin in 2014. Activities during the proposal and definition phases include:

- completing project planning and preliminary design in sufficient detail for the preparation of regulatory applications
- conducting biophysical and socio-economic studies and assessments, including field surveys
- undertaking engineering and geotechnical studies and fieldwork
- initiating engagement programs with stakeholders, First Nations and Métis
- preparing regulatory applications and initiating the regulatory review process

The information in this PD is based on conceptual design. It will be refined over time as field and other data are collected and assessed, and as engineering and construction planning progresses through preliminary and detailed design.

Changes might also be made to reflect the results of the following:

- consultation and engagement programs
- commercial negotiations
- environmental and socio-economic assessments (ESA)

TransCanada's application for a CPCN under Section 52 of the NEB Act will reflect changes and refinements to the Project that are made after this PD is submitted to the NEB and Major Projects Management Office (MPMO). The application, which will include an ESA, is scheduled for filing with the NEB in third quarter 2014.

The information provided in the Section 52 application will be based on preliminary design, supported by initial results from field investigation, and engagement and consultation programs.

While preliminary information to support the Project will be included in the Section 52 application, TransCanada expects that supplemental field studies will be required after the application is submitted to confirm preliminary findings in relation to valued ecosystem components such as soils, wetlands, wildlife, aquatics and vegetation.

Throughout the application and regulatory review process, TransCanada will provide updated and supplemental information, as appropriate.

3.2 CONSTRUCTION AND IN-SERVICE TIMELINES

To facilitate pipeline construction and facility construction and to help maximize local contracting, work is currently scheduled to begin by May 2016.

Opportunities to optimize the infrastructure, pipeline and facility construction schedule will be pursued through the Project development and regulatory review process. Environmental timing windows will be taken into consideration during detailed construction planning.

Start-up of Project facilities is scheduled for November 2016. Some construction activities could continue into 2017.

3.3 OPERATIONS AND MAINTENANCE

3.3.1 Health, Safety and Environment

All activities associated with the Project, including health, safety and environmental (HSE) performance will meet or exceed applicable laws and regulations and will align with the NEB's *Onshore Pipeline Regulations*.

TransCanada will address responsibilities for HSE performance through TransCanada's HSE management system framework supporting safety, emergency management and environmental protection programs. This framework will apply to the complete life cycle of the Project, from design and construction, through operations to abandonment. It is reviewed and updated regularly.

3.3.2 System Protection and Controls

Once the proposed Project facilities are placed in service, they will be monitored and controlled from TransCanada's OCC as part of the integrated Canadian Mainline system. The OCC is staffed 24 hours per day.

TransCanada's OCC SCADA system monitors pipeline flow, pressure, temperature and equipment status on a continuous basis. The SCADA system alerts the OCC operator of operational changes in the pipeline system to enable appropriate action to be taken.

Project facilities will also have local safety systems to react to abnormal operational events or loss of communications.

3.3.3 Emergency Response

The Project facilities will be incorporated in TransCanada's emergency management system.

Before the Project facilities are put into operation, TransCanada will work with external emergency response personnel to ensure appropriate:

- communications protocols
- operations and product awareness
- understanding of TransCanada's emergency response procedures

This helps ensure that TransCanada's emergency response plans appropriately link into plans maintained by affected agencies.

3.3.4 Public Awareness

TransCanada's existing public awareness (PA) program will be used during the operations phase of the Project.

The PA program is designed to increase awareness of pipeline safety and thereby protect the public, environment and TransCanada facilities. It reaches the affected public, excavators and contractors, emergency response providers and local public officials, educating them about living and working safely near TransCanada facilities. It provides safety messages on special incident response notification and evacuation measures, as appropriate, and information about TransCanada's Integrity Management Program.

3.3.5 Maintenance Programs

TransCanada's standard preventive maintenance programs will be incorporated in the design and operation of the proposed Project facilities. These programs include:

- aerial patrols
- internal inspections
- CP monitoring
- pipeline markers at roads and pipeline watercourse crossings
- planned maintenance activities

3.4 DECOMMISSIONING, ABANDONMENT AND SITE RECLAMATION

Decommissioning and abandonment activities will comply with applicable federal and provincial regulatory requirements in force at the time. Additional information will be provided in the Section 52 application.

4.0 LAND

This section describes the land requirements for the Project and the process for acquiring these lands.

The land requirements include:

- permanent Crown and private land tenure for the proposed pipeline and associated facilities
- TWS requirements for construction

4.1 LAND OWNERSHIP

Table 4-1 summarizes the various land types crossed by the Project.

Table 4-1: Land Ownership along Pipeline Route

Land Type	Approximate Percentage of Land Crossed	Approximate Length (km)
Private (Freehold)	93%	340
Provincial (Crown)	2%	9
Federal (Crown)	4%	15
Municipal	1%	3
Total	**100%**	**367**

4.1.1 Federally Owned and Administered Land

The proposed route traverses federally owned or administered land and are identified in Table 4-2.

Table 4-2: Federally Owned or Administered Lands

Federally Owned or Administered Land	Entity Responsible for Administration
Pickering Airport	Transport Canada
Cataraqui River (part of the Rideau Canal)	Parks Canada
Trent-Severn Waterway	Parks Canada
Rouge Urban National Park[1]	Parks Canada

Note:
1. Rouge Park is currently administered by the Toronto and Region Conservation Authority. The park is under transition to become the Rouge National Urban Park under the stewardship of Parks Canada, which might have different boundaries than the current park.

4.1.2 Consultation with Landowners and Occupants

Project representatives have identified landowners and occupants along the proposed pipeline route to:

- introduce the Project to potentially affected landowners and occupants
- identify early routing concerns and recommendations
- notify affected landowners of planned field surveys

Landowners are presented with an overview map of the Project, NEB documents and a TransCanada brochure during survey notification meetings, and will receive a project information package and invitation to future open houses for the Project.

4.2 LAND USE

Approximately 70% of the proposed route is on lands designated for agricultural land use (see Figure 4-1 and Figure 4-2). Specific agricultural land uses crossed by the proposed route include corn, grain, grazing, pasture and hay systems, field vegetables, fallow agricultural land, market gardens and orchards. The remaining land use is recreational, forestry and urban/industrial.

4.2.1 Industry

The proposed route traverses lands that are primarily used for agriculture. Secondary industries present along or near the proposed route include recreation and industry such as solar and hydroelectric power generation and transmission.

4.2.2 Recreation

Recreational areas near the proposed route include six golf courses and one ski hill.

Outdoor recreational activities, such as hiking and snowmobiling, are possible throughout the Project area. Recreational fishing occurs on the major watercourses and lakes.

4.2.3 Reserves under the *Indian Act*

The Project does not cross any Indian reserves, as defined under the *Indian Act*. For a list of First Nations and Métis identified by TransCanada as having potential interest in the Project, see Section 7.1.2.

4.2.4 Designated Environmental and Cultural Sites

The Project crosses a number of provincially designated natural heritage areas, including:

- Stephan's Gulch Conservation Area (Earth Science/Life Science Area of Natural and Scientific Interest [ANSI])
- West Clarington Iroquois Beach (Candidate ANSI)
- Bowmanville Valley (Life Science ANSI)
- Graham Creek Iroquois Archipelago (Candidate Life Science ANSI)
- Shelter Valley (Candidate Life Science ANSI)
- Batawa Savannah (Life Science ANSI)
- Johnston Drumlins (Life Science ANSI)
- Salmon River Alvar (Life Science ANSI)

None of the sites above are part of Ontario's network of parks and protected areas. Utilities are permitted in provincial parks and conservation reserves subject to the policies of the Ministry of Natural Resources (MNR) and approval of the Minister of MNR.

The proposed route crosses land under the jurisdiction of Parks Canada (federal land or federally administered land), including:

- Cataraqui River (part of the Rideau Canal National Historic Site of Canada)
- Trent-Severn Waterway National Historic Site of Canada

Project activities that fall under federal jurisdiction will be permitted according to the requirements of Parks Canada.

In addition, the proposed route crosses land that is part of the study area being investigated by Parks Canada for inclusion within the proposed Rouge National Urban Park, which would include lands associated with the proposed Pickering Airport that are currently administered by Transport Canada.

A constraints analysis conducted for the Project did not identify any cultural heritage properties on the proposed route. Mitigation options exist for the types of cultural resources that might be adversely affected by the Project.

No designated fisheries or sensitive watersheds are crossed by the proposed route.

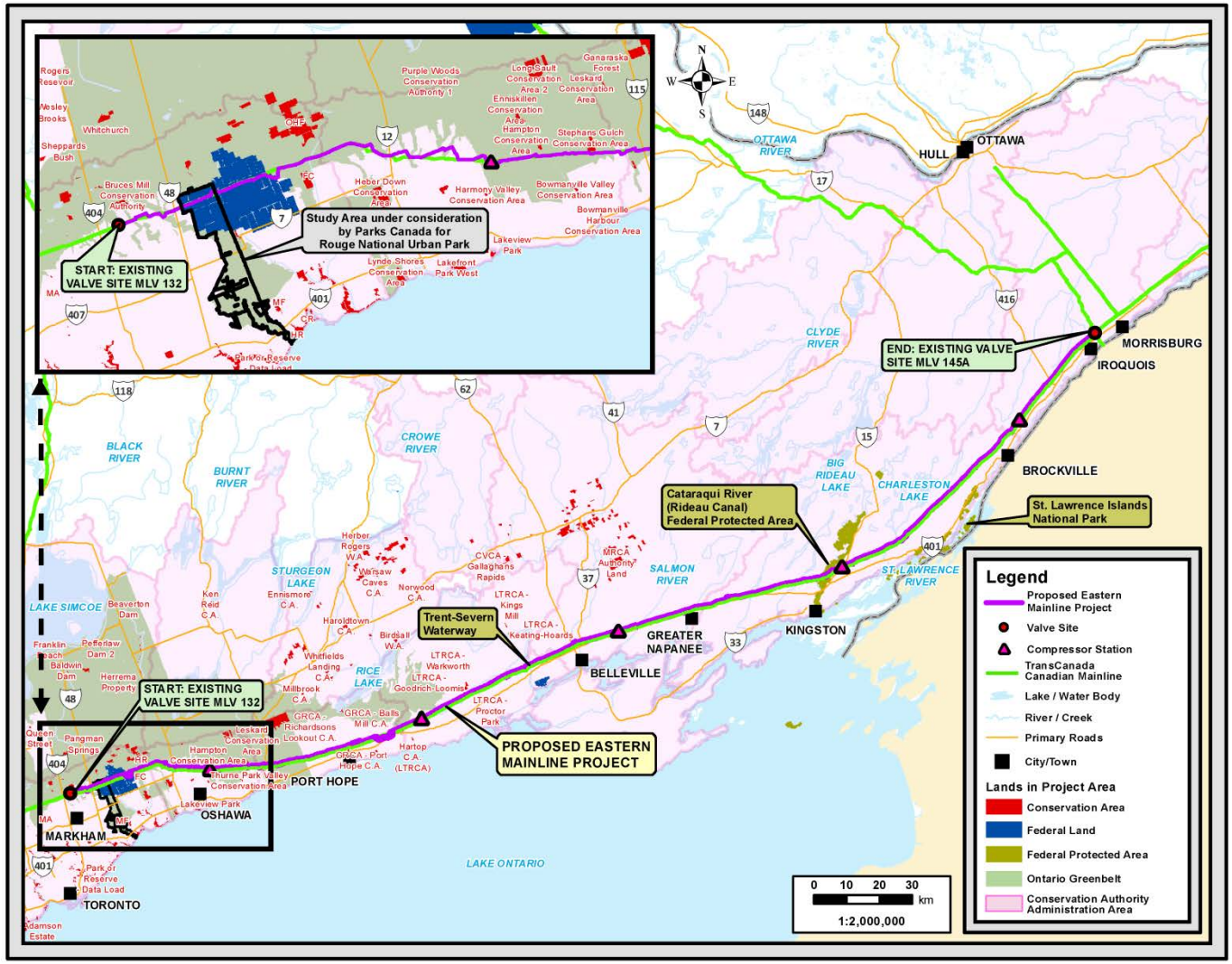

Figure 4-1: Federal and Conservation Lands in Project Area

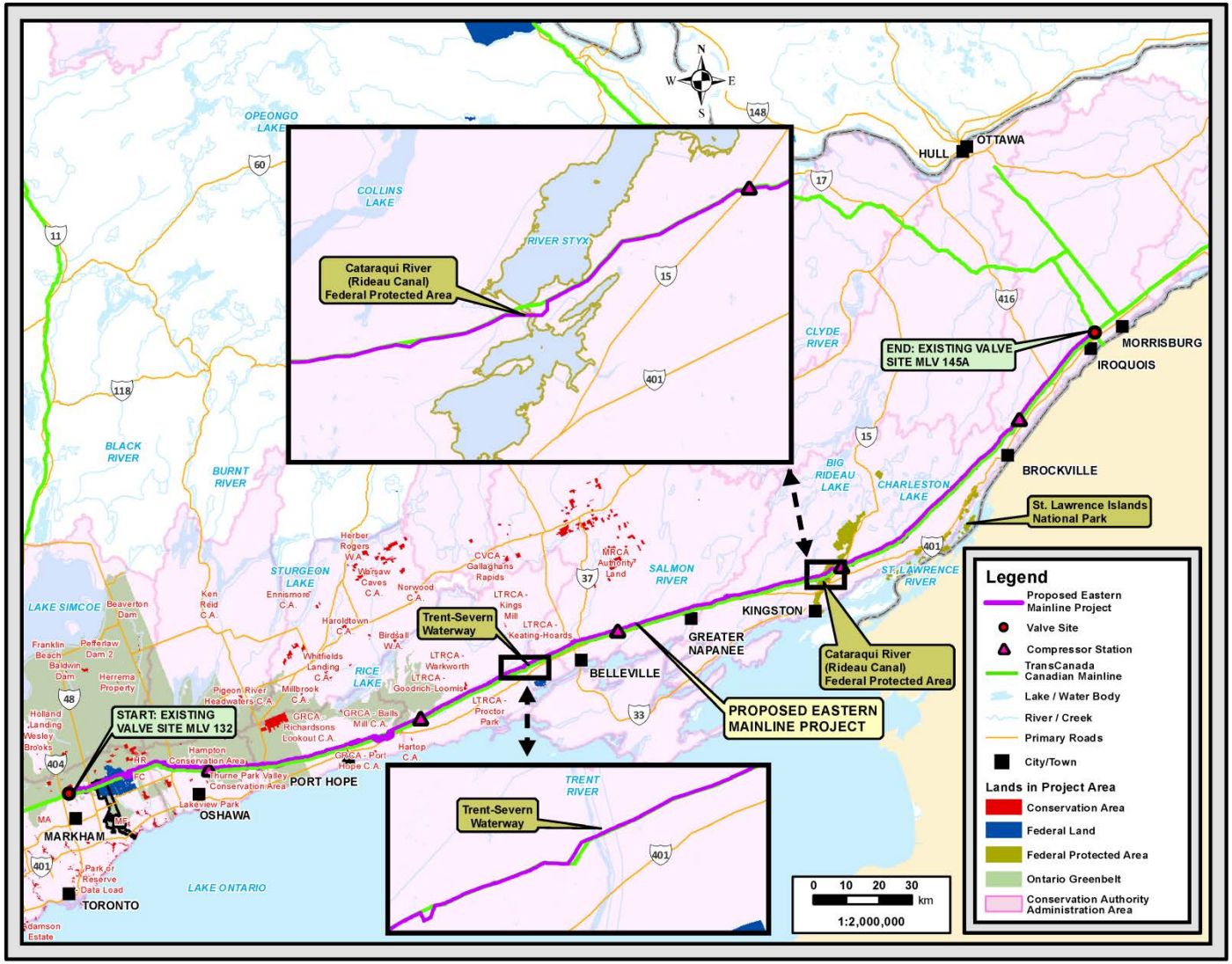

Figure 4-2: Federal and Conservation Lands in Project Area

5.0 ENVIRONMENTAL FEATURES

This section provides an overview of the biophysical and socio-economic environment in the Project area.

5.1 PHYSICAL ENVIRONMENT

The Project crosses one ecozone (Mixedwood Plains) and passes through four ecoregions – Lake Erie Lowland, Manitoulin–Lake Simcoe, Frontenac Axis, St-Laurent Lowlands (Government of Canada 1996) (see Figure 5-1).

The Lake Erie Lowland ecoregion extends from Windsor to Markham, including the Niagara Peninsula at the southern tip of Ontario. This ecoregion is marked by humid, warm to hot summers and mild, snowy winters. The mean summer temperature is 18°C and the mean winter temperature is -2.5°C. Mean annual precipitation ranges from 750 to 900 mm. The dominant land cover is cropped land with limited areas of mixed and deciduous forest on the Niagara Escarpment. Urban development is also a significant land cover.

The Manitoulin–Lake Simcoe ecoregion makes up the western portion of the Mixed Wood Plains ecozone and extends from Manitoulin Island to Kingston at the east end of Lake Ontario in southern Ontario. The ecoregion is characterized by warm summers and mild winters. The mean summer temperature is 16.5°C and the mean winter temperature is -4.5°C. Mean annual precipitation ranges from 750 to 1000 mm. The dominant land cover in the ecoregion is crops and pasture, and forest cover is also significant.

The Frontenac Axis ecoregion extends between Kingston and Brockville with the majority of the ecoregion within the Adirondacks area of upper New York state. The ecoregion is characterized by warm summers and cold winters with monthly precipitation being evenly distributed throughout the year. The mean summer temperature is 16°C and the mean winter temperature is -7°C. Mean annual precipitation ranges from 700 to 800 mm. The dominant land cover is mixed temperate deciduous forest with species of eastern white pine, sugar maple, beech, eastern hemlock, red oak, basswood and white elm present.

The St-Laurent Lowlands ecoregion includes the lowlands of the Ottawa River and St. Lawrence River, which stretch from Québec City, QC to the Frontenac Axis near Brockville, ON. It is bounded on the north by the hilly Laurentian Highlands and to the south by the Eastern Québec Uplands. The ecoregion is marked by warm summers and cold snowy winters. The mean summer temperature is 16.5°C and the mean winter temperature is -7°C. Mean annual precipitation ranges from 800 to 1000 mm. The dominant land cover in the ecoregion is crops and pasture, and forest cover is also significant.

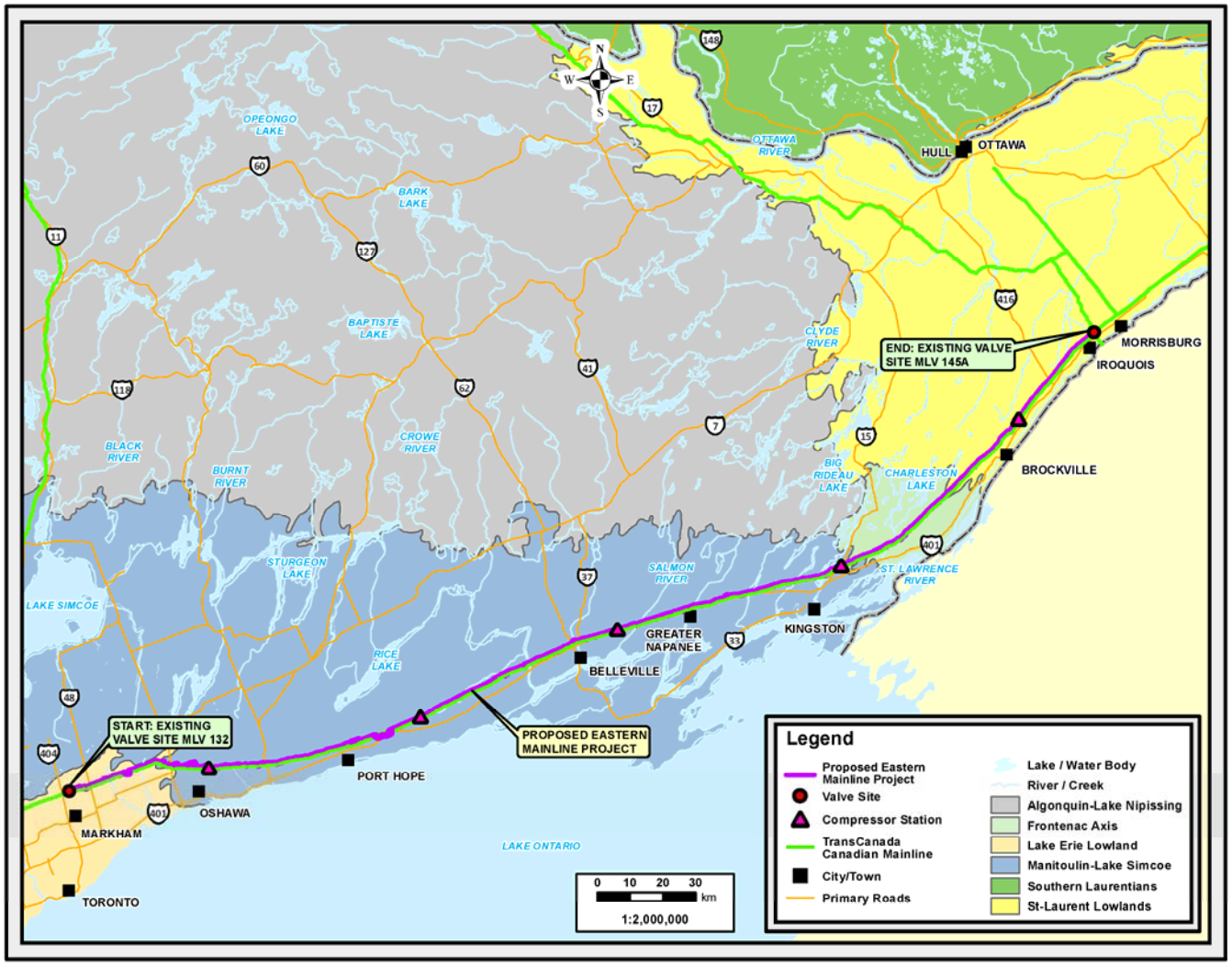

Figure 5-1: Ecoregions Crossed by the Project

5.2 ATMOSPHERIC ENVIRONMENT

Regional air quality in the Project area is monitored at a number of stations administered through the Ontario Ministry of Environment (OMOE). Monitoring locations near the Project area include:

- Cornwall
- Morrisburg
- Kingston
- Belleville
- Peterborough
- Oshawa

These stations will be used to describe the existing air quality and meteorological conditions for the Project study area in the ESA.

5.2.1 Pipeline

Air emissions from the pipeline are expected to be negligible during the construction and operations phases.

A qualitative air quality and greenhouse gas (GHG) emissions assessment will be undertaken as part of the ESA for the pipeline, including describing local meteorological conditions and existing air quality, and potential emission sources and magnitude.

5.2.2 Compression

A quantitative air quality assessment of construction and operations emissions at compressor stations will be undertaken as part of the ESA. The measurable parameters that will be assessed include the following criteria air contaminants:

- ozone
- nitrogen dioxide
- sulphur dioxide
- carbon monoxide

Particulate matter, including particulates with a nominal aerodynamic diameter of 10 microns and less (PM_{10}) and 2.5 microns and less ($PM_{2.5}$) will be assessed. The contribution of the compression facilities to local and regional GHGs will be assessed and expressed as carbon dioxide equivalents (CO_2e). Specific GHG compounds that will be considered include:

- carbon dioxide
- methane
- nitrous oxide

To assess potential cumulative effects, emissions from existing and other proposed facilities will be researched and the potential for these to interact cumulatively with Project emissions will be discussed in the ESA.

5.3 ACOUSTIC ENVIRONMENT

Ambient noise levels in the Project area are primarily dominated by sounds of nature and anthropogenic activity, which could include a combination of road, rail and air traffic and localized activities. During construction, elevated noise levels will result from equipment and traffic, which could potentially affect local receptors near the Project area.

Due to the temporary nature of the construction activity, a qualitative assessment of the construction phase of the Project will be completed for the acoustic environment, with results being reviewed against applicable guidance provided by the Ontario Ministry of the Environment and included in the ESA. To reduce potential construction noise effects, a construction noise management plan will be developed. Equipment used during construction will meet performance limits established by the Ministry (OMOE 1977). Sensory disturbance for wildlife will also be assessed as part of the ESA.

A quantitative assessment of the acoustic environment will be completed for the operations phase for noise associated with the compression facilities and will assess, through detailed modelling, changes in the acoustic environment due to these facilities. The results will be incorporated in the ESA, and will be in accordance with applicable federal and provincial requirements (OMOE 1977).

During operations, noise generated by the proposed pipeline is expected to be minimal and not expected to considerably contribute to ambient noise levels.

5.4 WASTE DISPOSAL

Typical types of waste expected to be generated during Project construction and operations include:

- motor oils
- hydraulic fluids
- welding rods
- hydrostatic testing water
- construction materials
- drilling fluids and cuttings from horizontal directional drills
- domestic waste

The handling and disposal of waste will be different for hazardous and non-hazardous materials and will be in accordance with the environmental protection plan that will be submitted as part of the ESA for the Project. This plan will meet the requirements of all applicable legislation.

5.5 WATER

Ontario's Conservation Authorities are a group of municipalities based on watersheds that work in partnership to manage their respective watersheds. The Conservation Authorities, based on boundaries, that will be engaged by the Project include:

- Toronto and Region
- Central Lake Ontario
- Ganaraska
- Lower Trent
- Quinte
- Cataraqui
- South Nation

5.5.1 Surface Water

Based on preliminary information obtained from the MNR Land Information Ontario database (MNR LIO 2013) and aerial imagery, the proposed route crosses 351 potential water features. The MNR LIO data classifies 272 of the 351 potential water features identified along the proposed route according to their permanency as:

- 30 intermittent
- 242 permanent

These water features are also classified by the MNR LIO as the following types:

- eight rivers
- 259 streams
- one lake
- two virtual flows[4]
- two virtual connectors[5]

Field surveys will be undertaken to verify the desktop data and identify any additional crossings. Furthermore, each verified crossing will be characterized from a hydrological and fish and fish habitat perspective (MNR 2013a).

[4] Virtual flows are known groundwater flows that have surficial elements and contribute to an area's overall hydrogeology.

[5] Virtual connectors are lines where flow is known to exist, but are not directly mapped (such as underground conduits or diffuse surface flow not visible in remote sensing information), though they are needed for network connectivity and flow direction purposes.

5.5.2 Groundwater

Surficial and bedrock aquifers, used for a variety of purposes (e.g., domestic, agricultural and industrial use), are known to be present in the Project area. The locations of aquifers and water supply wells close to the route will be identified through field investigations.

Appropriate groundwater protection measures will be implemented during construction and operation activities that are in proximity to sensitive aquifers and supply wells.

5.5.3 Fish and Fish Habitat

The proposed route crosses a diversity of watercourses, ranging from those that support cold water sensitive habitat to warm water urbanized streams. The types of species present in the watercourses change from east to west along the Project route.

In the eastern portion of the proposed route, the fish communities will generally consist of cold water- to cool water-tolerant species, including:

- bass
- pike
- perch
- white sucker
- various baitfish species

In the western portion of the Project, the fish communities will generally include cool water and warm water species, represented by suckers, various minnows and other baitfish.

Of the 351 potential crossings, more than 50% are considered to have cold water habitat with a general restricted activity period (during which in-stream activity is restricted) from October 1 to May 31 (MNR 2013). The remaining watercourses are considered to have warm or cool water habitat with restricted activity periods from approximately May 15 to June 30 and October 1 to May 31, respectively.

The Project crosses a number of watercourses that contain sport fish such as trout and salmon. These watercourses are used as recreational fisheries at specific times of the year.

Aquatic species at risk are associated with a limited number of watercourses crossed by the Project. Based on information from the MNR LIO 2013, approximately 20 watercourses are expected to contain fish species at risk, including a number of their unnamed tributaries, as follows:

- Bruce Creek
- Little Rouge Creek
- Mitchell Creek
- Lynde Creek
- Wilmont Creek
- LaRue Creek
- Jones Creek
- Brougham Creek
- Oshawa Creek
- Duffins Creek

The species at risk with potential to occur in these watercourses and their conservation status are identified in Table 5-1.

Environmental field surveys will verify the existence of identified watercourses and crossing locations, and the information gathered will be used to:

- document pre-construction fish presence/absence, fish habitat potential and aquatic habitat conditions
- identify potential interactions and associated effects on the productivity of commercial, recreational and Aboriginal fisheries
- identify measures to mitigate potential disturbance of aquatic habitats during construction
- confirm or revise the preliminary crossing method selection
- develop suitable mitigation measures for the proposed crossings

5.5.4 Navigable Waters

Some navigable waters might be affected by Project-related activities, including trenched pipeline crossing methods and installation of portable bridges and other temporary works. The following named watercourses are expected to be considered navigable, as they are listed under the proposed schedule to the *Navigation Protection Act*, expected to come into force in April 2014:

- Trent River Canal (part of Trent-Severn Waterway)
- Cataraqui River (part of the Rideau Canal)

Field investigations are being conducted to help confirm the navigability of waterways crossed by the proposed route.

The NEB considers navigability and is responsible for granting leave under Section 108 of the NEB Act for NEB-regulated projects.

Figure 5-2 identifies the major watercourse crossings associated with the proposed pipeline route.

Table 5-1: Potential Fish Species at Risk in Watercourses Crossed by the Project

Taxonomy	Common Name	SARA Status[1]	*Endangered Species Act* Status[2]	Provincial Rarity Rank[3]
Fish	Channel Darter	THR	THR	S2
	Redside Dace	—	END	S2
	River Redhorse	SC	SC	S2
	Northern brook lamprey	SC	SC	S3
	Pugnose Shiner	END	THR	S2
	Lake Sturgeon (Great Lakes – Upper St. Lawrence River population)	THR	THR	S2
	Bridle shiner	SC	SC	S2
	Grass pickerel	SC	SC	S3
	American Eel[4]	SC	END	S1

Note:

1. *Species at Risk Act* (SARA). 2002. Schedule 1 (Last amended 6 July 2012). Part 1 (Extirpated), Part 2 (Endangered), Part 3 (Threatened), Part 4 (Special Concern).
2. *Endangered Species Act*. 2007 (O.Reg 242/08 last amended 1 July 2012 as O.Reg 122/12). Species at Risk in Ontario List, 2007 (O.Reg 230/08 last amended 24 Jan 2013 as O.Reg 25/13, s. 1); Schedule 1 (Extirpated – EXP), Schedule 2 (Endangered – END), Schedule 3 (Threatened – THR), Schedule 4 (Special Concern – SC).
3. Provincial Ranks (SRANK) are Rarity Ranks assigned to a species or ecological community by the Natural Heritage Information Centre (NHIC). These ranks are not legal designations. SRANKs are continuously evaluated by NHIC and updated lists are produced annually.
4. American eel are a species at risk in Ontario that were recently stocked/dispersed into the Great Lakes. The distribution of eels has been expanded in Ontario as a result of this stocking and dispersal program, but there are very few records of actual occurrences. Although the watercourses occurring within the proposed project alignment are not associated with eel observation records, they will be considered in the species at risk screening due to the unknown distribution resulting from the stocking program (http://www.trca.on.ca/dotAsset/126294.pdf)

5.5.5 Watercourse Crossing Methodology

Table 5-2 provides preliminary watercourse crossing locations for the 20 watercourses anticipated to contain fish species at risk (see Section 5.5.3, Fish Habitat). Preliminary pipeline and vehicle access crossings methods, based on initial constructability assessments, are also provided.

TransCanada will select crossing locations and techniques in accordance with industry accepted design and installation practices, reflecting site-specific assessments and Fisheries and Oceans Canada's *Measures to Avoid Causing Harm to Fish and Fish Habitat*.

The crossing locations and methods will be refined after field studies are completed, and as design and construction planning progresses to reflect, among other things:

- geotechnical conditions
- environmental field assessments
- consultation with regulatory agencies
- field conditions during construction

Engineering assessments are planned to identify any potential slope stability issues and the geotechnical conditions at select watercourse crossing locations.

Table 5-2: Preliminary Crossings of Watercourses

Watercourse Name	Preliminary Location[1]		Fish Species of Management Concern Known to Occur Within The Watercourses Listed[2]	Preliminary Pipeline Crossing Method[1,3]	Preliminary Equipment Crossing Method
	Latitude	Longitude			
Ganaraska River	43°59'19"N	78°18'20"W	N/A	Trenchless/ Open Cut/ Super flume and AquaDam	Access from both sides/ Temporary Bridge
Trent River	44°9'49"N	77°35'9"W	Lake Sturgeon (Great Lakes – Upper St. Lawrence River population), River Redhorse	Trenchless/ Open Cut	Access from both sides
Moira River	44°12'48"N	77°23'6"W	Mussel (unknown species)	Trenchless/ Open Cut	Access from both sides
Salmon River	44°14'33"N	77°9'43"W	Mussel (unknown species)	Trenchless/ Open Cut/ Super flume and AquaDam	Access from both sides/ Temporary Bridge
Napanee River	44°16'30"N	76°55'22"W	N/A	Trenchless/ Open Cut/ Super flume and AquaDam	Access from both sides/ Temporary Bridge
Odessa Lake (Millhaven Creek)	44°17'46"N	76°42'13"W	N/A	Trenchless/ Open Cut	Access from both sides
Cataraqui River (Part of the Rideau Canal System)	44°19'17"N	76°25'34"W	N/A	Trenchless/ Open Cut	Access from both sides
Gananoque River	44°23'8"N	76°9'47"W	Pugnose Shiner	Trenchless/ Open Cut	Access from both sides
Buells Creek Reservoir	44°37'33"N	75°42'21"W	N/A	Trenchless/ Open Cut	Access from both sides

Table 5-2: Preliminary Crossings of Watercourses (cont'd)

Watercourse Name	Preliminary Location[1]		Fish Species of Management Concern Known to Occur Within The Watercourses Listed[2]	Preliminary Pipeline Crossing Method[1,3]	Preliminary Equipment Crossing Method
	Latitude	Longitude			
Little Rouge Creek	43°55'43"N	79°17'18"W	Redside Dace	Trenchless/ Isolate if feasible and flowing water present / Open Cut if dry or frozen to bottom	Temporary Bridge/Flume-Ramp Crossing
Michell Creek	43°57'46"N	79°8'43"W	Redside Dace	Trenchless/ Isolate if feasible and flowing water present/ Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing
Lynde Creek	43°58'26"N	78°58'11"W	Redside Dace	Trenchless/ Isolate if feasible and flowing water present/ Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing
Wilmot Creek	43°57'30"N	78°37'23"W	Northern Brook Lamprey, Atlantic Salmon	Trenchless/ Isolate if feasible and flowing water present/ Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing
LaRue Creek (Tributary)	44°28'33"N	75°59'6"W	Bridal Shiner, Grass Pickerel	Trenchless/ Isolate if feasible and flowing water present/ Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing
Jones Creek	44°29'53"N	75°56'20"W	Channel Darter, Bridal Shiner	Trenchless/ Isolate if feasible and flowing water present/ Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing

Table 5-2: Preliminary Crossings of Watercourses (cont'd)

Watercourse Name	Preliminary Location[1]		Fish Species of Management Concern Known to Occur Within The Watercourses Listed[2]	Preliminary Pipeline Crossing Method[1,3]	Preliminary Equipment Crossing Method
	Latitude	Longitude			
Bruce Creek	43°55'39"N	79°20'0"W	Redside Dace	Trenchless / Isolate if feasible and flowing water present / Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing
Brougham Creek	43°57'32"N	79°9'54"W	Redside Dace	Trenchless/ Isolate if feasible and flowing water present/ Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing
Oshawa Creek	43°58'36"N	78°56'23"W	Redside Dace	Trenchless/ Isolate if feasible and flowing water present/ Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing
Duffins Creek	43°58'34"N	79°4'53"W	Redside Dace	Trenchless/ Isolate if feasible and flowing water present/ Open Cut if dry or frozen to bottom	Temporary Bridge/ Flume-Ramp Crossing

Note:

1. The pipeline crossing locations in this table are preliminary and based on constructability considerations. Final locations, as well as the crossing method and timing, will be subject to engineering and environmental site evaluations, geotechnical assessments, aboriginal, landowner and stakeholder engagement, land acquisition and consultation with regulatory authorities.
2. Species of management concern include SARA listed species and Provincially listed species.
3. Preliminary crossing methods recommendations are based on an assumption that in-stream work will be completed within the appropriate timing windows for instream work.

5.5.6 Wetlands

The study area around the proposed route and contemplated alternatives (i.e., within approximately 1 km of the proposed route and alternatives) includes over 140 mapped wetlands.

The dominant wetland types traversed by the proposed route are swamps and marshes. A number of these wetlands are considered Provincially Significant Wetlands (PSW) based on the Ontario Wetland Evaluation System (OWES). The OWES ranks wetlands based on biological, social and hydrological functions, as well as special features such as geographic rarity of wetlands, occurrence of rare species, ecosystem age and habitat quality for wildlife, including fish.

The Project will transect 13 PSW:

- Harmony–Farewell Iroquois Beach Wetland Complex
- Graham Creek Headwater Wetland Complex
- Shelter Valley Complex
- Cold Creek Wetland Complex
- Millhaven Creek Wetland
- Collins Creek Complex
- Glenburnie Marsh
- Wiltse Creek Marsh
- Lees Pond–Lyn Creek Complex
- Bulls Creek Reservoir
- South Augusta Wetland Complex
- Edwardsburg 1
- Edwardsburg 3

The routing and mitigation considerations concerning wetlands will be to:

- minimize length traversing environmentally sensitive areas such as protected, endangered or sensitive vegetation and wildlife habitat
- follow existing linear infrastructure, where practical (e.g., pipelines, roads, transmission lines and railways)
- follow or use existing clearings, where feasible
- implement construction mitigation and reclamation measures where avoidance is not technically or economically feasible
- monitor wetland function post-construction and recommend additional remediation measures where warranted

Ground-based wetland surveys will be completed to compile a wetland inventory along the proposed pipeline ROW and establish baseline functional conditions for wetlands temporarily disturbed during the construction phase of the Project. Results of the wetland surveys will be used in conjunction with desktop data to develop suitable general and site-specific mitigation measures where avoidance is not possible, to assist in maintaining the integrity of wetland ecosystems encountered by the Project.

5.6 TERRESTRIAL ENVIRONMENT

5.6.1 Soils

The Project will primarily traverse agricultural and forest soils.

Detailed soil and terrain data, including shallow bedrock, will be gathered during field surveys.

Approximately 15 km of the proposed route crosses slopes greater than 15% that might be sensitive to water erosion and slope instability. Using the existing datasets, approximately 6 km of soils designated as a stony or boulder phase have been identified.

5.6.2 Vegetation

The proposed route crosses lands that have been heavily modified by anthropologic influences and are predominantly covered today by crops and pasture land.

Characteristic native vegetation of the Mixedwood Plains Ecozone is generally temperate deciduous forest that includes species of sugar maple, beech, eastern hemlock, red oak, basswood, white pine, paper birch and trembling aspen. Successional species present in this ecozone include staghorn sumac, highbush cranberry, red-osier dogwood and willow.

A review of available information with respect to species of plants with special conservation status in the study area included the following sources:

- MNR Natural Heritage Information Centre (NHIC 2013) database for significant species and designated natural areas
- MNR Natural Resource Values Information System (NRVIS) district databases
- *Rare Vascular Plants of Ontario* (Oldham and Brinker 2009)
- Royal Ontario Museum website (2013)

Based on the information available, plant species at risk (SAR) that have the potential to inhabit the study area are listed in Table 5-3. These species have a geographic range that overlaps with the study area.

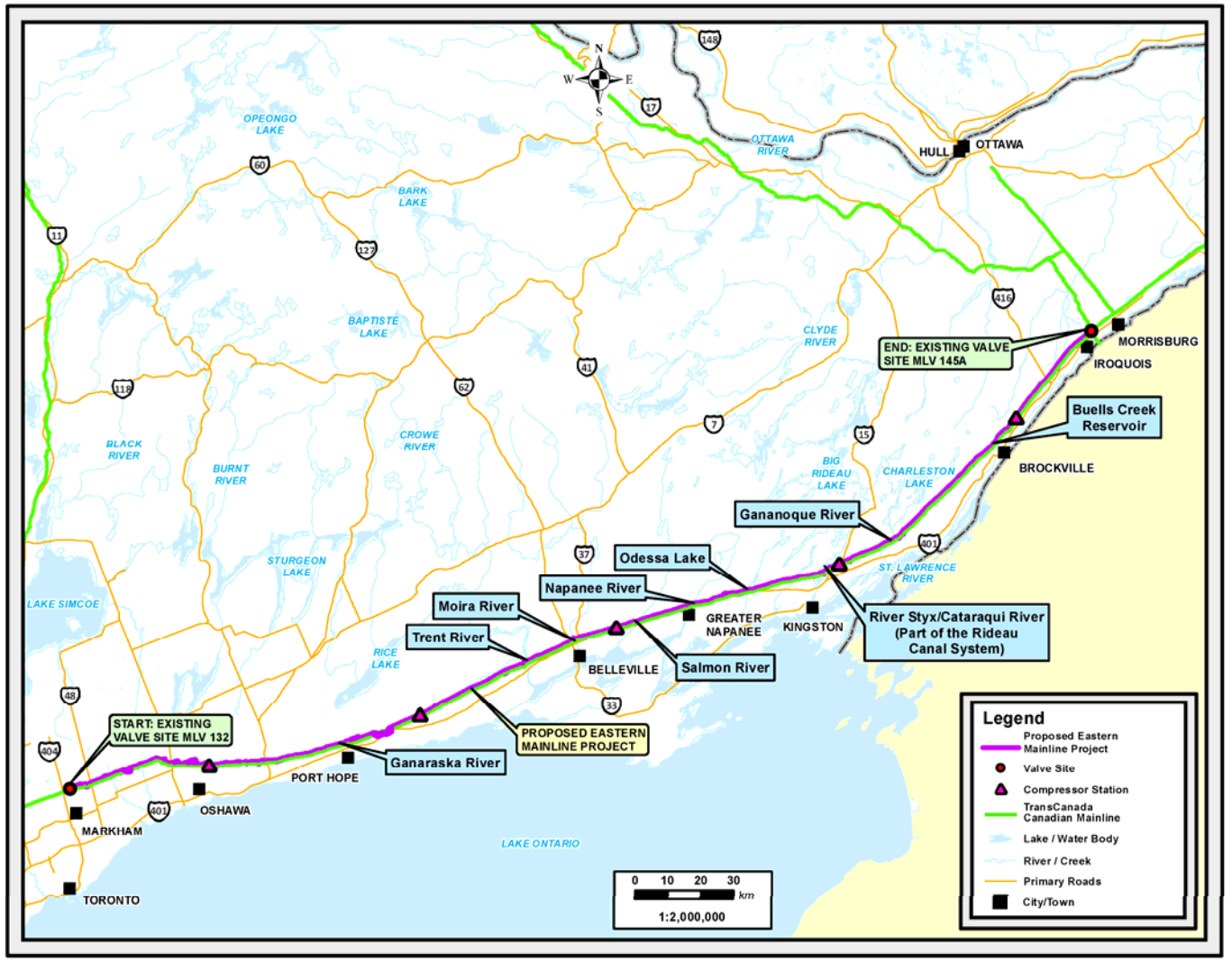

Figure 5-2: Major Watercourse Crossings along Proposed Route

Table 5-3: Plant Species at Risk with Potential to Occur in the Study Area

Taxonomy	Common Name	SARA Status[1]	ESA Status[2]	Provincial Rarity Rank[3]
Lichen	Pale-bellied Frost Lichen	–	END	S1
Vascular Plants	American Ginseng	END	END	S2
	Broad Beech Fern	–	SC	S3
	Butternut	END	END	S3?
	Deerberry	THR	THR	S1
	Dwarf Hackberry	THR	THR	S2
	Eastern Prairie Fringed-orchid	END	END	S2
	Four-leaved Milkweed	–	END	S1
	Juniper Sedge	END	END	S1
	Ogden's Pondweed	END	END	SH
Taxonomy	Common Name	SARA Status1	ESA Status2	Provincial Rarity Rank3
	Purple Twayblade	END	THR	S2
	Red Mulberry	END	END	S2
	Riddell's Goldenrod	SC	SC	S3

Note:

1. *Species at Risk Act* (SARA), 2002. Schedule 1 (Last amended 6 July 2012); Part 1 (Extirpated), Part 2 (Endangered), Part 3 (Threatened), Part 4 (Special Concern).
2. *Endangered Species Act,* 2007 (O. Reg 242/08 last amended 1 July 2012 as O. Reg 122/12). *Species at Risk In Ontario List*, 2007 (O. Reg 230/08 last amended 24 January 2013 as O. Reg 25/13, s. 1); Schedule 1 (Extirpated – EXP), Schedule 2 (Endangered – END), Schedule 3 (Threatened – THR), Schedule 4 (Special Concern – SC).
3. Provincial Ranks (SRANK) are Rarity Ranks assigned to a species or ecological communities, by the NHIC. These ranks are not legal designations. SRANKs are evaluated by NHIC on a continual basis and updated lists produced annually. SH (Possibly Extirpated – Historical), S1 Critically Imperiled), S2 (Imperiled), S3 (Vulnerable). Last assessed August 2011.

5.6.3 Wildlife

A review of available information with respect to wildlife in the area of the proposed route included the following sources:

- MNR Natural Heritage Information Centre (NHIC 2013) database for significant species and designated natural areas
- MNR Natural Resource Values Information System (NRVIS) district databases
- Ontario Breeding Bird Atlas (OBBA) database
- Royal Ontario Museum website (2013)

Publicly available information on species at risk from the NHIC is generalized and provides locations of occurrences of species and wildlife concentration areas to a 1-km grid resolution. Information is also restricted for some occurrences (e.g., species names are not given). Additional species-specific information is being sought from the NHIC.

Based on the information available, wildlife species at risk with the potential to inhabit the study area are listed in Table 5-4. The SAR list contains species with a geographic range that overlaps the study area. Due to the length of the study area, the ranges of certain species might overlap with only certain portions of the study area. This information will be refined when more data are gathered and used to guide future field investigations.

Table 5-4: Wildlife Species at Risk with Potential to Occur in the Study Area

Taxonomy	Common Name	SARA Status[1]	ESA Status[2]	Provincial Rarity Rank[3]
Amphibians	Western Chorus Frog (Canadian Shield population)	THR	–	S3
Arthropods	Monarch	SC	SC	S2N, S4B
	Rapids Clubtail	END	END	S1
	Rusty-patched Bumble Bee	END	END	S1
	West Virginia White	—	SC	S3
Birds	Acadian Flycatcher	END	END	S2S3B
	Bald Eagle	–	SC	S2N
	Barn Swallow	–	THR	S4B
	Black Tern	–	SC	S3B
	Bobolink	–	THR	S4B
	Canada Warbler	THR	SC	S4B
	Cerulean Warbler	SC	THR	S3B
	Chimney Swift	THR	THR	S4B, S4N
	Common Nighthawk	THR	SC	S4B
	Eastern Meadowlark	–	THR	S4B
	Eastern Whip-poor-will	THR	THR	S4B
	Golden-winged Warbler	THR	SC	S4B
	Henslow's Sparrow	END	END	SHB
	Hooded Warbler	THR	NAR	S4B
	King Rail	END	END	S2B
	Least Bittern	THR	THR	S4B
	Loggerhead Shrike	END	END	S2B
	Louisiana Waterthrush	SC	SC	S3B
	Northern Bobwhite	END	END	S1
	Olive-sided Flycatcher	THR	SC	S4B
	Peregrine Falcon (anatum subspecies)	THR	SC	S3B
	Red-headed Woodpecker	THR	SC	S4B
	Short-eared Owl	SC	SC	S2N,S4B
	Yellow Rail	SC	SC	S4B
	Yellow-breasted Chat	SC	END	S2B

Table 5-4: Wildlife Species at Risk with Potential to Occur in the Study Area (cont'd)

Taxonomy	Common Name	SARA Status[1]	ESA Status[2]	Provincial Rarity Rank[3]
Mammals	Grey Fox	THR	THR	S1
	Little Brown Myotis	–	END	S4
	Northern Myotis	–	END	S3
Reptiles	Blanding's Turtle	THR	THR	S3
	Five-lined skink (Southern Shield population)	SC	SC	S3
	Eastern hog-nosed snake	THR	THR	S3
	Eastern musk turtle / Stinkpot	THR	THR	S3
	Eastern ribbon snake	SC	SC	S3
	Gray rat snake (Frontenac Axis population)	THR	THR	S3
	Milk snake	SC	SC	S3
	Northern map turtle	SC	SC	S3
	Snapping turtle	SC	SC	S3
	Spotted turtle	END	END	S3

Note:

1. *Species at Risk Act* (SARA), 2002. Schedule 1 (Last amended 6 July 2012); Part 1 (Extirpated), Part 2 (Endangered), Part 3 (Threatened), Part 4 (Special Concern).
2. *Endangered Species Act,* 2007 (O. Reg 242/08 last amended 1 July 2012 as O. Reg 122/12). *Species at Risk In Ontario List*, 2007 (O. Reg 230/08 last amended 24 January 2013 as O. Reg 25/13, s. 1); Schedule 1 (Extirpated – EXP), Schedule 2 (Endangered – END), Schedule 3 (Threatened – THR), Schedule 4 (Special Concern – SC).
3. Provincial Ranks (SRANK) are Rarity Ranks assigned to a species or ecological communities, by the NHIC. These ranks are not legal designations. SRANKs are evaluated by NHIC on a continuous basis and updated lists produced annually. SH (Possibly Extirpated – Historical), S1 Critically Imperiled), S2 (Imperiled), S3 (Vulnerable). Last assessed August 2011.

5.7 SOCIO-ECONOMIC ENVIRONMENT

The socio-economic environment that will be assessed as part of the ESA will include:

- heritage resources
- human occupancy and resource use
- traditional knowledge
- social and cultural well being
- infrastructure and services
- employment
- economy

The following sections provide an overview of the heritage and archaeological resource elements, as well as the traditional knowledge element.

5.7.1 Heritage Resources

Heritage resources collectively refer to cultural, historic, archaeological and paleontological resources and can include pre- and post-contact features.

5.7.1.1 Built Heritage

A preliminary review of publicly accessible federal, provincial and municipal cultural heritage register inventories indicated that there are no heritage properties located on the proposed pipeline route and 107 heritage properties within 1-km on either side of the proposed route. The identified heritage properties include a portion of the Rideau Canal and Trent-Severn Waterway, listed as historic canals in Schedule 1 of the *Historic Canals Regulations SOR/93-220*, a regulation respecting the management, maintenance, proper use and protection of the historic canals that is administered by Parks Canada Agency.

Cultural heritage resources may be found in instances where the proposed route leaves the existing Canadian Mainline ROW. Field studies will verify the cultural properties identified and further information will be obtained from municipalities regarding heritage properties located within their jurisdictions. TransCanada will comply with all regulations and bylaws established with respect to these properties.

5.7.1.2 Archaeological Resources

An archaeological impact assessment will be conducted in areas with archaeological potential that might be disturbed during construction of the Project. Once a site reconnaissance of the study area has been completed, archaeological potential can be assigned low, moderate and high areas. A site visit will also help to identify areas that have been previously disturbed and do not need archaeological testing. Only areas that would be disturbed/modified from the construction of the pipeline require testing.

Identification of high and moderate potential locations will be based on a number of regional and local factors. Consideration will be given to:

- ethnographic patterns of settlement
- land use and resource exploitation
- access
- known gathering places
- information provided by area residents
- travel corridors (including waterways)
- the kinds and distribution of First Nations and Métis food sources
- restrictions on site location imposed by physical terrain
- climate regimes
- other factors, such as soil chemistry

Areas identified as being of high or moderate archaeological potential will include areas adjacent to water sources, such as river terraces and valleys, including:

- areas of elevation change, including micro-topographic changes
- areas with previously recorded sites

5.7.2 Traditional Knowledge

TransCanada has initiated an engagement process with potentially affected First Nations and Métis in the Project area. Based on the outcome of this initial engagement process, and as agreed on, traditional Aboriginal knowledge studies will be conducted. These studies will focus on the current use of land for traditional purposes as identified by First Nations and Métis in the agreed study areas.

Where available, traditional knowledge acquired through First Nation and Métis engagement activities might contribute to identifying potential adverse effects of the proposed Project and assist with identifying mitigation opportunities.

5.7.3 Socio-Economic Assessment Methodology

Socio-economic effects will be assessed as part of the ESA, using a combination of baseline data collection and technical discussions with local stakeholders (e.g., municipal/provincial agencies and local land users).

The baseline data collection (via desktop research) will provide an information base about the Project area and socio-economic conditions. This data will be used, in part, to form the basis of questions developed for the technical discussions (via telephone calls, emails and face-to-face meetings).

The goals of these discussions are to:

- provide insight into local issues and concerns relating to the Project
- provide the necessary information to be able to recommend appropriate mitigation and benefits measures, which address community needs and are within the scope of potential Project effects
- confirm information collected through baseline data collection
- fill information gaps

The quantitative economic effects resulting from the Project (e.g., Gross Domestic Product, gross output, employment and tax revenue) will be estimated using Statistics Canada's Interprovincial Input/Output Model.

The socio-economic assessment of the Project will consider the effects of construction and operations of the Project on:

- existing human occupancy and resource use (e.g., hunting, fishing, trapping, outfitting and recreational use)
- infrastructure and services (e.g., roads and waste facilities)
- employment and economy (e.g., contract and employment opportunities, income and government revenue)
- social and cultural wellbeing (e.g., use of local roads)

6.0 STAKEHOLDER ENGAGEMENT

This section describes TransCanada's approach to stakeholder engagement, which ensures that stakeholders have an opportunity to review and provide input to the proposed Project. It also provides the principles and goals that TransCanada used in designing its stakeholder engagement program and describes how that program is being implemented for the Project as it evolves.

For a description of the Aboriginal engagement program for the Project, see Section 7.0: Aboriginal Engagement.

6.1 PROGRAM OVERVIEW

The stakeholder engagement program for the Project has been designed, and is being conducted, in accordance with the principles of TransCanada's long-standing community relations program.

Preliminary engagement for the Project started in December 2013. Engagement activities will continue for the duration of the Project.

The program is intended to enable the development and maintenance of positive relationships by:

- providing clear, relevant and timely information about TransCanada and the Project
- identifying concerns of community leaders and other interested stakeholders
- providing an opportunity for stakeholders to provide feedback on the Project and understand how that feedback was considered by the Project
- answering questions stakeholders have about TransCanada and the Project
- fostering relationships between the Project and communities along the proposed route
- ensuring NEB engagement process requirements are met or exceeded

Engagement activities and communication tools include:

- a Project email box (eastern_mainline@transcanada.com)
- a Project webpage (http://easternmainline.com)
- the Project toll free telephone number: 1-855-920-4697
- introductory and project-specific fact sheets (see Appendix B) and letters
- TransCanada program brochures (community investment, pipeline integrity) and the NEB brochure (*A Proposed Pipeline or Power Line Project: What you Need to Know*) and the NEB fact sheet

- personal contacts with stakeholders including face-to-face meetings, presentations and telephone calls
- newspaper and radio advertisements
- open houses
- project information distribution by mail
- TransCanada social media forums (Twitter, YouTube)
- news releases

6.2 COMMUNITY ENGAGEMENT

The engagement program for the Project will be accomplished through:

- preliminary stakeholder identification and material development
- stakeholder notification and engagement
- transition to operations

6.2.1 Preliminary Stakeholder Identification and Material Development

By a combination of desktop research and personal contacts, TransCanada identified a preliminary list of potential stakeholders in the Project area. This list is updated as additional stakeholders are identified.

6.2.2 Stakeholder Notification and Engagement

Stakeholder notification began in fourth quarter 2013. Early stakeholder notification has involved providing information on the Project, including proposed facility locations and on key project-related activities. Information on how stakeholders could provide input into project planning and the NEB's regulatory review process has also been provided.

As the Project evolves, stakeholders will be provided with a variety of means to receive and obtain additional information about the Project including updated fact sheets, open houses and presentations to local communities.

Throughout the stakeholder engagement process, TransCanada will work with stakeholders to resolve or mitigate any concerns or issues.

6.2.3 Transition to Operations

Stakeholder engagement activities for the Project will be transitioned to the Public Awareness program for operations. The PA program was described in Section 3.3.4 of this PD.

To help ensure a seamless transition to the PA program, the process begins during Project construction. The PA program for the Project is expected to be implemented by the Eastern Regional office in Maple, ON.

6.3 STAKEHOLDERS

6.3.1 Community and Government Stakeholders

TransCanada is engaging with a broad range of stakeholders on the Project, including:

- landowners and occupants
- land users (e.g., recreational)
- community members
- municipal leaders and representatives (elected officials and staff of upper and lower tier municipalities, as defined under the *Municipalities Act, 2001*)
- provincial and federal elected officials
- government agencies and representatives
- non-government organizations
- general public and citizen groups with common interests

6.3.2 Landowners and Occupants

TransCanada has identified landowners and occupants along the proposed route. These landowners and occupants will be consulted through all phases of the Project.

6.3.3 Local Municipal and Regional Authorities

TransCanada has identified 23 local municipalities (i.e., lower-tier municipalities) that are crossed by the proposed route. Table 6- 1 lists these municipalities and provides the approximate length of the route that falls within their boundaries.

In addition to the local municipalities on Table 6-1, TransCanada has identified seven regions and counties that are traversed by the proposed route. These upper-tier municipalities provide regional infrastructure and land use planning for the lower-tier municipalities within their boundaries.

Table 6-2 lists the regions and counties traversed by the proposed route and provides the approximate pipeline length within these regional boundaries.

Table 6-1: Local Municipalities Crossed by the Proposed Route

Municipality	Distance from Proposed Route Entry (km)	Distance from Proposed Route Exit (km)
City of Markham	N/A	13
City of Pickering	13	29
Town of Whitby	29	39
City of Oshawa	39	48
Municipality of Clarington	48	80
Municipality of Port Hope	80	95
Township of Hamilton	95	112
Township of Alnwick/ Haldimand	112	127
Township of Cramahe	127	137
Municipality of Brighton	137	147
City of Quinte West	147	172
City of Belleville	172	184
Township of Tyendinaga	184	201
Town of Greater Napanee	201	216
Township of Loyalist	216	234
City of Kingston	234	271
Township of Leeds and The Thousand Islands	271	300
Township of Front of Yonge	300	311
Township of Elizabethtown-Kitley	311	320
City of Brockville	320	323
Township of Elizabethtown-Kitley	323	327
Township of Augusta	327	342
Township of Edwardsburgh/Cardinal	342	358
Township of South Dundas	358	367

Table 6-2: Regions and Counties Crossed by Proposed Route

Region / County	Distance from Proposed Route Entry (km)	Distance from Proposed Route Exit (km)
Regional Municipality of York	0.0	13
Regional Municipality of Durham	13	80
County of Northumberland	80	147
County of Hastings	184	201
County of Lennox and Addington	201	234
United Counties of Leeds and Grenville	271	358
United Counties of Stormont, Dundas and Glengarry	358	367

6.3.4 Preliminary Activities and Feedback

All the municipalities identified in Table 6-1 have been contacted and provided with preliminary information. Preliminary contacts did not identify any particular concerns and did suggest interest from municipalities in receiving greater access to natural gas supplies. The Project is currently in the process of arranging meetings with each of the municipalities to provide further information and gain insight into their potential interests and concerns.

7.0 ABORIGINAL ENGAGEMENT PROGRAM

7.1.1 Program Overview

The Aboriginal engagement program for the Project is designed to assist TransCanada in understanding and addressing the interests and concerns of First Nations and Métis with respect to the Project and, in particular, to:

- identify First Nations and Métis that might have some interest or concern relating to the Project
- provide ongoing project-related information
- work with the communities to obtain local and traditional knowledge about the Project area
- obtain socio-economic information relating to the Project
- facilitate economic participation in the Project
- identify potential concerns about the Project
- determine appropriate mitigation strategies

7.1.2 Preliminary List of Aboriginal Communities

As part of its Aboriginal engagement program, TransCanada considers the proximity of the Project area to:

- reserves under the *Indian Act*
- Métis settlements and communities
- areas identified by Aboriginal communities as their traditional land use areas
- areas under land claim negotiations and/or areas with unresolved Aboriginal title

TransCanada developed an initial list of First Nations and Métis that could be affected by the Project using a combination of desktop research, operating experience and an established network of contacts with Aboriginal communities.

TransCanada also considers Project location relative to reserve location, asserted traditional territory, Métis settlements and communities and Métis harvesting and traditional use areas. It will also confer about the list with Aboriginal Affairs and Northern Development Canada (AANDC) and the MPMO.

The First Nations and Métis shown in Table 7-1 have been advised of the Project and will be provided with copies of this PD. Figure 7-1 shows the location of First Nation reserve lands in proximity to the Project area.

Table 7-1: Preliminary List of First Nations and Métis

Aboriginal Community	Closest Distance from Proposed Route (km)
Algonquins of Ontario Consultation Office	5[1]
Alderville First Nation	15
Chippewas of Georgina Island First Nation	40
Curve Lake First Nation	50
Hiawatha First Nation	20
Métis Nation of Ontario (MNO)	N/A
Mississaugas of the New Credit First Nation	120
Mississaugas of the Scugog Island First Nation	22
Mohawks of Akwesasne	5
Mohawks of the Bay of Quinte	2
Six Nations of the Grand River	110

Note:
1. Approximate location from Algonquins of Ontario Settlement Area.

7.1.3 Preliminary Activities and Feedback

The First Nations and Métis identified in Table 7-1 have been contacted and provided with information on the Project.

To-date, TransCanada has held one information session with five First Nations and has met separately with two other First Nations. In addition, one organization has expressed an interest in further discussions to better understand the nature of the Project. The above described preliminary discussions with First Nations and Métis have identified some areas of interest and potential concern. At a high level, these areas include:

- Aboriginal agreements, protocols, interests and treaty rights
- business opportunities and employment
- construction methods and timing
- economic benefits of participation
- proposed protected areas
- training and employment opportunities
- vegetation and wetlands
- watercourse crossings and water quality

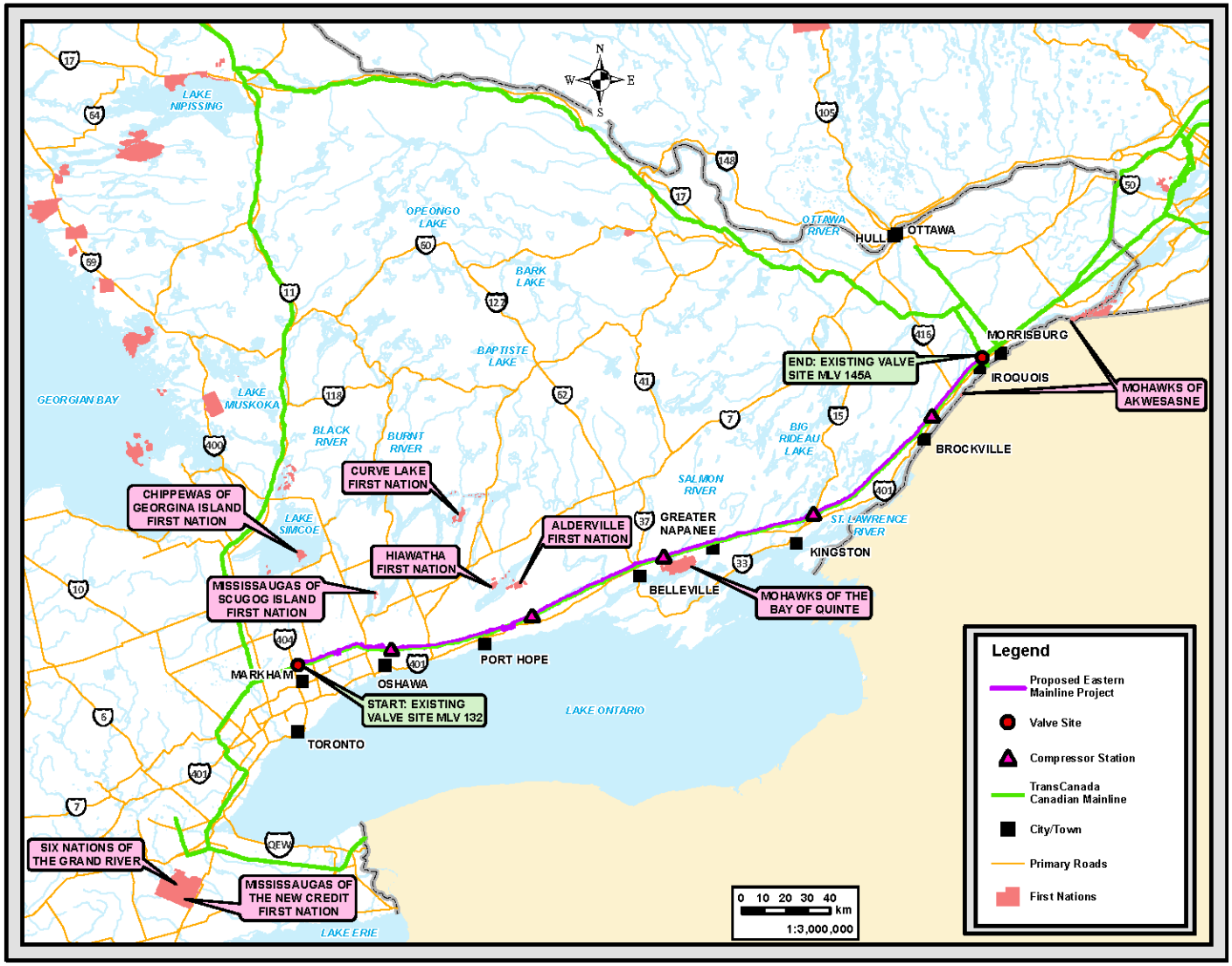

Figure 7-1: First Nations Reserve Lands in Proximity to the Project Area

8.0 REGULATORY AUTHORIZATIONS

8.1 FEDERAL AUTHORIZATIONS

In addition to a CPCN under Section 52 of the NEB Act, various other federal approvals and authorizations may be required for the Project.

A preliminary list of federal authorizations is provided in Table 8-1. A final list will be developed in consultation with federal authorities, as changes to the federal permitting process are implemented in response to the *Jobs, Growth and Long-Term Prosperity Act* (July 2012) and as design and construction planning progresses for the Project.

Table 8-1: Preliminary List of Federal Regulatory Authorizations and Departments

Department	Authority	Approval
Environment Canada	*Species at Risk Act*	A permit or agreement pursuant to Section 73 of the SARA might be required if it is determined the Project will have an incidental effect on a listed wildlife species, any part of such species' critical habitat or the residences of such critical species
National Energy Board (note 1 and 2)	Section 108 of NEB Act	Approval to install a pipeline along, or under, navigable waters.
	Section 5(1) of the *Navigable Waters Protection Act*	If required, approval to install a permanent access road crossing structure on, or across, navigable water.
	Fisheries Act	Under the MOU between the NEB and DFO, the NEB will assess potential effects of the project on fish or fish habitat and aquatic species at risk. If the NEB determines that a project could result in serious harm to fish or fish habitat, or adverse effects on species at risk, the NEB will notify DFO that a Fisheries Act authorization and/or SARA permit may be required
Natural Resources Canada	*Explosives Act*	Section 7 and 8: Ammonium Nitrate Fuel Oil Permit, Temporary Magazine License, Explosives Transportation Permit
Parks Canada	*Historic Canal Regulations, Department of Transportation Act*	• Easement • Work Permits
Transport Canada	*Federal Real Property and Federal Immovables Act* *Department of Transport Act*	• Easement • Work Permits • Road Rental Agreements • Lease • Licence

Note:

1. Fisheries and Oceans Canada (DFO). 2013. *Measures to Avoid Causing Harm to Fish and Fish Habitat*. Available at http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html.
2. Responsibility for Transport Canada permitting was transitioned to the NEB under a Memorandum of Understanding, effective July 2013.

8.2 PROVINCIAL AUTHORIZATIONS

Various authorizations under provincial legislation might be required to undertake activities ancillary to, but necessary for, the construction and operation of the proposed Project. A preliminary list of these authorizations are provided in Table 8-2. A final list will be developed in consultation with provincial authorities, as design and construction planning progresses.

Table 8-2: Preliminary List of Ontario Regulatory Authorizations

Department	Authority	Approval
Ontario Ministry of Natural Resources	*Ontario Endangered Species Act*	Permit for an Activity to Assist in the Protection or Recovery of a Species, to result in Overall Benefit to a Species, or that will result in Significant Economic or Social Benefit to Ontario
	Fish and Wildlife Conservation Act	Licence to Collect fish for Scientific Purposes Letter of Authorization under the Fish and Wildlife Conservation Act to drain a beaver pond
	Public Lands Act	Letter of Authorizations and/or Permits for impacts to Crown land Easement Licence Work Permit
Ontario Ministry of Tourism, Culture and Sport	*Ontario Heritage Act*	Archaeology clearance Built Heritage and Cultural Heritage Landscape clearance
Ontario Ministry of the Environment	*Ontario Water Resources Act*	Permit for the taking of 50,000 l/day or more of water from any one source
Conservation Authorities	*Conservation Authority Act, O. Re. 42/06*	Crossing/construction locations on watercourses/wetlands/flood control areas
Ontario Ministry of Transportation	*Highway Traffic Act*	Heavy/Oversize Load Transportation Permit
	Public Transportation and Highway Improvement Act	Encroachment Permit Building and Land Use Permit/Entrance Permit

8.3 REGIONAL AND MUNICIPAL APPROVALS

TransCanada might require a variety of permits and authorizations from regional, municipal and other local authorities as well as from private third-party utilities, railway and pipeline companies. These approvals will be confirmed as project planning and design progress.

Typical regional, municipal and other local government approvals include:

- electrical permits for compression facilities
- access road permits
- permissions to cross county and regional district roads
- water use
- tree cutting permits

9.0 DISTRIBUTION LISTS

This section provides the initial distribution lists for this PD.

The distribution lists of federal and provincial government department and agency recipients and other authorities were developed based on publicly available information and the collective experience of TransCanada and its environmental consultants.

9.1 FEDERAL AUTHORITIES

Table 9-1 lists the federal government recipients of this PD.

Table 9-1: Federal Government Recipients

Department	Contact	Contact Information
DFO	Director General Ecosystems Management	200 Kent Street Ottawa, ON K1A 0E6
	Central and Arctic Region	Alberta, Saskatchewan, Manitoba, Ontario Fisheries Protection Program Fisheries and Oceans Canada 867 Lakeshore Road Burlington, ON L7R 4A6
Environment Canada	Environmental Assessment Officer – Ontario	4905 Dufferin Street Toronto, ON M3H 5T4
Natural Resources Canada	Senior Environmental Assessment Officer – Environmental Assessment Group	580 Booth St. 11th Floor, Room C7C7-1 Ottawa, ON K1A 0E4
	Major Projects Management Office – Senior Operational Officer	155 Queen Street, 2nd Floor Ottawa, ON K1A 0E4
	Major Projects Management Office – Senior Policy Advisor	155 Queen Street, 2nd Floor Ottawa, ON K1A 0E4
Transport Canada	Environmental Assessment Officer	Airports, Harbours and Ports, and Environmental Services – Ontario Region Programs 4900 Yonge Street North York, ON M2N 6A5
Parks Canada	Field Unit Superintendent	34-A Beckwith Street South Smiths Falls, ON K7A 2A8
	Environmental Assessment Officer	Ontario Service Centre – Ottawa 1800 Walkley Road Ottawa, ON K1A 0M5

9.2 PROVINCIAL AUTHORITIES

The Ontario government recipients of this PD are shown in Table 9-2.

Table 9-2: Ontario Government Recipients

Department	Contact	Contact Information
Ministry of Natural Resources (Natural Resources Information Centre)	Regional Planner	Regional Resources Section – Southern Region Ministry of Natural Resources 300 Water Street, 4th Floor South Peterborough, ON K9J 8M5
Ontario Ministry of Tourism, Culture and Sport	Tourism, Culture and Sport – Culture Division	Suite 1800 401 Bay St Toronto, ON M7A 0A7
Ontario Ministry of the Environment	Central Region Office	5775 Yonge St. 8th Floor North York, ON M2M 4J1
Conservation Authorities	General Manager Senior Planning Manager	Conservation Ontario 120 Bayview Parkway Newmarket, ON L3Y 4W3
Cataraqui Conservation Authority	General Manager/ Secretary-Treasurer	1641 Perth Road P.O. Box 160 Glenburnie, ON K0H 1S0
Central Lake Ontario Conservation Authority	Chief Administration Officer	100 Whiting Avenue Oshawa, ON L1H 3T3
Ganaraska Conservation Authority	Chief Administration Officer/ Secretary-Treasurer	2216 County Road 29 P.O. Box 328 Port Hope, ON L1A 3W4
Lower Trent Conservation Authority	Chief Administration Officer/ Secretary-Treasurer	714 Murray Street RR 1 Trenton, ON K8V 5P4
Quinte Conservation Authority	General Manager	2061 Old Highway 2 RR 2 Belleville, ON K8N 4Z2
Rideau Valley Conservation Authority	General Manager	3889 Rideau Valley Drive P.O. Box 599 Manotick, ON K4M 1A5
South Nation Conservation Authority	Chief Executive Officer	38 Victoria Street P.O. Box 29 Finch, ON K0C 1K0
Toronto and Region Conservation Authority	Director, Planning and Development	5 Shoreham Drive Downsview, ON M3N 1S4

9.3 OTHER AUTHORITIES

Other authorities who will receive copies of this document are shown in Table 9-3.

Table 9-3: Ontario Community and Municipal Authorities

Authority	Contact	Contact Information
Regional Municipality of York	Bruce Macgregor, CAO	17250 Yonge Street Newmarket, ON L3Y 6Z1
City of Markham	Andy Taylor, CAO	101 Town Centre Blvd. Markham, ON L3R 9W3
Regional Municipality of Durham	Garry Cubbitt, CAO	605 Rossland Road East P.O. Box 623 Whitby, ON L1N 6A3
City of Pickering	Tony Prevedel, CAO	One The Esplanade Pickering, ON L1V 6K7
Town of Whitby	Robert Petrie, CAO	575 Rossland Road East Whitby, ON L1N 2M8
City of Oshawa	Rob Browning City Manager	2nd Floor, Rundle Tower, City Hall 50 Centre Street South Oshawa, ON L1H 3Z7
Municipality of Clarington	Franklin Wu, CAO	40 Temperance Street Bowmanville, ON L1C 3A6
County of Northumberland	Elizabeth Savill, CAO	555 Courthouse Road Cobourg, ON K9A 5J6
Municipality of Port Hope	Carl Cannon, CAO	56 Queen Street Port Hope, ON L1A 3Z9
Township of Hamilton	Barb Goodwin Director of Finance/Treasurer/Deputy CAO	8285 Majestic Hills Drive P.O. Box 1060 Cobourg, ON K9A 4W5
Township of Alnwick/Haldimand	Terry Korotki CAO/Planner	10836 County Road 2 P.O. Box 70 Grafton, ON K0K 1C0
Township of Cramahe	Christie Alexander CAO/Clerk	1 Toronto Street P.O. Box 357 Colborne, ON K0K 1S0
Municipality of Brighton	Gayle J. Frost, CAO	35 Alice Street P.O. Box 189 Brighton, ON K0K 1H0
Hastings County	Jim Pine, CAO/Clerk	235 Pinnacle Street P.O. Bag 4400 Belleville, ON K8N 3A9
City of Quinte West	Charlie Murphy, CAO	7 Creswell Drive P.O. Box 490 Trenton, ON K8V 5R6
City of Belleville	Rick Kester, CAO	169 Front Street Belleville, ON K8N 2Y8
Township of Tyendinaga	Steve Mercer, CAO	859 Melrose Road, RR 1 Shannonville, ON K0K 3A0

Table 9-3: Ontario Community and Municipal Authorities (cont'd)

Authority	Contact	Contact Information
County of Lennox and Addington	Larry Keech, CAO	97 Thomas Street East Napanee, ON K7R 4B9
Town of Greater Napanee	Raymond Callery, CAO	124 John Street P.O. Box 97 Napanee, ON K7R 3L4
Loyalist Township	Alida Moffatt, Interim CAO	263 Main Street P.O. Box 70 Odessa, ON K0H 2H0
City of Kingston	Gerard Hunt, CAO	216 Ontario Street Kingston, ON K7L 2Z3
United Counties of Leeds and Grenville	Andy Brown, CAO	25 Central Ave West, Suite 100 Brockville, ON K6V 4N6
Township of Leeds and the Thousand Islands	Milena Avramovic, CAO	1233 Prince Street P.O. Box 280 Lansdowne, ON K0E 1L0
Township of Front of Yonge	Elaine Covey, CAO/Clerk	1514 County Road 2 P.O. Box 130 Mallorytown, ON K0E 1R0
Township of Elizabethtown-Kitley	Yvonne L. Robert, Clerk	6544 New Dublin Road, RR 2 Addison, ON K0E 1A0
City of Brockville	Bob Casselman, City Manager	1 King Street West P.O. Box 5000 Brockville, ON K6V 7A5
Township of Augusta	Pierre Mercier, CAO/Clerk	3560 County Road 26, RR 2 Prescott, ON K0E 1T0
Township of Edwardsburgh/Cardinal	Debra McKinstry, Clerk/Acting CAO	18 Centre Street P.O. Box 129 Spencerville, ON K0E 1X0
United Counties of Stormont, Dundas and Glengarry	Tim Simpson, CAO	26 Pitt Street, Suite 323 Cornwall, ON K6J 3P2
Township of South Dundas	Stephen McDonald, CAO	34 Ottawa Street P.O. Box 740 Morrisburg, ON K0C 1X0
Association of Municipalities of Ontario (AMO)	Pat Vanini	200 University Ave Suite 801 Toronto, ON M5H 3C6
Boating Ontario	Al Donaldson	15 Laurier Rd. Penetanguishene, ON L9M 1G8
Canadian Council of Snowmobile Organizations	Dennis Burns	P.O. Box 21059 Thunder Bay, ON P7A 8A7
Canadian Forces Base Petawawa	Lt. Colonel Louis Lapointe	Menin Rd. Petawawa, ON K8H 2X3
National Defence and the Canadian Armed Forces	Major Chloeann Summerfield Coordinator	Garrison Petawawa Headquarters Building S-111, 101 Menin Road P.O. Box 9999, Stn Main CFB Petawawa, ON K8H 2X3

Table 9-3: Ontario Community and Municipal Authorities (cont'd)

Authority	Contact	Contact Information
Canadian Parks and Recreation Association	C J Noble	PO Box 8306 1180 Walkley Road Ottawa, ON K1V 1A3
Federation of Canadian Municipalities (FCM)	Brock Carlton	24 Clarence Street Ottawa, ON K1N 5P3
Federation of Northern Ontario Municipalities	Alan Spacek	c/o Town of Kapuskasing Kapuskasing, ON
Federation of Ontario Cottagers' Association Inc.	Terry Rees	201 – 159 King Street Peterborough, ON K9J 2R8
Northeastern Ontario Recreation Association	Cindy Dent	200 Brady Street Sudbury, ON P3A 5P3
Northwestern Ontario Municipal Association (NOMA)	Kristen Oliver	P.O. Box 10308 Thunder Bay, ON P7B 6T8
Ontario Federation of Anglers and Hunters	Angelo Lombardo	4601 Guthrie Drive PO Box 2800 Peterborough, ON K9J 8L5
Ontario Federation of Snowmobile Clubs	Director	501 Welham Road Unit 9 Barrie, ON L4M 8Z6
Ontario Municipal Administrators` Association (OMAA)	Maureen McCauley	15 Caledonia Terrace Goderich, ON N7A 2M8
Ontario Recreational Canoe Association	Bruce Hawkins	3 Concorde Gate, Suite 209 Toronto, ON M3C 3N7
Ontario Small Urban Municipalities (OSUM)	Jim Collard	Box 1401 Niagara-On-The-Lake, ON L0S 1J0
Rural Ontario Municipal Association	Bill Vrebosch	390 Highway 94 Corbeil, ON P0H 1K0

9.4 ABORIGINAL COMMUNITIES

As discussed in Section 7.1.2, TransCanada developed an initial list of Aboriginal communities that might potentially be affected by the Project. These communities will be provided with copies of this PD (see Table 9–4).

Table 9-4: Aboriginal Community Recipients – Ontario

Aboriginal Community	Contact	Contact Information
Algonquins of Ontario Consultation Office	Janet Stavingka, Executive Director	Algonquins of Ontario Consultation Office 31 Riverside Drive, Suite 101 Pembroke, ON K8A 8R6
Alderville First Nation	Chief James Marsden	Alderville First Nation P.O. Box 46 11696 2nd Line Road Alderville, ON K0K 2X0
Chippewas of Georgina Island	Chief Donna Big Canoe and Council	Chippewas of Georgina Island RR 2 Box N-13 Sutton West, ON L0E 1R0
Curve Lake First Nation	Chief Phyllis Williams	Curve Lake First Nation General Delivery Curve Lake, ON K0L 1R0
Hiawatha First Nation	Diane Sheridan, Consultation Officer Lori Ritter, Consultation Officer	Hiawatha First Nation 123 Paudash Street Hiawatha, ON K0L 2G0
Métis Nation of Ontario	Devi Shantilal Manager, Lands, Resources and Consultation	Métis Nation of Ontario 311 – 75 Sherbourne Street Toronto, ON M5A 2P9
Mississaugas of the New Credit First Nation	Chief Bryan LaForme and Council	Mississaugas of New Credit 2789 Mississauga Road RR6 Hagersville, ON N0A 1H0
Mississaugas of the Scugog Island First Nation	Chief Kelly LaRocca and Council	Mississaugas of Scugog Island First Nation 22521 Island Road Port Perry, ON L9L 1B6
Mohawks of Akwesasne	Mohawk Council of Akwesasne	Mohawk Council of Akwesasne PO Box 579 Cornwall, ON K6H 5T3
Mohawks of the Bay of Quinte	Lisa Maracle Director of Community Services	Tyendinaga Mohawk Council 13 Old York Road Tyendinaga Mohawk Territory, ON K0K 1X0
Six Nations of the Grand River	Chief Ava Hill and Council	Six Nations of the Grand River 1695 Chiefswood Road P.O. Box 5000 Ohsweken, ON N0A 1M0

10.0 REFERENCES

10.1 REFERENCES CITED

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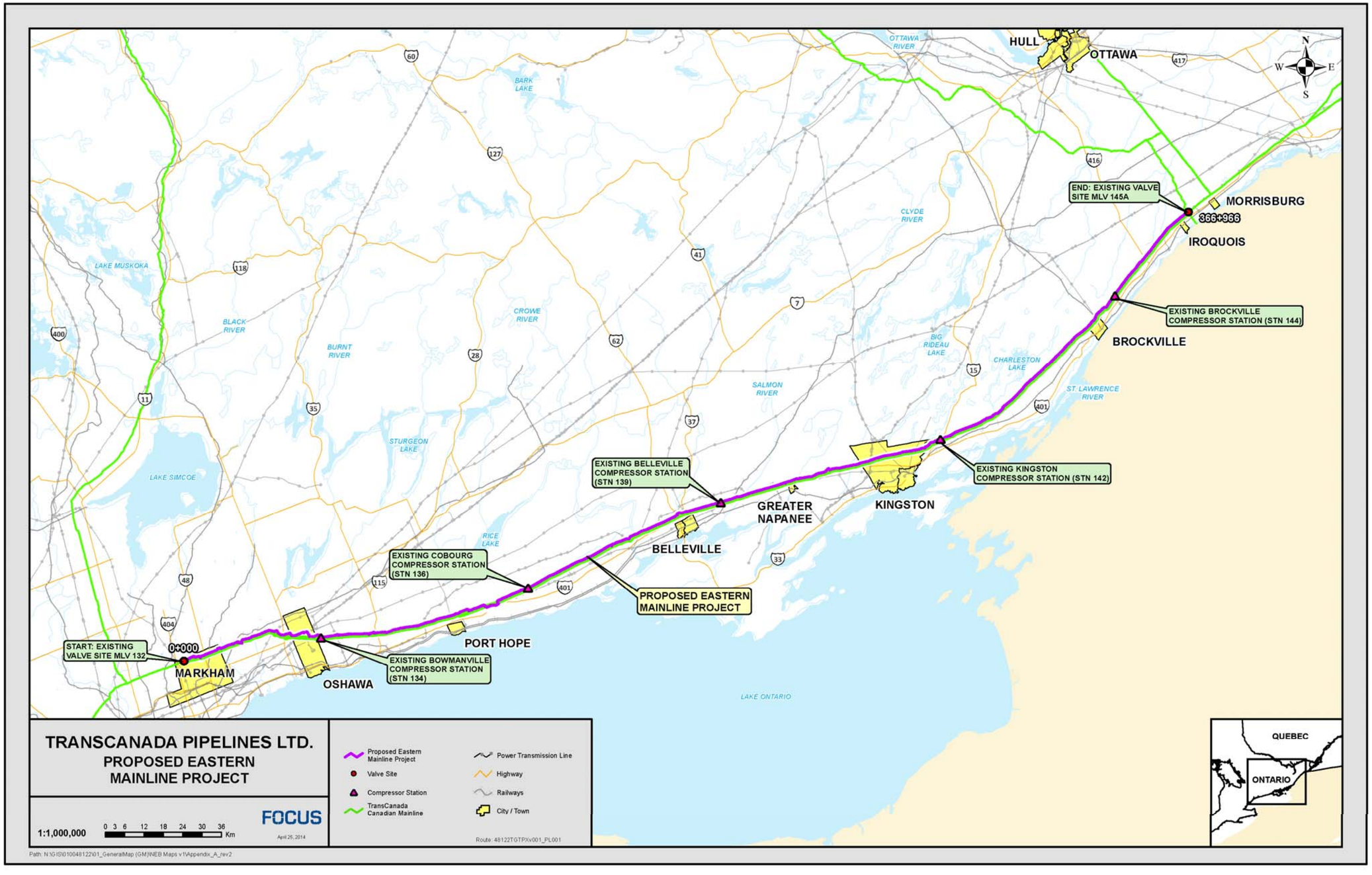
10.2 PERSONAL COMMUNICATION

Aspinall, D. Land Resource Specialist. Ontario Ministry of Agriculture and Food and Rural Affairs. Telephone conversation. October 22, 2013.

Appendix A
Foldout Map


HULL
OTTAWA
OTTAWA RIVER
BARK LAKE
CLYDE RIVER
LAKE MUSKOKA
BLACK RIVER
BURNT RIVER
CROWE RIVER
BIG RIDEAU LAKE
CHARLESTON LAKE
SALMON RIVER
ST. LAWRENCE RIVER
STURGEON LAKE
LAKE SIMCOE
RICE LAKE
LAKE ONTARIO
N
W
E
S
END: EXISTING VALVE SITE MLV 145A
366+986
MORRISBURG
IROQUOIS
EXISTING BROCKVILLE COMPRESSOR STATION (STN 144)
BROCKVILLE
EXISTING KINGSTON COMPRESSOR STATION (STN 142)
KINGSTON
EXISTING BELLEVILLE COMPRESSOR STATION (STN 139)
GREATER NAPANEE
BELLEVILLE
EXISTING COBOURG COMPRESSOR STATION (STN 136)
PROPOSED EASTERN MAINLINE PROJECT
PORT HOPE
START: EXISTING VALVE SITE MLV 132
0+000
MARKHAM
OSHAWA
EXISTING BOWMANVILLE COMPRESSOR STATION (STN 134)
TRANSCANADA PIPELINES LTD.
PROPOSED EASTERN MAINLINE PROJECT
1:1,000,000
0 3 6 12 18 24 30 36 Km
FOCUS
April 25, 2014
Proposed Eastern Mainline Project
Valve Site
Compressor Station
TransCanada Canadian Mainline
Power Transmission Line
Highway
Railways
City / Town
Route: 48122TGTPXv001_PL001
QUEBEC
ONTARIO
Path: N:\GIS\01004812201_GeneralMap (GM)\NEB Maps v1\Appendix_A_rev2

Appendix B
Project Fact Sheets

TransCanada's Proposed
Canadian Mainline Natural Gas
Pipeline Expansion

On November 29, 2013, TransCanada announced it is holding a binding open season to obtain commitments from interested parties for firm capacity in the Eastern Triangle region of the Canadian Mainline natural gas transmission system in Ontario.

The open season will close on January 15, 2014. This will identify if any additional pipeline or compression facilities are required in order to accommodate customers seeking greater access to natural gas supplies. This includes ensuring there is sufficient capacity to meet the needs of our customers prior to and following the transfer of a portion of the Canadian Mainline's capacity to crude oil transportation service for TransCanada's proposed Energy East project.

The Canadian Mainline system includes pipeline infrastructure within existing easements between North Bay, Toronto and Montreal. TransCanada will be conducting site assessments along the existing corridor between the City of Markham and Iroquois in the Township of South Dundas in advance of the completion of the open season. The final requirements for any additional infrastructure will be based on customer needs identified in the open season. A detailed routing assessment will reflect stakeholder input, as well as environmental and technical evaluations of this existing corridor.

TransCanada believes that stakeholder input is a critical part of developing project plans. In support of these goals, planning is underway to contact and share information with municipalities, landowners, agencies, and other interested stakeholders as it becomes available. We will also be engaging directly with First Nations and Metis who may be interested in or potentially affected by these activities.

TransCanada will begin initial land owner engagement immediately, followed by environmental studies that will help refine the facility requirements and identify options to minimize environmental impacts. We are committed to sharing information and seeking input from landowners, local communities, Aboriginal groups, customers and other stakeholders; we will undertake an extensive stakeholder engagement process as part of any future expansion projects.

If subscription for new firm service requires the addition of natural gas transmission facilities, TransCanada will proceed with the necessary regulatory applications.

Attached you will find a map that shows the portion of the Eastern Triangle region in Ontario where preliminary assessments and planning work will be undertaken.

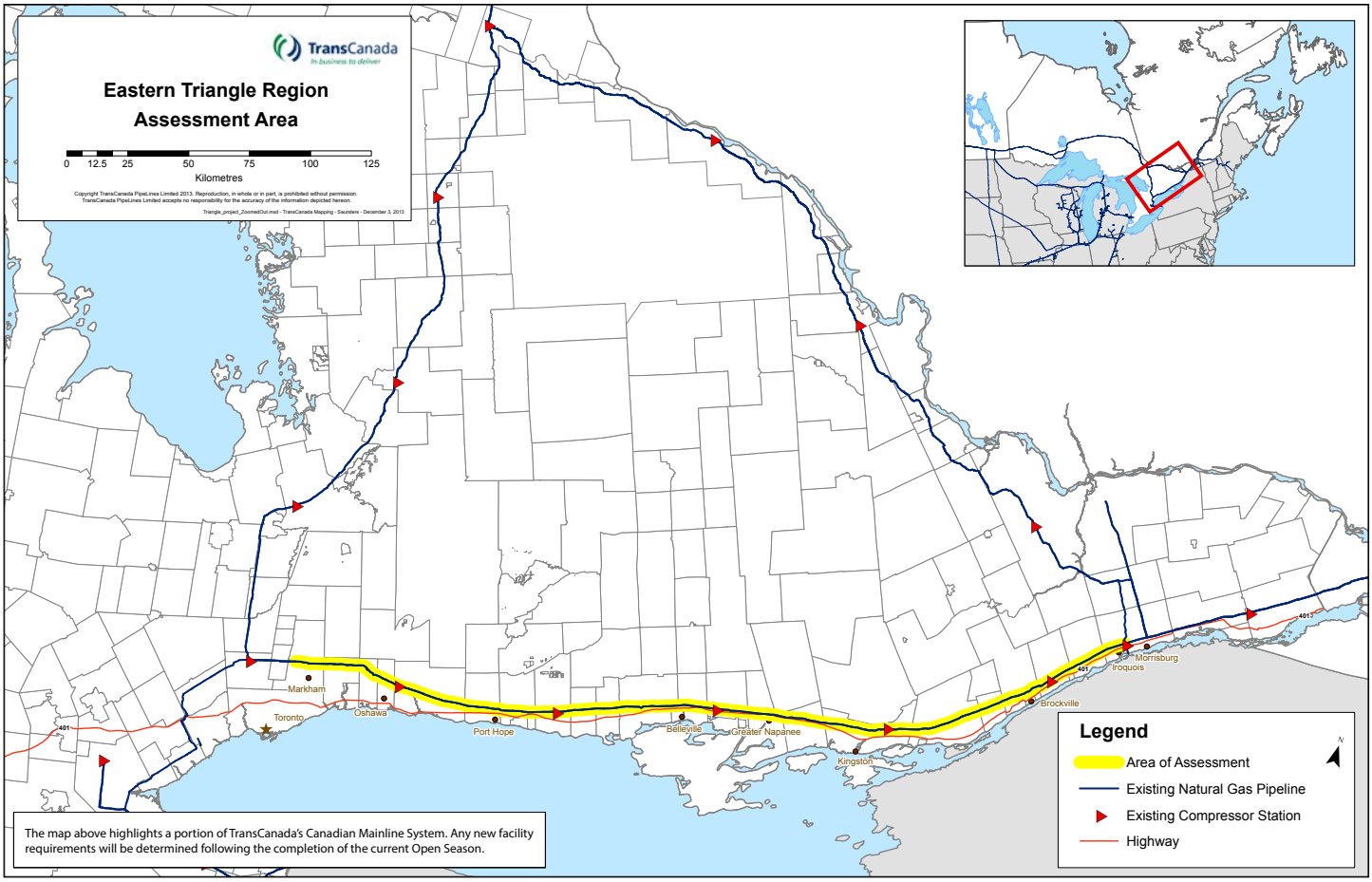
Contact Us

We invite you to contact TransCanada with any questions related to the proposed Canadian Mainline Natural Gas Expansion:

Phone: 1.855.920.4697
Email: Community_relations@TransCanada.com

TransCanada
In business to deliver

TransCanada's Proposed **Canadian Mainline Natural Gas Pipeline Expansion**



Canadian Mainline Natural Gas Expansion – December 2013

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