

MANITOBA HYDRO

Tyndall 115 kV Transmission Line and Distribution Supply Centre

Environmental Assessment Report

Prepared By:



**Transmission Planning and Design Division
Licensing and Environmental Assessment
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Prepared for:

Manitoba Conservation, Environmental Approvals Branch

Executive Summary

This report summarizes the environmental assessment of the proposed Tyndall 115 kV transmission line and Distribution Supply Center (DSC). The environmental assessment report: provides a description of the environmental assessment process; defines the scope of the project and the assessment; provides a description of the proposed project, a characterization of the existing biophysical and socioeconomic environments and a summary of the public consultation process; describes the potential effects of the project, potential mitigation measures and significance of residual effects; and outlines proposed environmental protection measures.

Environmental Assessment

The proposed project requires a license for a Class II development under The *Environment Act* (Manitoba). The environmental assessment is conducted in accordance with Manitoba Hydro's corporate and environmental policies, and satisfies Manitoba's environmental assessment legislation. It is also consistent with Canadian and international environmental assessment best practices and guidance.

Project and Assessment Scope

The scope of the proposed project includes pre-construction, construction, operation and maintenance, and eventual decommissioning. The project components included in the project are: Construction of a 115-12.47 kV DSC that will include three regulators and one 4 way switching cubicle to provide three feeder positions, 115 kV tap, and Construction of 10.6 km of 115 kV transmission line from the proposed tapping location (TS44) to the proposed DSC. The scope of the environmental assessment includes the identification, description, analysis and mitigation of potential adverse environmental effects, identification of any required follow-up actions, and evaluation of significance for any residual environmental effects. The spatial boundaries for the environmental assessment consist of the project (footprint), local and regional assessment areas. The temporal boundary of the environmental assessment covers the normal life expectancy of the proposed project, which is estimated to be approximately 50 years.

Project Description

The scope of the proposed Tyndall Project includes pre-construction, construction, operation and maintenance, and eventual decommissioning of associated equipment and facilities.

The Project scope includes the following:

- Acquisition of property for the proposed Project;
- Construction of a 10 MVA, 115-12.47 kV DSC that will include three regulators and one 4 way switching cubicle to provide three feeder positions;
- 115 kV tap;
- Construction of 10.6 km of 115 kV transmission line from the proposed tapping location (TS44) to the proposed DSC;
- Salvage of 3.8 km of transmission line 13 between Road 33 and Maple Street including the road crossing, capacitor bank and transformer 5980;

- Salvage of 4 capacitor banks and road crossing directly outside Garson Station, and installation of 2 tie points to ES12-2;
- Installation of feeder ties and salvage of 6.5 km of under build along PTH 44 west of the Community of Garson;
- Installation of feeder ties ES12-2 & TDL12-1/MRE12-1/MRE12-2 utilizing upper circuit Z2/0A;
- Decommissioning of Garson Station; and
- Line protection.

Description of the Environment

The proposed project is located in the Boreal Plains Ecozone, Interlake Plain Ecoregion and the Gimli Ecodistrict. The area is primarily agricultural with some residential and urban (Tyndal and Garson) areas. There are very local natural areas (small forested areas, shelterbelts, wetlands). Wildlife, amphibians and reptiles found or expected are typical of cultivated agricultural areas. The loggerhead shrike is the only potential species of conservation concern in the general Project area.

Public Consultation

The public consultation program consisted of meetings with municipal officials, notification by mail and newspapers, letters to property owners and area residents, two public open houses and other contacts.

Environmental Effects Assessment

The environmental effects of the proposed project were identified using checklists, interaction matrices, linkage diagrams and professional judgment. The significance of the residual environmental effects was evaluated using factors adapted from the Canadian Environmental Assessment Agency and the Canadian Standards Association.

Valued Environmental Components (VECs) were used to focus the assessment. VECs identified for the project included; Agricultural Land, Property Values, Rural Lifestyle, Aesthetic Values, Creeks and Drains, and Birds and Mammals.

The assessment found no significant effects to any of the valued ecosystem components.

Environmental Protection

Manitoba Hydro, Transmission Planning and Design's Environmental Protection Program provides a framework for the implementation, management and monitoring of environmental protection measures that satisfies corporate policies, regulatory requirements, environmental protection guidelines and best practices, and inputs from stakeholders and the public.

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1.0 INTRODUCTION

Manitoba Hydro is proposing to construct a 115 kV Transmission Line and Distribution Supply Centre (the Project) near the Communities of Tyndall and Garson (Map 1-1). The proposed project is a Class II Development under the Classes of Development Regulation, Environment Act (Manitoba). This report supports the Environment Act Proposal Form.

1.1 Background

Manitoba Hydro's corporate mission is to provide for the continuance of a supply of energy to meet the needs of the province and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of energy. Manitoba Hydro's system planning studies have identified the need to improve distribution of reliable electrical power in the Rural Municipalities of Brokenhead and St. Clements, east of Winnipeg. Manitoba Hydro is proposing the 115 kV Line and Distribution Supply Center to ensure reliable electrical supply to Brokenhead and St. Clements areas.

1.2 Project Overview

The proposed Tyndall 115 kV Transmission Line and Distribution Supply Centre (DSC) Project (Map 1-1) will provide a new 115 - 12.47 kV source capable of absorbing approximately 8 MVA of load from the existing 33 -12.47 kV Garson Station as well as supporting the area's 10 year historical load growth of 4.7% beyond 10 years. A new source of electrical power is required due to excessive reliability and performance issues attributed to line condition, lack of capacity and voltage related to an existing 33 kV sub-transmission system supplying the Garson Station.

The 115 kV Transmission Line will be tapped off the 115 kV Transcona to Selkirk Transmission Line (TS44) in SE Quarter Section 14, Township 13, Range 5, East of the Prime Meridian and will run southeast approximately 9 km to a new 10 MVA, 115/12.47 kV DSC in SE Quarter Section 10, Township 13, Range 6, East of the Prime Meridian immediately north of Provincial Trunk Highway (PTH) 44.

The existing transmission line (TS44) runs between the East Selkirk Station to the north and the Transcona Terminal Station to the southwest. A communications cubicle will be installed at the DSC site for future use with conduit runs to carry data cabling only to all site Automatic Circuit Reclosers (ACRs) and regulators, as well as conduit to carry power to station service transformer. Pending a Manitoba Hydro investigation of feasibility, the existing sub-transmission line 13 will be decommissioned or used for distribution.

The Garson Station located in SW Quarter Section 7, Township 13, Range 6 immediately north of PTH 44 will be decommissioned. The planned in-service date for the proposed Project is October, 2014.

1.3 Regulatory And Policy Context

The proposed Tyndall 115 kV Transmission Line and DSC Project requires a licence for a Class II development under *The Environment Act* (Manitoba). The Project does not trigger an environmental assessment under the *Canadian Environmental Assessment Act (2012)*. The environmental assessment was conducted in accordance with Manitoba Hydro's corporate and environmental policies, and satisfies Manitoba's environmental assessment legislation. It is also consistent with Canadian and international environmental assessment best practices and guidance. This Environmental Assessment Report is submitted as part of the Environment Act License Proposal for the Tyndall Project.

1.3.1 Provincial Legislation

The proposed 115 kV Transmission Line from TS44 (existing 115 kV Transmission Line) to the Tyndall DSC is a Class II development under the Classes of Development Regulation and requires an Environment Act Licence for a transmission line of 115 kV but not exceeding 230 kV. The proposed Tyndall DSC does not require an Environment Act Licence. The construction and operation of the proposed Tyndall 115 kV Transmission Line and DSC Project is subject to all applicable provincial legislation, guidelines, codes and standards including the following provincial acts and regulations:

- *The Conservation Districts Act*
- *The Contaminated Sites Remediation Act*
- *The Dangerous Goods Handling and Transportation Act*
 - Dangerous Goods Handling and Transportation Regulation
 - Environmental Accident Reporting Regulation
 - Generator Registration and Carrier Licensing Regulation
 - Storage and Handling of Petroleum Products and Allied Petroleum Products Regulation
- *The Drinking Water Safety Act*
 - *Drinking Water Quality Standards Regulation*
 - *Drinking Water Safety Regulation*
- *The Endangered Species Act*
 - Threatened, Endangered and Extirpated Species Regulation
- *The Environment Act* (Manitoba)
 - Classes of Development Regulation
 - Licensing Procedures Regulation
 - Litter Regulation
 - Pesticides Regulation

- Waste Disposal Grounds Regulation
- *The Fisheries Act (Manitoba)*
- *The Forest Act*
- *The Forest Health Protection Act*
- *The Heritage Resources Act*
- *The Highways and Transportation Act*
- *The Historic Highway No. 1 Act*
- *The Manitoba Hydro Act*
- *The Noxious Weeds Act*
- *The Planning Act*
 - Provincial Planning Regulation
- *The Public Health Act*
- *The Water Protection Act*
- *The Wildlife Act*
- *The Workplace Safety and Health Act*
 - Workplace Safety and Health Regulation

1.3.2 Federal Legislation

The proposed Tyndall 115 kV Transmission Line and DSC is subject to the following Canadian acts and regulations under the acts:

- *Canadian Environmental Protection Act 1999*
- *Explosives Act*
- *Fisheries Act*
- *Migratory Birds Convention Act*
- *Radio Communications Act*
- *Species at Risk Act*

While the Project does not trigger an environmental assessment under the Canadian Environmental Assessment Act (2012), the construction and operation of the proposed Project is subject to all applicable federal legislation, guidelines, codes and standards.

1.3.3 Municipal By-Laws

The Rural Municipalities of St. Clements and Brokenhead have a number of by-laws that govern land use planning, zoning and approvals for lands under municipal control.

1.3.3.1 Rural Municipality of St. Clements

The Selkirk and District Planning Area (SDPA) was incorporated June 11, 1977. The District office regulates development over an area of approximately 1,580 km², serving the Rural

Municipalities of St. Andrews, St. Clements, East St. Paul, West St. Paul, the City of Selkirk and the Village of Dunnottar. Through the Selkirk and District Planning Area office, development permit applications are processed for the respective municipalities, cities and villages.

The Selkirk and District Development Plan (By-law 190/08) is at the top of the municipal land use planning hierarchy. It is based on a long range vision for the district which embodies the goals and aspirations of the population with regard to how they want their communities developed. It is a broad document as it must meet the needs of four different municipalities and a full spectrum of land uses but at the same time direct the overall development of the district. To ensure that all plans are in alignment with each other and operate towards the community's long term goal, sector and secondary plans take direction from the development plan. Similarly, zoning by-laws must conform to both development plans and secondary plans. In this manner the community's long term goals in the development plan are incorporated into all planning documents. The Planning District Development Plan is the basis for the Municipal Secondary Plans and Zoning By-Laws.

1.3.3.2 Rural Municipality of Brokenhead

The Brokenhead River Planning District is responsible for the preparation, adoption and administration of district land use plans and related by-laws as well as the day-to-day responsibilities for the administration of zoning by-laws, zoning amendments and rezoning, zoning enforcement, variation orders and conditional use orders. The Planning District is also responsible for administration of the municipal building by-laws, and provincial and federal building codes. This includes the issuance of building permits and building inspections.

1.3.4 Manitoba Hydro Policy

Manitoba Hydro supports the need to protect and preserve the natural environment and heritage resources potentially affected by its Projects and facilities. This goal can only be achieved with the full commitment of Manitoba Hydro employees, consultants and contractors at all stages of Projects, from planning and design through construction and operational phases.

Manitoba Hydro's Corporate Environmental Management Policy (Manitoba Hydro 2012) states that Manitoba Hydro is committed to protecting the environment by:

- preventing or minimizing any adverse impacts, on the environment, and enhancing positive impacts
- continually improving our Environmental Management System
- meeting or surpassing regulatory, contractual and voluntary requirements
- considering the interests and utilizing the knowledge of our customers, employees, communities, and stakeholders who may be affected by our actions

- reviewing our environmental objectives and targets annually to ensure improvement in our environmental performance
- documenting and reporting our activities and environmental performance

Manitoba Hydro's environmental management policy is reflected in the corporation's environmental protection plan. The use of an environmental protection plan provides for practical implementation of mitigation measures and follow-up actions, and demonstrates Manitoba Hydro's commitment to responsible environmental stewardship.

1.4 Report Organization

The environmental assessment report for the proposed Tyndall 115 kV Transmission Line and DSC Project is organized into eight chapters and an appendix as follows:

Introduction

Background information on the proposed Tyndall Project is discussed, the purpose of the environmental assessment report is provided and the organization of the report is outlined.

Scope

The scope of the Project and the assessment for the Project are described in relation to applicable legislation, guidance and best practices. Temporal and spatial boundaries for the Project and assessment are also provided.

Project Description

This chapter of the report describes the proposed Tyndall Project in general and specific terms. Project alternatives are identified and described, and the preferred alternative is presented. The development is broken down into Project components and activities for the purpose of the environmental assessment.

Environment Description

The existing environmental setting of the proposed Tyndall Project is described. The environment is broken down into biophysical and socio-economic components for the purpose of the environmental assessment.

Public Engagement

The Public Engagement Process undertaken for the proposed Tyndall Project is described. Results of the engagement process are presented. Environmental issues and concerns identified by the public are identified and discussed.

Environmental Effects Assessment

Valued Environmental Components are identified to help focus the assessment. The potential environmental effects of the proposed Tyndall Project are identified, assessed and mitigated, and the significance of any residual environmental effects is evaluated. Cumulative effects,

effects of accidents and malfunctions, and effects of the environment on the Project are also considered.

Environmental Protection

This chapter of the environmental assessment report describes the Environmental Protection Program for the proposed Tyndall Project and how environmental protection plans will be implemented. Mitigation measures and follow-up actions identified in the report are summarized by Project phase.

Summary and Conclusion

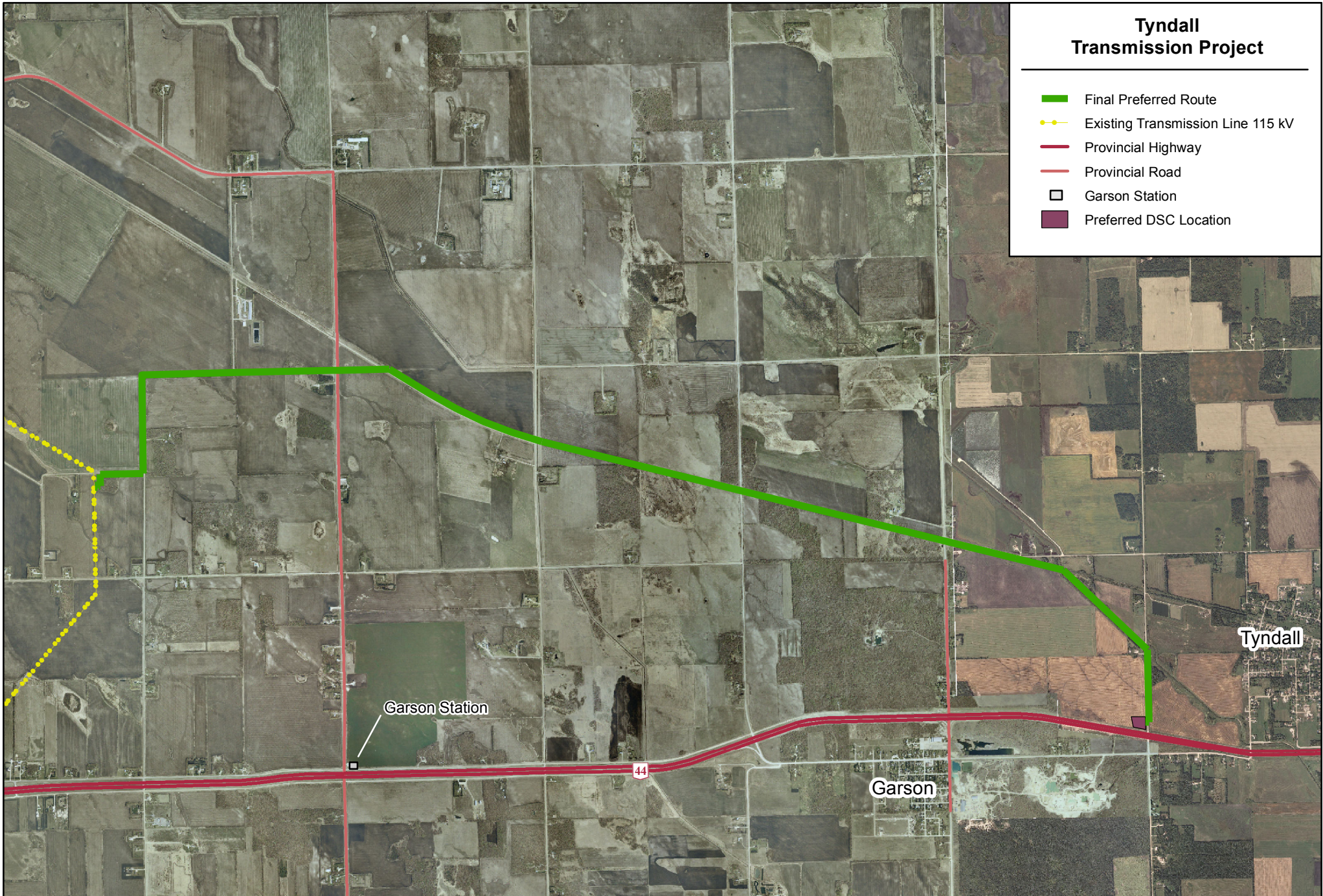
Environmental assessment information including environmental effects and mitigation measures are summarized, and the conclusion on the significance of residual environmental effects of the proposed Project is presented.

References

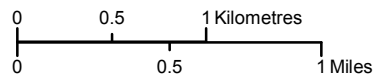
Literature cited and contacts made as part of the environmental assessment are listed.

Tyndall Transmission Project

- Final Preferred Route
- Existing Transmission Line 115 kV
- Provincial Highway
- Provincial Road
- Garson Station
- Preferred DSC Location



Coordinate System: UTM Zone 14 NAD 83
Data Source: MBHydro, ProvMB, NRCan
Date Created: December 30th, 2013



1:40,000

Final Preferred Route

Map 1-1

2.0 SCOPE

This chapter of the environmental assessment report describes the scope of the proposed Tyndall 115 kV Transmission Line and DSC Project and the scope of the assessment of the Project, and acts to focus the assessment on important components of the Project and the environment. Also provided are temporal and spatial boundaries for the Project.

2.1 Scope Of The Project

The scope of the proposed Tyndall Project includes pre-construction, construction, operation and maintenance, and eventual decommissioning of associated equipment and facilities.

The Project scope includes the following:

- Acquisition of property for the proposed Project;
- Construction of a 10 MVA, 115-12.47 kV DSC that will include three regulators and one 4 way switching cubicle to provide three feeder positions;
- 115 kV tap;
- Construction of 10.6 km of 115 kV transmission line from the proposed tapping location (TS44) to the proposed DSC;
- Salvage of 3.8 km of transmission line 13 between Road 33 and Maple Street including the road crossing, capacitor bank and transformer 5980;
- Salvage of 4 capacitor banks and road crossing directly outside Garson Station, and installation of 2 tie points to ES12-2;
- Installation of feeder ties and salvage of 6.5 km of under build along PTH 44 west of the Community of Garson;
- Installation of feeder ties ES12-2 & TDL12-1/MRE12-1/MRE12-2 utilizing upper circuit Z2/0A;
- Decommissioning of Garson Station; and
- Line protection.

Construction activities for the proposed Project would include accessing, flagging, clearing, excavating, grading, drilling, operating equipment, installing components and structures, tapping existing power, installing transmission poles, stringing conductors, decommissioning equipment and materials no longer required (i.e., Garson Station) and landscaping.

Construction equipment for the proposed Project would include pick-up trucks, loaders, dozers, back hoes, drills, semi-trailers, dump trucks, a crane, a bucket truck, compressors and hand held construction equipment. DSC operating equipment would include a 10 MVA, 115-12.47 kV DSC, regulators, and switching cubicle. Transmission equipment would include a tapping structure, wooden structures for the 115 kV line and conductors.

2.2 Scope of the Assessment

The scope of the environmental assessment includes identifying the need and purpose for the proposed Project, and identifying and describing alternatives for carrying out the Project. The scope of the assessment includes the identification, description, analysis and mitigation of potential adverse environmental effects, identification of any required follow-up actions, and evaluation of significance for any residual environmental effects.

The definition of “environment” includes ecological, social and economic components consistent with the principles of sustainable development (see Manitoba Hydro website for sustainable development principles (www.hydro.mb.ca/environment/policy/sdp.shtml)). Direct and indirect biophysical and socio-economic effects, cumulative environmental effects, effects of accidents and malfunctions, and effects of the environment on the Project are considered. Public engagement was also carried out as part of the environmental assessment.

2.3 Scope of the Factors Assessed

The biophysical and socio-economic environments are described with particular reference to the Rural Municipalities of St. Clements and Brokenhead, and the Project location. Biophysical assessment factors included microclimate, air quality, surface water, groundwater, soils, vegetation, and wildlife species and habitats. Socio-economic assessment factors included population, employment, infrastructure, services, recreation and heritage resources. Factors used to evaluate alternative transmission line routes and DSC locations included water, soil, vegetation, wildlife, fish, land use, resource use, residences, heritage resources, and technical factors.

Adversity factors included biophysical features and values, and socio-economic conditions. Significance factors included ecological and societal values, magnitude, geographic extent, frequency, duration and reversibility.

2.4 Spatial and Temporal Boundaries

The spatial boundaries for the environmental assessment consist of Project, local and regional assessment areas as described below.

2.4.1 Spatial Boundaries

Project Assessment Area – Footprint of the proposed Project including the DSC property, transmission line and tapping location right-of-way, and Garson Station and components (approximately 0.5 km²; 46.3 ha) (Map 2-1).

Local Assessment Area – One mile (1.6 km) area surrounding the proposed DSC, transmission line, and Garson Station and components (approximately 72.5 km²; 7,252.0 ha) (Map 2-1).

Regional Assessment Area – Area including the Rural Municipalities of St. Clements and Brokenhead (1,479.1 km²; 147,914.0 ha) (Map 2-2).

The direct, indirect and cumulative environmental effects of the proposed Tyndall Project are considered within these spatial boundaries.







2.4.2 Temporal Boundaries

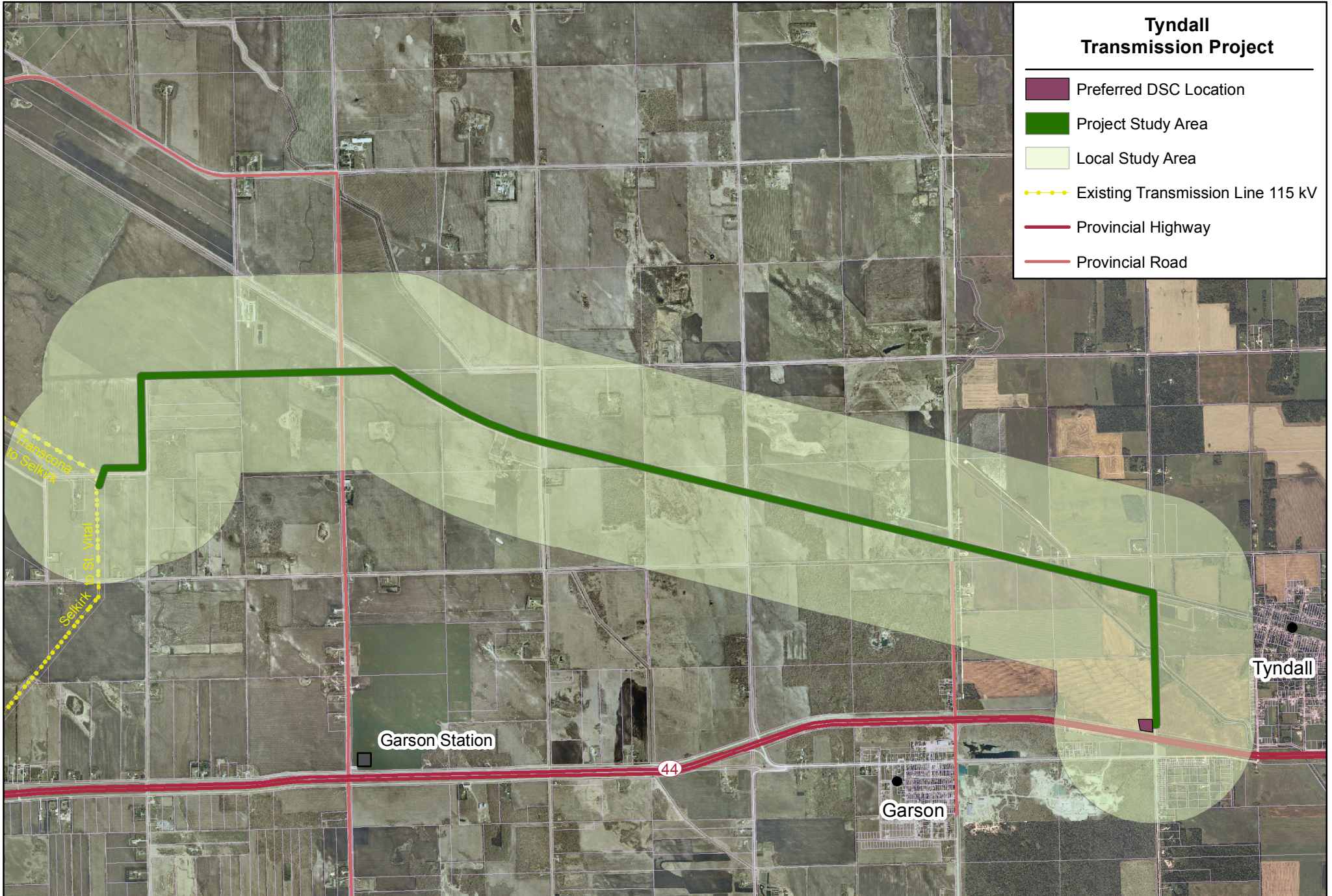
The temporal boundary of the environmental assessment covers the normal life expectancy of the proposed Project, which is estimated to be approximately 50 years. The time-frame covers the duration of any residual environmental effects and any required follow-up including monitoring activities.

2.4.3 Summary

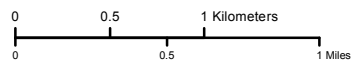
This chapter described the scope of the proposed Tyndall 115 kV Transmission Line and DSC Project and the scope of the assessment of the Project, and served to focus the assessment on important Project components and the environment. Spatial and temporal boundaries are also identified.

Tyndall Transmission Project

-  Preferred DSC Location
-  Project Study Area
-  Local Study Area
-  Existing Transmission Line 115 kV
-  Provincial Highway
-  Provincial Road



Coordinate System: UTM Zone 14 NAD 83
Data Source: MBHydro, ProvMB, NRCan
Date Created: March 19, 2013

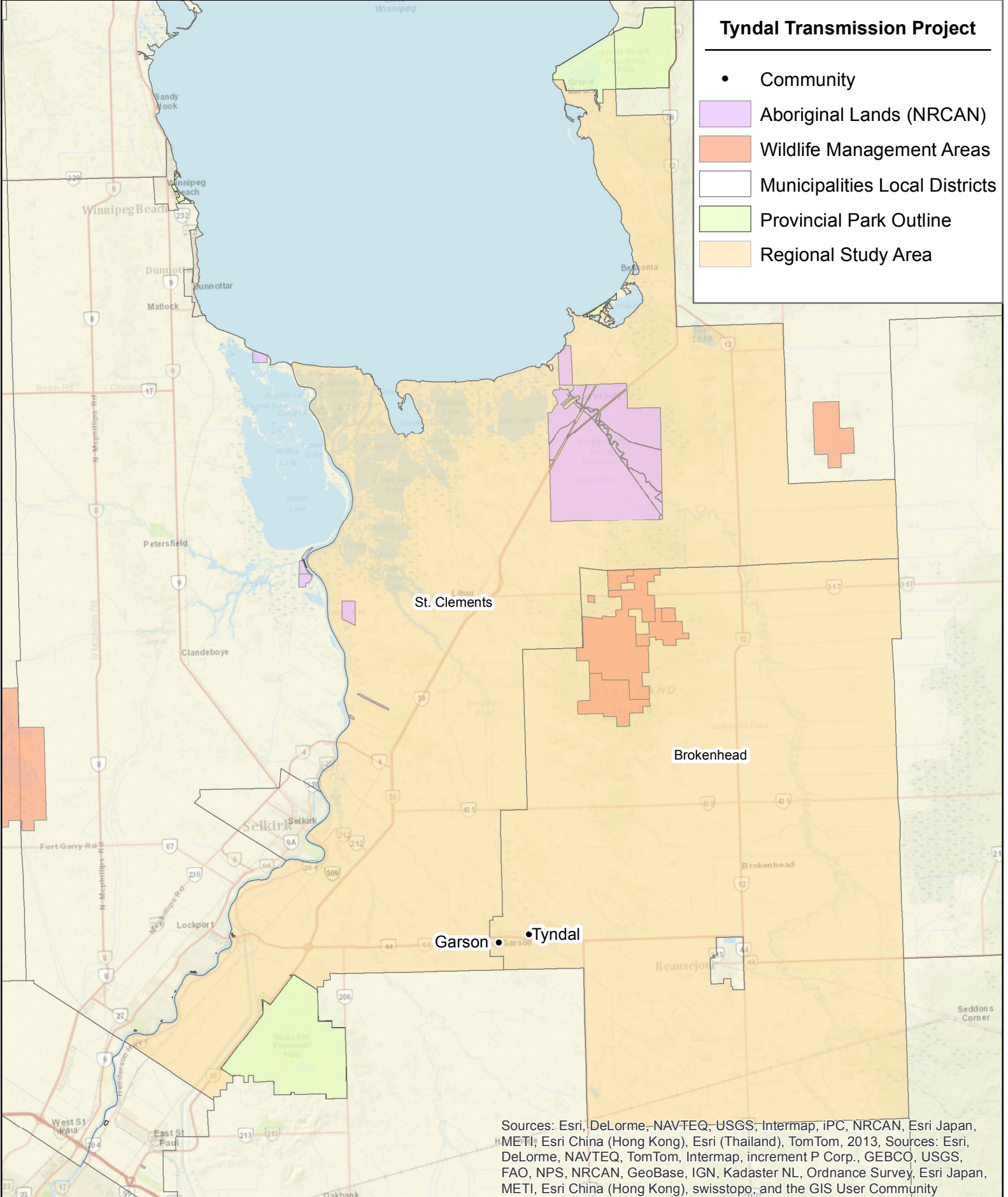


Project and Local Study Area Tyndall Transmission Project

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Tyndal Transmission Project

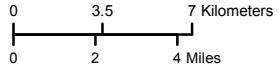
- Community
- Aboriginal Lands (NRCAN)
- Wildlife Management Areas
- Municipalities Local Districts
- Provincial Park Outline
- Regional Study Area



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013, Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community



Coordinate System: UTM Zone 14 NAD 83
 Data Source: MBHydro, MMM, Stantec, ProvMB, NRCAN
 Date Created: September 26, 2011



1:296,443

Regional Study Area

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