Wash'ake Mayzoon Station

Environmental Assessment Report

Prepared by Manitoba Hydro

Asset Planning and Delivery

Licensing & Environmental Assessment

September 2021

Prepared for:

Manitoba Conservation and Climate

Environmental Approvals Branch

Manitoba Hydro

Executive summary

This report summarizes the environmental assessment of the proposed Wash'ake Mayzoon 230-66kV station and P81C Tap sectionalization. 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 project engagement; describes the potential effects of the project, potential mitigation measures and significance of residual effects; and outlines proposed environmental protection measures.

This station is part of a larger project called the Portage Area Capacity Enhancement project which includes a proposed 230 kV line that will run from Dorsey Station to this station.

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.

The scope of the proposed project includes pre-construction, construction, operation and maintenance, and eventual decommissioning. The project components included in the project are a new 230-66kV transmission station and 200 m of 230 kV transmission line (four new 230 kV steel H-frame transmission towers) that sectionalizes the P81C Tap to Roquette station.

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 (specific to each valued component) and regional (specific to each valued component) assessment areas.

The temporal boundary of the environmental assessment covers the normal life expectancy of the proposed project, which is estimated to be approximately 75 years.

Manitoba Hydro used a site selection process that was designed to reduce potential effects to the biophysical and socioeconomic environments and traditional use of the

area while considering technical aspects of the project including cost and constructability.

The project is in the Rural Municipality of Portage la Prairie in NE-26-11-8-W.

The proposed station is in the Prairies Ecozone, Lake Manitoba Plains Ecoregion, MacGregor Ecodistrict. The local area presently consists of agricultural land. No significant surface water features occur within the local area.

Natural habitat is sparse in the area. Wildlife, amphibians and reptiles expected would be typical of cultivated agricultural areas. Potential species of conservation concern in the general Project area include Monarch, western tiger salamander, bobolink, barn swallow and green needlegrass (Appendix C).

The Project is in the Portage la Prairie Planning District. Land use in the region is primarily agricultural with some commercial, industrial and rural residential land use in the immediate area.

There was extensive engagement for the project including both public and Indigenous participants.

Public engagement consisted of a broad communication process including postcards, webpage, survey, virtual information session, interested parties meeting, social media, Project info sheet and email and telephone communications.

Indigenous engagement included project notification through information packages and follow-up phone calls. Communities most affected were determined and Indigenous Assessment and Community Coordinator positions were created to be embedded in the project team. Virtual meetings were held, and two communities provided a section of the environmental assessment report and reviewed relevant sections of the report prepared by Manitoba Hydro.

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 Impact Assessment Agency and the Canadian Standards Association.

Valued Components were used to focus the assessment. Valued components identified for the project included; agriculture, human health, community well-being, wildlife, economic opportunities, traditional practices, culture and heritage, and greenhouse gases and climate change.

Potential effects considered include the loss of agricultural land due to the project footprint as well as nuisance effects to agricultural operations. In addition, the noise from construction and the visual effects of the station were considered.

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

Cumulative effects were considered for the project in combination with reasonably foreseeable future projects. No significant cumulative effects to any valued components were determined.

Manitoba Hydro'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 Indigenous communities and the public.

Summary

Based on the information contained in the environmental assessment report and the implementation of mitigation measures and follow-up actions under an environmental protection program, the proposed Wash'ake Mayzoon Station will not result in any significant adverse environmental effects.

GLOSSARY

Term	Definition
Adaptive management	The process of updating management practices in response to ongoing observations
Adverse effects	Negative effects on the environment and people that may result from a proposed project.
Agricultural biosecurity	The protection of crops and livestock systems against the threats to production from disease, pests and invasive species.
Annual average daily traffic (AADT)	Is defined by Manitoba Infrastructure and Transportation (MIT) as the number of vehicles passing a count station on an average day of the year.
Areas of least preference	Features to avoid when siting a transmission line due to physical constraints (extreme slopes, long water crossings), regulations limiting development (protected areas), or areas that require extensive mitigation or compensation to minimize impacts
Built environment	An area of existing or proposed development found within the landscape, typically dominated by commercial, industrial, residential, and cultural structures.
Cumulative effect	The effect on the environment, which results when the effects of a project combine with those of the past, existing, and future projects and activities (CEAA 2018). OR the incremental effects of an action on the environment when the effects are combined with those from other past, existing and future actions (Cumulative Effects Assessment)

Decommissioning	Planned shutdown, dismantling and removal of a building, equipment, plant and/or other facilities from operation or usage and may include site clean-up and restoration.
Developed	Land that has been altered for residential, commercial or industrial use. Includes buildings, regularly managed green space and associated roads, parking lots, and trails.
Direct effect	An environmental effect that is: • A change that a project may cause in the environment; or • A change that the environment may cause to a project. It is a consequence of a cause-effect relationship between a project and a specific environmental component.
Ecological reserve	Lands established to preserve unique or rare natural (biological and geological) features of the province.
Ecoregion	Characterized by distinctive regional ecological factors, including climate, physiography, vegetation, soil, water, and fauna
Ecozone	An area of the earth's surface representative of large and very generalized ecological units characterized by interactive and adjusting abiotic and biotic factors
Environmental Management System	Part of an organization's overall management practices related to environmental affairs. It includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining an environmental policy. This approach is often formally carried out to meet the requirements of the International Organization for Standardization (ISO) 14000 series.

Environmental Protection Plan	Within the framework of an environmental protection program, an environmental protection plan prescribes measures and practices to avoid and minimize potential environmental effects of a proposed project.
Exurban	The transitional area outside of the traditional urban/suburban belts of development but not quite rural.
Heritage sites / objects	Any site, object, work, or assembly of works of nature or human endeavor that is of value for its archaeological, paleontological, pre-historic, historic, cultural, natural, scientific, or aesthetic features.
Indigenous Community and Assessment Coordinator (ICAC)	Positions supported at three Indigenous communities to facilitate engagement and traditional knowledge between those nations and Manitoba Hydro
Interested party	An interested party is someone or a group that would potentially have feedback to provide, may be affected by the decisions made regarding route selection, have a specific interest or mandate in the area, data to share, ability to disseminate information to membership or a general interest in the Project's route selection area.
Linear infrastructure	An existing network or system composed of transportation or utility-based facilities (e.g. roads, highways, railways, pipelines, and transmission lines).
Marshalling yard	An open area used to stockpile, store and assemble construction materials.
Mitigation	Means measures to eliminate, reduce, control or offset the adverse effects of a project, and includes restitution for any damage caused by those effects through replacement, restoration, compensation or any other means (Impact Assessment Act, 2019).
Natural environment	Naturally occurring physical features of the landscape. These features are represented by the hydrography, flora, fauna, and topography of a given area.

Public engagement process	The process of identifying interested individuals, including interested parties and the public, sharing balanced and objective information about the Project and using public input in decision making.
Species of Conservation Concern	Species that are rare, disjunct, or at risk throughout their range or in Manitoba and in need of further research. The term also encompasses species that are listed under (Manitoba) *The Endangered Species and Ecosystems Act of Manitoba*, (federal) *Species at Risk Act*, or that have a special designation by the Committee on the Status of Endangered Wildlife In Canada.
Species at Risk (SAR)	Is an extirpated, endangered or threatened species or a species of special concern, as defined by the Species at Risk Act.
Wildlife management area	Lands that exist for the benefit of wildlife and for the enjoyment of people including biodiversity conservation, wildlife-related forms of recreation, hunting and trapping.

TABLE OF CONTENTS

1.0 Introduction 1-1

1.1 Regulatory framework 1-1

1.2 Community involvement in the project. 1-2

1.3 Purpose of the document 1-2

2.0 Project description 2-3

2.1 Introduction 2-3

2.2 Project need and alternatives 2-6

2.2.1 Need 2-6

2.2.2 Alternatives 2-6

2.3 Project location 2-8

2.4 Project components 2-8

2.4.1 New 230-66 kV station 2-8

2.4.2 P81C Tap sectionalization 2-10

2.5 Station layout and profile 2-10

2.6 Ground grid 2-12

2.7 Fire prevention 2-12

2.8 Construction considerations 2-12

2.9 Station Access 2-13

2.10 Property acquisition 2-13

2.11 Project activities 2-13

2.11.1 Pre-construction 2-14

2.11.2 Construction 2-15

2.11.3 Operation and maintenance 2-19

2.11.4 Decommissioning and restoration 2-20

2.12 Funding 2-21

3.0 Site selection 3-1

3.1 Introduction 3-1

3.2 Site selection approach and summary 3-1

3.3 Site selection workshop 3-2

4.0 Public engagement process 4-1

4.1 Goal and objectives 4-1
4.2 Communication methods 4-1
4.2.1 Project webpage 4-2
4.2.2 Postcards 4-2
4.2.3 Printed materials 4-2
4.2.4 Phone calls 4-2
4.2.5 eCampaign 4-2
4.2.6 Emails 4-2
4.2.7 Letters 4-2
4.2.8 Social media 4-3
4.3 Engagement methods 4-4
4.3.1 Virtual information session 4-5
4.3.2 Interested party meeting 4-5
4.3.3 Online survey 4-6
4.3.4 Email and telephone communications 4-6
4.4 Public engagement feedback 4-6
4.4.1 Overview 4-6
4.4.2 Proximity to homes and property values 4-6
4.4.3 Health, safety, aesthetics and noise 4-7
4.4.4 Concerns about the location including drainage and impacts to adjacent roads 4-9
4.4.5 Concerns about impacts to trees on adjacent properties 4-10
4.4.6 Concerns about the Project name 4-10
4.4.7 Concerns about engagement 4-10
4.4.8 Concerns about future transmission line and development 4-10
4.4.9 Ongoing engagement 4-11
5.0 Indigenous engagement process 5-1
5.1 Purpose, goals and objectives 5-1
5.2 Process methods 5-2
5.2.1 Overview 5-2
5.2.2 Identification of Indigenous communities 5-2
5.2.3 Notification methods 5-12
5.2.4 Engagement activities 5-12
5.3 Indigenous engagement feedback 5-16
5.3.1 Overview 5-16
5.3.2 Dakota Tipi First Nation 5-16
5.3.3 Long Plain First Nation 5-17
5.3.4 Manitoba Métis Federation 5-17
5.3.5 Summary of concerns and responses 5-19
5.4 Ongoing engagement 5-35
6.0 Environmental assessment methods 6-1
6.1 Scope 6-2

6.1.1 Scope of the project 6-2
6.1.2 Valued components 6-2
6.1.3 Spatial boundaries 6-5
6.1.4 Temporal boundaries 6-6
6.2 Assessment of project effects 6-6
6.2.1 Project-environment interactions 6-6
6.2.2 Effects pathways 6-8
6.2.3 Mitigation 6-8
6.2.4 Characterizing residual effects 6-9
6.2.5 Determination of significance 6-9
6.2.6 Follow up and monitoring 6-12
6.3 Cumulative effects 6-12
6.3.1 Scoping 6-13
6.3.2 Analysis of effects 6-19
6.3.3 Identification of mitigation 6-19
6.3.4 Evaluation of significance 6-19
6.4 Greenhouse gases and climate change 6-20
6.5 Effects of the environment on the project 6-20
6.6 Accidents and malfunctions 6-20
7.0 Agriculture 7-1
7.1 Scope 7-1
7.1.1 Spatial boundaries 7-1
7.1.2 Temporal boundaries 7-1
7.2 Existing conditions 7-1
7.2.1 Soil 7-2
7.2.2 Land capability 7-2
7.3 Effects assessment 7-3
7.3.1 Significance thresholds 7-3
7.3.2 Project interactions 7-3
7.3.3 Effects pathways 7-3
7.3.4 Mitigation measures 7-6
7.3.5 Characterizing residual effects 7-6
7.3.6 Follow up and monitoring 7-7
7.4 Cumulative effects 7-7
7.5 Sensitivity to future climate change scenarios 7-7
8.0 Human health 8-1
8.1 Introduction 8-1
8.2 Scope 8-2

8.2.1 Significance thresholds 8-2
8.2.2 Spatial boundaries 8-3
8.2.3 Temporal boundaries 8-3
8.3 Existing conditions 8-3
8.3.1 Air quality 8-3
8.3.2 Geology and hydrogeology 8-4
8.4 Effects pathways 8-4
8.4.1 Pathways for change to air quality 8-4
8.4.2 Pathways for change to groundwater quality 8-5
8.4.3 Mitigation 8-6
8.4.4 Characterizing residual effects 8-7
8.4.5 Follow up and monitoring 8-8
8.4.6 Cumulative effects 8-8
8.5 Sensitivity to future climate change scenarios 8-8
9.0 Community well-being 9-1
9.1 Introduction 9-1
9.2 Scope 9-1
9.2.1 Significance thresholds 9-1
9.2.2 Spatial boundaries 9-4
9.2.3 Temporal boundaries 9-4
9.3 Existing conditions 9-5
9.3.1 Visual landscape 9-5
9.3.2 Noise 9-7
9.3.3 Property ownership 9-7
9.3.4 Electric and magnetic fields 9-8
9.4 Effects assessment 9-8
9.4.1 Effects pathways 9-8
9.4.2 Mitigation 9-17
9.4.3 Characterizing residual effects 9-19
9.4.4 Follow up and monitoring 9-20
9.4.5 Cumulative effects 9-20
9.5 Sensitivity to future climate change scenarios 9-20
10.0 Wildlife 10-1
10.1 Introduction 10-1
10.2 Scope 10-1
10.2.1 Significance thresholds 10-1
10.2.2 Spatial boundaries 10-1
10.2.3 Temporal boundaries 10-2
10.3 Existing conditions 10-2

10.4 Ecological classification 10-2
10.4.1 Prairies ecozone 10-3
10.5 Vegetation 10-3
10.6 Wildlife and wildlife habitat 10-5
10.6.1 Amphibians and reptiles 10-5
10.6.2 Birds 10-5
10.6.3 Mammals 10-6
10.6.4 Species of conservation concern 10-7
10.7 Effects assessment 10-9
10.7.1 Effects pathway 10-9
10.7.2 Mitigation 10-12
10.7.3 Characterizing residual effects 10-13
10.7.4 Follow up and monitoring 10-13
10.7.5 Cumulative effects 10-14
10.7.6 Sensitivity to future climate change scenarios 10-14
11.0 Economic opportunities 11-1
11.1 Introduction 11-1
11.2 Scope 11-1
11.2.1 Significance thresholds 11-1
11.2.2 Spatial boundaries 11-2
11.2.3 Temporal boundaries 11-2
11.3 Existing conditions 11-2
11.3.1 Population, employment and economy 11-2
11.4 Effects assessment 11-3
11.4.1 Effects pathways 11-3
11.4.2 Mitigation measures 11-4
11.4.3 Assessment conclusion 11-4
12.0 Traditional practices, culture and heritage 12-1
12.1 Introduction 12-1
12.2 Scope 12-1
12.2.1 Spatial boundaries 12-1
12.2.2 Temporal boundaries 12-2
12.3 Existing conditions 12-2
12.3.1 Property ownership 12-2
12.3.2 Indigenous land 12-3
12.3.3 Provincial and federal Crown land 12-3
12.4 Effects to traditional practices, culture and heritage 12-4
12.4.1 Effects to traditional harvesting 12-5
12.4.2 Effects to important sites 12-7

12.4.3 Effects to heritage resources 12-10
12.5 Cumulative effects 12-13
13.0 Greenhouse gases and climate change 13-3
13.1 Climate 13-3
13.1.1 Historic climate 13-3
13.1.2 Climate normals 13-3
13.1.3 Trends 13-5
13.1.4 Future climate 13-6
13.2 Greenhouse gas emissions 13-8
13.2.1 Construction-activity GHG emissions 13-9
13.2.2 Land use change GHG emissions 13-10
13.2.3 Operation and maintenance GHG emissions 13-11
13.3 Summary 13-11
14.0 Effects of the environment on the project 14-1
14.1 Overview 14-1
14.2 Effects analysis 14-1
14.3 Assessment conclusions 14-2
15.0 Accidents and malfunctions 15-4
15.1 Overview 15-4
15.2 Effects assessment 15-7
15.2.1 Worker accident 15-7
15.2.2 Fire 15-7
15.2.3 Hazardous materials spill 15-8
15.2.4 Vehicle accidents 15-9
15.2.5 Tower collapse 15-10
15.2.6 Discovery of a heritage site / object 15-11
15.3 Assessment conclusion 15-11
16.0 Environmental protection program 16-1
16.1 Introduction 16-1
16.2 Environmental management 16-1
16.3 Adaptive management 16-2
16.4 Experience from previous projects 16-2
16.5 Indigenous engagement 16-3
16.6 Environmental protection program 16-3

16.6.1 Overview 16-3
16.6.2 Organization 16-5
16.6.3 Resources 16-6
16.6.4 Roles and responsibilities 16-7
16.6.5 Communication and reporting 16-8
16.6.6 Environmental protection plans 16-9
16.7 Follow-up and monitoring 16-13
16.7.1 Indigenous engagement 16-13
16.7.2 Inspection program 16-13
16.7.3 Monitoring program 16-14
16.7.4 Environmental protection information management system 16-15
16.8 Pre-construction activities 16-15
16.9 Work stoppage 16-16
16.10 Review and updating 16-16
16.10.1 Incident reviews 16-16
16.10.2 Auditing 16-17
16.10.3 List of revisions 16-17
16.11 Summary 16-17
17.0 Conclusion 17-1
18.0 References 18-1

List of tables

Table 2-1: Station equipment containing hazardous materials 2-9
Table 2-2: Workforce and schedule 2-15
Table 5-1: Rationale for engaging with each community in the project 5-4
Table 5-2: Virtual meetings held between Manitoba Hydro and Indigenous communities 5-15
Table 6-1: Project Interaction Matrix 6-7
Table 6-2 Factors and criteria used to characterize interactions 6-11
Table 6-3: Project and activity inclusion list 6-16
Table 6-4: Future projects / activities interaction matrix 6-18
Table 9-1: Landscape character class description 9-2
Table 9-2: commercial and residential buildings within the local assessment area 9-8

Table 9-3: Typical noise emission rates for construction equipment 9-12
Table 10-1: Land cover in the regional and local assessment areas 10-4
Table 10-2: Species of conservation concern in the regional assessment area.....10-8
Table 12-1: Environmental effects analysis for heritage resources..... 12-12
Table 13-1: Projected change for the 2050s future horizon (2040-2069)* 13-7
Table 13-2: Projected change for the 2080s future horizon (2070-2099).....13-7
Table 13-3: Summary of GHG emissions.....13-8
Table 13-4: Right-of-way land use change summary..... 13-10
Table 15-1: Project-accident / malfunction interactions.....15-6
Table 18-1 Virtual information session date, time and number of participants 18-3

List of figures

Figure 2-1: Wash'ake Mayzoon Station 2-4
Figure 2-2: P81C Tap sectionalization 2-5
Figure 2-3: Example lighting scheme for electrical stations 2-10
Figure 2-4: Station profiles 2-11
Figure 4-1: Facebook ad for the Project.....4-3
Figure 4-2 De Salaberry East Station. Blue circle between the two 230/66kV, 140 mva transformers and green circle at the main gate.....4-8
Figure 7-1: Agricultural land removed from production.....7-5
Figure 9-1: Shelterbelts and forested areas around the station.....9-6
Figure 10-1: Forested areas near the station site.....10-7
Figure 11-1: Workforce distribution in the Portage la Prairie SLA 11-3
Figure 13-1: 1981-2010 Monthly Climate Normals at Winnipeg, Brandon and Portage la Prairie. 13-4
Figure 13-2: Time series of seasonal and annual temperature, precipitation and wind speed. 13-5
Figure 16-1: Environmental protection program components 16-4
Figure 16-2: Environmental protection organizational structure 16-6

Figure 16-3: Typical organizational lines of reporting and communications 16-8

List of maps

Map 2-1: Wash'ake Mayzoon Station and P81C Sectionalization

Map 3-1: Station site alternatives

Map 6-1: Cumulative effects assessment projects

Map 7-1: Local assessment area - agriculture

Map 7-2: Regional assessment area - agriculture

Map 7-3: Land capability for agriculture

Map 8-1: Local assessment area – human health

Map 8-2: Regional assessment area – human health

Map 9-1: Local assessment area – foreground view

Map 9-2: Local assessment area – midground view

Map 9-3: Regional assessment area – community well-being

Map 9-4: Regional infrastructure

Map 10-1: Local assessment area - wildlife

Map 10-2: Regional assessment area - wildlife

Map 10-3: Land cover

Map 12-1: Local assessment area (Traditional harvesting and important sites)

Map 12-2: Regional assessment area (Traditional harvesting and important sites)

Map 12-3: Designated lands

List of appendices

Appendix A: Public and Indigenous engagement materials

Appendix B: Cultural and heritage resources protection plan

Appendix C: Manitoba Conservation Data Centre correspondence

Appendix D: Wildlife timing windows, setbacks and buffers

Appendix E: Canadian Register of Canada's Historic Places federally designated sites

Appendix F: Construction related greenhouse gas emissions

Appendix G: Mitigation measures

1.0 Introduction

The Portage/Brandon area has had above average load growth due to various current and potential developments. These factors have contributed to unsustainable stress on the electrical transmission system in the area.

Manitoba Hydro performed a comprehensive network reliability evaluation study (NRES) to identify potential issues and propose alternatives to enhance the transmission system in the area.

Considering the immediate, near term and longer term need of the transmission system, five alternative transmission development plans (described in Section 2.2.2) were developed that would resolve the issues in the area.

The proposed Wash'ake Mayzoon Station, transmission line from Dorsey Station and sectionalizing of the existing P81C Tap (and other system improvements described later) were selected as the preferred option.

The construction of the new 230-66 kV station (Stage 1, in service fall 2025) west of Portage la Prairie will eliminate 230/66 kV transformation capacity constraints in Portage la Prairie and surrounding area.

The new 230 kV transmission line (Stage 2; in service fall 2027) from the Dorsey Converter Station to the station will eliminate 230 kV and 115 kV voltage constraints in the southwestern region of Manitoba.

This report describes the Wash'ake Mayzoon Station and sectionalizing of the existing P81C Tap and conducts an environmental assessment to determine the potential effects of the project on the surrounding environment.

A separate assessment is planned for the proposed Dorsey Station to Wash'ake Mayzoon Station 230 kV transmission line.

1.1 Regulatory framework

The proposed Wash'ake Mayzoon 230-66 kV Station project requires a licence for a Class II development (i.e., transformer station of 115 kV and over but not exceeding 230 kV) under the *Environment Act* (Manitoba).

Federally, the project is not considered a physical activity under the Physical Activities Regulations SOR/2019-285 and therefore does not trigger an environmental assessment under the *Impact Assessment Act*.

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. This environmental assessment report is submitted as the *Environment Act* Licence proposal for the Wash'ake Mayzoon Station project.

1.2 Community involvement in the project.

Manitoba Hydro conducted a public engagement process and an Indigenous engagement process for the project to engage those potentially affected by or interested in the project. Manitoba Hydro sought to continue its efforts to improve project engagement through direct involvement from community representatives on the project team. Further detail on both public and Indigenous engagement can be found in chapters 1.0 and 4.2.8.

1.3 Purpose of the document

This environmental assessment report for the proposed Wash'ake Mayzoon Station project is in support of an application to obtain a licence for a Class 2 development under *The Environment Act* (Manitoba). For Class 2 developments, proponents are required to submit an Environment Act proposal form and environmental assessment report to Manitoba Conservation and Climate's Environmental Approvals Branch. This provides the public, Indigenous communities, and government agencies with an opportunity to further examine the details of the project, its anticipated impact on biophysical and socio-economic aspects of the environment and measures that Manitoba Hydro intends to use to mitigate potential adverse effects. The purpose of this report is to describe how Manitoba Hydro identifies, assesses and mitigates any adverse environmental effects associated with the proposed project and forms *The Environment Act* proposal.

2.0 Project description

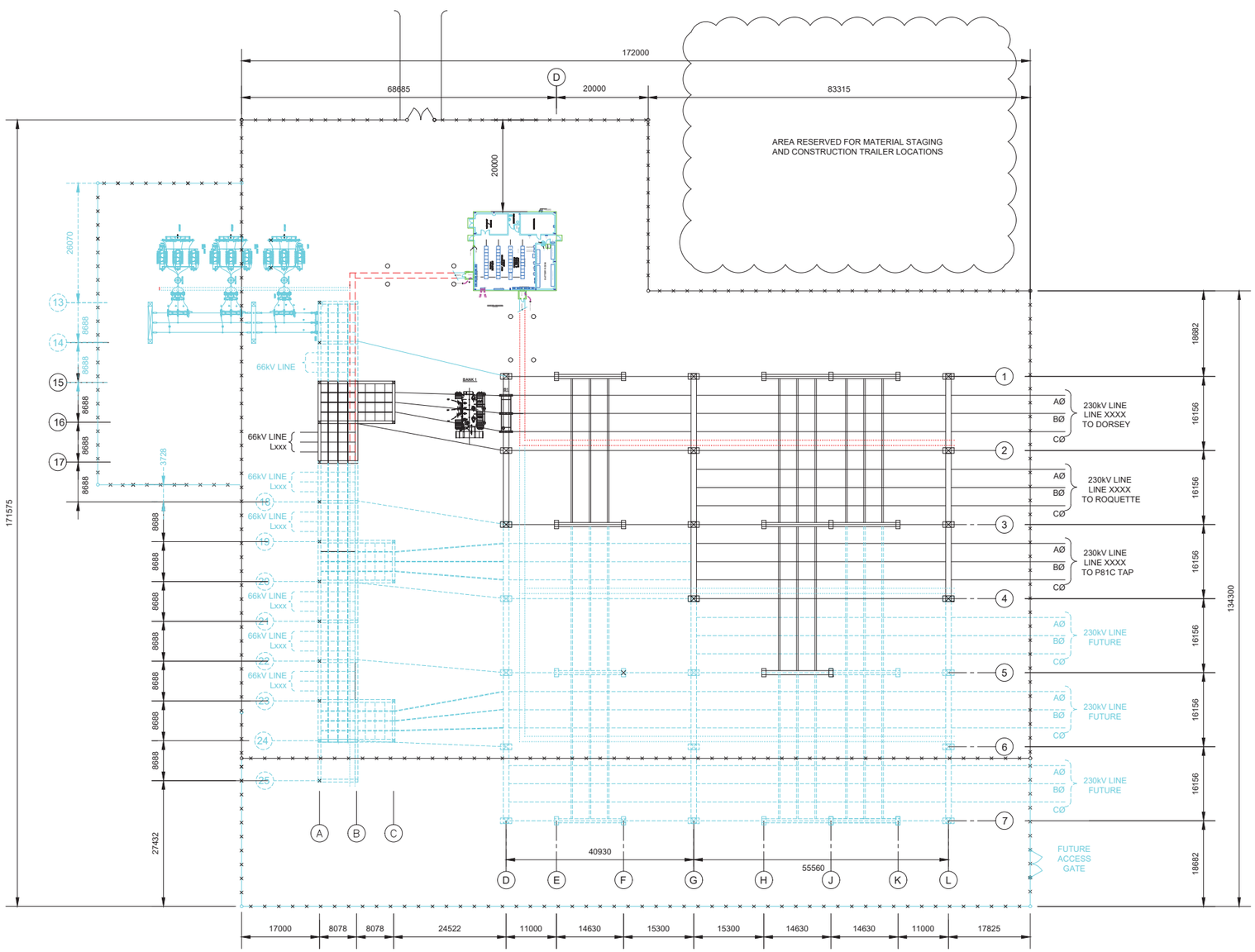
2.1 Introduction

Manitoba Hydro completed a network reliability evaluation study (Manitoba Hydro 2019) which evaluated 19 transmission enhancement options and recommended 5 development plans for further evaluation. One development plan was selected based on analysis of the results. A new project called the Portage Area Capacity Enhancement (PACE) project has been created to implement this plan.

The PACE project includes:

- Stage 1 Projects (In-service-date of March 2025)
  - Build the new 230-66 kV station
  - Sectionalize the existing 230 kV transmission line P81C tap
  - Terminate a new 66kV line at the station
  - Install protection changes at Manitoba Hydro's existing Cornwallis Station
  - Install protection changes at Manitoba Hydro's existing Portage South Station
  - Install protection changes at a customer's existing Roquette Station
- Stage 2 Projects (In-service-date of February 2027)
  - Build a new 230 kV transmission line from the station to the existing Dorsey Converter Station
  - Terminate the new 230kV transmission line at the station
  - Terminate the new 230kV transmission line and add a 230 kV Circuit Breaker at the existing Dorsey Converter Station

This environmental assessment is scoped to include the new 230-66 kV station (Figure 2-1) and the 230kv transmission line P81C Tap sectionalisation (Figure 2-2). The P81C Tap currently runs from Line P81C to Roquette station. This line will be sectionalized by having two line terminations at the station. One will connect to P81C (still called the P81C Tap) and one will connect to the line to Roquette station (now called W97R; Map 2-1).



Disclaimer:

This drawing shows the latest a 230 - 66kV Station designed by Manitoba Hydro. For the land requirements the station dimensions shown are adequate. An additional 40m is also required for any road setback. Transmission line access may need to be added.

This layout does not reflect the orientation of the Single Line Diagram but shows the current ultimate station requirements. After the final property is selected the drawings will be revised to show the proper orientations and line terminations.

Conceptual, not for construction.

REV.	DATE	DESCRIPTION	BY	CKD.	APP.

Manitoba Hydro

DRAWN: SM	CHECKED:	SCALE: 1:500
DESIGNED: SM	DATE: 2020 12 20	

TEMP - PORTAGE WEST STATION

AUTHENTICATION FOR CURRENT REVISION

230-66kV STATION STATION LAYOUT

DRAWING NUMBER	SHEET	REVISION
1-XXXXX-DE-10100-0001	0001	00

ISO A1 (33.1 x 23.4)

T:_Stations\xxxx - Portage West\NW 4402256 - 230-66kV Station\Concept Review\Conceptual Layout Drawings\Conceptual 4\230kV Station layout; 1-0xxxx-DE-10100-0001 0001 SM3.dwg 2/22/2021 2:29 PM



Manitoba Hydro

Portage West Planning Area

AREM Feature
- STN B Gantry (Assumed Location)
- P81C tap to Roquette
- Sectionalization into North Gantry
- Sectionalization into South Gantry

Existing Infrastructure
- Transmission Line (>115 kV)
- Distribution Lines (66kV)
- Distribution Gas Mains

Landbase
- Community
- Trans Canada Highway
- Provincial Roads
- Railway Line
- Pipelines
- Provincial Waterways/Drains
- First Nation
- National/Provincial Park
- Wildlife Management Area
- City

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date: November 25, 2020

N

0 0.05 0.1 Kilometres
0 0.05 0.1 Miles
1:4,000

Sectionalization into Station B
Scope of Work Map
Portage Area Capacity Expansion

Draft: For Discussion Purposes Only

IN-SERVICE DATE: 2027 04

T/L DESIGN

- LINE LENGTH - 200 m (ASSUMED DEPENDING ON THE FINAL LOCATION OF STATION B. LENGTH SUBJECT TO CHANGE.)
- RIGHT-OF-WAY - 60m ON CENTER LINE, 12m CENTER LINE OFFSET TO ROAD ALLOWANCE
- LENGTH OF AVERAGE SPAN - 85m
- PHASE CONDUCTOR - 954 MCM 54/7 ACSR CARDINAL
- GROUND CONDUCTOR - SIZE 9mm - 7 STRAND STEEL

STRUCTURE QUANTITIES

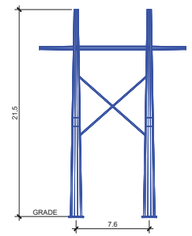
- 4 - TF-217-0(21.5m)

*STRUCTURE QUANTITIES BASED ON THE ASSUMED FINAL LOCATION OF STATION B. SUBJECT TO CHANGE.

CIVIL DESIGN

- THE P81C SECTIONALIZATION TAP TO TAP WILL TAP OFF FROM THE P81C TAP TO POLAR BLUFF T/L, BETWEEN TWR #41 AND TWR #42 AND TERMINATE IN AND OUT ON THE STATION B GANTRY STRUCTURES.
- THE TAP TO TAP CONSISTS OF FOUR SINGLE CIRCUIT TUBULAR DE TOWERS.

TOWER TYPE



TF-217-0(21.5m)
STRUCTURAL STEEL LAYOUT
QTY: 4

TOWER WEIGHT

TOWER TYPE	QTY.	ESTIMATED TOWER WEIGHT (GALVANIZED, INCLUDING BOLTS, PLATES, ETC.) (lbs)	ANCHOR BOLT WEIGHT PER TOWER (lbs)	TOTAL WT. WITH ANCHOR BOLTS(lbs)
TF-217-0(21.5m)	4	25000	3000	28000

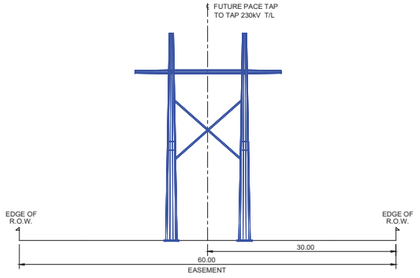
GEOTECHNICAL DESIGN

- GEOTECHNICAL DESIGN WILL BE BASED ON GROUND BASED EXPLORATION

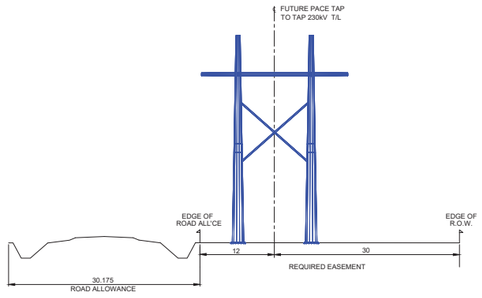
ASSUMED FOUNDATION TYPE

TOWER QTY.	TOWER TYPE	No. OF TOWER LOCATIONS WITH CIP PILES	No. OF TOWER LOCATIONS WITH HELICAL PILES	CIP PILE QTY./Ø/LENGTH (PER TOWER)	HELICAL PILE QTY. (PER TOWER)
4	TF-217-0 (21.5m)	4	0	2 /1829mm / 8m	-

PROPERTY REQUIREMENTS



TYPICAL CROSS-SECTION
RIGHT-OF-WAY OF TRANSMISSION LINE



TYPICAL CROSS-SECTION
ADJACENT TO ROAD ALLOWANCE

DISCLAIMER:

THIS DRAWING SHALL BE USED FOR ESTIMATING PURPOSES ONLY. ALL INFORMATION CONTAINED WITHIN THIS DRAWING SHALL BE CONSIDERED PRELIMINARY AND IS SUBJECT TO CHANGE. CONTACT THE TRANSMISSION AND CIVIL DESIGN DEPARTMENT FOR THE LATEST REVISION.

NETWORK NO. 4401614

REV.	DATE	DESCRIPTION	BY	CKD.	APP.

Manitoba Hydro

DRAWN:	CHECKED:	SCALE: NTS
DESIGNED:	DATE: 2020 11 26	

PORTAGE WEST - DORSEY 230 kV T.L.

AUTHENTICATION FOR CURRENT REVISION

SCOPE OF WORK
TAP TO TAP
PORTAGE AREA CAPACITY ENHANCEMENT

DRAWING NUMBER	SHEET	REVISION
SKETCH	0001	00

ISO A0 (46.8 x 33.1)

2.2 Project need and alternatives

The Brandon / Portage la Prairie area is one of the most stressed areas of the transmission network due to various current and/or potential developments in southwestern Manitoba. These developments include above average load growth, new industrial customers and increasing exports to Saskatchewan.

Manitoba Hydro performed a comprehensive network reliability evaluation study to identify potential issues and propose alternatives to enhance the transmission system in the area.

The study evaluated 19 transmission enhancement options and recommended 5 development plans for further evaluation.

2.2.1 Need

The Brandon/Portage area has various transmission reliability concerns which can be categorized into the following:

- Insufficient 230/66 kV transformation capacity in the Portage area, which requires immediate enhancement (approximately 2 years)
- Low voltages at several 115 kV and 230 kV stations, particularly in winter loading conditions, which requires system improvement in a near term planning horizon (approximately 5 years)
- Low voltages and high thermal loading issues which require significant transmission enhancements including new transmission stations and lines in a longer-term planning horizon (approximately 10 years)

2.2.2 Alternatives

The insufficient 230/66 kV transformation capacity in the Portage area requires immediate enhancement to prevent overloads. Six different mitigation options were evaluated and compared.

These options included:

- the addition of a third transformer bank at Portage South station,
- upgrade of the existing two transformer banks at Portage South station,
- transfer of load from Portage South station to Stanley station
- establishment of a new station at Elm Creek
- establishment of a new station at Portage West
- establishment of a new station at Portage East

The low voltages at several 115 kV and 230 kV stations require system improvement in a near term planning horizon (approximately 5-10 years). If no improvements are implemented, then violations of North American Electricity Reliability Corporation transmission planning criteria are expected before 2027.

Several different mitigation options were evaluated and compared including:

- Addition of a transmission line
- Establishment of a new station at different locations
- Addition of reactive support in the form of capacitor banks and a static var compensator, breaker replacement, enhancement of transmission capacity by adding series capacitor compensation to several 230 kV lines
- Sectionalization of a transmission line
- Supply of the area load from remote or local generation

The low voltages and high thermal loading issues require significant transmission enhancements including new transmission stations and lines in a longer-term planning horizon (approximately 10 years).

Considering the immediate, near term and longer term need of the transmission system, five alternative transmission development plans were developed that would resolve the issues in the area:

1) Portage South station bank addition and new 70 km 230 kV line from Dorsey station (D83P)
2) Portage South station bank upgrade and new 70 km 230 kV line from Dorsey (D83P)
3) Portage South station to Stanley station load transfer upgrades and new 70 km 230 kV line from Dorsey (D83P)
4) New Elm Creek station and new 30 km 230 kV line from Dorsey station
5) New Portage West station and a new 230 kV line from Dorsey station

The Portage West station (now named Wash'ake Mayzoon station see Section 1.2) and 75 km line from Dorsey station had the highest net value to Manitobans.

This was based on the corporate value framework which considers many factors including financial considerations such as project costs and potential revenue. It also considers system reliability, environmental and safety risks and corporate citizen considerations such as compliance risks and customer service benefits.

This alternative is expected to provide relief from the current stresses on the transmission network until approximately 2035 based on current load forecasts, system commitments and committed developments for the area.

2.3 Project location

The project is in the Rural Municipality of Portage la Prairie, located on NE-26-11-8-W (Map 2-1).

2.4 Project components

This project involves the installation of a new 230-66 kV station and the P81C Tap sectionalization (Figure 2-2).

2.4.1 New 230-66 kV station

Stage 1 will require the installation of:

- One 230-66kV, 57/76/95 MVA power transformer
- Twelve 230kV station class surge arresters
- Eight 230kV circuit breaker maintenance switches
- Three 230kV MOD line/ground switches
- One 230kV MOD bank switch
- Ten 230kV capacitive voltage transformers
- Four 230kV dead tank circuit breakers
- Twelve 66kV station class surge arresters
- Four 66kV maintenance switches
- One set of 66kV power fuses
- Three 66kV voltage transformers
- One 66kV circuit breaker
- Two 66kV selector switches
- One 66kV-120/208V station service transformer
- One 66kV grounding transformer

The following lines will be terminated into the station (Map 2-1):

- Three terminal 230 kV line (P81C) terminating at Wash'ake Mayzoon, Portage South, and Cornwallis stations
- New 230 kV line to Roquette customer owned station, previously supplied by P81C Tap
- One new 66 kV line

- New 230 kV line between Dorsey station and Wash'ake Mayzoon Station (Stage 2)

Table 2-1 provides details on the amount of hazardous materials contained in all major equipment required for Stage 1. Future equipment will depend on future development and design requirements. Containment will be adjusted to meet future requirements as required.

Table 2-1: Station equipment containing hazardous materials

Equipment	Quantity	Hazardous material contents
230 kV equipment		
Single-phase 230 kV capacitive voltage transformer	10	mineral oil: 60.0 L dielectric synthetic oil: 22.2 L
Three-phase 230kV dead tank Breaker	4	SF6: 55 kg CF4: 33 kg
Three-phase 230 kV/66 kV power transformer	1	Mineral oil: 47,100 L
66 kV Equipment		
Three-phase 66 kV station service transformer	1	Mineral oil: 7,220 L
Three-phase 66 kV dead tank breaker	1	SF_6 Gas: 7 kg CF_4 Gas: 4 kg
Three-phase 66 kV ground bank	1	Mineral oil: 5,390 L

2.4.1.1 Future design (Stage 2)

Future expansion will include the addition of two bays (8 breakers) for the 230 kV ring bus with three future 230 kV transmission line terminations (Figure 2-1) as well as two additional 230-66 kV power transformers.

The future 66 kV ring bus will extend two bays to the north and eight bays to the south. This provides terminations for seven future 66 kV sub-transmission lines (Figure 2-1), two future ground banks, one 66 kV station service transformer and a connection point for future 3-step capacitor banks.

2.4.1.2 Station security

The station will have a perimeter security monitoring system to minimize security vulnerabilities at the station during construction and operation.

The system will complement current standards and practices already designed and implemented across all transmission stations.

The system will include fixed and pan/tilt/zoom exterior and interior cameras as well as perimeter lighting provided by light standards with LED lighting (Figure 2-3).

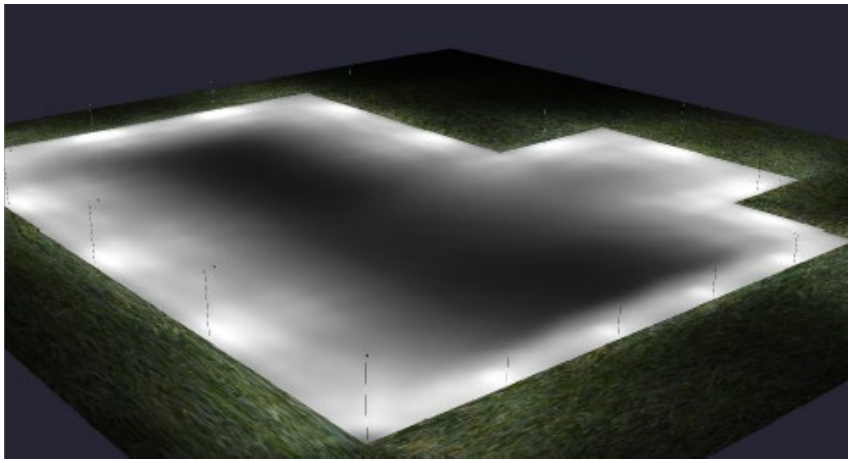


Figure 2-3: Example lighting scheme for electrical stations

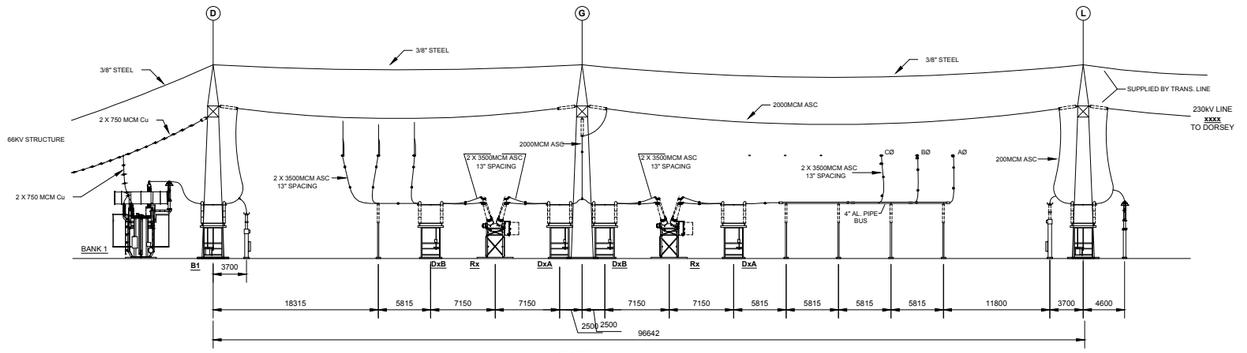
2.4.2 P81C Tap sectionalization

The P81C Tap sectionalisation will include 4 tubular steel H-frame towers (Figure 2-2). Line length will be approximately 200 m. Right-of-way width will be 60 m on center. The phase conductor will be 954 mcm ACSR and there will be a ground conductor (9 mm - 7 strand steel).

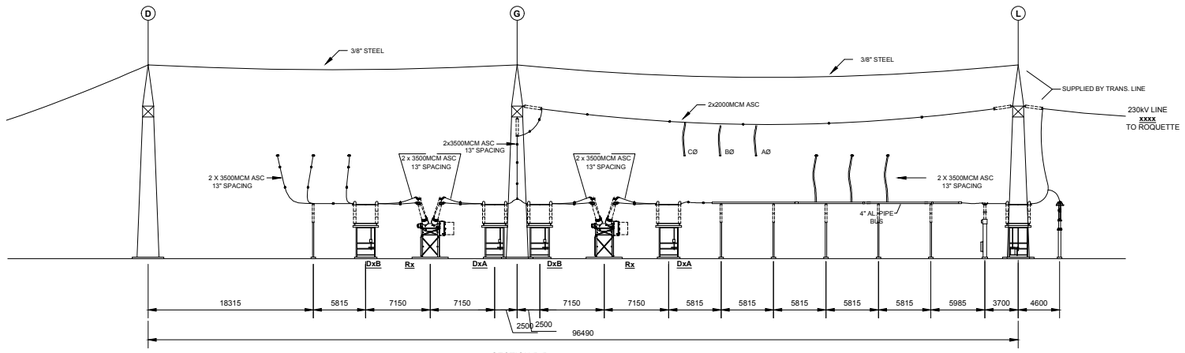
2.5 Station layout and profile

The footprint of the station will measure approximately 172 m x 171.6 m. The perimeter of the station will be surrounded with approximately 600 linear meters of fencing, with a 6 m vehicle gate and a control building (18.3 m x 17.3 m).

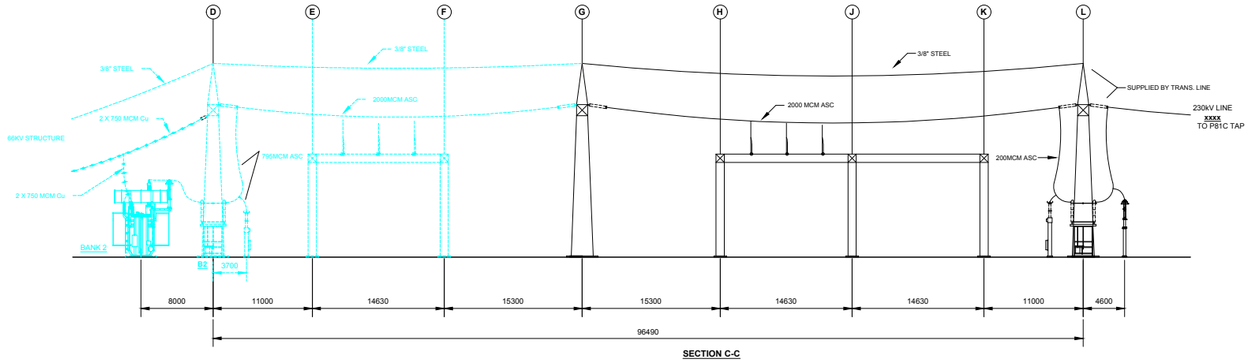
The conceptual site layout for the station, the 230 kV transmission lines into the station and 66 kV line out of the station and access road are shown in Figure 2-1. Section profiles for the proposed station are illustrated in Figure 2-4.



SECTION A-A



SECTION B-B



SECTION C-C

Disclaimer:

This drawing shows the latest equipment arrangement of a 230 - 66kV Station designed by Manitoba Hydro. For the land requirements the station dimensions shown are adequate. An additional 40m is also required for any road setback. Transmission line access may need to be added.

This layout does not reflect the orientation of the Single Line Diagram but shows the current ultimate station requirements. After the final property is selected the drawings will be revised to show the proper orientations and line terminations.

Conceptual, not for construction.

REV.	DATE	DESCRIPTION	BY	CKD.	APP.

Manitoba Hydro

AUTHENTICATION FOR CURRENT REVISION

DRAWN:	CHECKED:	SCALE:
SM		1:200
DESIGNED:	DATE:	
SM	2020 12 23	

TEMP - PORTAGE WEST STATION

230-66kV STATION
230KV AC SWITCHYARD
STRUCTURE & EQUIPMENT
SECTIONS A-A, B-B & C-C

DRAWING NUMBER	SHEET	REVISION
1-0xxxx-DE-51400-0001	0003	00

ISO A1 (ANSI B) 22 x 34 (11 x 17)

C:\Users\smiddelton\Desktop\Portage West Conceptual 3\SITE B Concept Drawings\230kV Section Views A-A, B-B, 1-0xxxx-DE-51400-0001 0003 SM3.dwg 12/24/2020 9:29 AM

2.6 Ground grid

The primary purpose of station grounding is to provide personnel, public and equipment safety through a grounding grid. The Canadian Electrical Code requires that all metallic objects in an outdoor station be bonded to ground.

A grounding grid is made up of mesh copper conductors and ground rods buried in the station soil. The grounding grid system normally encompasses the entire station site and extends 1 m past the station fence and gate swings.

2.7 Fire prevention

The largest oil filled equipment considered in the design is the single 230-66 kV 3Φ power transformer. For the conceptual design, the transformer was estimated to contain approximately 47 100 L of mineral oil. As a result, the transformer requires 15.0 m of spatial separation to equipment, buildings, and the property line. The separation distance in the station exceeds the requirement for the single power transformer, the station service transformer, ground bank and the control building.

Included in the electrical circuit of the power transformer are a station service transformer and a ground bank. Estimated oil volumes of these transformers are 7220 L and 5390 L respectively. The separation distance for oil filled equipment, with such volume, is 7.5 m. The separation distance is also exceeded.

Other oil filled equipment, namely the station metering power transformers will require spatial separation evaluated during detailed design. It is assumed they will contain less than 1890 L of oil.

The Manitoba Hydro fire manual (Manitoba Hydro 2012) requires a 20 m fire separation from a building to vegetation outside the fence. This distance is met. In addition, the ground surface is covered with stone to create a buffer zone between the building and fence.

2.8 Construction considerations

The station is a new green field construction and there is a low risk of electrical contact to existing equipment, structures or underground cables or wires.

Temporary electrical supply service for construction activities will be supplied to the station site.

2.9 Station Access

A station access approach will be required off rural road 65 N with a future east access off Road 43 W.

2.10 Property acquisition

Land required for the station (approx. 3 hectares) will accommodate:

- the ultimate switchyard build-out footprint of 172m x 171.6m (fenced area)
- a 40 m set back between the north fence and the government road allowance for Road 65N
- a set back greater than 40 m between the east fence and the government road allowance for Road 43W to allow for enough room for transmission line egress structures
- the required area for required and future 230 kV transmission and 66 kV sub-transmission egress structures
- proposed station approach access will be at the north side of the switchyard off Road 65N with a future east access off Road 43W.

Manitoba Hydro will purchase and take ownership of the property required for the station.

2.11 Project activities

The Project activities are described below and will be carried out in the following stages.

- Pre-construction
  - Surveying
  - Geotechnical investigations (design)
- Construction
  - Workforce presence
  - Station access
  - Material hauling
  - Site preparation
  - Machinery operation
  - Foundation installation
  - Equipment installation
  - Tower construction
  - Conductor stringing

    - Oil filling
    - Oil containment
    - Backfill, clean-up, final restoration
    - Hazardous material transportation and handling
    - Waste disposal
    - Manufacture and transport of components
- Operation and maintenance
    - Station operation and presence
    - Station maintenance (equipment repairs and equipment installation)
- Decommissioning and restoration

2.11.1 Pre-construction

2.11.1.1 Surveying

Prior to construction, the station site and required easements will be surveyed and flagged to establish alignments. The survey will also establish the specific locations of the various structures and grades.

2.11.1.2 Geotechnical Investigations

Geotechnical investigations involve the excavation of test pits and in some instances such as angle towers, soil drilling to create a soil profile that is used by civil designers in the development of specialty foundations. Test pits located at tower foundation sites are excavated by a tracked excavator. They are backfilled once tests are complete.

2.11.1.3 Oil containment

Manitoba Hydro will conduct an oil containment assessment for the station to determine the level of containment required. Oil containment will meet the requirements of the following guidelines.

- IEEE Standard 980-1994 (R2001) *"IEEE Guide for Containment and Control of Oil Spills in Substations"*
- USDA Bulletin 1724E-302 *"Design Guide for Oil Spill Prevention and Control at Substations"*
- CCME code of practice (CCME 2003)

2.11.2 Construction

2.11.2.1 Workforce / schedule

Subject to receipt of a licence, work at the station is scheduled to commence in spring 2023 and will be completed by spring 2025. Table 2-2 outlines the estimated timeline and workforce for each stage of construction.

Table 2-2: Workforce and schedule

Project activity	Start	End	Workforce
Civil construction site improvements	May 2023	July 2023	25
Civil construction, install foundations, ground grid, fence, trench, oil containment, control building	August 2023	January 2024	45
Electrical construction structures	January 2024	June 2024	12
Electrical construction equipment assembly, test and install	June 2024	December 2024	12
Telecommunications install and commissioning	January 2024	September 2024	3
Commissioning	January 2025	March 2025	1

2.11.2.2 Station access

Primary access to the station will be via rural road 65 N. Rural road 65 N is a rural gravel road, which will be assessed for continuous use during construction activities including hauling heavy loads (transformers and other heavy equipment).

Manitoba Hydro will construct a new access point from rural road 65 N to the station site with a culvert along the ditch. The access road is currently under design. It will meet the requirements for the weight of equipment required to access the site.

2.11.2.3 Material hauling

Material hauling is ongoing throughout the construction phase as different types of materials are required for specific activities such as foundation or steel support structure construction. Materials will generally be hauled from Winnipeg likely via TransCanada Hwy #1 and rural Roads 43 W and 65 N.

2.11.2.4 Site preparation

Initial site preparation will generally consist of clearing, grubbing and disposal of vegetation; stripping and removal of organic soils; and, grading and drainage for control of surface water.

Sub-grade preparation at the construction site will remove unsuitable material prior to fill placement. Soft areas of the sub-grade surface will be broken up and then compacted to acceptable density.

Suitable fill will be placed and compacted in accordance with site grading plans.

The installation of over 600 linear meters of fence will occur at the site.

Site development will consider existing drainage patterns surrounding the site. Additional localized drainage may be required. A newly developed drainage system for the site will integrate the existing site grading and drainage design. Site drainage will be achieved by use of swales, culverts and ditches within and around the roadway and structures.

All developed areas will be covered with a layer of coarse rock.

2.11.2.5 Machinery operation

Machinery required for construction may include excavators, loaders, dozers, graders, backhoes, cranes, semi-trailers, dump trucks, tracked vehicles, pick-up trucks, drill rigs, bucket trucks, telehandlers, tensioners, pullers, person lifts, all-terrain and support vehicles as well as generators, compressors and other small construction equipment.

2.11.2.6 Foundation installation

Concrete piles and slab on grade foundations will be required to support installation of structures and equipment at the station. Foundations to attach steel lattice structures to support electrical components and bus work will largely consist of concrete caps on deep piles.

The piles will be cast in place, which involves drilling a shaft into the soil, placing a reinforcing cage and filling it with concrete.

Slab on grade foundations without piles will be used for low-seated equipment which can tolerate foundation movement.

2.11.2.7 Equipment installation

A variety of manufactured steel structures will be installed for new equipment. Standalone equipment required for the station will have steel supporting structures that are manufactured, supplied and then mounted on the foundations. Steel lattice structures are typically used for taller structures to accommodate clearances for required voltages on equipment such as bus conductors.

2.11.2.8 Tower construction

The construction of the towers may be at each tower site and then erected by crane or may be assembled at a central marshalling yard and then transported to the site and erected by crane.

2.11.2.9 Conductor stringing

Once the towers are erected and the structures in the station are erected, insulator strings will be attached to the structure cross-arms. The insulators will separate the conductors from the structures. Conductor will be transported to the site in reels, then suspended from the insulator strings and tensioned by machine to provide the ground to conductor design clearances specified at the mid-span points of maximum sag.

To create a continuous conductor, the ends of conductor reels are spliced together by use of implosive sleeves. The implodes create a flash and a loud boom like the sound of a 12-guage shotgun blast (about 110 decibels; (CapX2020 2012)).

The installation of implosive sleeves in the province of Manitoba must be supervised by a certified blaster with a valid certified Manitoba Blaster's Certificate (High Energy Joining) and Transportation of Dangerous Goods certification.

The detonation of implosive sleeves is generally timed to occur on all the conductors that need splicing at splicing locations at the same time to minimize the frequency and amount of noise generated.

Before an implosive sleeve is detonated, the blaster will sound a warning signal. A compressed air horn is a common device used for this purpose.

The blaster will establish the blast warning signal and the all clear signal that will be used. A common signaling pattern is 3 short warning blasts, a 10 second countdown, followed by yelling "fire". Then the implosion. Then a single long air horn blast is done to give the all clear signal.

2.11.2.10 Vacuum oil filling

The three-phase 230 kV/66 kV power transformer will be transported to site empty. It requires over 47,000 liters of insulating oil. It is filled on site by vacuum filling.

The process of vacuum filling a transformer employs the force of atmospheric pressure to move insulating oil. The process works when a low-pressure area created inside a transformer tank is connected to an oil filled storage container vented to normal atmospheric pressure. Due to the pressure differential, the oil flows into the transformer tank to equalize and fill the low-pressure area.

The oil filling procedure also involves circulating the oil through a processing unit where the oil is heated, dehydrated and degassed before entering the transformer.

2.11.2.11 Clean-up and final restoration

The final step in construction is clean-up (and if required, rehabilitation) at the station site as well as landscaping activities. Construction clean-up will occur throughout construction. As soon as possible after completion of construction, the sites will be cleaned up and left in standard operating condition. All non-toxic materials will be disposed of using existing, appropriately licensed local facilities. Material supply and waste handling will be subject to conventional Manitoba Hydro codes of practice and relevant provincial and federal legislation. All clean-up and rehabilitation activity will be subject to the requirements of the environmental protection program described in Chapter 1.0.

2.11.2.12 Hazardous material transportation and handling

Fuels and hazardous materials likely to be used during construction include:

- Diesel / gasoline (construction equipment / vehicle fuel)
- Propane (heating)

- Paints / epoxies / solvents (control building)
- Mineral oil (cooling insulating the transformer)
- Sulphur hexafluoride / carbon tetrafluoride (interrupting electrical faults)
- Chromated copper arsenate (wood preservative)

No fuels or other hazardous substances will be stored at the station after construction. Management procedures for specific hazardous materials will follow the Hazardous Material Management Handbook (Manitoba Hydro 2016).

2.11.2.13 Waste disposal

Wastes will be managed, collected and disposed of in accordance with current provincial and/or federal regulations. Protective measures will include general guidelines for non-hazardous waste management. Opportunities to reduce, reuse, and recycle the wastes will be taken whenever possible. Wastes will be stored in designated areas and disposed of regularly to reduce potential for unsafe conditions and adverse impacts. Typically, waste will be disposed of by haulage to an existing permitted waste disposal site.

2.11.2.14 Manufacture and transport of project components

The construction of the station will require ACSR (Aluminum Conductors, Steel Reinforced) conductor, galvanized steel stranded conductor for the ground wire, steel for the towers, concrete for the foundations as well as fill material for site preparation and stone for insulation and to reach final grade. In addition, there are material requirements for the fencing, the control building as well as all the other electrical components of the station. These materials need to be manufactured and transported to site, in some cases internationally.

2.11.3 Operation and maintenance

The station and transmission lines will be operated continuously throughout the year and will be maintained in accordance with Manitoba Hydro standards, guidelines and procedures. The sites will be visited as required by Manitoba Hydro personnel to perform inspections and undertake maintenance and repairs.

Maintenance will include scheduled servicing and replacement of structures, equipment and components, and periodic repair of equipment malfunctions and damaged structures.

2.11.4 Decommissioning and restoration

When the facility has reached end of life or is no longer required, it will be decommissioned. The following sections describe the decommissioning process.

2.11.4.1 Preparation activities

All incoming transmission lines and outgoing distribution lines will be disconnected from the station to allow for the safe dismantling of the project. To disconnect, Manitoba Hydro will:

- Trip the breaker(s) at the station
- Open the 230 and 66 kV disconnects
- Disconnect the conductors at the substation

2.11.4.2 Removal of facilities

Salvage will involve removing and salvaging conductors onto spools under tension to be removed from site.

Station apparatus, equipment, steel support and ground grid material will be disassembled and placed onto flat bed trucks for transport.

Soil will be excavated surrounding foundations allowing them to be cut off 1.5 meters below grade. Surrounding soil will be used to backfill the excavation and graded to allow for re-vegetation.

2.11.4.3 Salvage and disposal

After dismantling the project, high value components will be removed for re-use or recycling. The remaining materials will be reduced to transportable size and removed from the site for disposal. Waste handling and disposal will be subject to conventional Manitoba Hydro codes of practice and relevant provincial and federal legislation.

2.11.4.4 Restoration

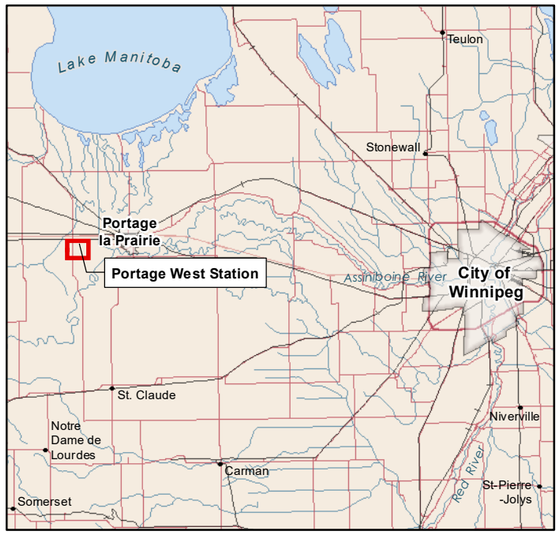
Following removal of all station components, foundations and station base materials, the station site will be restored to the surrounding land use. Disturbed areas will be graded to original contours and the soils will be restored to a condition consistent with intended land use.

Disturbed areas will be rehabilitated following a rehabilitation management plan developed for the project at time of decommissioning.

2.12 Funding

Manitoba Hydro is applying for federal funding under Infrastructure Canada's 'Investing in Canada Infrastructure Program'. Should funding not be received, Manitoba Hydro will be assuming full responsibility for funding the design, construction and commissioning of the project.

As part of the Infrastructure Canada funding application, three detailed reports were developed for PACE project components, including a Climate Resilience Assessment, a Greenhouse Gas Mitigation Assessment and a Gender Based Analysis. The draft Gender Based Analysis has been appended to this document as some mitigation measures included in this assessment were developed in response to disparities found in the way different identity groups may benefit from this project.



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Proposed 230kV Transmission Line
- Proposed 66kV Distribution Line
- Salvage of Existing Conductor
- Wash'ake Mayzoon Station
- Project Footprint

Future Infrastructure

- Future 230kV Transmission Line
- Future 66kV Distribution Line

Landbase

- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Rural Municipality

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

N

0 250 500 Meters
0 500 1,000 Feet

1:15,000

Wash'ake Mayzoon Station and P81C Tap Sectionalization

Map 2-1

3.0 Site selection

3.1 Introduction

This chapter outlines the site selection process used to determine the location of the proposed 230-66 kV station. The objectives of the site selection process were to:

- reduce potential effects to the biophysical environment
- reduce potential effects to the socioeconomic environment
- reduce potential effects on traditional use of the area
- consider transmission planning
  - minimize the length of the sectionalizing to the existing P81C Tap
  - consider the proposed PACE transmission line from Dorsey station that will terminate at this station
- consider distribution planning (proximity to the load centre; the need for up to six 66 kV lines leaving the station)
- consider station construction, operation and maintenance (ease of construction, access, and maintenance).

3.2 Site selection approach and summary

As discussed in Chapter 2.0, this station is part of a larger project called the Portage Area Capacity Enhancement project. Selection of a preferred station site is therefore directly linked to route selection for the proposed 230 kV line that will run from Dorsey Station to this station.

The site selection process was initiated by undertaking a desktop analysis of available information and the identification of proposed sites and potential transmission line routes, based on the above considerations.

The process started with a review of potential station sites to understand the general area in which a station would be best located. The review considered:

- Crown Land and First Nation Lands
- Assiniboine River and past flood data
- Portage la Prairie airport (6km aerodrome buffer)
- Southport Aerospace Centre (6km aerodrome buffer)
- Proximity to P81C Tap (shorter tap distance preferred)
- Potential transmission line crossings
- Population density

- Proximity to rail and pipelines
- Future transmission routing to Brandon

Based on this review it was determined that a station west of Portage la Prairie near the existing P81C Tap would be preferred.

3.3 Site selection workshop

Five station locations were developed west of Portage la Prairie near the existing P81C Tap (Map 3-1).

A site selection workshop was held to select the preferred station site. Representatives from Manitoba Hydro's transmission line design, distribution planning, station design, property, public engagement, Indigenous engagement, biophysical and socioeconomic specialists, and project management were present.

Each of the five sites were reviewed and characteristics of each were discussed. Three additional sites were proposed during the workshop. These were east of P81C Tap, on the same side of the road, however, they did not have any additional benefits and would require crossing P81C Tap for all the future transmission and distribution lines egressing the station.

Based on the results of the workshop, site 3 was preferred as it:

- does not require crossing BP6/BP7 and P81C Tap, which improves reliability and decreases cost
- would require fewer line crossings for future lines (66 kV and 230 kV)
- would have better soil conditions as soil conditions decrease as you move south (sites 4 and 5)
- decreases the length of the line from Dorsey, relative to sites 4 and 5, as that line will approach from the north (increased cost and decreased reliability for sites 4 and 5)
- is in the corner of the property, which is preferred for property / agricultural reasons (reduced nuisance effects)
- is at a crossroads of two municipal roads and in sight of several properties, which improves security

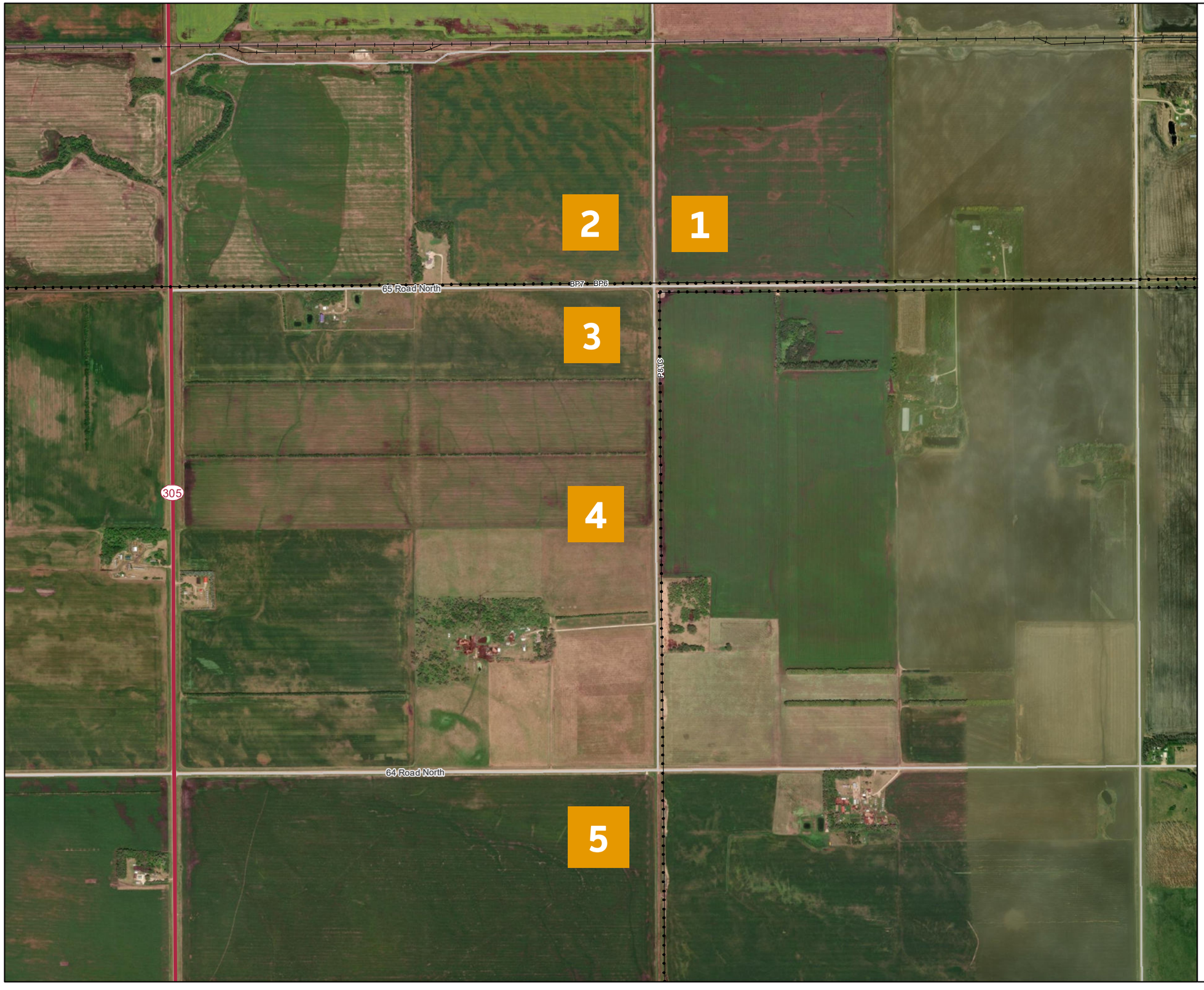
Sites 1 and 2 are not preferred as they would:

- have additional costs as higher towers would be required to clear BP6/BP7 to sectionalize P81C Tap
- require additional crossings as the 66kV expansion is also more likely to the south

Sites 4 and 5 have some similar benefits to site 3 (less crossings), but there are no benefits that outweigh the additional costs of moving further south, increasing the length of the Dorsey line.

Sites 6, 7 and 8, added at the meeting, did not have any additional benefits over site 3 and were therefore not preferred.

It was therefore determined that site 3 was the preferred station site to be moved forward for public engagement, Indigenous engagement and property acquisition.



Manitoba Hydro

Wash'ake Mayzoon Station

Station Site Alternative

1 Station Site Alternative

Landbase

- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Rural Municipality

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

N

0 250 500 Meters
0 500 1,000 Feet

1:12,500

Station Site Alternatives

Map 3-1

4.0 Public engagement process

4.1 Goal and objectives

The goal of the public engagement process (PEP) was to share balanced and objective information about the Project.

The engagement objectives for this project included:

- developing a comprehensive list of participants and planning the engagement process;
- communicating the need for the project;
- sharing information with communities, individuals, and groups about the decision-making criteria used to determine the station location;
- working to resolve any concerns about the project;
- sharing information about the environmental assessment process for the project including the station site and how it meets the decision-making criteria.

The communication objectives for this Project were to:

- share timely information that is easy to understand
- share how the work on this Project fits into the plan for system enhancements in the Portage Area
- provide opportunities for communities, individuals, and groups to share information with us, and communicate in the way they prefer and
- be open to listening and discussing concerns about the project, and to work together to find solutions.

4.2 Communication methods

Communication methods included:

- Project webpage
- Postcards
- Printed materials
- eCampaign
- Emails
- Phone calls
- Landowner letters
- Social media

4.2.1 Project webpage

A webpage was created to house information for this project and the broader Portage Area Capacity Enhancement project. This page will continue to share project information and act as a document library. Manitoba Hydro will continue to update the project webpage with key milestones and at key stages in the Project, such as key regulatory milestones and construction progress updates.

4.2.2 Postcards

Manitoba Hydro sent postcards informing 401 nearby residents about the upcoming virtual information session and opportunities to participate in the survey. Postcards were mailed on June 28, 2021.

4.2.3 Printed materials

Manitoba Hydro routinely creates printed materials containing project related updates including info sheets and maps.

4.2.4 Phone calls

Manitoba Hydro maintains a toll-free number for project related questions and concerns.

4.2.5 eCampaign

This is a notification mechanism targeted to self-identified interested parties. Email campaign recipients can unsubscribe from the email campaign service at any time, forward to other individuals, post on Twitter or share on Facebook. A Portage Area Capacity Enhancement eCampaign list was created for this project and the upcoming transmission line project.

4.2.6 Emails

Manitoba Hydro staff regularly sends and receives emails regarding project updates and maintains an email address for project related emails.

4.2.7 Letters

Manitoba Hydro sent nearby customers a letter, info sheet and map by direct mail on June 24, 2021.

4.2.8 Social media

Manitoba Hydro uses social media platforms to communicate information to its customers. Manitoba Hydro ran a Facebook ad from July 26 – August 5, 2021 targeting a 5-mile radius around the station. The Facebook ad had a map, link to the webpage and briefly introduced the project including the virtual information session (Figure 4-1).

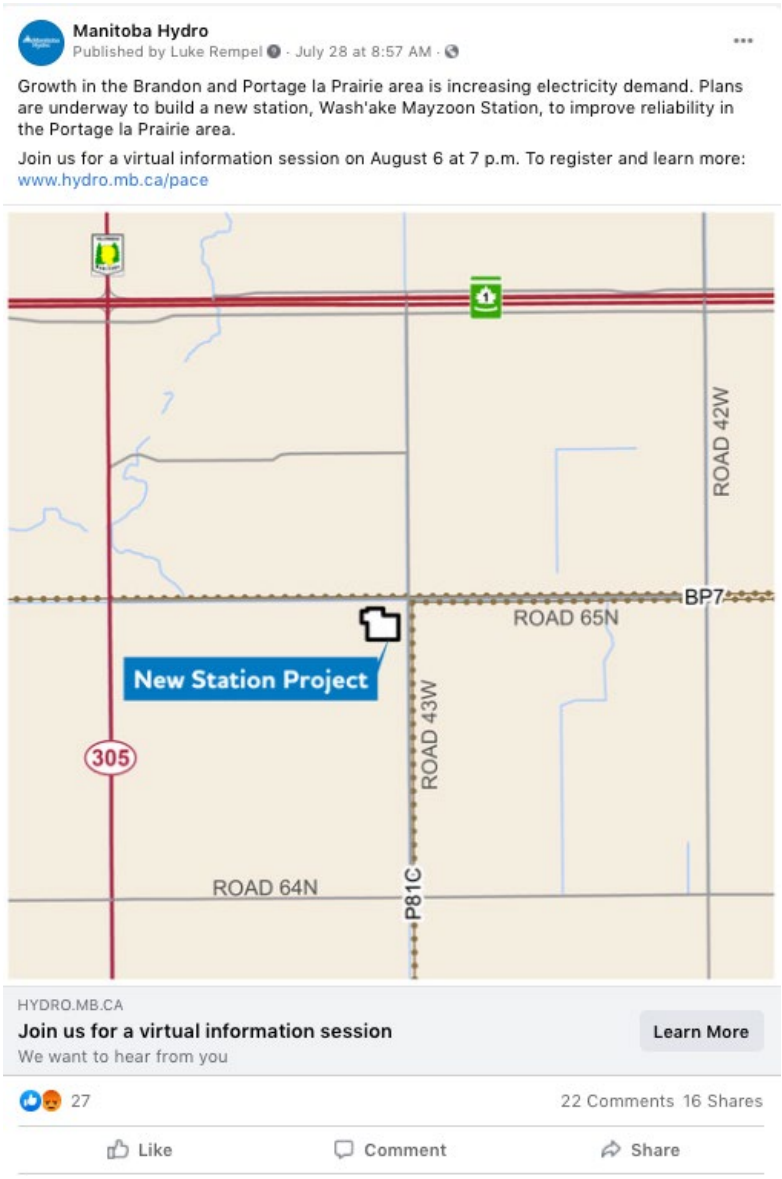


Figure 4-1: Facebook ad for the Project

Over 7,800 unique people viewed the targeted Facebook ad and over 490 people clicked on the link for more information. The ad was viewed more than 33,000 times.

4.3 Engagement methods

Engagement methods for the Project included:

- Virtual information session
- Interested parties meeting
- Online survey
- Email and telephone communications with landowners and other interested parties

The techniques chosen for the public engagement process were guided by the International Association of Public Participation (IAP2). IAP2 defines public participation as a "means to involve those who are affected by a decision in the decision-making process. It promotes sustainable decisions by providing participants with the information they need to be involved in a meaningful way, and it communicates to participants how their input affects the decision."

IAP2's public participation spectrum (Figure 4-1) was also used to guide the project's public engagement techniques. The public engagement process strategically used techniques that follow the inform level identified on the public participation spectrum. According to IAP2, the inform level is *"to provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions."* (International association for public participation 2018). For this Project, Manitoba Hydro also used techniques in the consult level including comment sheets and social media to provide opportunities for participants to share their views.

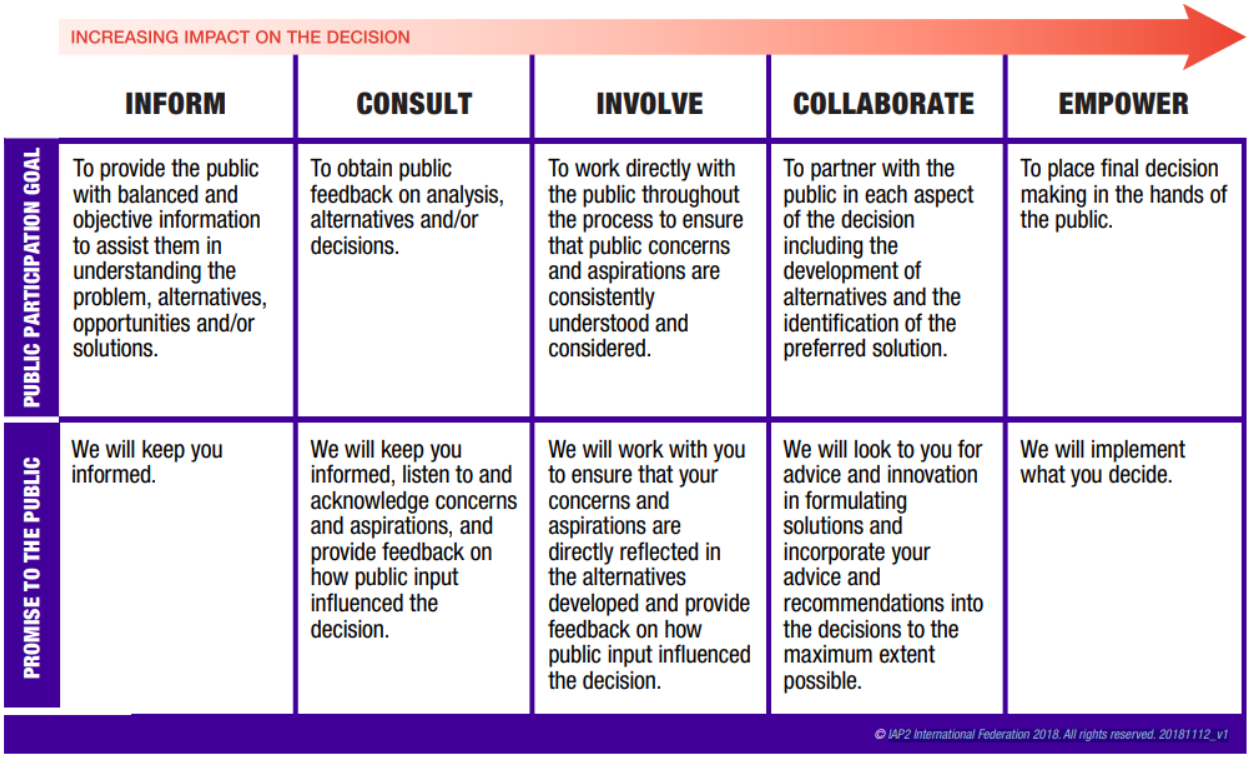


Figure 4-1: IAP2's public participation spectrum (International association for public participation 2018).

4.3.1 Virtual information session

The purpose of the virtual information session was to share information about the project, answer questions and hear feedback from interested parties, landowners and members of the public regarding the project.

Manitoba Hydro held a virtual information session using Microsoft Teams on August 9 at 7:00 pm.

The session started out with introductions, a brief presentation from Manitoba Hydro and discussion with the participants. Concerns shared by the nine participants are described more fully in Section 4.4.

4.3.2 Interested party meeting

The purpose of the interested party meeting was to engage representatives of organizations with an interest in the Project to share information, answer questions and hear feedback from interested parties regarding the project.

Table 4-1: Interested parties meeting

Date of Meeting	Interested parties
August 3, 2021	Environmental approvals branch

4.3.3 Online survey

Manitoba Hydro hosted an online survey using Simple Survey on the PACE webpage from June 24 – August 15, 2021. There were 17 respondents to the survey.

4.3.4 Email and telephone communications

Both the Project Information Line (1-877-343-1631) and email address (leaprojects@hydro.mb.ca) were available for external audiences and the public to share concerns and pose questions.

4.4 Public engagement feedback

4.4.1 Overview

Engagement feedback typically focused around one or more of the following topics:

- Proximity to homes and property values
- Health, safety, noise and aesthetics
- Concerns about the location including drainage and impacts to adjacent roads
- Concerns about impacts to trees
- Concerns about the project name
- Concerns about engagement

4.4.2 Proximity to homes and property values

A nearby landowner shared concerns about the proximity of the station to their home. They shared concerns about the project potentially affecting their property values and asked if Manitoba Hydro can share more information about potential impacts to their property values. A Manitoba Hydro employee shared that the literature is inconclusive on whether stations affect property values. Factors that can influence property values include change in aesthetics; real or perceived nuisances and health risks; real or perceived change in the use and enjoyment of the property; and distance from the property to the station. For transmission lines, some studies show a small, negative effect on property values immediately after construction that diminish over time and distance.

4.4.3 Health, safety, aesthetics and noise

Nearby landowners shared concerns about potential health, safety, noise and aesthetic concerns. In response, a Manitoba Hydro employee emailed links to a Health Canada brochure regarding Electric and Magnetic Fields and a Manitoba Hydro brochure on Electric Magnetic Fields. In response to the concerns about aesthetics, the Manitoba Hydro employee attached a copy of the preliminary site plan and a photo of a similar station to share more information about the potential dimensions and appearance of the station.

For concerns about noise, Manitoba Hydro shared that the work at the station site would conform to the hours set out in the noise by-law for nuisance-based activities and would meet CSA standards related to noise associated with station equipment. Manitoba Hydro takes care to ensure our employees and contractors follow the noise requirements of the rural municipality that we are working within. A temporary increase in noise during construction and a small increase in noise during the operations at the station site is anticipated.

In response to concerns about noise during operations, a Senior Electrical Technician went to the De Salaberry East station on August 20, 2021 and took noise readings at two locations. The photo below is of the De Salaberry East station. There's a blue circle between the two 230/66kV, 140 mva transformers and a green circle at the main gate. The noise reading at the blue circle, between the two 230/66kV, 140 mva transformers, read 54db and the reading at the main gate, the green circle, was below the scale <50db. Manitoba Hydro is anticipating the noise would likely be similar to the noise anticipated at Wash'ake Mayzoon station.

Health Canada (Health Canada 2017) suggests a conservative approach to estimate a reasonable worst-case scenario and assume baselines of 35 dBA for rural areas and 45 dBA for urban/suburban areas. As the proposed project is in a rural area, an estimated baseline noise level of 35 dba was used for the environmental assessment. During operations, Manitoba Hydro is anticipating that noise levels will be minimal similar to the De Salaberry East station. During inclement weather, there may be some audible noise, but it is below levels that would be considered a nuisance.



Figure 4-2 De Salaberry East Station. Blue circle between the two 230/66kV, 140 mva transformers and green circle at the main gate

A landowner shared further concerns about noise from the station and the proximity to their home. A Manitoba Hydro employee indicated that they could have further conversations about potentially planting more coniferous trees on the landowner's property to help reduce noise and address concerns. Manitoba Hydro also suggested a tour of an existing station currently in operation (the De Salaberry East Station). This station will look and operate similarly to this recently constructed station and provide a good example of how an existing station will look and sound.

A landowner shared concerns about the level of activity at the site during operations. After construction, the station and transmission lines will be operated continuously throughout the year and will be maintained in accordance with Manitoba Hydro standards, guidelines and procedures. The sites will be visited as required by Manitoba Hydro personnel to perform inspections and undertake maintenance and repairs. Once the station is in operation, there will be approximately 1-2 Manitoba

Hydro employees at site about twice a month for maintenance. Maintenance will include scheduled servicing and replacement of structures, equipment and components, and periodic repair of equipment malfunctions and damaged structures.

A landowner shared concerns about lighting at the station. For lighting, the station will have security lighting that stays on all night to reduce risks to the station. Manitoba Hydro is planning to install downcast lighting. This type of lighting is intended to reduce glare to neighbouring properties.

4.4.4 Concerns about the location including drainage and impacts to adjacent roads

A participant asked why the station is not located on Crown Land further down this line at the diversion site. The participant indicated that there would be no residential area around and it is a large area beside an industrial park.

Manitoba Hydro answered that this is where we are building the BP6/BP7 transmission line. When we select a site for a station, we contemplate many different things including socio-economic impacts, use of the land, future development, and others. The chosen site is close to other lines, which helps to keep the cost down and reduces both socio-economic and biophysical impacts.

A participant shared concerns about the Project affecting an adjacent property's drainage. Manitoba Hydro responded that when designing the site, potential effects on adjacent landowners is considered. For drainage at the station, Manitoba Hydro will consider existing drainage patterns surrounding the site and additional localized drainage that may be required. A newly developed drainage system for the site will integrate the existing site grading and drainage design. The drainage concerns were shared with the station design engineers for their consideration in planning the station site.

A participant shared concerns about potential impacts to adjacent roads and asked if roads would need to be built up. Manitoba Hydro indicated that existing roads should not need to be built up. If the roads are damaged during construction, Manitoba Hydro will return the roads to their original state.

A participant asked if the road east of the station will still be usable. There will be periods of time where there will be construction activities where it might be temporarily blocked off for safety reasons but otherwise, it will remain open.

4.4.5 Concerns about impacts to trees on adjacent properties

A participant shared concerns about future development of the Project affecting their trees as their property is located west of the station site. Manitoba Hydro responded that they have no immediate plans for distribution or transmission lines west of the station at this time; however, if they do move forward with plans, they will have further conversations with affected landowners.

4.4.6 Concerns about the Project name

Participants questioned why Manitoba Hydro did not name the station after the area. Participants recommended Manitoba Hydro consider naming the station Poplar Bluff or Burnside station to recognize the rich history of the area. Manitoba Hydro responded that many stations built across southern Manitoba were named after towns or municipalities near the station (i.e., Letellier Station, La Verendrye Station, De Salaberry Station). Many of these towns were named after military leaders and European explorers, or English words for natural features. Poplar Bluff transmission project, which was recently built nearby is named after the local village, which was named after the English word for a natural feature. Working in an area with such a rich history of different Indigenous cultural groups, such as Ojibway, Dakota and Métis, and the close involvement of Indigenous Coordinators on transmission projects in this area, we thought it was appropriate to update our naming process for this station.

4.4.7 Concerns about engagement

Participants shared concerns about future development at the site including the location of the future transmission line.

A participant shared concerns that they did not receive a letter regarding the project. Manitoba Hydro tried to reach out broadly and used different methods to try to reach nearby landowners. Manitoba Hydro sent landowner letters based on electrical meter locations as one way to notify nearby landowners. Manitoba Hydro also sent over 400 postcards, had an article in Portage Online, and had a targeted Facebook ad that was viewed by over 7,800 people in the area west of Portage la Prairie.

4.4.8 Concerns about future transmission line and development

Participants shared concerns about Manitoba Hydro selecting the station site before routing the transmission line. A participant indicated that this is like putting the horse before the cart by building the station before having a plan for transmission lines coming into it. Manitoba Hydro responded that they have more flexibility with moving a transmission line, so it makes sense to build the station first in this case.

A participant shared that they feel that Manitoba Hydro is keeping them in the dark about future development. Manitoba Hydro shared that they would continue to have ongoing dialogue about upcoming projects in the area.

4.4.9 Ongoing engagement

Manitoba Hydro will continue to notify landowners, interested parties and the public within the area regarding the regulatory review and construction processes. The project webpage will continue to be updated as the project progresses, and the information line and email address will remain active.

5.0 Indigenous engagement process

5.1 Purpose, goals and objectives

This section provides an overview of the Indigenous engagement process (IEP), including principles and goals of the process, the scope and adaptable nature of the process, key concerns, and outcomes resulting from engagement. Follow-up and ongoing engagement is also planned throughout the regulatory and construction phases of the project.

The following principles guided Manitoba Hydro's approach to Indigenous engagement for this project:

- Traditional territories and activities important to Indigenous peoples' way of life and culture should be acknowledged, valued and protected.
- The diversity of Indigenous cultures and worldviews should be understood and appreciated.
- Manitoba Hydro should work with Indigenous communities to better understand perspectives and determine mutual approaches to address concerns and build relationships.
- Indigenous communities should be provided opportunities to communicate early in the process and on an ongoing basis.
- Indigenous communities should be involved in the decision-making process and should understand how their input influenced decision-making.

In addition to the shared engagement process goals provided in the PEP section, the IEP had the following specific goals:

- Continue to build and strengthen working relationships with Indigenous communities in Manitoba
- Provide opportunities for Indigenous communities to have meaningful input and contributions to the project
- Provide opportunities for Indigenous communities to participate in an on-going engagement process through Indigenous Community and Assessment Coordinator (ICAC) positions for multiple projects in the Portage la Prairie area.
- Provide opportunities for Indigenous communities potentially impacted by projects to benefit economically from that project through employment opportunities and use of local businesses.

5.2 Process methods

5.2.1 Overview

Manitoba Hydro designed the IEP for the Project to engage Indigenous communities early in the process and at every stage. The IEP was adaptive and flexible, with opportunities for input provided to meet the specific context and needs of each group. This engagement process is separate from any Crown–Indigenous consultation process that could be initiated by the government. Engagement with Métis people for this Project was facilitated primarily through the Manitoba Métis Federation (MMF).

5.2.2 Identification of Indigenous communities

Manitoba Hydro has multiple planned projects in the area including BP6/BP7, the Wash'ake Mayzoon Station and the PACE transmission line project, and therefore chose to engage with the same Indigenous communities on all projects. Manitoba Hydro identified Indigenous communities who have historical or contemporary connection to the area, who have a strong potential for adverse impacts related to the Project and who have indicated an interest in the projects. During engagement for BP6/BP7, Manitoba Hydro also reached out to a representative from the Consultation and Reconciliation Branch of the Provincial Indigenous and Northern Relations Department who indicated they would consider other communities. Manitoba Hydro included those communities in engagement for BP6/BP7 and the Wash'ake Mayzoon Station. The Project is in Treaty 1 territory, the ancestral and traditional territories of the Anishinaabe, Cree, and Dakota peoples and the homeland of the Métis Nation. The project is in an area of the province that is of historical and contemporary interest to the MMF and its Citizens.

Manitoba Hydro considered several factors in determining whom to contact regarding participation in the IEP and the level of involvement. The IEP was designed to tailor engagement for individual Indigenous communities by considering three key criteria then assessing the level of potential adverse effect from the project. The approach to the IEP was meant to be adaptive and responsive to feedback from communities as the IEP progressed. The three criteria used were:

1) Historical and contemporary connection to the study area
2) Potential for adverse impacts related to the Project
3) Interest in the Project

Based on our understanding of potential effects related to the project, Manitoba Hydro worked closely with three Indigenous communities to develop and support ICAC positions. The three communities that had ICAC positions were: Dakota Tipi First Nation, Long Plain First Nation and the MMF. It is our understanding that these three communities met the three criteria. Other Indigenous communities engaged on the project included Brokenhead Ojibway Nation, Dakota Plains Wahpeton First Nation, Peguis First Nation, Roseau River Anishinabe First Nation, Sandy Bay First Nation and Swan Lake First Nation. Manitoba Hydro also engaged with the Portage Urban Indigenous Peoples Coalition (PUIPC).

Table 5-1 describes the rationale for engaging with each community in the project.

Table 5-1: Rationale for engaging with each community in the project	
Indigenous Community	Rationale for engaging in the project
Brokenhead Ojibway Nation	1) Historical and contemporary connection to the study area
Dakota Tipi First Nation	1) Historical and contemporary connection to the study area; 2) Strong potential for adverse impacts related to the Project; and 3) Interest in the Project
Long Plain First Nation	1) Historical and contemporary connection to the study area; 2) Strong potential for adverse impacts related to the Project; and 3) Interest in the Project
Dakota Plains Wahpeton First Nation	1) Historical and contemporary connection to the study area
Peguis First Nation	1) Historical and contemporary connection to the study area; and 2) Interest in the Project
Roseau River Anishinabe First Nation	1) Historical and contemporary connection to the study area;
Sandy Bay First Nation	1) Historical and contemporary connection to the study area
Swan Lake First Nation	1) Historical and contemporary connection to the study area
MMF	1) Historical and contemporary connection to the study area; 2) Strong potential for adverse impacts related to the Project; and 3) Interest in the Project
Portage Urban Indigenous Peoples' Coalition (PUIPC)	1) Potential for adverse impacts related to the Project; and 2) Interest in the Project

A community profile of the Indigenous communities included in engagement is provided below. Information describing each community was drawn from community websites or was drafted by the community themselves. Dakota Tipi First Nation and Long Plain First Nation drafted their own community profile for BP6/BP7

in April 2021, included below. The MMF also drafted their own community profile for this project in August 2021, included below.

5.2.2.1 Brokenhead Ojibway Nation

"The Brokenhead Ojibway Nation (BON) is a Treaty 1 Nation located northeast of the Winnipeg, Manitoba on Hwy. 59. The Brokenhead Ojibway Nation are a proud and thriving First Nation. We're focused on providing education and opportunities that can help assure a positive tomorrow for our youth, our families and our Elders.

Brokenhead Ojibway Nation #4 extends north to the shores of Lake Winnipeg and includes part of the Netley Creek Mars area. The Brokenhead River runs through the core area of the community. Both PTH #59 and the CN rail line cross through the northwest section of the Reserve. To the south is Winnipeg, 82 kilometres down highway #59 and to the north is Grand Beach, Patricia Beach and Victoria Beach to mane only three beaches in this area located along 59 north." (Brokenhead Ojibway Nation 2020).

Brokenhead Ojibway Nation has an on-reserve population of 801 and an off-reserve population of 1,311 for a total membership of 2,112 (Brokenhead Ojibway Nation 2020).

5.2.2.2 Dakota Plains Wahpeton First Nation

"Dakota Plains Wahpeton First Nation is in South Central Manitoba, 20 miles south west of Portage la Prairie. The Dakota of this community were relocated here due to a motion made by the City Council of Portage la Prairie on March 11, 1920."

As of 2013, the total registered population of Dakota Plains Wahpeton First Nation is 239 with 168 living on reserve (Dakota Plains Wahpeton Oyate 2021).

5.2.2.3 Dakota Tipi First Nation

<u>Introduction</u>

OVERVIEW OF THE DAKOTA TIPI OYATE BEING PART OF THE DAKOTA NATION and as it relates to the project

In the (TKS) study the DTFN intends to provide information about the cultural and historical context of the Dakota Tipi community and who we are as a part of the larger Dakota Nation.

While there are differing views on the extent of the Dakota Homeland or Traditional Territory, most sources agree that at the time of contact the Dakota People /Nation

(which the Dakota Tipi People are apart of) used and occupied areas within the current jurisdictions of Canada and the United States, the North West Territories, Alberta, Saskatchewan, Manitoba and portions of Ontario.

The DTFN and several other Dakota Nations within Manitoba are in a unique position, as they never adhered to a treaty and thus retain, hold and assert Aboriginal Rights and Title to areas within southern Manitoba, and areas the project traverses. Some of the Aboriginal Rights that DTFN exercise and assert include (but are not limited to) the right to hunt, fish, harvest land and water based resources, practice various forms of cultivation, build and occupy settlements, build and occupy camps and cabins, and the ability to travel to and access resource activity areas, etc.

The DTFN also asserts and maintain that it has never ceded its title or interests to its ancient homelands or traditional territory nor its inherent jurisdiction and decision-making authority in relation to the lands, waters, and resources.

Given this, at a minimum, Manitoba Hydro should begin its consideration of any potential known biophysical and socioeconomic effects against these noted broad rights categories through portions of southern Manitoba.

Community at a Glance

In 1959 the Old Sioux Village near Portage la Prairie relocated to the current location site of the Dakota Tipi First Nation. In 1972 the community divided and thereby creating two (2) First Nations presently known as Dakota Tipi First Nation (IR No.#56 or 295) and Dakota Plains Wahpeton Nation (which borders the Long Plain First Nation, south of Edwin Manitoba Canada).

The Dakota Tipi First Nation was granted “Indian Reserve” Status in 1972.

Dakota Tipi First Nation is situated approximately 2 kilometers southwest of the city of Portage la Prairie, Manitoba, and is roughly 80 kilometers west of Winnipeg, Manitoba, and located on the Yellowquill Trail highway, just off of the Trans-Canada No. 1 Highway, and can be reached by a paved class "C" highway.

The current Dakota Tipi First Nation consists of Parish lot 25 and Parish Lot 24 and in 1985 the First Nation also secured Parish Lot 16, 17 and 18 for a total of 371.8 acres or 150.48 hectares.

The current population of the Dakota Tipi First Nation is approximately 275 people “on reserve on” and has on “off reserve” population of approximately 300 people.

Current Vision of the Dakota Tipi First Nation

The Dakota Tipi First Nation currently works with several industries and industry partners, such as Manitoba Hydro, in consultation to ensure the concerns of the Dakota Tipi Nation are dealt with in an according, proper and traditional way.

The Dakota Tipi Nation continues to work towards the goals and vision of itself as a part of the larger Dakota Nation in creation of a strong and viable future for its membership and in honour of the history of the ancestral Dakota people that which we derive from." (Appendix A).

5.2.2.4 Long Plain First Nation

"A signatory to Treaty 1, 1871, Long Plain First Nation is a proud, prosperous community of both Ojibway and Dakota people situated in the central plains region of Manitoba.

Long Plain has a population of over 4,500 with approximately 2,475 of its registered members living on reserve, 1940 living in urban areas and the remining 60 living in other reserve communities.

Long Plain is Reserve No. 6 on a land base of 10,800 acres comprised of 3 reserves of which 2 are urban. Long Plain is situated in the south-central area of Manitoba, known as the "Central Plains Region". The reserve is located 14 km southwest of Portage La Prairie, and 98 kilometers west of Winnipeg and 10 kilometers south of the TransCanada Highway No. 1. The landscape of the reserve begins along the northwest and southeast banks of the Assiniboine River for approximately five miles and extending three miles west. A portion of the reserve also lies across Assiniboine River.

The urban reserves are situated along the city limits of Portage la Prairie (Keeshkeemaquah Reserve) and in the City of Winnipeg (Madison Indian Reserve No. 1). Long Plain has additional plans for Treaty Land/Reserve expansion in Manitoba. These plans are in various stages of the Addition to Reserve process.

The Portage and surrounding areas have been our people's traditional territory and homeland for thousands of years. The lands in the Portage area were historically considered Long Plain's traditional and tribal territory and are still currently used by Long Plain First Nation registered members for traditional hunting, harvesting and cultural practices.

Long Plain has a custom election system and a tribal government consisting of five; a Chief and four Councillors. Each of the five elected members are responsible for a

diverse portfolio of Long Plain's programs and services that includes Arrowhead Development Corp., Economic Development, Gaming, Employment / Training / Daycare, Security / Fire, Education, Social Services, Membership, Land Management, Public Works, Justice / Legal, Recreation / Culture, Child & Family Services, Housing, Residential School, Health and Veterans Affairs.

The community has a diverse economic development portfolio including one of the most successful Petro Canada stations in all of Canada at the Madison Indian Reserve No.1, a thriving Hotel and Gaming Centre on the Keeshkeemaquah Reserve as well as recent acquisitions and builds that will only continue to make Long Plain a fixture in both the Economic and Local Landscape for future generations to come." (Appendix A)

5.2.2.5 MMF

"The MMF is the democratically elected government of the Manitoba Métis. The MMF is duly authorized by the Citizens of the Manitoba Métis for the purposes of dealing with their collective Métis rights, claims, and interests, including conducting consultations and negotiating accommodations (as per MMF Resolution No. 8). While the MMF was initially formed in 1967, its origins lie in the 18th century with the birth of the Manitoba Métis and in the legal and political structures that developed with it. Since the birth of the Métis people in the Red River Valley, the Manitoba Métis—as a part of the larger Métis Nation— has asserted and exercised its inherent right of self-government. For the last 50 years, the MMF has represented the Manitoba Métis at the provincial and national levels.

During this same period, the MMF has built a sophisticated, democratic, and effective Métis governance structure that represents the Manitoba Métis at the local, regional, and provincial levels throughout Manitoba. The MMF was created to be the self-government representative of the Manitoba Métis—as reflected in the Preamble of the MMF's Constitution (also known as the MMF Bylaws):

> "WHEREAS, the Manitoba Métis Federation Inc. has been created to be the democratic and self-governing representative body of the Manitoba Métis."

In addition, the purpose "to provide responsible and accountable governance on behalf of the Manitoba Métis using the constitutional authorities delegated by its citizens" is embedded within the MMF's objectives, as set out in the MMF Constitution as follows:

> "To promote and instill pride in the history and culture of the Métis people.
>
> To educate members with respect to their legal, political, social and other rights.

To promote the participation and representation of the Métis people in key political and economic bodies and organizations.

To promote the political, legal, social and economic interests and rights of its citizens.

To provide responsible and accountable governance on behalf of the Manitoba Métis community using the constitutional authorities delegated by its members."

The MMF is organized and operated based on centralized democratic principles, some key aspects of which are described below.

President: The President is the leader and spokesperson of the MMF. The President is elected in a province-wide ballot-box election every four years and is responsible for overseeing the day-to-day operations of the MMF.

Cabinet: The MMF Cabinet leads, manages, and guides the policies, objectives, and strategic direction of the MMF and its subsidiaries. All 23 Cabinet members are democratically elected by Manitoba Métis Citizens.

Regions: The MMF is organized into seven regional associations or "Regions" throughout the province (Figure 3.): The Southeast Region, the Winnipeg Region, the Southwest Region, the Interlake Region, the Northwest Region, the Pas Region, and the Thompson Region. Each Region is administered by a Vice-President and two executive officers, all of whom sit on the MMF's Cabinet. Each Region has an office which delivers programs and services to their specific geographic area.

Locals: Within each Region are various area-specific "Locals" which are administered by a chairperson, a vice chairperson and a secretary-treasurer. Locals must have at least nine citizens and meet at least four times a year to remain active. There are approximately 140 MMF Locals across Manitoba.

While the MMF has created an effective governance structure to represent the Manitoba Métis at the local, regional, and provincial levels, it is important to bear in mind that there is only one large, geographically dispersed, Manitoba Métis Community. Manitoba Métis Citizens live, work and exercise their section 35 rights throughout and beyond the province of Manitoba." (Appendix A)

5.2.2.6 Peguis First Nation

"Peguis First Nation is a Treaty 1 First Nation, located in Manitoba, Canada. With a population of approximately 10,246 members of Ojibway and Cree descent, it is the largest First Nation community in Manitoba.

The main community of Peguis First Nation, Peguis 1B, is located approximately 196 kilometres north of Winnipeg, MB.

Peguis First Nation has a rich culture, strong traditions and a significant history within Canada. The community is named after Chief Peguis. Peguis led the band of Saultaux people from present day Sault Ste. Marie, Ontario to a settlement at Netley Creek, Manitoba, and later to St.Peter's (present day East Selkirk, Manitoba). After an illegal land transfer in 1907, Peguis First Nation was moved to its present location at Peguis 1B." (Peguis First Nation 2020)

5.2.2.7 PUIPC

"The Portage Urban Indigenous Peoples Coalition (PUIPC) was created to provide an environment for collaboration and increased dialogue for the Urban Indigenous people living in Portage la Prairie. This Coalition of community stakeholders have worked to create a Community Action Plan using feedback from the local Indigenous Community." (Portage La Prairie Revitalization Corporation 2021) "The 20-member Coalition works on several initiatives and commitments such as partnering with the Indigenous peoples in creating an inclusive community that values and respects the diversity that exists in the City of Portage la Prairie, to work with the Urban Indigenous peoples to identify and assist with the removal of barriers that hinder their full participation, recognize the resourcefulness of Indigenous Youth and assist with the creation of opportunities that will encourage them to participate in building the community" (Portage La Prairie Revitalization Corporation 2021). Members of the coalition include City Council, members of the community at large, the MMF, the Red River Community College, the RCMP, the Portage School Division, the Portage Friendship Centre, Health Santé Sud, the Dakota Ojibway Tribal Council, the Portage Community Revitalization Corporation, the City Manager of Portage la Prairie and the Indigenous Community Coordinator.

5.2.2.8 Roseau River Anishinabe First Nation

"Roseau River Anishinabe First Nation is a rural community located approximately one hour south of Winnipeg, Manitoba. Roseau River Anishinabe First Nation has three physical reserves.

The people of Roseau River Anishinabe First Nation have a rich history in the Red River and Pembina Valleys. Their main community is located about an hour south of Winnipeg, near Emerson, with a total membership of 2,000 people across their three reserve communities.

As part of the collective Ojibway of Manitoba, they were known as the "Strong Heart People" in recognition of their bravery. Roseau River signed Treaty 1 on August 3, 1871 and finally resolved their land claim in 2011 with a final settlement offer that is held in trust for future generations." (Roseau River Anishinaabe First Nation 2021)

5.2.2.9 Sandy Bay First Nation

"The Sandy Bay Ojibway First Nation is situated on Reserve No. 5, a 16,456 acre site on the western shore of Lake Manitoba. It is 165 kilometers northwest of Winnipeg and 90 kilometers from Portage la Prairie.

The reserve is accessible by all-weather roads via provincial highways #16 and #50 north from Portage la Prairie. Approximately three quarters of this land is committed to farming. Located in the lowlands with a gentle rise westward from Lake Manitoba, most of the shoreline along the lake consists of a fine sand beach bordered by Balsam Popular and Trembling Aspen.

A bog and marshland run alongside and into the lake. At the time of the signing of the treaty, Sandy Bay was called the White Mud Band, separate from the Portage Band of Chief Yellow Quill. It was a treaty after wards, the signing of treaty 1 of 1871 and in 1876 that settled the present location. The first chief after the treaty was Nawachegapow. Townships 17 & 18 were then granted to the band.

Sandy Bay does not have any more outstanding treaty land entitlements. Some of the economy for Sandy Bay Ojibway First Nation comes from and includes farming for livestock and various crops that are maintained by local Sandy Bay farmers. Our people of Sandy Bay have been a role model in keeping and speaking fluently in Ojibway. There is about an 80% average of Ojibway speaking community members, thus keeping our language alive.

POPULATION TO DATE: The total registered population of Sandy Bay First Nation as of July 2013 is 6174. With Sandy Bay's ever-growing population, the birth rate now stands at 8-12 births a month. Not included in the population figures, are the non-aboriginal members on reserve." (Sandy Bay Ojibway First Nation 2021)

5.2.2.10 Swan Lake First Nation

"Swan Lake First Nation (SLFN) is in southern Manitoba, along the junction of Hwy 23 and 34. Most reserve lands are strategically located close to major provincial transportation corridors.

In 1995 a Treaty Land Entitlement (TLE) was settled with the Federal Government that enabled SLFN to expand the land base for future developments with a minimum of

4484 acres outstanding through careful negotiations sound community consultation, we have doubled the size of our community.

Swan Lake First Nation is located on prime agricultural land and agriculture is an important part of its economy.

As of August 30, 2019, there are 359 on-reserve members and 1,094 off-reserve members for a total of 1,453 registered members." (Swan Lake First Nation 2021)

5.2.3 Notification methods

On June 24, 2021 Manitoba Hydro sent information packages to Brokenhead Ojibway First Nation, Dakota Plains Wahpeton First Nation, Dakota Tipi First Nation, Long Plain First Nation, the MMF, Peguis First Nation, Roseau River Anishinabe First Nation, Sandy Bay Ojibway First Nation, Swan Lake First Nation, and the PUIPC. Each package included:

- A letter and an email outlining the project, including upcoming engagement activities, and inviting the community/organization to contact Manitoba Hydro if there are any questions or concerns
- A Project info sheet outlining the Project, the regulatory process, the engagement process, the routing process, an anticipated timeline and a Project map with the location of the station. The info sheet included a link to the Project webpage (described in section 4.2.1)
- Manitoba Hydro contact information to share concerns or ask questions regarding the project

The Project info sheet and map can be found in Appendix A.

Follow up phone calls were made to ensure that the information packages were received and to determine interest in meeting virtually to discuss the project. A follow up email was sent to those communities that Manitoba Hydro was unable to reach by phone. The email was sent on July 29, 2021 and included the information package that was previously sent.

5.2.4 Engagement activities

It was Manitoba Hydro's understanding that some Indigenous communities had the potential to experience greater impacts to activities considered important to them as a result of the projects in the Portage la Prairie area, including constitutionally protected activities. Manitoba Hydro offered those communities an ICAC position, more targeted community engagement and support for the gathering and sharing of Indigenous Knowledge to inform the projects.

5.2.4.1 Indigenous Assessment and Community Coordinators (ICAC)

Manitoba Hydro worked to develop a regional approach to engagement that contemplated cumulative engagement needs across multiple projects. Learning from past project engagement, Manitoba Hydro representatives worked with Dakota Tipi First Nation, Long Plain First Nation and the MMF, to develop agreements that provided mutual support where ICAC positions would be embedded in the project team for BP6/BP7, this Project as well as upcoming future projects in the area. To facilitate this type of process, Manitoba Hydro developed a broader planning area that encompassed both ongoing and planned projects in the area over the 2020 to 2023 period, including:

- Brandon–Portage la Prairie (BP6/BP7)
- Stage 1 of PACE - Wash'ake Mayzoon station
- Stage 2 of Portage Area Capacity Enhancement (PACE) – new transmission line

The ICACs were provided with the opportunity to undertake their own interviews with knowledge holders, engage with their own community and provide their understanding of effects as a result of the project. The intent of the ICACs is to provide continuity of knowledge across multiple projects, represent their community at key routing and assessment meetings, and undertake meaningful Indigenous community involvement in the Portage la Prairie area environmental assessments including collaborating on heritage work, routing feedback and assessment.

The anticipated benefits of the ICACs to their respective communities and to Manitoba Hydro for this Project were to:

- Facilitate sharing and review of Project information within the community
- Allow for a dedicated community representative to help move forward the engagement needs of their community
- Provide an opportunity to understand the Manitoba Hydro assessment process by participating on the team
- Help Manitoba Hydro understand and address concerns relevant to their community earlier in the engagement process
- Help Manitoba Hydro develop a less impactful project with relevant mitigation developed collaboratively
- Facilitate input in the assessment processes to understand mitigation that works to resolve issues
- Provide a useful bridge into each of the communities to help facilitate communication between Manitoba Hydro and the community

- Facilitate a process that builds knowledge over time for all involved where learnings from this project may be applied to upcoming projects in the Portage la Prairie Area and providing the opportunity to have consistency across these upcoming projects over time

ICACs were hired by each of the three communities with financial support from Manitoba Hydro for part time positions for a duration of up to three years. Each of the three communities developed the position at their own pace, with different levels of participation. The positions provided the opportunity to support community leadership, community members and Manitoba Hydro through the Indigenous engagement process for projects in the Portage la Prairie area by providing information on the projects and developing and implementing community input into the routing and environmental assessment processes, including assisting in the completion of various initiatives/projects to gather and share Indigenous Knowledge as it relates to the Project and the area.

Key deliverables for the Wash'ake Mayzoon station project included:

1) Attendance at a 'is this working?/lessons learned' meeting, a background meeting on the station project, and an environmental assessment meeting. The positions were revised based on this lessons learnt during BP6/BP7 and were tailored to meet each community's needs to proceed with engagement for the Wash'ake Mayzoon station.
2) Preparation of a section of this environmental assessment report to inform Chapter 12 on Traditional Practices, Culture and Heritage
3) Review of the environmental assessment report IEP Chapter and the environmental assessment report Chapter 12 on Traditional Practices, Culture and Heritage

The budget also included funding for external training to support the ICAC and/or for consultant support to help the ICAC meet deliverables for the PACE station and transmission line. The flexible nature of the training budget meant that communities could also choose to hire a consultant to assist with preparing deliverables or to fulfill the role of the ICAC.

There were several challenges in establishing the ICAC positions. Preparing and finalizing contribution agreements that were appropriate for each community took several months and rounds of revisions. This resulted in the deliverable due dates for BP6/BP7 and Wash'ake Mayzoon Station to be delayed on multiple occasions;

however, clarifying roles and the process resulted in a stronger working relationship. Filling the positions also posed some challenges.

For the Wash'ake Mayzoon Station engagement process, the ICACs were involved in sharing information about the project with their community, providing feedback to Manitoba Hydro regarding community preferences or concerns, providing feedback on sections of the environmental assessment and how effects to traditional practices are characterized. The Dakota and Métis Coordinators also worked together to name the station. 'Wash'ake' means 'power' in Dakota and 'Mayzoon' means 'house' in Michif. Long Plain First Nation chose to collaborate with Asinii Consulting Inc. to meet engagement needs and fulfil the role of the ICAC.

5.2.4.2 Virtual meetings

The purpose of meeting with Indigenous communities and the ICACs was to share information about the project, discuss any project-related concerns, determine "is this working?" (with respect to the arrangement with ICACs) and to discuss any revisions necessary for the ICAC position, answer questions and hear feedback from communities and to review the environmental assessment process. Due to COVID-19 restrictions, most meetings during the engagement process were held virtually through Microsoft Teams or Zoom. Some meetings were held in person while following health and safety guidelines. A copy of presentations shared are found in Appendix A.

Table 5-2 shows the virtual meetings held between Manitoba Hydro and Indigenous communities.

Table 5-2: Virtual meetings held between Manitoba Hydro and Indigenous communities[1]

Date of Meeting	Indigenous community
March 26, 2021	Long Plain First Nation
May 5, 2021	Dakota Tipi First Nation
June 2, 2021	MMF
June 9, 2021	Dakota Tipi First Nation

[1] This is not an exhaustive list of meetings held between Manitoba Hydro and Indigenous communities related to the Project. There were additional informal meetings and discussions not included in the table.

Table 5-2: Virtual meetings held between Manitoba Hydro and Indigenous communities[1]

Date of Meeting	Indigenous community
July 15, 2021	Long Plain First Nation
July 23, 2021	MMF

Summaries of the meetings with Indigenous communities were recorded by a Manitoba Hydro representative and draft meeting notes were sent to participants for review. Additionally, any correspondence with Indigenous communities and organization, including phone or email, was documented.

5.3 Indigenous engagement feedback

5.3.1 Overview

Feedback was received during virtual meetings and through the ICAC positions from Dakota Tipi First Nation, Long Plain First Nation, and the MMF.

5.3.2 Dakota Tipi First Nation

From conversations with the ICAC for Dakota Tipi First Nation and from their submission for inclusion in the environmental assessment report (see Appendix A), Manitoba Hydro understands key concerns from Dakota Tipi First Nation on developments in the area include:

- Heritage concerns. There were no cultural artefacts, burials or cultural features known on the proposed site at the time of submission. However, given the history of the area and the soil disturbance required for the project, there is potential to disturb cultural artefacts at this site. This site is also potentially close to the Yellow Quill Trail. Any site disturbances should be assessed and monitored for potential remains.
- This site is on private, cultivated land. This site has already been altered from its natural state and is currently inaccessible to DTFN members.
- Interest in employment opportunities for the project
- Interest in monitoring construction for the project

In the submission from DTFN, concerns with cumulative impacts of development on Dakota territory in southern Manitoba were expressed, including:

- Agriculture has removed native vegetation, altered surface water patterns, and introduced chemicals and fertilizers into the environment in the area.
- Settlement and industrial development have taken up considerable areas as private land and have introduced many corridors (roadways, pipelines, transmission lines, and drainage structures).
- Drastic alterations of the landscape have brought cumulative impacts to wildlife, waterways, plants and medicines, which has left DTFN members with limited access to the land and minimal ability to exercise their rights.

It was shared that Manitoba Hydro's electrical network and the proposed station are part of these cumulative effects.

5.3.3 Long Plain First Nation

From discussion with Long Plain First Nation, Manitoba Hydro understand key concerns from the community to be:

- Potential cumulative effects related to this project in combination with other existing and planned transmission lines in proximity to the project.
- It is unclear whether LPFN members use this site for any purpose

5.3.4 Manitoba Métis Federation

From discussions with the MMF and their submission for the Wash'ake Mayzoon Station EA (see Appendix A), Manitoba Hydro determined that key concerns for the MMF include:

- Inadequate time and resources have impeded the ability for full and meaningful consultation with potentially impacted Manitoba Métis Citizens to occur
- Appropriate distinctions-based consultation processes should be advanced separately and labeled as 'Métis Engagement' and 'First Nations Engagement'
- Manitoba Hydro has not accurately captured the project effects that are important to the Manitoba Métis community, therefore it is considered incomplete
- Manitoba Hydro has missed assessing the effects with the Manitoba Métis community in the project area specifically as project effects that are important to the Manitoba Métis community have not been accurately captured
- Concerns about impacts to Métis Rights, Claims and Interests in the area including:
    - Change to water quality

    - Fishing
    - Hunting
    - Ecological knowledge
    - Historic trapping
- Concerns about Métis Valued Components being considered in the process, including 'Harvesting' and 'Available Lands'
- Concerns that contiguous unoccupied Crown Land will not be maintained
- Potential for impact to lands for Métis use
- Potential changes to wildlife habitat and the ability to harvest in the area
- Cumulative effects of Development on the ability to harvest

5.3.5 Summary of concerns and responses

The following table summarizes the project-specific concerns, comments and proposed mitigation shared by Indigenous communities and responses provided by Manitoba Hydro. The concerns, comments and proposed mitigation are taken from discussion with Indigenous communities and ICAC submissions for the Wash'ake Mayzoon Station environmental assessment.

Table 5-3: Summary of concerns, comments and proposed mitigation from Dakota Tipi First Nation and responses by Manitoba Hydro

Summary of Concerns and Comments from Dakota Tipi First Nation	Proposed Mitigation by Dakota Tipi First Nation	Summary of Manitoba Hydro Response
There are no cultural artefacts, burials or cultural features currently known on the proposed site. However, given the history of the area and the soil disturbance required for the project, there is potential to disturb cultural artefacts at this site.	• Conduct a full heritage assessment of the site • Arrange for a DTFN Liaison to be on-site during heritage work, site clearing, and ground disturbance. The Liaison may choose to be on-call in lieu of on-site depending on circumstances • Share results of the heritage assessment with DTFN • Work with DTFN in decisions regarding the handling and treatment of any artefacts found	• A Heritage Resources Assessment including pre-construction archaeological work will be conducted • A Culture and Heritage workshop will be held on October 7, 2021 with Indigenous communities, the Heritage Resources Branch and Manitoba Hydro to discuss heritage concerns and mitigation for projects in the Portage la Prairie area. • Members of Indigenous communities engaged on this project will be invited to participate in heritage work and to monitor construction activities

Table 5-3: Summary of concerns, comments and proposed mitigation from Dakota Tipi First Nation and responses by Manitoba Hydro

Summary of Concerns and Comments from Dakota Tipi First Nation	Proposed Mitigation by Dakota Tipi First Nation	Summary of Manitoba Hydro Response
		when it is deemed appropriate by communities and Manitoba Hydro • A summary of the Heritage Resources Assessment will be shared with Indigenous communities • Manitoba Hydro follows a CHRPP for handling and treatment of artefacts, which describes the community notification process. The CHRPP is intended to be adaptive and can be updated based on feedback from communities.
Interest in employment opportunities for the project		Manitoba Hydro will work with interested Indigenous communities to prepare a list of skilled labor, equipment, services and ancillary supports available for use on the project. Manitoba Hydro has also funded an Indigenous Community and Assessment Coordinator position for DTFN for the Portage area projects.

Table 5-3: Summary of concerns, comments and proposed mitigation from Dakota Tipi First Nation and responses by Manitoba Hydro

Summary of Concerns and Comments from Dakota Tipi First Nation	Proposed Mitigation by Dakota Tipi First Nation	Summary of Manitoba Hydro Response
Interest in monitoring construction for the project		Manitoba Hydro will invite members of Indigenous communities involved in the Project to participate in tours of construction activities at key stages and when it is deemed appropriate by communities and Manitoba Hydro
Drastic alterations of the landscape have brought cumulative impacts to wildlife, waterways, plants and medicines, which has left DTFN members with limited access to the land and minimal ability to exercise their rights. Manitoba Hydro electrical network and the proposed station are part of these cumulative effects.		Manitoba Hydro has assessed cumulative effects to Valued Components important to Indigenous communities in section 12.5
Ceremony	• Hold Pipe Ceremony at ground-breaking to respect the land in a traditional way • Hold a closing ceremony when construction is complete	Manitoba Hydro will invite all Indigenous communities engaged on the project to participate in an opening and closing ceremony.

Table 5-3: Summary of concerns, comments and proposed mitigation from Dakota Tipi First Nation and responses by Manitoba Hydro

Summary of Concerns and Comments from Dakota Tipi First Nation	Proposed Mitigation by Dakota Tipi First Nation	Summary of Manitoba Hydro Response
	• Invite DTFN participation both ceremonies	
Restoration and Decommissioning	• Discuss any restoration required after construction with DTFN – including appropriate methods, plant species, etc. • Include DTFN involvement in any decommissioning plan for the site	Manitoba Hydro has limitations related to the revegetation of station sites and how that vegetation may impact safety and equipment operation (some electrical equipment is susceptible to clogging from seed heads); however, information will be shared on how the station site will be restored with Dakota Tipi First Nation. Decommissioning activities are not anticipated for over 75 years.

Table 5-4: Summary of concerns and comments from Long Plain First Nation and responses by Manitoba Hydro

Summary of Concerns and Comments from Long Plain First Nation	Summary of Manitoba Hydro Response
Potential cumulative effects related to this project in combination with other existing and planned transmission lines in proximity to the project.	Manitoba Hydro has assessed cumulative effects to Valued Components important to Indigenous communities in section 12.5.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
1. Manitoba Hydro held meetings with MMF staff through the Fall and Winter 2020 with the aim of developing a contribution agreement to support a more fulsome consultation process on the suite of proposed transmission enhancement projects with the MMF. The MMF received a draft contribution agreement from Manitoba Hydro in December 2020. The agreement proposed that a series of engagement activities be carried out by the MMF over the next two months. However, because the MMF does not have an Energy Liaison employed at this time, it was not possible to mobilize to meet these aggressive timelines. We	Manitoba Hydro has maintained frequent and open communication by phone, email and virtual meetings with the MMF since August 2020 to develop, customize, and implement the ICAC Contribution Agreement in collaboration with the MMF. It is Manitoba Hydro's understanding that the Contribution Agreement was implemented when it was signed by the MMF on February 26, 2021 and that work to complete the deliverables set out in the agreement could begin. Two meetings were held on June 2, 2021 and July 23, 2021 to assess the effectiveness of the ICAC position, during which Manitoba Hydro was not made aware of the MMF's engagement

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
consider the contribution agreement negotiation process to be ongoing though some of the originally proposed timelines cannot be met.	limitations. Manitoba Hydro understands that the MMF has had challenges in filling the ICAC position and it appreciates that the MMF has been able to submit information for both the BP6/BP7 and Wash'ake Mayzoon Station projects. There will be opportunities for the MMF to share further information for the Environmental Protection Program for this project.
2. On February 18, 2021, representatives from the Manitoba Métis Federation (MMF) participated in a meeting related to the BP6 and BP7 project organized by Manitoba Hydro. During the meeting, MMF representatives shared concerns that proper consultation to that point had not occurred. MMF representatives shared that they participated in the meetings in good faith, but that a full and meaningful consultation process is required; the MMF still needs to consult with Manitoba Métis Citizens to understand their perceptions and the potential for project impacts. The MMF representatives added that they understand that there are pressures to move things forward, but they cannot participate fully without the perspective of potentially impacted Manitoba Métis Citizens.	It is Manitoba Hydro's understanding that since the MMF signed the ICAC Contribution Agreement on February 26, 2021, the MMF has had nearly six months to obtain the perspective of potentially impacted Manitoba Métis Citizens. Manitoba Hydro has kept open and responsive communication with the MMF by phone, email and virtual meetings to discuss and assist in the implementation of the Contribution Agreement. Two meetings were held on June 2, 2021 and July 23, 2021 to assess the effectiveness of the ICAC position, during which Manitoba Hydro was not made aware of the MMF's engagement limitations. Manitoba Hydro has also prepared and delivered training for the ICAC and is supportive of the recent workplan developed by a consultant of the MMF's choice to assist in meeting deliverables set out in the Contribution

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
	Agreement. Manitoba Hydro will continue to welcome Métis perspectives on the project to inform the Environmental Protection Program and to inform the EA for stage 2 of PACE – new transmission Line.
3. As it relates to the Wash'ake Mayzoon Station project, the MMF asserts that the engagement and consultation process remains flawed in that the timelines for consultation have been far too restrictive for the MMF to conduct meaningful consultation with potentially impacted Manitoba Métis Citizens. Manitoba Hydro is aware that COVID-19 pandemic social distancing measures have been an enormous barrier for meaningful consultation activities and the tight project timelines given the circumstances, seems to contradict the spirit and intent of the principles and goals of Manitoba Hydro's IEP for the projects.	Manitoba Hydro understands that COVID-19 has placed several barriers to undertaking meaningful consultation activities and remains open to supporting the MMF in finding creative ways to conduct consultation safely. Manitoba Hydro has extended the submission deadlines for deliverables on several occasion.
4. Manitoba Hydro's reliance on email notifications, newsletters and virtual meetings with the MMF should not be considered as adequate consultation. Furthermore, adequate time and resources have not been provided to enable proper engagement between the MMF and Manitoba Métis Citizens - activities which would have enabled the collection of needed data to	Manitoba Hydro will continue to welcome information from the MMF to inform the Environmental Protection Program for this project. There will be much more time dedicated to the engagement process for Stage 2 of PACE – new transmission line and so Manitoba Hydro believes that the MMF will have sufficient time to complete its Métis Citizen engagement. Manitoba Hydro will consult with the MMF to

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
inform the level of impacts that this project and others, including the BP6/BP7 and phase 2 of the PACE project will have on Manitoba Métis Citizens' rights, claims and/or interests. As a result, the MMF has limited information at its disposal with which to draw upon to fully, and meaningfully, participate in this review and commenting process. It is instead forced to draw upon information from past projects unrelated to the current transmission enhancements associated with BP6 & BP7, and phases 1 & 2 of the PACE project.	determine the amount of time needed for Stage 2 of PACE – new transmission line in advance of setting project timelines.
5. Manitoba Hydro continues to advance processes that do not provide for a distinctions-based approach to project consultation that recognizes the distinct histories, cultures, rights, claims and/or interests of the Manitoba Métis and First Nations. There is only one Métis government in Manitoba, the MMF. Appropriate distinctions-based consultation processes in the province should be advanced separately and labeled as 'Métis Engagement' and 'First Nations Engagement' and not simply lumped together as 'Indigenous Engagement'. The failure by Manitoba Hydro to do this is a serious flaw that undermines the validity of its consultation process	Manitoba Hydro appreciates the MMF's recommendation and will investigate the implementation of a distinctions-based approach labeled as 'Métis Engagement' and 'First Nations Engagement' for future projects.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
Manitoba Hydro has not accurately captured the project effects that are important to the Manitoba Métis community, therefore it is considered to be incomplete.	Manitoba Hydro has incorporated the MMF's concerns, comments, potential effects and suggested mitigation measures shared in their Wash'ake Mayzoon Station submission (see Appendix A) in this EA.
The information you have drawn upon in the EA Chapter is not taken out of context, but is considered to be incomplete.	Manitoba Hydro has incorporated the MMF's concerns, comments, potential effects and suggested mitigation measures shared in their Wash'ake Mayzoon Station submission (see Appendix A) in this EA.
We have described our preference for how cumulative effects are handled further in this section of our review: "As it relates to the MMF's preference for how to handle the cumulative effects of the Wash'ake Mayzoon Station project, the splitting of transmission enhancements project phases into multiple EAs despite their interrelation and interdependence, specifically and intentionally excludes an assessment of the cumulative impacts of these projects on the rights, claims and/or interests of the Manitoba Métis. Planned enhancements of transmission lines in the Portage La Prairie - Brandon corridor need to be assessed as a whole due to their interrelation and	Manitoba Hydro appreciates the MMF sharing their preference for cumulative effects assessment. Manitoba Hydro's intent in developing the ICAC positions to engage on all three projects in the Portage la Prairie area, including BP6/BP7, Phase 1 of PACE – Wash'ake Mayzoon Station and Phase 2 of PACE – new transmission line, was to facilitate communities' understanding of the interrelation and interdependence of the projects. Manitoba Hydro has addressed cumulative effects in section 12.5 and will address cumulative effects of all three projects in the Stage 2 of PACE – new transmission line EA. A separate licence was required for each project which resulted in the development of three separate EAs.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
interdependence. This assessment needs to include the provision of adequate resources and time for the MMF and Manitoba Métis Citizens to conduct a rigorous analysis of the cumulative impacts of these projects to inform their development"	
You have missed assessing the effects with the Manitoba Métis community in the project area specifically	Manitoba Hydro has incorporated the MMF's concerns, comments, potential effects and suggested mitigation measures shared in their Wash'ake Mayzoon Station submission (see Appendix A) in this EA.
The MMF feels this is not a respectful way to present information, as Manitoba Hydro has not done it's due diligence in ensuring the MMF is able to collect project-specific traditional knowledge and developing Métis-specific mitigation measures.	It is Manitoba Hydro's understanding that the MMF has had since the signing of the Contribution Agreement in February 26, 2021 to collect traditional knowledge and develop Métis-specific mitigation measures for projects in the Portage la Prairie area. Project-specific information was shared with the MMF on June 24, 2021 and so it is Manitoba Hydro's understanding that engagement with Métis citizens to collect project-specific traditional knowledge and develop Métis-specific mitigation measures for this project could have started then. Manitoba Hydro will continue to welcome this information to inform the Environmental Protection Plan for this project and to inform Stage 2 of PACE – new transmission line EA.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
We would like to engage in a process for mitigation planning as described in section 4.0 of this report. Recommendation 1: Ideally, the EA process would be paused so that the MMF may meaningfully assess whether the Manitoba Métis who uses the land near sites impacted by the project have concerns or input on the site location and to help us more effectively understand any potential adverse effects. This would involve a community meeting at the least, and most ideally, allowing us the time to complete our interviews with local Manitoba Métis Citizens before the EA report is submitted	Manitoba Hydro cannot delay the submission of the Wash'ake Mayzoon Station EA but will continue to welcome information to inform the Environmental Protection Plan, which will include mitigation measures for the project. It is Manitoba Hydro's understanding that the Wash'ake Mayzoon Station is located on private agricultural land where traditional harvesting is currently not practiced so adverse impacts to 'Harvesting' and 'Available Lands' should be minimal.
Recommendation 2: As is noted in section 5.3 of the draft EA documenting Indigenous Engagement Feedback, the MMF was unable to provide project-specific feedback for the Wash'ake Mayzoon Station. Therefore, we recommend that Manitoba Hydro use the precautionary principle and assume all the same concerns are held as have been identified in past transmission line projects to inform route and site selection processes. We request	Manitoba Hydro uses the precautionary principle and has taken into consideration the concerns that the MMF has identified in past transmission line projects to inform the site selection process. A letter in response to this recommendation has been included in Appendix A.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
Manitoba Hydro's explanation of how it took these concerns into consideration in route selection.	
Recommendation 4: As the BP6 & BP7 projects and PACE phases 1 & 2 projects are all interrelated and interdependent parts of transmission enhancement in the Portage La Prairie – Brandon corridor, the MMF recommends that these projects should be assessed under one EA process with the provision of adequate resources for the MMF to take into account the cumulative effects of these projects on the rights, interests and claims of the Manitoba Métis. As is noted in section 5.3 of the draft EA documenting Indigenous Engagement Feedback, the MMF was unable to provide project-specific feedback for the Wash'ake Mayzoon Station. Project splitting restricts our ability to adequately engage Manitoba Métis Citizens who may be impacted by components of the project through the imposition of tight deadlines and limiting access to resources with which to carry out necessary engagement. Therefore, project splitting of this nature is experienced as detrimental to developing the kind of relationships	Manitoba Hydro's intent in developing the ICAC positions was to engage communities on all three projects in the Portage la Prairie area, including BP6/BP7, Stage 1 of PACE – Wash'ake Mayzoon Station and stage 2 of PACE – new transmission line. Having one dedicated ICAC was intended to facilitate communities' understanding of the interrelation and interdependence of the projects. A separate licence is required for each project, which resulted in the development of three separate EAs. However, the intent was to build upon knowledge gained during engagement for each project to obtain a more wholesome understanding of the Portage la Prairie area and impacts of all three projects.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
Manitoba Hydro insists it wants to advance as per the principles and goals of the IEP.	
Recommendation 5: Although MMF and Manitoba Hydro have not finalized an agreement to fund interviews with Manitoba Métis Citizens in advance of route and site selection, the interviews should still be completed for our traditional ecological knowledge, land use and rights-based activities within the projects area to inform the environmental assessment including the identification of potential effects and appropriate mitigation measures	It is Manitoba Hydro's understanding that the agreement to fund interviews with Manitoba Métis Citizens was finalized when the MMF signed the ICAC Contribution Agreement, which includes funding for interviews for each project. Manitoba Hydro has provided a response to the MMF in support of their consultant's workplan to assist in achieving the deliverables set out in the agreement.
Recommendation 6: Although the MMF and Manitoba Hydro have not finalized an agreement to fund community meetings in advance of the selection of the preferred route, community engagement sessions should still be completed. By consulting with the Manitoba Métis meaningfully on the projects, Manitoba Hydro will have the opportunity to understand and address concerns directly and will gain additional information to inform its environmental assessment.	As set out in the Contribution Agreement, Manitoba Hydro will fund the MMF to conduct engagement with Métis Citizens. The collected information will inform the Environmental Protection Plan for BP6/BP7 and Stage 1 of PACE – Wash'ake Mayzoon Station and inform the EA for Stage 2 of PACE – new transmission line.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
Recommendation 7: While, in the case of BP6/BP7, there was an existing transmission line, the area was naturalized again to a certain degree and will be disturbed again in the construction of the line. Manitoba Hydro should examine and address the cumulative effects of this transmission line development on the Manitoba Métis in its environmental assessment.	Manitoba Hydro has assessed cumulative effects of the BP6/BP7 project throughout its EA and specifically for VCs of importance to Indigenous Communities in section 8.9.6.5. Manitoba Hydro has assessed cumulative effects for this project in section 12.5 Manitoba Hydro welcomes further information to assess cumulative effects to Métis Citizens for all project in the Portage la Prairie area to include in the Stage 2 of PACE – new transmission line EA.
Recommendation 8: The MMF should be engaged by Manitoba Hydro in the mitigation planning process for the projects. This would focus on mitigations to address the baseline data that is mapped during Métis Knowledge and land use interviews.	Manitoba Hydro has and continues to welcome suggestions for mitigation measures from the MMF through virtual meetings and through the ICAC. Manitoba Hydro will include additional mitigation measures proposed by the MMF in the Environmental Protection Plan for BP6/BP7 and Stage 1 of PACE – Wash'ake Mayzoon Station and in the EA for Stage 2 of PACE – new transmission line.
Recommendation 9: The Government of Manitoba encourage Manitoba Hydro to undertake engagement with the Manitoba Métis Government to identify issues and concerns prior to finalizing the EAP, to allow for potential concerns to be addressed early in the process. For the MMF to be adequately and meaningfully	Through the provincial public review process, there will be opportunities for the MMF to review and comment on the EA for BP6/BP7 and the Wash'ake Mayzoon Station.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
consulted, the MMF should be provided the time and capacity funding necessary to review and comment on the EAP and/or any proposed EIS guidelines for the projects should any of the individual projects require an EIS.	
Recommendation 10: While the MMF does not at this time, necessarily assume that these projects will require a public hearing, we would expect that we would be provided the opportunity for capacity funding to participate should a hearing occur.	If a hearing is required, the MMF could apply to be a participant which could involve a funding application process.
Recommendation 11: At the end of the environmental assessment process, a decision will be made by the Director of the EAB to either issue a licence with limits, terms, and conditions, or to refuse a licence for the each of the projects (BP6 & BP7/PACE phases 1 & 2). In the event a licence with conditions is granted, the MMF expects that we would be provided capacity funding to comment on these conditions.	Manitoba Hydro noted the MMF's request.

Table 5-5: Summary of concerns and comments from the Manitoba Métis Federation and responses by Manitoba Hydro

Summary of Concerns and Comments from the MMF	Summary of Manitoba Hydro Response
Recommendation 12: Manitoba Métis Citizens should be included in any environmental monitoring programs for the BP6 & BP7 projects and PACE project phases 1 & 2. The MMF has invested in capacity building and is in the process of providing training to Manitoba Métis Citizens on environmental monitoring techniques that are relevant to this and other future transmission line projects (e.g., surface water quality, wetland health, wildlife, species at risk).	Manitoba Hydro will involve the MMF in environmental monitoring programs for BP6/BP7, Stage 1 and Stage 2 of PACE projects in a way that is deemed appropriate by both Manitoba Hydro and the MMF.

5.4 Ongoing engagement

Following a decision regarding the Project, Manitoba Hydro will notify all Indigenous communities engaged on this Project and the PUIPC about the decisions and keep them informed about construction schedules and activities. Manitoba Hydro will remain open and responsive to any questions or concerns from communities. The telephone line and email address will remain operational throughout the regulatory review, construction and operation phases for the project.

This chapter was sent to ICACs and their communities for review. Feedback received was considered and adjustments to the chapter were made in response.

6.0 Environmental assessment methods

The following is an overview of the methods that were used to conduct this environmental assessment. This report was completed to meet the requirements of The *(Manitoba) Environment Act* and the Environment Act Proposal Report Guidelines Information Bulletin (Manitoba Sustainable Development 2018). These methods have been developed through a review of regulations, current practice in environmental assessment and experience on assessments of similar projects.

Project-related environmental effects were assessed using a standard framework for each valued component, with standard tables and matrices to facilitate and document details of the assessment. Although Manitoba guidelines do not require cumulative effects assessments for Class 2 developments, a cumulative effects assessment has been included.

Residual project-related environmental effects (i.e., after mitigation has been applied) were characterized using specific criteria. The significance of the project-related environmental effects was then determined based on predefined criteria or thresholds (also called significance criteria). If there was potential for residual effects of the project to interact cumulatively with the residual effects of other projects or physical activities, these cumulative environmental effects were assessed. The significance of cumulative effects has not been determined and instead is described in a manner relevant to each valued component in plain language.

The assessment progressed through the following steps (discussed in detail below):

- Scoping
  - Scoping the project
  - Selecting valued components
  - Defining spatial and temporal boundaries
- Determining project interactions with the environment
- Determining pathways of effects
- Developing mitigation
- Characterizing residual effects
- Determining significance
- Assessing cumulative effects
- Developing follow-up and monitoring programs

6.1 Scope

This section describes the scope of the proposed project and the scope of the assessment. It serves to focus the assessment on important components of the project and the environment.

6.1.1 Scope of the project

The scope of the proposed project includes the construction, operation, maintenance, and eventual decommissioning of a 230 kV to 66 kV station and the sectionalisation of the P81C Tap.

The project scope includes the following (details for each are provided in chapter 2):

- Construction;
  - Workforce presence
  - Station access
  - Material hauling
  - Surveying
  - Site preparation
  - Machinery operation
  - Foundation installation
  - Equipment installation
  - Oil filling
  - Ground grid installation
  - Oil containment
  - Backfill, clean-up, final restoration
  - Hazardous material handling and storage
  - Waste disposal
  - Manufacture and transport of project components
- Operation and Maintenance;
  - Station operation and presence
  - Station maintenance (equipment repairs and equipment installation)
- Decommissioning

6.1.2 Valued components

The first step in scoping the assessment is selecting valued components; elements that have the potential to interact with the project and meet one or more of the following criteria:

- represent a broad environmental, ecological or human environment component

- are considered important to Indigenous communities engaged on the project or a part of their current use of lands for traditional purposes
- are of scientific, historical, or archaeological importance
- have been identified as important issues or concerns by participants in the engagement process or by other effects assessments in the region

Several factors were considered while selecting valued components including reviewing valued components from previous assessments on stations or transmission lines in the area (Poplar Bluff and BP6/BP7 transmission projects) considering input from Indigenous communities, landowners, interested parties and/or the public; and the professional judgment of the assessment team.

A potential list of valued components was developed. They were presented at Indigenous community meetings and informed by concerns heard during public engagement. Subsequently, the list was amended in consultation with discipline specialists and was expanded in some instances and combined in others. The following section presents the valued components considered for the assessment and a rationale for there inclusion / exclusion from the assessment.

1) Agriculture. Annual crop land, forage and grassland constitute over 80% of the land base for the Rural Municipality of Portage la Prairie. Agricultural land is a valued resource with substantial importance to the regional economy. The proposed station will be situated on agricultural land and will therefor have a direct impact. Agriculture was included as part of the assessment.
2) Human health This valued component discusses potential for effects on human health. These areas are of concern to residents, Indigenous communities, regulators and other government departments.
    a. Air quality. There is potential for interaction with air quality during machinery operation. A change in air quality can affect human health.
    b. Water quality. There are no surface water bodies within 50 m of the proposed station location. There is potential for interaction with groundwater during drilling for foundations. This interaction is particularly important in areas with artesian conditions. Spills of hazardous materials also have the potential to impact groundwater. Decreased groundwater quality can affect human health if groundwater is used as a source of drinking water in the area. Human health was included as part of the assessment.
3) Community well-being. This valued component discusses potential for effects on community well-being. Local property owners, regional residents and others who visit or frequent the local assessment area derive individual or personal well-

being from the values offered by the agricultural setting and rural lifestyle. Community well-being was included as part of the assessment.

a. Visual quality. The local assessment area is characterized by crop lands, agricultural buildings, residential developments, transmission and distribution lines. There are a limited number of trees that mainly occur on residential properties, along road allowances, and fence lines. Aesthetic values are important to residents who live in the vicinity of the proposed station. Changes in visual quality can cause stress, which can lead to human health effects. Local property owners, regional residents and others who visit or frequent the local assessment area derive individual or personal well-being from the values offered by the agricultural setting and rural lifestyle. Changes in visual quality can alter the landscape and affect personal well-being.
b. Property value. Manitoba Hydro recognizes that effect on property value is a concern regarding station development. This concern has been raised during engagement activities for many Manitoba Hydro projects. Real or perceived effects to property value can cause stress which can lead to human health effects.
c. Electric and Magnetic Fields. There can be public concern about the risks to human health from electric and magnetic fields (EMF) produced by transmission stations. Perceived effects from EMF can cause stress which can lead to human health effects.

4) Wildlife. Wildlife are a critical part of a functioning ecosystem and play a vital role in ecological and environmental processes. The project footprint will not affect any natural areas. The assessment will focus on wildlife specifically and the nuisance effects of the project. Wildlife was included as part of the assessment.
5) Economic opportunities. There is some potential for benefits to local business during project construction and additional benefits to the local economy during project operations.
6) Traditional practices, culture and heritage. It was recognized that there is potential for development of this project to affect traditional practices of Indigenous communities. This Project is near Long Plain First Nation and Dakota Tipi First Nation. The Manitoba Métis Federation (MMF) has also indicated that their members have land use and interests in the area. Three VCs of importance to Indigenous communities were included as part of the assessment:
    a. Traditional harvesting (e.g. hunting, fishing, trapping, plant gathering)
    b. Important sites (e.g. cultural, spiritual, historical, heritage, sacred, identified TLE opportunities)

c. Heritage resources. Heritage sites / objects are protected by legislation and must be considered in any development that has the potential to affect them. Heritage resources are included in the assessment as part of the traditional practices, culture and heritage valued component.

7) **Greenhouse gases and climate change**. Climate change implications including a greenhouse gas inventory calculated according to guidelines developed by Environment Canada (Environment Canada 2021) are a requirement under the Environment Act proposal report guidelines (Manitoba Sustainable Development 2018). A greenhouse gas emissions assessment is included as part of the assessment.
8) **Fish and fish habitat**. Generally, station development has limited potential to affect aquatic habitat. The proposed station location is greater than 30 m from a fish bearing waterbody. The 30 m distance is listed in Table A-1 of the Canada Energy Regulator Filing Manual (Canada Energy Regulator 2020) and is recommended as an acceptable distance to buffer effects that construction could have on fish and fish habitat (Alberta Environment and Sustainable Resource Development 2012). Fish and fish habitat are **not included** as part of the assessment.
9) **Vegetation**. The proposed project will not require the clearing of natural vegetation. A search of the Manitoba Conservation Data Center did not indicate the presence of any rare or listed plant species within the project footprint. Vegetation is **not included** as part of the assessment.
10) **Land and resource use**. Land and resource use was considered as a valued component because of regulatory considerations (e.g. The Crown Lands Act, The Provincial Parks Act) and its importance to communities, property owners, resource users (e.g., hunters and trappers, commercial operators, recreational users and the general public), and other stakeholders. Due to the limited project footprint, lack of public lands and limited potential for resource use, land and resource use was **not included** as part of the assessment.

6.1.3 Spatial boundaries

The spatial boundaries for the environmental assessment consist of the project development area, local and regional assessment areas as described below:

Project development area: Footprint of the proposed project including the station footprint, the P81C tap sectionalization right-of-way and any additional areas such as marshalling yards and access road allowances.

Local assessment area: Represents the area where direct and indirect or secondary effects of construction, operation and maintenance are likely to be most pronounced or identifiable. The local assessment area will be specific to each valued component.

Regional assessment area: Encompasses the area where project-specific environmental effects overlap with those of past, present, and reasonably foreseeable future projects and activities. It is used to provide regional context and is generally the area used for assessing the project's contribution to cumulative effects.

The direct, indirect and cumulative environmental effects of the proposed project are considered within these assessment areas.

6.1.4 Temporal boundaries

The primary temporal boundaries for the assessment are based on the timing and duration of project activities. More detailed temporal boundaries could be established for specific environmental and/or socioeconomic components being assessed, and this is discussed in each assessment section. The primary temporal boundaries are:

- Construction – 2 years (Spring 2023 to Spring 2025)
- Operations and maintenance – for the life of the project, estimated to be a 75-year design life
- Decommissioning – 2 years

6.2 Assessment of project effects

6.2.1 Project-environment interactions

Assessing project effects on the environment begins with an understanding of which project activities interact with the valued components. Identifying these interactions allows the assessment to focus on the issues of greatest concern. A matrix (Table 6-1) was developed by listing the project activities (described in Section 2.11) and noting where they have the potential to interact with the valued components. The interactions were identified by the discipline specialists based on experience with similar projects and a review of previous electrical station environmental assessments.

Interactions between activities and project phases and potential environmental effects identified for each valued component are ranked according to the following criteria.

Table 6-1: Project Interaction Matrix

Project Activities / Phases	Agriculture	Human health	Community well-being	Wildlife	Economic opportunities	Traditional practices, culture and heritage	Greenhouse gases and climate change
Workforce presence					X	X	
Station access							
Material hauling				X			
Surveying							
Site preparation	X					X	
Machinery operation		X	X	X		X	X
Equipment installation							
Oil filling		X				X	
Foundation installation							
Oil containment						X	
Ground grid installation							
Backfill, clean-up, final restoration							
Hazardous materials	X	X				X	
Waste disposal						X	
Manufacture and transport and project components						X	X
Station operation and presence	X	X	X	X	X	X	X
Station maintenance							
Decommissioning	X	X	X	X	X	X	X

6.2.2 Effects pathways

Once interactions likely to have effects are determined, the potential resulting effects for each valued component are identified. This is done based on available scientific information, the assessment team's professional judgement and understanding of the interactions, previous experience from similar types of projects and recent environmental assessments, and input from engagement with the First Nations, Métis, the public, regulators and technical experts.

The pathways where these effects may occur are identified, and one or more measurable parameter(s) are selected for the quantitative (where possible) or qualitative measurement of potential project and cumulative effects.

Examples of measurable parameters include the area of wildlife habitat that may be affected or the expected number of workers that will move into the area for project construction. The amount of change in these measurable parameters is used to help characterize the environmental effects and to assist in evaluating their significance.

6.2.3 Mitigation

Mitigation measures are developed to eliminate, reduce, or control potential adverse effects to manageable levels where they do not threaten the sustainability of a valued component and become significant.

The process of characterizing, quantifying and mitigating effects is typically an iterative process for most environmental components. Initial measures considered in the planning and design phase include avoiding a sensitive location or critical timing for a valued component, reducing the size or magnitude of the project activity and its associated effect, reducing its geographic extent, or reducing the frequency or duration that a project activity occurs (e.g., number of times a day, number of hours a day).

Where residual adverse effects still occur, measures are developed to try to address them through replacement, restoration or compensation measures, by allowing natural recovery, actively facilitating recovery, or constructing something to replace what is being lost.

Mitigation measures are addressed largely through implementation of the environmental protection program described in Chapter 1.0. General and specific mitigation measures are described in the construction environmental protection plan, which will be created after license receipt, and the cultural and heritage resources protection plan (CHRPP -Appendix B). Input on relevant mitigation measures was

sought during public and Indigenous engagement activities. Feedback received during these conversations influenced mitigation included in this assessment, such as tree planting to reduce visual and noise impacts or holding ceremonies.

Specific mitigation measures for each biophysical and socioeconomic component are described in each of the assessment sections.

6.2.4 Characterizing residual effects

Residual effects are those that remain after the application of mitigation measures. The process is typically iterative and the goal in developing mitigation measures is to reduce residual adverse effects to "acceptable" levels where they do not threaten the sustainability of a valued component and become significant.

Guidance is provided through the various criteria listed in Table 6-2 using results of research, field studies, engagement and professional judgement, to predict potential significance.

The Impact Assessment Agency (Canadian Environmental Assessment Agency 2018) has developed guidance on determining whether a project is likely to cause significant effects.

Guidance from the British Columbia Environmental Assessment Office (British Columbia Environmental Assessment Office 2020) was also used.

Characterization of residual effects was assessed with respect to the nature of the interaction. The direction, magnitude, geographic extent, duration, frequency and reversibility were determined.

Table 6-2 describes the factors used to characterize the interactions.

6.2.5 Determination of significance

Significant effects are those likely to be of enough magnitude, duration, frequency, geographic extent or irreversibility to cause a change in the valued component that will alter its status or integrity beyond an acceptable level.

Significance thresholds were selected with consideration of provincial and federal regulatory requirements, standards, objectives, guidelines, and other relevant planning objectives applicable to each valued component.

Thresholds are developed in consideration of guidance, past practice, and the specific conditions of the receiving environment. In lieu of regulatory standards or thresholds, detailed definitions of the significance criteria for each environmental

effect are provided in the valued component assessment chapters. A threshold approach for the determination of significant effects is supported by the Clean Environment Commission (Manitoba Clean Environment Commission 2013).

Table 6-2 Factors and criteria used to characterize interactions

Factor	Definition	Criteria	Evaluation
Direction	Describes the difference or the trend of the effect on the environment	Positive	Beneficial or desirable change
		Neutral	No expected change
		Adverse	Adverse or undesirable change
Magnitude	The predicted degree or intensity of disturbance of an effect	Small	No definable or measurable effect; or below established thresholds of acceptable change; or within the range of natural variability; or minimum impairment of an ecosystem component's function
		Moderate	Effects that could be measured and could be determined with a well-designed monitoring program; or are generally below established thresholds of acceptable change; or are marginally beyond the range of natural variability or marginally beyond minimal impairment of ecosystem component's function
		Large	Effects that are easily observable and described, and well beyond guidelines or established thresholds of acceptable change; are well beyond minimal impairment of an ecosystem component's functions.
Geographic extent	The spatial boundary where the residual environmental effect is expected to occur	Project footprint	Effects confined to the Project footprint including the right-of-way.
		Local	Direct and indirect effects that extend beyond the Project footprint but remain within the local study area defined for each valued component.
		Regional	Direct and indirect effects that extend into the regional assessment area described for each valued component.
Duration	The length of time that the predicted residual effect is expected to last	Short-term	Effects that generally are limited to the construction phase of the project (i.e., less than one year) or recovery cycle of a biological component
		Medium-term	Effects that extend throughout the construction and into the operation phases of the project or that occur within one or two generations of recovery cycles.
		Long-term	High level effects that extend greater than 50 years; or are permanent, or that extend for two or more generations or recovery cycles
Frequency	How often the effect will occur	Infrequent	Effect may occur once during the life of the project
		Sporadic/ Intermittent	Effect may occur without predictable pattern during the life of the project
		Regular/ Continuous	Effect may occur periodically or continuously during the life of the project
Reversibility	Likelihood and time required for the Project to no longer influence a component. For socio-economic components, the manageability of effects is considered rather than reversibility	Reversible	Reversible within the lifetime of the project or after decommissioning
		Irreversible	Effect will persist after decommissioning

6.2.6 Follow up and monitoring

Manitoba Hydro uses an adaptive management approach in dealing with potential project effects. Best efforts are made to predict and characterize effects, but follow-up and monitoring may be carried out to verify the accuracy of the environmental assessment of a project, assess the effectiveness of measures taken to mitigate adverse effects through the continuous observation, measurement or assessment of environmental conditions at and surrounding the project and determine compliance with regulatory requirements.

Manitoba Hydro's environmental protection program (EPP; Chapter 1.0) provides the framework for implementation, management, monitoring and follow-up of environmental protection activities in keeping with environmental effects identified in the environmental assessment as well as in regulatory requirements. The program outlines how Manitoba Hydro is organized and functions to deliver timely, effective, and comprehensive solutions and mitigations to predicted environmental issues and effects. The program consists of the following:

- An implementation framework outlining how environmental protection is delivered and managed
- The construction environmental protection plan (CEnvPP)
- Contractor environmental management plans
- A culture and heritage resources protection plan

Adaptive management will be a core approach in implementation of the EPP. Adaptive management is a planned process for responding to uncertainty or to an unanticipated or underestimated project effect. It applies information learned from monitoring actual project effects and compares them with predicted effects. If there is a variance between the actual and the predicted effects, a determination will be made as to whether modifications are required in existing mitigation measures or other actions are necessary to address the variance, or in cases where there may be no mitigating options available, the appropriate information is disseminated in a timely manner. Plans for reporting and disseminating information regarding follow-up and monitoring activities, including any public reporting, are included in the EPP.

6.3 Cumulative effects

Cumulative environmental effects are the environmental effects that are likely to result from a project in combination with the environmental effects of other past,

existing and future projects or activities. It is generally a five-step environmental assessment process for cumulative environmental effects (CEAA 2018) that includes:

1) Scoping
2) Analysis of effects
3) Identification of mitigation
4) Evaluation of significance
5) Follow-up

Manitoba Hydro also considered current cumulative effects best practices and learnings from past assessments. The following sections describe how cumulative effects assessment was completed.

Cumulative effects assessment was conducted for each valued component if it was determined that there is an adverse residual effect from the project and one of the current or future projects listed in Table 6-3 may interact with the valued component (Table 6-4) and affect the environment cumulatively.

The cumulative effects assessment involves examining potential interactions among other projects and activities with the project's residual environmental effects.

Where there are potential interactions, the pathways are examined and interactions with the projects' residual effects are characterized in combination with those of other reasonably foreseeable future projects. This environmental assessment uses plain language to describe potential cumulative effects.

This discussion occurs at the end of each valued component chapter with adverse residual effects.

This assessment also included a discussion on the common language understanding of cumulative effects in a concluding section. Participants in past environmental assessment processes, such as engaged stakeholders, interveners in past projects, and some Indigenous communities, have shared that cumulative effects discussions are too limited. Learning from this experience, this report includes a discussion on change to the Portage la Prairie landscape broadly over time and how that change has affected the way of life for people living in the area.

6.3.1 Scoping

Scoping includes identifying valued components for which residual environmental effects are predicted, determining spatial and temporal boundaries to capture potential cumulative effects, and examining the relationship of the residual

environmental effects of the designated project with those of other physical activities. Scoping helps determine which valued components should be carried forward to the analysis step. All valued components with adverse residual effects are carried forward to the cumulative effects assessment.

6.3.1.1 Spatial and temporal boundaries

Spatial boundaries are generally greater and temporal boundaries are often longer for a cumulative effects assessment since the effects of other projects and activities may occur over a wider area and extend before and after the project boundaries.

The spatial boundaries identified for the cumulative effects assessment area will include the regional assessment areas described for each valued component.

The temporal boundary for the cumulative effects assessment was determined to extend over an approximate 75-year period, which is the normal life expectancy for a transmission line.

6.3.1.2 Existing projects / activities

Ongoing activities in the regional assessment area include agriculture, industry, residential development, traditional and domestic resource use and commercial or recreational resource use. Details are provided in Table 6-3. The location of each project is shown on Map 6-1.

6.3.1.3 Future projects / activities

Foreseeable future projects (CEAA 2018) are those that are:

- Certain
  - The physical activity has received approval in whole or in part, such as:
    - environmental assessment approval
    - pre-development approval for early works, permits for exploration, or collection of baseline data or
    - some other regulatory approval from a province
  - The physical activity is under construction
  - The site preparation is being undertaken
- Reasonably Foreseeable
  - The intent to proceed is officially announced by a proponent
  - The physical activity is under regulatory review (i.e., the application is in process)
  - The submission for regulatory review is imminent

- The physical activity is identified in a publicly available development plan that is approved or for which approval is anticipated
- The physical activity supports – or is consistent with – the long-term economic or financial assumptions and engineering assumptions made for the project's planning purposes
- A physical activity is required for the project to proceed (e.g., rail or port transportation facilities, or a transmission line)
- The economic feasibility of the project is contingent upon the future development
- The completion of the project would facilitate or enable the future development

Certain and reasonably foreseeable future projects or activities are described in Table 6-3.

Table 6-3: Project and activity inclusion list

Project / Activity	Description of project /activity	Potential effects
Ongoing projects and activities		
Agriculture	Agricultural activities, such as cropping, livestock operations and aerial spraying continue throughout the regional assessment area.	Potential effects include noise, dust and GHG emissions, hazardous materials release and spills.
Traditional and domestic resource use activities	Hunting, fishing, trapping and other traditional and domestic resource use activities continue throughout the regional assessment area.	Potential effects include some pressure on local wildlife populations
Recreational Activities	Recreational activities (e.g. various sports and leisure activities) continue throughout the regional assessment area.	None.
Future projects and activities		
Southeast development project	A 147 lot residential development on a 45 acre parcel. The development will include a 9.2 acre public reserve area equipped with man-made retention ponds.	Noise and GHG emissions during construction. Loss of ~45 acres of farmland. An increase in wildlife habitat would be expected from the planned retention ponds. Alteration to the current aesthetics, may be positive.
Pea processing facility alteration	The removal of a wastewater emergency lagoon and truck wash bay; the addition of silos for starch and pea protein storage; the addition of a retention basin for site rainwater; and the removal of proposed septic tanks. Construction complete in August 2020.	The main effects of the pea plant are emissions (particulates and GHG) and noise due to ventilation, equipment used at the project site and truck noise.
Portage la Prairie water pollution control facility expansion	The City of Portage la Prairie is planning the upgrade and alteration of the existing water pollution control facility including construction and operation of a nutrient reduction system, to meet new effluent limits. The proposed upgrades and alterations will require building expansions and additional treatment infrastructure. Construction was to be complete in January 2021.	The main effects are GHG emissions and noise during construction (complete), odor and effluent to the Assiniboine River during operation.
Saskatchewan Avenue upgrades	Rebuilding of Saskatchewan Avenue West including the paved avenue, sidewalks, bike paths, green space, parking spaces and enhanced land drainage. Construction is not planned yet.	Noise and emissions during construction. Minimal change during operation would be expected.
Crescent Lake Causeway	Three-lane low level causeway. Construction is underway, construction to be complete in 2021.	Noise and GHG emissions during construction. Alteration to aesthetics, may be positive.
Organics Resource Management Facility	The proposed project consists of developing an organics resource management facility in a newly subdivided property in the RM of Portage la Prairie, previously used for agriculture. Work was completed summer 2020.	Foul odors, fire and explosions, accidents during transport; increased dust and particulates; clearing of vegetation; loss of wildlife habitat; contamination of soil and surface water; increased traffic and the associated public attitude.
Truck and travel center	Truck and travel center, with a convenience store, truckers lounge, fuel and diesel services, and truck and trailer parking. Located adjacent to the Days Inn. Construction to potentially start in 2021.	Noise and GHG emissions during construction, altered aesthetics and hazardous materials contamination.
Willow Bay housing development	The Manitoba Métis Federation (MMF) is building a new housing project in Portage la Prairie. The housing development will feature a triplex for families, as well as two duplexes for seniors. Construction to be complete in early 2021.	Noise and GHG emissions during construction. Minimal change during operation.
BP6/BP7	Manitoba Hydro is rebuilding the portion of the BP6/BP7 transmission line that was damaged in the October 2019 snowstorm. Construction is planed for the winter of 2022/2023.	Noise, GHG emissions, altered aesthetics and potential effects to vegetation and wildlife.

Portage Area Capacity Enhancement project	As part of this project, Manitoba Hydro is planning a new 230 kV line from this station to Dorsey Station northwest of Winnipeg. There are also 4 additional transmission lines (10+ year planning horizon), one 66 kV line currently planned and up to 6 additional 66 kV lines (10-year planning horizon) that will eventually leave the station.	Full overlap of potential effects.

Table 6-4: Future projects / activities interaction matrix

Project / Activity	Valued components						
	Agriculture	Human health	Community well-being	Wildlife	Economic opportunities	Traditional practices, culture and heritage	Greenhouse gases and climate change
Agriculture	X	X					X
Traditional and domestic resource use activities						X	
Recreational activities							
Southeast development phase	X	X	X	X	X	X	X
Pea processing facility alteration		X	X	X	X		X
Portage la Prairie water pollution control facility expansion		X	X	X	X		X
Saskatchewan Avenue upgrades		X	X	X	X		X
Crescent Lake Causeway		X	X	X	X		X
Organics Resource Management Facility		X	X	X	X		X
Truck and travel center		X	X	X	X	X	X
Willow Bay housing development		X	X	X	X	X	X
BP6/BP7	X	X	X	X	X	X	X
PACE project	X	X	X	X	X	X	X

6.3.2 Analysis of effects

Valued components that have residual project effects, which may interact with potential effects of a current or future project are carried forward to the analysis step. This step considers how the physical activities examined during scoping may affect the valued components identified for further analysis. Analysis of cumulative effects follows that for project effects (e.g. magnitude, duration etc.).

6.3.3 Identification of mitigation

Identification of mitigation aims to identify technically and economically feasible measures that would mitigate adverse cumulative effects. Mitigation may include elimination, reduction or control or, where this is not possible, restitution measures such as replacement, restoration or compensation should be considered.

One of the challenges in developing mitigation measures for adverse cumulative environmental effects is that it is typically not feasible (or appropriate) for one proponent to manage effects in an area created by several proponents; however, Manitoba Hydro is tentatively planning further work in the Portage la Prairie area. Accordingly, Manitoba Hydro is proposing cumulative mitigation including supporting Indigenous engagement and monitoring over a region that includes these potential projects.

The primary responsibility of any given proponent is to deal with their own projects. The three types of mitigation measures that can be implemented are those:

- Implemented solely by the project proponent
- Implemented by the project proponent in cooperation with other project proponents, government, Indigenous communities or interested parties
- Implemented independently by other project proponents, government, First Nation, Métis or interested parties

For the latter two, the degree to which the proponent can influence the implementation of these measures is noted, where known.

6.3.4 Evaluation of significance

Significance evaluations have not been completed for cumulative effects assessments and instead the effects of future projects that combine with residual effects of the project are characterized in plain language. Each valued component chapter includes a discussion on the potential incremental future cumulative effects and identifies additional measures that could mitigate cumulative effects.

6.4 Greenhouse gases and climate change

The *Environment Act* proposal report guidelines (Manitoba Sustainable Development 2018) require discussion of climate change implications including a greenhouse gas inventory calculated according to guidelines developed by Environment Canada (Environment Canada 2021) and the United Nations (IPCC 2019). Chapter 13.0 provides details on climate change and the greenhouse gas inventory for the project.

6.5 Effects of the environment on the project

The assessment includes an evaluation of environmental effects that may occur as a result of the environment acting on the project. Potential environmental changes and hazards may include wind, severe precipitation, ice storms, flooding, grass and forest fire, or tornado. The influence that these environmental changes and hazards may have on the project will be predicted and described as well as the measures taken to avoid potential adverse effects. The effects of the environment on the project are presented in Chapter 1.0.

6.6 Accidents and malfunctions

The assessment considered the effects of accidents and malfunctions that might occur in connection with the project. It includes a range of potential accidents and malfunctions from the construction and operation of the project and evaluates their environmental effects. It provides an initial basis for the development of emergency response planning and what eventually will be incorporated into the emergency response plan.

For each event considered, a possible scenario relating how the event might occur during the life of the project was developed. Details on the types of accidents and malfunctions considered in this environmental assessment and the scenarios developed for this assessment, are discussed in Chapter 15.0. Potential environmental effects on the valued component due to accidents, malfunctions and unplanned events are assessed in a similar fashion to project environmental effects.

Environmental effects are characterized using the same terms used for project environmental effects, and mitigation measures are prescribed. The significance of the environmental effect is then determined using the same thresholds used for routine project environmental effects.

Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station

Projects in the Cumulative Effects Assessment

- Linear Regional Project
- Regional Project

Landbase

- Transmission Line
- Railway
- Trans-Canada Highway
- Provincial Highway
- Provincial Road
- Municipal Road
- First Nation
- National/Provincial Park
- Wildlife Management Area
- City of Portage La Prairie
- Rural Municipality

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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Regional Projects

Map 6-1

7.0 Agriculture

Agriculture was selected as a valued component because of its importance to landowners, agricultural producers, the local community and the economy of the area.

7.1 Scope

7.1.1 Spatial boundaries

The spatial boundaries for the environmental assessment consist of the project development area, local and regional assessment areas. Valued component specific details are described below.

Project development area: footprint of the proposed project including the footprint of the station, the approach (access), including the tower footprints and the 60 m right-of-way and any additional areas such as staging areas.

Local assessment area: consists of a 1 km buffer around all station footprints (Map 7-1). This covers an area that generally will encompass the basic field management unit commonly used, the quarter section, or an area of land 800 m × 800 m.

Regional assessment area: The regional assessment area includes the boundaries of the Rural Municipality of Portage la Prairie (Map 7-2). The RM represents the region that encompasses the communities within which changes in socioeconomic parameters attributable to project effects on agriculture might occur.

7.1.2 Temporal boundaries

The primary temporal boundaries for the assessment are based on the timing and duration of project activities as follows:

- Construction – two years
- Operations and maintenance – for the life of the project, estimated to be a 75-year design life
- Decommissioning – two years

7.2 Existing conditions

The project is in the Prairies Ecozone, Lake Manitoba Plains Ecoregion and the MacGregor Ecodistrict.

7.2.1 Soil

Soil information was developed for the RM of Portage la Prairie by Agriculture and Agri-Food Canada (Manitoba Land Resource Unit 1997), and for the MacGregor Ecodistrict by Smith et al. (Smith, et al. 1998).

Nearly all the soils in the MacGregor Ecodistrict are imperfectly drained gleyed rego black chernozems that have developed on shallow, slightly to strongly calcareous, sandy glaciolacustrine and deltaic sediments of the Lower Assiniboine Delta. Internal drainage is impeded by a clay substrate at about the 1 to 3 m depth, resulting in high water tables. Local areas of poorly drained gleysolic soils are very common.

The soils have been subjected to severe wind erosion since cultivation resulting in significant areas of regosolic soils along road allowances and groves of trees where drifting soil tended to accumulate.

7.2.2 Land capability

Map 7-3 shows the land capability for agriculture (Canada Land Inventory; (Agriculture and Rural Development Canada 1965) in the regional assessment area. The land capability classification displays the potential for agricultural production in one of seven classes, based on the characteristics of the soil. Class 1 soils (10% of the regional assessment area), have no significant limitations in use for crops and under good management can be moderately high to high in productivity for a wide range of field crops. Thirty-seven percent the regional assessment area consists of Class 2 soils, which have moderate limitations that can restrict the range of crops or require moderate conservation practices. Under good management, Class 2 soils are moderately high to high in productivity for a wide range of crops. Twenty-seven percent of the route planning area is comprised of Class 3 soils, which have moderately severe limitations that restrict the range of crops or require special conservation practices. In addition, there are small patches of Class, 4, 5, 6, and 7 soils, which have severe to very severe limitations that restrict the range of crops, require special conservation practices, are capable only of producing perennial forage crops, or have no capacity for arable agriculture or permanent pasture.

Based on a review of the harvested acres in the RM of Portage la Prairie, from 2010-2019 (Manitoba Agricultural Services Corporation 2021), canola, red spring wheat and soybeans were the crops most harvested, followed by barley, grain corn, oats, feed wheat, and winter wheat.

The RM also produces many speciality crops such as carrots, onions, asparagus, parsnips, beans, rutabagas, cauliflower, broccoli, peas, potatoes, various grains and

oil seeds, strawberries, Saskatoon berries, and raspberries (PCRC 2018). Much of the rural municipality is under irrigation, and additional acreage can be incorporated into the existing irrigation system. The diverse agricultural production of the Portage area has drawn many food processing plants to the city. These include McCain Foods Ltd., Richardson Milling, Roquette Canada, and JR Simplot's Canadian potato processing plant.

7.3 Effects assessment

7.3.1 Significance thresholds

A residual effect on agriculture is considered significant if the project results in the loss of agricultural land or degradation of soil quality such that existing agricultural production cannot continue at current levels for extended periods of time (beyond the construction phase) without adequate compensation.

7.3.2 Project interactions

Project activities that interact with agriculture (Table 6-1) include:

- Site preparation
- Station, transmission tower presence
- Decommissioning

7.3.3 Effects pathways

Transmission stations and lines can have several effects on agricultural operations. The consequences to farm operations and management and potential changes to the land itself can result in increased costs, inconvenience, nuisance and increased effort for operators. Transmission stations and lines can cause effects on the following agricultural operations:

- Loss of land from production due to the station footprint and transmission line structures
- Inconvenience, nuisance and increased production costs associated with operating farming equipment, aerial spraying and crop production around structures
- Compromised biosecurity for cropping lands and livestock operations

7.3.3.1 Loss of agricultural land

The presence of the station and the transmission line structures will permanently remove the land within the station footprint and the land under the structures from

production. The presence of the station and areas north and east of the station that will not be accessible to farm equipment will permanently remove 6.5 ha of agricultural land from production (Figure 7-1). The future transmission (green lines - Figure 7-1) and future distribution (blue lines - Figure 7-1 – both 10 year planning horizon) will remove an additional 10.5 ha (17 hectares removed in total) of agricultural land from production. The sectionalization of P81C will remove just over 100 m^2 from production (the area around the two towers on the east side of the road) and cause an increase in nuisance effects (see below).

Although station and tower footprints will result in an area of land removed from production, due to the small size of the project, small footprint of the station and towers, the loss of land from production is anticipated to be low.

Manitoba Hydro will purchase the land required for the station. Manitoba Hydro's compensation policy (i.e., the structure impact portion) takes into consideration the lost production underneath and directly adjacent to the towers situated on agricultural land for directly affected landowners.

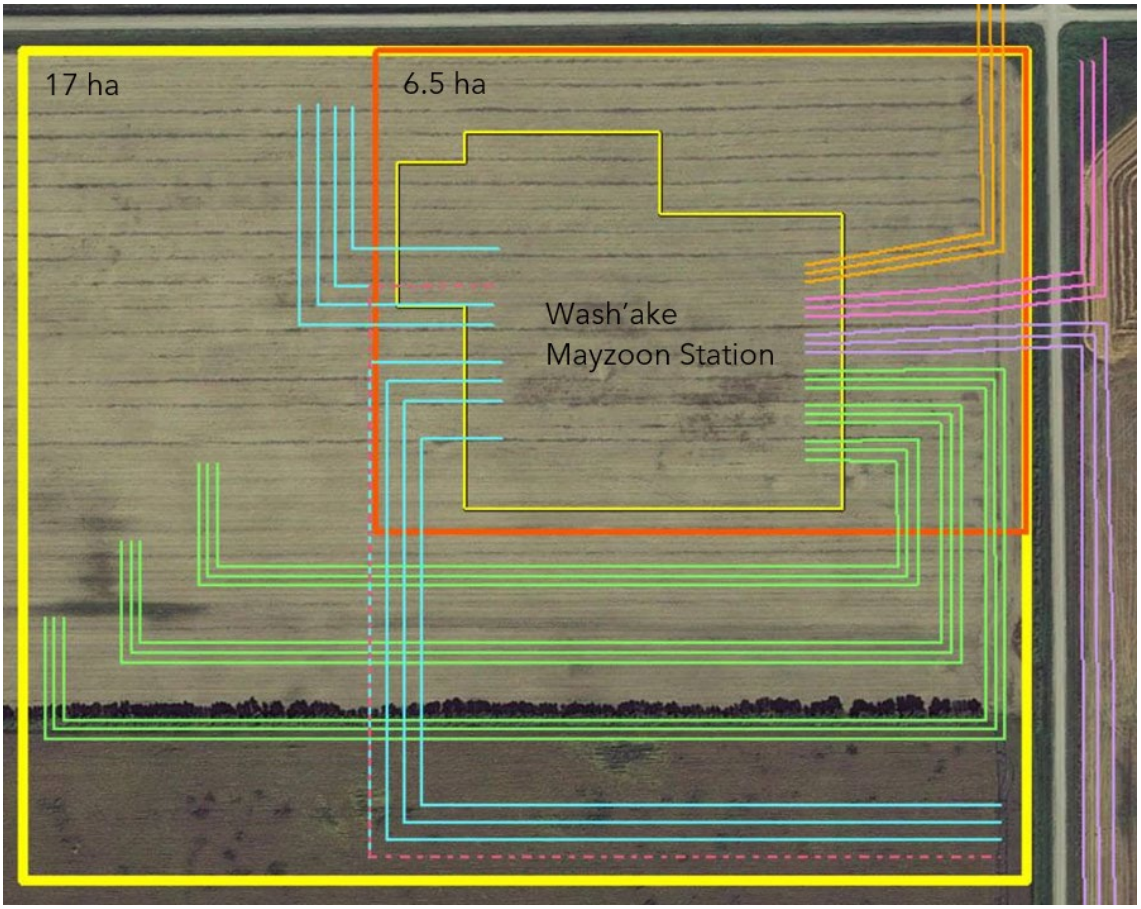


Figure 7-1: Agricultural land removed from production[2]

7.3.3.2 Inconvenience, nuisance and costs from structures

Farming around towers presents several challenges. Crop production is reduced within the immediate vicinity of the tower due to overlap around each structure (PAMI 2015); there are increased costs associated with the time it takes to farm around transmission towers, the application of seed, fertilizer and chemicals in the area of overlap around each structure, and decreased weed control around the towers.

Previous studies have found that approximately 70% of the costs of structures to farmers were the result of the non-productive area or area lost for production around the tower (Gustafson, et al. 1980); the other 30% of the costs were the result of lost time, crop damage and increased input costs from double coverage (Scott 1981).

For those property owners directly affected, landowners will be eligible for compensation. The structure impact portion of the compensation policy accounts for

[2] green lines are future transmission lines, blue lines are future distribution lines

reduced productivity, additional time required to maneuver farm machinery around each structure; double application of seed, fertilizer and chemicals in the area of overlap and additional weed control around each structure.

8.8.3.3 Biosecurity

Soil transport is an important mechanism for the spread of weeds and soil-borne diseases from one field or region to another. Movement of equipment and workers in croplands provides a potential pathway for disease and weed transmission to previously non-affected soils, compromising biosecurity for affected lands. There is potential for soil to be transferred from field to field or from another region to the project site during the construction phase as a result of construction equipment, other vehicles and people moving between fields.

The introduction of pests can have lasting adverse production value (reductions in yield) and production cost (increased input and management costs) effects. They can negatively affect yield, quality, value and sale of raw and processed commodities into domestic and international markets (Howard 2013). Diseases can spread quickly within and between fields by natural means (e.g., wind, rain, water and soil erosion and insects) or human-related means through transport of infested seed, soil and crop residues.

7.3.4 Mitigation measures

The following mitigation measures will be implemented to minimize the potential effects to land use and ownership:

- Purchase of property at the station site at fair market value
- Maintain access to adjacent land parcels
- Implement Manitoba Hydro Landowner Compensation Program
- Implement the Manitoba Hydro Biosecurity Policy and Standard Operating Procedures

7.3.5 Characterizing residual effects

Given the application of the above-described mitigation measures the effects of the Project in terms of agriculture are summarized as follows:

- Direction: Adverse
- Magnitude: Small
- Geographic extent: Project Footprint
- Duration: Long term
- Frequency: Regular/continuous

- Reversibility: Reversible

With the implementation of mitigation measures, residual effects from the project on agriculture are anticipated to be not significant.

7.3.6 Follow up and monitoring

Manitoba Hydro's practice is to develop project-specific environmental protection plans where mitigation measures are stipulated for construction, operation and maintenance activities. These measures are regularly reviewed for their effectiveness as part of a process of adaptive management in project monitoring and follow-up.

Manitoba Hydro has provided and will continue to provide project information to relevant agencies and organizations as required and requested.

Potential follow-up related to agriculture may involve biosecurity cleaning audits and through construction inspection. Inspection will determine whether the item or activity is in conformance with mitigation requirements.

7.4 Cumulative effects

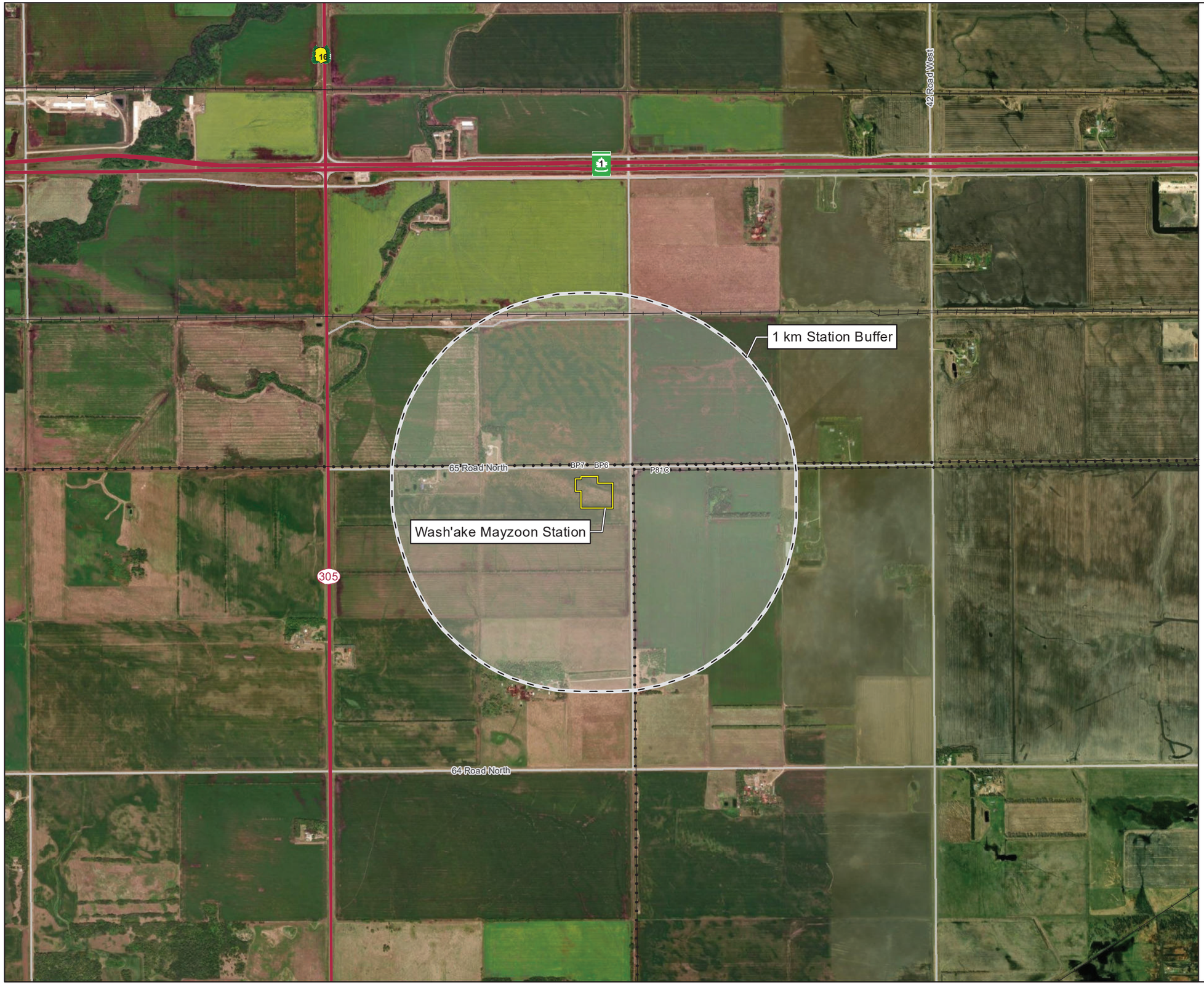
Several projects listed in Table 6-4 may interact with the residual effects of this project. The southeast development Phase I project, organics resource management facility and the Portage area capacity enhancement project (Phase II) are (or will be) on agricultural land and therefore there will be a cumulative loss of productive agricultural land in the area. Phase II of the Portage area capacity enhancement project includes a transmission line through agricultural land and will therefore also have similar nuisance effects and biosecurity risks. There are also 4 future transmission lines and 8 future 66 kV lines that will leave the station. This will directly affect agricultural land use on the same farm unit the station (Figure 7-1). This will take an additional 10.5 ha out of production. The distribution lines, after leaving the property, will be within road right-of-way where possible, so will not further impact agricultural lands. The four transmission lines, however, have the potential to cross agricultural land and may travel as far as the Brandon area.

7.5 Sensitivity to future climate change scenarios

Effects of climate change relate to the anticipated increase in temperature and precipitation. Winter months are projected to experience greater relative changes in precipitation than summer months. Normal precipitation coupled with higher temperatures in July and August could result in increased water deficits for crops in these summer months.

Given the timelines associated with the predicted precipitation and temperature changes (2050s and 2080s), crop type or variety selection and new variety options (i.e., continued advances in breeding and genetics) will likely be able to overcome these challenges.

The predicted climate change scenarios would not change the significance determinations of the assessment.



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station

Assessment Area

- Local Assessment Area - Agriculture

Landbase

- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Rural Municipality

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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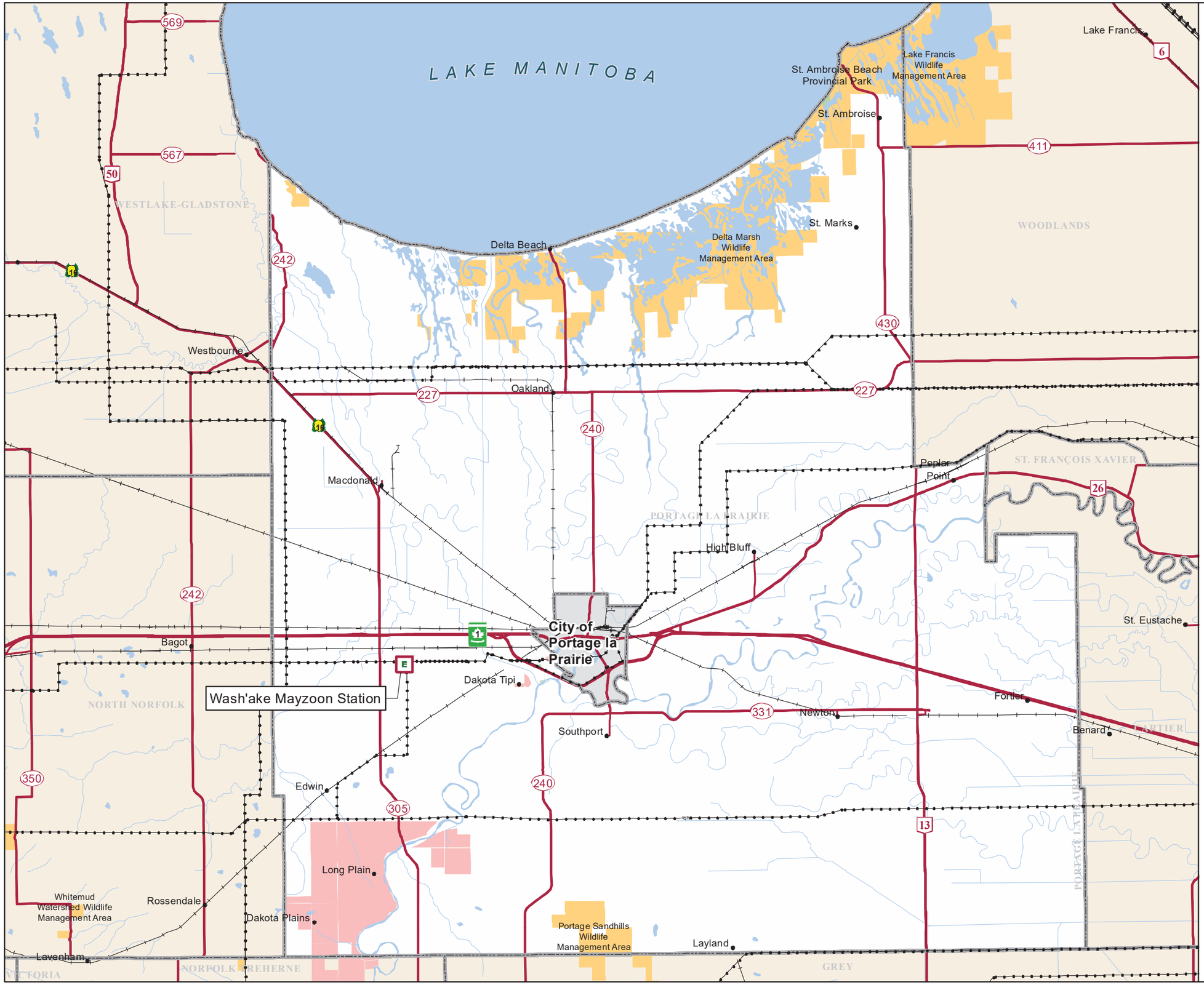
Local Assessment Area Agriculture

Map 7-1



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station

Landbase

- Transmission Line
- Railway
- Trans-Canada Highway
- Provincial Highway
- Provincial Road
- First Nation
- National/Provincial Park
- Wildlife Management Area
- City of Portage La Prairie

Regional Assessment Area - Agriculture

- RM of Portage La Prairie

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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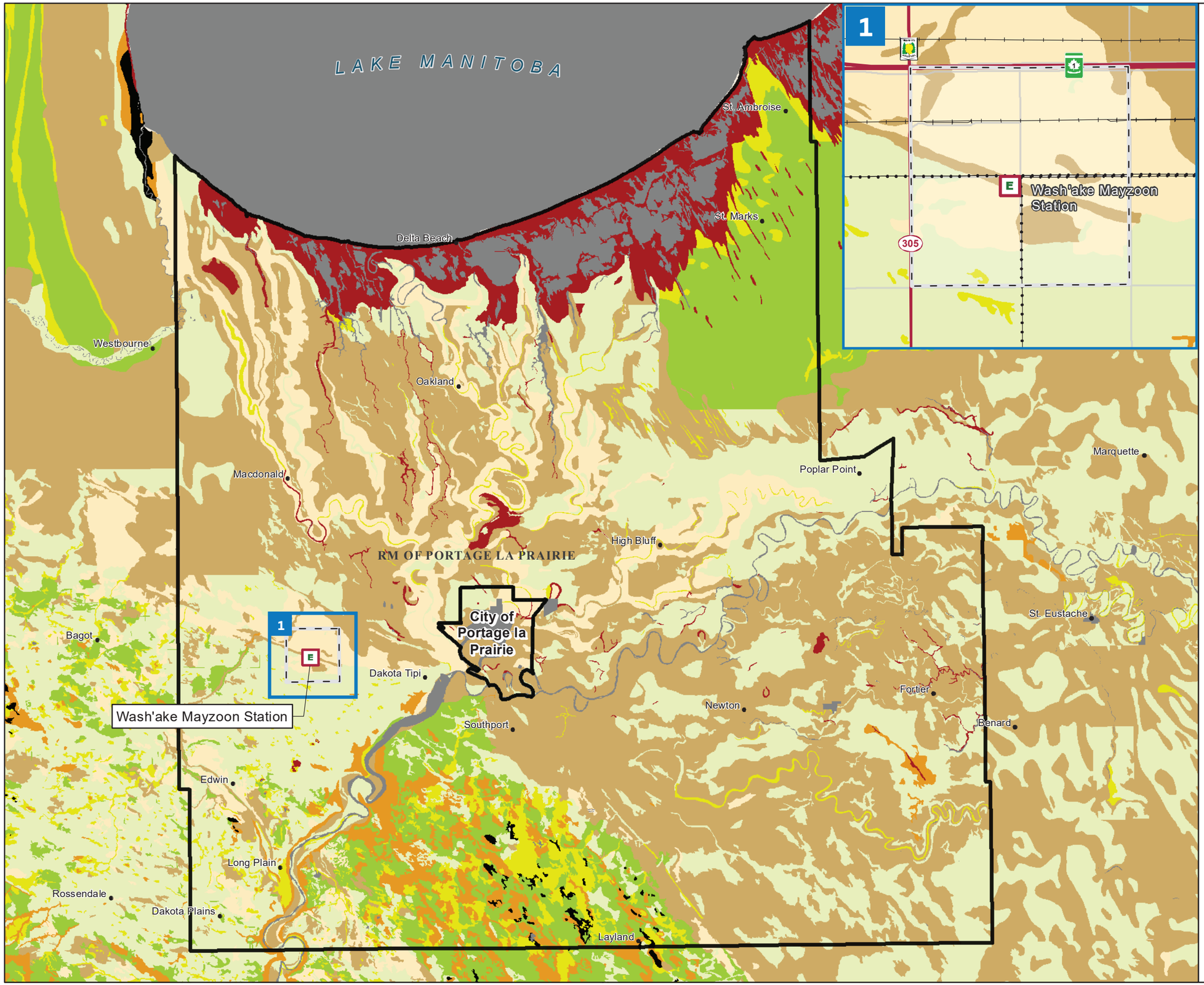
Regional Assessment Area Agriculture

Map 7-2



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- E — Wash'ake Mayzoon Station

Land Capability For Agriculture

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Class 6
- Class 7
- Organic
- Unclassified

Assessment Area

- Local Assessment Area
- Regional Assessment Area

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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Land Capability for Agriculture

Map 7-3

8.0 Human health

8.1 Introduction

Human health is a valued component because local changes (e.g. air emissions) resulting from the project may have health effects on residents within the local assessment area.

This chapter assesses potential human health risks for people who live, work, or engage in recreational activities in the local assessment area. The assessment methods are based on Health Canada guidance (Health Canada 2019), which evaluates the potential effects of the project that may influence health risk relative to the current scientific understanding of these effects. Specifically, this assessment evaluates the potential project influence on human health risk from:

- change in air quality related to dust and emissions from construction and maintenance activities
- change in groundwater quality from construction and maintenance activities

Numerous reviews of research literature on exposure to extremely low frequency EMF and possible adverse health effects have been conducted by national and international scientific and government agencies, including Health Canada and the World Health Organization. None of these agencies have concluded that exposure to extremely low frequency EMF is a demonstrated cause of any long-term adverse health effect. Study results are detailed in an EMF health research update report (Exponent 2015b), conducted for the recently constructed Manitoba-Minnesota transmission line.

Canadian (Manitoba Clean Environment Commission 2001) and international studies ((World Health Organization 2007); (International Agency for Research on Cancer 2002)) have concluded that there are no known adverse health consequences of exposure to extremely low frequency EMF at the levels generally found in residential and occupational environments, including proximity to electric transmission and distribution facilities. There is no conclusive evidence of any harm caused by exposures at levels normally found in Canadian living environments (Health Canada 2004).

The perceived health effects of EMF and other nuisance factors (e.g. noise, visual impacts) are covered in the community well-being chapter (Chapter 1.0), which considers change in stress and anxiety.

8.2 Scope

8.2.1 Significance thresholds

The *Canadian Environmental Protection Act, 1999* (CEPA) is the principal federal legislative tool governing environmental contaminants. It is administered jointly by Environment and Climate Change Canada and Health Canada. CEPA enables the Minister of the Environment and the Minister of Health to regulate substances and allows the federal government to assess air pollutants and provide targets that can be used in setting goals for reducing health risks from contaminants of potential concern (COPCs).

The WHO Air Quality Guidelines (World Health Organization 2006) provide exposure-response relationships describing the relationship between ambient particulate matter (PM) and various health endpoints. The guidelines do not propose a specific guideline value, as a threshold could not be identified below which no adverse effects on health occur (Health Canada 2016).

Scientific evidence shows that fine particles (PM2.5) are strongly associated with mortality and other human health endpoints, such as hospitalization for cardio-pulmonary disease (World Health Organization 2003). The new Canadian Ambient Air Quality Standards for PM also recognize that there is no population health threshold for human health effects; therefore, any increase in exposure will result in an incremental population risk (Environment and Climate Change Canada 2017). PM10 and PM2.5 are non-threshold substances, meaning that health effects may occur at any level of exposure.

Additional significance thresholds are based on Health Canada's guidance for conducting human health risk assessments for chemicals.

For the assessment of potential change in human health risk related to inhalation of chemicals in air or ingestion of water, the levels of risk associated with baseline (existing) conditions are considered.

A significant effect would occur if the project contributes to an increase in air quality parameter concentrations to levels that are above ambient air quality guidelines or if chemical concentrations from groundwater exceeded drinking water quality guidelines (Manitoba Water Stewardship 2011).

8.2.2 Spatial boundaries

The spatial boundaries for the environmental assessment consist of the project development area, local and regional assessment areas. Valued component specific details are described below:

Project development area: Footprint of the proposed project including the station footprint, transmission line right-of-way, any additional areas such as marshalling yards or access road allowances.

Local assessment area: A 1 km buffer around the station (Map 8-1). It represents the extent to which air contaminants may be generated and released to the atmosphere during construction and operations activities.

Regional assessment area: The boundaries of the Rural Municipality of Portage la Prairie (Map 8-2). Effects of other projects and activities occurring within the regional assessment area that have potential to act cumulatively with the project are assessed based on the regional assessment area

8.2.3 Temporal boundaries

The primary temporal boundaries for the assessment are based on the timing and duration of project activities as follows:

- Construction – two years
- Operations and maintenance – for the life of the project, estimated to be a 75-year design life
- Decommissioning – two years

8.3 Existing conditions

8.3.1 Air quality

The project is in an area predominantly used for agricultural purposes. Existing air quality conditions are not an issue for most of the year. The exception may occur during harvest, which would increase emissions and particulate matter and reduce visibility from local crop residue burning programs.

There are a few large sources of industrial air pollution around Portage la Prairie. Baseline sources of air emissions will also include windblown dust from traffic, especially along the TransCanada highway, and agricultural operations and vehicle emissions along roads and highways around Portage la Prairie.

8.3.2 Geology and hydrogeology

The project falls within the Manitoba lowland physiographic region, which lies to the east of the Manitoba escarpment (Betcher and Pupp 1995). The area has gentle relief and is underlain by gently southwestward dipping Paleozoic and Mesozoic sediments consisting mainly of carbonate rocks with some clastic and argillaceous units (Betcher and Pupp 1995). Bedrock is overlain by glacial tills and proglacial lacustrine sediments" and the overburden is generally less than 10 m thick, increasing with proximity to the escarpment.

Groundwater aquifers in the bedrock of the regional assessment area are typically not a significant water source as they are generally very saline, with total dissolved solids concentrations ranging between 5,000 mg/L and 100,000 mg/L ((Smith, et al. 1998), (Rutulis 1986a)).

The principal source of water is good quality groundwater extracted from shallow, sandy, surface deposits and gravelly aquifers associated with till (Smith, et al. 1998). These shallow groundwater aquifers occurring in some sand and gravel lenses in the project area have depths ranging from a few meters to more than 100 m. They typically produce well yields between 0.1 L/s and 10 L/s, with groundwater quality ranging from very poor to excellent (Rutulis 1986b).

8.4 Effects pathways

There are two main pathways that can lead to affects to human health:

- Change in air quality
- Change in groundwater quality

The project has the potential to result in a change to air quality due to emissions from vehicles and machinery and dust generation, particularly during construction. It also has the potential to result in a change to groundwater quality due to the release of hazardous materials.

The pathways, mitigation measures, and characterization of effects of changes in air and groundwater quality on human health risk are described below.

8.4.1 Pathways for change to air quality

Air quality is determined by the levels of gases and particulate matter in the air. Gases include nitrogen dioxide, sulphur dioxide, and carbon monoxide, all of which can have health effects above certain concentrations.

Particulate matter is classified according to particle size, with fine particulate matter defined as PM10 (less than 10 µm diameter) and PM2.5 (less than 2.5 µm diameter). Smaller particles pose a greater health risk, as they can travel deeper into the respiratory system when inhaled.

Change in air quality is important to sensitive individuals, including children, the elderly, and people with existing cardiorespiratory health problems such as asthma and chronic obstructive pulmonary disease.

8.4.1.1 Machinery operation

Machinery operation will result in air emissions (i.e., vehicle emissions and dust) to which people may be exposed. Causal associations have linked poor air quality to respiratory and cardiovascular illnesses, hospitalizations and mortality (Health Canada 2016).

For vehicles burning fossil fuels, associated contaminants may include polycyclic aromatic hydrocarbons, metals, trace elements (e.g., arsenic, copper, lead, manganese, sulphur, zinc), and fine particulate matter (Health Canada 2019) .

Road transportation (including fuel combustion, tire friction on road pavement and brake usage) is also a source of many air pollutants as well as dust.

During the construction phase, heavy equipment and vehicles will emit combustion products (e.g., NO2, SO2, CO and particulate matter). Particulate matter is generally the focus of human health concerns associated with diesel emissions from construction equipment. Fugitive dust (dust from disturbed soils becoming airborne) from the operation of heavy machinery, vehicles and vegetation removal will also be emitted.

Equipment required to completed foundations includes auger drills, concrete trucks and excavators. Equipment required to assemble and erect towers includes loaders, boom trucks and cranes. Equipment required to string conductors included boom trucks, drum pullers, drum tensioners, CAT D8s, cranes, radial arm diggers and excavators. Emissions are also generated by construction workforce traffic.

Emissions are not expected to exceed Manitoba's Ambient Air Quality Guidelines.

8.4.2 Pathways for change to groundwater quality

In general, groundwater quality will not be affected under normal conditions of construction and operation of the project. Potential pathways for affecting groundwater quality in wells is due to pesticide/ herbicide application for vegetation management or the release of hazardous materials due to spills.

Manitoba Hydro will apply herbicides at the station site for vegetation management (weed control). In the event of improper application, the potential exists for herbicide entry into shallow aquifers resulting in an indirect effect (groundwater contamination) and possible exceedance of regulatory guidelines for drinking water (Health Canada 2014).

Under normal conditions, most of these chemicals should degrade before they reach the aquifers. The aquifers that groundwater wells are accessing are deeper than herbicides should reach (Manitoba Hydro 2015).

Spills could result in groundwater contamination and subsequent effects on human health if the material reaches an aquifer used for human consumption.

8.4.2.1 Oil filling

The power transformer holds over 47,000 liters of oil (Table 2-1). The transformer is delivered to site empty and the oil is added after it is installed. An accident or malfunction during this stage has the potential to leak oil onto the ground which could eventually reach the groundwater aquifer. This could affect human health if groundwater is used for human consumption.

8.4.2.2 Hazardous material storage and handling

During construction and/or operation and maintenance, accidents and / or incidents may occur. Environmentally hazardous materials such as petroleum hydrocarbons (e.g., gasoline, diesel and lubricating oils) and hydraulic fluid will be used. Spills or leaks of petroleum hydrocarbons could occur as a result of incidents involving heavy equipment, vehicles that contain fuel, oil and lubricants (e.g., excavators and cranes). This could contaminate the air or groundwater and affect the health of people in the area.

8.4.3 Mitigation

Health Canada (Health Canada 2016) encourages the use of all available mitigation measures that are technically and economically feasible to limit negative impacts to air quality. The following mitigation will be applied to minimize potential effects to air and groundwater quality:

- Mud, dust and vehicle emissions will be managed in a manner that allows for safe and continuous public activities near construction sites
- Only water and approved dust suppression products will be used to control dust

- All applicable permits will be obtained, and provincial regulations adhered to for pesticide use

In the event of a release during construction, contractors will follow their own spill response plans, which will have been reviewed as part of their contracts with Manitoba Hydro.

Manitoba Hydro employees will follow the procedures for spill response outlined in the company's spill response and prevention plan.

Stations have spill kits and spill containment plans, including a combination of non-point and point containment for oil-filled equipment.

8.4.4 Characterizing residual effects

Change in air quality resulting from construction and maintenance activities will be short-term in duration, limited to the right-of-way, and is not be expected to produce emissions that differ greatly from current physical activities in the area (i.e., agricultural operations, industrial emissions). The Project is not expected to produce emissions that will result in an increase in air quality parameter concentrations that are above Manitoba's Ambient Air Quality Guidelines (Manitoba Conservation and Water Stewardship 2005). As a result, residual environmental effects do not pose a human health risk.

Project operation and maintenance could affect groundwater quality including a reduction in groundwater quality from herbicide use. With the implementation of the standard mitigation measures described above, there will be no residual effects on groundwater during project operation and maintenance.

Given the application of the above-described mitigation measures the effects of the Project in terms of health are summarized as follows:

- Direction: Adverse
- Magnitude: Small
- Geographic extent: Local
- Duration: Medium-term
- Frequency: Regular
- Reversibility: Reversible

With the application of mitigation measures, the residual effects of the project on human health risk, associated with air and groundwater quality are predicted to be not significant.

8.4.5 Follow up and monitoring

Manitoba Hydro's practice is to develop project-specific environmental protection plans where mitigation measures are stipulated for construction, operation and maintenance activities. These measures are regularly reviewed for their effectiveness as part of a process of adaptive management in project monitoring and follow-up.

Manitoba Hydro has provided and will continue to provide project information to relevant agencies and organizations as required and requested.

Potential follow-up will be through construction inspection. Inspection will determine whether the item or activity is in conformance with mitigation requirements.

8.4.6 Cumulative effects

Several projects listed in Table 6-3 may interact with this project. However, construction isn't planned for several years, so the overlap with the listed projects will be minimal and therefore not likely increase the overall changes in air or groundwater quality.

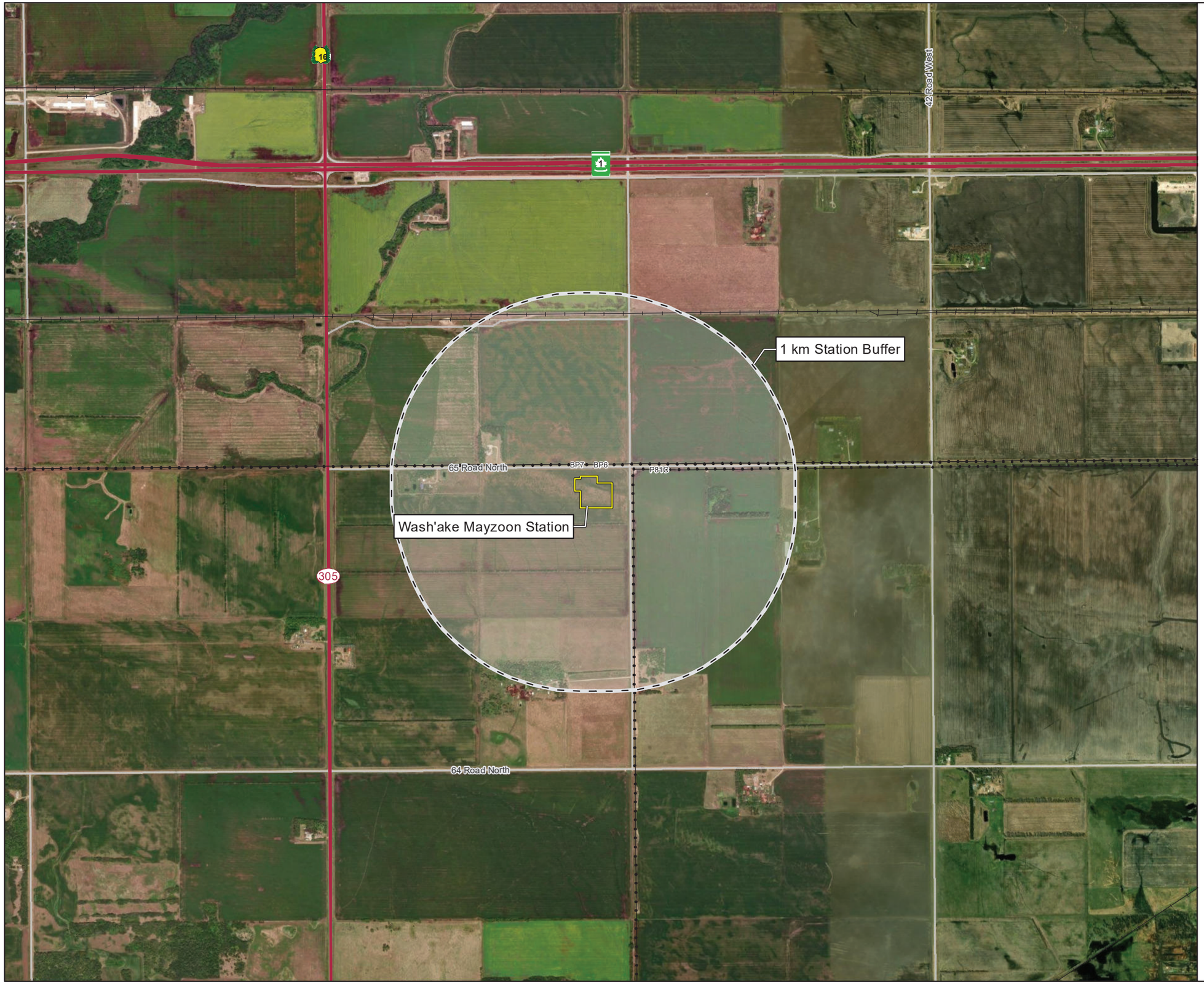
8.5 Sensitivity to future climate change scenarios

Effects of climate change relate to the anticipated increase in temperature and precipitation. Winter months are projected to experience greater relative changes in precipitation than summer months. Health effects relate to changes in air quality or groundwater quality. These should not be altered by future changes in temperature or precipitation.

The predicted climate change scenarios would not change the significance determinations of the assessment.

Map 8-1: Local assessment area – human health

Map 8-2: Regional assessment area – human health



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station

Assessment Area

- Local Assessment Area (Human Health)

Landbase

- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Rural Municipality

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
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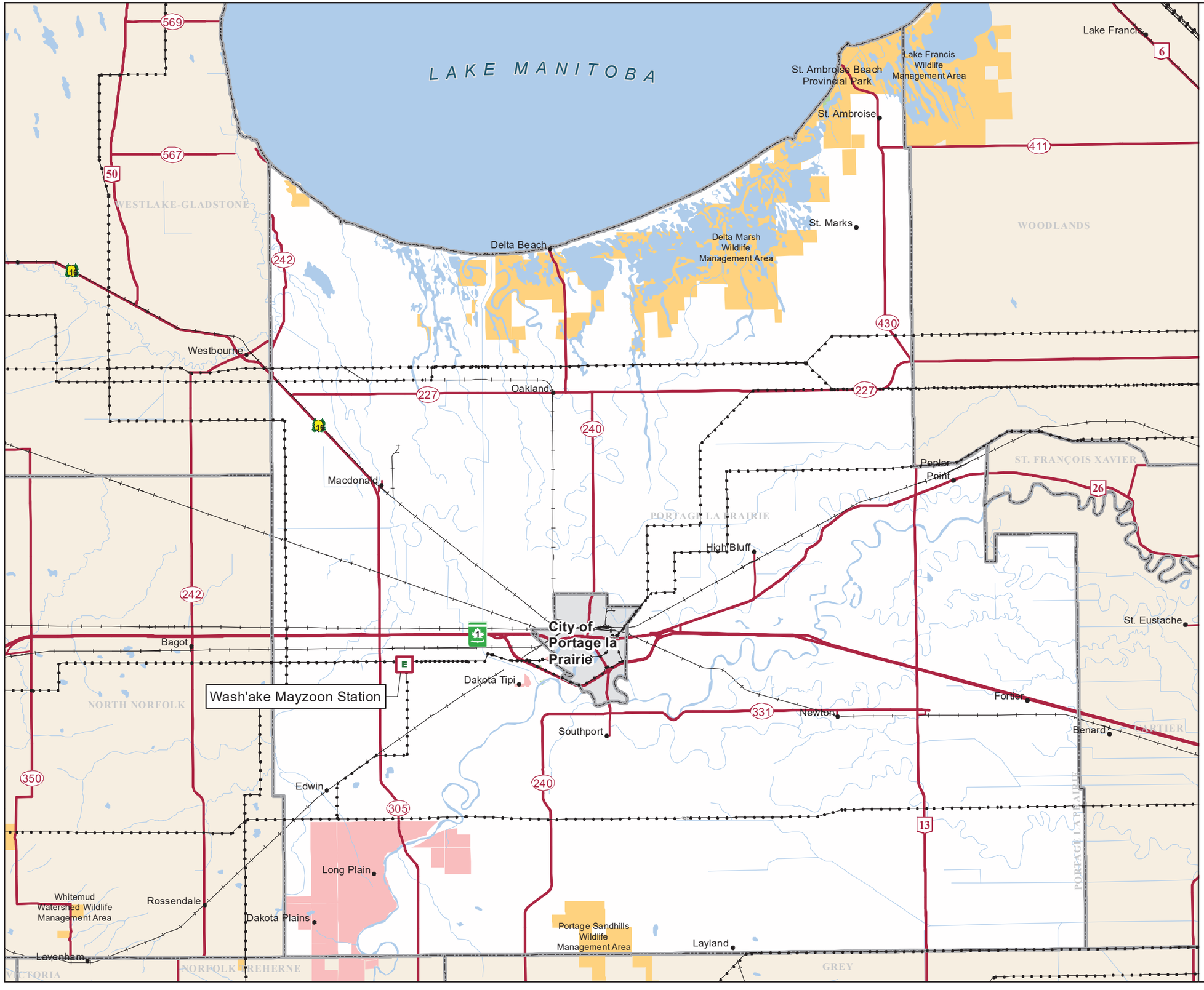
Local Assessment Area Human Health

Map 8-1



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station

Landbase

- Transmission Line
- Railway
- Trans-Canada Highway
- Provincial Highway
- Provincial Road
- First Nation
- National/Provincial Park
- Wildlife Management Area
- City of Portage La Prairie

Regional Assessment Area - Human Health

- RM of Portage La Prairie

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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Regional Assessment Area Human Health

Map 8-2

9.0 Community well-being

9.1 Introduction

Community well-being is a valued component because local changes (e.g. noise, visual disturbance) resulting from the project may affect people who live, work, or engage in traditional or recreational activities in the area. Such effects may be manifested as increased stress or annoyance, or a general decrease in their well-being.

This chapter assesses potential changes to community well-being. This is distinguished from human health effects (Chapter 8.0), which are project effects resulting from environmental change, such as change in air or groundwater quality that would have a direct effect on human health.

Local property owners, regional residents and others who visit or frequent the local assessment area derive individual or personal well-being from the values offered by the agricultural setting and rural lifestyle.

This chapter assesses potential effects on community well-being caused by the introduction of the project, including:

- Increase stress and annoyance and/or a decrease in personal well-being caused by:
    - Potential changes to the visual landscape
    - Potential increase in noise
    - Perceived changes in property values
    - Perceived health effects from EMF

9.2 Scope

9.2.1 Significance thresholds

9.2.1.1 Visual landscape

The significance of visual effects depends primarily on the anticipated magnitude of the visual alteration created by the project and the visual sensitivity of the landscape, including the anticipated viewer response to the visual alteration.

The thresholds for assessing the significance of effects on visual quality, defined below, consider the effect of the project within the planning context and intended management vision for the area, as well as the degree of change from current baseline conditions.

A residual effect is considered significant if the following conditions occur:

- The average visual landscape character changes from relatively undisturbed to disturbed (Table 9-1)
- Visual quality is an important planning objective by government authorities

A "relatively undisturbed" visual landscape is one that is either rural/pastoral in character, or rural/pastoral with minimum development (Table 9-1). A disturbed visual landscape exceeds the rural pastoral with distinguishable development class, becoming more semi-urban/industrial in character.

Table 9-1: Landscape character class description

Landscape character class	Description
Rural/Pastoral	The central field of view toward the project has a rural/pastoral character. Built interventions, when assessed from a viewpoint, are (1) not visible or (2) very small in scale, and not easily distinguished from the pre-development conditions.
Rural/Pastoral with minimal development	The central field of view toward the Project has a rural/pastoral character. Built interventions, when assessed from a viewpoint, are (1) difficult to see and (2) low in prominence.
Rural/pastoral with distinguishable development	The central field of view toward the Project has a rural/pastoral character. Built interventions, when assessed from a viewpoint, are (1) easy to see and (2) low to moderate in prominence.
Semi-urban/industrial	The central field of view toward the Project is dominated by a semi-urban or industrial character. Built interventions, when assessed from a viewpoint, are (1) easy to see and (2) high in prominence.
Urban/industrial	The central field of view toward the Project has an urban or industrial character. Built interventions when assessed from a viewpoint, begin to dominate the view as they are (1) very easy to see and (2) very high in prominence.

The Portage la Prairie development plan (Portage la Prairie Planning District 2018) outlines several common general goals related to visual quality. These include the promotion of development that enhances the aesthetic quality and visual cohesion of residential or commercial developments. The plan recognizes that urban parks and

recreation environments have a significant role in defining the character and quality of a community and are experienced by the visual and physical linkages that permit people to interact and move through space.

9.2.1.2 Noise

Health Canada (Health Canada 2017) does not have noise guidelines or enforceable noise thresholds or standards and encourages consultation with provincial and municipal authorities to determine appropriate local standards or regulations for projects. Health Canada does, however, consider the following noise induced endpoints as health effects: noise-induced hearing loss, sleep disturbance, interference with speech comprehension, complaints, and a change in the percentage of the population at a receptor location who become highly annoyed.

Hearing loss impacts are not typically considered in environmental assessments because project-related sound levels rarely reach these high levels at the locations of impacted receptors. However, noise-induced hearing loss may be a concern when project activities such as blasting, pile-driving and jack hammering are expected. When considering impulsive noise, the World Health Organization recommendation is to avoid hearing loss resulting from impulsive noise exposure and that peak sound pressures not exceed 140 decibels for adults and 120 decibels for children (World Health Organization 1999).

Implosive sleeves may be used for fusing the conductors. The implodes create a flash and a loud boom similar to the sound of a 12-guage shotgun blast, about 110 decibels; (CapX2020 2012). As this is below the level for potential hearing loss, this will not be considered further in the assessment.

Manitoba's guidelines for sound pollution specify outdoor environmental sound level objectives for residential, commercial, and industrial areas and include maximum acceptable noise levels for the protection of human health (Manitoba Department of Mines 1977). These guidelines are applied in the assessment of human health to determine whether predicted levels of noise are above the acceptable thresholds, and to determine whether additional mitigation measures may be needed to reduce or control noise levels.

9.2.1.3 Property value

A residual effect on property value or proposed development is considered significant if, unless addressed through compensation, it widely disrupts, restricts or degrades property values or development potential.

9.2.1.4 Electric and magnetic fields (EMF)

Health Canada recognizes the international exposure guidelines for EMF established by the International Commission on Non-Ionizing Radiation Protection, a group recognized by the World Health Organization as the international independent advisory body for non-ionizing radiation protection.

Government and international medical agencies, including Health Canada, the US National Institute of Health, and the National Institute of Environmental Health Sciences have thoroughly reviewed the available scientific information about EMF, but have not recommended regulatory standards.

9.2.2 Spatial boundaries

The spatial boundaries for the environmental assessment consist of the project development area, local and regional assessment areas. Valued component specific details are described below. The following areas are based on guidelines for visual assessment ((Palmer 2016); (Driscoll, et al. 1976); (Sullivan, et al. 2014)). As the potential effects to property values and residential development relate to the presence of the towers and visibility, the assessment areas are treated the same for both.

Project development area: Footprint of the proposed project including the transmission line right-of-way, any additional areas such as borrow pits or marshalling yards and access road allowances.

Local assessment area: The local assessment area corresponds to lands with a potential foreground (0-500 m; Map 9-1) or midground view of the station, a 5 km buffer (Map 9-2). These represents the area where noise and visual impacts are likely to be most pronounced or identifiable.

Regional assessment area: The regional assessment area corresponds to the areas with a potential view of the line, to the maximum extent of visibility, which includes areas within 15 km of the project; (Map 9-3).

9.2.3 Temporal boundaries

The primary temporal boundaries for the assessment are based on the timing and duration of project activities as follows:

- Construction – two years
- Operations and maintenance – for the life of the project, estimated to be a 75-year design life
- Decommissioning – two years

9.3 Existing conditions

9.3.1 Visual landscape

Biophysical characteristics such as topography, vegetation and views of water can create visual interest and draw people's attention. Similarly, the extent and type of landscape disturbances already present can influence the scenic integrity and visual enjoyment of the landscape.

Land use within the local assessment area is primarily agricultural and pastureland with some rural residential development. Agricultural land provides views of open spaces and visually appealing rural landscapes characteristic of open prairie landscapes ((Benson 2008); (Fleischer and Tsur 2000)) and can therefore in fact improve scenic quality.

There are some shelterbelts and small patches of deciduous forest in the area (Figure 9-1). Some other visible land uses include industrial developments, residential developments and utility corridors (Map 9-4). The City of Portage la Prairie falls within the local assessment area as well.

Depending on the degree of human modification, this can reduce the quality and enjoyment of the visual landscape.

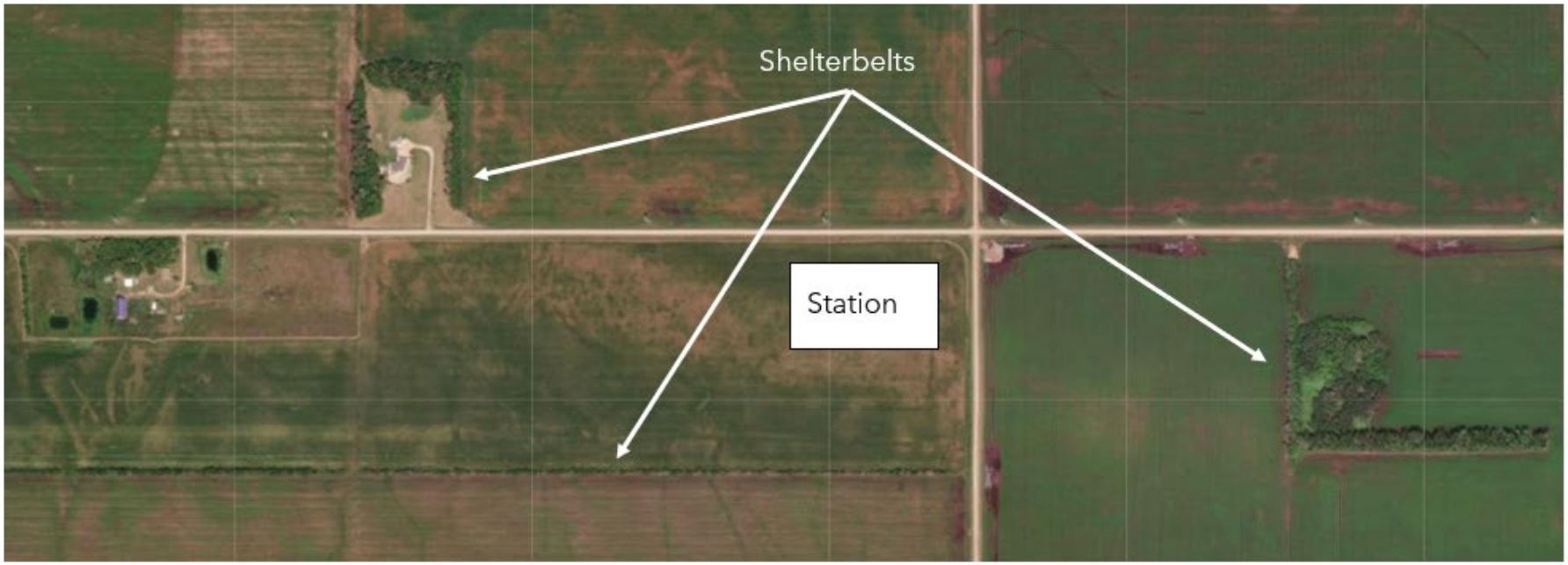


Figure 9-1: Shelterbelts and forested areas around the station

9.3.1.1 Recreation

Portage la Prairie is located in the central plains tourism area (Central Manitoba Tourism 2021) and the provision of recreation and leisure facilities in the area is managed by the Portage Regional Recreation Authority Inc. (Portage Regional Recreation Authority Inc. 2021).

There are no provincial parks within the foreground - local assessment area and no recreation facilities (Map 9-1).

9.3.1.2 Infrastructure

Map 9-4 shows the regional infrastructure. The only major infrastructure within the foreground local assessment area are the transmission and distribution lines. Extending to the midground local assessment area, there is a lot of distinguishable development. There are industrial sites west of Portage la Prairie, the TransCanada highway is 1 mile north, and there are other major developments in the area.

9.3.2 Noise

The project is in an area predominantly used for agricultural purposes and existing noise conditions are not an issue for most of the year. The exception may occur during harvest, which would increase local noise. The TransCanada highway is 1 mile north, which would add to the ambient noise levels in the area.

9.3.3 Property ownership

9.3.3.1 Overview

Land use planning responsibilities in municipal jurisdictions fall under the jurisdiction of the respective municipalities or planning districts. Municipal jurisdictions may adopt development plans and zoning by-laws to guide land use decisions within their boundaries. Municipalities can become members of planning districts to work together with respect to land use planning (i.e., development plans). The RM of Portage la Prairie and the City of Portage la Prairie have formed the Portage la Prairie Planning District. The planning district is established to ensure standardized planning requirements through an updated development plan and zoning by-law encompassing both municipal jurisdictions. This promotes a regional approach to industrial, agricultural, and urban fringe development. Land within the regional assessment area is almost entirely privately owned, with most land either agricultural fields or exurban development (homes, recreation, industrial developments etc.).

9.3.3.2 Commercial and residential development

The local assessment area is largely agricultural. Rural farm residential development is generally widespread and is associated with agricultural operations, including farm accessory buildings. Farming activities are permissible under the development plan.

There are 70 houses and 8 industrial and commercial buildings within the local assessment area (Table 9-2)

Table 9-2: commercial and residential buildings within the local assessment area

Building Type	Count
Commercial Building	6
Industrial Building	2
Occupied House	70
Total	**78**

9.3.4 Electric and magnetic fields

Electric and magnetic fields are produced by both natural and anthropogenic sources. Natural sources of EMF include the Earth's magnetic field, visible light and lightning. Anthropogenic sources include magnets, electrical appliances (e.g., stoves, refrigerators, microwaves), electronic devices (e.g., cellular phones, computers), vehicles, power lines and high-voltage transmission lines.

In a typical home, away from appliances, background levels of magnetic fields range from 1 to 2 mG, whereas background levels of electric fields range from 0.01 to 0.02 kV/m (Exponent 2015b). In proximity to appliances, magnetic fields can be hundreds of times higher and electric fields tens of times higher. The ubiquitous nature of EMF and variability in average background exposure levels make it difficult to quantify EMF levels (Exponent 2015b).

9.4 Effects assessment

9.4.1 Effects pathways

There are four main pathways that can lead to effects to community well-being:

- Potential changes to the visual landscape

    - Presence of the station
    - Security lighting at night
- Potential increase in noise
- Perceived changes in property values
- Perceived health effects from EMF

During engagement for the project (See Chapters 1.0 and 1.0 for details), concerns were raised regarding, health, noise, property values and traffic.

Several studies have linked how power transmission lines have increased levels of stress and annoyance in relation to perceived changes in property values, noise, aesthetic concerns, and health and safety concerns (i.e., the presence of EMF).

Residents living near a transmission line reported experiencing moderately negative effects on their health and safety, property values and aesthetics (Thomas and Evans 1996). McMahan and Meyer (McMahan and Meyer 1995) found the closer individuals live to a transmission line the greater the increase of concerns related to perceived health risks.

Several studies have assessed the link between the exposure of EMF and the perceived health risks thought to be associated with the presence of transmission lines ((Linder 1995), (Morgan, et al. 1985)). While most studies found no definitive health risk, there are often increased levels of stress and anxiety that result from the presence or siting of transmission line development.

As described in Chapter 8.0, several key studies conducted by the World Health Organization (WHO) and the International Agency for Research on Cancer (IARC) confirm there is no link between exposure to EMF fields and adverse human health outcomes. Despite this, there remains a perception that transmission lines pose health risks ((Furby, et al. 1988); (Cain and Nelson 2013); (Keir, Watts and Inwood 2014)).

A study conducted in the Netherlands found that health complaints increased for residents living within 300 m of a new transmission line and there were negative effects on health perceptions for nearby residents even before the line was in operation (Porsius, et al. 2014).

Another study shows regardless of the type of industry, there was a significant association between living in industrialized areas and decreased levels of well being, optimism and use of active coping strategies (Marques and Lima 2011).

9.4.1.1 Potential changes to the visual landscape

The construction of project infrastructure, including station infrastructure, transmission towers and conductor wires, will create or add to human-caused disturbance in the environment.

Based on a review of the literature for visual quality and transmission line visibility (Palmer 2016); (Driscoll, et al. 1976); (Sullivan, et al. 2014) a 500 m buffer was placed around the station (Map 9-1). This was considered the area where the station and transmission towers would be in the foreground view and therefore most intrusive. There is one home within the 500 m buffer. There are no recreational sites, or other public spaces within 500 m of the station.

A 5 km buffer was placed around the station (Map 9-2) representing the area where the station would be in the midground view. Within the 5 km buffer, there is one cultural / historic feature, one recreational site and 70 houses.

<u>The presence of the station</u>

The aesthetic value of the landscape can vary according to its scenic elements and the perception of the landscape by viewers. Landscapes have scenic value, which may be altered by changes brought on by the project and other future developments.

Construction activities include; clearing and grubbing of the station footprint, drilling foundations, installing support structures and towers and other overhead construction, stringing conductors and construction site rehabilitation and decommissioning. These activities are expected to result in disturbance to the existing visual landscape by their presence.

Project components will become more visible to varying and different degrees as construction progresses from site preparation, to overhead construction and stringing conductors. The effects of the project on visual quality recognizes that there will be increasing levels of alteration to viewsheds from the visibility of the station and contrast with the landscape during project construction, but focuses on the final alteration (i.e., during operations and maintenance) when all project components are constructed and operational. Figure 2-4 shows the final station profiles.

<u>Security lighting</u>

The station will have security lighting that stays on all night (Figure 2-3). Artificial lighting, both indoors and outdoors, exposes people to light that can negatively influence the physiological day-night rhythm (Bierbaum, et al. 2019). Stray light

entering bedrooms at night disturbs sleep and contributes to sleepiness and fatigue (Clark 2009).

Light at night is never the only cause of a serious illness, but like many other factors (e.g. stress) it can be a contributor to the development of such an illness (Bierbaum, et al. 2019).

9.4.1.2 Potential increase in noise

The World Health Organization (World Health Organization 2002) defines health as *"a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*". This implies that noise-induced annoyance may be considered an adverse effect on health (World Health Organization 2011).

Below the exposure threshold of biological damage to the ear, noise can cause potential health impacts, such as sleep disturbance and/or cause long-term high annoyance, an indicator of potential health impacts, depending on the interference of the noise with what someone is trying to do (e.g. sleep, concentrate or communicate) and the expectation of peace and quiet during such activities (e.g. in a quiet rural area or during Indigenous spiritual ceremonies; (Health Canada 2017).

As construction takes place during the day, effects to sleep, and noise guidelines for night, will not be considered in the assessment.

Health Canada (Health Canada 2017) developed guidance for evaluating human health impacts of noise in environmental assessment. The main steps in assessing the potential health impacts of changes in noise associated with a project are the following:

1) Identify people (receptors) who may be affected by the project-related noise
2) Determine the existing (baseline) noise levels at representative receptors, by measurement or estimation
3) Predict project-related changes in noise levels for each phase of the project (construction, operation and decommissioning)
4) Compare predicted noise levels to relevant guidelines and/or standards
5) Identify and discuss the potential human health impacts associated with predicted changes in noise levels
6) Consider mitigation measures, their implementation, and any residual effects, after the measures are implemented
7) Consider community consultation and prepare a complaints-resolution plan
8) Consider the need for monitoring of noise levels.

Identify people (receptors) who may be affected by the project-related noise

Noise levels from construction sites range from 90 decibels at 15 m down to less than 60 decibels at 500 m (Bonneville Power Administration 2012). Based on Health Canada guidelines (Health Canada 2017), no effects are anticipated below 60 decibels. Based on this information a 500 m buffer was drawn around the station (Map 9-1) to determine potential receptors.

There is one occupied home within 500 m of the proposed station and several others just outside of the boundary. There are no recreational sites, or other public spaces within 500 m of the project.

Transportation routes are not included as all construction traffic will follow existing high use highways and municipal roads.

Determine the existing (baseline) noise levels at representative receptors, by measurement or estimation

Health Canada (Health Canada 2017) suggests a conservative approach to estimate a reasonable worst-case scenario and assume baselines of 35 dBA for rural areas and 45 dBA for urban/suburban areas. As the proposed project is in a rural area, an estimated baseline noise level of 35 dba will be used.

Predict project-related changes in noise levels for each phase of the project (construction, operation and decommissioning)

The largest source of noise during construction is the combined operation of machinery (i.e., bulldozers, transportation vehicles, clearing equipment, and cranes) and periodic explosive discharges by implosive sleeves during conductor stringing and line termination. Use of implosive sleeves will be limited to a short duration of time near the end of construction only. Notifications will be provided to area residents to alert them of exploding discharge noise prior to commencing this work. General construction noise will be 89 dBA at 15 m (Table 9-3) and fall to less than 60 dBA at 500 m (Bonneville Power Administration 2012).

Table 9-3: Typical noise emission rates for construction equipment

Type of equipment	Decibels at 15 metres
Implosive sleeve*	110
Road grader	85
Bulldozers	85
Heavy trucks	88
Backhoe	80

Pneumatic tools	85
Crane	85
Combined equipment**	89
Helicopter	80-100

*CAPX2020 (2012)
**Thalheimer (1996) – does not include helicopters or implosive sleeves

The largest source of noise during operation is associated with corona discharges that result in audible noise typically heard as a hissing or crackling sound (Exponent 2015a). Corona discharges are produced at points along the transmission line conductors and are more common during foul-weather events (Exponent 2015a)..

Exponent (Exponent 2015a) modeled the electrical and acoustic environment of the Manitoba-Minnesota Transmission Project (500 kV line). During medium-fair weather conditions, maximum audible noise associated with operation of the transmission lines anywhere along the edge of the right-of-way is expected to be approximately 23 dBA (Exponent 2015a), which is below the typical ambient noise typically experienced in quiet rural locations (30-40 dBA). This is a conservative estimate as the audible noise should be lower for this project due to the lower voltage running through the conductor. During periodic foul weather conditions that may cause corona discharges, maximum audible noise at the edge of the right-of-way is expected to be 48 dBA, dissipating to 45 dBA at a location 30 m from the edge-of-right-of-way (Exponent 2015a).

Compare predicted noise levels to relevant guidelines and/or standards

For construction phases less than one year in duration, Health Canada (Health Canada 2017) has set the guideline of 62 dBA average noise level over a 24-hour period. This guideline is based on a previous study conducted by Health Canada that determined the level at which people start to find construction equipment highly annoying. Health Canada guidance including the percent highly annoyed calculation relies on ISO 1996-1:2003 (International Organization for Standardization 2003).

Health Canada uses 62 decibels when it considers effects related to widespread complaints. When project sound levels are greater than 75 dba, complaints can be expected to include strong appeals to authorities to stop noise.

Identify and discuss the potential human health impacts associated with predicted changes in noise levels

Within 500 m of the construction site, construction noise levels will be above the guideline value of 62 dBA and therefore we can expect some effects. The effects relate to nuisance effects that may cause stress (stress discussed below).

During operation, noise levels will be minimal. During inclement weather, there may be some audible noise, but it is below levels that would be considered a nuisance.

Consider mitigation measures, their implementation, and any residual effects, after the measures are implemented

Mitigation is discussed in Section 9.4.2.

Consider community consultation and prepare a complaints-resolution plan

Manitoba Hydro does extensive engagement for upcoming projects. Details of engagement for this project are covered in Chapters 1.0 and 1.0. Manitoba Hydro will continue to engage interested parties, will maintain the project communication methods in place (project phone line and email) and work to resolve any issues that arise. Manitoba Hydro uses a SharePoint database to record project communications. This allows tracking of any complaints and maintains accountability.

Consider the need for monitoring of noise levels.

The project area includes rural residential and rural areas. The noise created by construction will be periodically above ambient but should not cause a level of nuisance and stress that would justify a monitoring program.

9.4.1.3 Perceived changes in property values

The assessment of change in property values focuses on three effects:

- Change in private property value
- Nuisance effects on residences
- Conflict with land development potential

Private Property Values

The physical presence of the project could affect the value of residential property near the station. Factors that can influence property values include change in aesthetics; real or perceived nuisances and health risks; real or perceived change in the use and enjoyment of the property; and distance from the property to the project.

The literature is inconclusive on whether transmission lines affect property values. Some studies show a small, negative effect on property values immediately after construction that diminish over time and distance ((Cowger, Bottemiller and Cahill 1996); (Jackson and Pitts 2010.); (Headwaters Economics 2012)).

A review of transmission line effects on housing prices found a small, negative effect occurring when rights-of-way abut single-family homes (Bottemiller and Wolverton

2013). Effects on property values were more substantive for higher priced homes and negligible for average priced homes.

While transmission line easements were found to have a consistent small negative effect on the value of adjacent affected properties, the statistical significance of this finding has varied (Elliot Grover & Co. Ltd. 2008).

Effects on property value varied depending on the location and visibility of transmission towers to properties ((Colwell 1990); (Cowger, Bottemiller and Cahill 1996); (Bottemiller, Cahill and Cowger 2000); (Elliot Grover & Co. Ltd. 2008); (Chalmers and Voorvart 2009); (Jackson and Pitts 2010.)). Other studies have found no evidence that proximity to, or visibility of high voltage transmission lines affect property values (Elliot Grover & Co. Ltd. 2008).

Manitoba Hydro conducted a property value-monitoring program in the Birds Hill and Lister Rapids areas in the Rural Municipalities of East and West. St. Paul. The monitoring program was initiated in response to property owner concerns regarding the construction of the Dorsey-St. Vital 230 kV transmission line within an existing right-of-way. Real estate transactions for developed single-family residential properties within the monitoring area were tracked from January 1, 1992 to December 31, 2013 (Manitoba Hydro 2014). The monitoring area was divided into:

- Adjacent – properties located immediately next to the transmission right-of-way without any other properties located in between
- Nearby – properties located between the adjacent property and the next property line
- Other – all other property located within the project development area

The 2014 monitoring report noted that housing prices have fluctuated within range of adjacent, nearby and other properties (Manitoba Hydro 2014).

The findings of an econometric analysis conducted for Manitoba Hydro by Prairie Research Associates (PRA) on the effect of transmission lines on residential property values were consistent with the existing literature. PRA found mixed evidence that transmission lines affect property values. Evidence that pointed to a negative effect suggests that any effect is small and diminishes rapidly as distance to the transmission line increases. While the analysis indicates a small, negative correlation between transmission line proximity and assessed value, no such negative correlation occurs regarding sales price (Prairie Research Associates 2015).

Nuisance effects on residents

Potential nuisance effects during project construction include noise disturbance, vibration, dust, damage to property, interference with roads and community infrastructure and nighttime lighting.

Development potential

The development of an electrical station could reduce development potential due to less interest in wanting to buy a lot or build a residence near the station thus lowering the development potential of land nearby. These changes could influence development in localized areas adjacent to the project or potentially affect the location of future developments within the local assessment area.

9.4.1.4 Perceived health effects from EMF

Numerous reviews of research literature on exposure to extremely low frequency EMF and possible adverse health effects have been conducted by national and international scientific and governmental agencies, including Health Canada and the World Health Organization. None of these agencies have concluded that exposure to extremely low frequency EMF is a demonstrated cause of any long-term adverse health effect. Study results are detailed in the EMF health research update report (Exponent 2015b), conducted for the recently constructed Manitoba-Minnesota transmission line.

Regardless of the potential for direct health effects from EMF, perceived health effects could cause additional stress to residents. The effects of stress are discussed below.

9.4.1.5 Stress and annoyance

Visual intrusion, noise, a reduction of property values, or potential health risks of exposure to extremely low frequent electromagnetic fields (ELF-EMF) emitted by power lines can be perceived as a burden (Porsius, et al. 2014). The increased stress has the potential to cause adverse effects.

Stress is thought to contribute to the development of many adverse health conditions including heart disease, stroke, high blood pressure, upper respiratory disease and poor immune response (Scneiderman, Ironson and Siegel 2005).

The stress response diverts energy and resources away from many physiological processes, including both the cardiovascular and immune systems, important to long-term health maintenance (Marmot and Wilkinson 2003). If people feel tense too often or for too long, they become more vulnerable to a wide range of conditions including

infections, diabetes, high blood pressure, heart attack, stroke, depression and aggression (Marmot and Wilkinson 2003).

9.4.2 Mitigation

9.4.2.1 Visual quality

Visual quality considerations were factored into site selection (See Chapter 3.0 for details). Manitoba Hydro will continue to work with a range of interested parties (residents, interested parties, and provincial government agencies as applicable) in development of the proposed station with the goal to reduce any potential visual concerns. Based on concerns raised during the engagement process, Manitoba Hydro has committed to plant trees to reduce visual and noise concerns at two landowner's homes adjacent to the station.

9.4.2.2 Noise

Noise due to implosions has unique characteristics. Therefore, Health Canada (Health Canada 2017) recommends limiting the number of blasts irrespective of other noise levels due to background sources or construction activities. Manitoba Hydro will combine blasts to minimize the overall number of blasts required. A blasting hut may also be used to minimize noise impacts.

General mitigation measures for noise (Health Canada 2017)

- Regularly train workers and contractors to use equipment in ways that minimize noise
- Provide notification to the public ahead of implodes related to conductor stringing with contact information
- Investigate and respond to complaints about noise as quickly as feasible
- Include in tenders, employment contracts, subcontractor agreements and work method statements, clauses that assure the following of local noise by-laws
- Avoid excessive volume of radios and stereos outdoors and the overuse of public address systems where neighbours can be affected
- Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours and other relevant practices (e.g. minimizing the use of engine brakes and periods of engine idling)

9.4.2.3 Property values and residential development

Station siting considered the occurrence of homes and proximity to homes.

During construction, Manitoba Hydro plans to notify landowners, Indigenous communities and interested parties prior to construction start and will share information about planned construction activities.

The effect of project activities can be reduced through scheduling and logistics planning (e.g., use of implosives during daytime hours during the week). Mitigation measures of potential project effects on property and residential development include the following:

- Construction activities and equipment will be managed to avoid damage and disturbance to adjacent properties, structures and operations
- Mud, dust and vehicle emissions will be managed in a manner that considers the safe and continuous public activities near construction sites
- Noisy construction activities where noise and vibration may cause disturbance and stress in built-up areas will follow local noise by-laws
- A communication protocol will be developed to notify affected parties of blasting operations and conductor splicing (if required)
- Construction, operation and maintenance personnel will undertake activities in such a way to avoid affecting neighbouring properties, structures or operations. In the unlikely event that a landowner incurs damages, they are subject to compensation through Manitoba Hydro's existing compensation policies

9.4.2.4 Electric and magnetic fields

Although no mitigation is required, Manitoba Hydro continues to undertake the following actions regarding EMF concerns:

- Designing the transmission line to meet international standards and guidelines set forth by the International Commission on Non-Ionizing Radiation Protection. These guidelines have been adopted by Health Canada and the World Health Organization
- Monitoring of worldwide research programs on electric and magnetic fields for its large-scale projects
- Maintaining communications and provision of technical information to interested parties, including the public and agencies responsible for public and occupational health and the environment

9.4.2.5 Stress and annoyance

To mitigate stress and annoyance caused by real and perceived environmental effects, the site selection process considered several factors, including existing land

uses and the presence of existing infrastructure. The following measures will be implemented to mitigate the effects of stress and annoyance:

- Manitoba Hydro has an easement agreement with the private landowners whose land is crossed by the transmission line and where the station is located. The information provided to landowners during this process is expected to alleviate concerns related to project uncertainty
- The final detailed project design will consider standards for setbacks and overhead clearance, including CSA standards such as CAN/CSA-C22.3 No. 1-10 "Overhead Systems" and CAN/CSA 22.3 No. 60826-10 "Design Criteria for Overhead Transmission Lines"
- Manitoba Hydro will continue to share up to date information regarding project activities and timelines and to work to resolve concerns
- Noisy construction activities where noise and vibration may cause disturbance will follow local noise by-laws.
- A communication protocol will be developed to notify affected parties of blasting operations and conductor splicing. Affected parties may include the RCMP, municipalities, landowners and resource users.

9.4.3 Characterizing residual effects

Changes in the visual landscape, increased noise levels during construction, changes in property values and perceived health risks of EMF are likely to be the primary source of stress and annoyance for residents.

The local assessment area consists of agricultural landscapes. There are existing transmission lines in the area and adjacent to the station site, therefore the addition of the station will not alter the average visual landscape character. Only one home is within 500 m of the station, so visual and noise effects are minimal.

Table 6-2 describes the factors used to characterize the interactions between the project and community well-being. Given the application of the above-described mitigation measures the effects of the Project in terms of health are summarized as follows:

- Direction: Adverse
- Magnitude: Small
- Geographic extent: Local
- Duration: Medium-term
- Frequency: Regular
- Reversibility: Reversible

Due to the small number of residents and other public potentially effected, and the well tested mitigation measures, the project should not cause nuisance effects that would alter community well-being. The residual effects for community well-being are not significant.

9.4.4 Follow up and monitoring

Manitoba Hydro's practice is to develop project-specific environmental protection plans where mitigation measures are stipulated for construction, operation and maintenance activities. These measures are regularly reviewed for their effectiveness as part of a process of adaptive management in project monitoring and follow-up.

Manitoba Hydro has provided and will continue to provide project information to relevant agencies and organizations as required and requested.

Potential follow-up related to property value proposed development and visual quality will be through construction inspection. Inspection will determine whether the item or activity is in conformance with mitigation requirements.

In terms of effects related to EMF, Manitoba Hydro will continue to monitor studies and make information available to the public.

9.4.5 Cumulative effects

Several of the projects listed in Table 6-3 may interact with this project. Further development alters the landscape and could alter the way of life for those who derive individual or personal well-being from the values offered by the agricultural setting and rural lifestyle. However, as the average visual landscape character is already disturbed, the overall change is minimal.

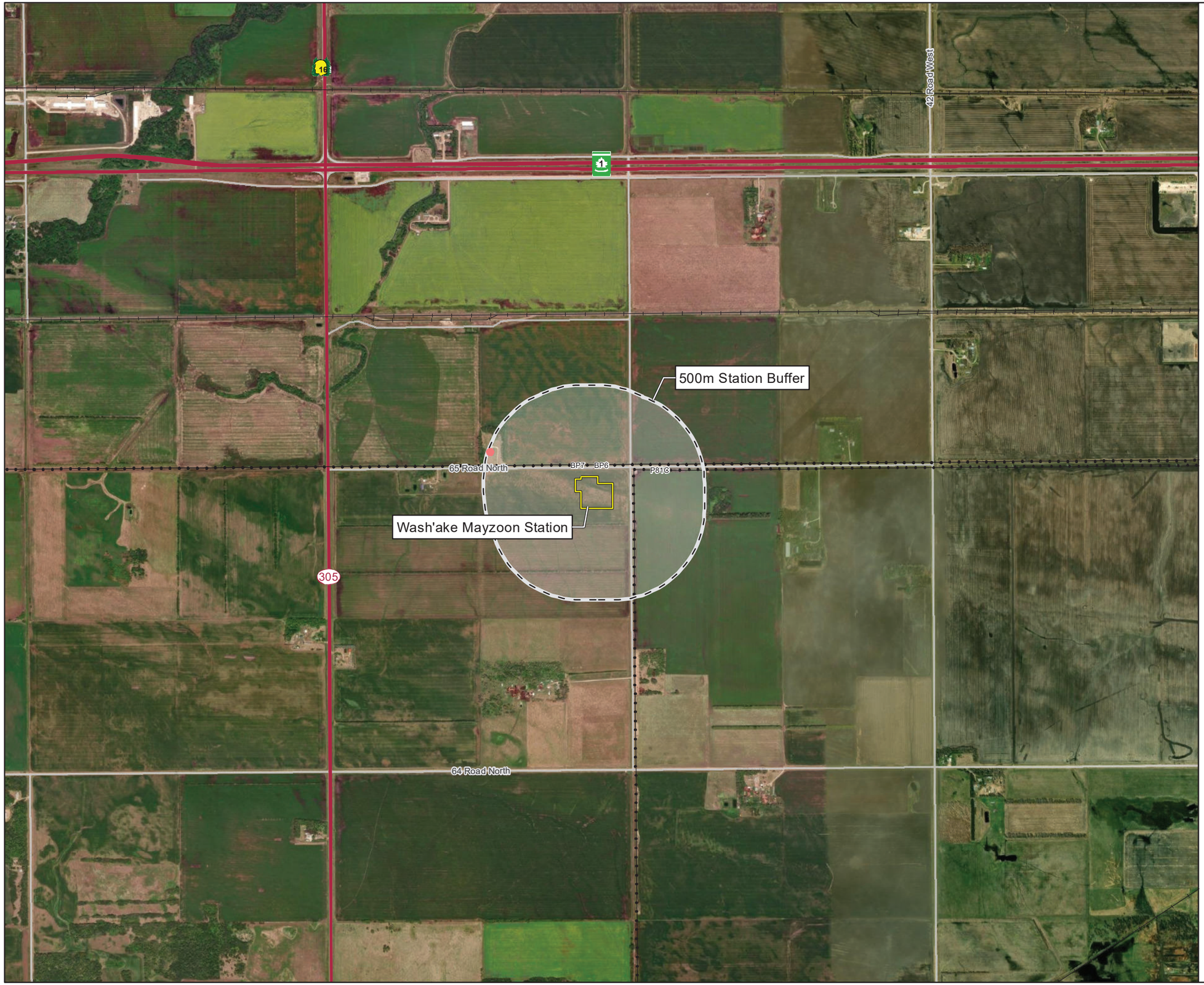
None of the project listed in Table 6-3 will produce EMF, therefore there will be no overlap. Several of them may have overlapping construction periods or continue after construction is complete, extending the length of time construction noise is prevalent in the area. This could increase stress and annoyance. However, all projects listed are greater than 500 m away. The noise and visual intrusion receptors will be different, other than transient receptors.

9.5 Sensitivity to future climate change scenarios

Effects of climate change relate to the anticipated increase in temperature and precipitation. Winter months are projected to experience greater relative changes in precipitation than summer months. The potential effects to community well-being,

visual landscape, noise, property ownership and EMF, will not be altered by future climate change.

The predicted climate change scenarios would not change the significance determinations of the assessment.



Manitoba Hydro

Wash'ake Mayzoon Station

Building Survey
- Occupied House

Project Infrastructure
- Wash'ake Mayzoon Station

Local Assessment Area
- Foreground View

Landbase
- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Rural Municipality

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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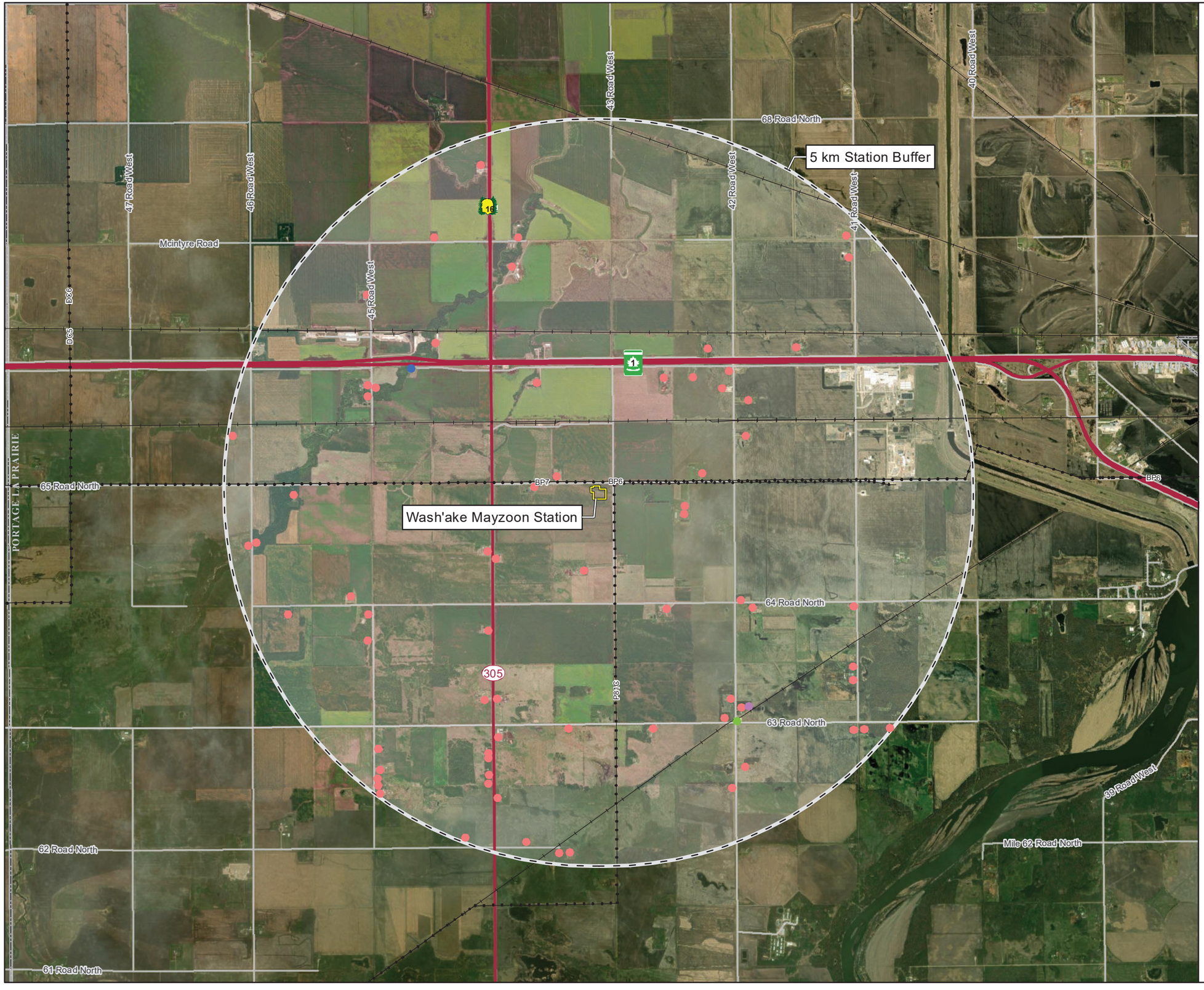
Local Assessment Area Foreground View

Map 9-1



Manitoba Hydro

Wash'ake Mayzoon Station

Building Survey
- Special Features
- Historical/Cultural Resources
- Recreational Bldg/Site
- Occupied House

Project Infrastructure
- Wash'ake Mayzoon Station

Local Assessment Area
- Midground View

Landbase
- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Rural Municipality

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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0 0.5 1 Miles

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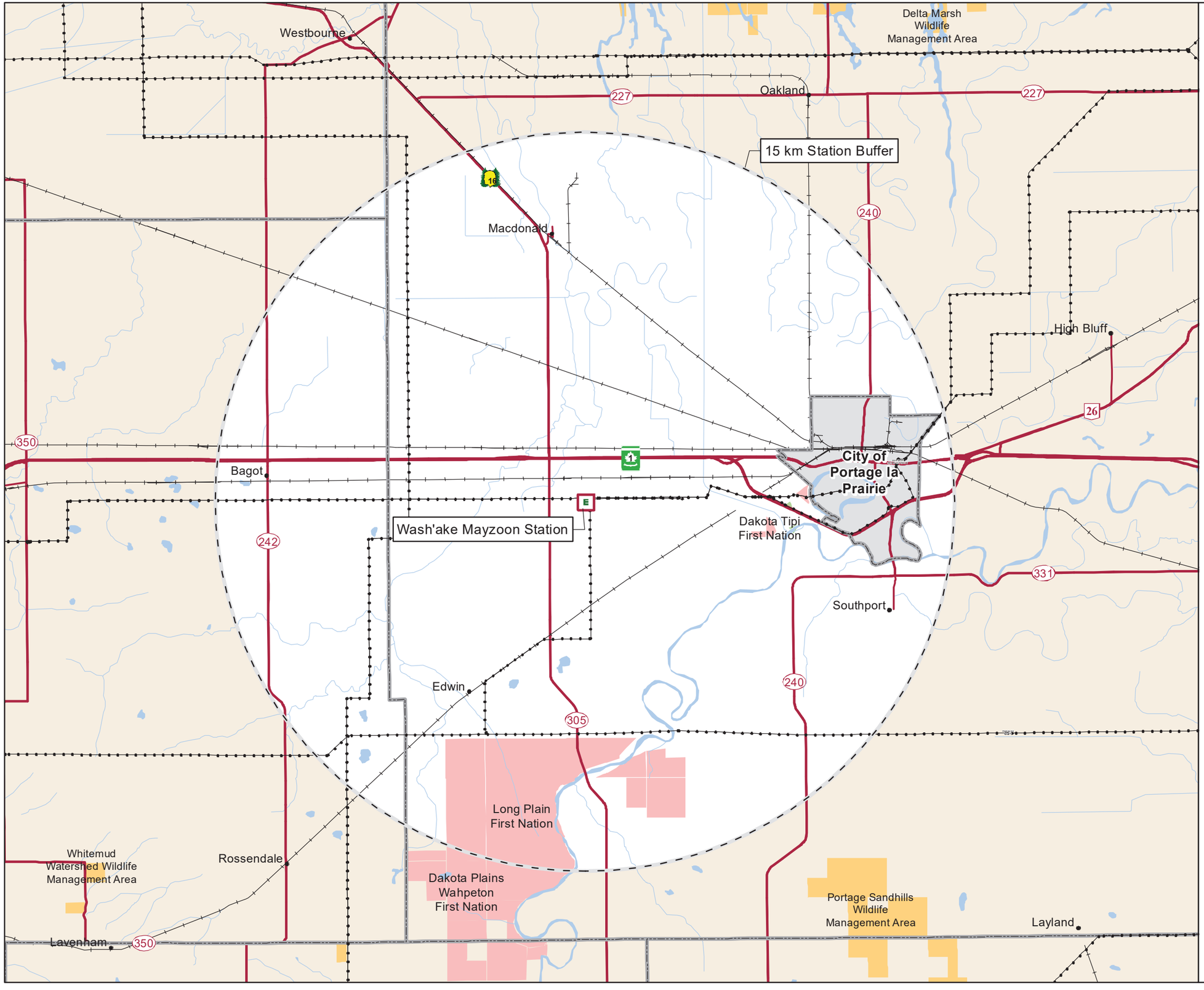
Local Assessment Area Midground View

Map 9-2



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- E — Wash'ake Mayzoon Station

Regional Assessment Area

- Regional Assessment Area - Community Well-Being

Landbase

- Transmission Line
- Railway
- Trans-Canada Highway
- Provincial Highway
- Provincial Road
- First Nation
- National/Provincial Park
- Wildlife Management Area
- City of Portage La Prairie

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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0 2 4 Kilometers

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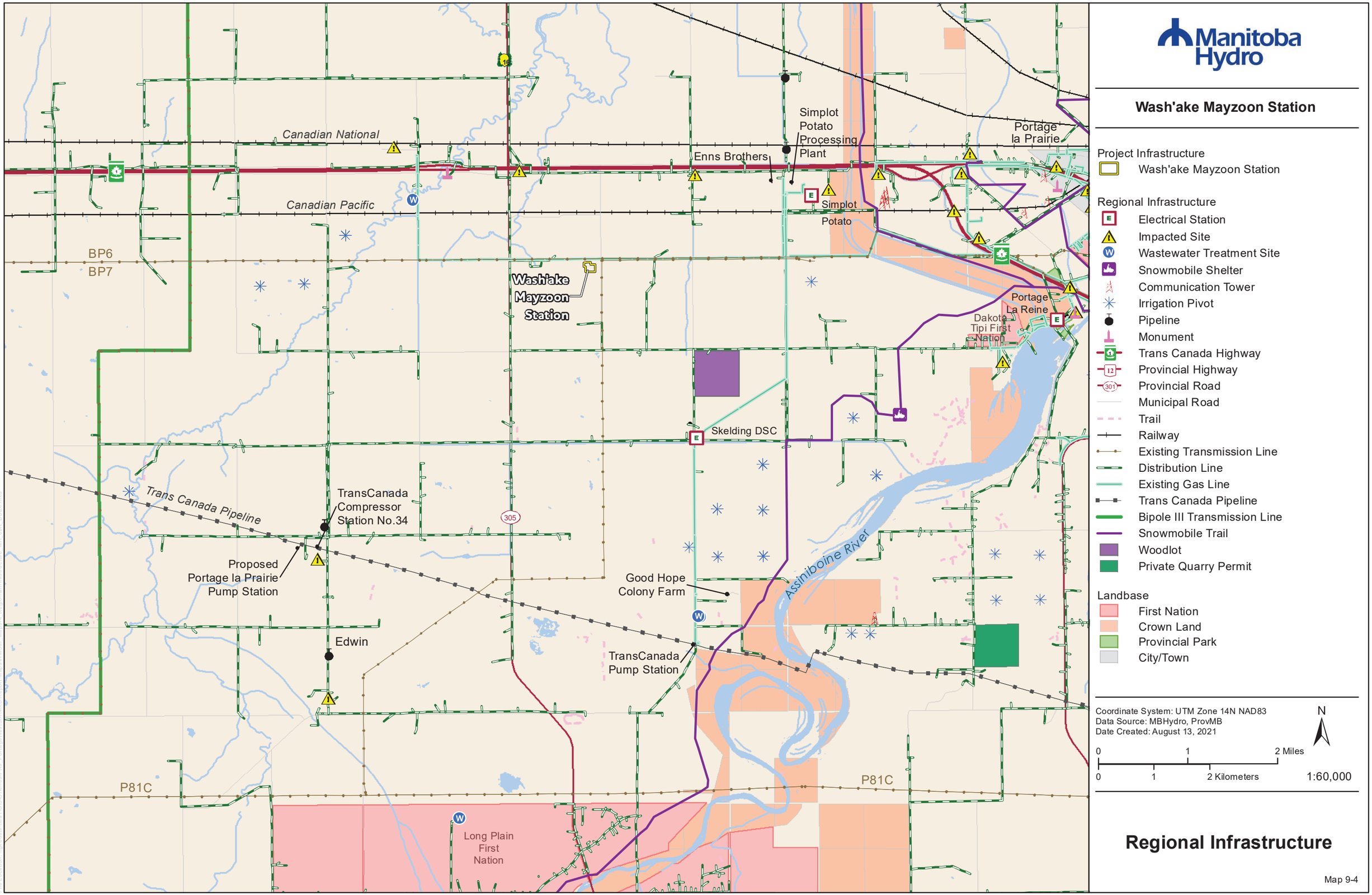
Regional Assessment Area Community Well-Being

Map 9-3



Manitoba Hydro
Wash'ake Mayzoon Station
Project Infrastructure
Wash'ake Mayzoon Station
Regional Infrastructure
Electrical Station
Impacted Site
Wastewater Treatment Site
Snowmobile Shelter
Communication Tower
Irrigation Pivot
Pipeline
Monument
Trans Canada Highway
Provincial Highway
Provincial Road
Municipal Road
Trail
Railway
Existing Transmission Line
Distribution Line
Existing Gas Line
Trans Canada Pipeline
Bipole III Transmission Line
Snowmobile Trail
Woodlot
Private Quarry Permit
Landbase
First Nation
Crown Land
Provincial Park
City/Town
Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 13, 2021
N
0 1 2 Miles
0 1 2 Kilometers
1:60,000
Regional Infrastructure
Map 9-4
Canadian National
Canadian Pacific
Simplot Potato Processing Plant
Enns Brothers
Simplot Potato
Portage la Prairie
Portage La Reine
Dakota Tipi First Nation
BP6
BP7
Wash'ake Mayzoon Station
Skelding DSC
Trans Canada Pipeline
TransCanada Compressor Station No.34
Proposed Portage la Prairie Pump Station
Good Hope Colony Farm
Assiniboine River
Edwin
TransCanada Pump Station
P81C
P81C
Long Plain First Nation
305

10.0Wildlife

10.1 Introduction

Wildlife and wildlife habitat are a critical part of a functioning ecosystem and play a vital role in ecological and environmental processes.

This chapter assesses potential effects to wildlife including:

- Change in mortality risk
- Change in disturbance/annoyance

10.2 Scope

10.2.1 Significance thresholds

There are no provincial or federal regulations that set thresholds for determining the significance of environmental effects on wildlife and wildlife habitat found within the regional assessment area.

Significance was determined using qualitative and quantitative approaches, through professional judgment and previous experience assessing effects on wildlife and wildlife habitat.

Significant effects on wildlife are those that meet any of the following criteria (based on (Lynch-Stewart 2004)):

- Threaten the long-term persistence or viability of wildlife populations, including any effects that would lead to species extinction, extirpation or up-listing to special concern, threatened or endangered status
- Diminish the potential or prolong threats to species recovery, such as effects that are contrary to or inconsistent with the goals, objectives or activities of federal recovery strategies and action plans
- Diminish the capacity of critical habitat to provide for the recovery and survival of wildlife at risk

10.2.2 Spatial boundaries

The spatial boundaries for the environmental assessment consist of the project development area, local and regional assessment areas. Valued component specific details are described below:

Project development area: Footprint of the proposed project including the station footprint, transmission line right-of-way, any additional areas such as borrow pits or marshalling yards and access road allowances.

Local assessment area: The local assessment area is defined as 1 kilometer around the station and transmission line footprint (Map 10-1). Benitez-lopez et al. (Benitez-lopez, Alkemade and Verweij 2010) reported that most songbirds and waterbirds have lower abundances within 1 km of infrastructure.

It represents the area where indirect or secondary effects of construction and operation and maintenance are likely to be most pronounced or identifiable.

Regional assessment area: The regional assessment area is defined as 15 kilometers around the station and transmission line footprint (Map 10-2). It encompasses the home ranges or dispersal distances of the most wide-ranging species in this assessment, including white-tailed deer (89 km^2 (Fisher, et al. 2013) and red-sided garter snake (18 km dispersal (Gregory and Stewart 1975).

It encompasses the area where project-specific environmental effects overlap with those of past, present, and reasonably foreseeable future projects and activities. It is used to provide regional context and is therefore generally the area where the project's contribution to cumulative effects is assessed.

10.2.3 Temporal boundaries

The primary temporal boundaries for the assessment are based on the timing and duration of project activities as follows:

- Construction – two years
- Operations and maintenance – for the life of the project, estimated to be a 75-year design life
- Decommissioning – two years

10.3 Existing conditions

10.4 Ecological classification

The project is in the Prairies Ecozone, Lake Manitoba Plains Ecoregion and the Macgregor Ecodistrict. The following ecological classification descriptions have been obtained from Smith et al. (Smith, et al. 1998).

10.4.1 Prairies ecozone

Agriculture influences most native communities of plants and animals. Loss of habitat is the most critical threat to the flora and fauna. The prairies ecozone is home to high numbers of threatened and endangered wildlife species and its native ecosystems are among the most endangered natural habitats in Canada.

10.4.1.1 Lake Manitoba plain ecoregion

The ecoregion is transitional between areas of boreal forest to the north and the aspen parkland of the southwest. It is a mosaic of trembling aspen/oak groves and rough fescue grasslands. Trembling aspen and shrubs occur on moist sites, and bur oak and grass species occupy increasingly drier sites on loamy to clayey, Black Chernozemic soils. Poorly drained, Gleysolic soils support willow and sedge communities.

The region includes habitat for white-tailed deer, coyote, rabbits, ground squirrels, and waterfowl.

10.4.1.2 Macgregor Ecodistrict

As is common in most of the Lake Manitoba Plain Ecoregion, the vegetation in this ecodistrict has also been strongly modified by cultivation, with only minor areas of native vegetation remaining in an unaltered state. The native vegetation consisted of areas of tall prairie grasses, meadow grasses and sedges, interspersed with areas of willow and stands of trembling aspen and balsam poplar with associated shrubs such as snowberry, red-osier dogwood, willow and saskatoon and associated herbs

10.5 Vegetation

Desktop data was analyzed to characterize the existing biophysical information and vegetation in the regional assessment area. The main source is Smith et al. (Smith, et al. 1998).

Map 10-3 shows the land cover in the regional assessment area, displays the various broad land cover types (Manitoba Conservation 2006). Table 10-1 shows the percent of the total area in both the regional and local assessment areas.

More than 80% of the land in the regional assessment area is used for agriculture (90% in the local assessment area), with most of this consisting of cropland (Table 10-1). Ten percent of the regional assessment area and only 6% of the local assessment area consists of forested lands. Range and grassland comprise 16% of the regional assessment area and only 5% of the local assessment area.

This description is consistent with (Smith, et al. 1998) who noted that the vegetation in the MacGregor Ecodistrict has been substantially altered by cultivation and urbanization. The remainder of the ecodistrict was mainly tall-grass prairie with some aspen groves. Most forest cover was, and is, confined to floodplains and levees of streams and rivers, where dense stands of American elm (*Ulmus Americana*), green ash (*Fraxinus pennsylvanica),* Manitoba maple (*Acer negundo*) and basswood (*Tilia americana*) grow. Bur oak (*Quercus macrocarpa*) is present as an additional species on higher sites not prone to flooding.

Table 10-1: Land cover in the regional and local assessment areas

Class Name	Regional assessment area		Local assessment area	
	Area (Hectares)	Percent total	Area (Hectares)	Percent total
Agri - Forage Field	1812	3	0	0
Agricultural Field	46569	65	329	85
Cultural Features	1036	1	0	0
Deciduous Forest	6565	9	21	6
Open Deciduous Forest	489	1	0	0
Range and Grassland	11285	16	18	5
Roads Trails Rail Lines	2949	4	17	4
Sand and Gravel	7	0	0	0
Water Body	809	1	0	0
Wetland - Marsh	133	0	0	0
Wetland - Treed Bog	11	0	0	0
Total	71664	100	385	100

10.6 Wildlife and wildlife habitat

10.6.1 Amphibians and reptiles

Desktop data were analyzed to characterize the existing biophysical information on amphibians and reptiles in the region. Sources included Species at Risk Act Public Registry, COSEWIC List of Canadian Wildlife at Risk, The Manitoba Endangered Species and Ecosystems Act List of Species at Risk, Manitoba Conservation Data Centre Database, the Manitoba Herp Atlas, iNaturalist, and the Amphibians and Reptiles of Manitoba (Preston 1982). Information on species important to Indigenous peoples was received through the Indigenous Engagement Process (Chapter 5). Public engagement documents (Chapter 4) were also reviewed.

The proposed project (project development area) is on private agricultural land in the central Assiniboine River watershed. This watershed supports a variety of amphibians including boreal chorus frog, (*Pseudacris maculate*), leopard frog (*Lithobates pipens*), wood frog (*Lithobates sylvaticus*), spring peeper (*Pseudacris crucifer*), gray tree frog (*Hyla versicolor*) and blue-spotted salamander (*Ambystoma laterale*).

Reptiles found in this region include painted turtle (*Chrysemys picta*), snapping turtle (*Chelydra serpentine*), common garter snake (*Thamnophis sirtalis*), plains garter snake (*Thamnophis radix*) and redbelly snake (*Storeria occipitomaculata)* (Preston 1982).

Amphibians and reptiles are not typically found in intensively developed agricultural areas, and generally prefer natural habitats such wetlands, forests, and grasslands. Other than the ditches adjacent to the municipal roads, there is only marginal habitat for amphibians or reptiles.

10.6.2 Birds

Desktop data was analyzed to characterize the existing biophysical information about birds in the Project area. Sources included Species at Risk Act Public Registry, COSEWIC List of Canadian Wildlife at Risk, The Manitoba Endangered Species and Ecosystems Act List of Species at Risk, Manitoba Conservation Data Centre Database, the Manitoba Breeding Bird Atlas, and the Environment and Climate Change Canada Bird Conservation Regions. Information on bird species important to Indigenous peoples was received through the Indigenous Engagement Process (Chapter 5). Public engagement documents (Chapter 4) were also reviewed.

Bird Studies Canada (Bird Studies Canada 2021) states that the south-central portion of Manitoba supports approximately 200 species of breeding birds, including 88 species with evidence of breeding identified within the two 10 km by 10 km survey squares around the regional assessment area. Some of these species include Canada

goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), blue winged teal (*Anas discors*), mourning dove (*Zenaida macroura*), American robin (*Turdus migratorius*), clay-coloured sparrow (*Spizella pallid*), and the red-tailed hawk (*Buteo jamaicensis)*.

Most bird species in this region typically breed in natural habitats including wetlands, forests, and grasslands. None of these habitats exist within the project development area and comprise only 26% of the regional assessment area and 11% percent of the local assessment area.

10.6.3 Mammals

Desktop data were analyzed to characterize the existing biophysical information about mammals in the region. Sources included Species at Risk Act Public Registry, COSEWIC List of Canadian Wildlife at Risk, Manitoba's The Endangered Species and Ecosystems Act List of Species at Risk, Manitoba Conservation Data Centre Database, and the Manitoba Agriculture and Resource Development wildlife branch website. Information on mammal species important to Indigenous peoples was received through the Indigenous Engagement Process (Chapter 5). Public engagement documents were also reviewed (Chapter 4).

As indicated, the proposed project (project development area) is on private agricultural land in the central Assiniboine River watershed. This watershed is known to support a variety of mammal species including jackrabbit (*Lepus townsendii*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), white-tailed deer (*Odocoileus virginianus*), muskrat (*Ondatra zibethicu*), beaver (*Castor canadensis*), and mink (*Neovison vison*). No mammal species of conservation concern are known to occur in this regional assessment area.

The mammal species in the regional assessment area are common and widespread in natural habitats including wetlands, forests, and grasslands. None of these habitat types exist within the project development area. As shown in Map 10-1 and Figure 10-1, there are some deciduous forest stands and grasslands within the local assessment area that could provide habitat for wildlife.

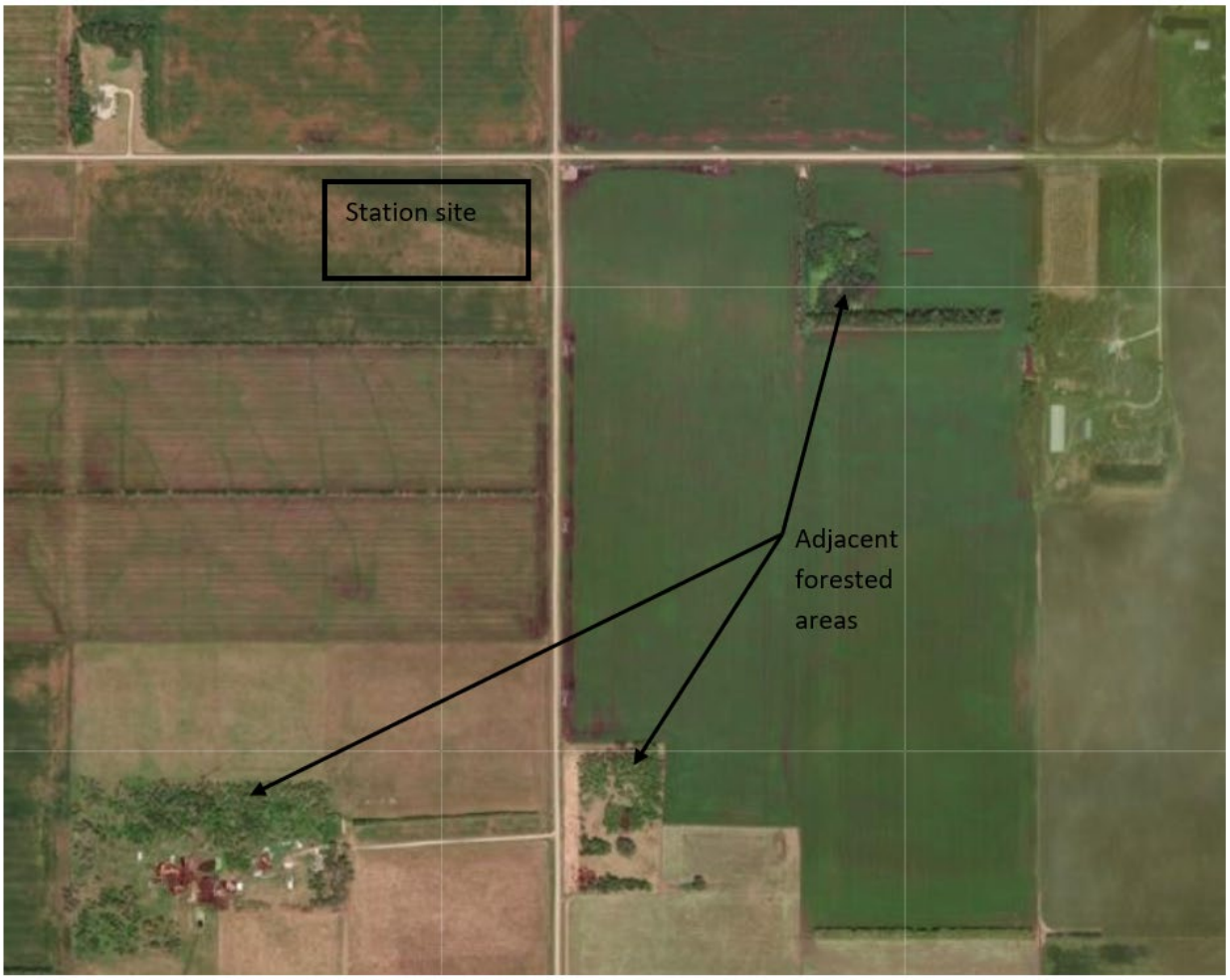


Figure 10-1: Forested areas near the station site

10.6.4 Species of conservation concern

Table 10-2 lists species of conservation concern that may occur in the regional assessment area. To identify species of conservation concern, a variety of databases were examined including the Species at Risk Act Public Registry, COSEWIC List of Canadian Wildlife at Risk, The Manitoba Endangered Species and Ecosystems Act List of Species at Risk, Manitoba Conservation Data Centre Database, and the Manitoba Breeding Bird Atlas. In addition, a specific project area query of the Conservation Data Centre was made on July 8th, 2021 to identify any known occurrence of species of conservation concern (Appendix C).

The species listed in these databases were cross-referenced with Schedule 1 of the *Species at Risk Act* and *The Endangered Species and Ecosystems Act*, to determine the provincially listed rare or sensitive species within the Manitoba plain ecoregion

and regional assessment area. Furthermore, distribution maps and habitat requirements were examined to determine the likelihood of occurrence of federally and/or provincially listed species. There are three bird, two amphibian and two invertebrate species of conservation concern known to occur in the regional assessment area. There are no known vegetation species of conservation concern in the regional assessment area. There are no endangered ecosystems, as defined by *The Endangered Species and Ecosystems Act* (Manitoba) known to occur in the regional assessment area. There is no critical habitat, as defined by the *Species at Risk Act*. The Manitoba Conservation Data Centre query identified a single occurrence on NE-26-011-08W, a monarch (*Danaus plexippus*).

Table 10-2: Species of conservation concern in the regional assessment area

Species	Federal SARA Species Schedule 1 status	Manitoba Endangered Species and Ecosystems Act status	COSEWIC status	Environmental considerations
Western tiger salamander (*Ambystoma mavortium*)	Special concern	Not listed	Special concern	Breed in shallow wetlands
Bobolink (*Dolichonyx oryzivorus*)	Threatened	Not listed	Threatened	Nests in grassland areas, including pastures often near wetlands
Barn Swallow (*Hirundo rustica*)	Threatened	Not listed	Threatened	Aerial insectivore that nests in agricultural buildings and bridges
Northern Leopard Frog (*Lithobates pipens*)	Special concern	Not listed	Special concern	Breed in shallow wetlands
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	Threatened	Threatened	Threatened	Nests in dead or dying deciduous trees, with a preference for open

Table 10-2: Species of conservation concern in the regional assessment area

Species	Federal SARA Species Schedule 1 status	Manitoba Endangered Species and Ecosystems Act status	COSEWIC status	Environmental considerations
				mature woodlands areas.
Chimney Swift *(Chaetura pelagica)*	Threatened	Threatened	Threatened	Aerial insectivore that nests in chimneys and other urban structures
Yellow-banded Bumble Bee (*Bombus terricola*)	Not listed	Not listed	Special concern	Widespread medium-sized bumble bee
Monarch (*Danaus plexippus*)	Special Concern	Not listed	Endangered	Widespread butterfly

10.7 Effects assessment

10.7.1 Effects pathway

Material hauling, machinery operation, station operation and presence and decommissioning all have the potential to interact with wildlife (Table 6-1).

As there will not be any direct loss of wildlife habitat due to the proposed project, two main pathways were considered, that can lead to affects to wildlife, including species of conservation concern:

- Increased mortality risk
- Increase in disturbance/annoyance

10.7.1.1 Increased mortality risk

Construction

Wildlife mortality could increase due to collisions with construction vehicles. These could be mammals, birds, and amphibians, and include species of conservation concern.

Behavioural changes related to increased activity, noise and nighttime illumination from construction may cause an indirect increase in mortality risk due to disturbance to wildlife resulting in behavioural changes and increased chance of predation. Small mammals or birds may move from cover (behavioural change) because of disturbance from noise and vibration, putting them at greater risk of predation and mortality from exposure (Habib, Bayne and Boutin 2007).

Construction activities may also displace wildlife species into areas adjacent to the project that may contain lesser quality habitats depending on a species' habitat requirements and dispersal abilities. This displacement may result in increased energy expenditure potentially reducing an individual's survival and reproduction (Powlesland 2009).

Operation and maintenance

Collisions with transmission lines are among the top causes of human-related bird mortality in Canada (Calvert, et al. 2013). The degree of risk is influenced by several factors relating to transmission line design, location, and mitigation, as well as physical characteristics of the bird (species, size), and flight behaviour (flocking, aerial courtship displays); (Avian Power Line Interaction Committee 2012). Larger-bodied species can have difficulty performing evasive manoeuvres to avoid transmission lines and structures (Bevanger 1998).

The project should not increase bird-wire strikes as the length of line is very short, and not in or adjacent to wetlands or rivers that concentrate large-bodied birds such as geese and ducks.

The physical presence of the transmission line and vegetation management inspection activities may have minor nuisance effects causing altered movements of wildlife near and across the right-of-way during operation.

10.7.1.2 Change in disturbance/annoyance

Indirect effects on habitat are those that reduce the effectiveness of existing or remaining habitat for wildlife. Indirect effects may occur through sensory disturbances (e.g., noise, light) causing temporary displacement of some wildlife from otherwise suitable habitat.

Noise

Mobilizing staff and equipment or the use of heavy machinery can cause noises that could disrupt and displace some wildlife from habitat located within and beyond the project development area. These effects will be more pronounced during sensitive periods (breeding /nesting).

Most of the sensory disturbance (i.e., noise, human presence) associated with construction (i.e., 89 dBA at 15 m) will dissipate within approximately 500 m (Section 9.4.1.2).

Periodic explosive discharges by implosive sleeves during conductor stringing will be louder at 115 dba.

Noise and activity associated with electrical equipment installation at the station may cause some wildlife, such as birds and amphibians to temporarily avoid the area.

Although changes in habitat availability will be most pronounced during construction, operation and maintenance will continue to have an influence on wildlife through periodic disturbance associated with operation and maintenance activities.

The station will not be regularly staffed but periodic inspections will be required. These intermittent activities are not anticipated to have much of an effect on wildlife as noise will be minimal and will be at irregular intervals.

Light

The station will have security lighting as shown in Figure 2-3.

Artificial light disturbs natural movement patterns (habitat fragmentation, barrier effect and displacement), migration and orientation, foraging, predation, communication, and can influence various physiological processes that can impact health and circadian rhythm ((Ogden 1996); (Cabrera-Cruz, Smolinsky and Buler 2018); (Bierbaum, et al. 2019); (Australian Government 2020); (Jägerbrand and Bouroussis 2021).

Documentation of bird aggregation around artificial light at night, as well as observations of bird reactions to strobe lights and lasers, suggests that light may both attract and repel birds (Adams, et al. 2019). Birds can also be disoriented by artificial lights at night (Ogden 1996). Some evidence suggests that artificial night lighting affects the choice of nest site (Longcore and Rich 2004), leading to selection of less optimal sites.

Once a bird is within a lighted zone at night, it may become “trapped” and will not leave the lighted area ((Graber 1968); (Longcore and Rich 2004)). It will often

continue to flap around in the beam of light until they drop to the ground with exhaustion (Avery, Springer and Dailey 1978), and references therein).

Artificial light can also impede the selection of high-quality stopover habitat which is critical to successful migration, and hindrances during migration can decrease fitness (McLaren et al 2018).

Birds that fly at night and are attracted by artificial lights have increased mortality from collision with illuminated towers and high buildings ((Ogden 1996); (Shire, Brown and Winegrad 2000)), and from exhaustion and predation following entrapment into circling around upwardly aimed floodlight beams, illuminated structures and large light-emitting buildings (Clark 2009).

Exposure to artificial light at night may adversely affect bird reproductive and other behaviour ((Pollard 2007); (Walker 2008)). Artificial lighting can also disrupt bird migration by interfering with the night sky patterns used by birds as one of their methods of navigation (Fornasari 2002).

10.7.2 Mitigation

Selection of the station site took a balanced approach to minimize overall project effects. In addition to site selection, standard industry practices and avoidance measures, along with project-specific mitigation as summarized in Chapter 1.0 will be implemented during project construction and operation.

This section highlights the key mitigation measures implemented to limit effects to wildlife, including species of conservation concern.

Mitigation will include, but not be limited to:

- Establishing setbacks and buffers (Appendix D) around migratory bird nests or mammal dens
- Keeping litter and garbage contained
- Flagging off environmentally sensitive areas prior to construction
- Limiting project-related activity outside of the project development area
- Using designated roadways and access roads.
- Cleaning equipment before moving from locations with identified invasive weed infestation
- Performing daily inspections for fuel, oil and fluid leaks on vehicles, equipment and machinery and shutting down and repairing any leaks found
- Hunting and harvesting of wildlife or possession of firearms by project staff will not be permitted while working on project sites

Security lighting mitigation includes:

- Full cut-off lighting
  - No direct light shall be emitted above the horizontal.
- Light spill will be limited to 20lux horizontal (ground level) at 3 meters outside the fence for safety and security purposes.

10.7.3 Characterizing residual effects

Construction noise may temporarily disrupt wildlife behaviour. Security lighting has the potential to alter wildlife behavior as well, including bird migration and nesting. However, due to the limited amount of high-quality habitat in the area and the proximity of the station to industrial development and the City of Portage (lots of noise and light at night), the effects to wildlife should be minimal.

Table 6-2 describes the factors used to characterize the interactions among the project and wildlife.

Given the application of the above-described mitigation measures, the effects of the project in terms of the wildlife and wildlife habitat are summarized as follows:

- Direction: Adverse
- Magnitude: Negligible
- Geographic extent: Local
- Duration: Moderate Term
- Frequency: Infrequent
- Reversibility: Reversible

In conclusion, due to the limited wildlife habitat in the area and the minor nuisance effects and mortality risk, the residual effects for wildlife are not significant.

10.7.4 Follow up and monitoring

Due to limited project interactions and well-established wildlife protections and mitigation measures, wildlife monitoring is not proposed for the project. If significant wildlife habitat damage is observed, remediation efforts will be implemented, and a monitoring plan developed to address concerns. Protections for wildlife habitat will be implemented as part of the environmental protection program.

The environmental protection program is a framework for implementation, management, monitoring and evaluation of protection activities in keeping with environmental effects identified in environmental assessments, regulatory requirements and public expectation. It prescribes measures and practices to avoid

and reduce adverse environmental effects on wildlife habitat (e.g., wildlife reduced risk work windows, setbacks and buffers for sensitive habitat).

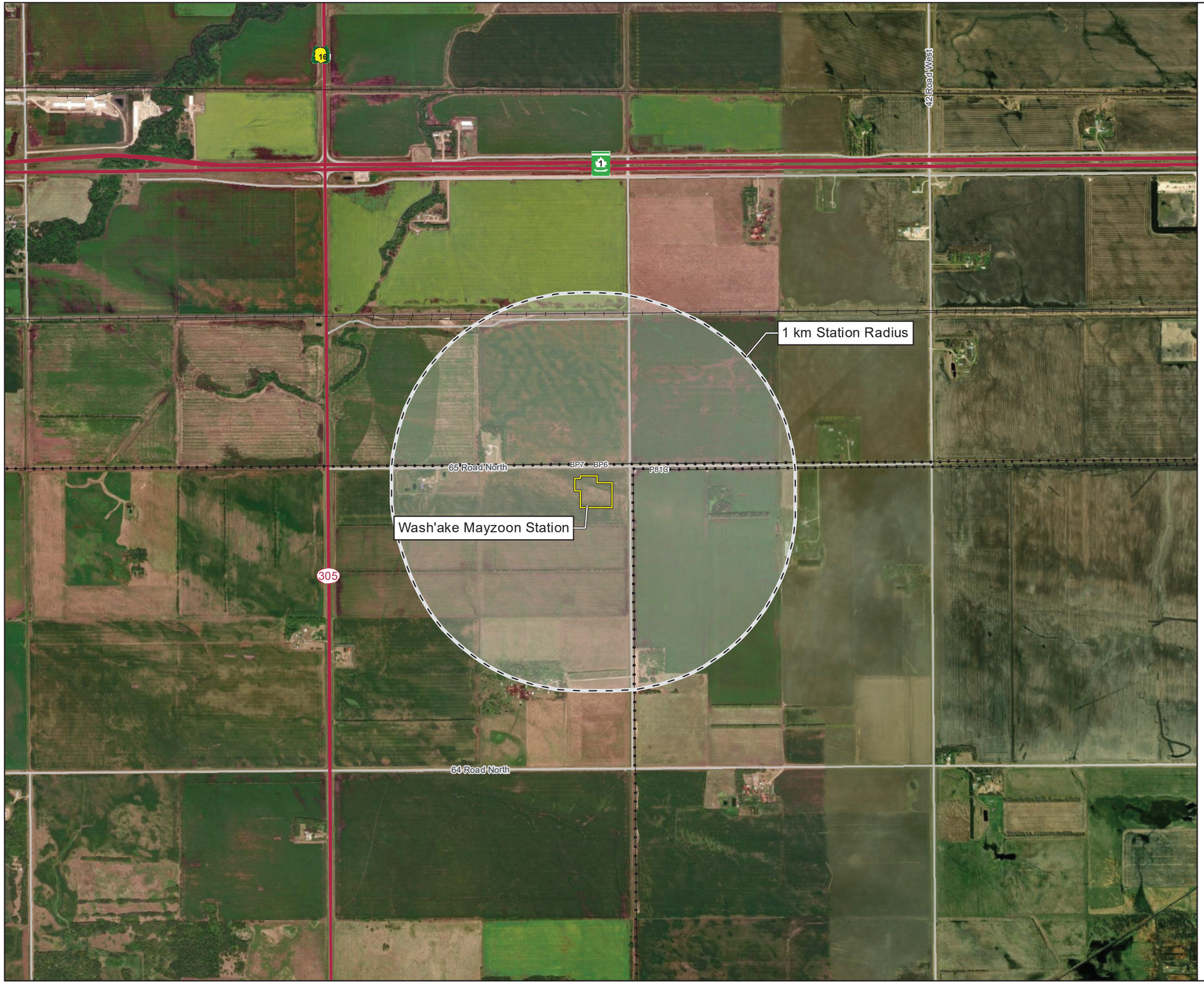
10.7.5 Cumulative effects

Table 6-4 lists the interactions between current and future projects/activities and wildlife. Several of the projects have potential interactions. The main effect of this project is the nuisance effects of noise during construction and security lighting during operations. None of the projects listed are close enough to this project to have overlapping nuisance effects on wildlife.

10.7.6 Sensitivity to future climate change scenarios

The predicted climate change scenarios would not change the significance determinations for wildlife, as they are not anticipated to measurably increase the magnitude of the effects of the project on wildlife mortality or disturbance/annoyance to wildlife.

Effects of future climate change scenarios on wildlife will directly relate to the anticipated increase in temperature and associated extreme weather events (e.g., flooding, fires) and may include change in habitat availability resulting from extreme weather events, reduced food availability (e.g., shifts in the seasonal timing of insect emergence, rotting of food caches due to warmer temperatures) and shifts in species ranges.



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station

Assessment Area

- Local Assessment Area - Wildlife

Landbase

- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Rural Municipality

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

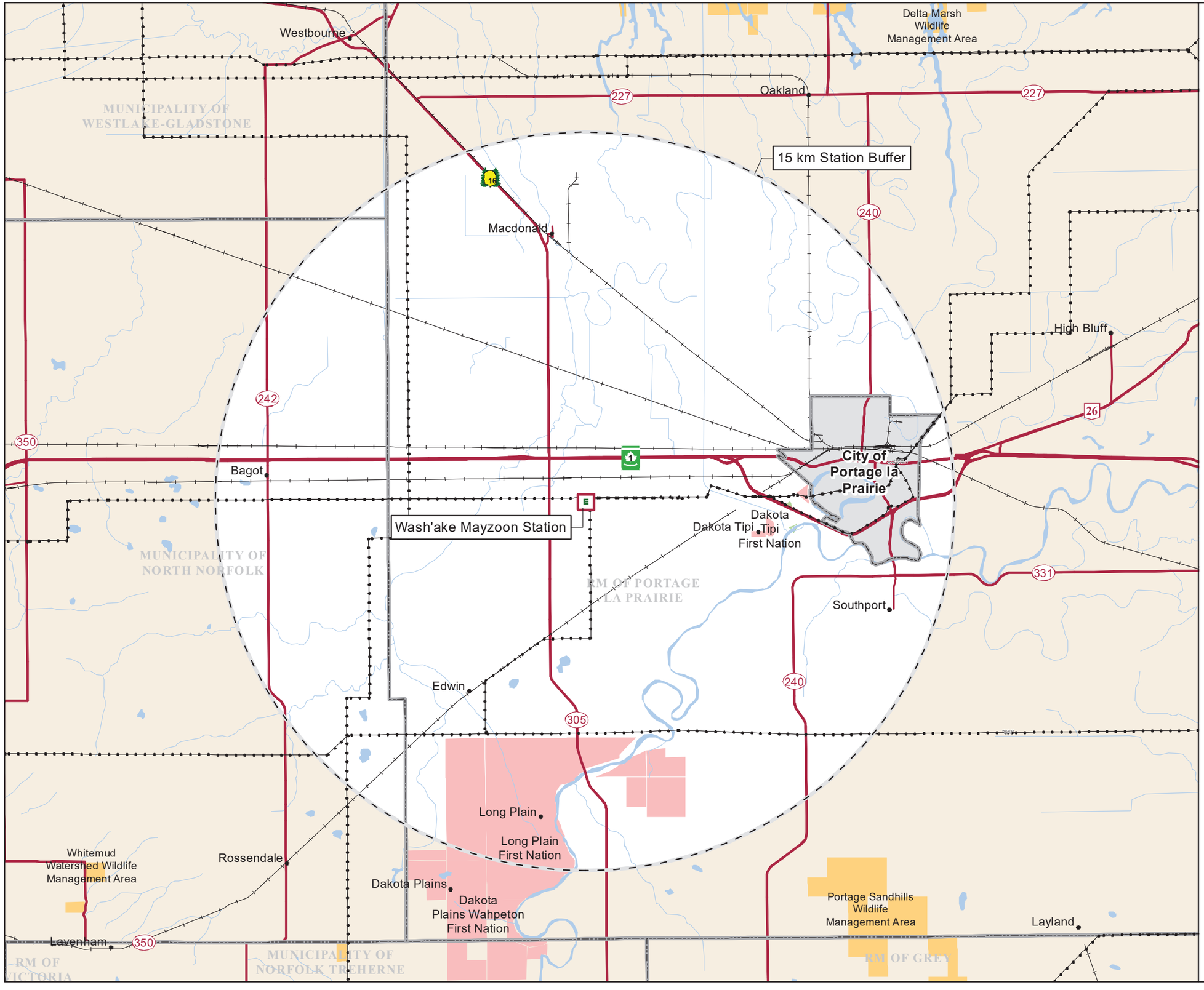
N

0 250 500 Meters
0 1,000 2,000 Feet

1:20,000

Local Assessment Area Wildlife

Map 10-1



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- E — Wash'ake Mayzoon Station

Regional Assessment Area

- Regional Assessment Area - Wildlife

Landbase

- Transmission Line
- Railway
- Trans-Canada Highway
- 12 — Provincial Highway
- 300 — Provincial Road
- First Nation
- National/Provincial Park
- Wildlife Management Area
- City of Portage La Prairie

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

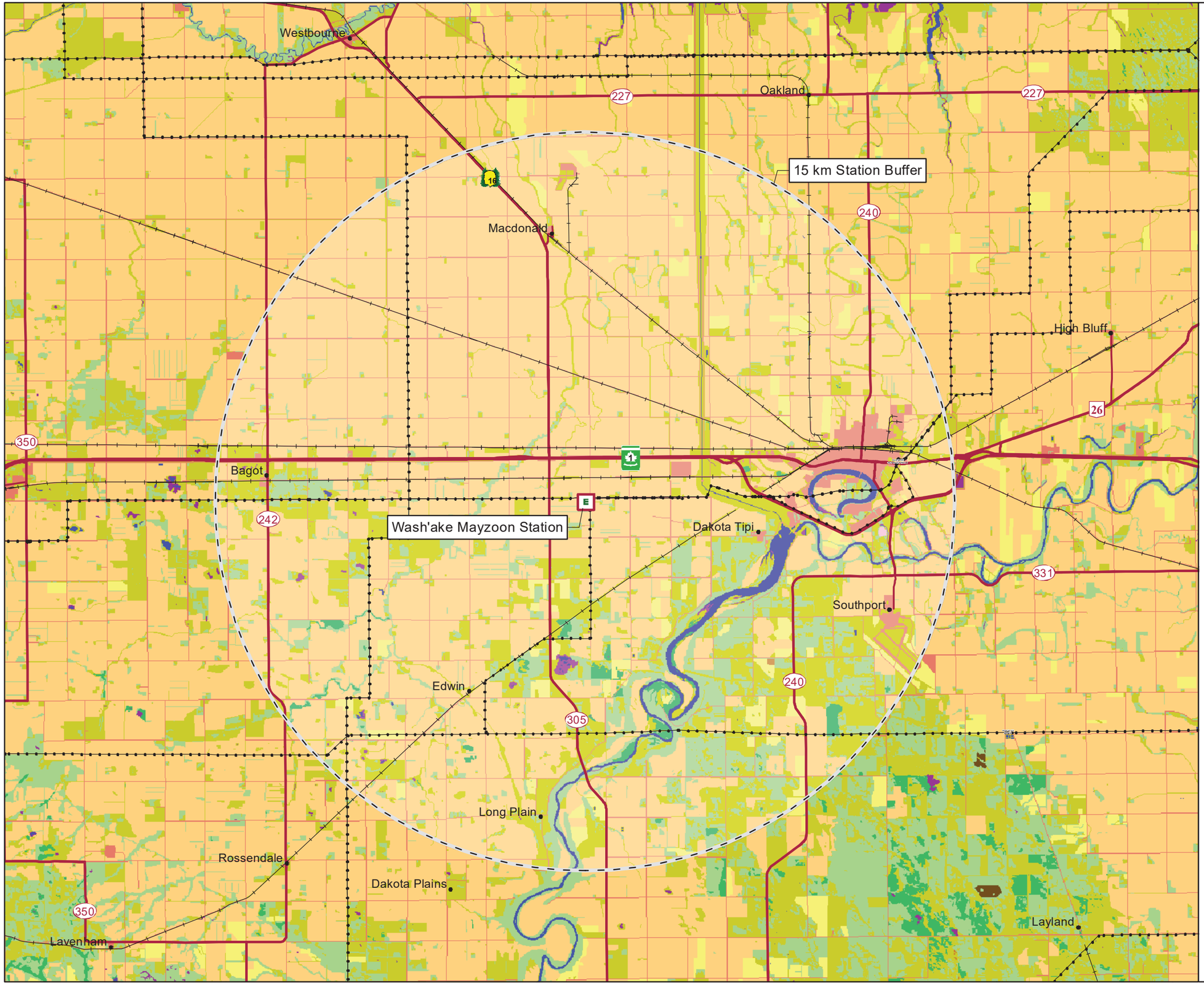
N

0 2 4 Miles
0 2 4 Kilometers

1:150,000

Regional Assessment Area Wildlife

Map 10-2



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station

Regional Assessment Area

- Regional Assessment Area

Land Cover

- Agricultural Cropland
- Bare Rock, Gravel and Sand
- Coniferous Forest
- Cultural Features
- Decidious Forest
- Forage Crops
- Forest Cutover
- Marsh and Fens
- Mixedwood Forest
- Open Decidious Forest
- Range and Grassland
- Treed and Open Bogs
- Water

Landbase

- Transmission Line
- Railway
- Trans-Canada Highway
- Provincial Highway
- Provincial Road

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 13, 2021

N

0 2 4 Miles
0 2 4 Kilometers

1:150,000

Land Cover

Map 10-3

11.0Economic opportunities

11.1 Introduction

Economic opportunities are a valued component because of the importance to local and provincial residents, business owners, communities and governments.

Project construction will generate employment opportunities for the local and regional labour force. Direct employment opportunities may include management and supervisory roles, inspection services, equipment operators, health and safety, trades, and semi-skilled and unskilled labour.

Project spending during construction will generate indirect and induced employment opportunities. Indirect employment is generated within industries supplying intermediate components such as raw materials, while induced employment is generated by household spending (e.g., consumer products, restaurants) from wages earned by direct and indirect workers.

Project spending will also generate subcontracting opportunities and the demand for goods and services from local and regional businesses. Such opportunities include the provision of accommodations, parts supply and concrete foundations materials.

Project spending and employment will contribute to the regional, provincial, and national economies. It will also contribute to federal, provincial, and local government revenue through taxation on income and on goods and services procured for the project.

This chapter presents baseline conditions and assesses the potential effects of project activities from construction, operation, and maintenance; it also addresses cumulative effects.

11.2 Scope

11.2.1 Significance thresholds

11.2.1.1 Sustainable Development Policy

The Sustainable Development Act (S270) requires Manitoba Hydro to prepare and adopt a corporate sustainable development code of practice. Manitoba Hydro has adopted a sustainable development policy and 13 guiding principles that influence corporate decisions, actions and day-to-day operations to achieve environmentally sound and sustainable economic development. Manitoba Hydro applies the principles of sustainable development in all aspects of its operations. Through

corporate decisions and actions to provide electrical services, Manitoba Hydro endeavors to meet the needs of the present without compromising the ability of future generations to meet their needs.

In accordance with regulatory guidance, a significance determination will not be made for this valued component as the effects are positive.

11.2.2 Spatial boundaries

The spatial boundaries for the environmental assessment consist of the project development area, local and regional assessment areas. Valued component specific details are described below:

Project development area: Footprint of the proposed project including the station footprint, transmission line right-of-way, any additional areas such as borrow pits or marshalling yards and access road allowances.

Local assessment area: includes the RM of Portage la Prairie. This encompasses the area where employment and economic activities are most prevalent.

Regional assessment area: as above.

11.2.3 Temporal boundaries

The primary temporal boundaries for the assessment are based on the timing and duration of project activities as follows:

- Construction – two years
- Operations and maintenance – for the life of the project, estimated to be a 75-year design life
- Decommissioning – two years

11.3 Existing conditions

11.3.1 Population, employment and economy

According to the 2016 census (Statistics Canada 2021), the City of Portage la Prairie had a population of 13,304, which represents a 2.3% increase over the reported population of 12,996 in 2011. According to Crown-Indigenous Relations and Northern Affairs Canada the total population of Dakota Tipi First Nation is 347 with 180 living on reserve. The Long Plain First Nation population was 3853, with 2,135 on reserve. Dakota Plains Wahpeton First Nation population was 239, with 168 on reserve (Crown-Indigenous Relations Northern Affairs Canada 2021).

The RM and city coordinate planning through the Portage la Prairie Planning District (Portage la Prairie Planning District 2021). This serves to standardize requirements and *"promote a regional approach to industrial, agricultural, and urban fringe development"*.

The RM contains several small communities, such as St. Ambrose, High Bluff, Newton, Oakville, Poplar Point, Skelding and Edwin.

The Portage la Prairie Self-contained Labour Area (SLA) includes:

- Municipality of Portage la Prairie
- City of Portage la Prairie
- Long Plain First Nation
- Dakota Plains First Nation
- Dakota Tipi First Nation

The total population of the area is over 20,000. Figure 11-1 shows the distribution of the workforce in the self-contained labor area (Government of Manitoba 2021).

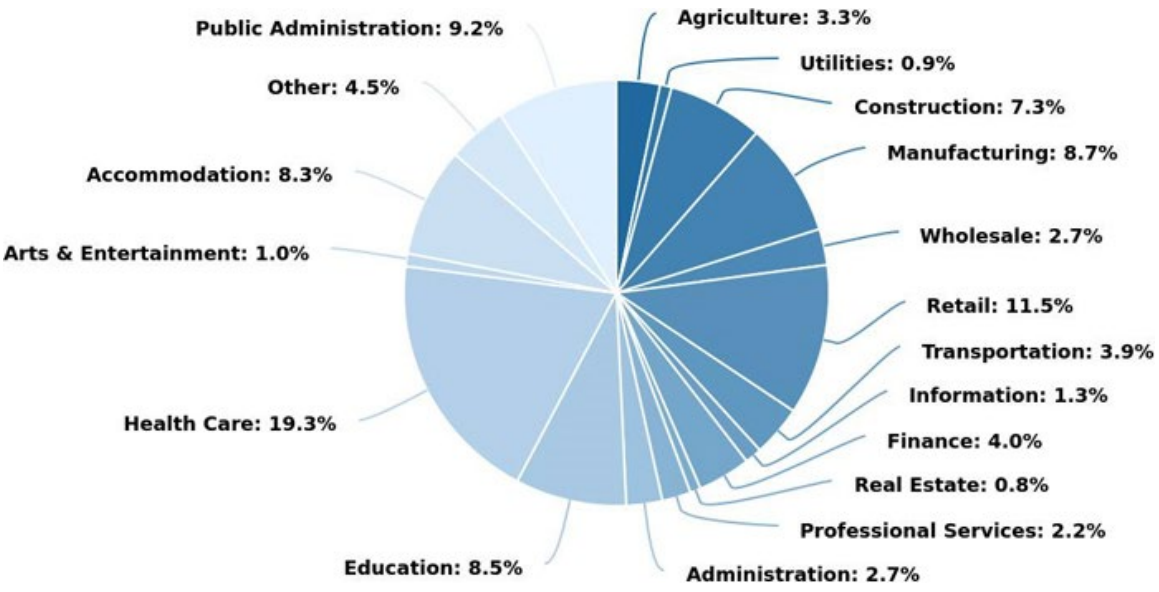


Figure 11-1: Workforce distribution in the Portage la Prairie SLA

11.4 Effects assessment

11.4.1 Effects pathways

During engagement for the project, comments were received relating to the potential for increased growth in the community and the potential to support industrial growth.

Direct Project employment will be generated through the hiring of residents within the local assessment area by either Manitoba Hydro or its contractors. Other direct employment will be generated by providers of equipment used in product construction, while indirect employment will be generated within industries supplying intermediate components. Induced employment is created by the household spending of the direct and indirect workforce.

Project construction will increase demand for goods and services and will generate direct and indirect opportunities for local and regional businesses. Examples of local goods and services provision include the purchase of food (e.g., from grocers and restaurants), fuel and materials. In addition to Project construction contracts, there is potential for sub-contracting opportunities for local and regional businesses.

The Project will generate federal, provincial and local government revenue during construction, operation and maintenance. Revenue includes federal and provincial consumption taxes (e.g., goods and services tax [GST] and provincial sales tax [PST] payable by Manitoba Hydro).

Federal and provincial income taxes will be payable by workers and on taxable income earned by suppliers (direct and indirect) and companies whose earnings are attributed to household spending (i.e., induced income).

Economic opportunities are experienced primarily during construction, with the potential for employment opportunities and presence of the workforce in the regional assessment area. During construction there will be 25 – 45 workers (Table 2-2). Potential project effects on the economy are beneficial rather than adverse.

During the operations and maintenance phase there will be no employment opportunities since the existing Manitoba Hydro workforce will be used for operations and maintenance. Effects on economy during operations will therefore be negligible as no new operation or maintenance jobs will be created.

11.4.2 Mitigation measures

Manitoba Hydro will work with interested Indigenous communities to prepare a list of skilled labor, equipment, services and ancillary supports available for use on the project.

11.4.3 Assessment conclusion

The effects of the Project in terms economic opportunities are summarized as follows:

- Direction: Positive
- Magnitude: Small

- Geographic extent: Regional
- Duration: Medium Term
- Frequency: infrequent
- Reversibility: Reversible

In conclusion, the residual effects are assessed as being minor but positive.

12.0Traditional practices, culture and heritage

12.1 Introduction

As described in the Indigenous Engagement Process (IEP; Chapter 1.0), Manitoba Hydro engaged eight First Nations, the MMF and the PUIPC, see Section 5.3 for a summary of discussion. Manitoba Hydro also supported Indigenous Community and Assessment Coordinator (ICAC) positions and provided opportunities for Long Plain First Nation, Dakota Tipi First Nation and the MMF to share Indigenous Knowledge. This section incorporates the ICAC submissions and feedback from virtual meetings with Manitoba Hydro's understanding of effects. It is clearly indicated when words come directly from the ICAC submissions. The full ICAC studies are included in Appendix A.

Based on experience from past projects, feedback provided in submissions from ICACs, existing literature and interests and concerns identified during virtual meetings with Indigenous communities, Manitoba Hydro identified three valued components that are directly related to matters considered important to rights bearing communities and are of cultural importance. Manitoba Hydro then asked the three ICACs to review this chapter and provide feedback on the valued components and assessment of effects to those valued components. The three valued components related to traditional practices, culture and heritage identified for this project include:

1. Traditional harvesting (e.g. hunting, fishing, trapping, plant gathering)
2. Important sites (e.g. cultural, spiritual, historical, heritage, sacred, identified TLE opportunities)
3. Heritage sites / objects

12.2 Scope

12.2.1 Spatial boundaries

The spatial boundaries for the environmental assessment consist of the project development area, local and regional assessment areas. Valued component specific details are described below:

Project development area: Footprint of the proposed project including the station footprint, transmission line right-of-way, any additional areas such as borrow pits or marshalling yards and access road allowances.

Local assessment area: The local assessment area is defined as 1 kilometre around the station and transmission line footprint (Map 12-1). It represents the area where indirect or secondary effects of construction and operation and maintenance are likely to be most pronounced or identifiable.

Regional assessment area: The regional assessment area is defined as 15 kilometres around the station and transmission line footprint (Map 12-2). It encompasses the area where project-specific environmental effects overlap with those of past, present, and reasonably foreseeable future projects and activities. It is used to provide regional context and is therefore generally the area where the project's contribution to cumulative effects is assessed.

12.2.2 Temporal boundaries

The primary temporal boundaries for the assessment are based on the timing and duration of project activities as follows:

- Construction – two years
- Operations and maintenance – for the life of the project, estimated to be a 75-year design life
- Decommissioning – two years

12.3 Existing conditions

12.3.1 Property ownership

Land use planning responsibilities in municipal jurisdictions falls under the jurisdiction of the respective municipalities or planning districts. Municipal jurisdictions may adopt development plans and zoning by-laws to guide land use decisions within their boundaries. Municipalities can become members of planning districts to work together with respect to land use planning (i.e., development plans). The RM of Portage la Prairie and the City of Portage la Prairie have formed the Portage la Prairie Planning District. The planning district is established to ensure standardized planning requirements through an updated development plan and zoning by-law encompassing both municipal jurisdictions. This promotes a regional approach to industrial, agricultural, and urban fringe development. Lands within the regional assessment area are almost entirely privately owned, with most land either agricultural fields or exurban development (homes, recreation, industrial developments etc.). The RAA encompasses the community of Burnside, formerly known as Rat Creek Settlement, located in 35-11-8 WPM, approximately 14 km west of Portage la Prairie. Scottish settlers establishing farm settlements in the area as early as 1868 and the community became a railway station point along the CPR main line in

1882. The first landowner of Section NE-26-11-8 WPM was Joseph Harris Fawcett who received a land grant in 1881. Sometime prior to 1906, the property transferred ownership to Solomon Beck, an English immigrant and his Ontario-born wife, who lived there with their family until at least the 1920s.

12.3.2 Indigenous land

Map 12-3 shows the Crown lands, Reserve lands and Treaty Land Entitlement areas in the RM of Portage la Prairie. The project is in Treaty One Territory, the traditional territories of the Anishinabe, Cree, and Dakota people, the homeland of the Métis Nation and within the Recognized Métis Harvesting Zone (Manitoba Metis Federation 2021).

In their submission for the Wash'ake Mayzoon EA, the MMF identifies the Recognized Métis Harvesting Zone in Figure 4 that covers the Regional Assessment area for the Project. The MMF adds that: "courts have also recognized that Métis harvesting rights may not be limited to Unoccupied Crown Lands" (Appendix A).

In their ICAC submission, Dakota Tipi First Nation shares that "In order to plan for and build the station in a good way, it is important to understand and acknowledge that the Project site is located in unceded Dakota territory. At the time of contact, Dakota people occupied areas with Canada and the US, the Northwest Territories, Alberta, Saskatchewan, Manitoba, and portions of Ontario. Dakota Tipi First Nation (DTFN) has not signed a Treaty and thus retains, holds and asserts Aboriginal Rights and Title to areas within southern Manitoba. This includes the area surrounding present-day Portage La Prairie, the Yellowquill Trail, and the site of the proposed Project." (Appendix A)

12.3.3 Provincial and federal Crown land

Crown lands are lands vested in the Crown and described under *The Crown Lands Act*. They include lands such as provincial parks, provincial forests, wildlife management areas, community pastures and ecological reserves (Map 12-3).

There are Crown land parcels within the RM of Portage la Prairie. The Assiniboine Diversion is Crown land and Dakota Plains Wahpeton First Nation, Dakota Tipi First Nation and Long Plain First Nation lands exist within the RM of Portage la Prairie.

The station site and local assessment area are not located on any provincial forest, wildlife management area or other provincially protected area, community pasture, Treaty Land Entitlement area or First Nation reserve land. It is located on privately held agricultural land within the RM of Portage la Prairie.

12.4 Effects to traditional practices, culture and heritage

As described in Section 5.2.2, Manitoba Hydro worked closely with several Indigenous communities and organizations to understand traditional practices, culture and heritage within the regional assessment area. A description of past and present use of the area is best described by the community submissions provided in Appendix A. Indigenous people have lived and practiced their culture in the regional assessment for millenia. In the past, cultural activities, hunting, fishing, trapping, and plant gathering for food and medicines were centred around/near the Assiniboine River and its tributaries.

The RAA includes the Yellow Quill Trail, an ancient Indigenous trade route and travelway for people moving northward to Lake Manitoba and the Qu'Appelle Valley in Saskatchewan, and Fort la Reine, a fort built in 1738 A.D. and located close to the Yellow Quill Trail to intercept travellers using the trail. There are no known remains relating to Fort La Reine, but a stone cairn and plaque have been erected to commemorate the site. The RAA is also important to the Métis who were amongst the earliest permanent residents of the Portage area. The Manitoba Act of 1870 provided substantial land grants to the Métis of the Red River Settlement which extended to various parishes along the Assiniboine River including the Parish of Portage la Prairie. The Portage la Prairie area was an important staging ground for the annual buffalo hunts which continued until 1882.

Dakota Tipi First Nation identifies in their submission that "DTFN continues to exercise rights in the region, including the right to hunt, fish, harvest land- and water-based resources, practice cultivation, build and occupy settlements, build and occupy camps and cabins, and travel to and access resource activity areas. DTFN is in the process of finding and documenting a number of burial sites in the region. There are undoubtedly many more burial and cultural sites yet to be identified." (Appendix A).

The local assessment area is located entirely on agricultural land within the RM of Portage la Prairie, where there is limited cultural activities and traditional harvesting being practiced today. As noted in Dakota Tipi First Nation's submission, "The project site is located on private, cultivated land. This site has already been altered from its natural state and is currently inaccessible to DTFN members." (Appendix A). Dakota Tipi First Nation adds that "While the station covers a reasonably small area, it is important to recognize that this site plays a role in the broader colonial impact and cumulative effects mentioned above." (Appendix A). Cumulative effects are further discussed at the end of this chapter.

In their submission for the Wash'ake Mayzoon Station, the MMF shares that the project is located within the Recognized Métis Harvesting Zones and identified the presence of 80 existing Métis Knowledge features in proximity to areas impacted by the Wash'ake Mayzoon Station. The MMF added that "The presence of these 80 existing features is evidence of the potential for impact to the Métis way of life from transmission enhancements related to the PACE project (both phases 1 & 2) and the BP6 & BP7 project. Today, Métis Constitutionally protected rights to harvest, and any impact on these rights needs to be adequately and appropriately assessed and, if necessary, accommodated and mitigated for." (see Appendix A).

12.4.1 Effects to traditional harvesting

On past projects, including the Brandon-Portage la Prairie transmission line replacement project (BP6/BP7) (Manitoba Hydro 2021), Indigenous communities have expressed that changes in available lands to practice traditional harvesting and access to these lands can have negative impacts to traditional harvesting practices. In the MMF's submission for the Wash'ake Mayzoon Station EA (see Appendix A), it was shared that the project was part of a historic trapping area as well as a broader hunting area (for grouse, waterfowl, turkey and deer) and that 80 Métis Knowledge features exist in the project area, though these were not identified specifically for this project. . In their submission (Appendix A), the MMF expressed the importance of preserving as much contiguous Unoccupied Crown Land as possible to maintain the ability to practice traditional harvesting. The Wash'ake Mayzoon Station will not be located on or take up Unoccupied Crown land.

In their ICAC submission, Dakota Tipi First Nation identifies the project site as "already altered from its natural state and is currently inaccessible to DTFN members" (Appendix A). While no traditional harvesting is being practiced by Dakota Tipi First Nation members at the project site, their submission notes that the regional assessment area is still used for traditional harvesting: "DTFN continues to exercise rights in the region, including the right to hunt, fish, harvest land-and-water-based resources, practice cultivation, build and occupy settlements, build and occupy camps and cabins, and travel to and access resource activity areas." (Appendix A).

12.4.1.1 Mitigation

The primary mitigation measure for reducing adverse effects to traditional harvesting practices was site selection. The site selection methodology considered values from multiple perspectives and community groups. Accordingly, the location of a station is often a balance of those perspectives. The location for this station does not interfere

with any Unoccupied Crown Lands nor do we have current knowledge of traditional harvesting practices taking place directly on the station site.

Manitoba Hydro remains open to any mitigation measures suggested by Indigenous communities to further reduce any adverse effects the project might have on traditional harvesting practices.

12.4.1.2 Characterizing residual effects

Given that the project is located on agricultural land where traditional harvesting practices are limited, the effects of the project on traditional harvesting practices are as follows:

- Direction: Adverse
- Magnitude: Minor
- Geographic extent: Local
- Duration: Short-Term
- Frequency: Intermittent
- Reversibility: Permanent

The unique nature of traditional harvesting practices makes it inappropriate to determine whether any effects are significant or not significant. A full description of effects to harvesting as a result of the project are provided within each ICAC submission (Appendix A). Manitoba Hydro understands the severity of the residual effects to vary between communities but overall, the project has low impacts due to its presence on agricultural lands and avoidance of Unoccupied Crown Lands. Manitoba Hydro will continue to work with communities to mitigate any adverse effects.

12.4.1.3 Follow up and monitoring

The environmental protection program is a framework for implementation, management, monitoring and evaluation of protection activities in keeping with environmental effects identified in environmental assessments, regulatory requirements and public expectations. The environmental protection program prescribes measures and practices to avoid and reduce adverse environmental effects on wildlife habitat (e.g., wildlife reduced risk work windows, setbacks and buffers for sensitive habitat). There are no specific follow up or monitoring measures proposed for this valued component.

12.4.2 Effects to important sites

This valued component includes important sites to Indigenous communities such as sites of cultural, historical and spiritual importance, heritage sites, sacred sites and other sites such as Treaty Land Entitlement opportunities. These include tangible and intangible sites identified by Indigenous communities during the IEP and in the ICAC submissions.

During the IEP for BP6/BP7 (Manitoba Hydro 2021), Long Plain First Nation representatives expressed concerns about projects that may impact their ability to access land for Treaty Land Entitlement selections. Preserving land parcels for current and future use is a high priority for LPFN. LPFN discussed aspects of future development planning initiatives with Manitoba Hydro and highlighted both the economic and land protection value of maintaining properties for future TLE. The location of the station avoids any potential TLE and future development plans.

During the IEP for BP6/BP7 (Manitoba Hydro 2021), Dakota Tipi First Nation identified several sites along the transmission line including burials, mounds and tipi rings, and stressed the need for Manitoba Hydro to be diligent in its pre-construction heritage surveys and monitoring of construction activities. The location of the station avoids these important sites and a Cultural and Heritage Resources Protection Plan (CHRPP) will be followed to monitor for any heritage findings, which is further described in Section 12.4.3 Effects to heritage resources.

In their submission for this project, Dakota Tipi First Nation notes that "DTFN's Community Liaison has visited the proposed station site and reviewed existing research on Dakota history in the region. The area is currently an open field, well away from local waterbodies. There are no cultural artefacts, burials or cultural features currently known to be on the proposed site, and it has not been identified as a significant area to date. However, DTFN has not yet examined the full written record with respect to use of this site. Given the history of the area and the soil disturbance required to install the station's grinding grid, there is potential to disturb cultural artifacts at this site." (Appendix A). After submission by DTFN, artefacts were discovered at the proposed site, which are described in section 12.4.3.

Since May of 2021 unmarked and potential burials have been uncovered near the sites of former Indian Residential Schools across Canada, starting with news of finding 215 remains in Kamloops, B.C. and continuing as more investigations revealed hundreds more unmarked graves at sites across Canada. This information, although not news to ICACs and many community members located in the Project area, brought to light the importance of respecting heritage and archeological values over a Project's life. Dakota Tipi First Nation ICAC Darryl Taylor, has worked with local

archeologists to map out four former Residential schools/day schools in the Portage la Prairie area. Long Plain First Nation representatives indicated during a Project site visit that it was common for children to run away from these schools, and that there was potential for remains to be found throughout the region.

In their submission for this project, the MMF identifies: "the presence of 80 existing Métis Knowledge features in the PACE project area indicates the potential for the Manitoba Métis Community (Manitoba Métis) to have additional specific knowledge to share about alternatives to sites if given the opportunity. We would also like to engage the Métis Citizens for additional project specific information which can be used to inform Manitoba Hydro's full environmental assessment and EAP, construction and future operations of the line." (Appendix A).

12.4.2.1 Mitigation

The primary mitigation measures for reducing adverse effects to important sites is the site selection process and implementing the Culture and Heritage Resources Protection Plan (CHRPP). The location of the station avoids any important site identified by Indigenous communities and avoids areas considered by communities for future development plans and TLE.

In their ICAC submission, Dakota Tipi First Nation suggests four mitigation measures to reduce disturbance to heritage sites, including:

1) "Conduct a full heritage assessment of the site
2) Arrange for a DTFN Liaison to be on-site during heritage work, site clearing and ground disturbance. The Liaison may choose to be on-call in lieu of on-site depending on circumstances
3) Share results of the heritage assessment with DTFN
4) Work with DTFN in decision regarding the handling and treatment of any artifacts found." (Appendix A)

A Heritage Resources Assessment has been conducted for the project and pre-construction archaeological surveys will take place (see section 12.4.3 Effects to Heritage Resources for more detail). Results of the assessment will be shared with communities. Manitoba Hydro will arrange for community members to participate in on-site heritage work and monitoring of construction activities when deemed appropriate by Manitoba Hydro and communities. Manitoba Hydro will follow the CHRPP for handling and treatment of artifacts, which includes provision for notifying communities.

In response to the MMF's statement that "the presence of 80 existing Métis Knowledge features in the PACE project area indicates the potential for the Manitoba

Métis Community (Manitoba Métis) to have additional specific knowledge to share about alternatives to sites if given the opportunity. We would also like to engage the Métis Citizens for additional project specific information which can be used to inform Manitoba Hydro's full environmental assessment and EAP, construction and future operations of the line." (Appendix A), Manitoba Hydro will continue to welcome information from the MMF to inform construction and future operations of BP6/BP7 and the Wash'ake Mayzoon Station as well as to inform the EA for stage 2 of PACE – new transmission line.

It has been shared by Indigenous communities on past projects and for this project that a traditional ceremony should take place on any project that affects the land. In their ICAC submission, Dakota Tipi First Nation suggests that Manitoba Hydro:

1) "Hold a Pipe Ceremony at ground-breaking to respect the land in a traditional way
2) Hold a closing ceremony when construction is complete
3) Ensure DTFN participation in both ceremonies" (Appendix A)

Manitoba Hydro will work with Indigenous communities to organize a traditional ceremony before construction on the project begins and a closing ceremony after completion of the project. All communities engaged on the project will be invited to attend and participate in the ceremonies.

Cultural awareness training will be provided to project staff (contractors and internal MH staff). A Culture and Heritage Workshop will take place on October 7, 2021 where Indigenous communities, the HRB and Manitoba Hydro will meet to share concerns related to important sites, including how to pay respect and be responsive to any finds should they be encountered during site work.

12.4.2.2 Characterizing residual effects

Given that the project is located away from important sites identified by Indigenous communities and future development plans and TLE, the effects of the project on important sites are as follows:

- Direction: Adverse
- Magnitude: Minor
- Geographic extent: Local
- Duration: Short-Term
- Frequency: Intermittent
- Reversibility: Permanent

The unique nature of important sites makes it inappropriate to determine whether any effect is significant or not significant. Therefore, such conclusion will not be made.

Manitoba Hydro anticipates the severity of the residual effects to vary between communities and therefore will continue to work with communities to mitigate any adverse effects.

12.4.2.3 Follow up and monitoring

Manitoba Hydro will continue to be open and responsive to Indigenous communities and consider any important sites in the project area that might be identified in the future.

12.4.3 Effects to heritage resources

12.4.3.1 Existing environment

Heritage resources are protected under Manitoba's Heritage Resources Act (1986) and are managed by the Historic Resources Branch (HRB) under the Department of Sport, Culture and Heritage. A desktop review was undertaken to gain an understanding of the general and specific history of the areas. A screening request for known heritage and cultural sites that have been registered with the province was sent to the HRB for the proposed Project to determine if there are any potential heritage resources that may be affected. A listing of registered sites was provided from the HRB's Site Inventory database for the Rural Municipality (RM) of Portage la Prairie, including the City of Portage la Prairie, to inform the baseline for heritage resources. The listing included:

- Archaeological sites (130),
- Cemetery sites (38),
- Centennial farms (49),
- Plaques (48), municipally designated sites (8), and
- Provincially designated sites (6).

The Canadian Register of Canada's Historic Places was searched for federally designated sites. There are five (5) federal designated sites. A listing of these registered sites that fall within the boundaries of RM of Portage la Prairie and the City of Portage la Prairie is provided at Appendix E.

12.4.3.2 Characterizing residual effects

Potential interactions between the Project and heritage resources that may cause environmental effects are described in this section. Any Project activity that includes surface or sub-surface ground disturbance has the potential for interaction with heritage resources or human remains where they are present.

The temporal boundaries for the assessment of potential effects of the Project on heritage resources includes only the construction phase when there is potential for interaction with heritage resources to be disturbed.

The spatial boundaries for the environmental effects assessment of heritage resources are defined below:

- Local Assessment Area (LAA): The LAA for understanding effects to heritage resources include the property purchased for the proposed station footprint.
- Regional Assessment Area (RAA): The RAA for heritage resources is the area within which the Project's environmental effects may overlap or accumulate with the environmental effects of other projects in proximity to the Project. For heritage resources, the RAA is defined by the boundaries of the RM of Portage la Prairie, including the City of Portage la Prairie.

Direct effects on the heritage resources are only possible during the construction phase. Any effects would be the direct consequence of the disturbance or destruction of heritage site as a result of excavating and earth moving activities. Potential effects of the Project on heritage resources are possible only within the LAA or, more, specifically, within the general area of the Project footprint.

Based on the information compiled from the desktop review, there were no known heritage sites within the LAA. A preliminary archaeological survey undertaken in August 2021 by the Project Archaeologist, Manitoba Hydro staff and representatives from Dakota Tipi First Nation and the Manitoba Métis Federation located surface artifacts within the project footprint. The site consisted of Late Historic period (1870-1930 A.D.) artifacts along with the recovery of a Precontact projectile point. The finds were scattered across a 100-metre area within the project footprint and have been impacted through agricultural processes. The site has been registered with the Manitoba's Historic Resources Branch and notification emails were sent informing the communities of the finds. Continuation of the HRIA survey and testing will occur in fall 2021 once the standing wheat crop has been harvested.

Given that the project is located within a disturbed context, the integrity of the site found during the preliminary HRIA investigation is impacted. With the implementation of the proposed mitigation, the project will not result in a permanent disturbance or destruction of a heritage resource. Therefore, the residual environmental effect of the project on heritage resources during the project are rated not significant. The effects of the project heritage resources are as follows:

- Direction: Adverse

- Magnitude: Minor
- Geographic extent: Site-specific
- Duration: Short-Term
- Frequency: Occurs Once

Reversibility: Permanent

12.4.3.3 Mitigation

Mitigation of potential Project effects on heritage resources includes pre-construction archaeological work at station site. Mitigation measures for the archaeological site found during the preliminary HRIA investigation will include subsurface testing to determine if buried components are present below the plow zone. Additional mitigation measures will be determined based on discussion with the HRB with input from the Indigenous Community Assessment Coordinators. If there are no additional finds as a result of the shovel testing that cannot be mitigated then an application will be made to the HRB for the project to receive heritage clearance.

In addition to the measures developed in the environmental protection plan, a Cultural and Heritage Resources Protection Plan (Appendix B) has been developed to specifically deal with potential effects. It includes the following measures:

- All archaeological finds discovered during site preparation and construction will be left in their original position until the Project Archaeologist is contacted and provides instruction;
- Orientation information will include typical heritage resource materials and reporting procedures;
- The Contractor will report heritage resource materials immediately to the Construction Supervisor who will cease construction activities in the immediate vicinity until the Project Archaeologist is contacted and prescribes instruction; and
- Relevant measures within the Cultural and Heritage Resource Protection Plan will be adhered to during construction and operations phases of the Project.

Table 12-1: Environmental effects analysis for heritage resources

Environmental effect	Mitigation measures	Residual effects	Evaluation
Identification of unknown heritage resources or burials at station site	Pre-construction archaeological work in Project footprint	Disturbance of unknown	Low

	Follow relevant measures outlined in the Cultural and Heritage Resource Protection Plan	resources or burials

No heritage resource sites were initially known within the LAA based on the compiled data. However, an archaeological site was discovered during HRIA investigations. Additional testing and assessment will determine if there are buried subsurface components or if the site is limited to the surface within the disturbed plow zone. The potential for additional unknown archaeological sites being discovered during clearing and construction remains low, especially since the project site has been disturbed through agricultural activities. While there is low potential, there could be potential for deeply buried unknown heritage resources to be discovered during clearing and construction of the proposed station site. Continuing pre-construction archaeological work should reduce the possibility of accidental disturbance to heritage resources or human remains.

12.5 Cumulative effects

The project is in a region of southern Manitoba where the original native ecology has been substantially affected by more than one hundred years of human development. This change has been dominated by conversion of native prairie to agricultural lands, accompanied by urban and rural settlements, public infrastructure, and various other land uses. As a result, there has been a gradual displacement of natural features. Any remaining natural features in the area are highly valued, including the intact aspen-oak forest on Crescent Island and the mature cottonwood forest observed in the vicinity of the Assiniboine River.

Many of the proposed future projects planned in the area (Table 6-3) will be built upon this previously disturbed environment, converting agricultural lands to industrial, utility or transportation infrastructure, as is the case for the Wash'ake Mayzoon Station. Construction related effects on vegetation including clearing, the potential to spread non-native/invasive plants and loss of wetland vegetation are likely to occur on other foreseeable future projects, including the BP6/BP7 project, the Crescent Lake causeway and Manitoba Hydro's planned Portage Area Capacity Enhancement (PACE) 230 kV transmission line project. These projects will contribute to the cumulative effects to important traditional plant species and traditional harvesting in the area.

For the BP6/BP7 project, First Nation representatives in the area have indicated that riparian areas are important for gathering willow, an important traditional plant.

Recognizing the importance of these remaining pockets of intact natural vegetation along the Assiniboine River and Crescent Lake, residual effects related to vegetation loss along these waterways will act cumulatively with riparian habitat loss of these future projects.

In working with ICACs on the project it is understood that cumulative effects to traditional practices, culture and heritage have extended across a broad span of time, and these effects will continue. All future projects have potential to interact with the effects of the Wash'ake Mayzoon Station in that the presence of more infrastructure on the landscape may impact harvesting, important sites, and heritage.

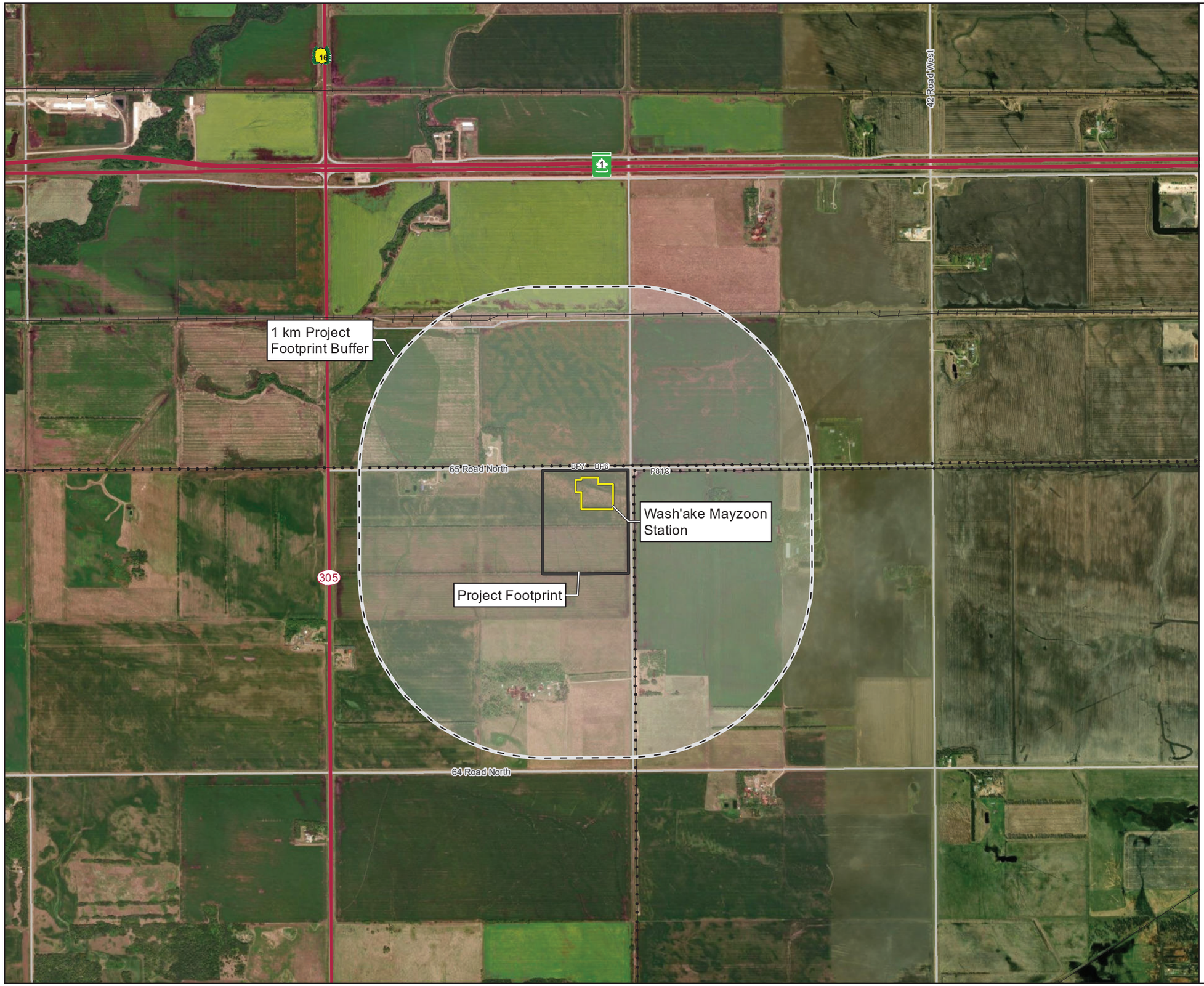
The level of disturbance associated with the Wash'ake Mayzoon Station is minimal in relation to other projects because of the project being on pre-disturbed agricultural land; however, when considered cumulatively with other infrastructure on the landscape, Manitoba Hydro projects in the Portage la Prairie area contribute to the loss of available land to both harvest and access important sites. Manitoba Hydro understands that when working with ICACs on the projects this loss is considered with changes that have occurred since settlement. Adopting pre-disturbance condition as the historical temporal limit, key mitigation to address impacts include hosting ceremonies to pay respect to Mother Earth and supporting Indigenous monitors during construction of transmission projects in the area.

The site selected for the Wash'ake Mayzoon Station and the final route of the BP6/BP7 project are both primarily on pre-disturbed agricultural land. The processes that went into selecting the site for the Station and routing the BP6/BP7 project struck a balance between competing values in the area. Both projects will facilitate the conveyance of clean, renewable energy to an area with growing energy needs, build reliability within the Manitoba transmission system and contribute to Manitoba's economic future.

Manitoba Hydro undertook an approach to Indigenous engagement that was adaptive in that it was structured to understand concerns related to the BP6/BP7 project, then build upon these understandings for the Wash'ake Mayzoon Station and then further build upon these understandings for the upcoming planned PACE transmission line project. Indigenous Coordinators were supported to conduct interviews, assess effects, and propose mitigation measures. Manitoba Hydro intends to work with Coordinators in upcoming future Manitoba Hydro projects, including the planned PACE transmission line, to build upon understandings from this project and the BP6/BP7 project.

- Manitoba Hydro will work with Indigenous Coordinators to apply learnings from the BP6/BP7 project and the Wash'ake Mayzoon Station to the planned PACE transmission line project.

Manitoba Hydro is committed to continue sharing information with landowners, Indigenous communities, the public and to continue working with interested parties through implementation of the Environmental Protection Program.



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station
- Project Footprint

Assessment Area

- Local Assessment Area
  Traditional Harvesting and Important Sites

Landbase

- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Rural Municipality

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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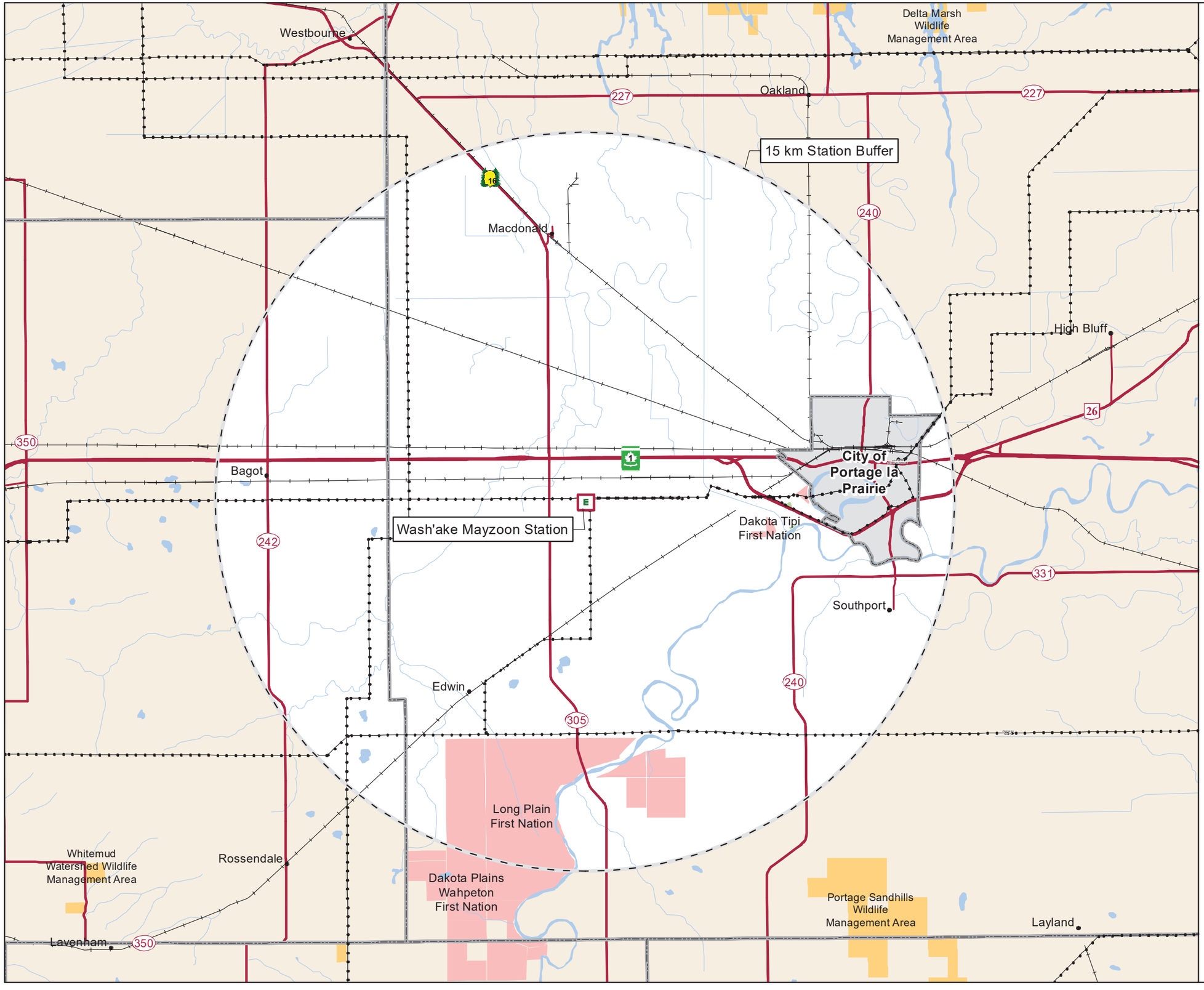
Local Assessment Area Traditional Harvesting and Iimportant Sites

Map 12-1



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- E — Wash'ake Mayzoon Station

Regional Assessment

- Regional Assessment Area - Traditional Harvesting and Important Sites

Landbase

- Transmission Line
- Railway
- Trans-Canada Highway
- 12 — Provincial Highway
- 300 — Provincial Road
- First Nation
- National/Provincial Park
- Wildlife Management Area
- City of Portage La Prairie

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 18, 2021

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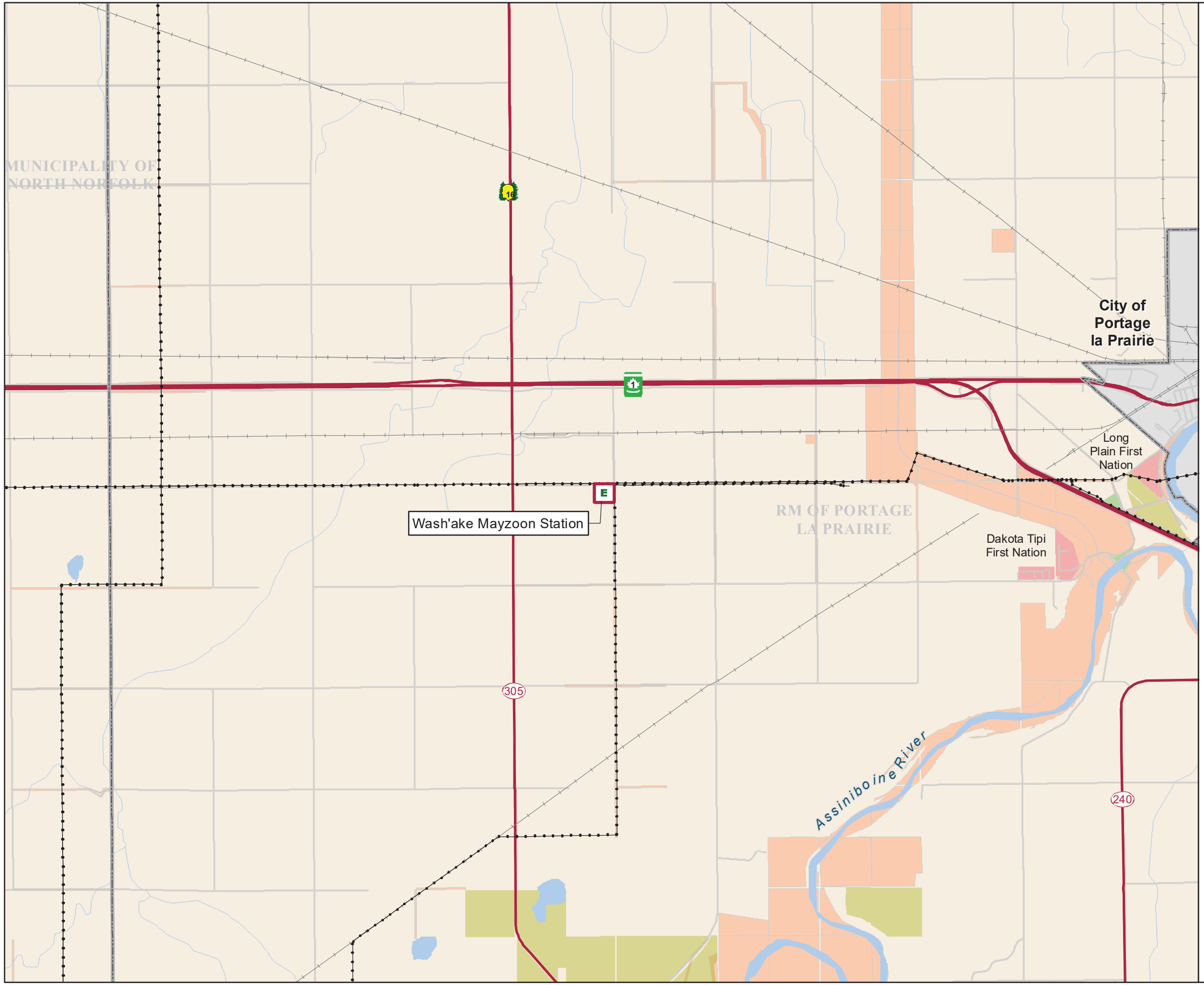
Regional Assessment Area Traditional Harvesting and Important Sites

Map 12-2



Manitoba Hydro

Wash'ake Mayzoon Station

Project Infrastructure

- Wash'ake Mayzoon Station

Landbase

- Transmission Line
- Railway
- Trans-Canada Highway
- Provincial Highway
- Provincial Road
- Municipal Road
- First Nation
- Crown Land
- Treaty Land Entitlement
- National/Provincial Park
- Wildlife Management Area
- City of Portage La Prairie
- Rural Municipality

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: August 13, 2021

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Designated Lands

Map 12-3

13.0Greenhouse gases and climate change

13.1 Climate

Climate plays an important role in multiple aspects of the project. For example, design loads are influenced by ice accumulation and wind, construction planning may use seasonal temperature patterns to favour frozen ground conditions, and conductor clearances are influenced by ambient temperature and wind conditions.

Furthermore, the impact of extreme climate events, such as the wet snow event in October 2019 that resulted in damage to the adjacent BP6/BP7 transmission line (Manitoba Hydro 2021), can result in substantial outages and financial consequences.

At a high level, this section characterizes historic climate conditions and presents projections of how climate in the area may change in the future. The information provided will become foundational for subsequent assessments of climate change impacts and resilience for transmission projects in the Portage la Prairie area.

13.1.1 Historic climate

The project is in the MacGregor Ecodistrict of the Lake Manitoba Plain Ecoregion, which is part of the broader Prairies Ecozone. The climate is generally characterized as subhumid, with mean annual precipitation that varies considerably year-to-year (often falling in the form of local summer storms), high evaporation, short, warm summers and long, cold winters (Smith, et al. 1998).

There are nine meteorological stations operated by Environment and Climate Change Canada (ECCC) used for the assessment. Seven are in the Portage area and one at the Richardson International Airport in Winnipeg and one in Brandon are also included. These two are to complement records at Portage la Prairie and extrapolate to southern Manitoba.

Some stations have a long temporal coverage (back to 1886) but many have missing and poor-quality data that limit the suitability of these records for long term climate studies.

13.1.2 Climate normals

Monthly Climate Normals (Environment and Climate Change Canada 2021) are illustrated in Figure 13-1 for temperature, precipitation and wind speed. Also shown are period-of-record extremes at each station, which may extend beyond the 1981-2010 period.

Portage la Prairie is located roughly midway between Winnipeg and Brandon and because of their proximity, normal climatic conditions from Winnipeg and Brandon are indicative of general conditions at Portage la Prairie. This is illustrated in Figure 13-1 for precipitation, which shows similar patterns at all three stations. One notable difference in the precipitation plots is the extreme (period-of-record) daily precipitation in which Portage la Prairie CDA's 137mm event (August 16, 1985; (Environment and Climate Change Canada 2021)) exceeds extreme daily records at Winnipeg Richardson Int'l A and Brandon A. This difference shows the highly variable nature of precipitation compared to temperature.

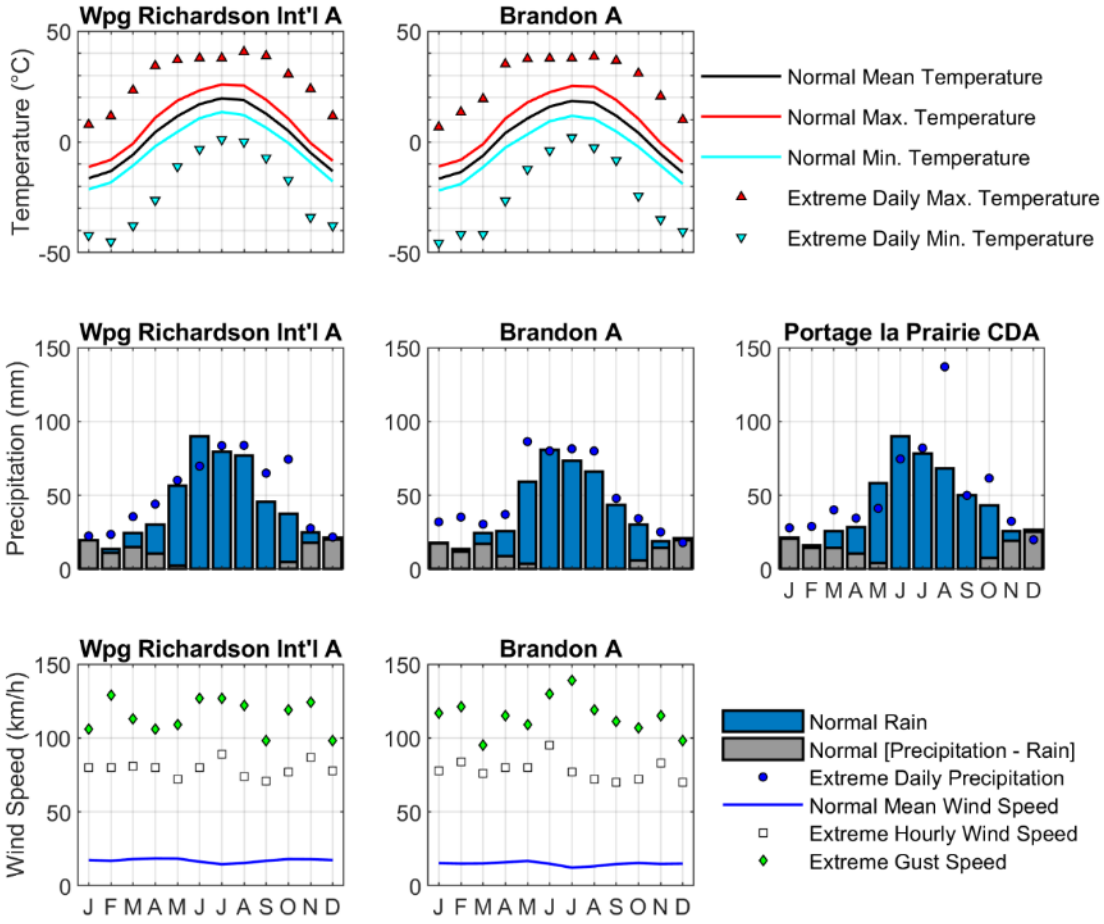

Figure 13-1: 1981-2010 Monthly Climate Normals at Winnipeg, Brandon and Portage la Prairie[3].

[3]Also shown (points) are period-of-record, sub-monthly, extremes for select variables. Data retrieved from ECCC (2021).

13.1.3 Trends

Adjusted and Homogenized Canadian Climate Data (AHCCD) from ECCC are developed specifically for purposes of trend analysis (Vincent, Hartwell and Wang 2020); (Mekis and Vincent 2011); (Wan, Wang and Swail 2010). AHCCD includes minimum temperature (Tmin), mean temperature (Tmean), maximum temperature (Tmax), rain (total of daily rainfall), snow (total of daily snowfall), precipitation (total of daily precipitation), and wind speed (mean of hourly wind speed). Seasonal and annual time series from AHCCD at select locations in the project area are plotted in Figure 13-2.

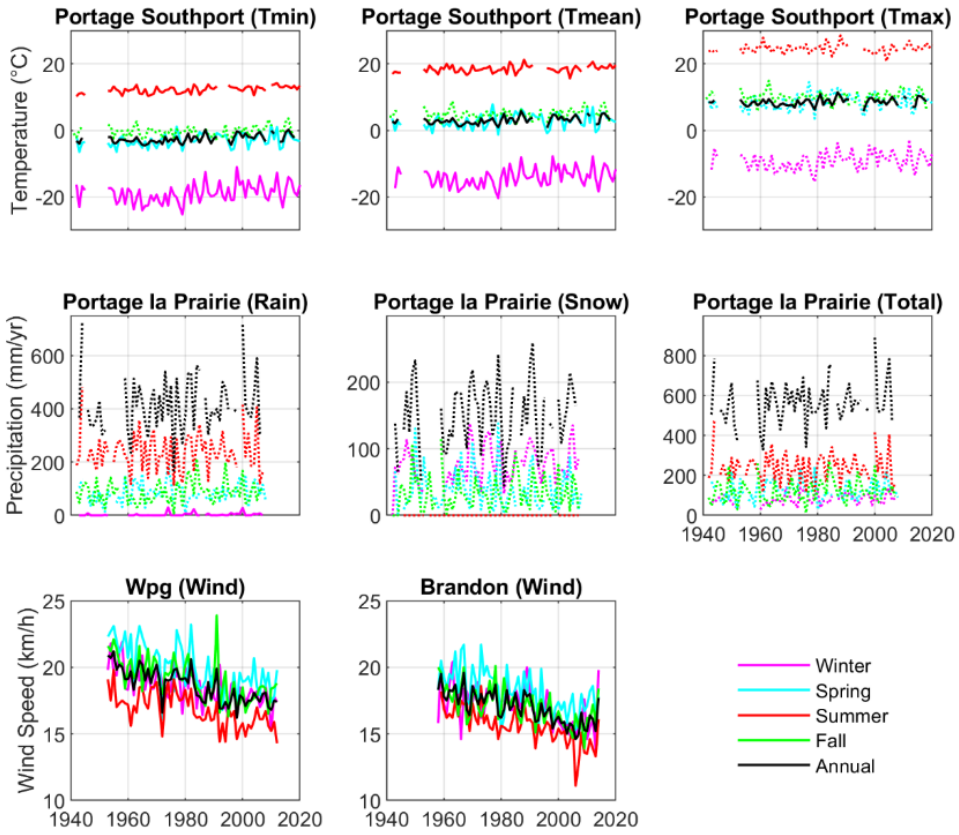

Figure 13-2: Time series of seasonal and annual temperature, precipitation and wind speed[4].

[4]Solid lines indicate statistically significant trends and dotted lines indicate time series where no statistically significant trend was detected. Data shown are from the entire period available within ECCC's Adjusted and Homogenized Canadian Climate Data (AHCCD) for select stations of interest.

Statistically significant trends are shown in Figure 13-2 as solid lines (dotted lines are not statistically significant). Trends of note include:

- Annual temperatures increased by
  - 0.031°C/yr for Tmin
  - 0.026°C/yr for Tmean
  - 0.019°C/yr for Tmax
- In winter
  - minimum temperatures increased by 0.044°C/yr
  - mean temperatures increased by 0.035°C/yr,
- In spring
  - minimum temperatures increased by 0.035°C/yr
  - mean temperatures increased by 0.029°C/yr
- In summer
  - minimum temperatures increased by 0.025°C/yr
  - mean temperatures increased by 0.016°C/yr
- The only significant precipitation trend was for increasing winter rain (0.02mm/yr), which is likely in response to warmer winter temperatures resulting in more precipitation falling as rain instead of snow.
- Annually, wind speeds decreased by 0.055km/h/yr in Winnipeg and 0.056km/h/yr at Brandon. Seasonally, the largest trend occurred in summer at Brandon by 0.057km/h/yr and in spring at Winnipeg 0.071km/h/yr.

It is important to recognize that trend analysis can be sensitive to the start and end dates. For the purposes of this assessment, trends are analyzed for their entire period of record available. Historic trends provide an indication of how the climate has changed in the past but may not be an accurate representation of continued longer-term changes in the climatic system (e.g., through extrapolation of trends).

13.1.4 Future climate

Global climate models driven by future greenhouse gas emission scenarios (van Vuuren, et al. 2011) are used to project how Earth's climate may evolve in the future. Forty simulations from eighteen global climate models and two greenhouse gas emission scenarios provided the basis for this assessment.

The text below characterizes projections specific to the Portage la Prairie area. Based on the design life of the project, projections are presented for the 2050s (2040-2069) and 2080s (2070-2099) future horizons relative to the reference 1981-2010 period. Projected changes (deltas; Δ) indicate how the overall long-term climate may differ from the reference period, so information presented in this section can be complementary to historic climate normal presented in Section 13.1.1.

Table 13-1: Projected change for the 2050s future horizon (2040-2069)*

	Tmin (°C)	Tmean (°C)	Tmax (°C)	Precipitation (mm)	Evaporation (mm)	Runoff (mm)	Wind Speed (km/h)
Annual	2.97	2.83	2.60	3.00	3.7	-0.12	-0.12
Winter	4.34	3.73	3.18	2.65	1.81	2.36	-0.06
Spring	2.73	2.43	2.31	6.73	5.75	-2.95	-0.14
Summer	2.55	2.67	2.55	-1.11	2.66	0.2	-0.33
Fall	2.66	2.69	2.72	2.67	2.91	0	-0.17

↑ ↓ Strong agreement

↑ ↓ Moderate agreement

↑ ↓ Weak agreement

↑ ↓ Negligible agreement

*Relative to 1981-2010. Cell colours reflect agreement on the direction of change. Dark green / brown indicates strong agreement that an increase / decrease will occur, medium green / brown indicates moderate agreement that an increase / decrease will occur, light green / brown indicates weak agreement that an increase / decrease will occur, and grey denotes projections where the ensemble agreement is less than 60% on the direction of future change.

Table 13-2: Projected change for the 2080s future horizon (2070-2099)

	Tmin (°C)	Tmean (°C)	Tmax (°C)	Precipitation (mm)	Evaporation (mm)	Runoff (mm)	Wind Speed (km/h)
Annual	4.04	3.83	3.72	4.56	4.76	-0.34	-0.13
Winter	6.11	5.19	4.53	4.11	2.56	3.1	-0.04
Spring	3.85	3.57	3.45	9.72	9.79	-3.92	-0.11
Summer	3.45	3.52	3.69	0.45	4.29	0.2	-0.54
Fall	3.63	3.63	3.59	3.88	4.4	0.07	-0.19

↑ ↓ Strong agreement

↑ ↓ Moderate agreement

↑ ↓ Weak agreement

↑ ↓ Negligible agreement

The model projects average temperatures will increase by 2.83°C in the 2050s and 3.83°C in the 2080s (Table 13-1; Table 13-2). Both future time horizons (Table 13-1; Table 13-2) show strong agreement that temperature will increase into the future in all seasons. Winter is projected to experience the greatest temperature increase.

There is strong agreement that annual and winter precipitation will increase for both future time horizons. Increasing spring and fall precipitation is also projected, although with less agreement. Summer precipitation shows very small changes and is associated with notable uncertainty regarding the direction of change.

As expected, increasing temperature results in increasing evaporation, which may result in dryer summers. Some runoff projections show increasing winter runoff coincident with decreasing spring runoff, which may suggest changes in runoff timing. Increased temperatures result in earlier snowmelt in winter months, leaving less snow to melt in spring. Global climate models suggest that mean wind speed is not expected to drastically change in the future.

13.2 Greenhouse gas emissions

The following section documents the predicted construction and operation and maintenance greenhouse gas emissions ('GHG emissions') for the project, including construction activity GHG emissions (including supply-chain GHG emissions), land-use change GHG emissions resulting from permanent disturbances, and maintenance GHG emissions during operation. A full technical report is provided in Appendix F.

Total aggregated GHG emissions are anticipated to be 5.9 kilotonnes ("kt") of carbon dioxide equivalent ("CO_2e") for the project. While aggregated GHG emissions are presented to the nearest tonne ("t") in Table 13-3, this is only done to help facilitate comparison between activities; it is not intended to imply that this level of accuracy was achieved in the assessment of GHG emissions.

Table 13-3: Summary of GHG emissions

Activity	kt CO_2e	% of total
Construction: Material Supply Chain	2.454	41.5%
Construction: On-Site Energy	0.817	13.8%
Construction: Worker Transport	0.144	2.4%

Station Maintenance	2.325	39.3%
Station Land Use Change	0.169	2.9%
Total	**5.909**	

13.2.1 Construction-activity GHG emissions

GHG emissions will result from the construction of the project, including GHG emissions embedded in the materials ("supply-chain GHG emission") used to construct the station. These supply-chain GHG emissions have been estimated to provide a useful point of comparison with direct on-site construction GHG emissions which are predicted to represent only 13.8% of overall station related GHG emissions.

Construction related activities for have been broken down into three major activities:

1. Manufacture of construction components/materials (supply-chain)
2. Transportation of construction components/materials (supply-chain)
3. Construction of the station (on-site energy and worker transport)

Most construction GHG emissions are supply-chain GHG emissions embedded in the manufacturing of station components/materials. Material related GHG emissions include estimates for electrical apparatus (e.g., transformers, disconnects, circuit breakers etc.), the control building (including major internal equipment), above-ground conductors, the below-grade grounding system, foundations (for the control building and electrical apparatus), yard cover, electrical apparatus supports, take-off structures (e.g., gantry towers), and fencing.

Conservative estimates have been made during the calculation of GHG emissions throughout. For example, most metal components will likely be manufactured internationally, but not all. For this assessment, India was selected as the presumed source location because India is one of the furthest locations in which to estimate transport GHG emissions, resulting in a conservative estimate of GHG emissions (a higher estimate); but, the actual source location of most station components are unknown at this time. A detailed list of assumptions is provided in the technical report.

GHG emissions related to the construction of the station, and the transportation of workers, are based on workforce estimates for each stage of construction (Table 2-2) and high level assumptions of vehicle requirements. Machinery operation may include excavators, loaders, dozers, graders, backhoes, cranes (e.g., 20 tonne, 50 tonne), semi-trailers, dump trucks, tracked vehicles, pick-up trucks, drill rigs, bucket

trucks, telehandlers, tensioners, pullers, person lifts, all-terrain and support vehicles as well as generators, compressors and other small construction equipment.

GHG emissions resulting from on-site energy use during construction are estimated to be 0.8 kt. For comparison, this is about 3% of the annual GHG emissions from Manitoba Hydro's existing fleet (25 kt of CO_2ein 2019; (Manitoba Hydro 2020a)).

13.2.2 Land use change GHG emissions

The use of construction vehicles during station construction will result in direct GHG emissions ("construction-activity GHG emissions"). In addition to this GHG emissions impact, station construction will also permanently alter the carbon content of areas of the station where land is covered by foundations and/or compacted granular fill and granite isolation stone.

For estimating land use change impacts, this assessment followed similar methods to those used for the life cycle assessment of the Manitoba-Minnesota Transmission Project (Jeyakumar and Kilpatrick 2015). From a carbon content perspective, the entire area within the station's fence-line is assumed to have all above ground carbon content (e.g., crops) permanently removed.

For the purposes of this assessment we have assumed 3 ha of farmland will be permanently covered. Land use change GHG emissions as a result of the construction are estimated to be 0.169 kt of CO_2e. Table 13-4 summarizes the key inputs assumed for that estimate.

Table 13-4: Right-of-way land use change summary

Land use change component	Value	Unit
Area affected (ha)	3	ha
Above ground carbon content - original state	15.33	tonne C/ha
Above ground carbon content - modified state	0.0	tonne C/ha
Permanent carbon change	15.33	tonne C/ha
GHG emissions released (per ha)	56.22	tonne CO_2e/ha
GHG Emissions Released	**0.169**	**kt CO_2e**

13.2.3 Operation and maintenance GHG emissions

Operation and maintenance emissions, due to the use of vehicles, at the station are expected to minimal. However, 136 kg of carbon tetrafluoride ("CF_4") and 227 kg of sulphur hexafluoride ("SF_6") are expected to be incorporated into circuit breakers added to the station. These are potent greenhouse gases with global warming potentials of 7,390 tonnes of CO_2e/tonne of CF_4 and of 22,800 tonnes of CO_2e/tonne of SF_6. Based on these emission equivalency factors, and the total amount of CF_4 and SF_6 associated with the project, there is a total potential of 6,181 tonnes of CO_2e related to these installed gases. New breakers are expected to have an average release rate of <1%/year, which translates to be 0 to 62 tonnes of CO_2e per year. This assessment assumed a release rate of 0.5% over 75 years, which would result in 2.3 kt of CO_2e. This is a conservative assumption that increased construction related emissions by over 60% (compared with an estimate that excluded these potential emissions). It is probable that a much lower level of CF_4 and SF_6 is unintentionally released throughout the life of the station.

13.3 Summary

Aggregated construction related emissions for the Wash'ake Mayzoon Station are 5.9 kt of CO2e. The two most significant categories of construction related emissions are the supply-chain emissions embedded in the materials of Wash'ake Mayzoon Station components and maintenance emissions related to the unintentional release of sulphur hexafluoride ("SF6") and carbon tetrafluoride ("CF4") gases throughout the presumed 75-year life of the station; however, it is probable that a much lower level of CF4 and SF6 would be released.

14.0Effects of the environment on the project

14.1 Overview

Effects of the environment on the project refer to the forces of nature that could affect the project physically or hamper the ability to carry out activities in their normal, planned manner. Typically, potential effects of the environment on any project are a function of project or infrastructure design and the risks of natural hazards and influences of nature. These effects may result from physical conditions, landforms and general site characteristics that may act on the project such that project components, schedule and/or costs could be substantively and adversely changed.

While environmental forces (e.g., severe weather, climate change) have the potential to adversely affect the project, good engineering design considers and accounts for these effects and the associated loadings or stresses on the project that may be caused by these environmental forces. The methodologies used for mitigating potential effects of the environment on the project are inherent in the planning, engineering design, construction, and planned operation of a well-designed project expected to be in service for several decades or longer.

The potential effects of the environment on the project is focused on the following effects:

- Delays in construction and/or operation and maintenance
- Damage to infrastructure
- Reduced visibility impacting public health and safety

14.2 Effects analysis

The assessment of the effects of the environment on the project considers potential changes to the project that may be caused by the environment. The project will be designed, constructed, and operated in compliance with various codes, standards, beneficial practices, acts, and regulations that govern the required structural integrity, safety, reliability, and environmental and operating performance of the project to minimize the potential for adverse effects of the environment on the project.

There are no environmental factors that are expected to interact substantially with the construction of the project. While some weather-related delays are possible, they are not likely to adversely affect the project construction, schedule, or cost.

During operation and maintenance, the transmission line or station components be subject to severe weather events. Manitoba Hydro designs its infrastructure to withstand extreme weather; however, it is not possible to design for all eventualities.

Severe weather that has negatively affected the Manitoba Hydro system in the past includes tornados, ice storms and floods. There is potential for any of these to occur in the regional assessment area. Mitigation measures include, applying engineering practices and scheduling of activities to account for possible weather disruptions.

Over the next 100 years, Manitoba will likely experience warmer temperatures, a greater frequency of storm events, increasing storm intensity and an increase in annual precipitation. Potential effects of climate change on operation and maintenance of the project would be related to increases in the frequency of severe weather events, changes in temperature and changes in precipitation. It is expected that increases in extreme weather events would potentially affect operation and maintenance of the project by increasing unexpected maintenance due to storm damage. Changes in temperature could affect the freeze/thaw cycle, which will result in decreased foundation stability and potentially increased maintenance.

Mitigation measures include applying engineering practices and scheduling of activities to account for possible weather disruptions. Based on the above, the residual effects of the environment on the project during all phases of the project assessed as minor, with a moderate level of confidence because of the uncertainty in the potential changes to local, regional, and global climate that could occur over the life of the project.

14.3 Assessment conclusions

The most likely effect of the environment on the project is a short-term disruption in service and the economic costs of repair. The project will be designed to meet applicable CSA standards. Design will be subject to two general design standards and the structural design loads will be based on a 150-year return period. Despite these measures, it is likely that extreme weather events can still result in outages and the requirement for repair of lines, conductors or towers. While this can result in socio-economic effects and potential public safety hazards, potential effects on the biophysical environment would be limited and associated mainly with an increased risk of an accidental release of hydrocarbons in the event of a flood or fire.

The project is being designed, and will be constructed and operated with regard for health, safety, and environmental protection to minimize potential environmental effects that could result during the normal course of construction, operation and

maintenance as well as those that could result from forces of nature that could affect the project physically or hamper the ability to carry out activities in their normal, planned manner.

The careful planning and design of the project will minimize the potential for damage from extreme weather events. The effects of an individual event could have significant effects on a localized extent. However, the potential for these events to occur, given the measures that will be undertaken to prevent their occurrence, is low.

In the very unlikely and improbable event that damage to the line were to occur, it would be of a short duration, low frequency, or limited geographic extent such that major residual adverse environmental effects will not likely occur.

Overall, given the nature of the project, proposed mitigation, the potential residual environmental effects, extreme weather events on all valued components during all phases of the project, are assessed as not significant.

15.0Accidents and malfunctions

15.1 Overview

In the context of environmental assessment, a malfunction is a failure of a piece of equipment, a device, or a system to operate as intended and an accident is an unexpected and unintended interaction of a project component or activity with environmental, health-related, social, or economic conditions (Impact Assessment Agency 2021).

These could occur as a result of abnormal operating conditions, wear and tear, human error, equipment failure, or other possible causes. Many accidents or malfunctions are preventable and can be readily addressed or prevented by good planning, design, equipment selection, hazards analysis and corrective action, emergency response planning, and mitigation.

In this section, potential accidents and malfunctions that could result in significant adverse environmental effects are described, discussed, and assessed. The focus is on credible accidents that have a reasonable probability of occurrence, and where the resulting residual environmental effects could be major without careful management.

It is noted that accidents and malfunctions are evaluated individually, in isolation of each other, as the probability of a series of accidental events occurring in combination with each other is very minimal. These possible events, on their own, generally have a very low probability of occurrence and thus their environmental effects are of low likelihood. They have an even lower probability or likelihood of occurring together – thus their combination is not considered credible, nor of any measurable likelihood of occurrence.

Accident and malfunction event scenarios have been conservatively selected that represent higher consequence events that would also address the consequences of less likely or lower consequence scenarios.

The accidents, malfunctions, and unplanned events that have been selected based on experience and professional judgment are as follows:

- Worker accident
- Fire
- Power outages
- Tower / structure collapse (weather, sabotage or force majeure)
- Spill of hazardous materials

- Collisions
- Discovery of a heritage site / object

Table 15-1 presents the potential interactions between the valued components and potential accidents or malfunctions. Project and cumulative effects of the accident or malfunction event on each valued component with a potential interaction are described, and the significance of the effect is determined using the same thresholds as those for the project environmental effects. Any event that results in human mortality is considered significant. The potential for, and consequence of, accidents and malfunctions were assessed considering historical risk information from Manitoba Hydro's experience and for other similar projects.

Table 15-1: Project-accident / malfunction interactions

Accident /malfunction	Valued components						
	Agriculture	Human health	Community well-being	Wildlife	Economic opportunities	Traditional practices, culture and heritage	Greenhouse gases
Worker accident		X	X				
Fire	X	X	X	X		X	X
Power outages			X		X		
Tower collapse (weather, sabotage or force majeure)		X		X			
Spill of hazardous materials	X	X		X		X	X
Collisions		X	X				
Discovery of a heritage site / object						X	

15.2 Effects assessment

15.2.1 Worker accident

A worker accident has the potential to interact with human health and safety as it may result in harm, injury, or death to workers. All workers will be properly trained in practices to prevent workplace accidents including Workplace Hazardous Materials Information System (WHMIS), first aid, and other applicable training programs. These procedures are designed to prevent serious injury to staff and the general public as well as to minimize the occurrence of unplanned events and minimize any potential damage to the environment.

Interactions between a worker accident and communities will be mitigated by compliance with health and safety legislation, safety by design, and implementation of environmental management measures aimed at protecting human health. Safety risks to workers will be reduced by complying with the requirements of various governing standards including the federal *Canada Labor Code*, the federal *Transportation of Dangerous Goods Act*, the *Manitoba Workplace Health and Safety Act* and all associated regulations. Adherence to public safety codes and regulations will help the project to be carried out in a safe manner to protect workers and the public.

With the application of, and compliance with, these acts, regulations, and standards, including the application of safety and security measures that are known to effectively mitigate the potential environmental effects, the potential environmental effects of a worker accident on communities during construction and operation and maintenance of the project are considered not significant.

15.2.2 Fire

Potential effects caused by a fire include:

- Smoke emissions (GHG / climate)
- Safety risks to workers and the public (human health)
- Loss or damage to property or resources (community well-being)
- Direct crop loss (agriculture)
- Contamination with sediment-laden water used in extinguishing the fire (groundwater (human health), wildlife, agriculture)
- Damage to infrastructure or heritage sites / objects (heritage sites / objects, traditional practices and culture)

A fire may arise from heavy equipment or from natural causes such as a lightning strike.

Manitoba Hydro will ensure that personnel are trained in the use of fire-extinguishing equipment. In the unlikely event of a fire, local emergency response will be able to reduce the severity and extent of damage.

A large fire could create particulate matter levels greater than the ambient air quality standard over distances of several kilometers or damage vegetation or infrastructure in the area, but such situations would be of short duration, infrequent, and are not expected to occur because of planned mitigation and prevention measures. The potential residual environmental effects of a fire are therefore considered not significant.

15.2.3 Hazardous materials spill

Hazardous materials could be released into the air, soils, surface water or groundwater as a result of an accidental spill during construction or operation and maintenance activities.

In general, hazardous materials spills have the potential to:

- Contaminate surface and groundwater (human health, traditional practices and culture, wildlife)
- Contaminate soil (agriculture, traditional practices and culture, wildlife)
- Increase harmful emissions (GHG / climate)

Spills are usually highly localized and easily cleaned up by on-site crews using standard equipment. The oil containment infrastructure for the station will limit potential effects during operation.

Implementation of a detailed spill response plan and a well-designed construction environmental protection plan will result in minimal potential effects through accidental releases. The contractor will be required to provide environmental training, as well as training in spill prevention and response, to construction personnel. Prior to the commencement of construction activities, Manitoba Hydro will ensure that spill response equipment is readily available. All spills will be contained, cleaned, and reported to applicable authorities as follows:

- Contaminated material or potentially hazardous material will be contained
- Proper safety precautions (e.g., protective clothing and footwear) will be taken
- The contractor will follow their spill response policy and will ensure that the provinces spill reporting line is notified for reportable spills

- Contaminated wastes, such as used cleaning cloths, absorbents, and pads, will be stored in proper waste containers
- Waste material will be disposed of at approved disposal facilities

Construction equipment will be cleaned and maintained in good working condition, with visual inspections of equipment performed on a regular basis. Petroleum products such as gasoline, diesel fuel, and oil will be properly labeled in accordance with the appropriate legislation and regulations. Refueling, oiling, and maintenance of equipment, as well as storage of hazardous materials, will be conducted in a designated and contained area(s). Servicing of equipment (e.g., oil changes and hydraulic repairs) will be completed off-site when possible. Vehicles will be equipped with spill containment and cleanup materials.

Personnel handling fuels and hazardous wastes will have WHMIS training and will be qualified to handle these materials in accordance with the manufacturer's instructions and applicable regulations. Hazardous waste and storage area(s) will be clearly marked and secured. Industrial waste will be reused or recycled on a priority basis. Where reuse or recycling opportunities are not available, industrial waste will be collected and disposed of at an approved facility. Garbage receptacles for solid non-hazardous wastes will be available. These wastes will be collected on a regular basis or as they are generated and will be disposed of at approved locations. With these mitigation measures and emergency response procedures implemented, and because of the low likelihood of such events, the potential residual environmental effects of a hazardous material spill on groundwater resources, aquatic environment, and terrestrial environment during construction and operation and maintenance of the project are considered not significant.

15.2.4 Vehicle accidents

A vehicle accident arising from project-related activities could cause injury or death to workers or the public (human health; note that the potential for a fire or hazardous material spill, which could be associated with a vehicle accident or other means has been addressed above).

The potential for a vehicle accident exists during construction and operation and maintenance phase of the project. Worker traffic and truck traffic to and from the site, and the operation of heavy equipment on-site during construction have the potential to result in a vehicle accident during construction. Project-related vehicles will observe all traffic rules and provincial and federal highway regulations. Trucking activity will observe speed limits and weight restrictions. Because the project will comply with all applicable traffic rules and regulations, the nominal increase in traffic

volumes as a result of the project along with safety precautions, the potential residual environmental effects of a vehicle accident are considered not significant.

15.2.5 Tower collapse

While considered unlikely given the applied design standards, it is possible for a transmission tower or station structure to collapse during construction and operation as a result of extreme weather, mechanical failure, or intentional or unintentional human interaction.

Tower collapse has the potential to:

- Cause injury or death (human health)
- Cause fires (effects and mitigation discussed above)
- Damage other infrastructure, heritage / cultural sites, crops, either directly due to tower collapse or as a result of emergency repair activities (agriculture, community well-being, traditional practices and culture)
- Impede access / movement (traditional practices and culture, wildlife)

The risk of tower failure will be reduced through the application of sound engineering practice in the design of the towers and transmission lines for extreme loadings, the use of qualified construction contractors, and regular maintenance.

Engineering design will adhere to industry standards and reflect Manitoba Hydro's experience with similar projects. Design will follow the Canadian Standards Association (CSA) C22.3 No. 1-10 "Overhead Systems" standard. The reliability-based design method will be used for designing the structural components following the CAN/CSA-C22.3 No. 60826-10 "Design Criteria of Overhead Transmission Lines" standard.

In addition, consequences are managed through mitigation. Line maintenance crews will address damage to personal property, vegetation or soils. Soil contamination issues will be addressed following spill response planning.

The effects of a tower collapse would be localized and short term. The viability of wildlife populations or the capacity of critical habitat for wildlife species of conservation concern would not be jeopardized. Disruption of infrastructure or agriculture is short term and minimal. Given the localized extent of the effects on wildlife habitat, effects on land use activities are not expected to extend beyond the actual collapsed structures. The likelihood of injury to or death of, humans or wildlife is low given the limited area affected by a tower collapse and the rarity of such an occurrence. As a result, while the magnitude of the effect of tower collapse on the

affected valued component could be moderate to high, given the low likelihood and array of mitigation measures the effect is assessed as being not significant.

15.2.6 Discovery of a heritage site / object

Cultural or heritage sites / objects may be discovered during activities involving ground disturbance such as construction related excavation. It is unlikely that a heritage sites / objects will be discovered during operation.

The discovery of a heritage site / object has the potential to affect heritage sites / objects and traditional practices and culture.

Heritage potential is determined during the environmental assessment. If areas of high potential are found, a preconstruction archaeological survey may be conducted.

Mitigation for the protection of heritage sites / objects is outlined in the cultural and heritage resources protection plan (Appendix B).

The CHRPP will provide clear instructions if Manitoba Hydro, its contractors and/or consultants, discover or disturb a cultural or heritage sites / objects and will determine the ongoing protection measures for the resources through processes outlined in this document.

If a heritage site / object is discovered, project work will cease in the area of the discovery and the project archaeologist will be contacted. Work in the area will continue only if approval is received from the archaeologist or the Historic Resources Branch.

With the low probability of encountering heritage sites / objects during project-related activities, and in consideration of the nature of the project and planned mitigation, the potential residual effects are considered not significant.

15.3 Assessment conclusion

The project is being designed, and will be constructed and operated with regard for health, safety, and environmental protection to minimize potential environmental effects that could result during the normal course of construction, operation and maintenance as well as those that could result from accidents and malfunctions.

The careful planning of the project and the implementation of proven and effective mitigation will minimize the potential for accidents and malfunctions. The effects of an individual accident or unplanned event could have significant effects on a localized extent. However, the potential for these events to occur, given the measures that will be undertaken to prevent their occurrence, is low. In the very unlikely and

improbable event that an accidents or malfunctions were to occur, it would be of a short duration, low frequency, or limited geographic extent such that major residual adverse environmental effects will not likely occur.

Overall, given the nature of the project, credible accidents and malfunctions considered, proposed mitigation, the potential residual environmental effects of all project-related accidents and malfunctions on all valued components during all phases of the Project, are assessed as not significant.

16.0Environmental protection program

16.1 Introduction

Manitoba Hydro will implement the mitigation measures, monitoring and other follow-up actions identified during the assessment (summarized in Appendix G) through an Environmental Protection Program (EPP). The EPP provides the framework for implementing, managing, monitoring and evaluating environmental protection measures consistent with regulatory requirements, corporate commitments, beneficial practices and public expectations. Environmental protection, management and monitoring plans will be prepared and implemented under the EPP to address environmental protection requirements in a responsible manner.

The purpose of this chapter is to outline how Manitoba Hydro will implement, manage and report on environmental protection measures, monitoring and other follow-up actions as well as regulatory requirements and other commitments identified in this environmental assessment report.

Manitoba Hydro developed the environmental protection program in accordance with its environmental policy.

Manitoba Hydro's Corporate Environmental Management Policy states the corporation is committed to protecting the environment by:

- ensuring that work performed by its employees and contractors meets environmental, regulatory, contractual, and voluntary commitments
- recognizing the needs and views of its interested parties and ensuring that relevant information is communicated
- continuously assessing its environmental risks to ensure they are managed effectively
- reviewing its environmental objectives regularly, seeking opportunities to improve its environmental performance
- considering the life cycle impacts of its products and services
- ensuring that its employees and contractors receive relevant environmental training, and
- fostering an environment of continual improvement

16.2 Environmental management

An environmental management system is a framework for developing and applying its environmental policy and includes articulation of organizational structure,

responsibilities, practices, processes and resources at all levels of the corporation. The environmental management system includes commitments to comply with legislation, licenses, permits and guidelines, conduct inspections and monitoring, and review the results for adherence to requirements.

16.3 Adaptive management

Adaptive management is a planned systematic process employed with the goal of continually improving environmental management practices by learning from their outcomes. The environmental protection program for the project has established the principles of adaptive management allowing for flexibility in the mitigation of adverse environmental effects that may result from the project. Manitoba Hydro will use the information gathered during follow up and monitoring activities to verify the accuracy of the environmental assessment effects predictions and the effectiveness of implemented mitigation measures.

Manitoba Hydro designed the EPP to be adaptive and responsive throughout the project lifecycle by evaluating program documents, processes, procedures and mitigation measures through inspection, monitoring and communication programs and conducting reviews to facilitate updates to the program.

Within the EPP, adaptive management will take place in two primary areas:

- At the management level, involving changes with the program structure itself
- At the implementation level, involving individual mitigation measures as management and implementation teams evaluate the onsite effectiveness of mitigation strategies or the program.

Scheduled update meetings between departments, annual reviews of the program and its effectiveness will take place to foster the process.

16.4 Experience from previous projects

Manitoba Hydro has extensive experience in the development of environmental protection, monitoring and follow-up plans for all sizes of projects in many different environments, from small electrical stations, to transmission lines that span over half of Manitoba.

The development of the EPP has allowed the standardization and consistent approach to environmental protection, monitoring and follow-up. The EPP improves through the experiences from past and current projects (e.g., monitoring and inspection results, documentation format changes).

16.5 Indigenous engagement

As a component of the Indigenous engagement process, Manitoba Hydro offered the ICACs the opportunity to review the IEP and traditional practice, culture and heritage chapters of the environmental assessment. Feedback shared by Indigenous communities during the IEP helped inform the environmental assessment report and EPP.

The knowledge that was shared through the IEP assisted Manitoba Hydro with:

- Developing a greater understanding of the project development area
- Identifying key concerns in the project development area
- Identifying potential project effects
- Planning and designing the project
- Developing potential mitigation measures

Manitoba Hydro recognizes the unique relationship that Indigenous communities and organizations have with their areas of land use and appreciates sharing of information about their history and culture, and perspective on the project.

16.6 Environmental protection program

16.6.1 Overview

Manitoba Hydro's Environmental Protection Program (EPP) provides the framework for the delivery, management and monitoring of environmental and socio-economic protection measures that satisfy corporate policies and commitments, regulatory requirements, environmental protection guidelines and beneficial practices, and input during the public engagement process and Indigenous engagement process. The EPP:

- Describes how Manitoba Hydro is organized
- Functions to deliver timely, effective, comprehensive solutions and mitigation measures to address potential environmental effects
- Defines roles and responsibilities for Manitoba Hydro employees and contractors
- Outlines management, communication and reporting structures.

The EPP includes the what, where and how aspects of protecting the environment during the pre-construction, construction, operation and decommissioning of the project. Figure 16-1 illustrates the components of the EPP. The following sections describe each component in further detail.

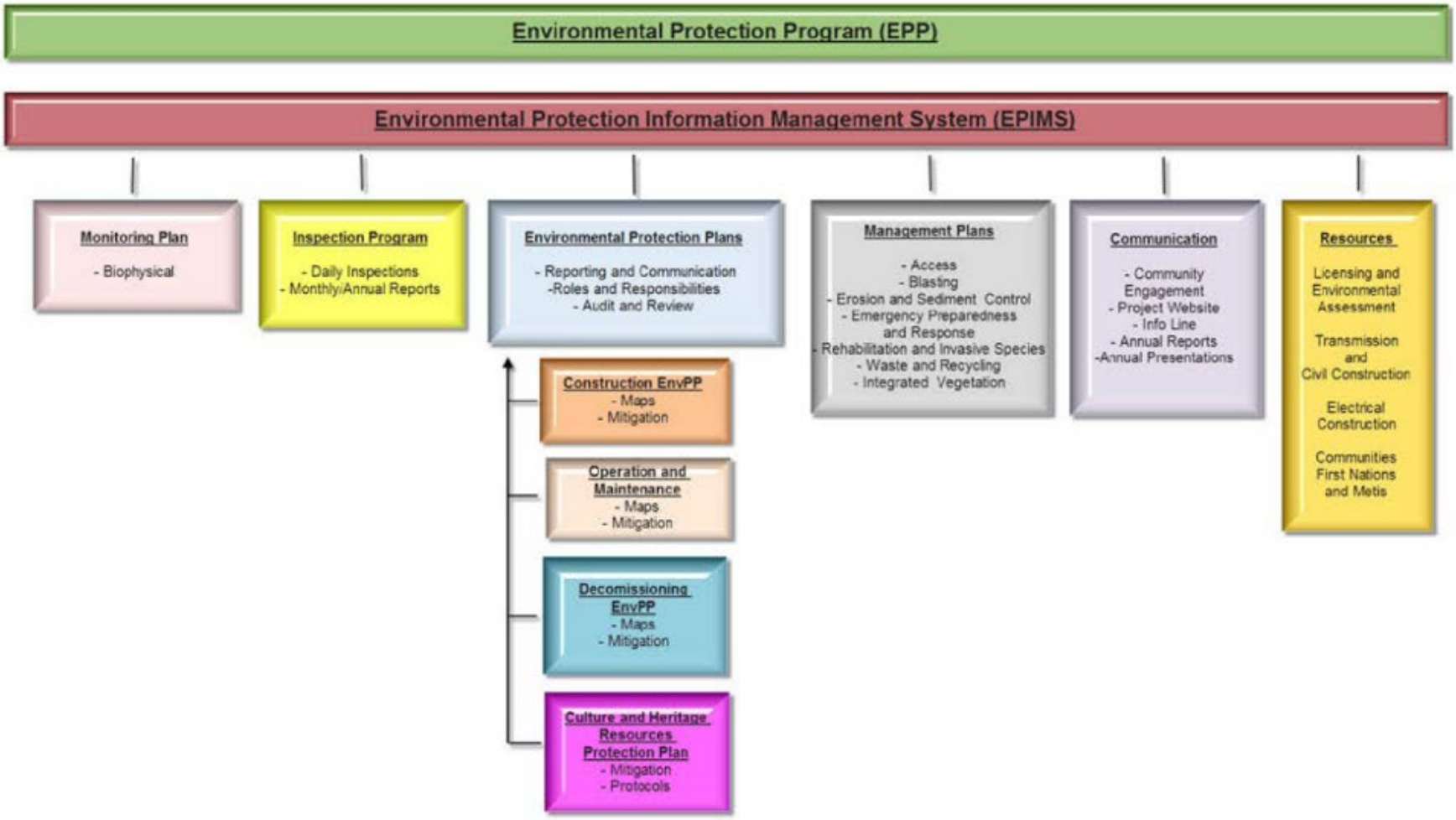

Figure 16-1: Environmental protection program components

16.6.2 Organization

The organizational structure of the EPP includes senior Manitoba Hydro management, project management and implementation teams that work together to provide timely and effective implementation of environmental protection measures identified in environmental protection plans (Figure 16-2). Manitoba Hydro senior management is responsible for the overall EPP, including resourcing, management and performance, and is accountable for regulatory compliance, policy adherence and interested party satisfaction.

The environmental protection management team is composed of senior Manitoba Hydro staff and is responsible for the management of environmental protection plans, including compliance with regulatory and other requirements, quality assurance and control, consultation with regulators, and related public and Indigenous engagement activities. Environmental consultants and advisors support the management team.

The environmental protection implementation team is composed of Manitoba Hydro operational field and office staff and is responsible for the day-to-day implementation of environmental protection plans, including monitoring, inspecting and reporting. The implementation team works closely with other Manitoba Hydro staff as required.

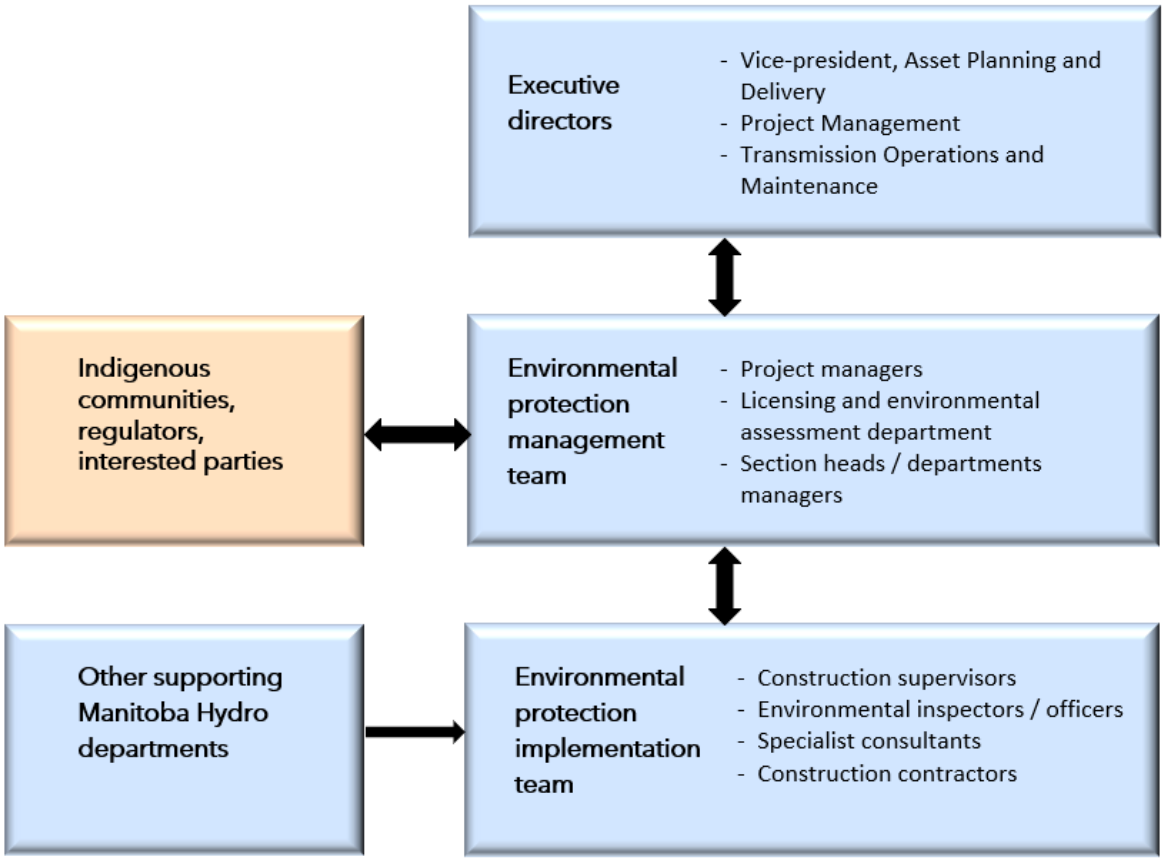

Figure 16-2: Environmental protection organizational structure

16.6.3 Resources

Manitoba Hydro commits resources early in the planning cycle to provide effective environmental assessment, mitigation and monitoring. Teams of engineers and environmental professionals develop preventative or avoidance mitigation measures that include design and routing alternatives. In addition, there are resource allocations for the delivery and implementation of environmental protection measures to meet corporate policy and government regulatory requirements.

Manitoba Hydro is committed to staffing the environmental protection program with environmental inspectors and providing required support, including training, financial resources and equipment.

16.6.4 Roles and responsibilities

Figure 16-3 illustrates the typical organizational lines of reporting and communications. The roles and responsibilities for delivery of the project and implementation of environmental protection measures are as follows:

- The construction supervisor has overall responsibility for the implementation of the environmental protection plans and reports to a section head or department manager.
- The Licensing and Environmental Assessment Department oversees the development of environmental protection documents and associated inspection and monitoring programs, including ongoing public and Indigenous engagement activities.
- The construction contractor is responsible for ensuring work adheres to the environmental protection plans and reports to the construction supervisor.
- Environmental inspectors / officers have the primary responsibility to confirm that environmental protection measures and specifications are implemented per the environmental protection plans as well as provide information and advice to the construction supervisor.
- Manitoba Hydro field safety, health and emergency response officers are responsible for the development and execution of the safety program and occupational health and safety practices at the various construction sites.

Other Manitoba Hydro employees, including engineers and technicians, provide information and advice to the construction supervisor.

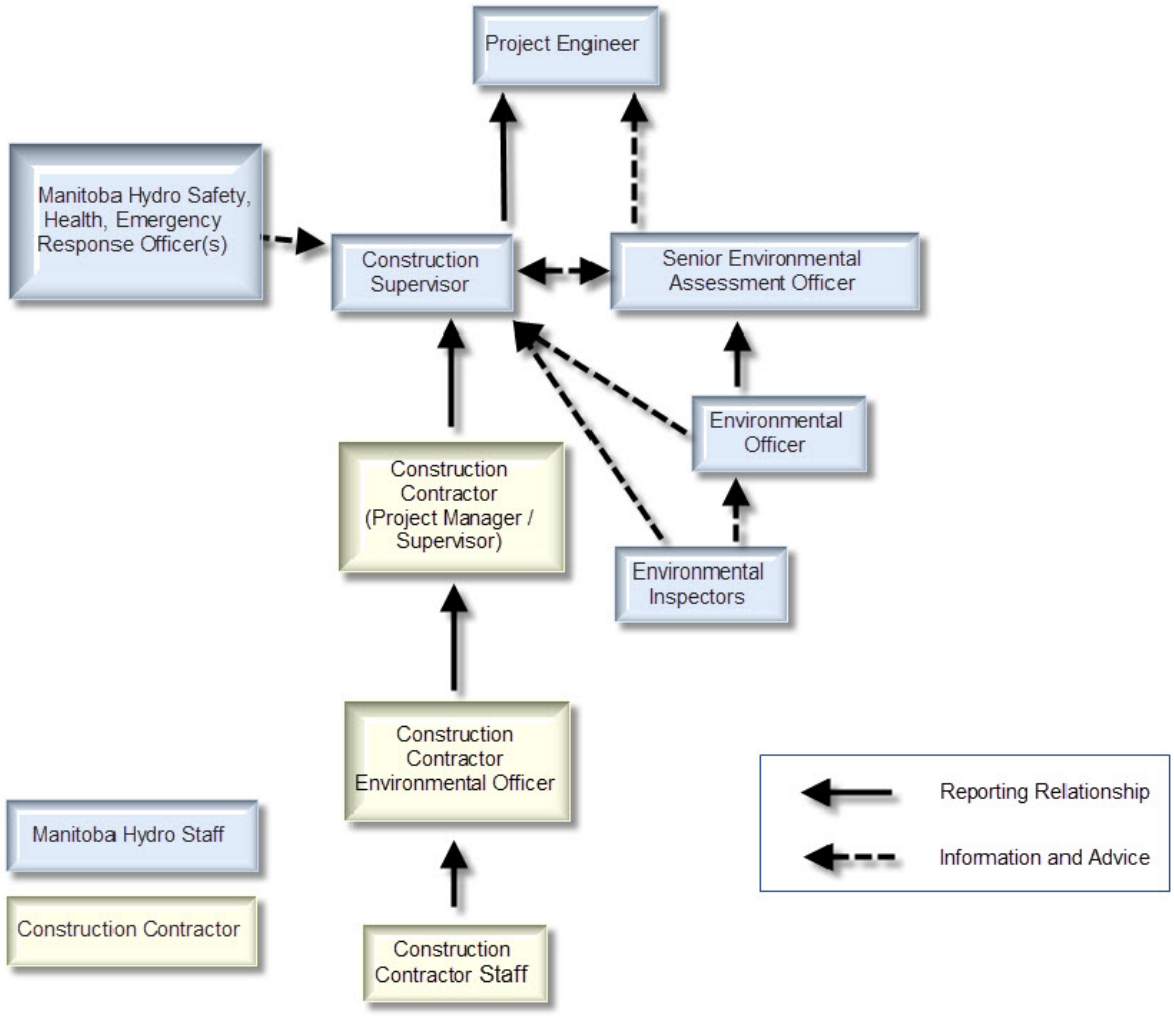

Figure 16-3: Typical organizational lines of reporting and communications

16.6.5 Communication and reporting

Manitoba Hydro personnel will maintain ongoing communications with Manitoba Conservation and Climate, other provincial and federal departments, and Indigenous communities and organizations regarding implementation of the environmental protection plan. The construction supervisor and environmental inspectors will maintain ongoing communications with the contractor and contract staff through daily tailboard meetings and weekly or otherwise scheduled construction meetings at the worksite. Inspection reports as well as incident, monitoring and other reports will be prepared and available on site for the regulators, contractors and Manitoba Hydro staff.

Manitoba Hydro will provide Indigenous communities and organization, landowners, interested parties and the public with ongoing opportunities to review and comment on the project. Manitoba Hydro developed a dedicated project webpage to facilitate communication with Indigenous communities and organizations, landowners, interested parties and the public. The environmental protection management team will record and review formal enquiries or complaints for response or action. Manitoba Hydro will also engage Indigenous communities in monitoring of the Project whether it be through field tours offered to community members during construction of the Project or through Indigenous monitoring positions.

16.6.6 Environmental protection plans

Environmental protection plans document environmental protection measures to provide for compliance with regulatory and other requirements, and to achieve environmental protection goals consistent with corporate environmental policies. Manitoba Hydro designed the environmental protection plans as user-friendly reference documents that provide project managers, construction supervisors and contractors with detailed lists of environmental protection measures and other requirements implemented in the design, construction and operation phases of a project.

Manitoba Hydro organized the environmental protection measures by construction component and activity, and environmental component and issue to assist project personnel in implementing measures for work sites and activities.

Manitoba Hydro will develop the environmental protection plans described in the following sections.

16.6.6.1 Construction

The construction environmental protection plan (CEnvPP) will be prepared prior to construction. It is a key element in implementing effective environmental protection and limiting the potential adverse environmental effects identified in the environmental assessment report. It also outlines actions to identify unforeseen environmental effects and implement adaptive management strategies to address them. An important component of an environmental protection plan is review and updating. This allows environmental protection measures to remain current, continually improving environmental performance.

A CEnvPP is composed of general and specific environmental protection measures that cover all aspects of the work and the environment. General environmental protection measures for the project include mitigation measures and follow-up

actions identified in the environmental assessment report, including design mitigation, provincial and federal regulatory requirements, beneficial practice guidelines, Manitoba Hydro environmental policies and commitments, and input during public and Indigenous engagement.

The CEnvPP lists the general environmental protection measures for major components and activities associated with the project. Environmental protection measures are provided for environmentally sensitive sites (ESS) identified during public and Indigenous engagement and assessment activities. Environmentally sensitive sites are locations, features, areas, activities or facilities along or immediately adjacent to the transmission line corridor or other project components that are ecologically, socially, economically or culturally important and sensitive to disturbance by the project and, as a result, require site-specific mitigation measures.

The CEnvPP will contain orthophoto map sheets that provide Manitoba Hydro project managers, construction supervisors, employees, contractors and contract employees with detailed site-specific environmental protection information that can be implemented, managed, evaluated and reported on in the field.

16.6.6.2 Operation and maintenance

The Operations and Maintenance Environmental Protection Plan will be prepared after completion of construction. The plan will contain ongoing operation monitoring requirements. It applies to project components from in-service to the end of their operational life.

16.6.6.3 Decommissioning

A decommissioning environmental protection plan will be prepared at the end of the project's operational life and will contain decommissioning methods, waste and recycling management, and mitigation measures to address environmental effects and legislation that is in effect at that time.

16.6.6.4 Cultural and heritage sites / objects

The fact that cultural and heritage sites / objects have intrinsic value to Manitobans is understood by Manitoba Hydro and addressed through a separate protection plan. The culture and heritage resource protection plan (Appendix B) outlines protection measures in the event of the discovery of previously unrecorded cultural and heritage sites / objects during construction and describes the ongoing monitoring of known cultural and heritage sites / objects for disturbance.

Through Indigenous engagement and previous projects, Manitoba Hydro understands and acknowledges the importance of cultural and heritage sites / objects to Indigenous communities. Manitoba Hydro has developed mechanisms such as notification of discovery and involvement in site investigations, which are further explained in the culture and heritage resource protection plan.

Results from the heritage resources monitoring program will be discussed through Indigenous engagement on an as required basis during construction, as well as through a heritage resources impact assessment to the Manitoba Historic Resources Branch per the terms of the Heritage Resources Act (1986) and heritage permit.

16.6.6.5 Management plans

Management involves the organization of activities and resources to resolve or respond to environmental problems, issues or concerns. Management plans provide reasoned courses of action to achieve pre-defined goals or objectives. Management plans will be prepared to address important management issues, regulatory requirements and corporate commitments identified in the environmental assessment report. The management plans will describe the management actions, roles and responsibilities, evaluation mechanisms, updating requirements and reporting schedules. The following management plans will be prepared prior to the start of construction of the project:

- Biosecurity
- Blasting
- Emergency preparedness and response
- Rehabilitation and weed management
- Waste and recycling

Environmental inspectors / officers will conduct regular inspections during construction to ensure adherence to the plans. The following sections describe each plan.

16.6.6.6 Biosecurity

Prior to the start of construction Manitoba Hydro will prepare a biosecurity management plan for the project to provide guidance to Manitoba Hydro staff and contractors in order to prevent the introduction and spread of weeds and other pests, including invasive species, in agricultural land and livestock operations through project pre-construction and construction activities.

16.6.6.7 Blasting

Prior to the use of explosives, the contractor will prepare blasting plans to manage the storage and use of explosives at construction sites in accordance with environmental protection measures, provincial and federal legislation and guidelines, and corporate policies for explosives.

16.6.6.8 Emergency preparedness and response

Prior to the start of construction, each contractor will prepare an emergency preparedness and response plan to prepare for and respond to emergencies at construction sites in accordance with provincial legislation and guidelines, and corporate policies and procedures for the protection of human health and the environment. The plan will include the following:

- Spills or releases of hazardous substances, including petroleum products
- Accidents involving hazardous substances
- Medical emergencies
- Explosions and fire
- Measures prescribed for
  - Provision of emergency response planning
  - Responsibilities
  - Training
  - Exercises
  - Procedures
  - Containment
  - Clean-up equipment and materials

16.6.6.9 Rehabilitation and weed management

Prior to the start of construction, Manitoba Hydro will prepare a rehabilitation and weed management plan in accordance with environmental protection measures and provincial guidelines for rehabilitation.

The plan will prescribe measures for:

- Washing equipment and vehicles prior to entering construction sites
- Controlling vegetation at construction sites
- Restoring and re-vegetating disturbed sites

16.6.6.10 Waste and recycling

Prior to the start of construction, Manitoba Hydro or the contractor will develop a waste and recycling management plan to manage waste at construction locations in accordance with provincial legislation and guidelines, and corporate policies and procedures for the protection of human health and the environment.

The plan will include measures for:

- Waste reduction
- Recycling and reusing initiatives
- Storage of kitchen wastes
- Recycling and disposal of construction wastes
- Disposal of wastes at licenced facilities

16.7 Follow-up and monitoring

Follow-up and monitoring are conducted to verify the accuracy of the environmental assessment of a project, assess the effectiveness of measures taken to mitigate adverse effects and determine compliance with regulatory requirements. Manitoba Hydro implements the follow-up and monitoring activity using two programs called inspection and monitoring, which are discussed further in the sections below.

16.7.1 Indigenous engagement

Manitoba Hydro will offer Indigenous communities and organizations environmental protection program meetings to review and discuss the findings of the environmental assessment and engagement and how the information shared will inform the EPP.

Manitoba Hydro will also engage Indigenous communities in monitoring of the project whether it be through field tours offered to community members during construction of the project or other means. Manitoba Hydro will further discuss with Indigenous communities to determine the preferred and most meaningful option for monitoring.

16.7.2 Inspection program

Inspection is the organized examination or evaluation involving observations, measurements and sometimes tests for a construction project or activity. The results of an inspection are compared to specified requirements, drawings and standards for determining whether the item or activity is in conformance with these requirements. Environmental inspection is an essential and key function in environmental protection and implementation of mitigation measures.

Manitoba Hydro has established a comprehensive integrated environmental inspection program to comply with regulatory approvals and meet corporate environmental objectives. The program includes environmental inspectors onsite during construction activities. Manitoba Hydro's approach to environmental inspection includes:

- Compliance with regulatory approvals
- Adherence to environmental protection plans
- Onsite environmental inspectors
- Training and education
- Regular monitoring and inspection during construction
- Interaction with contractors (e.g., pre-construction meeting, daily discussion)
- Regular review of inspection and monitoring information
- Quick response to incidents or changing conditions
- Monthly summary reports
- Regular reporting to regulators
- Notification of regulators of emergency or contingency situations

Environmental inspectors / officers will:

- Visit active work sites to inspect for compliance with licence, permit or other approval terms and conditions, and adherence to environmental protection plan general and specific mitigation measures
- Report all instances of non-compliance to the construction supervisor, contractor and applicable regulatory authority
- Report incidents such as accidents, malfunctions, spills, fires, explosions and environmental damage to the construction supervisor and applicable regulatory authority
- Provide inspection reports electronically to the environmental protection information management system for review and viewing by applicable Project staff

Incidents will be dealt with immediately and followed up in subsequent daily inspection reports.

16.7.3 Monitoring program

Due to the small scope of the project and minimal natural habitat, an environmental monitoring plan has not been prepared for this project. However, should inspection discover unknown effects, one may be prepared and implemented.

Should it be required, monitoring will be carried out by Manitoba Hydro and may be contracted to environmental consultants that possess the necessary expertise, equipment and analytical facilities.

16.7.4 Environmental protection information management system

An environmental protection information management system (EPIMS) is the internal central repository of environmental protection information, including:

- Environmental protection documents
- Reference information such as regulations and guidelines
- Inspection reports
- Monitoring field data and reports

The environmental inspection program will employ modern electronic recording, reporting and communication systems using field computers, geographic positioning systems and digital cameras. Field computers will have project and other reference information needed for effective implementation of environmental protection measures, including regulations, guidelines, licences, permits, engineering drawings, specifications, maps, reports and data.

EPIMS is a tool that helps Manitoba Hydro monitor and report on environmental protection implementation, regulatory compliance and incident reporting. EPIMS will be the mechanism to provide reporting and tracking of environmental protection performance, and the foundation of an auditable EPP.

16.8 Pre-construction activities

Manitoba Hydro will undertake several activities prior to commencing construction of the project to set the direction for environmental protection and compliance with legislated requirements. Manitoba Hydro will endeavour to meet with interested Indigenous communities and organizations during the finalization of the construction environmental protection plan to discuss, address and mitigate concerns, to the extent possible, with cultural and environmentally sensitive sites.

Manitoba Hydro will obtain licenses, permits, authorizations and other approvals, including property agreements, right-of-way easements and releases, prior to commencement of construction of each project component. Additional terms and conditions of these approvals will be incorporated into the construction environmental protection plan. Additional approval requirements to be obtained by the contractors will be identified and communicated to the successful bidders.

The Licensing and Environmental Assessment Department will typically participate in the tender / direct negotiated contract development process to support the inclusion of environmental requirements as contract specifications. Bidders are required to list and defend their environmental record and must have an environmental policy, including a commitment to environmental protection.

Meetings will be held with the contractors to review the environmental protection requirements, establish roles and responsibilities, management, monitoring and other plans, inspection and reporting requirements, and other submittals. Prior to the start of construction, contractor employees will be trained and/or oriented on environmental protection requirements.

16.9 Work stoppage

The duty to stop work rests with everyone encountering situations where the environment, including biophysical, socio-economic and heritage sites / objects, are threatened by an activity or occurrence that has not been previously identified, assessed and mitigated. Work stoppage is also to occur in the event of an environmental accident, extreme weather event or exposed human remains. Individuals discovering such situations are to inform their supervisor who will report the matter to the construction supervisor or environmental inspector / officer immediately. The contractor is also required to stop work voluntarily where construction activities are adversely affecting the environment or where mitigation measures are not effective in controlling environmental effects. Remedial action plans or other environmental protection measures will be developed and implemented immediately after discussion and prior to resumption of work if previously halted. Work is not to resume until the situation has been assessed and responded to and Manitoba Hydro approves the resumption of work. Stop work orders will be documented, reported to regulatory authorities (if applicable) and reviewed at construction meetings.

16.10 Review and updating

16.10.1 Incident reviews

CEnvPP will be subject to review in the event of an incident, including environmental accidents, fires and explosions, reportable releases of hazardous substances and non-compliance situations.

16.10.2 Auditing

Auditing is a systematic approach to defining environmental risk and/or determining the conformance of an operation with respect to prescribed criteria. An environmental audit typically involves a methodical examination of evidence that may include interviews, site visits, sampling, testing, analysis, and verification of practices and procedures. Environmental protection plans for the project will be subject to internal and external audits. The audit results will help to evaluate the effectiveness of environmental protection measures, to learn from inspection and monitoring programs, and to improve project planning and environmental assessment performance.

16.10.3 List of revisions

A list of revisions will be maintained at the beginning of each environmental protection plan that identifies the nature of the revision, section revised and dates.

16.11 Summary

This chapter outlined the environmental protection program where environmental protection commitments, mitigation measures and follow-up actions identified in this environmental assessment report will be implemented, managed, reported and evaluated. The purpose, organization, responsibilities, management, communication and other aspects of the environmental protection program were described. Environmental protection plans are described as they relate to the construction, operation and decommissioning stages in the project planning cycle and environmental assessment and licensing process. Implementation of follow-up actions, including inspection, management and auditing are discussed. Environmental management and monitoring plans are also identified.

17.0Conclusion

The environmental assessment for this project examined potential effects on biophysical and socioeconomic components. Biophysical components assessed include climate, groundwater and air quality, terrain and soils, and wildlife.

Socioeconomic components assessed include human health; community well-being; agriculture; and traditional practices, culture and heritage.

The primary mechanism to mitigate potential effects involved the site selection process (Chapter 3.0), which considered both biophysical and socioeconomic factors.

Mitigation measures were developed to address effects that were not avoided by site selection. Effects to the natural environment in the project region consist mainly of agricultural land and there are few areas of natural habitat that would be affected by the project. Natural terrestrial habitat is limited. There are several wildlife species of conservation concern that may occur in the region, but few natural areas near the project where they could occur.

The main effect of the project on wildlife will be the presence of the station and the security lighting that can affect adjacent wildlife habitat and alter behaviours, which could affect wildlife.

The project is expected to result in positive economic benefits to the region, through the presence of the workforce, but also indirectly, through facilitating development of industry. There will be a slight increase in traffic associated with the workforce, but the volume will be low and outside of traditionally heavy traffic periods.

The proposed station and transmission line tap are on agricultural land so there will be effects associated with direct loss of agricultural land as well as the inconvenience, nuisance and increased production costs associated with operating farming equipment and crop production. Manitoba Hydro has developed a compensation policy for landowners that grant an easement for a transmission line right-of-way and for incidental and or physical damages to property during construction.

Changes in groundwater and air quality have the potential to affect human health. Due to the localized nature of the project and standard mitigation, the potential effects to human health will be minor.

Noise during construction and the presence of the station can alter the landscape character of the area which can affect the well-being of people on the area.

The environmental assessment includes an evaluation of potential cumulative effects and effects of the environment on the project, as well as an analysis of potential

accidents, malfunctions and unplanned events. It also includes a description of the environmental protection program developed for the project, including the various roles, communication protocols, and commitments to monitor project activities and manage potential effects.

Based on the site selection process, and the measures developed to mitigate and manage any potential adverse effects, the conclusion of environmental assessment was that the residual effects are not significant.

18.0References

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Appendix A

Public and Indigenous Engagement Material

TABLE OF CONTENTS

Project Newsletter 2
Project Map 5
Project Postcard 7
Virtual Information Session Presentation 10
Presentation: Meeting with the MMF 29
Presentation: Meeting with DTFN 42
Presentation: Meeting with the MMF 54
ICAC Submission: DTFN 65
ICAC Submission: MMF 69
ICAC Submission: DTFN 104
ICAC Submission: LPFN 109
Letter from Manitoba Hydro to the MMF 114
Public Engagement Report 120

Project Newsletter

Thefollowing Project newsletter was sent to interested parties, Indigenous communities and made available to the public on the project webpage on June 24, 2021.

New station project

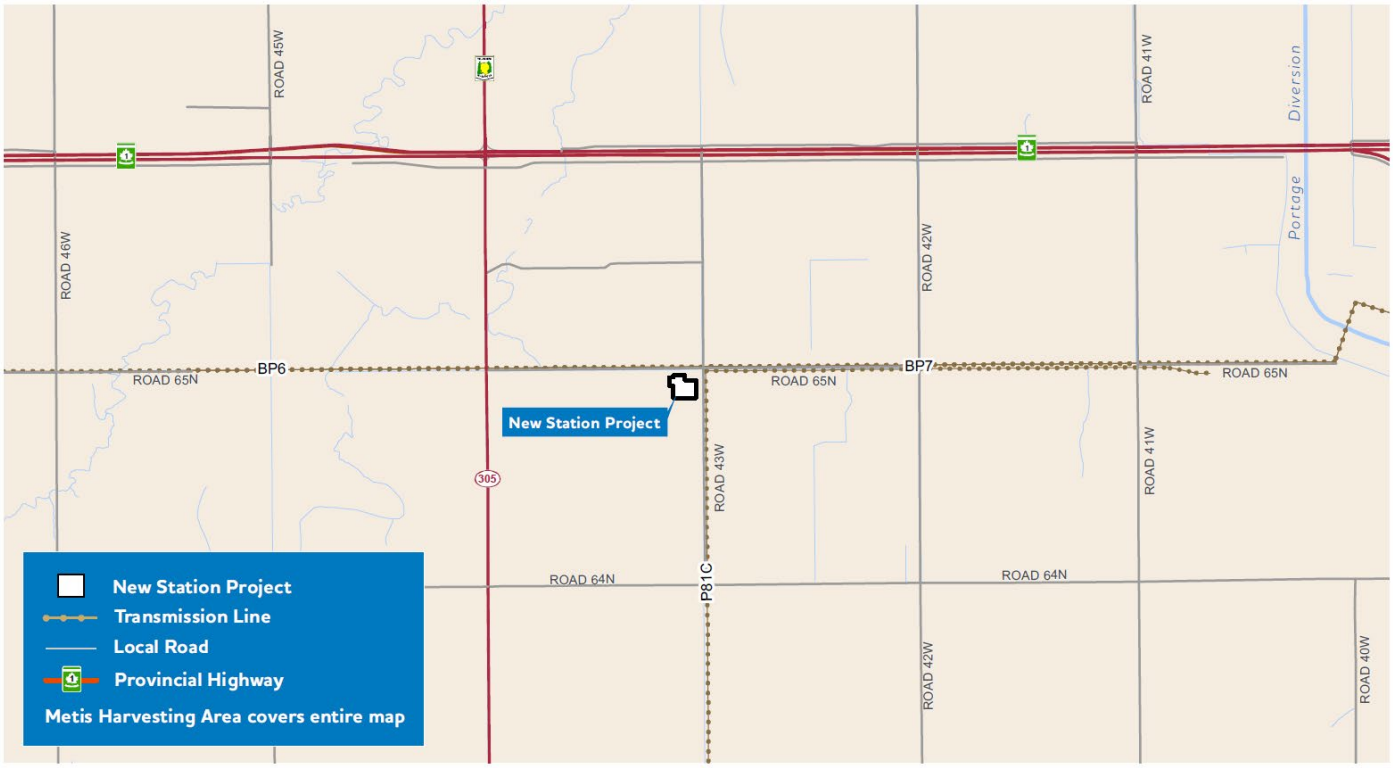
We know that safe, reliable supply of electricity today and into the future is important to our customers. That's why Manitoba Hydro is planning to build an electrical station west of the city of Portage la Prairie.

Why do we need it?

Growth in the Brandon and Portage la Prairie region, including the addition of new industrial customers, is increasing electricity demand. To meet these needs and help enhance electrical reliability, Manitoba Hydro requires a new station to deliver electricity from our 230-kilovolt transmission network into the regional 66-kilovolt distribution system.

Where is it?

The site for the electrical station is NE-26-11-8W (located approximately 1.5 kilometres east of Provincial Road 305 and1.75 kilometres south of Highway 1).



Map of the new station

What do we need to build?

The electrical station will consist of transformers that reduce the voltage of electricity delivered by our transmission network so it can be distributed for local use. The station will be approximately 172 square metres in size and be fenced for public safety. The project will include a short double circuit transmission line to connect into the existing P81C Tap transmission line. This project is part of the Portage Area Capacity Enhancement (PACE) project, which includes planning for a future transmission line to further improve service around the region that would also connect to the station.

How did we determine a site for the station?

Manitoba Hydro sought to balance different concerns and preferences when locating the station. We considered:

- biophysical concerns (e.g. species at risk, wildlife),
- socio-economic aspects (e.g. heritage sites, subdivisions),
- project management (e.g. schedule, cost),
- property related concerns (e.g. land use, existing infrastructure),
- station layout and design (e.g. placement, access, future planning),
- transmission line planning and design (e.g. load concerns, future development, standards), and
- distribution line and station planning (e.g. road access, load growth needs).

The proposed site balances the above considerations and will best serve the communities benefitting from the enhanced reliability of their local electricity supply.

Are regulatory approvals required?

The development of the project will require a Class 2 Licence under *The Environment Act* (Manitoba).

The environmental assessment for the project will include:

- a description of the project, through construction, operation, and maintenance;
- a study area characterization;
- an outline of the public and Indigenous engagement processes, and the feedback received;
- identification and assessment of potential environmental and socio-economic effects; and
- the development of mitigation measures to minimize potential effects on people and the environment.

Manitoba Hydro will develop and submit an environmental assessment report to the Environmental Approvals Branch of Manitoba Conservation and Climate for review.

When will the work happen?

The tentative schedule (subject to change) is:

- Site selected: June 2021
- Engagement begins: June 2021
- Environmental assessment report submitted: late summer 2021
- Licensing decision: early 2022
- If licence approved, construction spring 2023

For more information:

Visit www.hydro.mb.ca/pace to learn more and sign-up for updates. Send your questions to LEAprojects@hydro.mb.ca or call 1-877-343-1631.

Available in accessible formats upon request.

Project Map

The following map was sent to interested parties, Indigenous communities and made available to the public on the project webpage on June 24, 2021.



Manitoba Hydro

New Station Project

Project Infrastructure

- New Station Project

Landbase

- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Parcel Fabric
- Rural Municipality

Entire map area falls within Metis Natural Resource Harvesting Zone

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: June 21, 2021

N

0 0.25 0.5 Kilometers

0 0.25 0.5 Miles

1:20,000

New Station Project Overview

Available in accessible formats upon request

Project Postcard

The following postcard was sent to 401 nearby residents informing them of the upcoming virtual information session and opportunities to participate in the survey.

Portage West Station Project

New station planned

We are planning to build a new electrical station west of the City of Portage la Prairie. The Portage West Station Project will help enhance the electrical reliability in the Portage la Prairie area.

Growth in the Brandon and Portage la Prairie region, including the addition of new industrial customers, is increasing electricity demand. To meet these needs and help enhance electrical reliability, we require a new station to deliver electricity from our 230-kilovolt transmission network into the regional 66-kilovolt distribution system.

Join us for a virtual information session:

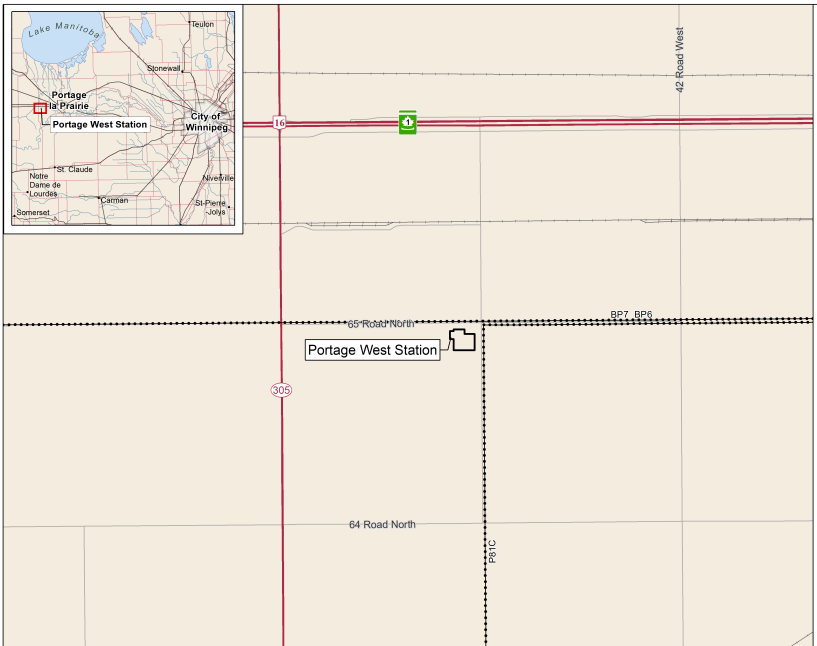
- Date at time

Email LEAprojects@hydro.mb.ca or call 1-877-343-1631 to register.

Stay connected

Learn more and sign-up for updates at **www.hydro.mb.ca/needurl** or connect with us: LEAprojects@hydro.mb.ca or 1-877-343-1631

Manitoba Hydro



Manitoba Hydro

Portage West Station

Project Infrastructure
- Portage West Station

Landbase
- Trans-Canada Highway
- Provincial Trunk Highway
- Provincial Road
- Transmission Line
- Municipal Road
- Rail
- Parcel Fabric
- Rural Municipality

Entire map area falls within Metis Natural Resource Harvesting Zone

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB
Date Created: June 15, 2021

N

0 0.25 0.5 Kilometers
0 0.25 0.5 Miles
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Portage West Station Overview

Virtual Information Session Presentation

The following presentation was shared during a virtual information session hosted by Manitoba Hydro on August 6, 2021.

Attendees:
Nine interested parties and three Manitoba Hydro staff.

Wash’ake Mayzoon Station

Virtual information session

August 6, 2021

Session outline

- Welcome
- Introductions
- Project presentation by Manitoba Hydro
- Questions and answers

12

Why is this project needed?



Help enhance electrical reliability in Portage la Prairie area



Growth in Brandon and Portage la Prairie region, including new industrial customers, is increasing electricity demand



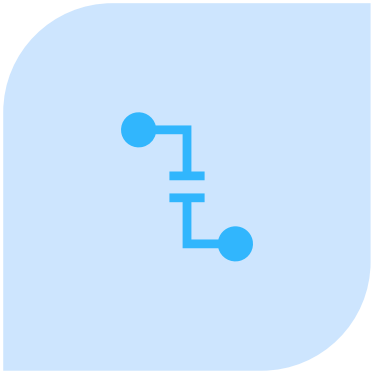
Part of Portage Area Capacity Enhancement (PACE) project, which includes planning for future transmission line to further improve service around region that would also connect to the station

Manitoba Hydro

Project description



New 230-66 kV station



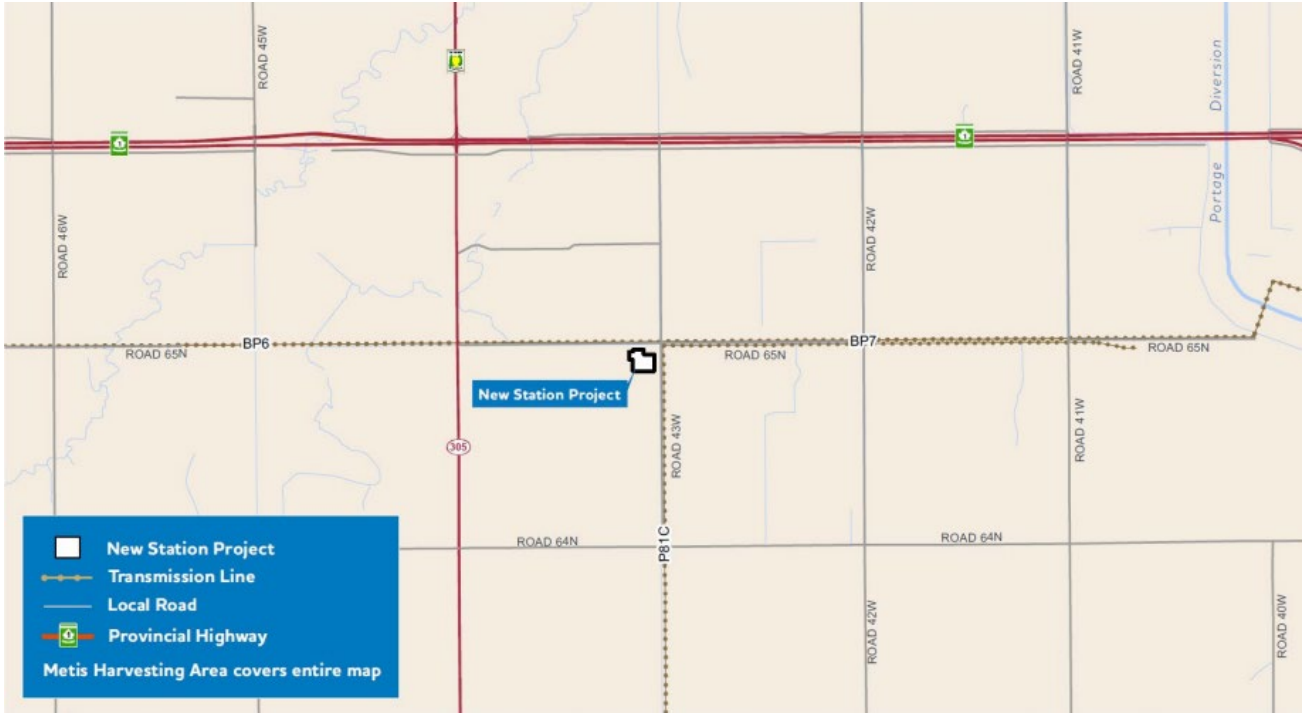
Short double circuit transmission line to connect into existing P81C tap transmission line

14

Station location

Rural municipality of Portage la Prairie

Located on NE-26-11-8-W



Manitoba Hydro

Concerns heard to date



Why here?



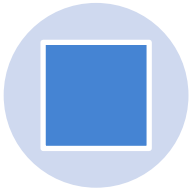
Noise



EMF



Traffic



Property values

Why this location?

- Less biophysical concerns including species at risk and wildlife
- Less socio-economic concerns including heritage sites and subdivisions
- Allows for adequate space for station layout and design
- Crosses fewer existing transmission lines
- Has good road access
- Proximity to P81C tap

Manitoba Hydro

Noise

- We take care to ensure our employees and contractors follow noise requirements of the rural municipality that we are working within.
- We do anticipate that there would be a temporary increase in noise during construction, and a small increase in noise during the operations at the station site

Manitoba Hydro

Electric and Magnetic Fields (EMF)

- National and international scientific and governmental agencies have conducted numerous reviews of research literature on exposure to extremely low frequency EMF and possible adverse health effects
- None of these agencies have concluded that exposure to extremely low frequency EMF is a demonstrated cause of any long-term adverse health effect.


Health Canada Santé Canada

Your health and safety... our priority. Votre santé et votre sécurité... notre priorité.

Electric and Magnetic Fields

Updated: November 2012

Original: November 2001

IT'S YOUR HEALTH

Electric and Magnetic Fields from Power Lines and Electrical Appliances

THE ISSUE

Some people are concerned that daily exposure to electric and magnetic fields (EMFs) may cause health problems.

Every time you use electricity and electrical appliances, you are exposed to electric and magnetic fields (EMFs) at extremely low frequencies (ELFs). The term "extremely low" is described as any frequency below 300 hertz. EMFs produced by the transmission and use of electricity belong to this category.

EMFs are invisible forces that surround electrical equipment, power cords, and wires that carry electricity, including outdoor power lines.

- *Electric Fields:* These are formed whenever a wire is plugged into an outlet, even when the appliance is not turned on. The higher the voltage, the stronger the electric field.
- *Magnetic Fields:* These are formed when electric current is flowing within a device or wire. The greater the current, the stronger the magnetic field.

EMFs can occur separately or together. For example, when you plug the power cord for a lamp into a wall socket, it creates an electric field along the cord. When you turn the lamp on, the flow of current through the cord creates a magnetic field. Meanwhile, the electric field is still present.

ELECTRICITY AND ELECTRIC AND MAGNETIC FIELDS (EMFS)

Electricity delivered through power lines is important in today's society. It is used to light homes, prepare food, run computers and operate other household appliances, such as TVs and radios. In Canada, appliances that plug into a wall socket use electric power that flows back and forth at a frequency of 60 cycles per second (60 hertz). The frequency used with the distribution of electricity from power lines and electrical appliances is different than the frequencies used for Wi-Fi, cell phones, and smart meters.

Canada

Manitoba Hydro

Traffic

- Construction traffic will follow existing high use highways and municipal roads
- Project-related vehicles will observe all traffic rules and provincial and federal highway regulations
- Trucking activity will observe speed limits and weight restrictions

Manitoba Hydro

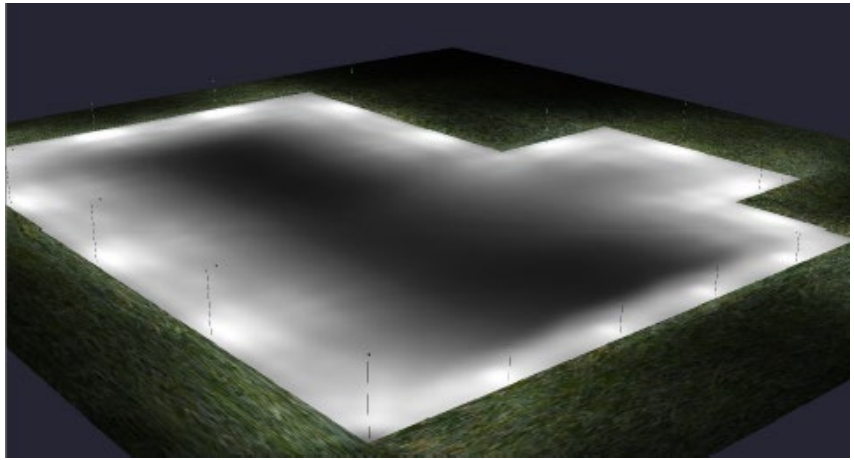
Property values

- The literature is inconclusive on whether stations affect property values.
- For transmission lines, some studies show a small, negative effect on property values immediately after construction that diminish over time and distance.

Manitoba Hydro

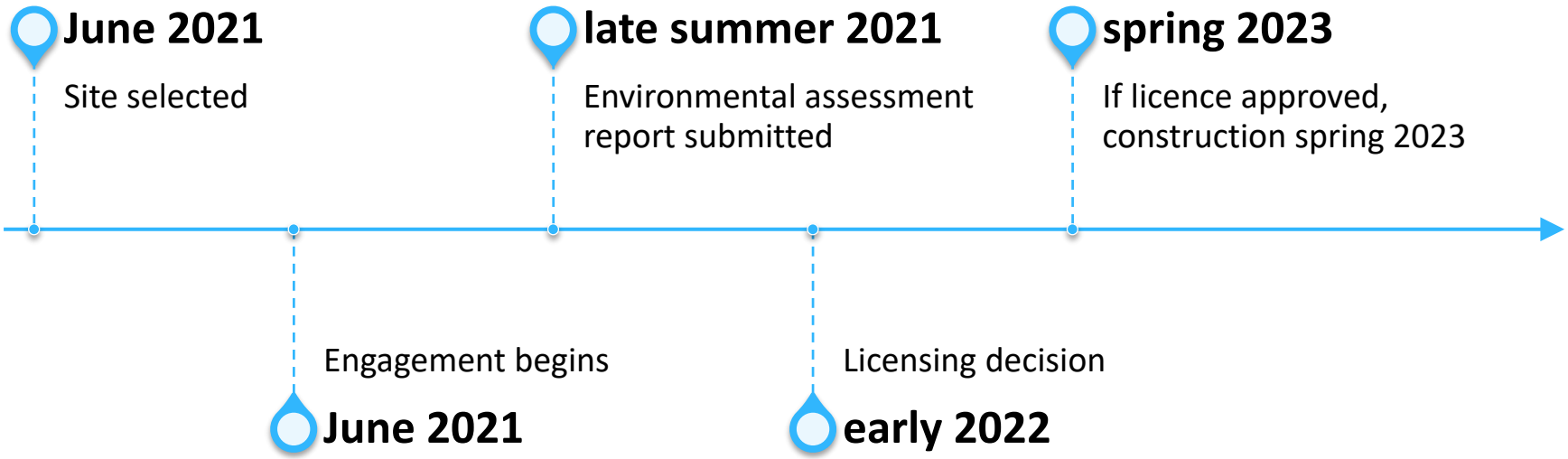
What will it look like?

- Approximately 172 square metres in size
- Fenced for safety
- Lighting

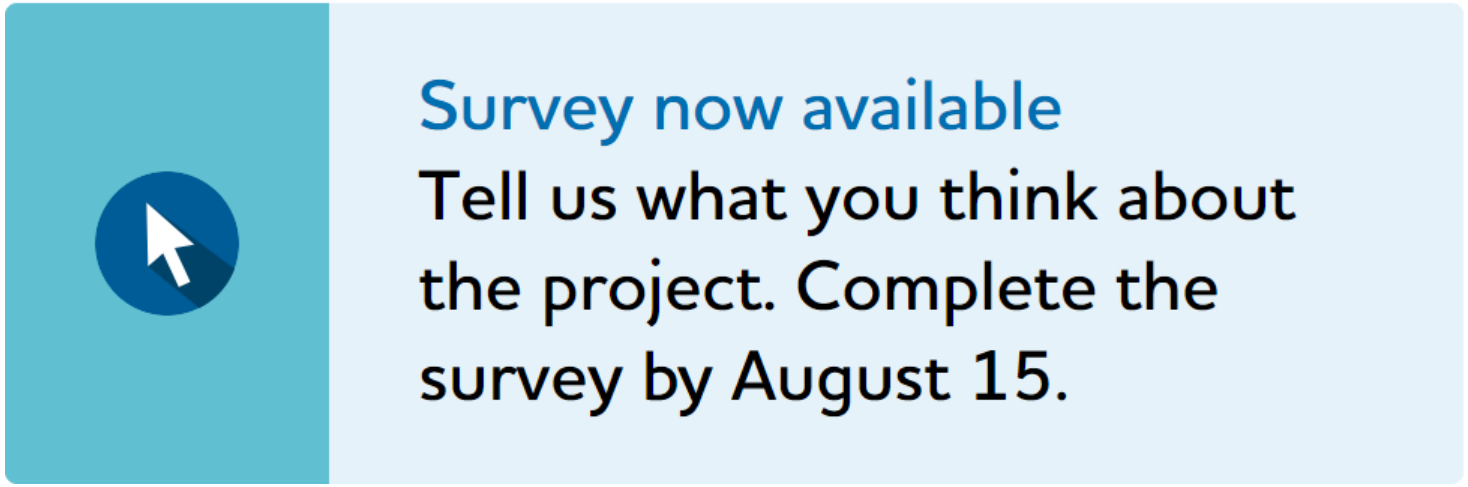




Timeline


June 2021
Site selected
Engagement begins
June 2021
late summer 2021
Environmental assessment report submitted
Licensing decision
early 2022
spring 2023
If licence approved, construction spring 2023

We want to hear from you



www.hydro.mb.ca/pace

Manitoba Hydro

Discussion



General questions and concerns?



Location specific

Why is it called Wash'ake Mayzoon Station?

- Many stations built across southern Manitoba were named after towns or municipalities near the station (i.e., Letellier Station, La Verendrye Station, De Salaberry Station).
- Many of these towns were named after military leaders or English words for natural features.
  - Poplar Bluff Transmission line recently built nearby is named after the local village, which was named after the English word for a natural feature.
- Working in an area with such a rich history of different Indigenous cultural groups, such as Ojibway, Dakota and Metis, and the close involvement of Indigenous Coordinators on transmission projects in this area, we thought it was appropriate to update our naming process for this station

Manitoba Hydro

Thank you

For more information about Wash’ake Mayzoon and to sign up for email notices, please visit www.hydro.mb.ca/pace

Presentation: Meeting with the MMF

Thefollowingpresentationwasshared during a meeting with the MMF and Manitoba Hydro on July 23, 2021

Attendees:
Marci Riel, Jade Dewar and Keith Kowall
Manitoba Hydro: Sarah Coughlin and Maria M'Lot

MMF and Manitoba Hydro July 23, 2021 Meeting

RE: Wash’ake Mayzoon Station and a meeting that fulfills a portion of Deliverable 6

Agenda

- Proposed Agenda Name – can we go ahead with Wash'aki Mayzoon Station?
- The Project – any questions resulting from your review of the project description?
- Any project-specific mitigation we should consider?
- Sharing what we understand WRT effects so far in the draft assessment
- The upcoming tline project
- Other?

The Name

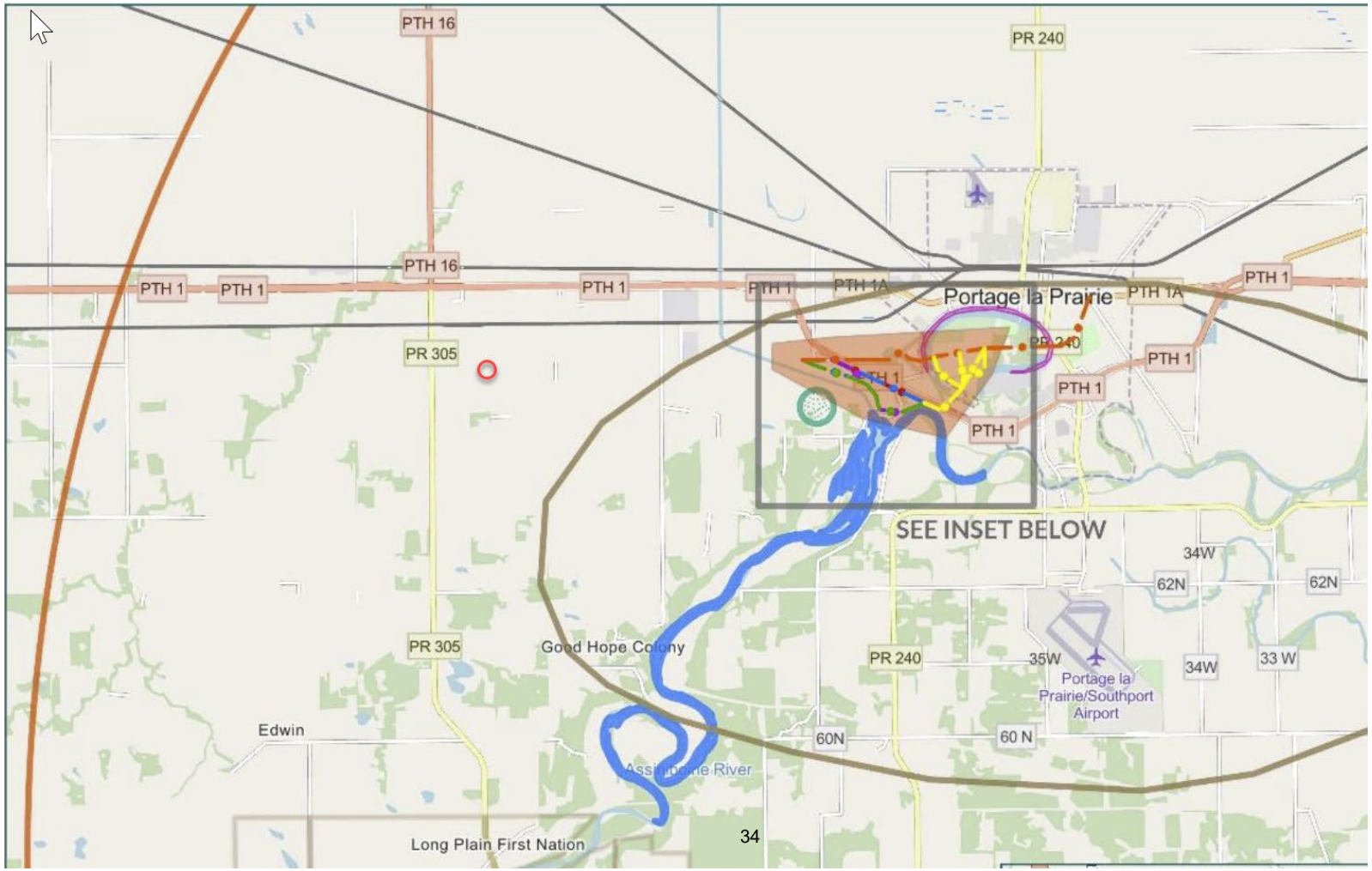
- Wash’ake Mayzoon Station

Valued Components and sub-topics

- Agriculture
- Human health
  - Air quality
  - Water quality
- Community well-being
  - Visual quality
  - Property value
  - Electric and Magnetic Fields
- Wildlife
- Economic opportunities
- Traditional practices, culture and heritage
  - Heritage resources
- Greenhouse gases and climate change
- ~~Fish and fish habitat~~
- ~~Vegetation~~
- ~~Land and resource use~~

Any suggested changes?

Effects we understand so far…



Effects we understand so far…

- Wildlife & Wildlife Habitat
  - Construction noise may temporarily disrupt wildlife behavior
  - Security lighting at the station has the potential to alter wildlife behavior, including birds and nesting
  - Due to limited amount of high-quality habitat in the area and the proximity of the station to industrial development and City of Portage la Prairie (lots of noise and light), effects should be minimal

- Vegetation
  - 90% of the land in the local assessment area is used for agriculture (only 6% consists of forested land and 5% is grassland) so effects to natural vegetation should be minimal

Effects we understand so far…

- Traditional practice, culture and heritage
  - As identified in the MMF's BP6/P7 report, the project is located in a historic trapping area and is part of a broader hunting area
  - Construction activities can disrupt access and experience of traditional harvesting practices
  - Since the project is located on agriculture land where traditional harvesting practices are not widely practices, effects should be minimal
  - Extensive heritage and archaeological surveys will be conducted prior to construction to help mitigate adverse effects to heritage
  - Implementation of the Culture and Heritage Resources Protection Plan (CHRPP) will minimize disruption to potential heritage findings during construction activities

Questions/Concerns/Suggestions/Potential benefits for the MMF for the station?

Project-specific mitigation we should consider?

Project	Description	Date
New station	Environmental assessment starts	May 2021
	Site selected	June 2021
	Round 1 engagement begins (Indigenous, Public, interested parties) -- Station Site and Tap 2 Tap	June 2021
	Submit EA chapter for review by MMF	Week of July 26-30, 2021
	Receive comments back by	?
	Station EA filed	August 2021
	License	?
	Tentative In Service Date	May 2023
New 230kV transmission line	Round 1 of 230kV Dorsey to Station Site: present route alternatives for feedback	September 2021
	Environment Assessment Report Document - initiated	September 2021
	Round 2 of 230kV Dorsey to station site: present preferred route for feedback	January 2022
	Preferred route selected	March 2022
	Transmission line EA filed	October 2022
	Tentative In Service Date	August 2025

Other

- Consultant training?
- MMF submission for the new station?
- The upcoming transmission line project
  - Heritage workshop
  - MMF plans for Citizen engagement?

- CLOMP
  - Cultural representative?

Heritage Workshop – proposed draft agenda

- Virtual (2 hours)
- Intro/welcome/prayer/ go over goal of meeting (to be on the same page with heritage work)
- The job at hand – describe upcoming three projects in the area and our current plan for protecting heritage concerns
- HRB – share their goals/what they do at the branch
- Protective measures (discussion)
  - Pre-construction
  - Construction and the Culture, Heritage Resource Protection Plan
  - Spiritual
  - What else can we do to protect?
- Archeologist recommendations
- Other
- Adjourn

Presentation: Meeting with DTFN

The following presentation was shared during a meeting with Dakota Tipi First Nation and Manitoba Hydro on June 9, 2021

Attendees:
Dakota Tipi First Nation: Chief Eric Pashe and Darryl Taylor
Manitoba Hydro: Sarah Coughlin and Maria M'Lot

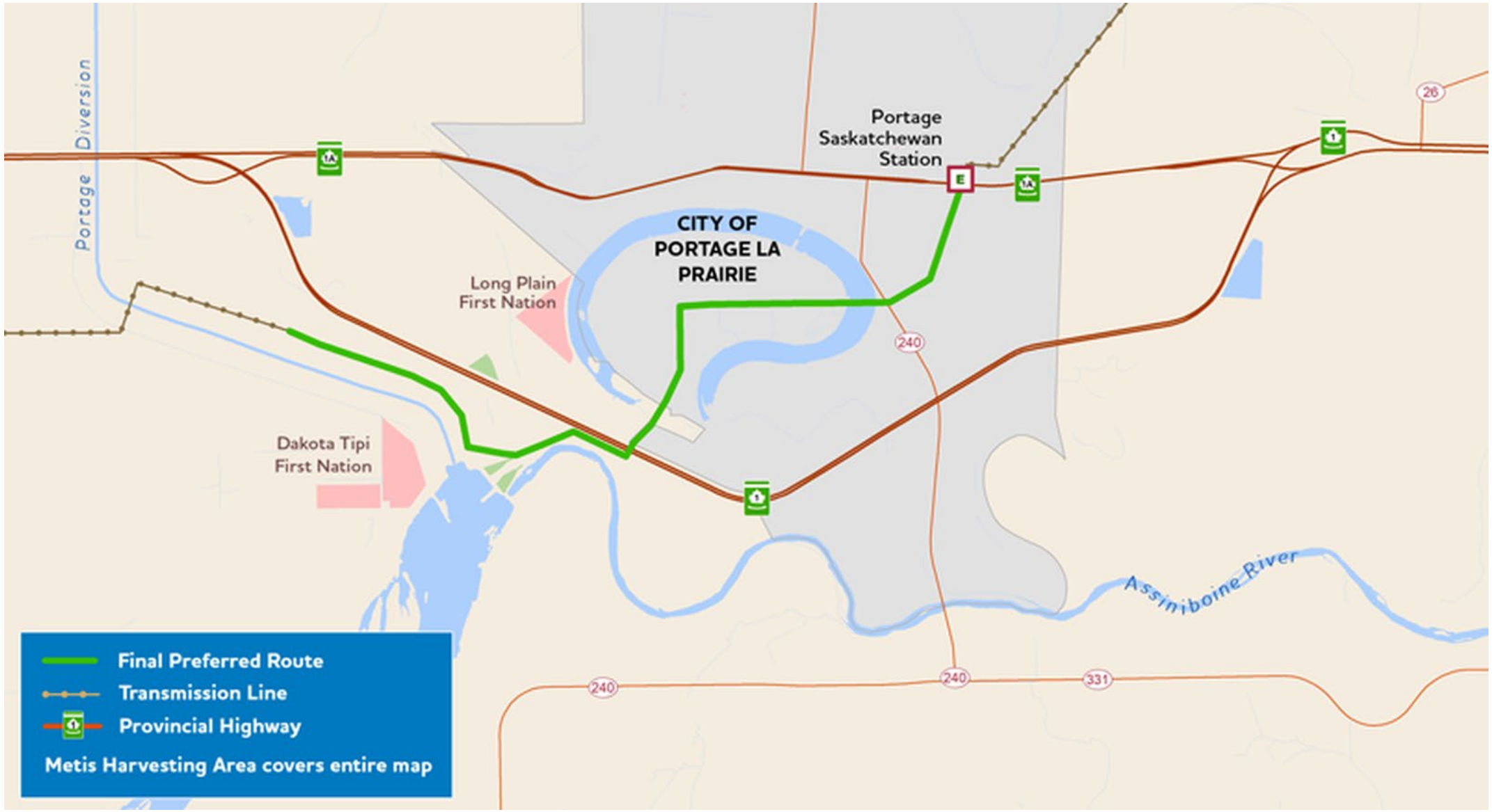
DTFN and Manitoba Hydro June 9, 2021 Meeting

RE: Deliverable 5 - Portage Area Projects

Deliverable no. 5: Approximately one week after Hydro's filing of the BP6/BP7 Environmental Assessment Report, participate in a meeting called by Hydro to discuss the effectiveness of the Indigenous Community and Assessment Coordinator position. Assess any changes necessary for remaining work on the PACE projects.

Background

- 3 projects
  - BP 6/7 - filed – see map for final preferred route
  - Portage West Station – just starting
  - Portage Transmission Line – has not yet started


Portage Diversion
Portage Saskatchewan Station
E
CITY OF PORTAGE LA PRAIRIE
Long Plain First Nation
Dakota Tipi First Nation
240
26
331
Assiniboine River
Final Preferred Route
Transmission Line
Provincial Highway
Metis Harvesting Area covers entire map

Agenda

- BP6/7 is now filed (see public registry).
- Any Outstanding questions or concerns?
- We have received Board approval to move forward on the Portage West Station and transmission line. We'd like to discuss what worked/what didn't work for Phase 1 (Deliverables 1-4) and the best way to implement the remaining deliverables in the agreement, including:
  - project schedule
  - upcoming meetings and deliverables
  - preferences from DTFN for how members will want to be engaged on these projects (the station and the transmission line).
- Training Budget
  - The HTFC proposal
  - Potential to add Intergroup as a sub for mapping / heritage work
- Invoicing
  - Status

Outstanding Concerns re: BP6/7

- Comments/Questions from MH:
  - Thank you for your feedback on
    - Early site analysis
    - Interviews
    - Routing brief
    - Participation in routing meetings
    - EA review
    - Photos, follow up and collaboration with other Coordinators
  - Are there any outstanding concerns/report updates from DTFN?
- How did this process work for DTFN?
  - Good? Bad? Any improvements needed?
    - ICAC says process worked well. Challenge was having different stakeholders at the table and seeking their input. This was a real positive. Good to have city, RM, all involved.
  - What can we improve for these next two projects (the station and the transmission line)?

Updated Schedule

Project	Description	Date
Portage west station	Environmental assessment starts	May 2021
	Site selected	June 2021
	Round 1 engagement begins (Indigenous, Public, interested parties) -- Station Site and Tap 2 Tap	June 2021
	Station EA filed	August 2021
	License	?
	Tentative In-Service Date	May 2023
New 230kV transmission line	Round 1 of 230kV Dorsey to Station Site: present route alternatives for feedback	September 2021
	Environment Assessment Report Document - initiated	September 2021
	Round 2 of 230kV Dorsey to station site: present preferred route for feedback	January 2022
	Preferred route selected	March 2022
	Transmission line EA filed	October 2022
	Tentative In-Service Date	August 2025

Meeting Planning

- What works best for DTFN?
  - Virtual meetings with members?
  - Additional interviews?
  - Comment on site selected for station?
- MH would like to:
  - Conduct a site visit – next few weeks (MH to contact the DTFN ICAC)
  - Ask DTFN to provide:
    - Understanding of your traditional territory
    - Understanding of rights-based activities occurring in that area and how the projects (the station and the transmission line) may impact those rights
    - Feedback on whether the assessment we prepare adequately captures DTFN's concerns and works to address them

Preference for Engagement

- How does Dakota Tipi want to engage on this project?
  - Is there something we should do differently or try for Phase 2?

Training Budget

- The HTFC Proposal – updates?
- Potential to add Intergroup to assist with mapping/heritage work

Invoicing Status

- ICAC contribution agreement signed January 4, 2021
- Advance provided January 21, 2021
- Status of submissions to MH

- Reschedule a meeting with DTFN finance department.

Questions or Comments

Presentation: Meeting with the MMF

Thefollowingpresentationwasshared during a meeting with the MMF and Manitoba Hydro on June 2, 2021

Attendees:
Marci Riel, Jade Dewar and Keith Kowall
Manitoba Hydro: Sarah Coughlin, Maria M'Lot and Breanne Smith

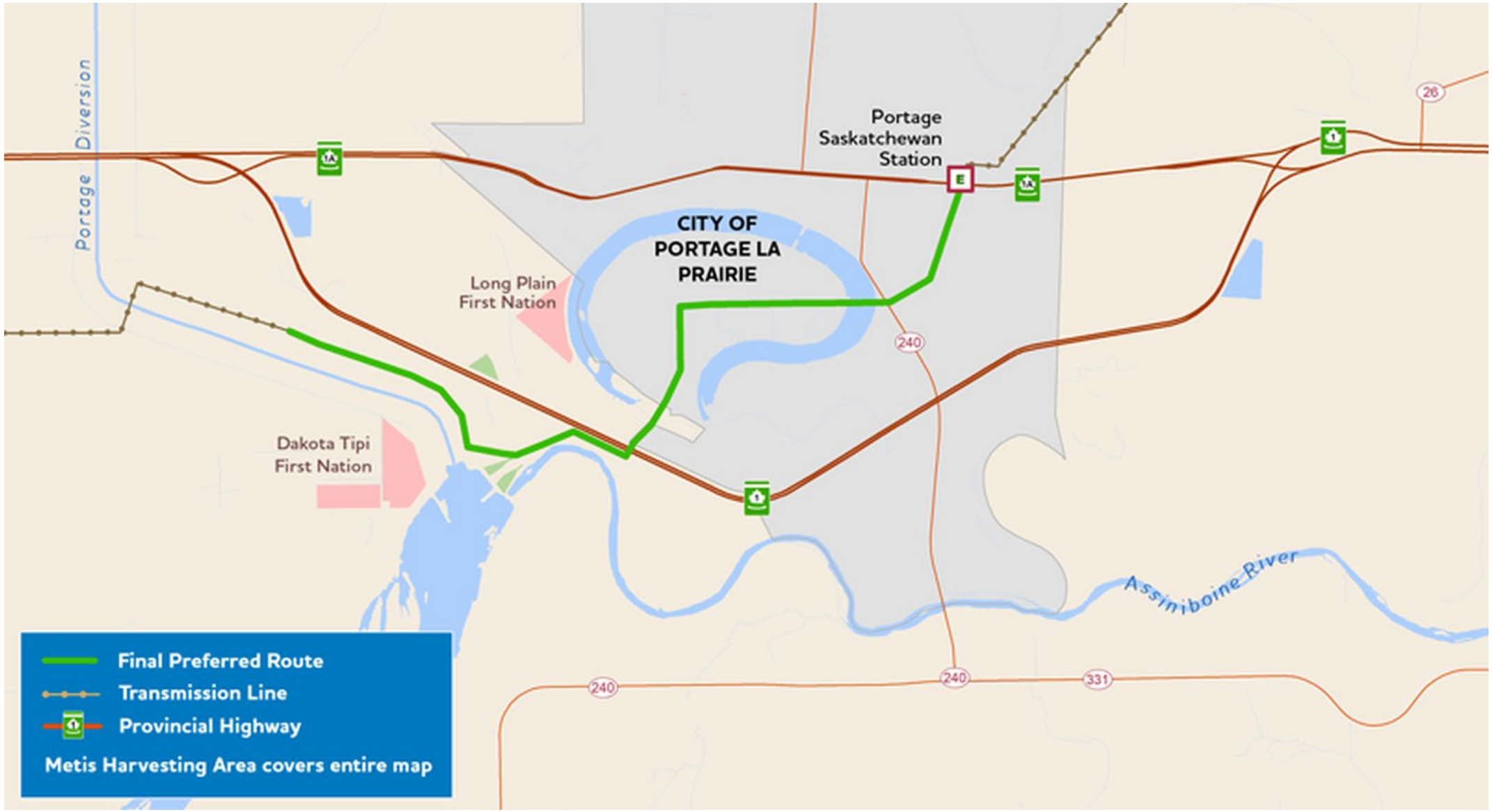
MMF and Manitoba Hydro June 2, 2021 Meeting

RE: Deliverable 5 - Portage area projects

Deliverable no. 5: Approximately one week after Hydro's filing of the BP6/BP7 Environmental Assessment Report, participate in a meeting called by Hydro to discuss the effectiveness of the Indigenous Community and Assessment Coordinator position. Assess any changes necessary for remaining work on the PACE projects.

Background

- 3 projects
  - BP 6/7 - filed
  - Portage West Station – just starting
  - Portage Transmission Line – has not yet started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Portage Saskatchewan Station
CITY OF PORTAGE LA PRAIRIE
Long Plain First Nation
Dakota Tipi First Nation
Assiniboine River
240
331
26
Final Preferred Route
Transmission Line
Provincial Highway
Metis Harvesting Area covers entire map

Proposed agenda topics

- BP6/7 is now filed (see public registry). Are there any outstanding concerns/report updates from the MMF?
- We have received Board approval to move forward on the Portage West Station. We'd like to discuss what worked/what didn't for phase 1 and the best way to implement the remaining deliverables in the agreement, including:
  - ideas for the training budget,
  - schedule,
  - upcoming meetings and deliverables (including community consultation meeting)
  - preferences from the MMF for how Metis Citizens will be engaged on these projects (the station and the tline).
  - Recommendations
- Other topics?

Outstanding concerns re: BP6/7

- BP6/7 is now filed (see public registry)
- Questions from MH:
  - Are there any outstanding concerns/report updates from the MMF?
  - Will Metis Citizens be engaged on the project through the MMF?
  - Will the report be updated?

Training budget

- MMF to lead - The process of engaging with the community (MMF has their own process)
- Will connect with SVS (mapping, data catalogue, ecological expertise, review of material, filling gaps)
- Manitoba Hydro to connect with Indigenous knowledge piece
- Manitoba Hydro will send shp files.
- The MMF will prep proposal for SVS work

Updated Schedule

Project	Description	Date
Portage west station	Environmental assessment starts	May 2021
	Site selected	June 2021
	Round 1 engagement begins (Indigenous, Public, interested parties) -- Station Site and Tap 2 Tap	June 2021
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	Preferred route selected	March 2022
	Transmission line EA filed	October 2022
	Tentative In Service Date	August 2025

Meeting planning

- Site visit – next few weeks (Manitoba Hydro to contact the MMF)
- Similar process to BP6/7 - share VCs, ask for comments, adjust
- Metis citizen engagement.
  - Shp file
  - Project description
  - Schedule
- Community meeting – MMF will provide date when scheduled

Preference for engagement

- The MMF ICAC will undertake interview (s) with specific Citizens

Recommendations from report

- MH to set up meeting sooner than later

ICAC Submission: DTFN

The following document was submitted by Dakota Tipi First Nation to Manitoba Hydro on August 10, 2021.

This forms part of the deliverables for the Portage Area Projects: Indigenous Community and Assessment Coordinators.

Wash'ake Mayzoon / Portage West Station

DTFN Assessment & Proposed Mitigation Measures

August 10, 2021

Wash'ake "power" – Dakota
Mayzoon "house" – Michif

CONTEXT

UNCEDED DAKOTA TERRITORY

In order to plan for and build the station in a good way, it is important to understand and acknowledge that the Project site is located in unceded Dakota territory.

At the time of contact, Dakota people occupied areas with Canada and the US, the Northwest Territories, Alberta, Saskatchewan, Manitoba, and portions of Ontario. Dakota Tipi First Nation (DTFN) has not signed a Treaty and thus retains, holds and asserts Aboriginal Rights and Title to areas within southern Manitoba. This includes the area surrounding present-day Portage La Prairie, the Yellowquill Trail, and the site of the proposed Project.

DTFN continues to exercise rights in the region, including the right to hunt, fish, harvest land- and water-based resources, practice cultivation, build and occupy settlements, build and occupy camps and cabins, and travel to and access resource activity areas. DTFN is in the process of finding and documenting a number of burial sites in the region. There are undoubtedly many more burial and cultural sites yet to be identified.

IMPACTED LANDS

Since the time of contact, Dakota territory in southern Manitoba has been drastically changed through the cumulative impacts of development.

- Agriculture has removed native vegetation, altered surface water patterns, and introduced chemicals and fertilizers into the environment.
- Settlement and industrial development have taken up considerable areas as private land and have introduced many corridors: roadways, pipelines, transmission lines, and drainage structures.

This drastic alteration of the landscape has brought cumulative impacts to wildlife, waterways, plants, and medicines. In turn, DTFN members' have been left with limited access to the land and minimal ability to exercise their rights. The Manitoba Hydro electrical network, and the proposed station are part of these cumulative effects.

SITE CONSIDERATIONS

The project site is located on private, cultivated land. This site has already been altered from its natural state and is currently inaccessible to DTFN members.

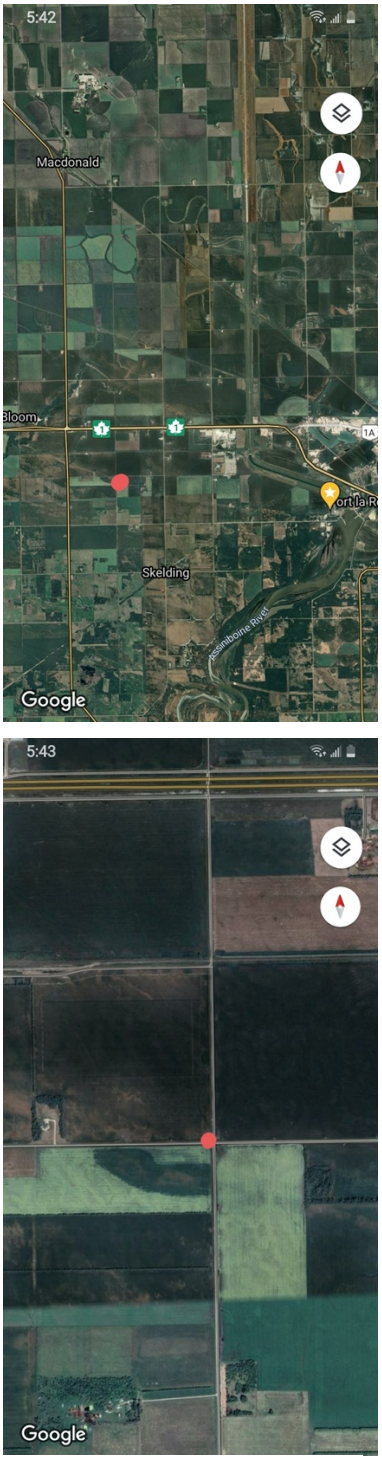
While the station covers a reasonably small area, it is important to recognize that this site plays a role in the broader colonial impact and cumulative effects mentioned above.

DTFN's Community Liaison has visited the proposed station site and reviewed existing research on Dakota history in the region. The area is currently an open field, well away from local waterbodies. There are no cultural artefacts, burials or cultural features *currently known* to be on the proposed site, and it has not been identified as a significant are *to date.*

However, DTFN has not yet examined the full written record with respect to use of this site. Given the history of the area and the soil disturbance required to install the station's grounding grid, **there is potential to disturb cultural artefacts at this site**.

A thorough heritage assessment will be needed, with appropriate participation of DTFN. The recommendations below expand on this point.

Note that this discussion focusses on the footprint of the station itself and does not consider the possible routes of the five future and proposed transmission lines that will connect to it. DTFN will require further consultation and review with respect to routing each of these lines.



Project location – Google maps

APPROPRIATE MITIGATION

DTFN proposes the following measures to address the context of the site, and its potential to contain cultural artefacts:

HERITAGE ASSESSMENT & DISTURBANCE

1. Conduct a full heritage assessment of the site
2. Arrange for a DTFN Liaison to be on-site during heritage work, site clearing, and ground disturbance. The Liaison may choose to be on-call in lieu of on-site depending on circumstances
3. Share results of the heritage assessment with DTFN
4. Work with DTFN in decisions regarding the handling and treatment of any artefacts found

CEREMONY

5. Hold a Pipe Ceremony at ground-breaking to respect the land in a traditional way
6. Hold a closing ceremony when construction is complete
7. Ensure DTFN participation in both ceremonies

RESTORATION & DECOMMISSIONING

8. Discuss any restoration required after construction with DTFN – including appropriate methods, plant species, etc.
9. Include DTFN involvement in any decommissioning plan for the site



Wash'ake Mayzoon Station Site. 2021. Photo by Darryl Taylor

ICAC Submission: MMF

The following document was submitted by the Manitoba Metis Federation to Manitoba Hydro on August 19, 2021.

This forms part of the deliverables for the Portage Area Projects: Indigenous Community and Assessment Coordinators.

Manitoba Métis Specific Concerns

Wash'ake Mayzoon Station EA Chapter Review

Manitoba Métis Federation

August 19, 2021

Contents

Executive Summary 2
1.0 Introduction 3
1.1 Project Context 3
1.2 Environmental Assessment Process 3
1.3 Environmental Assessments and Consultation with the Manitoba Métis Federation 6
2.0 MMF EA Review for the Wash'ake Mayzoon Station 7
2.1 Concerns with the Indigenous Engagement Process 7
2.2 Review of the Traditional Practices, Culture, and Heritage Chapter 9
3.0 Manitoba Métis 19
3.1 Manitoba Hydro's Description of the MMF 19
3.2 History and Identity 20
3.3 Manitoba Métis Federation 23
3.4 MMF Resolution No. 8 24
3.5 Manitoba Métis Rights, Claims, and Interests 25
4.0 Conclusion and Recommendations 28
4.1 Conclusions 28
4.2 Recommendations Including a Process for Developing Mitigation Measures 29
5.0 References 32

Executive Summary

Through an assessment of our existing land use and occupancy database, we confirmed that **Métis Citizens are actively exercising their rights throughout the Portage La Prairie region within which lies the Portage and Area Capacity Enhancement (PACE) project, which includes lands encompassing the Wash'ake Mayzoon 230 – 66kV Station**. A large proportion of Portage La Prairie are Métis Citizens and their history in the community spans as far back as the establishment of the community. The presence of 80 existing Métis Knowledge features in the PACE project area indicates the potential for the Manitoba Métis Community (Manitoba Métis) to have additional specific knowledge to share about alternatives to sites if given the opportunity. We would also like to engage Métis Citizens for additional project specific information which can be used to inform Manitoba Hydro's full environmental assessment and EAP, construction and future operations of the line.

The 80 existing features near the PACE project area, identified through past studies not focused on this project, are evidence of the potential for impact to the Métis way of life due to the cumulative impacts of the proposed PACE project in addition to the BP6/BP7 project and other developments in the area. The cumulative effects of these developments and others have significantly impacted Métis Citizens' Constitutionally protected rights to harvest, and any further impact on these rights, claims or interests needs to be adequately and appropriately assessed and, if necessary, accommodated and mitigated for.

In the context of the cumulative impacts that the Manitoba Hydro projects in the Portage La Prairie area present to Métis Citizens' rights, claims and/or interests, the Manitoba Métis Federation (MMF) is responding to the request to review and comment on the draft EA chapters for the Wash'ake Mayzoon Station as well as providing a set of recommendations related to the current site and route selection processes, and recommendations for ongoing engagement and consultation with the MMF.

Métis Concerns with Transmission Lines

- Concerns about impacts to Métis rights, claims and interests.
- Concerns about Métis Valued Components being considered in the process.
- Concerns that contiguous Unoccupied Crown Land will not be maintained.
- Potential for impact to Lands for Métis Use
- Potential changes to wildlife habitat and the ability harvest in the area
- Cumulative effects of development on the ability to harvest.
- Numerous concerns related to transmission line project impacts including the following:
    - Aquatic harvesting and water quality
    - Chemical spraying
    - Human population increase pressures on harvesting
    - Impacts to animal health and habitat
    - Sensitive Habitat such as a swamp
    - Access to historic and culturally important harvesting areas and impacts on gathering berries
    - Economic impacts
    - Effects on commercial trapping
    - Wood harvesting impacts
    - Challenges presented by needing to change harvesting locations
    - Cultural impacts
    - Changes to the landscape and foreign objects
    - Aesthetic and visual concerns
    - Human health impacts and noise concerns
    - Safety
- Fears and psycho-social concerns
- Concerns with the administration of monitoring programs.

1.0 Introduction

1.1 Project Context

Manitoba Hydro is proposing the Portage Area Capacity Enhancement (PACE) project as part of a plan to enhance its network reliability in Manitoba. The PACE project is proposed to advance in 2 stages: Phase 1 of the PACE project includes the construction of a new 230-66 kV station (Wash'ake Mayzoon Station) approximately 12 km west of the city of Portage La Prairie and the sectionalization of the existing 230 kV transmission line P81C tap with a planned in-service date of March 2025. Phase 2 of the PACE project includes the construction of a new 230 kV transmission line from the new Wash'ake Mayzoon Station to the existing Dorsey Converter Station located approximately 75 km east in the area northwest of Winnipeg with a planned in-service date of February 2027. The Wash'ake Mayzoon Station will be approximately 172 square metres in size and be fenced in for public safety.

The rationale provided for the PACE project is based on the increased stress load in the Brandon – Portage La Prairie region resulting from above average load growth, new industrial customers in southwestern Manitoba, increasing exports to Saskatchewan and a deferral of planned transmission projects. Manitoba Hydro has indicated that insufficient 230/66 kV transformation capacity in the Portage area requires immediate enhancement to prevent overloads.

1.2 Environmental Assessment Process

General Process Overview

The Wash'ake Mayzoon Station Project requires an environmental assessment (EA) as a Class 2 development according to Manitoba Regulation 164/88 (the Classes of Development Regulation) under *The Environment Act* (Manitoba). The EA must be submitted to Manitoba Conservation and Climate for approval, and the Project will require a licence under *The Environment Act* prior to the initiation of construction.

As described in Section 1(1) of *The Environment Act*, the purpose of the EA process is to "ensure that the environment is protected and maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for this and future generations". Section 1(1)(b) of *The Environment Act* provides for the environmental assessment of projects which are likely to have significant effects on the environment.

The MMF has been asked to review and provide comment on draft chapters of the EA for the new 230-66kV station and the line P81C sectionalization related to 1) the project description, and 2) the Indigenous Engagement Process.

The Site Selection Process

As part of its EA, Manitoba Hydro conducted an evaluation of 19 transmission enhancement options and an analysis of 5 recommended development options. The PACE project which consisted of the construction of the new Wash'ake Mayzoon Station in addition to 75 km of new line from Dorsey Station was selected as the best option to provide relief until approximately 2035 based on current forecasts, system commitments and committed developments for the area. The environmental assessment report for the Wash'ake Mayzoon Station project is anticipated to be filed for regulatory review in late summer 2021, with construction planned to start in 2023 if regulatory approval is received.

Key Milestones

June 2021 – Site Selection

June 2021 – Engagement begins

Late summer 2021 – EA report to be submitted for regulatory review

Early 2022 – Licensing decision

2023 – Construction planned to start if licence approved

Manitoba Hydro indicates that it sought to 'balance different concerns and preferences when locating the (Wash'ake Mayzoon) station'. This included:

- Biophysical concerns (e.g. species at risk),
- Socio-economic aspects (e.g. heritage sites, subdivisions),
- Project management (e.g. schedule, cost),
- Property related concerns (e.g. land use, existing infrastructure),
- Station layout and design (e.g. placement, access, future planning),
- Transmission line planning and design (e.g. load concerns, future development, standards), and
- Distribution line and station planning (e.g. road access, load growth needs).

Environment Act Proposal for Licensing

To obtain a Licence under *The Environment Act*, Manitoba Hydro must submit a complete Environment Act Proposal (EAP) to the Environmental Approvals Branch (EAB) of Manitoba Conservation and Climate. The EAP will consist of the following components (emphasis added):

- Cover Letter

- Environment Act Proposal Form

- Reports/Plans Supporting the Environment Act Proposal, including the Environmental Assessment Report. According to the Government of Manitoba's Environment Act Proposal Report Guidelines (March 2018), the EA Report should include the following sections:

    - Executive summary

    - Introduction and background

    - Description of proposed development, including construction, operation, maintenance, and decommissioning if applicable.

    - Description of existing environment in the project area, including **identification of Indigenous communities in the vicinity of the proposed development**. Existing environmental **information may come from sources including traditional ecological knowledge.**

    - Description of **environmental and human health effects of the proposed development, including potential impacts of the development on Indigenous communities**, including, but not necessarily limited to:

        - direct impacts on communities in the project area.

        - resource use, including hunting, fishing, trapping, gathering, etc.

        - cultural or traditional activities in the project area.

    - **Mitigation measures** to protect the environment and human health, and residual environmental effects.

    - **Follow-up plans, including monitoring and reporting**.

    - Conclusions

- Application Fee

The Government of Manitoba encourages proponents to consult with staff of the department, affected public, interested parties **and First Nation communities to identify issues and concerns prior to finalizing the EAP**, to allow for potential concerns to be addressed early in the process. These guidelines are dated and incomplete. MMF will assume that Manitoba Hydro understands that "First Nation" communities actually means "First Nation, Métis or Inuit communities" and that the MMF will be provided time and capacity funding to comment on the EAP.

After checking the EAP for completeness, the Government of Manitoba will place the EAP on the public registry and request public comments within a prescribed timeframe. A Technical Advisory Committee (TAC) consisting of provincial and federal government specialists will review the EAP and submit comments in parallel with the public review.

The EAB will then reviews all public and TAC comments on the EAP and may request additional information from Manitoba Hydro to address concerns. Guidelines may be completed for the proponent to prepare a full Environmental Impact Statement (EIS). If required, the EIS Guidelines and the EIS are also screened by the public and TAC.

If concerns warrant a public hearing, the Director of the EAB may recommend that the Minister request the Clean Environment Commission to hold a public hearing on the proposed development. Upon the Minister's request, the Commission would conduct a public hearing and provide advice and recommendations to the Minister based on evidence received during the hearing process. While the MMF does not at this time, necessarily assume that the BP6/BP7 will require a public hearing, we expect that we would be provided the opportunity for capacity funding to participate should a hearing occur.

At the end of the environmental assessment process, a decision will be made by the Director of the EAB for Class 2 developments to either issue a licence with limits, terms, and conditions, or to refuse a licence. In the event a licence with conditions is granted, the MMF expects that we would be provided capacity funding to comment on these conditions.

1.3 Environmental Assessments and Consultation with the Manitoba Métis Federation

There is a natural convergence between the conduct of an environmental assessment process and the Crown's Duty to Consult and if necessary, accommodate Indigenous peoples for adverse effects to their rights (Bankes, 2009). Broadly, the environmental review process is often the only vehicle used by the Crown to identify and predict whether a proposed natural resources development project should proceed.

The Crown's Duty to Consult is triggered when the Crown, as represented by Canada and/or a Province, "has knowledge, real or constructive, of the potential existence of the Aboriginal right or title and contemplates conduct that might adversely affect" (*Haida Nation v. British Columbia [Minister of Forests]*, 2004 SCC 73, [2004] 3 SCR 511, para. 35) that right. Consultation must always be conducted "through a meaningful process" and with "the intention of substantially addressing [Aboriginal] concerns" (*Haida Nation v. British Columbia [Minister of Forests]*, 2004 SCC 73, [2004] 3 SCR 511, para. 42). "Consultation that excludes from the outset any form of accommodation would be meaningless" (*Mikisew Cree First Nation v. Canada*, 2005, para. 54). The 'conduct' of the Crown that may result in a negative effect to a Métis right, claim or interest includes decisions to approve the construction and operation of natural resource development projects, such as a transmission line.

The conduct of environmental assessment processes is underpinned by the notion that a rational scientific method provides the basis for their execution and that "in order to be credible, the [EA] process must be based on scientific objectives, modeling and experimentation, quantified impact predictions and hypothesis-testing" (Noble, 2010).

In Canada, the requirement for the conduct of an environmental assessment is codified within legislation, both federal and provincial across the country. However, legislation setting out the Crown's expectations on the requirements of the environmental assessment process, including scope, procedures, and methods, are not

explicit with respect to the identification of adverse effects to Métis rights, claims or interests. Despite this lack of explicit guidelines, both federal and provincial regulatory authorities often rely on the results of the environmental assessment process as a resource to assist in predicting and managing adverse effects to Métis rights, claims or interests.

Consultation with the MMF, interwoven into the regulatory review process, can assist in the identification of impacts to Manitoba Métis rights, claims and interests and assist the Crown in its decision about whether a project should proceed. In the case of the EAP for the PACE project, meaningful consultation with the MMF can also assist Manitoba Hydro in preparing mitigation measures, and follow-up plans, including monitoring.

Furthermore, Manitoba Hydro should take note of that on July 6, 2021, Canada and the MMF signed Canada's first Métis self-government agreement that gives immediate recognition to an existing Métis government, namely to the Manitoba Métis Federation as the existing democratically elected government of the Manitoba Métis. This Agreement will be followed by a Treaty between the MMF and Canada and ensures that the MMF will continue to provide responsible and accountable self-government for the Manitoba Métis. This further reinforces the need for Manitoba Hydro to adopt a distinctions-based approach when advancing consultation for current and future projects.

2.0 MMF EA Review for the Wash'ake Mayzoon Station

2.1 Concerns with the Indigenous Engagement Process

Indigenous Engagement Process Background

Manitoba Hydro's rationale for engaging the MMF is appropriate in that 1) Manitoba Métis Citizens have an interest in the projects (BP6 & BP7 and PACE project phases 1 & 2), 2) there exists the **strong** potential for adverse impacts related to the projects, and 3) there exists a historical and contemporary connection to the study area.

Manitoba Hydro states that the Indigenous Engagement Process (IEP) for the PACE and BP6 & BP7 projects was designed to '*engage Indigenous communities early in the process and at every stage… (and) was adaptive and flexible, with opportunities for input provided to meet the specific context and needs of each group*'. Furthermore, the IEP states that '*engagement with Métis people for this Project was facilitated primarily through the Manitoba Métis Federation (MMF)*'.

The principles guiding Manitoba Hydro's approach to Indigenous engagement for the PACE project include:

- Traditional territories and activities important to Indigenous peoples' way of life and culture should be acknowledged, valued and protected.
- The diversity of Indigenous cultures and worldviews should be understood and appreciated.
- Manitoba Hydro should work with Indigenous communities to better understand perspectives and determine mutual approaches to address concerns and build relationships.

- Indigenous communities should be provided opportunities to communicate early in the process and on an ongoing basis.
- Indigenous communities should be involved in the decision-making process and should understand how their input influenced decision-making.

The IEP also states the following specific goals:

- Continue to build and strengthen working relationships with Indigenous communities in Manitoba.
- Provide opportunities for Indigenous communities to have meaningful input and contributions to the project.
- Provide opportunities for Indigenous communities to participate in an on-going engagement process through Indigenous Community and Assessment Coordinator (ICAC) positions for multiple projects in the Portage la Prairie area.
- Provide opportunities for Indigenous communities potentially impacted by projects to benefit economically from that project through employment opportunities and use of local businesses.

MMF's Assessment of the Adequacy of the EA Chapter Related to IEP

On July 6, 2021, Canada and the MMF signed Canada's first Métis self-government agreement that gives immediate recognition to an existing Métis government, namely, to the Manitoba Métis Federation as the existing democratically elected government of the Manitoba Métis. This Agreement will be followed by a Treaty between the MMF and Canada and ensures that the MMF will continue to provide responsible and accountable self-government.

As a result of this agreement, there are some updates to how Manitoba Hydro should refer to the Manitoba Métis Federation in writing (note the é) when referencing the democratically elected collective governing body of the Manitoba Métis (please see section 3.1 for more details).

However, in response to Manitoba Hydro's request to comment on whether the EA chapter related to the IEP adequately 1) captures the effects of the Wash'ake Mayzoon Station project on activities important to the Manitoba Métis and 2) adequately draws upon information provided by the MMF in various formats, the MMF's answer is unequivocally '**no**' for the following reasons:

1. Manitoba Hydro held meetings with MMF staff through the Fall and Winter 2020 with the aim of developing a contribution agreement to support a more fulsome consultation process on the suite of proposed transmission enhancement projects with the MMF. The MMF received a draft contribution agreement from Manitoba Hydro in December 2020. The agreement proposed that a series of engagement activities be carried out by the MMF over the next two months. However, because the MMF does not have an Energy Liaison employed at this time, it was not possible to mobilize to meet these aggressive timelines. We consider the contribution agreement negotiation process to be ongoing though some of the originally proposed timelines cannot be met.

2. On February 18, 2021, representatives from the Manitoba Métis Federation (MMF) participated in a meeting related to the BP6 and BP7 project organized by Manitoba Hydro. During the meeting, MMF representatives shared concerns that proper consultation to that point had not occurred. MMF representatives shared that they participated in the meetings in good faith, but that a full and meaningful consultation process is required; the MMF still needs to consult with Manitoba Métis Citizens to understand their perceptions and the potential for project impacts. The MMF representatives added that they understand that there are pressures to move things forward, but they cannot participate fully without the perspective of potentially impacted Manitoba Métis Citizens.

3. As it relates to the Wash'ake Mayzoon Station project, the MMF asserts that the engagement and consultation process remains flawed in that the timelines for consultation have been far too restrictive for the MMF to conduct meaningful consultation with potentially impacted Manitoba Métis Citizens. Manitoba Hydro is aware that COVID-19 pandemic social distancing measures have been an enormous barrier for meaningful consultation activities and the tight project timelines given the circumstances, seems to contradict the spirit and intent of the principles and goals of Manitoba Hydro's IEP for the projects.

4. Manitoba Hydro's reliance on email notifications, newsletters and virtual meetings with the MMF should not be considered as adequate consultation. Furthermore, adequate time and resources have not been provided to enable proper engagement between the MMF and Manitoba Métis Citizens - activities which would have enabled the collection of needed data to inform the level of impacts that this project and others, including the BP6/BP7 and phase 2 of the PACE project will have on Manitoba Métis Citizens' rights, claims and/or interests. As a result, the MMF has limited information at its disposal with which to draw upon to fully, and meaningfully, participate in this review and commenting process. It is instead forced to draw upon information from past projects unrelated to the current transmission enhancements associated with BP6 & BP7, and phases 1 & 2 of the PACE project.

5. Manitoba Hydro continues to advance processes that do not provide for a distinctions-based approach to project consultation that recognizes the distinct histories, cultures, rights, claims and/or interests of the Manitoba Métis and First Nations. There is only one Métis government in Manitoba, the MMF. Appropriate distinctions-based consultation processes in the province should be advanced separately and labeled as '*Métis Engagement*' and '*First Nations Engagement*' and not simply lumped together as '*Indigenous Engagement*'. The failure by Manitoba Hydro to do this is a serious flaw that undermines the validity of its consultation process.

2.2 Review of the Traditional Practices, Culture, and Heritage Chapter

MMF's Review Summary

Manitoba Hydro requested the MMF respond to the following questions in our review of the Wash'ake Mayzoon Station project EA:

- *Have we captured effects to activities important to your community accurately?*
- *We have drawn upon information you have provided in various formats. Have we taken anything out of context?*
- *Do you have a preference for how to handle cumulative effects?*
- *What have we missed?*
- *Are we being respectful in the way information is presented?*
- *Any further suggestions for mitigation for the Project?*

The MMF has limited information at its disposal with which to draw upon to fully, and meaningfully, participate in this review and commenting process. We have, instead, drawn upon information from past projects unrelated to the current transmission enhancements associated with BP6 & BP7, and phases 1 & 2 of the PACE project to inform this process. Because of this, our response to Manitoba Hydro's questions can be summarized as "**no**", with the following additional detail related to each of the above bullets:

- Manitoba Hydro has not accurately captured the project effects that are important to the Manitoba Métis community, therefore it is considered to be incomplete.

- The information you have drawn upon in the EA Chapter is not taken out of context, but is considered to be incomplete.

- We have described our preference for how cumulative effects are handled further in this section of our review.

- You have missed assessing the effects with the Manitoba Métis community in the project area specifically.

- The MMF feels this is not a respectful way to present information, as Manitoba Hydro has not done it's due diligence in ensuring the MMF is able to collect project-specific traditional knowledge and developing Métis-specific mitigation measures.

- We would like to engage in a process for mitigation planning as described in section 4.0 of this report.

We take this opportunity in the following subsections to draw Manitoba Hydro's attention, again, to the information that the MMF has gathered from past, unrelated projects, which demonstrates the high potential for impact to the Manitoba Métis. This is the basis of our rationale for requesting more fulsome consultation and engagement occur as input to the current EA.

Furthermore, while the following information is not specific to the PACE phase 1 & 2 projects, nor the BP6 & BP7 projects, it is relevant to transmission corridor projects in general. It has been provided to Manitoba Hydro at numerous junctures during past EA processes and it remains unaddressed. As a result, it should be considered relevant to the impacts of both phases of the PACE project, including the Wash'ake Mayzoon Station project.

Potential for Impact to Métis Rights, Claims and Interests

The MMF has a database of Métis Knowledge features that were recorded by the Manitoba Métis through past studies. While data has not been collected specifically to inform the Wash'ake Mayzoon Station project as per the reasons outlined above, the database is a useful starting point to begin to understand the Manitoba Métis' rights, interests, and values in the Project area in addition to the cumulative impacts of transmission line enhancements as represented in the BP6 & BP7 projects and phases 1 & 2 of the PACE project.

Our Métis Knowledge studies are conducted using a rigorous, legally defensible, methodology known as land use and occupancy mapping. These studies involve a desktop mapping exercise with individual Manitoba Métis Citizens and an interview that asks the land users to share their oral history and give their opinions on a specific project development. The data we collect is not comprehensive of all Métis Knowledge in an area. This is because we have not yet had the capacity to interview the entire population of Métis land users and because each interview is only a couple hours long and it is impossible to map each person's entire lifetime of knowledge in that time frame. For this reason, our database should be thought of as a snapshot of some Manitoba Métis Citizens knowledge in the area.

We have assessed our data and prepared a map in Figure 5 which summarizes previously collected land use, occupancy, and ecological knowledge features in the Portage La Prairie area. This map was initially submitted as part of the MMF's review of draft EA chapters for the BP6 & BP7 projects. There were ten Citizens who had previously mapped some of their knowledge in the area. Collectively these participants recorded over 80 features in the areas overlapping or immediately surrounding the proposed routes.

The Métis Knowledge in the Portage La Prairie region has been summarized in the following categories:

- Reported change to water quality (1 participant)
- Fishing – walleye, pike, carp, mariah (burbot), sturgeon, catfish (8 participants)
- Hunting – grouse, waterfowl, turkey, deer (5 participants)
- Ecological knowledge – deer birthing area, plant gathering, deer hunting (1 participant)
- Historic trapping (3 participants)

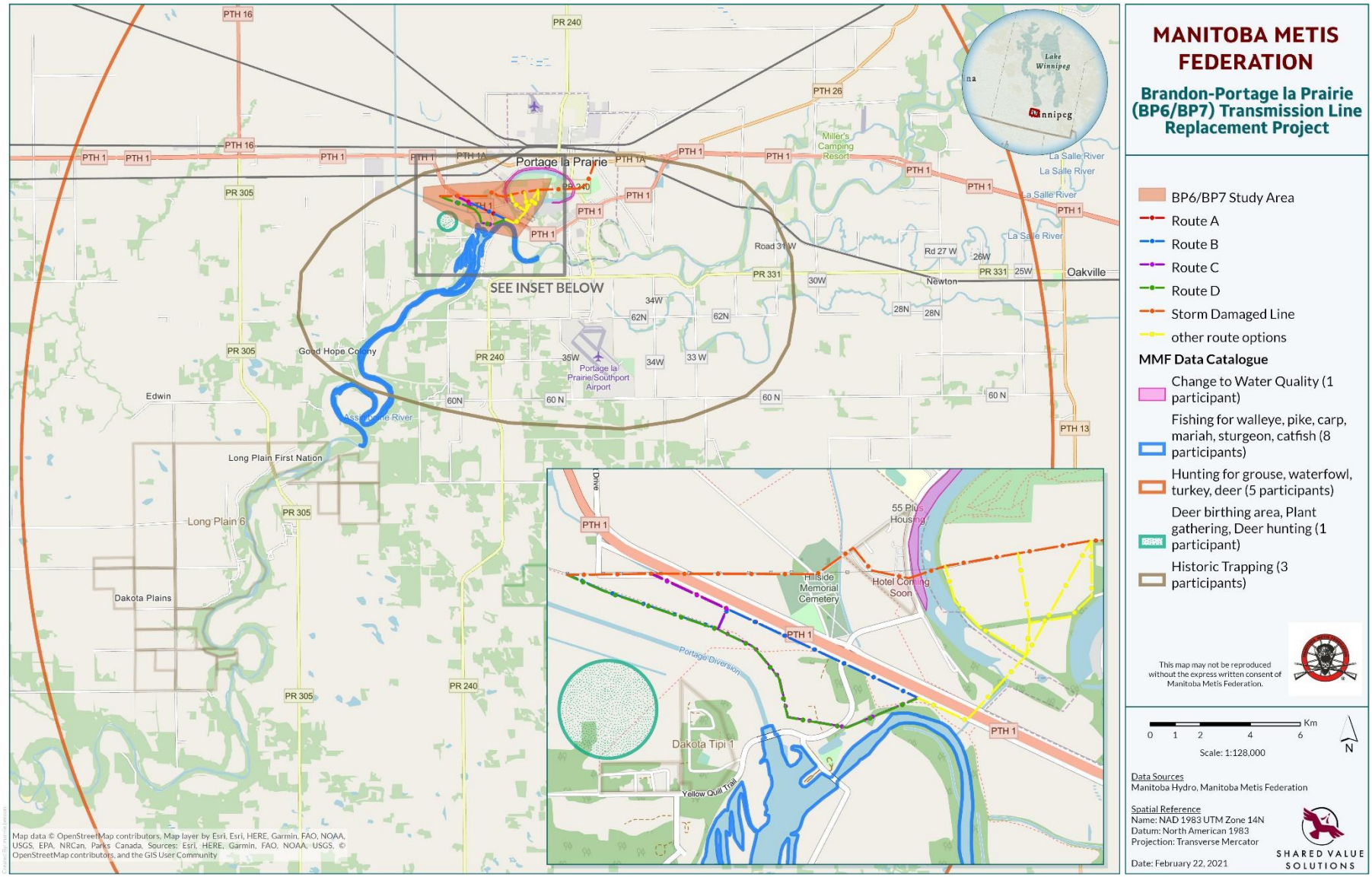


Figure 5. Previously Mapped Manitoba Métis Community Knowledge in the Portage La Praire Area

Previously Recorded Métis Concerns

Because of timelines and lack of resources, the MMF has been unable to engage Manitoba Métis Citizens in any community meetings or primary research with relation to the Wash'ake Mayzoon Station project. However, we have looked to the concerns that the community voiced around previous transmission line developments and compiled those here for Manitoba Hydro's consideration.

The MMF has previously commissioned the following studies:

- Métis Land Use and Occupancy Study as input to the Manitoba to Minnesota Transmission Line Project by Calliou Group in 2017
- Métis Land Use and Occupancy Study as input to the Birtle Transmission Project by MNP in 2017
- Métis Land Occupancy and Use Study as input to the Bipole III Transmission Line Project by SVS in 2015.

We have summarized the concerns from these reports which have applicability for any transmission line development below.

Concerns Identified Through the MMTP Métis Land Use and Occupancy Study

Concerns about Impacts to Métis Rights, Claims and Interests

The Manitoba Minnesota transmission project (MMTP) falls on portions of the Métis Homeland in southern Manitoba. This report describes the history of the Manitoba Métis in southern Manitoba, including reference to the Goodon decision where the court found a historic, rights-bearing Métis community to have existed in "all of the area within the present boundaries of southern Manitoba from the present-day City of Winnipeg and extending south to the United States and northwest to the Province of Saskatchewan" (para.48).

Concerns about Métis Valued Components being Considered in the Process

Based on our initial review of the Project Scoping Document for the Manitoba Minnesota Transmission Line Project, we felt that it did not adequately describe the valued components (VCs) necessary to fully identify potential environmental effects to Métis rights, claims and interests. The MMF worked with our legal counsel and consultants to define potential Métis Specific Interests (MSIs), including VCs related to Métis rights and interests and then consulted the Manitoba Métis about the MSIs. We decided that "Harvesting" and "Available Lands" would be measurable, have available information and potentially be affected by the Project.

In 2017, Calliou Group examined the potential effects of the MMTP on lands available for Manitoba Métis use and harvesting using these two Métis Valued Components as a framework to assess the baseline data we collected. They conducted 47 in-person surveys and 121 paper surveys.

Concerns that Contiguous Unoccupied Crown Land will not be Maintained

The report goes on to explain how important unoccupied land is to the Manitoba Métis as it represents areas where they have access to exercise their Métis rights that does not require permission. On all other land types, the exercise of Métis rights can be restricted from time to time under certain circumstances.

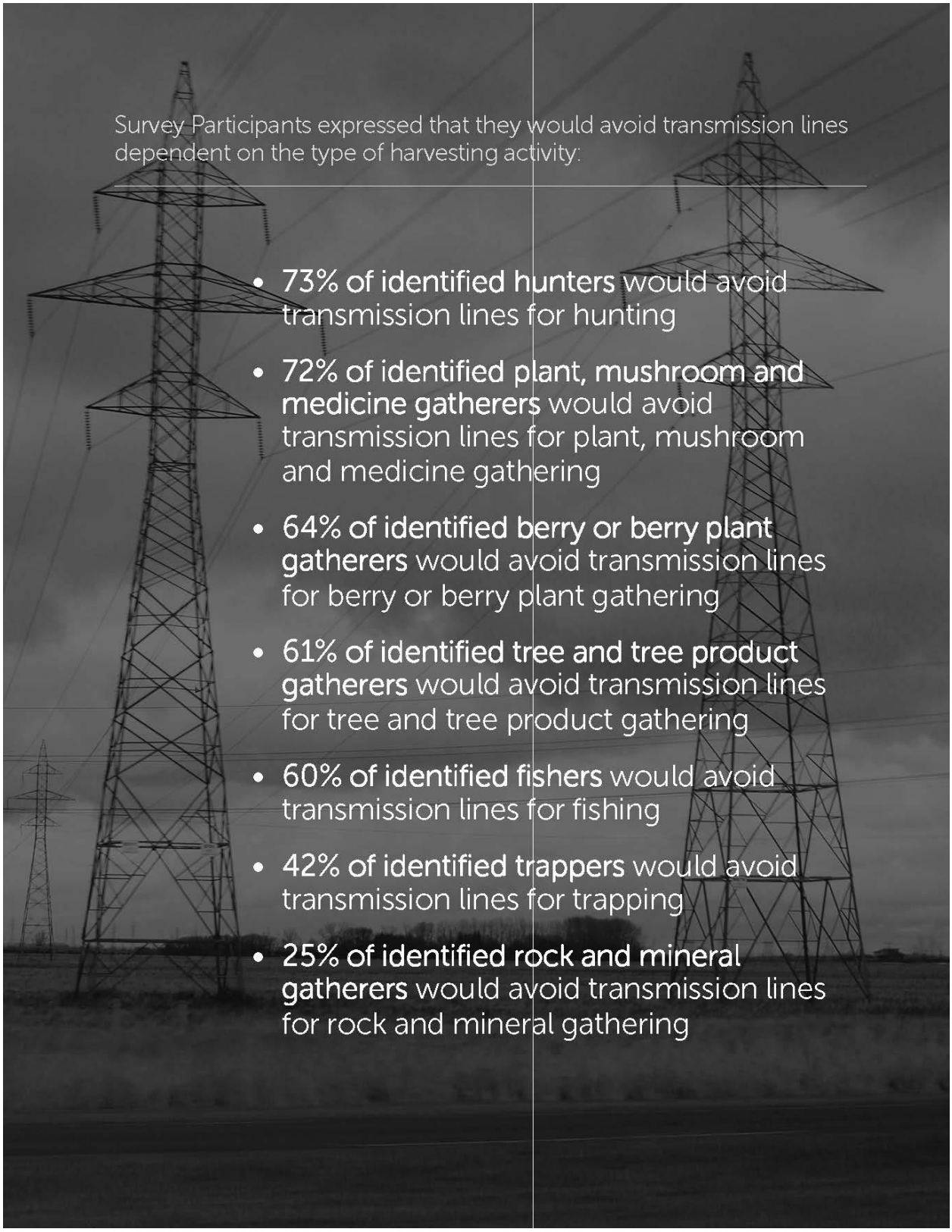
The study pointed out that the Manitoba Minnesota Transmission Project would result in a further reduction of the Manitoba Métis' ability to access unoccupied Crown land.

The Manitoba Métis would have the same concerns with the potential for loss of access to Unoccupied Crown Land with the BP6/BP7 projects and phase 2 of the PACE project and requests that route selection take in to account the objective to maintain as much contiguous Unoccupied Crown Land as possible.

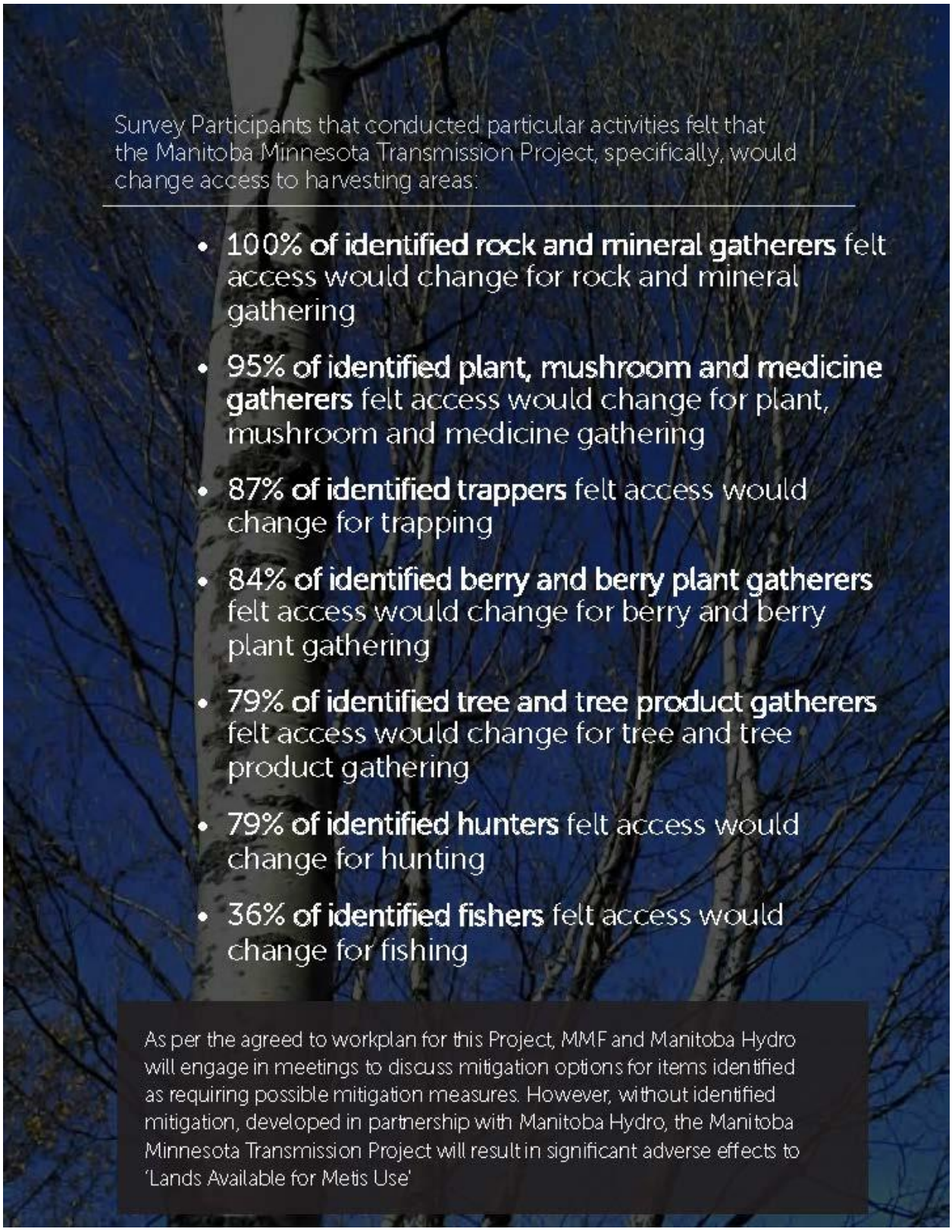
Potential for Impact to Lands for Métis Use

Through the survey conducted for this study, the Manitoba Métis respondents reported that they would avoid transmission lines for future harvesting. They also said that they felt their access to lands for their harvesting would be affected. These findings are summarized in more detail on the next two pages.

Effective engagement on the Wash'ake Mayzoon Station project would include providing the MMF an opportunity to assess whether the Manitoba Métis Citizens who use the land near the project have similar or different opinions regarding the site and the potential for adverse effects.



Calliou Group (2017). Métis Land Use and Occupancy Study: Manitoba to Minnesota Transmission Line Project



Calliou Group (2017). Métis Land Use and Occupancy Study: Manitoba to Minnesota Transmission Line Project

Concerns Identified Through the Birtle Métis Land Use and Occupancy Study

The Métis Land Use and Occupancy Study completed by MNP in 2017 includes information related to Métis land use and connection to the Ste. Madeleine site and area, Land Available for Métis use, and Harvesting in the vicinity of the Birtle Transmission Line Project. This study involved seven interviews with Manitoba Métis Citizens and a focus group with 30 Manitoba Métis Citizens and political representatives which included dissemination of surveys, 16 of which were completed and returned.

Potential Changes to Wildlife Habitat and the Ability Harvest in the Area

The participants in this study indicated several concerns related to the transmission line development largely having to do with the potential for change to wildlife habitat and to their ability to harvest. Some participants noted that the Birtle study area had just begun to be rehabilitated from previous development and they worried that the transmission line would disturb the wildlife that had returned to the area. One Manitoba Métis Citizen who participated in the study explained:

> *"[t]he area is starting to be re-habitated by animals again […] [i]t's going to affect the plant life. It's going to affect the animal life and the habitat. It's going to affect the water."*

Cumulative Effects of Development on the Ability to Harvest

Another participant discussed the cumulative effects they have experienced:

> *"[t]hat is what happened to the environment – remember where people used to hunt, they can't hunt anymore because of those bulldozers and all that … knocked down bushes; built new roads and there is no wildlife there anymore."*

Similar concerns would be applicable for transmission line enhancement projects including the Wash'ake Mayzoon Station project, BP6/BP7 projects, and phase 2 of the PACE project. Though there was an existing transmission line, the area was naturalized again to a certain degree and will be disturbed again in the construction of the line. Manitoba Hydro should also examine and address the cumulative effects of this transmission line development on the Manitoba Métis.

Concerns Identified through the Bipole III Métis Land Occupancy and Use Study

A Métis Traditional Knowledge and Land Use Study (TKLUS) (Larcombe, 2012) was first commissioned and completed by the MMF with funding from Manitoba Hydro to identify Métis rights and interests that would potentially be impacted by the Bipole III transmission line project. The findings of the TLUKS, which were derived from 735 mail-out surveys and 49 in-person map biography and semi-structured interviews, concluded that there was extensive traditional use in the Bipole III study area. Much of this use was concentrated on the Breadbasket Region of Manitoba.

Shared Value Solutions' (SVS) built on the initial TLUKS by conducting more focused, representative research specific to Manitoba Métis Citizens who use the features, areas, activities, or facilities within the Breadbasket Region. They completed 58 desktop mapping interviews and 12 follow up field interviews

with a sub-sample of the participants. These results were reported on in the 2015 Métis Land Occupancy and Use Study.

Numerous concerns related to transmission line project impacts.

The Manitoba Métis Citizens who participated in the 2015 study had many concerns regarding the transmission line development. The quotes from the participants and summary that accompanies detailing these concerns is chapters long in that report. However, some of the main concerns identified include the following:

- Aquatic harvesting and water quality
- Chemical spraying
- Human population increase pressures on harvesting
- Impacts to animal health and habitat
- Sensitive Habitat such as a swamp
- Access to historic and culturally important harvesting areas and impacts on gathering berries
- Economic impacts
- Effects on commercial trapping
- Wood harvesting impacts
- Challenges presented by needing to change harvesting locations
- Cultural impacts
- Changes to the landscape and foreign objects
- Aesthetic and visual concerns
- Human health impacts and noise concerns
- Safety

Fears and psycho-social concerns

This is an example of a direct quote from one of the study participants:

> *"We had power lines in the back there. And we never liked to pick berries. You could always hear, and everybody always told us the people who lived in our house along there, none of them ever had any kids. It was because of the hydro lines they said, eh? So who knows whether it was or not, but all those things like that stay in mind, and when I pick berries, I didn't like picking near the hydro lines either. It was just the, they were ugly to look at. They don't represent the sacred, like, peaceful area to gather our stuff. I would never go pick by the hydro lines or hang out. And now they've got a snow route going right down the highway line, hydro lines."*

This quote demonstrates some of the fears and uncertainties that the Manitoba Métis hold about transmission line developments in general. By consulting with the MMF meaningfully on the these projects, Manitoba Hydro will have the opportunity to understand and address these sorts of concerns directly as they did with the Bipole III project.

Concerns with the Administration of Monitoring Programs

Several participants in this study suggested that there was an opportunity for Manitoba Métis Citizens to support with 'boots on the ground' monitoring. There were concerns with monitoring programs that are led by people who do not know the area well as described in this quote from a participant:

> *"And that's how it should be, like some guy sitting in the office in Winnipeg, at Portage and Main, should [not] be making the calls about what's happening right here in our backyard. There should be somebody locally, no matter if there's one from each town, one each district, but there should be somebody there doing the monitoring."*

The MMF used the study results to identify Environmentally Sensitive Sites (ESS) that required protection during construction, operation, and maintenance of the Bipole III. Additional mitigation, offsetting, or accommodation measures for the ESS were recommended.

Manitoba Hydro engaged the MMF to discuss these concerns and adjust its Environmental Protection Plans (EPP) based on this input in a series of collaborative workshops, meetings, and communications with the MMF. The MMF would request a similar process be undertaken for all transmission enhancement projects including phases 1 & 2 of the PACE project and the BP6 & BP7 projects.

MMF Preference for Handling Cumulative Effects

As it relates to the MMF's preference for how to handle the cumulative effects of the Wash'ake Mayzoon Station project, the splitting of transmission enhancements project phases into multiple EAs despite their interrelation and interdependence, specifically and intentionally excludes an assessment of the cumulative impacts of these projects on the rights, claims and/or interests of the Manitoba Métis.

Planned enhancements of transmission lines in the Portage La Prairie - Brandon corridor need to be assessed as a whole due to their interrelation and interdependence. This assessment needs to include the provision of adequate resources and time for the MMF and Manitoba Métis Citizens to conduct a rigorous analysis of the cumulative impacts of these projects to inform their development.

3.0 Manitoba Métis

3.1 Manitoba Hydro's Description of the MMF

As noted in section 2.1, on July 6, 2021, Canada and the MMF signed Canada's first Métis self-government agreement that gives immediate recognition to an existing Métis government, namely, to the Manitoba Métis Federation as the existing democratically elected government of the Manitoba Métis. This Agreement will be followed by a Treaty between the MMF and Canada and ensures that the MMF will continue to provide responsible and accountable self-government. This information is provided as context to Manitoba Hydro for any future project under consideration. The description of the MMF's governance structure in the draft Wash'ake Mayzoon EA chapter should be updated with the content in

section 3.3 below. Furthermore, we wish to provide the following additional information in an effort to continue building Manitoba Hydro's awareness of the history and identity of the Manitoba Métis.

3.2 History and Identity

The Métis Nation—as a distinct Indigenous people—evolved out of relations between European men and First Nations women who were brought together as a result of the early fur trade in the Northwest. In the eighteenth century, both the Hudson Bay Company and the Northwest Company created a series of trading posts that stretched across the upper Great Lakes, through the western plains, and into the northern boreal forest. These posts and fur trade activities brought European and Indigenous peoples into contact. Inevitably, unions between European men—explorers, fur traders, and pioneers—and Indigenous women were consummated. The children of these families developed their own collective identity and political community so that "[w]thin a few generations, the descendants of these unions developed a culture distinct from their European and Indian forebears" and the Métis Nation was born—a new people, indigenous to the western territories *(Alberta (Aboriginal Affairs and Northern Development) v. Cunningham*, [2011] 2 SCR 670 at para. 5; 2008 MBPC *R. v. Goodon*, 59 at para. 25; *Manitoba Metis Federation Inc. v. Canada (Attorney General)*, [2013] 1 SCR 623 at para. 2).

The Métis led a mixed way of life. "In early times, the Métis were mostly nomadic. Later, they established permanent settlements centered on hunting, trading and agriculture" (*Alberta v. Cunningham*, at para. 5). The Métis were employed by both of the fur trades' major players, the Hudson's Bay and Northwest companies. By the early 19th century, they had become a major component of both firms' workforces. At the same time, however, the Métis became extensively involved in the buffalo hunt. As a people, their economy was diverse; combining as it did, living off the land in the Aboriginal fashion with wage labour (*MMF v. Canada*, at para. 29).

It was in the Red River, in reaction to a new wave of European immigration, that the Métis Nation first came into its own. Since the early 1800s, the Manitoba Métis — as a part of the larger Métis Nation—has asserted itself as a distinct Indigenous collective with rights and interests in its Homeland. The Manitoba Métis share a language (Michif), national symbols (infinity flags), culture (i.e., music, dance, dress, crafts), as well as a special relationship with its territory that is centered in Manitoba and extends beyond the present-day provincial boundaries.

The Manitoba Métis has been confirmed by the courts as being a distinctive Indigenous community, with rights that are recognized and affirmed in section 35 of the *Constitution Act, 1982*. In *R. v. Goodon*, the Manitoba court held that:

The Métis community of Western Canada has its own distinctive identity […] the Métis created a large inter-related community that included numerous settlements located in present-day southwestern Manitoba, into Saskatchewan and including the northern Midwest United States. This area was one community […] The Métis community today in Manitoba is a well-organized and vibrant community (paras. 46-47; 52).

This proud independent Métis population constituted a historic rights-bearing community in present day Manitoba and beyond, which encompassed "all of the area within the present boundaries of southern Manitoba from the present-day City of Winnipeg and extending south to the United States" (para. 48).

The heart of the historic rights-bearing Métis community in southern Manitoba was the Red River Settlement; however, the Manitoba Métis also developed other settlements and relied on various locations along strategic fur trade routes. During the early part of the 19th century, these included various posts of varying size and scale spanning the Northwest Company and the Hudson Bay Company collection and distribution networks.

More specifically, in relation to the emergence of the Métis—as a distinct Indigenous Nation in Manitoba—the Supreme Court of Canada wrote the following in the *MMF v. Canada* case:

> "[21] The story begins with the Aboriginal peoples who inhabited what is now the province of Manitoba—the Cree and other less populous nations. In the late 17th century, European adventurers and explorers passed through. The lands were claimed nominally by England which granted the Hudson's Bay Company, a company of fur traders' operation of out London, control over a vast territory called Rupert's Land, which included modern Manitoba. Aboriginal peoples continued to occupy the territory. In addition to the original First Nations, a new Aboriginal group, the Métis, arose—people descended from early unions between European adventurers and traders, and Aboriginal women. In the early days, the descendants of English-speaking parents were referred to as half-breeds, while those with French roots were called Métis.
>
> [22] A large—by the standards of the time—settlement developed at the forks of the Red and Assiniboine Rivers on land granted to Lord Selkirk by the Hudson's Bay Company in 1811. By 1869, the settlement consisted of 12,000 people, under the governance of Hudson's Bay Company.
>
> [23] In 1869, the Red River Settlement was a vibrant community, with a free enterprise system and established judicial and civic institutions, centred on the retail stores, hotels, trading undertakings and saloons of what is now downtown Winnipeg. The Métis were the dominant demographic group in the Settlement, comprising around 85 percent of the population [approximately 10,000 Métis], and held leadership positions in business, church and government."

The fur trade was vital to the ethnogenesis of the Métis Nation and was active in Manitoba from at least the late 1770s, and numerous posts and outposts were established along cart trails and waterways throughout the province. These trails and waterways were crucial transportation networks for the fur trade (Jones 2014; 2) and were the foundation of the Manitoba Métis' extensive use of the lands and waters throughout the province. In the early 20th century, the Manitoba Métis continued to significantly participate in the commercial fisheries and in trapping activities, which is well documented in Provincial government records.

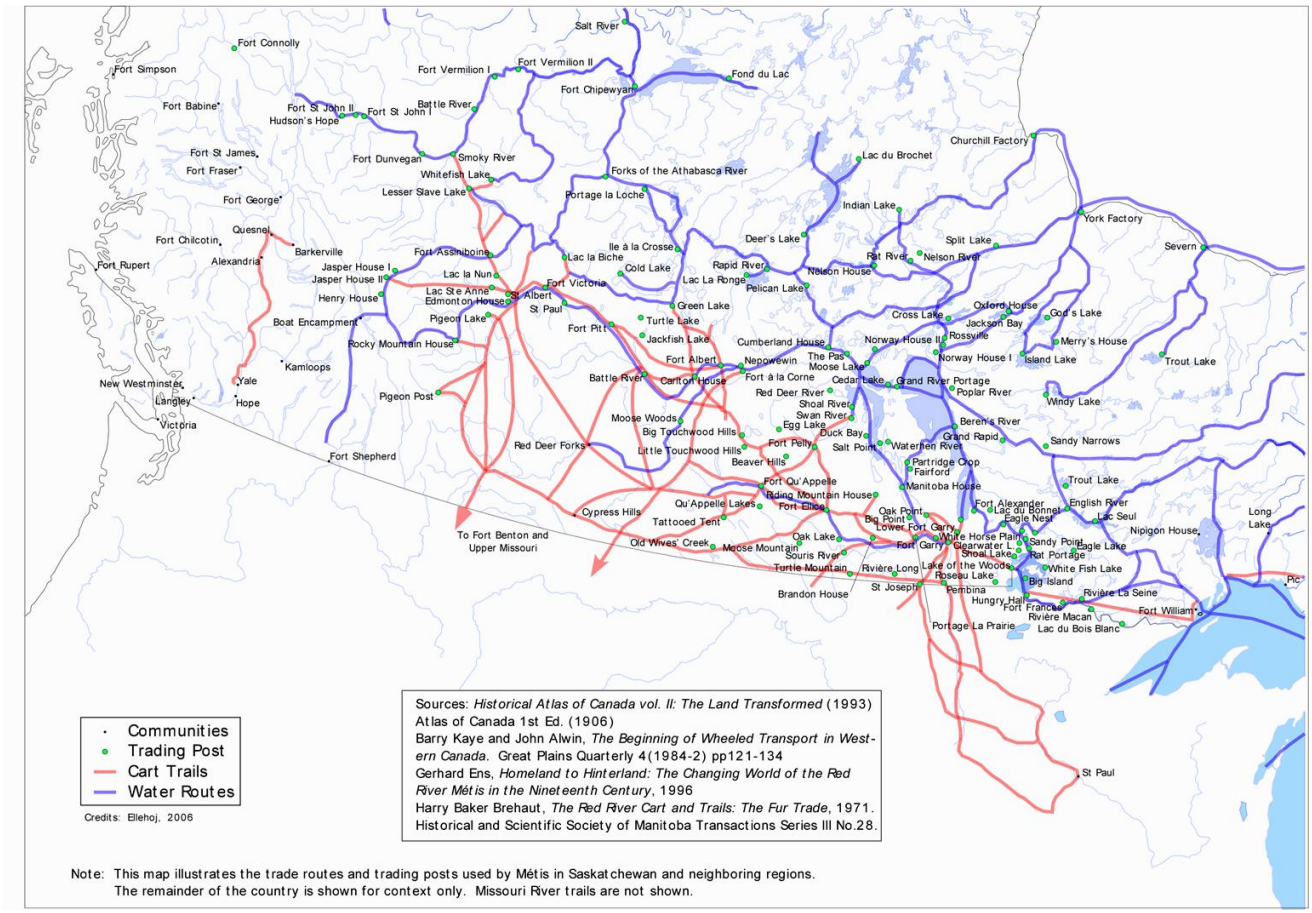


Figure 2. The Fur Trade Network: Routes and Posts Prior to 1870

3.3 Manitoba Métis Federation

The MMF is the democratically elected government of the Manitoba Métis. The MMF is duly authorized by the Citizens of the Manitoba Métis for the purposes of dealing with their collective Métis rights, claims, and interests, including conducting consultations and negotiating accommodations (as per MMF Resolution No. 8). While the MMF was initially formed in 1967, its origins lie in the 18th century with the birth of the Manitoba Métis and in the legal and political structures that developed with it. Since the birth of the Métis people in the Red River Valley, the Manitoba Métis—as a part of the larger Métis Nation—has asserted and exercised its inherent right of self-government. For the last 50 years, the MMF has represented the Manitoba Métis at the provincial and national levels.

During this same period, the MMF has built a sophisticated, democratic, and effective Métis governance structure that represents the Manitoba Métis at the local, regional, and provincial levels throughout Manitoba. The MMF was created to be the self-government representative of the Manitoba Métis—as reflected in the Preamble of the MMF's Constitution (also known as the MMF Bylaws):

> "WHEREAS, the Manitoba Métis Federation Inc. has been created to be the democratic and self-governing representative body of the Manitoba Métis."

In addition, the purpose "to provide responsible and accountable governance on behalf of the Manitoba Métis using the constitutional authorities delegated by its citizens" is embedded within the MMF's objectives, as set out in the MMF Constitution as follows:

> "To promote and instill pride in the history and culture of the Métis people.
>
> To educate members with respect to their legal, political, social and other rights.
>
> To promote the participation and representation of the Métis people in key political and economic bodies and organizations.
>
> To promote the political, legal, social and economic interests and rights of its citizens.
>
> To provide responsible and accountable governance on behalf of the Manitoba Métis community using the constitutional authorities delegated by its members."

The MMF is organized and operated based on centralized democratic principles, some key aspects of which are described below.

President: The President is the leader and spokesperson of the MMF. The President is elected in a province-wide ballot-box election every four years and is responsible for overseeing the day-to-day operations of the MMF.

Cabinet: The MMF Cabinet leads, manages, and guides the policies, objectives, and strategic direction of the MMF and its subsidiaries. All 23 Cabinet members are democratically elected by Manitoba Métis Citizens.

Regions: The MMF is organized into seven regional associations or "Regions" throughout the province (Figure 3.): The Southeast Region, the Winnipeg Region, the Southwest Region, the Interlake Region, the Northwest Region, the Pas Region, and the Thompson Region. Each Region is administered by a Vice-President and two executive officers, all of whom sit on the MMF's Cabinet. Each Region has an office which delivers programs and services to their specific geographic area.

Locals: Within each Region are various area-specific "Locals" which are administered by a chairperson, a vice-chairperson and a secretary-treasurer. Locals must have at least nine citizens and meet at least four times a year to remain active. There are approximately 140 MMF Locals across Manitoba.

While the MMF has created an effective governance structure to represent the Manitoba Métis at the local, regional, and provincial levels, it is important to bear in mind that there is only one large, geographically dispersed, Manitoba Métis Community. Manitoba Métis Citizens live, work and exercise their section 35 rights throughout and beyond the province of Manitoba.

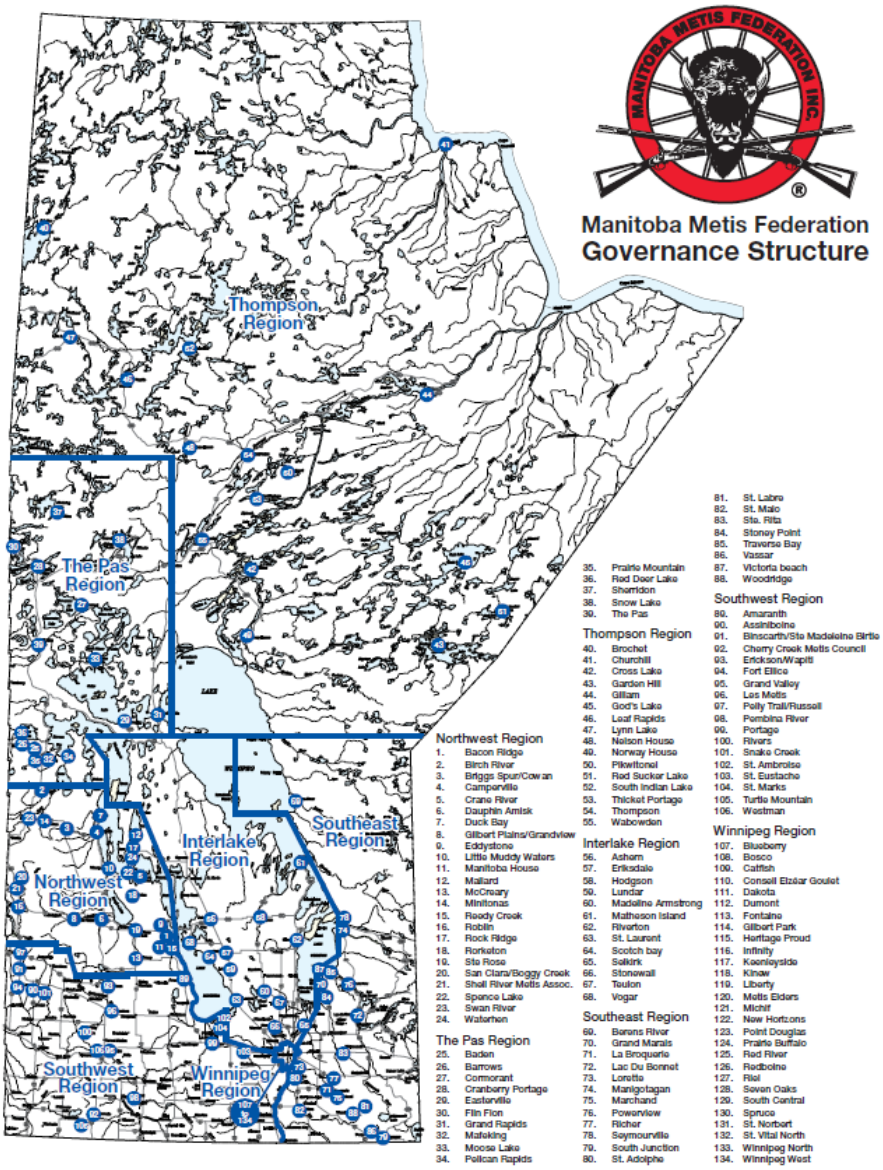


Figure 3. Manitoba Métis Federation (MMF) Regions

3.4 MMF Resolution No. 8

Among its many responsibilities, the MMF is authorized to protect the Aboriginal rights, claims, and interests of the Métis Nation's Manitoba Métis, including those related to harvesting, traditional culture, and economic development, among others.

In 2007, the MMF Annual General Assembly unanimously adopted Resolution No. 8 that sets out the framework for engagement, consultation, and accommodation to be followed by Federal and Provincial governments, industry, and others when making decisions and developing plans and projects that may impact the Manitoba Métis. Under MMF Resolution No. 8, direction has been provided by the Manitoba Métis for the MMF Home Office to take the lead and be the main contact on all consultation undertaken with the Manitoba Métis. Resolution No. 8 reads, in part that:

> *…this assembly continue[s] to give the direction to the Provincial Home Office to take the lead and be the main contact on all consultations affecting the Métis community and to work closely with the Regions and Locals to ensure governments and industry abide by environmental and constitutional obligations to the Métis…*

The MMF Home Office works closely with the Regions and Locals to ensure the rights, interests, and perspective of the Manitoba Métis are effectively represented in matters related to consultation and accommodation.

Resolution No. 8 has five phases:

Phase 1: Notice and Response

Phase 2: Funding and Capacity

Phase 3: Engagement or Consultation

Phase 4: Partnership and Accommodation

Phase 5: Implementation

Each phase is an integral part of the Resolution No. 8 framework and proceeds logically through the stages of consultation.

3.5 Manitoba Métis Rights, Claims, and Interests

The Manitoba Métis possess Aboriginal rights, including pre-existing Aboriginal collective rights and interests in lands recognized and affirmed by section 35 of the *Constitution Act, 1982*, throughout Manitoba. The Manitoba court recognized these pre-existing, collectively held Métis rights in *R. v. Goodon* (at paras. 58; 72):

> *I conclude that there remains a contemporary community in southwest Manitoba that continues many of the traditional practices and customs of the Métis people.*
>
> *I have determined that the rights-bearing community is an area of southwestern Manitoba that includes the City of Winnipeg south to the U.S. border and west to the Saskatchewan border.*

As affirmed by the Supreme Court of Canada, such rights are "recognize[d] as part of the special aboriginal relationship to the land" (*R. v. Powley,* 2003 SCC 43, at para. 50) and are grounded on a "communal Aboriginal interest in the land that is integral to the nature of the Métis distinctive community and their

relationship to the land" (*MMF v. Canada*, at para. 5). Importantly, courts have also recognized that Métis harvesting rights may not be limited to Unoccupied Crown Lands (*R. v. Kelley*, 2007 ABQB 41, para. 65).

The Crown, as represented by the Manitoba government, has recognized some aspects of the Manitoba Métis' harvesting rights through a negotiated agreement: The *MMF-Manitoba Points of Agreement on Métis Harvesting* (2012) (the *MMF-Manitoba Harvesting Agreement*). This Agreement was signed at the MMF's 44th Annual General Assembly and "recognizes that collectively-held Métis Harvesting Rights, within the meaning of section 35 of the *Constitution Act, 1982*, exist within the [Recognized Métis Harvesting Zone], and that these rights may be exercised by Manitoba Métis Rights Holders consistent with Métis customs, practices and traditions…" (*MMF-Manitoba Harvesting Agreement*, section 1). In particular, the *MMF-Manitoba Harvesting Agreement* recognizes that Métis rights include "hunting, trapping, fishing and gathering for food and domestic use, including for social and ceremonial purposes and for greater certainty, Métis harvesting includes the harvest of timber for domestic purposes" throughout an area spanning approximately 169,584 km² (the "Métis Recognized Harvesting Area") (*MMF-Manitoba Harvesting Agreement*, section 2; Figure). The MMF further asserts rights and interests exist beyond this area, which require consultation and accommodation as well.

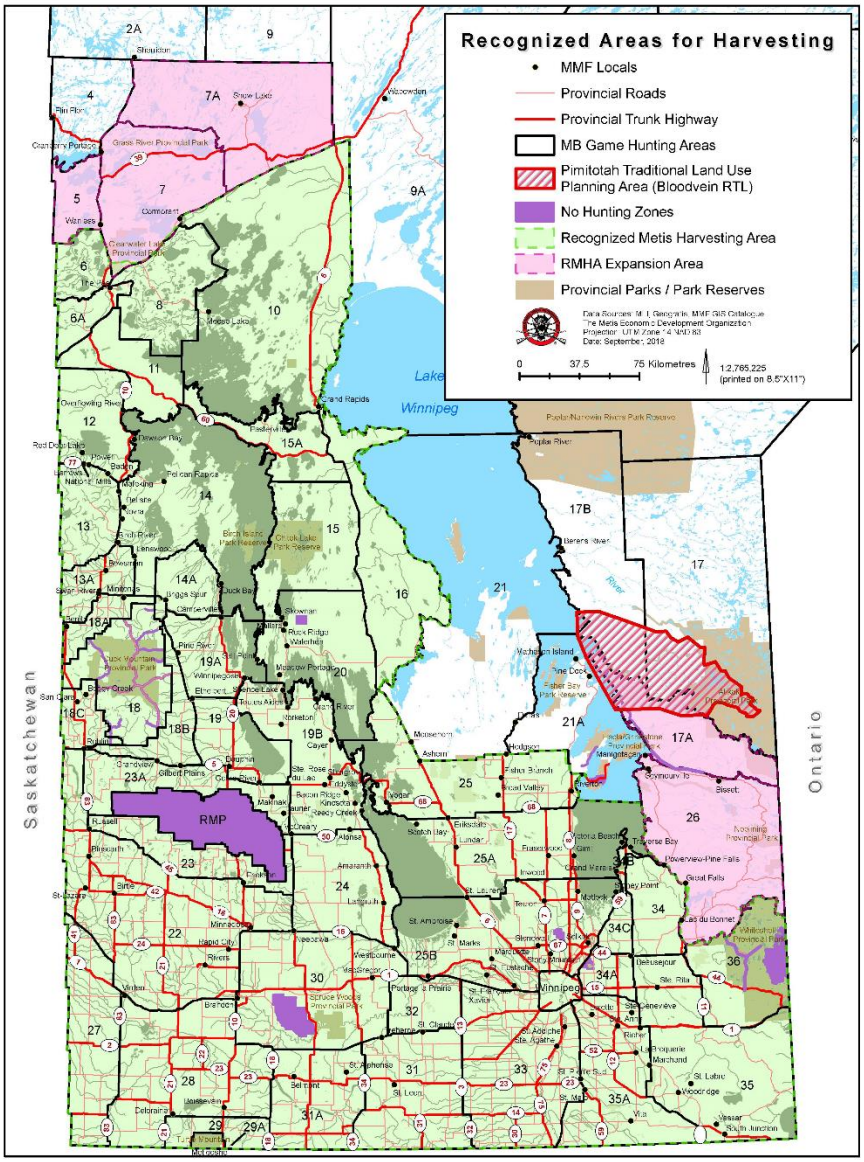


Figure 4. MMF-Manitoba Harvesting Agreement Recognized Manitoba Métis Harvesting Zones

Beyond those rights already established through litigation and recognized by agreements, the Manitoba Métis claims commercial and trade-related rights. Courts have noted that Métis claims to commercial rights remain outstanding (*R. v. Kelley* at para. 65). These claims are strong and well-founded in the historical record and the customs, practices, and traditions of the Manitoba Métis, and it is incumbent on the Crown and Proponents to take them seriously.

As noted above, the Manitoba Métis has its roots in the western fur trade (*R. v. Blais*, 2003 SCC 44 at para. 9 [*Blais*]; *R. v. Goodon* at para. 25). The Métis in Manitoba are descendants of early unions between Aboriginal women and European traders (*MMF v. Canada* at para. 21). As a distinct Métis culture developed, the Métis took up trade as a key aspect of their way of life (*R. v. Powley* at para. 10). Many Métis became independent traders, acting as middlemen between First Nations and Europeans (*R. v. Goodon* at para. 30). Others ensured their subsistence and prosperity by trading resources they themselves hunted and gathered (*R. v. Goodon* at para. 31, 33, & 71). By the mid-19th century, the Métis in Manitoba had developed the collective feeling that "the soil, the trade and the Government of the country [were] their birth rights." (*R. v. Goodon* at para. 69(f)). Commerce and trade are, and always have been, integral to the distinctive culture of the Manitoba Métis. Today, the Manitoba Métis have an Aboriginal, constitutionally protected right to continue this trading tradition in modern ways to ensure that their distinct community will not only survive, but also flourish.

Unlike First Nations in Manitoba, whose commercial rights were converted and modified by treaties and the *Natural Resources Transfer Agreement* (*NRTA)* (*R. v. Horseman*, [1990] 1 SCR 901), the Métis' pre-existing customs, practices, and traditions—including as they relate to commerce and trade—were not affected by the *NRTA* (*R. v. Blais*) and continue to exist and be protected as Aboriginal rights. First Nations' treaty rights in Manitoba are, for example, inherently limited by the Crown's power to take up lands (*Mikisew Cree First Nation v Canada* (*Minister of Canadian Heritage*), [2005] 3 SCR 388 at para 56). Métis rights, in contrast, are not tempered by the "taking up" clauses found in historic treaties with First Nations. Métis rights must be respected as they are, distinct from First Nations' rights and unmodified by legislation or agreements.

In addition to the abovementioned rights to land use that preserve the Métis culture and way of life, the MMC has other outstanding land related claims and interests with respect to lands. These include claims related to the federal Crown's constitutional promise to all Aboriginal peoples, including Manitoba Métis, as set out in the Order of Her Majesty in Council Admitting Rupert's Land and the North-Western Territory into the Union (the "1870 Order") which provides that, upon the transference of the territories in question to the Canadian Government, the claims of the Indian tribes to compensation for lands required for purposes of settlement will be considered and settled in conformity with the equitable principles which have uniformly governed the British Crown in its dealings with the aborigines.

The manner in which the federal Crown implemented this constitutional promise owing to the Manitoba Métis—through the *Dominion Lands Act* and the resulting Métis scrip system—effectively defeated the purpose of the commitment. Accordingly, the MMF claims these federal Crown actions constituted a breach of the honour of the Crown, which demand negotiations and just settlement outside of the 'old postage stamp province' within Manitoba as well.

The MMF also claims that the *Dominion Lands Act* and the resulting Métis scrip system were incapable of extinguishing collectively held Métis title in specific locations where the Manitoba Métis are able to meet the legal test for Aboriginal title as set out by the Supreme Court of Canada. These areas in the province, which the Manitoba Métis exclusively occupied—as an Indigenous people—prior to the assertion of sovereignty, establish a pre-existing Métis ownership interest in these lands.

The Manitoba Métis also have an outstanding legal claim within what was the 'old postage stamp province' of Manitoba relating to the 1.4 million acres of land promised to the children of the Métis living

in the Red River Valley, as enshrined in section 31 of the *Manitoba Act, 1870* (*MMF v. Canada* at para 154).

This land promised was a nation-building, constitutional compact that was meant to secure a "lasting place in the new province [of Manitoba]" for future generations of the Métis people (*MMF v. Canada* at para 5). This "lasting place" was to have been achieved by providing the Manitoba Métis a "head start" in securing lands in the heart of the new province (*MMF v. Canada* at paras 5-6).

Instead, the federal Crown was not diligent in its implementation of section 31, which effectively defeated the purpose of the constitutional compact.

In March 2013, the Supreme Court of Canada found that the federal Crown failed to diligently and purposefully implement the Métis land grand provision set out in section 31 of the *Manitoba Act, 1870* (*MMF v. Canada* at para 154). This constituted a breach of the honour of the Crown. In arriving at this legal conclusion, the Court wrote:

"What is at issue is a constitutional grievance going back almost a century and a half. So long as the issue remains outstanding, the goal of reconciliation and constitutional harmony, recognized in s. 35 of the Constitution Act, 1982 and underlying section 31 of the Manitoba Act, remains unachieved. The ongoing rift in the national fabric that section 31 was adopted to cure remains unremedied. The unfinished business of reconciliation of the Métis people with Canadian sovereignty is a matter of national and constitutional import (*MMF v. Canada* at para 140)."

This constitutional breach is an outstanding Métis claim flowing from a judicially recognized common law obligation which burdens the federal Crown (*MMF v. Canada* at paras 156; 212). It can only be resolved through good faith negotiations and a just settlement with the MMF (see for example: *R v Sparrow*, [1990] 1 SCR 1075 at paras 51–53; *R v Van der Peet*, [1996] 2 SCR 507 at paras 229, 253; *Haida* at para 20; *Carrier Sekani* at para 32). Lands both within the 'old postage stamp province' as well as in other parts of Manitoba—since little Crown lands remain within the 'old postage stamp province'—may need to be considered as part of any future negotiations and settlement in fulfillment of the promise of 1.4 million acres, together with appropriate compensation.

On November 15, 2016, the MMF and Canada concluded a *Framework Agreement for Advancing Reconciliation* (the "Framework Agreement"). The Framework Agreement established a negotiation process aimed, among other things, at finding a shared solution regarding the Supreme Court of Canada's decision in *MMF v. Canada* and advancing the process of reconciliation between the Crown and the Manitoba Métis. It provides for negotiations on various topics including, but not limited to, the "quantum, selection and management of potential settlement lands." Negotiations under the Framework Agreement are active and ongoing.

4.0 Conclusion and Recommendations

4.1 Conclusions

Through an assessment of our existing land use and occupancy database, we found that Manitoba Métis are actively exercising their rights in areas cumulatively impacted by the Wash'ake Mayzoon Station, BP6

& BP7 projects and phase 2 of the PACE project. Initial findings pointing to the presence of 80 existing Métis Knowledge features in proximity to areas impacted by the projects indicates the potential for the Manitoba Métis to have additional specific knowledge to share about the location if given the opportunity. We would also like to engage Manitoba Métis Citizens for additional project specific information which can be used to inform Manitoba Hydro's full environmental assessment and EAP, construction and future operations of transmission enhancements in the Portage La Prairie – Brandon corridor.

The presence of these 80 existing features is evidence of the potential for impact to the Métis way of life from transmission enhancements related to the PACE project (both phases 1 & 2) and the BP6 & BP7 projects. Today, Métis have Constitutionally protected rights to harvest, and any impact on these rights needs to be adequately and appropriately assessed and, if necessary, accommodated and mitigated for.

It is in the context of these conclusions that we provide a set of recommendations and mitigation measures related to transmission enhancements related to the PACE project (both phases 1 & 2) and the BP6 & BP7 projects, including recommendations for MMF's engagement and consultation on these projects going forward, and recommendations that may guide MMF's engagement and consultation on future projects.

4.2 Recommendations Including a Process for Developing Mitigation Measures

The following are recommendations regarding the Wash'ake Mayzoon Station EA process:

Recommendation 1: Ideally, the EA process would be paused so that the MMF may meaningfully assess whether the Manitoba Métis who uses the land near sites impacted by the project have concerns or input on the site location and to help us more effectively understand any potential adverse effects. This would involve a community meeting at the least, and most ideally, allowing us the time to complete our interviews with local Manitoba Métis Citizens before the EA report is submitted.

Recommendation 2: As is noted in section 5.3 of the draft EA documenting *Indigenous Engagement Feedback*, the MMF was unable to provide project-specific feedback for the Wash'ake Mayzoon Station. Therefore, we recommend that Manitoba Hydro use the precautionary principle and assume all the same concerns are held as have been identified in past transmission line projects to inform route and site selection processes. We request Manitoba Hydro's explanation of how it took these concerns into consideration in route selection.

Recommendation 4: As the BP6 & BP7 projects and PACE phases 1 & 2 projects are all interrelated and interdependent parts of transmission enhancement in the Portage La Prairie – Brandon corridor, the MMF recommends that these projects should be assessed under one EA process with the provision of adequate resources for the MMF to take into account the cumulative effects of these projects on the rights, interests and claims of the Manitoba Métis. As is noted in section

5.3 of the draft EA documenting *Indigenous Engagement Feedback*, the MMF was unable to provide project-specific feedback for the Wash'ake Mayzoon Station. Project splitting restricts our ability to adequately engage Manitoba Métis Citizens who may be impacted by components of the project through the imposition of tight deadlines and limiting access to resources with which to carry out necessary engagement. Therefore, project splitting of this nature is experienced as detrimental to developing the kind of relationships Manitoba Hydro insists it wants to advance as per the principles and goals of the IEP.

The following are recommendations regarding ongoing MMF engagement on the transmission enhancement projects in the Portage La Prairie – Brandon corridor:

Recommendation 5: Although MMF and Manitoba Hydro have not finalized an agreement to fund interviews with Manitoba Métis Citizens in advance of route and site selection, the interviews should still be completed for our traditional ecological knowledge, land use and rights-based activities within the projects area to inform the environmental assessment including the identification of potential effects and appropriate mitigation measures.

Recommendation 6: Although the MMF and Manitoba Hydro have not finalized an agreement to fund community meetings in advance of the selection of the preferred route, community engagement sessions should still be completed. By consulting with the Manitoba Métis meaningfully on the projects, Manitoba Hydro will have the opportunity to understand and address concerns directly and will gain additional information to inform its environmental assessment.

Recommendation 7: While, in the case of BP6/BP7, there was an existing transmission line, the area was naturalized again to a certain degree and will be disturbed again in the construction of the line. Manitoba Hydro should examine and address the cumulative effects of this transmission line development on the Manitoba Métis in its environmental assessment.

Recommendation 8: The MMF should be engaged by Manitoba Hydro in the mitigation planning process for the projects. This would focus on mitigations to address the baseline data that is mapped during Métis Knowledge and land use interviews.

Recommendation 9: The Government of Manitoba encourage Manitoba Hydro to undertake engagement with the Manitoba Métis Government to identify issues and concerns prior to finalizing the EAP, to allow for potential concerns to be addressed early in the process. For the MMF to be adequately and meaningfully consulted, the MMF should be provided the time and capacity funding necessary to review and comment on the EAP and/or any proposed EIS guidelines for the projects should any of the individual projects require an EIS.

Recommendation 10: While the MMF does not at this time, necessarily assume that these projects will require a public hearing, we would expect that we would be provided the opportunity for capacity funding to participate should a hearing occur.

Recommendation 11: At the end of the environmental assessment process, a decision will be made by the Director of the EAB to either issue a licence with limits, terms, and conditions, or to refuse a licence for the each of the projects (BP6 & BP7/PACE phases 1 & 2). In the event a licence with conditions is granted, the MMF expects that we would be provided capacity funding to comment on these conditions.

Recommendation 12: Manitoba Métis Citizens should be included in any environmental monitoring programs for the BP6 & BP7 projects and PACE project phases 1 & 2. The MMF has invested in capacity building and is in the process of providing training to Manitoba Métis Citizens on environmental monitoring techniques that are relevant to this and other future transmission line projects (e.g., surface water quality, wetland health, wildlife, species at risk).

The following are recommendations regarding MMF engagement and consultation on future projects such as the Portage Area Capacity Enhancement (PACE) project:

Recommendation 13: In the short term, the MMF requests Manitoba Hydro's understanding that we do not have an Energy Liaison in place. The MMF simply does not have the 'person power' to be as responsive as we may have been on some previous projects and so additional time should be built into Manitoba Hydro's engagement timelines to allow for our responses.

Recommendation 14: Manitoba Hydro should provide initial capacity funding to support the MMF's involvement in contribution agreement negotiations. While the MMF has the goal of building its internal capacity to respond to energy files, we have a gap in this area currently. Even when a new staff person is hired, they will take time to build their capacity; we rely on our legal advisors and consultants to support us in this capacity development process. Even after our internal capacity is built, there will be times that our staff's overall workload is too high to be responsive enough to projects with short regulatory timelines. At these times, the MMF may need to rely on its legal advisors and consultants for support so that we do not miss opportunities for engagement. Doing so does not reduce the MMF's capacity, but rather increases it. The MMF's capacity funding requests will be reasonable and the intended use of capacity funding for the MMF's negotiations in contribution agreements will be laid out transparently to Manitoba Hydro. The MMF requests Manitoba Hydro's understanding that capacity building may look different at the MMF than how it thinks about it. Providing initial capacity funding will help ensure timely negotiation of contribution agreements to support our meaningful engagement and consultation on future transmission line projects.

Recommendation 15: The MMF should be engaged at early stages to identify Métis Specific Interests and assist in identifying Valued Components for the transmission line project environmental assessment.

Recommendation 16: Collection of Manitoba Métis land use and occupancy information should occur earlier in the route selection process (e.g., during the gather local knowledge stage) so that this information can meaningfully inform the selection of the preferred alternative route.

Recommendation 17: The MMF should be given reasonable amounts of time and opportunity to consult with the Manitoba Métis about any concerns and feedback on the preferred route.

Recommendation 18: The Government of Manitoba encourage Manitoba Hydro to engage undertake consultation with the Manitoba Métis Government to identify issues and concerns prior to finalizing the EAP, to allow for potential concerns to be addressed early in the process. The MMF should be provided time and capacity funding to comment on the EAP.

Recommendation 19: In the event that concerns raised during review of the EAP require a public hearing, we would expect that we would be provided the opportunity for capacity funding to participate should a hearing occur.

Recommendation 20: At the end of the environmental assessment process, a decision will be made by the Government of Manitoba to either issue a licence with limits, terms, and conditions, or to refuse a licence. In the event a licence with conditions is granted, the MMF expects that we would be provided capacity funding to comment on these conditions.

5.0 References

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ICAC Submission: DTFN

The following document was submitted by Dakota Tipi First Nation to Manitoba Hydro on March 15, 2021.

This forms part of the deliverables for the Portage Area Projects: Indigenous Community and Assessment Coordinators.

Introduction Component to the Dakota Tipi First Nation

Project: *Manitoba Hydro* BP6 and BP7 Project
Traditional Knowledge Study

Date: March 15, 2021

Completed By: Darryl Taylor
Dakota Tipi First Nation Tribal Member
Industry and Lands Liaison Worker/ Lands Protector

Introduction:

The Dakota Tipi First Nation (DTFN) and *Manitoba Hydro* entered into a Traditional Knowledge (TKS) Study agreement in the fall of 2021. The purpose of the Study was to provide a framework that would enable the gathering and documentation of DTFN (TKS) and traditional knowledge information relevant to the proposed BP 6/7 project (the project).

The agreement acknowledged that the DTFN will take the lead in the planning and implementing of its own methods of research and will decide what level of information will be provided to *Manitoba Hydro* to assist in the assessment of potential project effects and potential impacts on the use of lands, waters, and resources by the DTFN community.

1.1 OVERVIEW OF THE DAKOTA TIPI OYATE BEING PART OF THE DAKOTA NATION and as it Relates to the Project

In the (TKS) study the DTFN intends to provide information about the cultural and historical context of the Dakota Tipi community and who we are as a part of the larger Dakota Nation.

While there are differing views on the extent of the Dakota Homeland or Traditional Territory, most sources agree that at the time of contact the Dakota People /Nation (which the Dakota Tipi People are apart of) used and occupied areas within the current jurisdictions of Canada and the United States, the North West Territories, Alberta, Saskatchewan, Manitoba and portions of Ontario.

The DTFN and several other Dakota Nations within Manitoba

are in a unique position, as they never adhered to a treaty and thus retain, hold and assert Aboriginal Rights and Title to areas within southern Manitoba, and areas the project traverses. Some of the Aboriginal Rights that DTFN exercise and assert include (but are not limited to) the right to hunt, fish, harvest land and water based resources, practice various forms of cultivation, build and occupy settlements, build and occupy camps and cabins, and the ability to travel to and access resource activity areas, etc..

The DTFN also asserts and maintain that it has never ceded its title or interests to its ancient homelands or traditional territory nor its inherent jurisdiction and decision-making authority in relation to the lands, waters, and resources.

Given this, at a minimum, *Manitoba Hydro* should begin its consideration of any potential known biophysical and socio-economic effects against these noted broad rights categories through portions of southern Manitoba.

1.2 Community at a Glance

In 1959 the *Old Sioux Village* near Portage La Prairie relocated to the current location site of the Dakota Tipi First Nation. In 1972 the community divided and thereby creating two (2) First Nations presently known as Dakota Tipi First Nation (IR No.#56 or 295) and Dakota Plains Wahpeton Nation (which borders the Long Plain First Nation, south of Edwin Manitoba Canada).

The Dakota Tipi First Nation was granted “Indian Reserve” Status in 1972.

Dakota Tipi First Nation is situated approximately 2 kilometers southwest of the city of Portage La Prairie, Manitoba, and is roughly 80 kilometers west of Winnipeg, Manitoba, and located on the Yellowquill Trail highway, just off of the TransCanada No. 1 Highway, and can be reached by a paved class "C" highway.

The current Dakota Tipi First Nation consists of Parish lot 25 and Parish Lot 24 and in 1985 the First Nation also secured Parish Lot 16, 17 and 18 for a total of 371.8 acres or 150.48 hectares.

The current population of the Dakota Tipi First Nation is approximately 275 people “on reserve on” and has on “off reserve” population of approximately 300 people.

1.3 Current Vision of the Dakota Tipi First Nation

The Dakota Tipi First Nation currently works with a number of industries and industry partners, such as *Manitoba Hydro*, in consultation to ensure the concerns of the Dakota Tipi Nation are dealt with in an according, proper and traditional way.

The Dakota Tipi Nation continues to work towards the goals and vision of itself as a part of the larger Dakota Nation in creation of a strong and viable future for its membership and in honour of the history of the ancestral Dakota people that which we derive from.

ICAC Submission: LPFN

The following document was submitted by Long Plain First Nation to Manitoba Hydro on April 17, 2021.

This forms part of the deliverables for the Portage Area Projects: Indigenous Community and Assessment Coordinators.

Deliverable # 3

A description of the LPFN community in the Portage la Prairie area, at a level of detail deemed appropriate by the LPFN.

A signatory to Treaty 1, 1871, Long Plain First Nation is a proud, prosperous community of both Ojibway and Dakota people situated in the central plains region of Manitoba.

Long Plain has a population of over 4,500 with approximately 2,475 of its registered members living on reserve, 1940 living in urban areas and the remining 60 living in other reserve communities.

Long Plain is Reserve No. 6 on a land base of 10,800 acres comprised of 3 reserves of which 2 are urban. Long Plain is situated in the south-central area of Manitoba, known as the "Central Plains Region". The reserve is located 14 km southwest of Portage La Prairie, and 98 kilometers west of Winnipeg and 10 kilometers south of the TransCanada Highway No. 1. The landscape of the reserve begins along the northwest and southeast banks of the Assiniboine River for approximately five miles and extending three miles west. A portion of the reserve also lies across Assiniboine River.

The urban reserves are situated along the city limits of Portage la Prairie (Keeshkeemaquah Reserve) and in the City of Winnipeg (Madison Indian Reserve No. 1). Long Plain has additional plans for Treaty Land/Reserve expansion in Manitoba. These plans are in various stages of the Addition to Reserve process.

The Portage and surrounding areas have been our people's traditional territory and homeland for thousands of years. The lands in the Portage area were historically considered Long Plain's traditional and tribal territory and are still currently used by Long Plain First Nation registered members for traditional hunting, harvesting and cultural practices.

Long Plain has a custom election system and a tribal government consisting of five; a Chief and four Councillors. Each of the five elected members are responsible for a diverse portfolio of Long Plain's programs and services that includes Arrowhead Development Corp., Economic Development, Gaming, Employment / Training / Daycare, Security / Fire, Education, Social Services, Membership, Land Management, Public Works, Justice / Legal, Recreation / Culture, Child & Family Services, Housing, Residential School, Health and Veterans Affairs.

The community has a diverse economic development portfolio including one of the most successful Petro Canada stations in all of Canada at the Madison Indian Reserve No.1, a thriving Hotel and Gaming Centre on the Keeshkeemaquah Reserve as well as recent acquisitions and builds that will only continue to make Long Plain a fixture in both the Economic and Local Landscape for future generations to come.

A description or assessment, from LPFN's perspective, of the potential effect of the BP6/BP7 Project on the traditional practices and culture of the LPFN community.

Long Plain is happy to be a part of these discussions and is grateful there is a consultation process with the potentially affected First Nations in the region.

We are also however reluctant to (and are not in a position to) grant a corporation 'carte blanche' authority for any future infrastructure conflicts that may arise, and they have in the past. The reality is after hundreds of years of socio-economic, spiritual and legal disparity, we simply do not know for

certain if these plans are over for instance, a familial or community burial plot from the 1790's. Perhaps it goes through the old lodging grounds of the regions most respected Medicine Man from an even earlier time which would no doubt be in abundance of our 4 Sacred Medicines (Sage, Cedar, Sweetgrass and Tobacco). Such a plot would no doubt have old ceremonial grounds that would still be respected and protected no matter how old they are, as such sites are identified and do exist within our Long Plain Reserve No. 6 borders today.

I am sure you can see our need to keep communication open and honest so that if and when matters like the examples presented here arise, proper consultation and due diligence can be performed.

That being said, the purposed route is not currently in any conflict therefor should have no immediate adverse effect on current traditional practices and culture of the LPFN Community, outside of perhaps the disturbance of wildlife habitats or migration routes that some families still rely on today as a source of food.

A suggestion of potential mitigation measures to reduce any adverse effect and enhance the positive effects of the BP6/BP7 Project.

Long Plain First Nation would like to see an effort made to harvest any sacred medicines that may be disturbed during the project in accordance with our spiritual protocols.

We have attached **Attachment A** for identification purposes.

In regard to any spiritual lodgings or landmarks, we would like the opportunity to consult with local Elders and knowledge-keepers on proper protocol if such an issue were to arise. There are many constructs we use on our spiritual journey including but not limited to, Arbours, Ceremonial Lodges, Rock Paintings and formations etc.

Also, if a rough count of large vegetation removals (trees and native brush etc.) exists we would like to see an effort made to either relocate or plant-new vegetation in accordance with our beliefs that we should live lightly on Mother Nature, take only what we need and replace what we take whenever possible.

Attachment A

Four Sacred Medicines:

1. Wild Sage



2. Closeup of Cedar Branches



3. Sweetgrass



4. Wild Tobacco



Letter from Manitoba Hydro to the MMF

The following letter was sent to the MMF by Manitoba Hydro on August 31, 2021.

Manitoba Hydro

August 31, 2021

President David Chartrand
Manitoba Métis Federation
300 – 150 Henry Avenue
Winnipeg, MB R3B 0J7

Dear President David Chartrand:

RE: MANITOBA HYDRO'S RESPONSE TO THE "MANITOBA MÉTIS SPECIFIC CONCERNS: WASH'AKE MAYZOON STATION EA CHAPTER REVIEW" BY THE MANITOBA MÉTIS FEDERATION DATED AUGUST 19, 2021

Manitoba Hydro would like to thank the Manitoba Métis Federation (MMF) for submitting a report for inclusion in the Wash'ake Mayzoon Station environmental assessment and for reviewing chapters from the draft environmental assessment (EA). This report is informative, and also raises certain issues which require a response.

The following is Manitoba Hydro's response to Recommendation 2 in section *4.2 Recommendations Including a Process for Developing Mitigation Measures*, which states:

> *"Recommendation 2: As is noted in section 5.3 of the draft EA documenting Indigenous Engagement Feedback, the MMF was unable to provide project-specific feedback for the Wash'ake Mayzoon Station. Therefore, we recommend that Manitoba Hydro use the precautionary principle and assume all the same concerns are held as have been identified in past transmission line projects to inform route and site selection processes. We request Manitoba Hydro's explanation of how it took these concerns into consideration in route selection."*

Table 1 below shares how Manitoba Hydro took into consideration the concerns that the MMF have identified in past transmission line projects during the site selection process for the Wash'ake Mayzoon Station. Manitoba Hydro has used the list that the MMF included on page 2 of their report under 'Métis Concerns with Transmission Lines' as a template for its response. Manitoba Hydro understands that this may not be an exhaustive list and can provide additional explanation to the MMF if requested.

Table 1. Métis concerns with transmission lines and consideration by Manitoba Hydro in the site selection process for the Wash'ake Mayzoon Station

Métis Concerns with Transmission Lines	**How the concern was considered in Manitoba Hydro's station site selection process**
Concerns about impacts to Métis rights, claims and interests	In the submission, the MMF states that Métis Rights, Claims and Interests in the area include changes to

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	water quality, fishing, hunting, ecological knowledge and historic trapping. It was determined by Manitoba Hydro that selecting a site on private, agricultural land would have minimal impacts to water quality, fishing, hunting, ecological knowledge and historic trapping.
Concerns about Métis Valued Components being considered in the process.	The MMF has identified 'Harvesting' and 'Available Lands' as Métis Valued Components. During the site selection process, the preference was to avoid transmission development on unoccupied Crown Land. Manitoba Hydro avoided Crown Land entirely for this project.
Concerns that contiguous Unoccupied Crown Land will not be maintained.	Manitoba Hydro avoided Unoccupied Crown Land and chose a site on private agricultural land.
Potential for impact to Lands for Métis Use	Manitoba Hydro understands the MMF's preference to avoid transmission development on unoccupied Crown Land and therefore avoided Crown Land entirely.
Potential changes to wildlife habitat and the ability to harvest in the area	Selection of the station site took a balanced approach to minimize overall project effects which included wildlife and wildlife habitat. There is limited wildlife habitat in the project area and so adverse impact to the ability to harvest due to changes in wildlife habitat are anticipated to be minimal
Cumulative effects of development on the ability to harvest.	Cumulative effects were considered during the site selection process, and it was determined that the station being on private agricultural land would not contribute to cumulative effects to harvesting. The EA addresses cumulative effects to Traditional Practice, Culture and Heritage in more detail in section 12.5.
Numerous concerns related to transmission line project impacts including the following bullets: • Aquatic harvesting and water quality	The following considerations were included in the site selection process: • The site avoids any waterbody where aquatic harvesting or water quality would be impacted.
• Chemical spraying	• The site is on private agricultural land where chemical spraying might already occur. It is Manitoba Hydro's understanding that there is no traditional harvesting occurring at the project site and so, chemical spraying should not affect these practices.

• Human population increase pressures on harvesting	• It is not anticipated that the station will increase human population and it is Manitoba Hydro's understanding that no traditional harvesting is currently being practiced at the project site. Therefore increased pressures on harvesting are anticipated to be minimal.
• Impacts to animal health and habitat	• There is limited wildlife and wildlife habitat in the project area which was a consideration during the site selection process.
• Sensitive Habitat such as a swamp	• There are no sensitive habitats such as swamps near the project site.
• Access to historic and culturally important harvesting areas and impacts on gathering berries	• It was taken into consideration that the project is located within the Recognized Métis Harvesting Zone and that to Manitoba Hydro's knowledge there is currently no harvesting being done on this private agricultural land.
• Economic impacts	• It was determined that the site located on private agricultural land would only have potential adverse economic impact to the landowner. Additionally, the selected site had fewer project costs than several other sites considered.
• Effects on commercial trapping	• As it is Manitoba Hydro's understanding that harvesting is not currently practiced on the project site, effects on commercial trapping are not expected to occur.
• Wood harvesting impacts	• As the site selected is on private agricultural land, impacts to wood harvesting are not expected to occur.
• Challenges presented by needing to change harvesting locations	• The site selected is on private agricultural land and, to Manitoba Hydro's understanding, there is no traditional harvesting being practiced. Therefore there would be no need to change harvesting locations.

• Cultural impacts	• Traditional harvesting, important sites, heritage and culture were all considered in the site selection process. Manitoba Hydro's understanding was that there was no traditional harvesting being practiced, no known important sites were present and no heritage resources were known to be present at the site during the site selection process. Based on this understanding it was determined that effects to culture would be minimal at the selected site.
• Changes to the landscape and foreign objects	• Changes in the landscape and foreign objects were considered in the site selection process and it was determined that adverse effects at this site could be adequately mitigated. Section 9.4.1.1 of the EA assesses potential changes to the visual landscape.
• Aesthetic and visual concerns	• Aesthetic and visual concerns were considered in the site selection process and it was determined that adverse effects to aesthetics and the visual landscape could be adequately mitigated. Sections 9.4.1.1 and 9.4.1.2 of the EA assess visual and noise effects.
• Human health impacts and noise concerns	• Human health and noise concerns were taken into consideration and it was determined that adverse effects would be minimal at the selected site. The site is in the corner of the property, which is preferred for property / agricultural reasons (reduced nuisance effects). Effects to human health are assessed in section 8.0 of the EA and noise effects are assessed in section 9.4.1.2.
• Safety	• The site selected is at a crossroads of two municipal roads and in sight of several properties which improves security.
Fears and psycho-social concerns	Reducing potential effects to the overall socioeconomic environment including fears and psycho-social concerns was considered and it was determined that the selected site would not raise specific fears and psycho-social concerns.
Concerns with the administration of monitoring programs.	Concerns with monitoring programs were not considered during site selection but were considered in the EA and will be considered when developing the monitoring program for the project.

We also acknowledge that the MMF has expressed concern that Métis-specific feedback was not obtained due to lack of Métis Citizen engagement. Manitoba Hydro took reasonable steps

to support opportunities for Métis-specific feedback, including making funding available to the MMF and offering opportunities to address any concerns in a timely manner. Métis Citizen engagement was supported by Manitoba Hydro in the Contribution Agreement signed by the MMF on February 26, 2021. This Contribution Agreement included funding for the MMF to hire an Indigenous Community and Assessment Coordinator (ICAC) to lead Métis Citizen engagement for the Brandon-Portage la Prairie Transmission Project (BP6/BP7), the Wash'ake Mayzoon Station and the planned PACE transmission line. The Contribution Agreement included funding to conduct interviews with Métis Citizens for each project including the Wash'ake Mayzoon Station.

Manitoba Hydro met with the MMF on June 2, 2021 to discuss the effectiveness of the ICAC position and assess any changes necessary for remaining work on the Wash'ake Mayzoon Station and the PACE transmission line. The MMF did not share concerns about not being able to engage with Métis Citizens at this meeting. Another meeting was held on July 23, 2021 to discuss the status of the MMF's engagement with Métis Citizens during which Manitoba Hydro was not made aware of the MMF's engagement limitations. Without knowledge of these concerns, there was no opportunity for Manitoba Hydro to work with the MMF to address them within the project timelines.

All other recommendations made by the MMF in their report regarding the Wash'ake Mayzoon Station (Recommendations 1-4) and recommendations regarding ongoing MMF engagement on the transmission enhancement projects in the Portage la Prairie area (Recommendations 5-12) have been addressed in Table 5-5 of the Wash'ake Mayzoon Station EA. Other recommendations regarding MMF engagement and consultation on future projects (Recommendations 13-20) will be considered by Manitoba Hydro for the PACE transmission line and other future projects.

Manitoba Hydro welcomes any questions, comments and concerns the MMF might have to this letter, the EA or the project. Please don't hesitate to contact me directly at (204) 918-9848 or by email at scoughlin@hydro.mb.ca.

We look forward to continuing to work with the MMF on the projects in the Portage la Prairie area and we continue to welcome Métis-specific feedback on BP6/BP7 and the Wash'ake Mayzoon Station to inform the environmental protection programs for the projects.

Sincerely,

Sarah Coughlin

Sarah Coughlin Senior
Environmental Specialist
Licensing and Environmental Assessment Department

Cc. Marci Riel
Jade Dewar
Keith Kowall

Public Engagement Report

The following document summarizes the public engagement process for the Wash'ake Mayzoon station project.

The following document includes summaries from the public engagement process for the Wash'ake Mayzoon station project. The document has two main sections that include information from:

- the virtual information session
- online survey feedback

1 Virtual information session

Table 1-1 Virtual information session date, time and number of participants

Date	Time	# of participants
August 6, 2021	7:00 pm	9

1.1 Summary of issues and concerns from the virtual information session

Table 1-2 Category of discussion and summary of Manitoba Hydro response from Round 1 virtual information sessions

Category	Discussion	Summary of Manitoba Hydro response
Project description	A participant asked about the size of the station.	The station is anticipated to be 172 m X 172 m.
	A participant asked about the size of the station in feet and how far west will it come up our road? Will the road east still be usable (road 65)? We will be able to travel to town and not have it blocked off?	The station is anticipated to be approximately 564 ft X 564 ft. There will be periods of time where there will be construction activities where it might be blocked off but afterwards, it will be open. That road is open for all types of industrial development so it will stay open.
	A participant asked if this this an overhead or underground station with pad mounts.	This is an above ground station.

Table 1-2 Category of discussion and summary of Manitoba Hydro response from Round 1 virtual information sessions

Category	Discussion	Summary of Manitoba Hydro response
	A participant asked if the station is only that size, why is Manitoba Hydro buying so much extra property?	There will be distribution lines and eventually a transmission line that will be connecting to the station. Manitoba Hydro should have transmission line alternatives to share in the fall. The timeline for this project is longer and they will do more engagement starting in the fall.
Location	A participant asked if this station is going to replace the tie into the Portage station due to the land dispute with Long Plain First Nation since the storm took out the line and they won't let Manitoba Hydro replace it.	The station is not related to a land dispute with Long Plain First Nation. Manitoba Hydro is building this station to help reliability issues in the Portage area.
	A participant asked why the station is not located on Crown Land further down this line at the diversion site. There would be no residential area around and it is a large area beside an industrial park.	Manitoba Hydro is building the BP6/BP7 transmission replacement line on Crown land near the diversion. When we select a site for a station, we contemplate many different things including socio-economic impacts, use of the land, future development, and others. The chosen site is in close proximity to other lines, which helps to keep the cost down and reduces both socio-economic and biophysical impacts. Locating the station on Crown Land increases time and impacts for this

Table 1-2 Category of discussion and summary of Manitoba Hydro response from Round 1 virtual information sessions

Category	Discussion	Summary of Manitoba Hydro response
		project, which is why we are not siting the station on Crown Land.
Location	A participant asked how far up the mile Manitoba Hydro is coming towards their property. They are at the half mile. How close will Manitoba Hydro get to their house?	Manitoba Hydro sent a map that shows the distance between the station and their property and confirmed that the station will not extend onto their land.
Purpose	A participant asked if this station would help the reliability of the interconnection between Manitoba and Saskatchewan.	This station is not intended to help the reliability of the interconnection between Manitoba and Saskatchewan.
Station name	A participant asked about the naming of the station. The Steinbach station is named after the municipality, why is this station not named after the rural municipality? A participant shared that Burnside could've been a good name.	Manitoba Hydro responded that the De Salaberry station went through around 5 different names. For this station, we asked our Indigenous coordinators to name the station. A Dakota Tipi First Nation and a Manitoba Metis Federation representative came up with the name (Wash'ake means power in Dakota and Mayzoon means House in Michif), which is a different way to represent what we are doing. We just recently built the Poplar Bluff transmission project so it might have been confusing to have the station the same name. Manitoba Hydro will

Table 1-2 Category of discussion and summary of Manitoba Hydro response from Round 1 virtual information sessions

Category	Discussion	Summary of Manitoba Hydro response
		consider the name Burnside for future development in the area.
Drainage	A participant asked about drainage or water coming off in the spring.	Maintaining good drainage is very important to Manitoba Hydro as well because we need to keep our infrastructure dry so drainage will be considered.
Future development	A participant asked if more lines from Dorsey will be feeding into the Portage site.	There will be additional transmission lines feeding the station. There will be future engagement for the location of the transmission lines where participants will have opportunities to share concerns and feedback.
	A participant shared that this is like putting the horse before the cart by building the station before having a plan for transmission lines coming into it.	Manitoba Hydro has more flexibility with routing a transmission line so it makes sense to build the station first in this case.
	A participant asked about future development and what will be restricted in terms of future property once this project is built.	Since Manitoba Hydro has not routed the transmission line, we cannot answer this with confidence. Underneath the transmission line, we take an easement so this can affect future development. We will have a better answer once the transmission lines are routed and engagement is underway.

Table 1-2 Category of discussion and summary of Manitoba Hydro response from Round 1 virtual information sessions

Category	Discussion	Summary of Manitoba Hydro response
Expropriation	A participant asked if more land will be expropriated.	Expropriation is not our preference but rather a last resort option. Manitoba Hydro wants to work with landowners to avoid expropriation. We will work with landowners to determine preferences and to take in as many perspectives as possible.
Trees	A participant asked if there is a chance that there will be transmission lines on their side of the road and if so, what will Manitoba Hydro do with their trees. They shared that the trees are the most valuable to them and they shelter from noise. They must be protected.	Manitoba Hydro took note that the participant's trees are valuable to them. Manitoba Hydro brought up the map to identify the location of the trees. Manitoba Hydro confirmed that they are documenting this and that there will be many other opportunities to share routing preferences during engagement for the transmission lines.

2 Online survey feedback

There were 17 respondents to the survey.

2.1 Project impact

The first question in the survey asked respondents "Do you think the new station will have an impact on you?" Six respondents (35%) selected yes, nine selected no (53%) and two selected didn't know (12%).

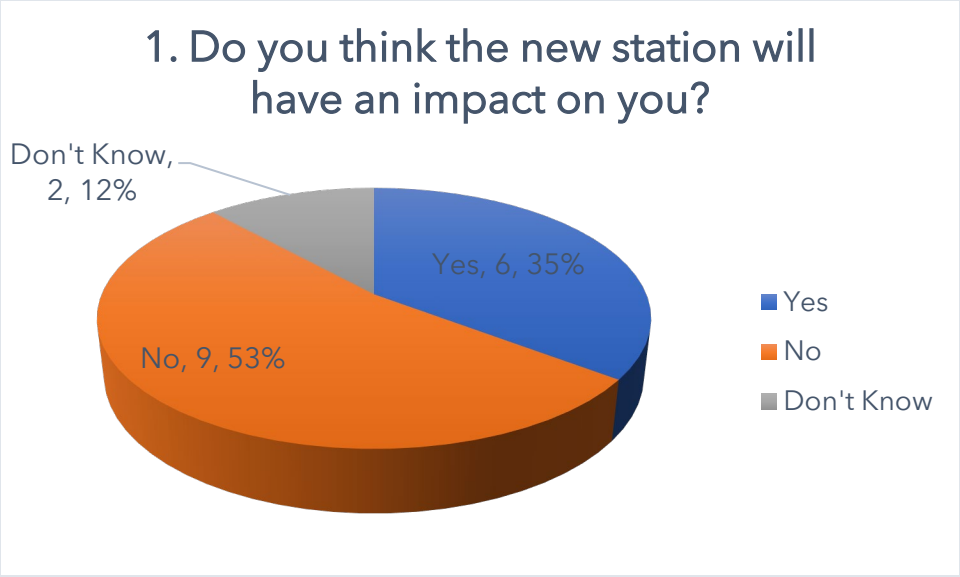

Figure 2-1 Do you think the new station will have an impact on you?

2.2 How do you think the project might impact you?

The follow up question in the survey asked respondents how they think the project might impact them. There were concerns shared about proximity to homes, noise, health and traffic:

"We live within 500 meters of said new sub station. Health and noise levels are a concern. As well addition lines will eventually become very less desirable place to live. Our property value will decrease and a lot of unknown variables and questions are still not being answered by Manitoba hydro"

"I own property adjacent to station"

"It is being built very close to our home. We have concerns regarding increased traffic in the area. Moving farm equipment from fields during construction. Concerned about Long term effects of a station of that size so close to us. We travel road 43 west everyday so this will most certainly impact us."

There were also positive comments about the project:

"It will increase growth in our community. Good news!"

"Industrial Growth can be accommodated, creating jobs and lower our tax rate. This is great news!"

"It will improve the stability of our power"

2.3 Do you have concerns with the planned location of the station?

The second question asked respondents if they have concerns with the planned location of the station. Four respondents (23%) selected yes, 12 selected no (71%) and one selected didn't know (6%).

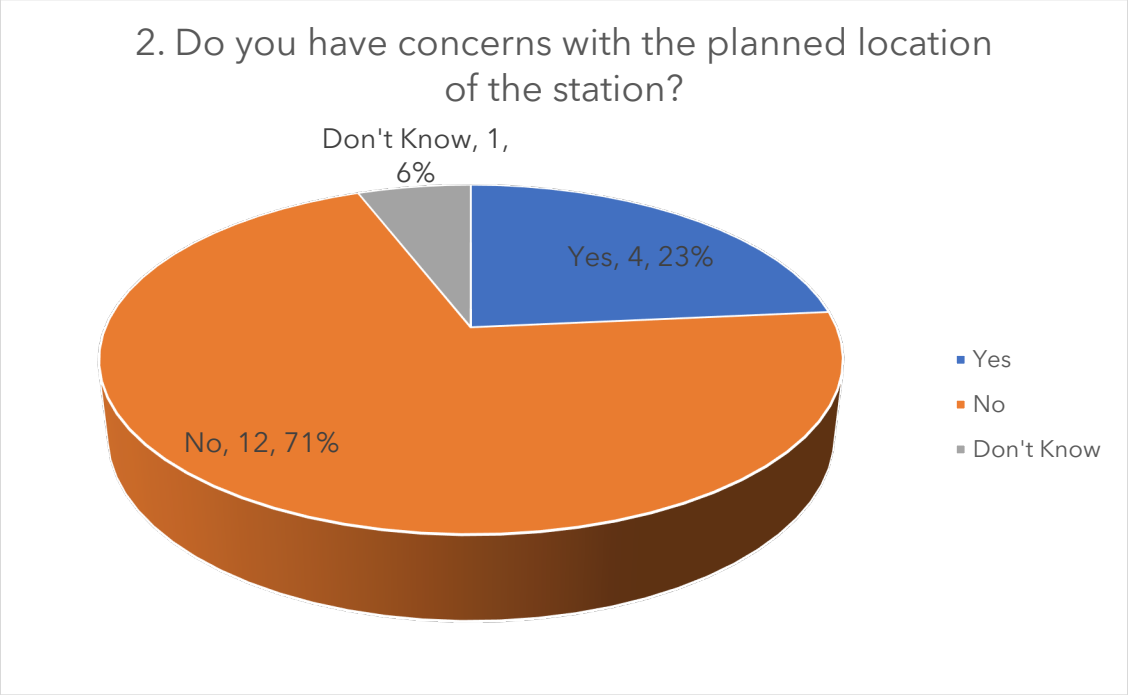

Figure 2-2 Do you have concerns with the planned location of the station?

2.4 What are your concerns with the location of the station?

The follow up question about concerns with the location of the station. Respondents shared:

"timeline - the sooner the better!"

"Too close"

"Eye sore. Taking up valuable farm land. Nobody in the community is happy about it"

"We have to wonder why the station was not located on crown land closer to portage diversion floodway where it is not as populated with yard sites. There are several developed yard sites located within close proximity to the station."

2.5 Did you find the project information on the webpage helpful?

The third question asked if the project information on the webpage was helpful. Fifteen respondents (88%) selected yes, one selected no (6%) and one selected didn't know (6%).

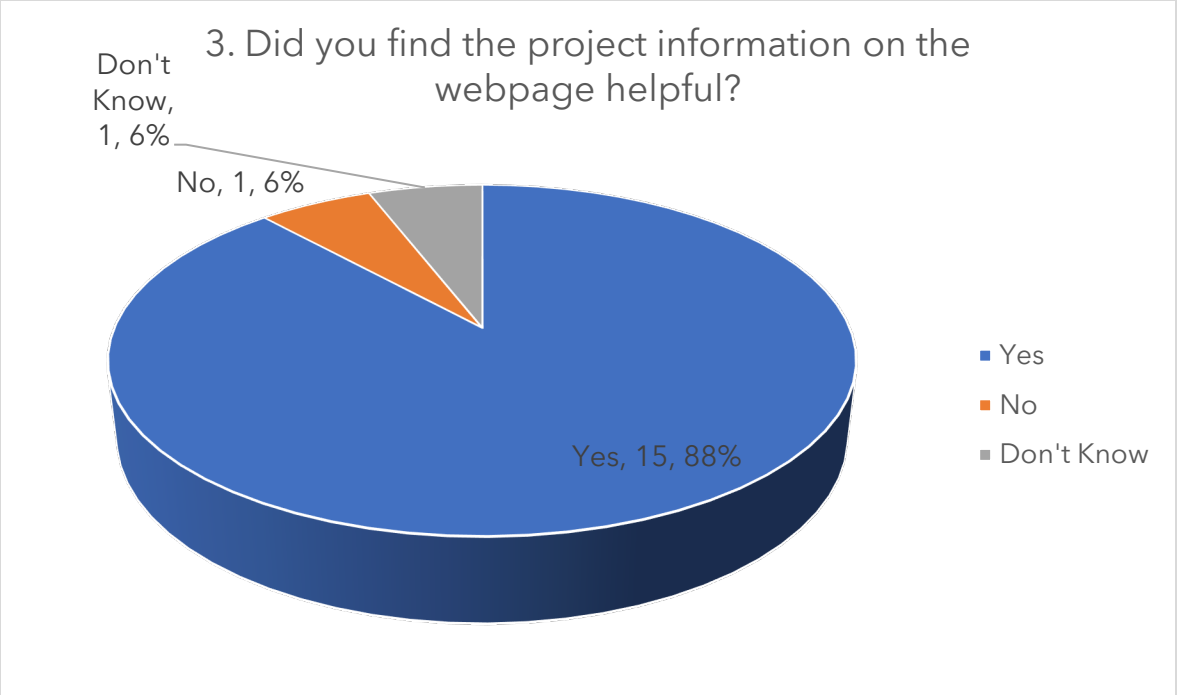

Figure 2-3 Did you find the project information on the webpage helpful?

2.6 How can we better share project information?

The follow up questions asked how Manitoba Hydro can better share project information. One respondent shared that *"I am still waiting on questions I have asked directly to Manitoba Hydro"*. A Manitoba Hydro employee followed up with the landowner. Another respondent shared:

"It would have been nice if the local community had a say in the naming of the station considering it is being located in the Burnside/Poplar Bluff area which were established a century ago."

2.7 Is there other project information that would be helpful?

Another follow up question asked if there is other project information that would be helpful. A respondent shared: *"What is the actual size of the project? We have heard varying rumours."*

2.8 Any additional comments

The last question provided an opportunity for respondents to share any additional comments. One respondent recommended that Manitoba Hydro follow up with them to discuss further. A Manitoba Hydro employee followed up with them. Other comments included:

"Given that this project is occurring on private land that is already been used extensively for agricultural purposes I have no concerns to raise."

"Seems consulting has been going on with everyone except the community people. The name should be Burnside station or poplar bluff station to recognize the rich history in the area."

"We have concerns about our property being staked out and yet have had no communication as to why."

Final 1.0 2020_0610








STANDARD CULTURAL AND HERITAGE RESOURCES PROTECTION PLAN

Manitoba Hydro

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Document Owner
Licensing and Environmental Assessment Department
Transmission Planning and Design Division
Transmission Business Unit
Manitoba Hydro

Version - Final 1.0

List of Revisions

Number	Nature of Revision	Section(s)	Revised By	Date
Final 1.0	Document has been approved and published			2020_06109

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Key messages for construction

Workers in the field should remain vigilant to watch for and report any discoveries. Manitoba Hydro expects workers to report any findings to the Manitoba Hydro On-Site Supervisor or designate.

If human remains, a cultural and/or heritage site are found, activities stop at that location.

The Manitoba Hydro Licensing and Environmental Assessment Department is prepared to offer the required support to On-Site Supervisors including archaeological services, to preserve and protect cultural and heritage resources. LEA can be contacted at 1-877-343-1631 or leaprojects@hydro.mb.ca.

Potential fines

Under The Heritage Resources Act, any person who contravenes or fails to observe a provision of this Act or a regulation, order, by-law, direction or requirement made or imposed thereunder is guilty of an offence and liable, on summary conviction, where the person is an individual, to a fine of not more than $5,000. for each day that the offence continues and, where the person is a corporation, to a fine of not more than $50,000. for each day that the offence continues.

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Preface

This standard Cultural and Heritage Resources Protection Plan outlines protection measures and protocols that Manitoba Hydro, its contractors and/or consultants will undertake in the event of the discovery of previously unrecorded cultural and **heritage resources** during construction, maintenance or operation of an electrical or gas transmission line or facility.

The intent for this document is to be a straightforward and practical reference document for use by the Manitoba Hydro On-Site Lead, Environmental Inspector and/or Indigenous Communities and Organizations. Manitoba Hydro - Licensing and Environmental Assessment Department encourages anyone to provide feedback on this document and will review this plan on an annual basis. Feedback can be provided to LEAprojects@hydro.mb.ca.

Some words in the text are in **bold face** the first time they occur in the document and definitions are included in the glossary in section 3.0.

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Table of contents

1.0 Introduction....1-1
1.1 Commitment to environmental protection....1-1
1.2 Regulatory and policy setting....1-1
1.3 Implementation....1-2
1.4 On-site project management structure....1-3
1.5 Human remains....1-3
1.6 Heritage resources....1-5
1.7 Cultural resources....1-6
1.8 Practices that Manitoba Hydro will follow if cultural and heritage resources are found....1-6
2.0 Reporting and follow-up....2-9
3.0 Glossary of terms....3-11
Appendix A: Resources Identification Guide....13
Appendix B: Cultural and heritage resource protection protocol....19

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1.0 Introduction

Manitoba Hydro understands and appreciates the value that Manitobans place on cultural and heritage resources and the rich legacy found throughout our Province. Manitoba Hydro's commitment to safeguarding these resources has led to the development of this Cultural and Heritage Resources Protection Plan (CHRPP). The CHRPP will provide clear instructions if Manitoba Hydro, its contractors and/or consultants, discover or disturb a cultural or heritage resource and will determine the ongoing protection measures for the resources through processes outlined in this document.

1.1 Commitment to environmental protection

Protecting the environment is an integral part of everything Manitoba Hydro does. Manitoba Hydro accomplishes this by integrating environmentally responsible practices in all aspects of our business. Environmental protection can only be achieved with the full cooperation of Manitoba Hydro employees, consultants and contractors at all stages of the Project from planning and design through construction and operational phases.

The use of a Cultural and Heritage Resources Protection Plan (CHRPP) is a practical and direct implementation of Manitoba Hydro's environmental policy and its commitment to responsible environmental and social stewardship. It is a proactive approach to manage potential discoveries of **human remains**, cultural and heritage resources.

Manitoba Hydro is committed to implementing this CHRPP. Manitoba Hydro will also require companies that contract with us to follow the terms of this and other applicable plans.

1.2 Regulatory and policy setting

Legislation that commonly applies to cultural and heritage resources for construction, maintenance or operation of transmission lines or facilities includes: ***The Heritage Resources Act*** *(The Act)* and the ***Province of Manitoba Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains (Burials Policy)***. This CHRPP is consistent with and does not replace the above. In effect, the CHRPP builds on the protective measures afforded by *The Act and policy*.

1.3 Implementation

The goal of the CHRPP is to act as a reference manual to describe key actions in the event of discovery of cultural or heritage resources or human remains. Manitoba Hydro will inform relevant employees and contractors working on the Project of the contents of applicable regulatory specifications, guidelines, licenses, authorizations and permits, and of this Plan, and copies will be available from the On-Site Lead office.

The plan also allows for adaptive management to include new and evolving strategies, protocols and information to support and protect culture and heritage resources. Appendix B includes a Protocol template that interested communities and organizations can complete to augment and enhance this CHRPP.

This Protocol could provide feedback on items such as:

- Whether the community/organization wants Manitoba Hydro to contact them upon discovery of unrecorded cultural or heritage resources
- Who and how to contact the Community Representative(s) upon discovery of unrecorded cultural or heritage resources
- When the Community Representative(s) would like to be contacted
- Description of the Area of Interest the Community feels may contain heritage and **cultural resources** important to them
- General types of cultural and heritage resources that may be in Area of Interest
- Ceremonial or spiritual activities the community would like conducted prior to construction
- Any other concerns the community may have with regard to cultural and heritage resources
- Whether the community has received a copy of this Standard CHRPP

Upon the discovery of unrecorded cultural or heritage resources, Manitoba Hydro will follow the steps outlined in section 1.8 in conjunction with the applicable attached Protocols.

1.4 On-site project management structure

Manitoba Hydro staff and consultants will be required to undertake activities, steps, procedures and measures set out in the Figure 1-1 and Figure 1-2 should cultural or heritage resources or human remains be discovered during the construction, operation or maintenance of the project. There is a potential to discover cultural and heritage resources in many different locations and workers in the field should remain vigilant to watch for and report any discoveries. Manitoba Hydro expects workers to report any findings to the Manitoba Hydro On-Site Supervisor or designate.

The Manitoba Hydro Licensing and Environmental Assessment Department is prepared to offer the required support to On-Site Supervisors including archaeological services, to preserve and protect cultural and heritage resources. LEA can be contacted at 1-877-343-1631 or leaprojects@hydro.mb.ca.

In order to conduct any type of archaeological or heritage resource investigation, a Heritage Permit is required from the Historic Resources Branch (HRB) (Manitoba Sport, Culture and Heritage Department). The HRB is responsible for the issuance and management of heritage permits. Permits can only be issued to Registered Archaeologists; LEA has access to archaeologists to support any investigation.

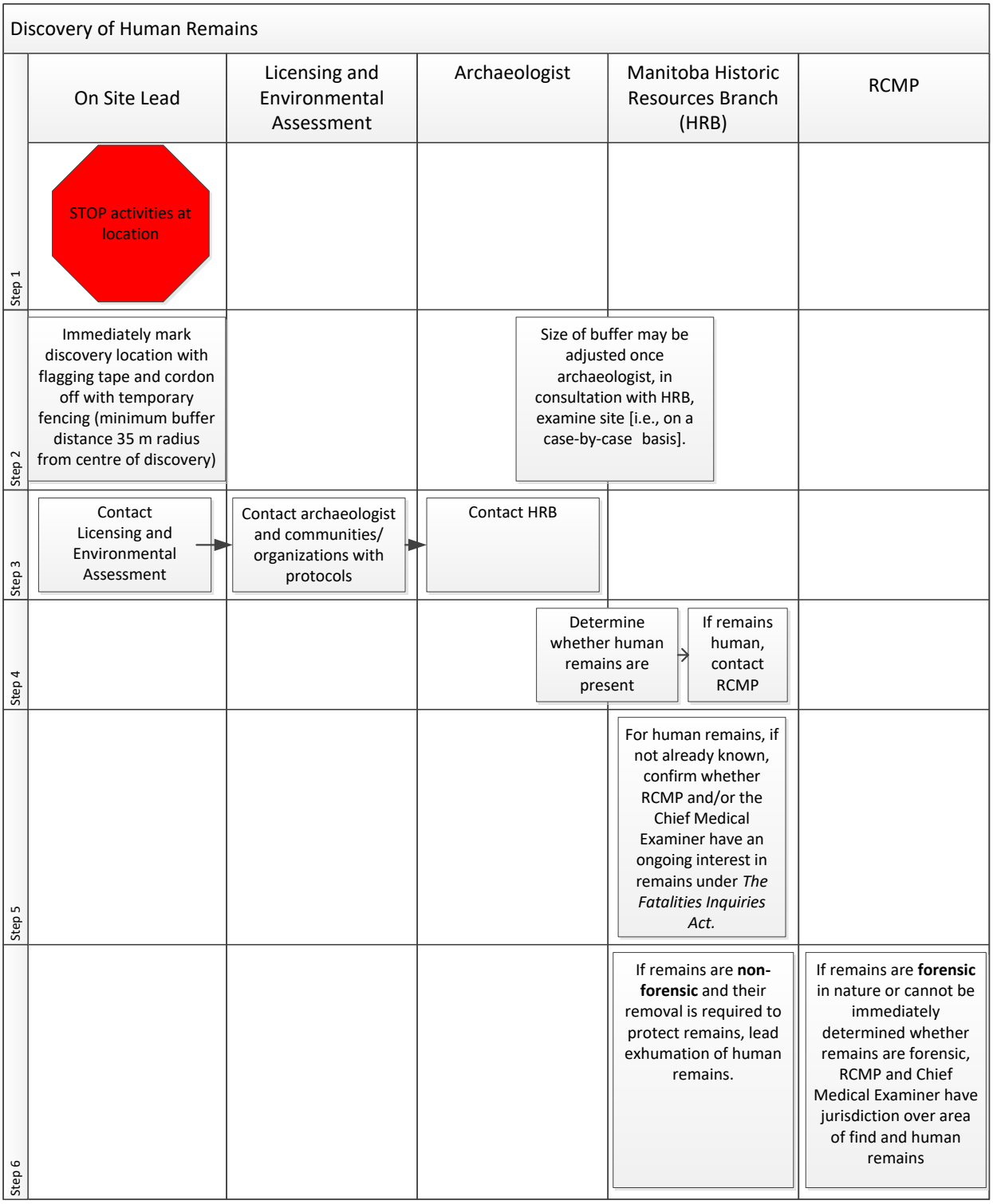
1.5 Human remains

The Heritage Resources Act (1986), Section 43 (1) states that "human remains" means:

> *"remains of human bodies that in the opinion of the minister have heritage significance and that are situated or discovered outside a recognized cemetery or burial ground in respect of which there is some manner of identifying the persons buried therein."*

Manitoba Hydro will not disturb or remove human remains from their original resting place unless removal is unavoidable and necessary. Out of respect for the remains, all work related to the remains will be conducted as much as possible out of the public eye. **Funerary (grave) goods** found with human remains will accompany human remains at all times. No reports related to any such find and its analysis will be published unless the Community Representative(s) consents to such publication, other than such reports provided to Manitoba Hydro and the Historic Resources Branch or other agencies as may be required by law. The following describes the practices that Manitoba Hydro will follow if **skeletal remains** believed or known to be human remains and/or accompanying grave goods are discovered or disturbed:

Figure 1-1 Discovery of human remains



Discovery of Human Remains					
	On Site Lead	Licensing and Environmental Assessment	Archaeologist	Manitoba Historic Resources Branch (HRB)	RCMP
Step 7		If human remains are left in place where discovered, Community Representative(s) may arrange for and facilitate an appropriate ceremony	HRB and/or archaeologist directs cautious investigation of surrounding surface prior to exhumation of remains to determine if other human remains or artifacts are in area		
Step 8			Locate and document human remains with GPS, record relevant data and submit with reports to HRB, construction supervisor and Community Representative(s)	Oversee basic non-invasive physical anthropological techniques, including drawings, sketches and initial measurements to assist in determining basic information about individual	
Step 9	Construction activities in vicinity of site that will not impact artifacts or related archeological activities may proceed	LEA would work with communities to decide whether and what type of analysis would be done on remains.	No construction activities within buffer until archaeologist has completed archaeological investigation		

1.6 Heritage resources

Heritage resources are the physical remains of past cultures. They are the product of human art, workmanship or use, including plant and animal remains that have been modified by or left behind due to human activities.

The *Manitoba Heritage Resources Act* (1986) defines "Heritage Resource" as:

(a) a heritage site;

(b) a heritage object, and;

(c) any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof (Section 1).

There are two types of heritage resources, **artifacts** and features. Heritage objects (artifacts) can be as small as a single stone flake (a product from stone tool production) or as large as a shipwreck. Other types of artifacts can include butchered animal bones, pottery, and historic materials such as nails, bottle glass, beads that are at least 75 years or older. Features are in situ (or in place) objects or changes to the landscape that are non-portable, meaning that they cannot be easily removed from their original location. Examples of features include petroforms (stones that have been placed in a shape or design and may be an effigy of an animal or thunderbird nest). Stones were also used as waymarkers or could indicate a food cache or burial location.

All heritage resources, whether a single isolated find (such as single artifacts) or a site with numerous artifacts and/or features, are protected under the Act. These physical remains can provide some evidence of specific activities such as campsites, work stations, quarries, kill sites, and post-contact settlement, industry and events. Deliberate destruction or disturbance of heritage resources is considered an offence. Certain heritage resources have special consideration such as pictographs, petroforms or ceremonial sites and represent a connection to First Nation and Metis to the landscape. Cultural resources

1.7 Cultural resources

For the purposes of this plan, Manitoba Hydro defines Cultural resources as an object, site or location of a traditional or cultural practice that is the focus of traditional or contemporary use and is of continuing importance to people. Some examples include important resource gathering areas, sites of spiritual significance or ceremonial sites.

Although there are some commonalities, each community has a unique interpretation of what the cultural resource value represents.

1.8 Practices that Manitoba Hydro will follow if cultural and heritage resources are found

Manitoba Hydro and its contractors will leave all artifacts **in situ**, that is, in the same position and will not remove objects from the site until advised by the archaeologist. There will be no activities within the buffer until the archaeologist has completed their archaeological investigation. No reports related to any such find and its analysis will be published, other than such reports provided to Manitoba Hydro and the Historic Resources Branch or other agencies, as may be required by law.

The following describes the practices that Manitoba Hydro will follow if cultural and heritage resources are found:

Figure 1-2 Discovery of cultural and heritage resources

Discovery of Cultural and Heritage Resources				
	On Site Lead	Licensing and Environmental Assessment	Archaeologist	Manitoba Historic Resources Branch (HRB)
Step 1	STOP activities at location			
Step 2	Contact Licensing and Environmental Assessment	Contact archaeologist and communities/ organizations with protocols	Contact HRB	
Step 3	Establish buffer around find (minimum 35 m radius from centre of discovery)			
Step 4	Talk to archaeologist and immediately email them photos of find		Talk to On Site Lead, review photos and determine significance of find	
Step 5			Obtain Heritage Permit from HRB	
Step 6			Direct cautious exploratory investigation to determine if other artifacts in area	
Step 7		If discovery includes sacred or ceremonial objects, Community Representative(s) may arrange and facilitate appropriate ceremony		

Discovery of Heritage Resources				
	On Site Lead	Licensing and Environmental Assessment	Archaeologist	Manitoba Historic Resources Branch (HRB)
Step 7			Undertake: extended surface reconnaissance; - shovel tests at regular intervals perpendicular and parallel to artifact deposit; - controlled collection of data about artifacts, including mapping using global positioning system or chain and compass; and - test excavations, if necessary	
Step 8			Locate and document finds with GPS, record relevant data	
Step 9			Collect and place artifacts in protective container include date, project, contents, coordinates and other information, including site classification	
Step 10				Evaluate heritage resource site and findings presented by archaeologist to determine if further mitigative action is necessary before construction in site vicinity may continue
Step 11	Construction activities in vicinity of site that will not impact artifacts or related archeological activities may proceed		If MH cannot avoid site based on progress of construction, direct site's removal by standard and most appropriate excavation methods.	No construction activities will take place at site until HRB is satisfied that site removal is complete and meets provincial standards
Step 12			Submit copies of technical data and reports to HRB and MH	

2.0 Reporting and follow-up

The archaeologist will establish and maintain a record for each discovered or disturbed heritage object and of any human remains found during construction. Information will include the **provenience**, artifact chain of custody, as well as a conservation and /or identification plan for the heritage resource or resources associated with each record. This is a requirement of *The Heritage Resources Act*. The Province of Manitoba manages a descriptive inventory regarding the physical location and composition of archaeological sites. All artifacts and field-collected data such as notes, photographs and geo-referenced information is provided to the HRB who has ownership of heritage resources found in the Province.

The archaeologist will prepare an annual report, as well as updated summaries and technical reports as are necessary, to the HRB as partial fulfillment of the Heritage Permit and to Manitoba Hydro who in turn will share with the applicable Community Representative(s). The report will provide the following information:

- A record of the human remains found. This will include the reporting, exhumation and reburial of the found human remains per the Provincial policy, the date of the report and the process by which Manitoba Hydro managed, honored and reinterred the remains.
- A record of archaeological investigations and finds documented throughout each year.
- A summary of any directions provided by the Community Representative(s) regarding permission granted to conduct specialized analysis (where such permission is required).
- A record of the heritage objects that Manitoba Hydro found and the process by which they managed the heritage objects.
- Any additional information concerning matters of significance related to heritage resources.

Manitoba Hydro will treat information shared by Indigenous communities regarding burial sites, sacred sites and other sites traditionally and presently used for cultural and ceremonial purposes as confidential and may only be shared with the Province or other authorities if agreed upon by the community to which the resource is associated.

Specific information regarding details or locational information of these cultural or ceremonial sites will not be included in the recording or reporting processes nor included in the HRB's site database.

Manitoba Hydro appreciates that this is sensitive information; the reports will be treated as confidential, unless otherwise authorized or specified by the Community Representative(s), if applicable, in discussion with the HRB.

The archaeologist will prepare an overview of the annual report and provide it LEA to review with the On-Site Supervisor. The overview report will not contain confidential information but will include information required by the On-Site Supervisor in order to fulfill regulatory and managerial responsibilities.

If requested, the archaeologist will meet with the applicable Community Representative(s), HRB and the Manitoba Hydro Licensing and Environmental Assessment Department to review the reports.

3.0 Glossary of terms

Artifacts	Any object made or modified by a human being.
Caches	Rock features in which supplies were stored.
Cultural Resource	An object, site or location of a traditional or cultural practice that is the focus of traditional or contemporary use and is of continuing importance to people.
Diagnostic	Any artifact that provides information as to cultural affiliation or age.
Exhumation	The act of removing a buried, or once buried, human body from the grave or found location.
Funerary goods	Items placed with a person at the time when they were buried. Often referred to as Grave Goods, these items are treated no differently than the person's actual skeletal remains.
Forensic	Of interest to law enforcement or Office of Chief Medical Examiner.
Heritage Resource	The Manitoba Heritage Resources Act (1986) defines "Heritage Resource" as: (as) a heritage site; (b) a heritage object, and; (c) any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof (Section 1).
Human Remains	The remains of human bodies, normally referring to those recovered in the skeletal form. This may range from a single bone or tooth to complete skeletons.
Identification	Refers to the process of examining human skeletal remains in order to determine jurisdiction and disposition of the remains. The may be done by archaeologists trained in human osteology, or physical anthropologists. Age at death, sex, height, general health, relative age: recent, early contact or ancient age may be possible along with ethnic identification.
In situ	An artifact is found in the exact spot that it was probably deposited at some time in the past.
Manitoba's Burials Policy (1987)	Short name of: ' *Province of Manitoba Policy Concerning the Reporting, Exhumation, and Reburial of Found Human Remains*.' This is the 1987 Provincial Cabinet approved policy based on *The Heritage Resources Act* (1986) governing and directing the actions, responsibilities, duties and task to be undertaken upon the discovery of found human remains in Manitoba.
Matrix	The consistency and quality of the soil.

Morphology	The form, structure and method by which an object is created.
Non-Forensic	Not of interest to law enforcement or Office of Chief Medical Examiner.
Ochre	An earthy clay colored by iron oxide – usually red, but can be yellow.
Provenience	The original place of an artifact. Can be measured by two or three-points.
Stratum	A layer of soil that is distinct and separate from that above and below it.
Skeletal Remains	Skeletal remains are all that is left of a corpse after nature has taken its course and has disposed of skin, tissue, and any other organ that may cover the skeletal frame.
The Heritage Resources Act (1986)	The Provincial legislation (law) governing the physical heritage of all Manitobans, located in Manitoba on either provincial crown lands or private lands within the province of Manitoba.
Way-markers	A sign or feature that marks a portage or trail or announces a change in direction.

Appendix A: Resources Identification Guide

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Examples of cultural and heritage resources of potential interest

The following are some examples of surface or sub-surface heritage objects or features that may be encountered in the field that have the potential to be of archaeological interest or cultural significance. These descriptions are provided for information only. When the features described in these examples are encountered in the field, or when it is otherwise believed that a site potentially may be of archaeological interest, a Manitoba Hydro On-Site Supervisor/delegate or Environmental Inspector/Officer must be notified.

In situ artifacts

Projectile points, pottery, historic trade goods and thousands of other types of artifacts have been recovered from across the Province. Before collection, the artifact will be photographed and the surrounding vegetation and soils described in detail. If a diagnostic artifact is found during a controlled surface collection, the recovery of the artifact will not take place until mapping is complete.

Often metal objects are found abandoned along old portage routes, former trails and at long-forgotten cabin sites. This old, blue enameled kettle was found in the hollow of a tree with tin cups nestled inside. The way that metal tins were constructed can be dated. Glass fragments can also be identified as belonging to a certain time period. The morphology and markings on bottles help archaeologists to date sites.

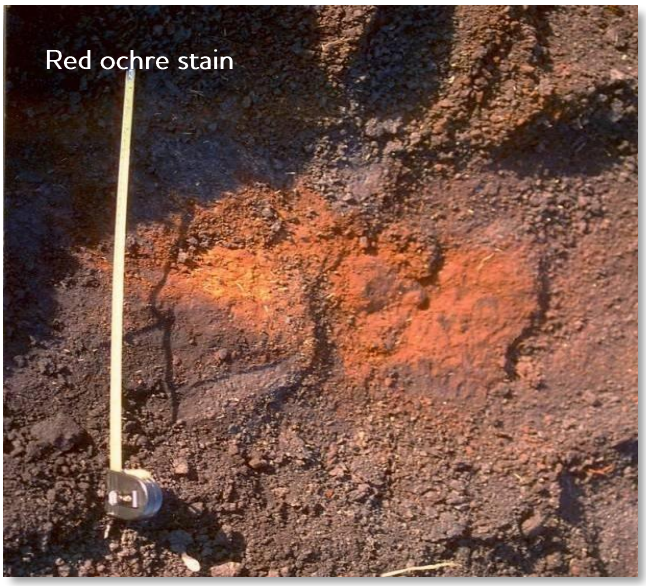

Pre-contact pottery sherd


Historic period kettle and tin cups


Projectile point (left) and lithic flake (right)

Soil Staining

Discolourations in the soil may indicate an archaeological site. The following examples are common colours associated with artifacts, features that have been found within the Province.



Red or yellow **Ochre** or rust stains can be found in the soil. They can be the result of oxidized metal fragments or nails, red or yellow ochre nodules may indicate a burial or ceremonial activity.

Soil staining can also be found in the form of charcoal flecks and white ash from a hearth or fire pit. Black soil stains may indicate human activity and organic materials or a living floor. Cultural strata can vary in depths depending on the length of occupation at the site. The presence of burned bone, fire-cracked rock, stone chips, pottery and other objects may be found in association with soil discolouration and would confirm the soil staining is a cultural layer.


Ash and organic soil staining of a hearth feature

Animal Bone

Animal Bone (mammal, bird, fish) at a site can indicate the kinds of resources that were being used as food as well as indicate seasonality of occupation.



Animal Long Bone with red staining

Bone was also an important material for tool manufacturing. Common bone tools include fleshers and beamers fashioned from large mammal long bones, barbed spear points and harpoons, awls and needles. Bones at a site can indicate the kinds of animals that were being used as food. The ulna of swans, eagles and other large birds were used for bird whistles.



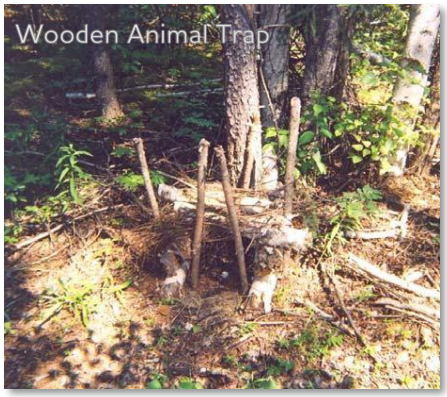
Bison bone fragments

Key features to look for on bones to determine if they have been deposited by humans include signs of cut-marks or burning or staining which may indicate human modification by various butchering or processing techniques.

Culturally modified trees

Occasionally evidence of cultural practices is found in the form of modified trees such as the birch trees noted in this photograph. Birch bark was used for many purposes such as storage baskets, canoes and more recently, birch-bark biting crafts. Cut wood has been used to construct an animal traps, as a material for building or for fireword and indicates that humans have been in the area.







Stone features

There are many different kinds of stone alignments that have been constructed by humans: **Way-markers, caches**, ceremonial sites, building foundations, tepee rings and burials are the major rock features that are found during archaeological investigations. These can be on or above the ground surface or buried features.





Ground or Structural Features

It is especially important to note unusual ground features. Depressions or mounds that are out-of-place from the surrounding landscape may indicate an underlying structure or possible burial. The manner in which structural features are constructed can be dated.







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Appendix B: Cultural and heritage resource protection protocol

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CULTURAL AND HERITAGE RESOURCE PROTECTION PROTOCOL

Community/Organization: _____

1. Do you want Manitoba Hydro to notify your community/organization about cultural and heritage discoveries?

   Yes ☐ No ☐

2. If yes, we would like to be notified about the following type of discoveries:

Human remains	Yes	☐	No	☐
Heritage/cultural resources (pictographs, petroforms, bone tools)	Yes	☐	No	☐

3. Leadership have chosen _____as the community representative that Manitoba Hydro should contact for heritage or cultural resources discoveries

Phone number: _____

Cell phone: _____

Email address: _____

Preference for contact _____

(i.e.: cell phone, email)

4. Should a previously unrecorded heritage or cultural resource be encountered, would your community like to conduct a ceremonial or spiritual activity?

Yes ☐ No ☐

5. Could you please draw the area of interest to your community for cultural and heritage resources on the attached map? This information can be kept confidential.

6. Are you aware of recent discoveries of the following in the area near the project:

Human remains	Yes	☐	No	☐
Heritage/cultural resources	Yes	☐	No	☐

7. Have you received a copy of the Cultural and Heritage Resources Protection Plan?

Yes ☐ No ☐

Date: _____

Filled out by (Please print): _____

Signature _____

Appendix C
Manitoba Conservation Data Centre correspondence

From: Murray, Colin (ARD) <Colin.Murray@gov.mb.ca>
Sent: Wednesday, July 28, 2021 10:52 AM
To: Wiens, Jonathan <jwiens@hydro.mb.ca>
Subject: DR J Wiens MBHydro 20210708 NE-26-011-08W1 SAR

BE CAUTIOUS WITH THIS EMAIL: This message originated outside Manitoba Hydro. Verify all links and attachments from unknown senders before opening. Search 'email security' on mpower for details.

Hi Jonathan
Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's (CDC) rare species database for your area of interest. This includes the primary location NE-26-011-08W1; and the surrounding parcels.

I am attaching a Microsoft Excel spreadsheet summarizing these occurrences. The spreadsheet includes scientific and common names, the provincial (SRank) rank for each species as well as the Manitoba Endangered Species and Ecosystem Act, and the federal Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and Species at Risk Act (SARA) designations.

Further information on this ranking system can be found on our website at:
http://www.natureserve.org/conservation-tools/conservation-status-assessment.
These designations can be found at:
http://web2.gov.mb.ca/laws/statutes/ccsm/e111e.php,
https://ddei5-0-ctp.trendmicro.com:443/wis/clicktime/v1/query?url=https%3a%2f%2fwww.cosewic.ca%2findex.php%2fen%2dca%2f&umid=E89F5763-C830-F605-A320-F0DA8BD616CE&auth=2628ad18b21f934c4a3f3bcb7fa326f6a4758e66-0415747ab1ba49ee5d2dffe8fcdb5773b608ca50 and
http://www.sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1.

Manitoba's recommended setback distances can be found at:
https://ddei5-0-ctp.trendmicro.com:443/wis/clicktime/v1/query?url=https%3a%2f%2fwww.gov.mb.ca%2fsd%2fpubs%2fconservation%2ddata%2dcentre%2fmbcdc%5fbird%5fsetbacks.pdf&umid=E89F5763-C830-F605-A320-F0DA8BD616CE&auth=2628ad18b21f934c4a3f3bcb7fa326f6a4758e66-864cdc830462438b2625208b8849d515f1119c1d.

The information provided in this letter is based on existing data known to the Manitoba Conservation Data Centre of the Wildlife and Fisheries Branch at the time of the request. These data are dependent on the research and observations of CDC staff and others who have shared their data, and reflect our current state of knowledge. An absence of data does not confirm the absence of any rare or endangered species. Many areas of the province have never been thoroughly surveyed, therefore, the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should not be regarded as a final statement on the occurrence of any species of concern, nor should it substitute for on-site surveys for species or environmental assessments. Also, because our Biotics database is continually updated and because

information requests are evaluated by type of action, any given response is only appropriate for its respective request.

Please contact the Manitoba CDC for an update on this natural heritage information if more than six months passes before it is utilized.

Third party requests for products wholly or partially derived from our Biotics database must be approved by the Manitoba CDC before information is released. Once approved, the primary user will identify the Manitoba CDC as data contributors on any map or publication using data from our database, as the Manitoba Conservation Data Centre; Wildlife and Fisheries Branch, Manitoba Sustainable Development.

This letter is for information purposes only - it does not constitute consent or approval of the proposed project or activity, nor does it negate the need for any permits or approvals required by the Province of Manitoba.

We would be interested in receiving a copy of the results of any field surveys that you may undertake, to update our database with the most current knowledge of the area.

If you have any questions or require further information contact me directly at (204) 945-7760.

Colin

Reference screen clip:

Colin Murray
Information Manager- Manitoba Conservation Data Centre
Wildlife, Fisheries, and Resource Enforcement Branch
Manitoba Agriculture and Resource Development
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Visit our website: Mhttps://www.manitoba.ca/fish-wildlife/cdc/index.html
Follow us on Twitter: twitter.com/MBGovAg
View our videos on YouTube: youtube.com/ManitobaAgriculture

From: Wiens, Jonathan <jwiens@hydro.mb.ca>
Sent: July 8, 2021 3:55 PM
To: Murray, Colin (ARD) <Colin.Murray@gov.mb.ca>
Subject: CDC Request

Hello Colin,

We would like to request a CDC database search for an area west of Portage la Prairie, MB

Could you please review quarter section: NE-26-11-8-W1?

We would also appreciate learning if there are any CDC occurrences on nearby parcels:

- NW-26-11-8-W,
- SE-26-11-8W,
- SE-35-11-8W,
- SW-36-11-8W,
- RL-39 PP

I attached a PDF map showing ortho imagery of the area, in case that may help.

Thank you very much

Jonathan Wiens
Manitoba Hydro
Licensing & Environmental Assessment Dept
360 Portage Avenue (5), R3C 0G8
Mobile (204) 250-2595
Email: jwiens@hydro.mb.ca

SEARCH CRITERIA	SITE	SCINAME	COMNAME	SARA	COSEWIC
Within	NE-26-011-08W1	Danaus plexippus	Monarch	Special Concern	Endangered
Within	NW-26-011-08W1	Danaus plexippus	Monarch	Special Concern	Endangered
Within	SE-26-011-08W1	Danaus plexippus	Monarch	Special Concern	Endangered
Within	SW-26-011-08W1	Danaus plexippus	Monarch	Special Concern	Endangered
Within	SE-35-011-08W1	Danaus plexippus	Monarch	Special Concern	Endangered
Within	SW-36-011-08W	Danaus plexippus	Monarch	Special Concern	Endangered
Within	RL-39-PP	Danaus plexippus	Monarch	Special Concern	Endangered
Within	RL-39-PP	Ambystoma mavortium	Western Tiger Salamander	Special Concern	Special Concern
general area	NE-26-011-08W1	Dolichonyx oryzivorus	Bobolink	Threatened	Threatened
general area	NE-26-011-08W1	Hirundo rustica	Barn Swallow	Threatened	Threatened
general area	NE-26-011-08W1	Nassella viridula	Green Needlegrass		

Appendix D

Wildlife timing windows, setbacks and buffers

Timing windows

Project Wildlife Reduced Risk Timing Windows

Species	Sensitivity	January		February		March		April		May		June		July		August		September		October		November		December	
Mammals	Denning Sites																								
Amphibians/Reptiles	Amphibian Bearing Wetland																								
Snakes	Hibernaculum																								
Bats	Hibernaculum																								
Birds	Breeding and Nesting																								
Fish	Spawning																								

Reduced Risk to Wildlife

Sensitive Time Period for Wildlife (Where construction activities occur during this period, mitigations measures will be prescribed on a site by site basis)

Examples of Mitigations that may be approved by Licensing and Environmental Assessment Department during Sensitive Time Period for Birds or Amphibians/Reptiles are found in Appendix E and M.

Buffers and setbacks

Feature	Activity	Non Frozen Ground Setback Distance[2]	Frozen Ground Setback Distance[2]	Vegetated Buffer Distance[3]
Vegetation				
Plant Species at Risk	Tower Foundation Siting	100m	100m	
	Clearing And Construction	30m		30m
	Maintenance	30m		30m
	Access Trail	30m	30m	
Anthropogenic				
Heritage and Cultural	All	Varies	Varies	Varies
Amphibians				
Northern Leopard Frog (known breeding pond, watering site)	Tower Foundation Siting	30m	30m	
	Clearing And Construction	30m		30m
	Maintenance	30m		
	Access Trail	30m	30m	
Reptiles				
Garter Snake Hibernaculum	Tower Foundation Siting	200m	200m	
Landforms				
Wetlands	Clearing And Construction			30m
	Maintenance			30m
	Access Trail			30m
	Hazardous Material Handling/Storage	100m	100m	
	Soil Stockpiles	30m		30m
Sharp-tailed Grouse				
Lek site (dancing breeding site)	All	1000m[5]	1000m[5]	1000m[5]
Mammals				
Mineral Licks	All	120m		120m
Occupied Mammal Dens[4] (Red fox, Gray fox, Coyote, Wolf, Bobcat, American badger, American marten, Fisher, Least weasel and Raccoon)	All	50m	50m	

[1]All measurements are from edge of feature

[2]No Work Allowed without Manitoba Hydro Licensing and Environmental Assessment Department review and approval, which may be subject to regulatory approval.

[3]Shrub and Herbaceous Vegetation Retained)

[4]Bear/Mammal den sites are highly variable and may be found in caves, crevasses, overturned trees, open ground nests, and low-sweeping branches of a coniferous tree.

[5]Do not plan to carry out construction activities within this area between March 15 to June 1st. l If construction activity is required within this area between April 15 to June 1st, contact Manitoba Hydro Environmental Officer to discuss potential mitigation options.

Appendix E
Canadian Register of Canada's Historic Places federally designated sites

Appendix E: Listing of Heritage Resource Sites in RM of Portage la Prairie and City of Portage la Prairie

Municipal Designated Sites	
St. Anne's Anglican Church Poplar Point	Taylor House
Poplar Point and District Memorial Rink	Portage la Prairie Dominion Post Office
Macdonald Pioneer Cemetery	McCowan House
Portage la Prairie Canadian Pacific Railway Station	Hill's Drug Store
Provincial Designated Sites	
St. Anne's Anglican Church River Poplar Point	Portage la Prairie Indian Residential School
Flee Island Dakota Entrenchment	Portage la Prairie Land Titles Building
St. Ambroise Dakota Entrenchment	St. Mary's la Prairie Anglican Church
Federal Designated Sites	
Portage la Prairie Armoury	First Homestead in Western Canada
VIA Rail/Canadian National Railways Station	Fort La Reine
Portage La Prairie Public Building/City Hall	
Plaques	
PLAQ158 Burnside School	PLAQ260 Curtis (East) School)
PLAQ157 Burnside Churches and Cemetery	PLAQ388 Flee Island Dakota Entrenchment
PLAQ1708 North Ridge Road School	PLAQ699 Lynch Party
PLAQ1127 St. Anne's Church	PLAQ2193 Nairn School District
PLAQ1543 St. Margaret's Anglican Church	PLAQ2445 Prospect Plains Methodist Church and Cemetery
PLAQ2412 High Bluff Presbyterian Church	PLAQ2197 High Bluff Village School
PLAQ610 Kelvin School	PLAQ2196 Flee Island School District
PLAQ1545 High Bluff Village School Bell	PLAQ2195 North High Bluff School District
PLAQ73 Beautiful Valley School	PLAQ2194 Cochrane School
PLAQ1544 Setter United Church	PLAQ2198 High Bluff School, Old
PLAQ2416 High Bluff, First Presbyterian Chuch	PLAQ2417 North High Bluff School
PLAQ2415 Portage Creek School	PLAQ379 First Homestead in Western Canada

PLAQ579 Ingleside School	PLAQ2414 Dale School
PLAQ1394 Oakville School	PLAQ2413 Jackson United Church
PLAQ1391 Fortier School	PLAQ1586 Longburn
PLAQ1152 St. Mary's Anglican Cemetery, Portage la Prairie	PLAQ1390 Mill Creek School
PLAQ1398 Gainsborough School	PLAQ1389 Glengarry School #1419
PLAQ1043 Salem School	PLAQ1388 Glengarry School #77
PLAQ261 Curtis (West) School	PLAQ1387 West Prospect School
PLAQ758 Meighen, Rt. Hon. Arthur	PLAQ337 Elm River School
PLAQ1546 Sioux Indian Graveyard	PLAQ1397 Overhill School
PLAQ941 Portage la Prairie Public Building	PLAQ1395 Belle Plain School
PLAQ940 Portage la Prairie Agricultural Society Centennial	PLAQ1362 Manitoba Developmental Centre Centennial
PLAQ2407 Canadian Forces Base, Portage la Prairie	PLAQ2410 Manitoba Development Centre Cemetery

Archaeological Sites

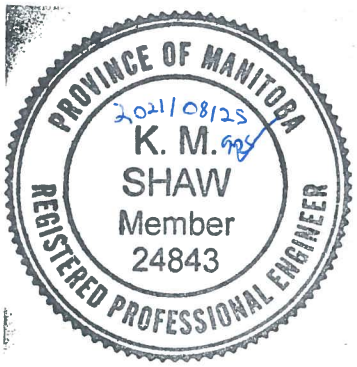
DlLn-012	DlLn-Y1	DlLo-011	DlLn-002
DlLn-011	DlLo-001	DlLo-003	DlLn-003
DlLn-004	DlLo-002	DkLp-008	DlLo-004
DlLn-005	DlLo-Y1	DkLo-002	DlLo-005
DlLn-006	DlLp-002	DlLm-001	DlLo-006
DlLn-007	DlLp-003	DlLm-002	DlLo-007
DlLn-008	DlLp-004	DlLn-001	DlLo-008
DlLp-006	DlLp-005	DlLn-010	DlLo-009
EaLo-022	EaLn-024	EaLo-023	EaLm-002
DlLp-007	EaLn-025	EaLo-024	EaLn-001
EaLo-031	EaLn-026	EaLo-025	EaLn-010
EaLo-032	EaLn-027	EaLo-026	EaLn-011
EaLo-033	EaLn-028	EaLo-027	EaLn-012
EaLo-035	EaLn-003	EaLo-028	EaLn-013
EaLo-036	EaLn-004	EaLo-029	EaLn-014

EaLo-038	EaLn-005	EaLo-003	EaLn-015
EaLo-039	EaLn-006	EaLo-030	EaLn-016
EaLo-004	EaLn-007	EaLm-001	EaLn-017
EaLo-040	EaLn-008	EaLo-007	EaLn-018
EaLo-005	EaLn-009	DlLm-003	EaLn-019
EaLn-021	EaLn-Y1	DlLm-004	EaLn-002
EaLn-022	EaLn-Y2	EaLo-041	EaLn-020
EaLn-023	EaLn-Y3	DlLo-015	EaLo-014
EbLn-002	EaLo-001	DlLn-019	EaLo-013
EbLo-001	EaLo-008	DlLn-013	EaLo-011
EbLo-002	EaLo-009	DlLn-015	EaLo-012
EbLo-003	EaLo-Y1	DlLn-016	EaLo-010
EbLp-001	EbLm-002	EbLp-004	EaLo-015
DlLn-017	EbLm-003	DlLo-013	EaLo-016
DlLn-014	EbLn-001	EaLp-002	EaLo-017
EaLo-020	EaLo-034	DlLn-017a	EaLo-018
EaLo-021	EaLo-037	EaLo-002	EaLo-019
EaLo-006	DlLo-014		

Appendix F
Construction related greenhouse gas emissions

WASH'AKE MAYZOON STATION – CONSTRUCTION RELATED GREENHOUSE GAS EMISSIONS REPORT

Energy Supply Planning Department
Integrated Resource Planning



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APPROVED BY: _____

NOTED BY: _____

DATE: AUGUST 2021

REPORT: IRPD 21_13

Manitoba Hydro

Final Version

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Table of Contents

Table of Contents i
List of Tables i
1 Purpose of this Report 1
2 Summary of Construction Related Emissions 2
3 Construction Activity Emissions – Methodology 3
3.1 Construction Activities 3
3.1.1 Manufacture of Construction Components/Materials (Supply-Chain) 3
3.1.2 Transportation of Construction Components/Materials (Supply-Chain) 5
3.1.3 Construction of the Station 5
3.2 Key Assumptions and Inputs 7
4 Land Use Change Emissions – Methodology 9
5 Operation and Maintenance Emissions – Methodology 11
6 References 12

List of Tables

Table 1 Summary of Construction Related Emissions 2
Table 2 Construction Material – Mass Summary (tonnes) 4
Table 3 Workforce and Schedule 6
Table 4 Life Cycle Activity EFs 7
Table 5 Life Cycle EFs for Aggregated Activities 8
Table 6 Construction Emissions – Key Input Assumptions 8
Table 7 Land Use Change Summary 10

1 PURPOSE OF THIS REPORT

This report summarizes the estimate of greenhouse gas emissions ("emissions") related to the construction of the Wash'ake Mayzoon Station. The proposed Wash'ake Mayzoon Station would be a new 230/66 kV transmission station west of Portage la Prairie and is the main element of Phase 1 of the Portage Area Capacity Enhancement Project ("PACE Project").

The purpose of this report is to function as a point of reference for the environmental assessment ("EA") of the Wash'ake Mayzoon Station Project by documenting the applied emissions estimation methodologies and assumptions. Construction related emissions include construction activity emissions (including supply-chain emissions), permanent land-use change emissions at the station, and ongoing station maintenance emissions.

While the estimate of construction related emissions draws on methodologies from previous greenhouse gas ("GHG") life cycle assessments ("LCAs"), such as Jeyakumar & Kilpatrick (2015), and it strives to follow LCA principles, it is considered a high level estimate of construction related GHG emissions, not a LCA. This was deemed an appropriate approach as potential emissions related to the construction of the Wash'ake Mayzoon Station are small.

Only emissions related to the construction of the Wash'ake Mayzoon Station are presented in this report; however, the estimate/assessment of construction related emissions was a sub-component of a comprehensive GHG mitigation assessment of the entire PACE Project (i.e., Manitoba Hydro (2021)). That assessment incorporates estimates of all relevant GHG effects (both emissions and emission reductions), primary and secondary, of the complete PACE Project. As a whole the PACE Project, of which the Wash'ake Mayzoon Station is a part, is expected to reduce global GHG emissions by 53 to 65 kilotonnes ("kt") of carbon dioxide equivalent ("CO_2e"); this includes substantially reducing emissions at Manitoba's last grid-connected fossil-fuel generating station (Brandon Generating Station).

The GHG mitigation assessment of the PACE Project compared a "project scenario" with a "baseline scenario", with the Wash'ake Mayzoon Station being built in both scenarios; however, emission estimates presented herein are absolute Wash'ake Mayzoon Station emissions (i.e., emissions are compared against a "do-nothing" scenario where the Wash'ake Mayzoon Station is not built).

2 SUMMARY OF CONSTRUCTION RELATED EMISSIONS

Table 1 provides a high-level approximation of construction related emissions, indicating the order of magnitude of potential emissions. Aggregated construction related emissions for the Wash'ake Mayzoon Station are 5.9 kt of CO_2e. While aggregated emissions are presented to the nearest tonne of CO_2e in Table 1, this is only done to help facilitate comparison between activities; it is not intended to imply that this level of accuracy was achieved during the estimate of construction related emissions.

Table 1 Summary of Construction Related Emissions

Activity	kt of CO_2e	% of total
Construction: Material Supply-Chain	2.454	41.5%
Construction: On-Site Energy	0.817	13.8%
Construction: Labour Transport	0.144	2.4%
Station Maintenance	2.325	39.3%
Station Land Use Change	0.169	2.9%
Total	**5.909**	

The two most significant categories of construction related emissions are the supply-chain emissions embedded in the materials of Wash'ake Mayzoon Station components (41.5% of emissions) and maintenance emissions related to the unintentional release of sulphur hexafluoride ("SF_6") and carbon tetrafluoride ("CF_4") gases (39.3% of emissions) throughout the presumed 75-year life of the station; however, it is probable that a much lower level of CF_4 and SF_6 would be released.

Construction of the Wash'ake Mayzoon Station is assumed to require no clearing[1] of forestland; however, all above ground biomass will be removed from a 3 hectare[2] ("ha") fenced-in area of the station. Due to the relatively small amount of existing above ground biomass within the permanently impacted area, land use change emissions are minimal (i.e., 0.17 kt) for the Wash'ake Mayzoon Station Project. Emissions resulting from on-site energy use during construction are estimated to be 0.82 kt. For comparison, this is approximately 3% of the annual emissions from Manitoba Hydro's existing vehicle fleet (25 kt of CO_2e in 2019)[3].

[1] Note: Manitoba Hydro may plant trees outside of the fenced-in area, but any emission benefits resulting from these potential project activities have not been included in the emissions estimates presented herein.

[2] Note: The fenced-in area of the Wash'ake Mayzoon Station is assumed to be 172 m X 172 m, along with a short access road, resulting in a total permanently impacted area of 3 ha. Preliminary estimates place the full site area (in and outside of the fence line) of the Wash'ake Mayzoon Station at 26 ha, all on existing farmland. The area outside the fenced-in area is assumed to remain either farmland or other low-lying vegetation.

[3] [Manitoba Hydro, 2020]

3 CONSTRUCTION ACTIVITY EMISSIONS – METHODOLOGY

On-site construction emissions result from the consumption of fossil-fuels in vehicles used during station construction. Estimates of those emissions have been compared against a high-level estimate of embedded supply-chain emissions to provide a useful point of comparison.

The presented estimate of gross construction emissions does not have a high-level of accuracy. This was deemed an appropriate approach as potential emissions related to the construction of the Wash'ake Mayzoon Station are small relative to other Manitoba Hydro transmission projects (e.g., Jeyakumar & Kilpatrick (2015)) as well as the PACE Project as a whole. The approach to use readily available construction information and LCA emission factors ("EFs") was deemed reasonable because although a more comprehensive analysis might provide greater accuracy, this level of accuracy was not considered necessary for a project with such low emissions. Conservative estimates were adopted at several decision points such that the total emission estimates provided herein are considered to likely be higher than what will occur. Where detailed construction information was readily available it has been incorporated.

Design and construction assumptions related to the Wash'ake Mayzoon Station are based on preliminary project design scopes and similar Manitoba Hydro projects (e.g., the De Salaberry East Transmission Station[4]); the final design may change from what was assumed herein. Construction assumptions presented in this report are intended for emissions estimation purposes only.

3.1 Construction Activities

Construction activities for the Wash'ake Mayzoon Station are broken down into three major activities:

1. Manufacture of construction components/materials (supply-chain)
2. Transportation of construction components/materials (supply-chain)
3. Construction of the station (on-site energy and worker transportation)

3.1.1 Manufacture of Construction Components/Materials (Supply-Chain)

High-level material estimates for required station equipment (Table 2) are based on the preliminary project scope with some assumptions based on the design of the De Salaberry East Transmission Station.[5] Material totals are shown in Table 2 and include estimates for electrical

[4] Note: A project description is provided in Manitoba Hydro (2017).

[5] Note: Many design details are presented in the Wash'ake Mayzoon Station EA Report.

apparatus (e.g., transformers, disconnects, circuit breakers, etc.), the control building (including major internal equipment), above-ground conductors, the below-grade grounding system, foundations (for the control building and electrical apparatus), yard cover, electrical apparatus supports, take-off structures (e.g., gantry towers), and fencing. For simplicity, some minor station components (e.g., the control building washroom) were left out of the scope of the overall material estimate.

Approximately 37% of the overall weight of material (excluding foundations and yard cover) is due to the new 230-66 kV power transformer, which is assumed to be approximately 155 tonnes (filled with oil)[6]. Structural steel for the electrical apparatus supports, takeoff structures, control building, and fencing was estimated at approximately 170 tonnes, or 40% of the overall weight of material. While some components would likely originate from closer to the Wash'ake Mayzoon Station (e.g., the fencing), for consistency and conservativeness India is the presumed source location for all materials (excluding yard cover and concrete foundations).

Uniform material specific EFs are applied separately to the weight of copper (wire EF), aluminum (wire EF), steel (bars EF), and insulating oil (Table 2); EFs for other materials (e.g., ceramics) are based on the overall average of these four main materials. 15% of the total concrete weight is assumed to be cement, with a cement production LCA EF listed on Table 4. The original source for cement is assumed to be Edmonton, based on recent projects and Canadian availability. It is assumed that concrete will be mixed near or on-site and aggregate will be obtained from within a 100 km radius of the station.

Table 2 Construction Material – Mass Summary (tonnes)

Construction Material	Wash'ake Mayzoon Station
Aluminum	18.5
Steel	210.6
Copper	117.8
Insulating Oil	54.4
Other	13.1
Material Total (Excluding Concrete/Yard Cover/CF_4/SF_6)	**414**
Concrete	3,000
Yard Cover	25,000
Breaker CF_4	0.1360
Breaker SF_6	0.2270

[6] Note: Approximate transformer mass breakdown is: 22 tonnes steel; 90 tonnes copper; 43 tonnes oil.

3.1.2 Transportation of Construction Components/Materials (Supply-Chain)

As noted in Section 3.1.1, for conservativeness, India was the assumed manufacture location for estimating transportation emissions for steel, aluminum, and copper materials. Metal-based materials and equipment were assumed to be transported by ocean to Vancouver, then by rail to Portage la Prairie, and then by road to the Wash'ake Mayzoon Station. Transportation emissions for diesel (and insulating oil) were embedded in the "Produce and Deliver Diesel" EF (Table 4).

Cement is assumed to be transported by rail from Edmonton to Portage la Prairie and then by road to site. It is assumed that the fenced in area[7] (3 ha) of the Wash'ake Mayzoon Station will be covered ("yard cover") with compacted granular fill (minimum 450 mm deep) topped with 150 mm deep granite isolation stone. A conservative average source distance of 100 km was assumed for estimating the transportation emissions of aggregate and yard cover since no specific supplier is currently identified.

Alternative source locations (than India) for steel, aluminum, and copper would likely result in lower transportation emissions; however, Table 5 shows that transportation emissions make up less than 10% of overall life cycle emissions for these materials, even with this conservative assumption.

3.1.3 Construction of the Station

"*It is expected that…existing local accommodations will be used for the most part for housing the transmission construction workforce*" [Manitoba Hydro, 2014a]. It is assumed a typical worker will commute from Portage la Prairie (15 km from the station) instead of Winnipeg (100 km from the station) or other alternative locations. Since not all workers will commute from Portage la Prairie, an average one-way 40 km commute distance is conservatively assumed.

Machinery operation may include excavators, loaders, dozers, graders, backhoes, cranes (e.g., 20 tonne, 50 tonne), semi-trailers, dump trucks, tracked vehicles, pick-up trucks, drill rigs, bucket trucks, telehandlers, tensioners, pullers, person lifts, all-terrain and support vehicles as well as generators, compressors and other small construction equipment. It is assumed that vehicles would be left on-site while workers commuted from Portage la Prairie (or elsewhere) daily. It is

[7] Note: It is also assumed that 6.5 ha of farmland may be lost due to the construction of the Wash'ake Mayzoon Station, with 17 ha potentially lost due to future development of the transmission and distribution system around the station; however, these expanded areas will not be covered with granular fill, and areas outside of the fenced in area are assumed to continue growing low-lying vegetation, similar to farmland in terms of above ground carbon content.

assumed that there will be one major construction vehicle, on average, for every three workers and that workers will arrive on site using one light duty truck for every three workers. Construction vehicles are assumed to consume, on average, twice the 3.4 L/hour rate of fuel required to continually idle a typical "aerial device" (i.e., bucket truck) without load over the course of 10 hours a day. The doubling incorporates a high-level estimate of average vehicle loading under various seasons and work requirements.

Estimated workforce requirements are presented in Table 3 and are based on preliminary project specific estimates[8].

Table 3 Workforce and Schedule

Project activity	Start	End	Workforce	Person-Months
Civil Construction – Site development	May-23	Jul-23	25	50
Civil Construction – Install foundations, ground grid, fence, cable trench, oil containment and control building	Aug-23	Jan-24	45	225
Electrical Construction – Install structures	Jan-24	Jun-24	12	60
Electrical Construction – Assemble, install and test equipment	Jun-24	Dec-24	12	72
Telecommunications – Install and commission equipment	Jan-24	Sep-24	3	24
Commissioning	Jan-25	Mar-25	1	2
			Total	**433**

[8] Note: These estimates are based on table 2-2 in the Wash'ake Mayzoon Station EA Report.

3.2 Key Assumptions and Inputs

Table 2, in Section 3.1.1, summarizes the mass of construction materials required for Wash'ake Mayzoon Station. Table 4 lists the EFs applied for the assessment of construction emissions. These EFs were selected for the LCA of the Manitoba–Minnesota Transmission Project[9] and reapplied for the high-level estimate of Wash'ake Mayzoon Station emissions.

Table 4 Life Cycle Activity EFs

Activity	CO_2e	Unit	Source[10]
Ocean Transport	15.84	g/tonne-km	NREL
Rail Transport	18.97	g/tonne-km	NREL
Road Transport	79.91	g/tonne-km	NREL
Mine Iron Ore	43.04	g/kg of ore	StatsCan
Produce Galvanized Steel Sheet	2,706.09	g/kg steel	NREL
Forge Steel into Bars/Wire/Other	354.61	g/kg steel	Chalmers University
Mine Bauxite	9,627.19	g/kg aluminum	NREL
Produce Aluminum Ingot			
Produce Aluminum Conductor	860.00	g/kg aluminum	CPM LCA Database
Mine Copper	1,424.62	g/kg copper	ICE and StatsCan
Process Copper	1,625.44	g/kg copper	ICE and StatsCan
Produce Copper Wire	3,192.00	g/kg copper	LCA of Copper Products
Produce Cement	928.39	g/kg of cement	LCI of Portland Cement
Produce and Deliver Diesel	979.29	g/L of diesel	GHGenius
Combust Diesel	2,803.53	g/L of diesel	ECCC

To provide a more complete understanding of the impact of specific input assumptions, Table 5 presents EFs for aggregated activities closely aligned with the three main activities laid out in Section 3.1. "g/kg material" for the Wash'ake Mayzoon Station excludes emissions related to concrete, yard cover, and insulating gases as these emissions are calculated separately.

[9][Jeyakumar & Kilpatrick, 2015]

[10] "NREL" is the U.S National Renewable Laboratory; "ICE" is the "Inventory of Carbon and Energy (ICE) Version 1.6a" produced by the Sustainable Energy Research Team from the University of Bath in the United Kingdom; Copper Products LCA is the *European Update Study on Life Cycle Assessment of Copper Products*; "Chalmers University" is based on the 2002 master thesis "LCA Based Solution Selection" by Berg, H. & Haggstrom, S. from the Chalmers University of Technology and ; "CPM LCA Database" is the Centre for Environmental Assessment of Product and Materials System's LCA Database; "LCI of Portland Cement" is the "Life Cycle Inventory of Portland Cement Manufacture" report prepare by Marceau, M., Nisbet, M & Vangeem, M. in 2006; "GHGenius" is GHGenius 4.03a Modeling Software; ECCC means ECCC (2020)

Table 5 Life Cycle EFs for Aggregated Activities

Activity	CO_2e	Unit
Transport from India to the Wash'ake Mayzoon Station	322.2	g/kg material
Transport from Edmonton to the Wash'ake Mayzoon Station	26.3	g/kg material
Full LC - Wash'ake Mayzoon Station Material	4,357	g/kg material
Full LC - Diesel Combustion	3,783	g/L of diesel
Full LC - Cement	143	g/kg concrete
Full LC - Aggregate, Yard Cover	8	g/kg material
Labourer Transport to the Wash'ake Mayzoon Station	45,394	g/vehicle-day
Construction Vehicle Emissions	257,231	g/vehicle-day

Table 6 lists the key assumptions used in the estimate of construction emissions. Rationale for the selection of these values are described in Section 3.1.

Table 6 Construction Emissions – Key Input Assumptions

Assumption	Value	Unit	Source
Light Duty Truck Mileage	0.15	L/km	Manitoba Hydro
"Aerial Device" Mileage	0.50	L/km	Manitoba Hydro
"Aerial Device" vehicle idling (no load)	3.4	L/hour	Oak Ridge National Lab
India to Vancouver by Ocean	17,500	km	sea-distances.org
Vancouver to Portage la Prairie by Rail	2,200	km	Google Maps
Edmonton to Portage la Prairie by Rail	1,220	km	Google Maps
Portage la Prairie to Wash'ake Mayzoon Station by Road	15	km	Google Maps
Hours per Construction Day	10	hours	Manitoba Hydro
Construction Days Per Month	22	days	Manitoba Hydro
Vehicle Ratio (Labour & Construction)	3	persons/vehicle	Manitoba Hydro
Construction Labour: Wash'ake Mayzoon Station	9,526	person-days	Manitoba Hydro

4 LAND USE CHANGE EMISSIONS – METHODOLOGY

The Wash'ake Mayzoon Station will require permanent covering of the yard as well as a short permanent access road. Station construction may also require temporary land disturbances (e.g., marshalling yards). Temporary disturbances are assumed to return their original state, from a carbon content perspective, and resulting land use change emissions related to temporary disturbances are assumed to be zero.

For estimating land use change impacts, the GHG mitigation assessment of the PACE Project followed similar methods to those used for the LCA of the Manitoba-Minnesota Transmission Project[11]. From a carbon content perspective, it was assumed that non-covered farmland would be converted to a different type of "non-treed" land and therefore not permanently disturbed, from a carbon content perspective. It was assumed no permanent clearing of forestland would be required for the construction of the Wash'ake Mayzoon Station as the station area is currently farmland (refer to Figure 9-1 in the EA of the Wash'ake Mayzoon Station). As with other Manitoba Hydro assessments, the GHG mitigation assessment of the PACE Project assumed only above ground carbon[12] content would be permanently disturbed.

The yard at Wash'ake Mayzoon will be covered with equipment/take-off structure foundations, a control building, granular fill, and granite isolation stone. It is assumed no above ground biomass will remain throughout the fenced in area (i.e., 3 ha[13]) of Wash'ake Mayzoon (i.e., the fenced in area will lose all ability to grow anything). The original carbon state of this area was assumed to be 15.33 tonne C/ha, as derived from Shaw et al. (2005).

This GHG mitigation assessment of the PACE Project followed IPCC (2003) direction on calculation methodology and land use change emissions were estimated using Equation A. Equation A assumes all carbon is released as CO_2 as all biomass is combusted. Should the biomass be productively harvested for use elsewhere (instead of being combusted), net emissions would

[11] [Jeyakumar & Kilpatrick, 2015]

[12] Note: Below-ground carbon content is not assumed to be permanently impacted below most of the yard cover; however, it will likely be impacted below the control building, tower foundations, the power transformer, and possible other station equipment foundations. Total area of below ground disturbed area is assumed to be less than 0.1 ha. Based on a 79 tonne C/ha total soil carbon assumption from Shaw et al. (2005), potential impact could range between 0 and 0.03 kt of CO_2e. But, for consistency with other Manitoba Hydro assessments, below ground impacts has been left out of the quantified emission totals.

[13] Note: The fenced in area of the Wash'ake Mayzoon Station is assumed to be 172 m X 172 m, along with a short access road, resulting in a total permanently impacted area of 3 ha. Preliminary estimates place the full site area (in and outside of the fence line) of the Wash'ake Mayzoon Station to be 26 ha, all on existing farmland. The area outside the fenced area is assumed to remain either farmland or other low-lying vegetation.

likely be less than presented on Table 7. These assumptions are consistent with mitigation measures outlined in Manitoba Hydro (2014b).

Equation A: CO_2e emissions (tonnes CO_2e) = Area Effected (ha) * [Original Carbon State (tonne C/ha) - Modified Carbon State (tonne C/ha)] * 44/12[14]

Land use change emissions as a result of the construction of Wash'ake Mayzoon Station are estimated to be 0.169 kt of CO_2e; Table 7 summarizes the key inputs assumed for that estimate.

Table 7 Land Use Change Summary

Land Use Change Component	Value	Unit
Area Affected	3.00	ha
Above Ground Carbon Content - Original State	15.33	tonne C/ha
Above Ground Carbon Content - Modified State	0.00	tonne C/ha
Permanent Carbon Change	15.33	tonne C/ha
GHG Released (per ha)	56.22	tonne CO_2e/ha
GHG Released	**0.169**	**kt of CO_2e**

[14] Note: 44/12 is the approximate ratio of the molecular weight of CO_2 (44) to that of carbon (12).

5 OPERATION AND MAINTENANCE EMISSIONS – METHODOLOGY

Fossil-fuel combustion related operation and maintenance ("O&M") emissions (e.g., due to the use of construction vehicles) at Wash'ake Mayzoon are expected to be minimal, especially compared to O&M emissions due to D83W (Phase 2 of the PACE Project); however, Table 2 presents that 0.136 tonnes of carbon tetrafluoride ("CF_4") and 0.227 tonnes of sulphur hexafluoride ("SF_6") will be added to the Manitoba Hydro transmission system as a result of the Wash'ake Mayzoon Station. These are potent GHGs with global warming potentials of 7,390 tonnes of CO_2e/tonne of CF_4 and of 22,800 tonnes of CO_2e/tonne of SF_6. Based on these emission equivalency factors, and the total amount of CF_4 and SF_6 associated with the project, there is a total potential of 6,181 tonnes of CO_2e related to these installed gases. New breakers are expected to have an average release rate of <1%/year, which translates to be 0 to 62 tonnes of CO_2e per year. The GHG mitigation assessment of the PACE Project assumed a release rate of 0.5% over 75 years, which would result in 2.3 kt of CO_2e. This is a conservative assumption that increased construction related GHG emissions by over 60% (compared with an estimate that excluded these potential emissions). It is probable that a much lower level of CF_4 and SF_6 is unintentionally released throughout the life of the station.

An assessment of supply-side emissions related to O&M materials was excluded from the GHG mitigation assessment of the PACE Project and presumed to be relatively negligible. The quantity of material required to construct Wash'ake Mayzoon will be substantially higher than any material required for repairs. Any large-scale replacements of Wash'ake Mayzoon equipment was placed outside the scope of the GHG mitigation assessment of the PACE Project.

6 REFERENCES

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Appendix G
Mitigation measures

APPENDIX G: Mitigation measures

This appendix provides a list of all the mitigation measures discussed throughout the environmental assessment

Agriculture

The following mitigation measures will be implemented to minimize the potential effects to land use and ownership:

- Purchase of property at the station site at fair market value
- Maintain access to adjacent land parcels
- Implement Manitoba Hydro Landowner Compensation Program
- Implement the Manitoba Hydro Biosecurity Policy and Standard Operating Procedures

Human Health

Health Canada (Health Canada 2016) encourages the use of all available mitigation measures that are technically and economically feasible to limit negative impacts to air quality. The following mitigation will be applied to minimize potential effects to air and groundwater quality:

- Mud, dust and vehicle emissions will be managed in a manner that allows for safe and continuous public activities near construction sites
- Only water and approved dust suppression products will be used to control dust
- All applicable permits will be obtained, and provincial regulations adhered to for pesticide use

In the event of a release during construction, contractors will follow their own spill response plans, which will have been reviewed as part of their contracts with Manitoba Hydro.

Manitoba Hydro employees will follow the procedures for spill response outlined in the company's spill response and prevention plan.

Stations have spill kits and spill containment plans, including a combination of non-point and point containment for oil-filled equipment.

Community Well-being

Visual quality

Visual quality considerations were factored into site selection (See Chapter 3.0 for details). Manitoba Hydro will continue to work with a range of interested parties (residents, interested parties, and provincial government agencies as applicable) in development of the proposed station with the goal to reduce any potential visual

concerns. Based on concerns raised during the engagement process, Manitoba Hydro has committed to plant trees to reduce visual and noise concerns at two landowner's homes adjacent to the station.

Noise

Noise due to implosions has unique characteristics. Therefore, Health Canada (Health Canada 2017) recommends limiting the number of blasts irrespective of other noise levels due to background sources or construction activities. Manitoba Hydro will combine blasts to minimize the overall number of blasts required. A blasting hut may also be used to minimize noise impacts.

General mitigation measures for noise (Health Canada 2017)

- Regularly train workers and contractors to use equipment in ways that minimize noise
- Provide notification to the public ahead of implodes related to conductor stringing with contact information
- Investigate and respond to complaints about noise as quickly as feasible
- Include in tenders, employment contracts, subcontractor agreements and work method statements, clauses that assure the following of local noise by-laws
- Avoid excessive volume of radios and stereos outdoors and the overuse of public address systems where neighbours can be affected
- Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours and other relevant practices (e.g. minimizing the use of engine brakes and periods of engine idling)

Property values and residential development

Station siting considered the occurrence of homes and proximity to homes.

During construction, Manitoba Hydro plans to notify landowners, Indigenous communities and interested parties prior to construction start and will share information about planned construction activities.

The effect of project activities can be reduced through scheduling and logistics planning (e.g., use of implosives during daytime hours during the week). Mitigation measures of potential project effects on property and residential development include the following:

- Construction activities and equipment will be managed to avoid damage and disturbance to adjacent properties, structures and operations
- Mud, dust and vehicle emissions will be managed in a manner that considers the safe and continuous public activities near construction sites

- Noisy construction activities where noise and vibration may cause disturbance and stress in built-up areas will follow local noise by-laws
- A communication protocol will be developed to notify affected parties of blasting operations and conductor splicing (if required)
- Construction, operation and maintenance personnel will undertake activities in such a way to avoid affecting neighbouring properties, structures or operations. In the unlikely event that a landowner incurs damages, they are subject to compensation through Manitoba Hydro's existing compensation policies

Electric and magnetic fields

Although no mitigation is required, Manitoba Hydro continues to undertake the following actions regarding EMF concerns:

- Designing the transmission line to meet international standards and guidelines set forth by the International Commission on Non-Ionizing Radiation Protection. These guidelines have been adopted by Health Canada and the World Health Organization
- Monitoring of worldwide research programs on electric and magnetic fields for its large-scale projects
- Maintaining communications and provision of technical information to interested parties, including the public and agencies responsible for public and occupational health and the environment

Stress and annoyance

To mitigate stress and annoyance caused by real and perceived environmental effects, the site selection process considered several factors, including existing land uses and the presence of existing infrastructure. The following measures will be implemented to mitigate the effects of stress and annoyance:

- Manitoba Hydro has an easement agreement with the private landowners whose land is crossed by the transmission line and where the station is located. The information provided to landowners during this process is expected to alleviate concerns related to project uncertainty
- The final detailed project design will consider standards for setbacks and overhead clearance, including CSA standards such as CAN/CSA-C22.3 No. 1-10 "Overhead Systems" and CAN/CSA 22.3 No. 60826-10 "Design Criteria for Overhead Transmission Lines"
- Manitoba Hydro will continue to share up to date information regarding project activities and timelines and to work to resolve concerns
- Noisy construction activities where noise and vibration may cause disturbance will follow local noise by-laws.

- A communication protocol will be developed to notify affected parties of blasting operations and conductor splicing. Affected parties may include the RCMP, municipalities, landowners and resource users.

Wildlife

Selection of the station site took a balanced approach to minimize overall project effects. In addition to site selection, standard industry practices and avoidance measures, along with project-specific mitigation as summarized in Chapter 16.0 will be implemented during project construction and operation.

This section highlights the key mitigation measures implemented to limit effects to wildlife, including species of conservation concern.

Mitigation will include, but not be limited to:

- Establishing setbacks and buffers (Appendix D) around migratory bird nests or mammal dens
- Keeping litter and garbage contained
- Flagging off environmentally sensitive areas prior to construction
- Limiting project-related activity outside of the project development area
- Using designated roadways and access roads.
- Cleaning equipment before moving from locations with identified invasive weed infestation
- Performing daily inspections for fuel, oil and fluid leaks on vehicles, equipment and machinery and shutting down and repairing any leaks found
- Hunting and harvesting of wildlife or possession of firearms by project staff will not be permitted while working on project sites

Security lighting mitigation includes:

- Full cut-off lighting
    - No direct light shall be emitted above the horizontal.
- Light spill will be limited to 20lux horizontal (ground level) at 3 meters outside the fence for safety and security purposes.

Economic Opportunities

Manitoba Hydro will work with interested Indigenous communities to prepare a list of skilled labor, equipment, services and ancillary supports available for use on the project.

Traditional Practices, Culture and Heritage

Traditional harvesting

The primary mitigation measure for reducing adverse effects to traditional harvesting practices was site selection. The site selection methodology considered values from multiple perspectives and community groups. Accordingly, the location of a station is often a balance of those perspectives. The location for this station does not interfere with any Unoccupied Crown Lands nor do we have current knowledge of traditional harvesting practices taking place directly on the station site.

Manitoba Hydro remains open to any mitigation measures suggested by Indigenous communities to further reduce any adverse effects the project might have on traditional harvesting practices.

Important sites

The primary mitigation measures for reducing adverse effects to important sites is the site selection process and implementing the Culture and Heritage Resources Protection Plan (CHRPP). The location of the station avoids any important site identified by Indigenous communities and avoids areas considered by communities for future development plans and TLE.

In their ICAC submission, Dakota Tipi First Nation suggests four mitigation measures to reduce disturbance to heritage sites, including:

1) "Conduct a full heritage assessment of the site
2) Arrange for a DTFN Liaison to be on-site during heritage work, site clearing and ground disturbance. The Liaison may choose to be on-call in lieu of on-site depending on circumstances
3) Share results of the heritage assessment with DTFN
4) Work with DTFN in decision regarding the handling and treatment of any artifacts found." (Appendix A)

A Heritage Resources Assessment has been conducted for the project and pre-construction archaeological surveys will take place (see section 12.4.3 Effects to Heritage Resources for more detail). Results of the assessment will be shared with communities. Manitoba Hydro will arrange for community members to participate in on-site heritage work and monitoring of construction activities when deemed appropriate by Manitoba Hydro and communities. Manitoba Hydro will follow the CHRPP for handling and treatment of artifacts, which includes provision for notifying communities.

In response to the MMF's statement that "the presence of 80 existing Métis Knowledge features in the PACE project area indicates the potential for the Manitoba

Métis Community (Manitoba Métis) to have additional specific knowledge to share about alternatives to sites if given the opportunity. We would also like to engage the Métis Citizens for additional project specific information which can be used to inform Manitoba Hydro's full environmental assessment and EAP, construction and future operations of the line." (Appendix A), Manitoba Hydro will continue to welcome information from the MMF to inform construction and future operations of BP6/BP7 and the Wash'ake Mayzoon Station as well as to inform the EA for stage 2 of PACE – new transmission line.

It has been shared by Indigenous communities on past projects and for this project that a traditional ceremony should take place on any project that affects the land. In their ICAC submission, Dakota Tipi First Nation suggests that Manitoba Hydro:

1) "Hold a Pipe Ceremony at ground-breaking to respect the land in a traditional way
2) Hold a closing ceremony when construction is complete
3) Ensure DTFN participation in both ceremonies" (Appendix A)

Manitoba Hydro will work with Indigenous communities to organize a traditional ceremony before construction on the project begins and a closing ceremony after completion of the project. All communities engaged on the project will be invited to attend and participate in the ceremonies.

Cultural awareness training will be provided to project staff (contractors and internal MH staff). A Culture and Heritage Workshop will take place on October 7, 2021 where Indigenous communities, the HRB and Manitoba Hydro will meet to share concerns related to important sites, including how to pay respect and be responsive to any finds should they be encountered during site work.

Heritage Resources

Mitigation of potential Project effects on heritage resources includes pre-construction archaeological work at station site. Mitigation measures for the archaeological site found during the preliminary HRIA investigation will include subsurface testing to determine if buried components are present below the plow zone. Additional mitigation measures will be determined based on discussion with the HRB with input from the Indigenous Community Assessment Coordinators. If there are no additional finds as a result of the shovel testing that cannot be mitigated then an application will be made to the HRB for the project to receive heritage clearance.

In addition to the measures developed in the environmental protection plan, a Cultural and Heritage Resources Protection Plan (Appendix B) has been developed to specifically deal with potential effects. It includes the following measures:

- All archaeological finds discovered during site preparation and construction will be left in their original position until the Project Archaeologist is contacted and provides instruction;
- Orientation information will include typical heritage resource materials and reporting procedures;
- The Contractor will report heritage resource materials immediately to the Construction Supervisor who will cease construction activities in the immediate vicinity until the Project Archaeologist is contacted and prescribes instruction; and
- Relevant measures within the Cultural and Heritage Resource Protection Plan will be adhered to during construction and operations phases of the Project.

Environmental effects analysis for heritage resources

Environmental effect	Mitigation measures	Residual effects	Evaluation
Identification of unknown heritage resources or burials at station site	Pre-construction archaeological work in Project footprint Follow relevant measures outlined in the Cultural and Heritage Resource Protection Plan	Disturbance of unknown resources or burials	Low

No heritage resource sites were initially known within the LAA based on the compiled data. However, an archaeological site was discovered during HRIA investigations. Additional testing and assessment will determine if there are buried subsurface components or if the site is limited to the surface within the disturbed plow zone. The potential for additional unknown archaeological sites being discovered during clearing and construction remains low, especially since the project site has been disturbed through agricultural activities. While there is low potential, there could be potential for deeply buried unknown heritage resources to be discovered during clearing and construction of the proposed station site. Continuing pre-construction archaeological work should reduce the possibility of accidental disturbance to heritage resources or human remains.