

NATIONAL ENERGY BOARD

IN THE MATTER OF: Sections 45(1) and 58.11 of the *National Energy Board Act*, R.S.C. 1985, c.N-7

AND IN THE MATTER OF: Condition 13 of Permit EP-196 and Condition 8 of Certificate of Public Convenience and Necessity EC-III-16

AND IN THE MATTER OF: An Application by Manitoba Hydro to construct and operate an international power line, alter the Glenboro international power line and alter the Riel international power line

**AMENDED APPLICATION FOR AUTHORIZATIONS
RELATED TO THE MANITOBA-MINNESOTA
TRANSMISSION PROJECT**

K. Jennifer Moroz
Barrister & Solicitor
Law Division
Manitoba Hydro
22nd floor – 360 Portage Avenue
WINNIPEG, Manitoba
R3C 0G8

Telephone: 204-360-4539
Facsimile: 204-360-6147

kjmoroz@hydro.mb.ca

TABLE OF CONTENTS

1. Introduction	1
1.1 The Project	1
1.2 The Applicant.....	1
1.3 Provincial Context.....	1
1.4 The Application.....	2
2. Concordance of Requirements	2
3. Common Information Requirements	3
3.1 Action Sought by Applicant.....	3
3.2 Project Proponents.....	11
3.3 Proof of Publication of Notice	12
4. Project Description and Engineering	12
4.1 Project Location	12
4.2 Project Components and Activities	18
4.3 Impacts on the Bulk Power System.....	25
4.4 Project Schedule and Other Required Approvals.....	28
4.5 Alternatives	32
5. Consultation	39
5.1 Guiding Principles and Goals for Consultation Program.....	39
5.2 Design of the Public Engagement Process	41
5.3 Implementation and Outcome of PEP	42
5.4 First Nations and Metis Engagement Process	49
5.5 Notification to Affected Third Parties.....	58
6. Environmental and Socio-Economic Assessment	59
6.1 Overview	59
6.2 Scope of Assessment.....	60
6.3 Description of the Environmental and Socio-Economic Setting	62
6.4 Effects Assessment.....	65
6.5 Inspection, Monitoring and Follow-Up.....	67
7. Economics	68
7.1 Economics	68
7.2 Finance	83

8. Lands Information	84
8.1 Land Area Requirements.....	84
8.2 Land Rights	84
8.3 Land Rights Acquisition Process	85
8.4 Land Acquisition Agreements.....	85
8.5 Plan of Survey	86

APPLICATION

1. Introduction

1.1 The Project

The Manitoba-Minnesota Transmission Project (“MMTP” or the “Project”) is a multi-faceted transmission project initiated by Manitoba Hydro involving the construction of a new international power line, modifications to existing international and intraprovincial transmission lines and other associated transmission facilities. The Project will provide benefits to the Canadian economy not only by increasing the capacity of the Canadian transmission grid and thereby the capacity for international trade in electricity, but also by creating employment and business opportunities, contributing to the GDP of Manitoba and Canada and by generating revenue at the local, provincial and federal levels. The construction phase of the Project alone is expected to generate over 900 person-years of employment. This cross-border transmission project also supports the goals of the North American Climate, Clean Energy and Environment Partnership formed between Canada, Mexico and the United States of America. During the extensive planning of MMTP, Manitoba Hydro implemented a transmission line routing process that was intended to ensure that these benefits would be realized without significant harm to the environment. Manitoba Hydro believes this goal has been achieved through the use of a routing methodology that had three hallmarks: (i) optimization of the use of existing transmission corridors; (ii) the incorporation of feedback from comprehensive public, First Nations and Metis engagement processes; and (iii) the use of models and criteria that strove to balance competing interests.

1.2 The Applicant

Manitoba Hydro is a vertically integrated electric utility and natural gas distributor that is incorporated under a special act of the Manitoba legislature as a Crown corporation. Manitoba Hydro owns, operates, and maintains extensive electricity generation, transmission and distribution facilities located in the province of Manitoba. The Corporation’s generating facilities are predominantly hydro-electric, thus offering a clean, non-emitting source of electricity to retail customers in the province and wholesale customers in Canada and the United States of America.

1.3 Provincial Context

The *Manitoba Hydro Act*¹ regulates much of the electricity industry under provincial jurisdiction and requires certain matters to be authorized by Orders in Council. The Public Utilities Board of Manitoba (the “PUB”) regulates retail electricity rates and compliance with reliability standards developed through the North American Electric Reliability Corporation, Inc. (“NERC”) that have been adopted under provincial regulations. In addition, other matters may be assigned to the PUB by order of the Lieutenant Governor in Council, such as the review of

¹ C.C.S.M., c. H190.

Manitoba Hydro’s generation and transmission development plans. Such a review was conducted for MMTP, resulting in the requisite authorization from the Province of Manitoba pursuant to *The Manitoba Hydro Act* to proceed with the Project. Manitoba Hydro has also submitted a regulatory application for MMTP at the Provincial level in the form of a proposal to Manitoba Conservation and Water Stewardship pursuant to the provisions of *The Environment Act*.² The scope of Manitoba Hydro’s Environment Act proposal includes the components of MMTP that involve intraprovincial transmission facilities, as well as the international power line components of MMTP that have been made subject to Provincial jurisdiction by way of an Order in Council issued pursuant to the *National Energy Board Act*.³

1.4 The Application

The scope of this Application includes the three threshold National Energy Board approvals required for the construction and alteration of the components of the Project that are regulated by the National Energy Board. Applications for amendments to Manitoba Hydro’s existing National Energy Board Certificates and Permits that will be required if the new international power line is approved will be filed with the National Energy Board separately. Although Manitoba Hydro has not elected for federal law to apply to its proposed international power line project, the Electricity Filing Manual has been used as guidance for this Application supplementary to the requirements contained in the *National Energy Board Electricity Regulations*.⁴ Accordingly, this Application is organized consistent with the order of subject matter contained in the Electricity Filing Manual.

2. Concordance of Requirements

In order to assist the Board in its determination of whether the requirements of the applicable regulations have been met, a concordance between the requirements specified in section 5 of the *National Energy Board Electricity Regulations* and the relevant sections of this Application is provided below.

Section of Regulations	Section of Application
5(a)	3.2(a), 3.2(b)
5(b)	3.2(c), (d), 7.2.1
5(c)	3.3
5(d)	5.3.2, 5.4.2.b
5(e)	4.1.1, 4.5.1, 6.3.2
5(f)	4.1, 4.5.1
5(g)	4.1.1.a, 4.1.2
5(h)	4.1.1.b
5(i)	4.1.1.b

² C.C.S.M., c. E125.

³ R.S.C. 1985, c. N-7.

⁴ SOR/97-130.

5(j)	8.5
5(k)	3.2.e
5(l)	7.2.1.c
5(m)	4.2.1.1
5(n)	4.3.2
5(o)	4.3.4
5(p)	3.1.3, 4.4.1
5(q)	4.4.2
5(r)	4.4.3
5(s)	6
5(t)	6.3.2, 4.1.4, 8.1.1, 6.4.1.e, 6.5.1
5(u)	n/a
5(v)	4.3.3
5(w)	4.2.2

3. Common Information Requirements

3.1 Action Sought by Applicant

3.1.1 Project Summary

The Manitoba-Minnesota Transmission Project includes the following initiatives: (i) the construction of a 500 kV alternating current international power line, to be owned and operated by Manitoba Hydro, extending from Manitoba Hydro’s existing Dorsey Converter Station in southern Manitoba to a point on the international boundary between Manitoba and Minnesota (“Dorsey IPL” or the “IPL”)⁵; (ii) the alteration of Manitoba Hydro’s Glenboro international power line (“Glenboro IPL”) to prevent overloading on another facility caused by increased flows over the Manitoba-U.S. interface once the Dorsey IPL is in service; and (iii) the alteration of Manitoba Hydro’s Riel international power line (“Riel IPL”) in order to accommodate the proposed route of the Dorsey IPL. The new IPL is 213 km in length and is proposed to be located on both existing and new right-of-way. This will require the acquisition of rights over Provincial Crown and privately owned land. If approved by the National Energy Board (“Board”), the Dorsey IPL will connect with a new U.S. transmission line known as the Great Northern Transmission Line that is under development by Minnesota Power (a division of ALLETE, Inc.) and a subsidiary of Manitoba Hydro, 6690271 Manitoba Ltd. The Great Northern Transmission Line is a 500 kV alternating current transmission line extending from the international boundary crossover point of the Dorsey IPL to the proposed Iron Range Substation near Grand Rapids, Minnesota. The Project provides the necessary infrastructure for several executed long-term electricity sale agreements between Manitoba Hydro and Minnesota Power. The justification for the Project, which includes the benefits to

⁵ To avoid confusion based on past IPL authorizations, Manitoba Hydro clarifies that the former “Dorsey” IPL that was authorized by Certificate EC-III-16 in 1977 has been modified pursuant to Order AO-4-EC-III-16 so as to now extend from the Riel Substation to a point on the international boundary (“Riel IPL”).

Manitoba electricity customers derived from export sale revenue and increased import capacity for reliability purposes, has been reviewed at a public hearing under provincial law and endorsed by the Province of Manitoba. In accordance with applicable federal and provincial environmental legislation, Manitoba Hydro has conducted a detailed environmental assessment to demonstrate that the Project will not cause significant adverse biophysical or socio-economic environmental effects.

3.1.2 Board Authorizations Being Sought

In order to meet the Applicant's proposed in-service date of May 31, 2020, Manitoba Hydro seeks the following authorizations prior to August 31, 2017.

a. National Energy Board Act

- i. Dorsey IPL: Pursuant to section 58.11 of the *National Energy Board Act* (the "Act"), Manitoba Hydro seeks a permit to construct and operate a 500 kV alternating current international power line extending from Manitoba Hydro's Dorsey Converter Station in Manitoba to a point on the international boundary south of Piney, Manitoba. An Order in Council was issued by the Lieutenant Governor of the Province of Manitoba on November 6, 2013, pursuant to section 58.17 of the Act, designating the Minister of Conservation and Water Stewardship for Manitoba as the provincial regulatory agency for the proposed Dorsey IPL. Attached as Appendix 1 to this Application is a copy of Manitoba Order in Council 00386/2013. Manitoba Hydro notes that under paragraph 58.28(1)(a) of the Act, authorization from the Board for the Dorsey IPL may require a term or condition allowing the IPL to parallel Manitoba Hydro's Riel international power line for a portion of the proposed route (as described in section 4.1.2 of this Application).⁶ Manitoba Hydro also confirms that, pursuant to section 4 of the *Power Line Crossing Regulations*:⁷ (i) the Dorsey IPL will be constructed in accordance with CAN/CSA-C22.3 No.1-M87, Overhead Systems; (ii) the requirements for the permission of the owner of the facility and an agreed procedure and schedule between the owner of the international power line and the facility are met as Manitoba Hydro is the proposed holder of the permit for the international power line and the owner of the "facility" in question; (iii) the length of the Dorsey IPL will not be extended beyond all termini of the IPL.
- ii. Alterations to Glenboro IPL: On March 5, 2002 the Board issued Permit EP-196 authorizing Manitoba Hydro to construct and operate a 230 kV international power line extending from Manitoba Hydro's Glenboro Station in southern Manitoba to a point on the international boundary near

⁶ It is not clear what distance between an IPL and a facility would constitute an IPL "passing along a facility" under s.58.28(1)(a).

⁷ SOR/95-500.

Killarney, Manitoba, subject to certain terms and conditions.⁸ Condition 13 of Permit EP-196 provides that “Manitoba Hydro shall not make any change in the international power line authorized by this Permit without prior approval of the Board.” Manitoba Hydro seeks authorization from the Board pursuant to Condition 13 of Permit EP-196 to alter the Glenboro IPL by the addition of two phase-shifting transformers to the terminal facilities of the IPL and relocating a segment of the IPL as described in this Application.

iii. Alterations to Riel IPL: On September 6, 1977 the Board issued Certificate of Public Convenience and Necessity (“Certificate”) EC-III-16 for the Riel IPL. Condition 8 of Certificate EC-III-16, as amended by AO-4-EC-III-16 issued on December 4, 2009, provides that “Manitoba Hydro shall not make any changes or alterations in the international power line or in its associated terminal facilities at Riel Substation or in the metering facilities without the prior approval of the Board.” Manitoba Hydro seeks authorization from the Board pursuant to Condition 8 of Certificate EC-III-16 to relocate a segment of the Riel IPL as described in this Application. Authorization is also requested pursuant to section 45(1) of the Act for the plan, profile and book of reference showing the proposed alteration. Manitoba Hydro notes that although the Project as described in sections 4.1 and 4.2 of this Application includes modifications to the Dorsey Converter Station and Glenboro South Station, Manitoba Hydro does not consider the stations themselves to be part of the international power lines.

iv. Confidential Material: Due to the confidential nature of some of the material contained in the appendices to this Application, an application pursuant to sections 16.1 and 16.2 of the Act is being filed concurrently with this Application.

b. Canadian Environmental Assessment Act, 2012

Since the proposed Dorsey IPL exceeds 345 kV and requires more than 75 km of new right-of-way, Manitoba Hydro is prohibited from constructing and operating the Dorsey IPL prior to an environmental assessment being conducted pursuant to the *Canadian Environmental Assessment Act, 2012*.⁹ The proposed modifications to the Riel IPL and Glenboro IPL are incidental to the construction of the Dorsey IPL and are therefore included in the “designated project”.¹⁰ The Board is the responsible authority for ensuring

⁸ Note that “Glenboro Station” as referenced in Permit EP-196 is now referred to by Manitoba Hydro as “Glenboro South Station”. The more recent terminology is used throughout the remainder of this Application and the Environmental Impact Statement.

⁹ S.C. 2012, c. 19, s.52 (“CEAA, 2012”) s.6,13; *Regulations Designating Physical Activities*, SOR/2012-147, s. 4(3) and Schedule s. 5.

¹⁰ CEAA, 2012, *supra* note 9, s. 2, “designated project”.

that an environmental assessment is performed, subject to any delegation of authority pursuant to section 26(1) of that Act.¹¹

3.1.3 Project Justification

- a. **Functional Separation:** Since 1997 when Manitoba Hydro introduced open access transmission service in Manitoba pursuant to subsection 15(4) of The Manitoba Hydro Act,¹² the Corporation has been functionally separated into a Transmission Function and a Marketing Function that operate independently from one another in accordance with Standards of Conduct.¹³ This functional separation ensures that all users of Manitoba Hydro’s transmission system, including Manitoba Hydro’s Marketing Function (known as “Manitoba Hydro Export Power Marketing” or “MHEM”), are treated in a non-discriminatory manner under the Manitoba Hydro Open Access Transmission Tariff.¹⁴ Given this corporate structure, this section of the Application will address the justification for the Project from the Transmission Function perspective as well as, but separately, from the Marketing Function perspective.
- b. **Transmission Justification:** From a Transmission Function perspective, the Project is justified because it fulfills Manitoba Hydro’s legal obligations as a Transmission Provider under the Manitoba Hydro Open Access Transmission Tariff (“MH OATT”). As described in more detail below, Manitoba Hydro’s Transmission Function has entered into an agreement with its Marketing Function to construct the Project based on studies performed under the MH OATT.
 - i. **Overview of Transmission Upgrade Process:** The MH OATT contains the terms and conditions of service governing the use of existing transmission facilities, as well as the process for determining and constructing transmission upgrades to meet requests for firm transmission service. In accordance with the general framework of the MH OATT, once a request for Long-Term Firm Point-to-Point Transmission Service is submitted, Manitoba Hydro’s Transmission Business Unit (“MH TBU”) conducts a System Impact Study to assess the impact of the request on its system and to determine if the transmission capacity is available.¹⁵ The System Impact Study also includes a preliminary identification of required upgrades and their estimated cost. If the transmission capacity is not available and the Transmission Customer agrees to pay the costs of a Facilities Study, a Facilities Study is conducted to determine the transmission upgrades required in Manitoba to provide the requested

¹¹ *Supra* note 9, s. 15(b).

¹² *Supra* note 1.

¹³ See Manitoba Hydro Standards of Conduct for Providing Open Access Transmission and Interconnection Service, August 26, 2014, online:
http://www.hydro.mb.ca/your_business/standards/standards_of_conduct.pdf.

¹⁴ See Manitoba Hydro Open Access Transmission Tariff, January 1, 2016, version 37, online:
<http://tsoinfo.hydro.mb.ca/sites/ts/tariff/OATT%20Tariff/MH%20OATT%20Version%2037%20FINAL.pdf>

¹⁵ MH OATT, *supra* note 14, s. 19.1, Attachment D.

transmission service, the estimated cost of the upgrades and the time for completion.¹⁶ Facilities Studies are coordinated with affected transmission owners and their respective Regional Transmission Organizations.¹⁷ Studies may be performed on an individual basis or a single study may be done for a group of transmission service requests (“TSRs”).¹⁸ The MH OATT provides for the issuance of preliminary Facilities Study Reports that may identify various different upgrade options for the Transmission Customer to consider.¹⁹ After a preliminary Facilities Study Report is issued, the Transmission Customer has the opportunity to provide comments on the report and must determine the option that it wishes to pursue. Once the final Facilities Study Report is issued, MH TBU must offer to construct the upgrades identified in the Facilities Study Report through issuance of a standard form Facilities Construction Agreement and Service Agreement to the Transmission Customer.²⁰ The offer to construct the required transmission upgrades is non-discretionary and must be offered by TBU on a non-discriminatory basis to all Transmission Customers that have requested a Facilities Study. An analogous process applies for studying requests for Network Integration Transmission Service, which is also a type of firm transmission service.²¹

- ii. Transmission Service Requests Related to MMTP: MHEM submitted 12 TSRs in 2007 and 2008 for a total of 1100 MW of Long-Term Firm Point-to-Point Transmission Service and Network Integration Transmission Service. These TSRs were submitted for imports and exports between Manitoba and the U.S., based on prospective long term purchase/sale agreements that were under negotiation with counterparties located in the region that is under the operational authority of the Midcontinent Independent System Operator, Inc. (“MISO”). Based on the similarities of the TSRs, a Group System Impact Study was performed for these TSRs. A report entitled Manitoba Hydro System Impact Study Results dated January 24, 2013²² was issued by MH TBU to MHEM documenting the results of a series of three impact studies that were performed between 2009 and 2012 by Siemens PTI, in conjunction with Manitoba Hydro, MISO and affected MISO Transmission Owners (“Ad Hoc Study Group”). Given that the 2013 System Impact Study Report identified the need for transmission upgrades, MHEM requested a Facilities Study.
- iii. Facilities Study Reports: Preliminary Group Facilities Study Reports were issued in October of 2013 and April 3, 2014, outlining various options for constructing Network Upgrades to provide some or all of the requested 1100 MW of transmission service. These options are described in section

¹⁶ MH OATT, *supra* note 14, s. 19.8.

¹⁷ MH OATT, *supra* note 14, Attachment D-2, s. 3.3 and Attachment D-2(G), s. 2.2.

¹⁸ MH OATT, *supra* note 14, s. 19.3.1.

¹⁹ MH OATT, *supra* note 14, s. 19.8.

²⁰ MH OATT, *supra* note 14, s. 19.8, Attachment A and Attachment E.

²¹ MH OATT, *supra* note 14, s. 32.1-32.4.

²² Manitoba Hydro, System Impact Study Results, January 24, 2013, Appendix 2.

4.5.2 of this Application. After considering the April 3, 2014 Preliminary Report on Group Facilities Study (“Preliminary Study Report”),²³ and the outcome of power purchase agreement negotiations, MHEM withdrew some of its previous TSRs and submitted new TSRs for a total of 883 MW of transmission service. At the request of MHEM, a Group System Impact Study Report was issued on October 1, 2014 analyzing the new group of seven (7) TSRs, examining only one option (“Y500”) which involved a U.S. injection point located within the Iron Range region of Minnesota.²⁴ Based on studies analyzing the system impact, this report identified system constraints resulting from the new group of TSRs and the need for Network Upgrades to accommodate the requested service. A preliminary assessment indicated that the same Network Upgrades as described in the April 2014 Preliminary Study Report would be required to accommodate the new group of TSRs.²⁵ A Group Facilities Study Report dated June 5, 2015 was issued to MHEM confirming the need to: (i) construct a new 500 kV international power line from Dorsey Station²⁶ to the Manitoba-U.S. border; (ii) add two 300 MVA phase-shifting transformers to the Glenboro IPL and make associated modifications to the IPL and Station; (iii) relocate a segment of the Riel IPL; and (iv) undertake associated intraprovincial upgrades to accommodate the requested transmissions service.²⁷

- iv. Facilities Construction Agreement: Pursuant to section 19.8 of the MH OATT, MH TBU issued a Facilities Construction Agreement to MHEM, offering to construct the Network Upgrades. The Facilities Construction Agreement was executed by MH TBU and MHEM on October 5, 2015, obligating MH TBU to construct the Network Upgrades identified in the Report, subject to the terms and conditions set forth in the agreement.²⁸

c. Marketing Justification:

- i. Statutory: Manitoba Hydro’s governing legislation, *The Manitoba Hydro Act*, sets forth the following purposes for the Corporation:

The purposes and objects of this Act are to provide for the continuance of a supply of power adequate for the needs of the province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power and, in addition, are: (a) to provide and market products, services and expertise related to the development, generation, transmission, distribution, supply

²³ Manitoba Hydro, Preliminary Report on Group Facilities Study, April 3, 2014, Appendix 3.

²⁴ Manitoba Hydro, Report on Group System Impact Study, October 1, 2014, Appendix 4, p. 3 and 4.

²⁵ Manitoba Hydro, Report on Group System Impact Study, Appendix 4, *supra* note 24, p. 10, s. 7.0.

²⁶ The “Dorsey Station”, as referenced in the MH OATT reports, is synonymous with the “Dorsey Converter Station” as referenced in this Application and the EIS.

²⁷ Manitoba Hydro, Report on Group Facilities Study, June 5, 2015, Appendix 5 at p. 12.

²⁸ Facilities Construction Agreement, October 5, 2015, Appendix 6.

and end-use of power, within and outside the province; and (b) to market and supply power to persons outside the province on terms and conditions acceptable to the board.²⁹

From the perspective of the Marketing Function of Manitoba Hydro, the Project is justified as meeting the statutory objects of *The Manitoba Hydro Act* based on: (i) executed agreements between Manitoba Hydro and a U.S. counterparty for the export and import of electricity; (ii) transmission capacity required for the export of Manitoba Hydro's surplus electricity using MISO's day-ahead and real-time energy markets; (iii) the need for additional transfer capability to import electricity to maintain reliability of service to Manitoba customers during times of drought or during emergencies.

- ii. Requirements Under Executed Contracts: The generating facilities owned by Manitoba Hydro and its affiliates are predominantly hydro-electric. By design, this hydro-electric generation provides surplus energy in all flow conditions other than the lowest recorded flow period. Additionally, large hydro-electric developments produce more firm power that is surplus to the needs of domestic customers in the early years of development. The availability of surplus power from the 695 MW Keeyask Generating Station that is currently under development by Keeyask Hydropower Limited Partnership³⁰ to meet projected load growth (ISD 2019) provides Manitoba Hydro with export sale opportunities. Projected load growth and environmental restrictions on carbon-emitting energy sources in the U.S. at the federal and state levels (MISO region) has also enhanced export opportunities for Manitoba Hydro in recent years. Of relevance to MMTP, Manitoba Hydro has executed the following four contracts for the sale and/or purchase of electricity with Minnesota Power, a division of ALLETE, Inc.: (i) 250 MW System Power Sale Agreement dated May 19, 2011;³¹ (ii) Energy Exchange Agreement dated May 19, 2011;³² (iii) 133 MW Energy Sale Agreement dated July 30, 2014;³³ and (iv) 2014 Energy Exchange Agreement dated July 30, 2014.³⁴ All of these contracts require one or both of the parties to construct a new transmission interconnection to provide additional firm transmission capacity between Manitoba Hydro's Balancing Authority Area and Minnesota Power's local Balancing Authority Area within MISO.³⁵

²⁹ *Supra* note 1, s. 2.

³⁰ KHLP is a limited partnership between Manitoba Hydro, a wholly owned subsidiary of Manitoba Hydro and four First Nations.

³¹ 250 MW System Power Sale Agreement, May 19, 2011, Appendix 7.

³² Energy Exchange Agreement, May 19, 2011, Appendix 8.

³³ 133 MW Energy Sale Agreement, July 30, 2014, Appendix 9.

³⁴ 2014 Energy Exchange Agreement, Appendix 10.

³⁵ 250 MW System Power Sale Agreement, Appendix 7, *supra* note 31, s. 3.1(1); and Energy Exchange Agreement, Appendix 8, *supra* note 32, s. 3.1(1); 133 MW Energy Sale Agreement, Appendix 9 *supra* note 33, s. 3.1; and 2014 Energy Exchange Agreement, Appendix 10, s. 3.1.

- iii. Other Transmission Service Requirements: While the import and export contracts with Minnesota Power taken together only require the transmission interconnection to provide 383 MW of south-bound firm transmission capacity and associated north-bound capacity, as referenced above, MHEM submitted seven (7) transmission service requests for a total of 883 MW of additional firm transmission capacity under Manitoba Hydro's OATT. Requests in addition to those related to the contracts with Minnesota Power were submitted in order to accommodate: (i) transmission capacity for prospective export sales under negotiation; (ii) transmission capacity for non-negotiated MISO energy market sales; and (iii) transmission capacity for reliability purposes to allow imports to Manitoba in drought conditions or emergencies resulting in the loss of local supply.
 - iv. Benefits to Domestic Customers: The export sale revenue that will be generated through construction of the Dorsey IPL will serve to reduce Manitoba Hydro's revenue requirement that must be recovered through domestic rates and will assist Manitoba Hydro in keeping rates affordable for provincial customers. Imports from the U.S. also provide economic benefits, as there are times when it may be more economic to import than use Manitoba generation.
- d. Provincial Review of Justification: The justification for the proposed international power line as part of a Manitoba Hydro development plan was reviewed by a Panel of the Public Utilities Board of Manitoba ("PUB Panel") during a public proceeding that commenced in August of 2013. This Needs For and Alternatives To ("NFAT") review included the appointment of independent expert consultants to examine Manitoba Hydro's plans, file expert reports and testify. The hearing commenced with the filing of Manitoba Hydro's business case, followed by two rounds of written information requests from the PUB Panel and intervenors, evidence filed by intervenors, an additional round of information requests and an oral hearing from March 3 to May 26, 2014. After the NFAT review concluded, the PUB Panel issued a report with recommendations to the Government of Manitoba regarding Manitoba Hydro's development plan.³⁶ With respect to the transmission component of the development plan, the PUB Panel recommended that Manitoba Hydro be given approval to proceed with the proposed 500 kV international power line for a 2020 in-service date.³⁷ It was concluded that the interconnection "provides increased firm transmission access extending into Minnesota, provides important, increased reliability, and supports import and export of electricity."³⁸

³⁶ Public Utilities Board, The Public Utilities Board Report on the Needs For and Alternatives To (NFAT) Review of Manitoba Hydro's Preferred Development Plan, June 2014 online:

http://www.pub.gov.mb.ca/nfat/pdf/finalreport_pdp.pdf.

³⁷ *Supra* note 36, p. 250.

³⁸ *Supra* note 36, p. 133; see also p. 72.

3.2 Project Proponents

a. Applicant: Manitoba Hydro

* b. Authorized Representatives **Effective September 7, 2017:**

* K. Jennifer Moroz
* Barrister & Solicitor
* **211 Waverley Street**
* WINNIPEG, Manitoba **R3M 3K4**
* Telephone No. **431-996-9206**
* j.moroz@jennifermoroz.com

* **and**

* **Janet Mayor**
* **Barrister & Solicitor**
* **Manitoba Hydro Law Division**
* **22nd floor – 360 Portage Avenue**
* **WINNIPEG, Manitoba R3C 0G8**
* **Telephone No. 204-3500-4655**
* jmayor@hydro.mb.ca

c. Ownership and Operation of IPL: Manitoba Hydro will own and operate the proposed Dorsey IPL.

d. Description of power system: Manitoba Hydro operates an integrated electricity system in the province of Manitoba consisting of generation, transmission and distribution facilities. The corporation's generating resources include fifteen hydro-electric generating stations and two thermal plants, with a total system capacity of 5675 MW. One hydro-electric generating station, Wuskwatim G.S., is owned by a limited partnership between Manitoba Hydro, a subsidiary of Manitoba Hydro and Taskinigahp Power Corporation (formed by Nisichawayasihk First Nation). As mentioned previously, a second generation development involving a partnership with several First Nations is currently underway. Manitoba Hydro's major transmission system consists of a network of alternating current facilities of various voltages, as well as two intraprovincial high voltage direct current ("HVDC") transmission lines that connect the Corporation's northern generating stations on the Nelson River to load located in the southern portion of Manitoba. A third HVDC line ("Bipole III) is currently under development with a proposed in-service date of July, 2018. Manitoba Hydro's integrated system is interconnected with the Canadian transmission systems of SaskPower Corporation and Hydro One Networks Inc. Manitoba Hydro is connected to the U.S. systems of Northern States Power Company, Minnesota Power, Minnkota Power Cooperative, Otter Tail Power Company and Great River Energy through four existing international power lines.

- e. Owner and Operator in U.S.: The Dorsey IPL will connect with the Great Northern Transmission Line (“GNTL”) that will be owned by Minnesota Power, a division of ALLETE, Inc. The arrangements for the construction of the GNTL pursuant to transmission service requests submitted under the MISO Open Access Transmission, Energy and Operating Reserve Markets Tariff are documented in the Multi-Party Facilities Construction Agreement (“MPFCA”) between MISO, Minnesota Power and 6690271 Manitoba Ltd. dated September 25, 2014 that was approved by the U.S. Federal Energy Regulatory Commission on November 25, 2014.³⁹ Although the MPFCA entitled 6690271 Manitoba Ltd. to certain ownership rights in the GNTL, in April of 2016 6690271 Manitoba Ltd. assigned its ownership interest in the GNTL to Minnesota Power. The GNTL will be operated by Minnesota Power, subject to the functional control of MISO. The mailing address for Minnesota Power is:

30 West Superior Street
Duluth, Minnesota
U.S.A. 55802-2093

3.3 Proof of Publication of Notice

The Notice of Application and Directions on Procedure with respect to this Application (Appendix 11) is being published and served in accordance with the Board’s requirements set forth in the Electricity Memorandum of Guidance Concerning Full Implementation of the September 1988 Canadian Electricity Policy. Proof of publication in the Canada Gazette Part 1, the Winnipeg Free Press (the largest paid general circulation English language newspaper in Winnipeg), and La Liberté (the largest paid general circulation French language newspaper in Winnipeg), as well as proof of service on interconnected Canadian utilities will be filed with the Board once available.

4. Project Description and Engineering

4.1 Project Location

4.1.1 Overview

- a. Dorsey IPL Location: The general location of the Project is the southeastern portion of the province of Manitoba. The Dorsey IPL component of the Project will originate at the existing Dorsey Converter Station near Rosser, travel south around Winnipeg within the existing Southern Loop Transmission Corridor, then east within the existing Riel to Vivian Transmission Corridor to a point south of Anola, then continue southeast in a new right-of-way and cross the international border south of Piney, Manitoba. The terminal point of the IPL in the United States is the proposed Iron Range Station near Grand Rapids, Minnesota. The proposed route crosses 75 watercourses, including six that may be considered navigable waters under the National Energy Board

³⁹ See 149 FERC ¶ 61,161, Order on Facilities Construction Agreement, November 25, 2014, Docket No. ER14-2950-000.

Act: Assiniboine River, Red River, Cooks Creek, La Salle River, Seine River and Rat River.

- b. Dorsey IPL Maps: Map 2-1 and Map 2-4 of the MMTP Environmental Impact Statement (“EIS”) that was filed with Manitoba Conservation and Water Stewardship (now Manitoba Sustainable Development) identify: (i) the proposed route and facility sites (including all terminal points and the international boundary crossover point); (ii) major land use features, including the areas subject to physical and environmental constraints (including biophysical, land use and natural resource constraints) that limit the route or facility sites; and (iii) the approximate sites of all proposed ancillary facilities.⁴⁰ Map Series A, attached as Appendix 12, depicts the provinces, cities, towns, villages, park boundaries, major roads, railways and navigable waters through, under or across which the Dorsey IPL is proposed to pass. Map Series 1-100 contained in the EIS depicts more detailed land features.⁴¹ Map B, attached as Appendix 13 to this Application, depicts the power line outside Canada. As indicated on Map B, the distance between the international boundary crossover point and the terminal facilities at the Dorsey Converter Station is 213 km. The distance from the international boundary crossover point to the terminal point at the Iron Range Substation is 363 km, based on the proposed route. Due to the large number of alternative routes considered, maps depicting the most viable alternative routes considered for the proposed IPL are provided separately, as referenced in section 4.5.1 under the discussion of alternative routes, in order to provide more readable maps of the proposed route and its features.
- c. Riel and Glenboro IPL Components: The proposed alterations to the Riel IPL⁴² that form part of the Project will take place within Manitoba Hydro’s existing transmission corridor for the Riel IPL. The proposed relocation of a segment of the IPL is more fully described in section 4.2.1.b of this Application. Similarly, the alterations to the Glenboro IPL⁴³ will be located within the existing transmission corridor for the Glenboro IPL. Maps of the Riel and Glenboro components of the Project are provided as Map 2-5 and Map 2-6 of the EIS respectively.⁴⁴

4.1.2 Detailed Route of Dorsey IPL

- a. Use of Existing ROW: Approximately 43% of the proposed route (92 km) of the Dorsey IPL is located within existing transmission line corridors. The utilization of Manitoba Hydro’s existing corridors was encouraged by the public and factored heavily in the transmission line routing process, as

⁴⁰ EIS, Volume 1, Chapter 2, Map 2-1 and Map 2-4, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtpl_eis_chapter02_project_description_maps.pdf.

⁴¹ EIS, Executive Volume, Final Preferred Route Map Folio, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtpl_exec_vol_fpr_map_folio.pdf

⁴² Authorized pursuant to Certificate EC-III-16 as am. by AO-2, AO-3 and AO-4-EC-III-16.

⁴³ Authorized pursuant to Permit EP-196.

⁴⁴ EIS, Volume 1, Chapter 2, *supra* note 40, Map 2-5 and 2-6.

discussed in more detail in section 5.0 of this Application. As a result, Manitoba Hydro's existing Southern Loop Transmission Corridor and Riel-Vivian Transmission Corridor ("Existing ROW") were used to route a substantial portion of the Dorsey IPL as a mitigative decision. Refer to Map 2-2 of the EIS for the proposed route within Existing ROW.⁴⁵ The remaining 121 km requires a new right-of-way ("New ROW"), as shown on Map 2-3 of the EIS.⁴⁶ Map Series 1-100 of the EIS depict the detailed land features along the proposed route, including all watercourses.⁴⁷

- b. Southern Loop Transmission Corridor Section: The Southern Loop Transmission Corridor ("SLTC") extends from the Dorsey Converter Station south and then east, circumventing the City of Winnipeg (City") and ending at the Riel Converter Station located on the east side of the City adjacent to the Red River Floodway. The existing SLTC is up to 245 m wide and is designed to accommodate multiple transmission lines. Approximately 68 km of the Dorsey IPL will be constructed within the SLTC between the Dorsey and Riel Converter Stations. As detailed below and depicted in Figure 1, the segments of the IPL within the SLTC will need to cross a variety of infrastructure due to physical constraints. All transmission lines identified in the description below are owned and operated by Manitoba Hydro.
 - i. Dorsey Converter Station to LaVerendrye Segment: Starting from the Dorsey Converter Station, at geographic coordinates of approximately 49.9882 degrees latitude and -97.4318 degrees longitude, the Dorsey IPL (denoted as D604I) will exit the west side of Dorsey Converter Station switchyard, then head south along the SLTC. Just south of Dorsey Converter Station the IPL will cross Provincial Road ("PR") 221, then two double-circuit intraprovincial transmission lines that exit Dorsey Converter Station (D11Y/D15Y, and D14S/D55Y). The IPL will continue south through agricultural land, passing along the west side of an intensive hog operation, along the SLTC for approximately 12 km until it crosses the TransCanada Highway, just west of the town of Headingley. South of the TransCanada Highway, the proposed route crosses the Assiniboine River. South of the Assiniboine River the proposed route continues south along the SLTC through agricultural land for approximately 6.5 km, crossing over PR 241, PR 427 and the Canadian Pacific Railway. The proposed route then crosses over two double circuit transmission lines (D11Y/D15Y and D14S/D55Y) then turns east paralleling these lines. It then continues east through agricultural land, crossing PR 334 heading to LaVerendrye Station.

⁴⁵ EIS, Volume 1, Chapter 2, *supra* note 40, Map 2-2.

⁴⁶ EIS, Volume 1, Chapter 2, *supra* note 40, Map 2-3.

⁴⁷ EIS, Executive Volume, Final Preferred Route Map Folio, *supra* note 41.

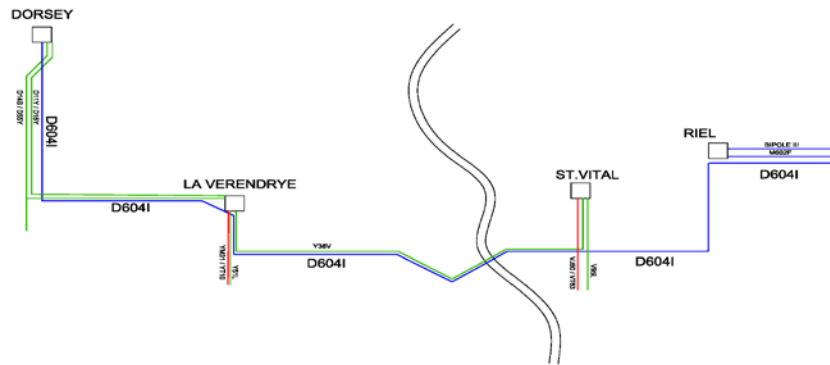


Figure 1 – Southern Loop Transmission Corridor – Transmission Line Crossovers

- ii. LaVerendrye to Deacon’s Reservoir Segment: At LaVerendrye Station, the IPL will turn south, crossing three intraprovincial transmission lines connected to LaVerendrye Station (YM31, Y51L, and YT10). From LaVerendrye Station the proposed route heads south along the SLTC through agricultural land and crosses Provincial Trunk Highway (“PTH”) 2, then heads east crossing YF11 and PTH 3. The proposed route continues east through agricultural land crossing PR 330 and PTH 75, heads northeast, crosses through Duff Roblin Provincial Park then over the Red River just north of the Red River Floodway (“floodway”) inlet. East of the Red River, the proposed route crosses over the floodway, then over PR 200 and parallels the floodway on the south side for approximately 14 km, crossing over PR 300 twice, then the Seine River just south of where it enters the floodway. The proposed route then crosses PTH 59, one double-circuit 115kV transmission line (VT63, VJ50) and one proposed single-circuit 230kV transmission line (V95L). The Dorsey IPL will continue to parallel the floodway as it turns north crossing the TransCanada Highway. The proposed route travels north for approximately 3 km, passing along the west side of Deacon Reservoir and the City’s Water Treatment Plant south of Riel Converter Station.
- c. Riel–Vivian Transmission Corridor Section: After the Dorsey IPL leaves the SLTC it will head east within the Riel–Vivian Transmission Corridor (“RVTC”) along the northern end of Deacon’s Reservoir along the south side of Riel Converter Station. The RVTC extends east from Riel Converter Station to a location just south of Vivian, Manitoba. The existing RVTC is 177 m wide. Within this corridor there is currently one 500 kV AC international power line: M602F (Riel IPL). A 500 kV high voltage direct current intraprovincial transmission line (Bipole III) is under construction in the RVTC at the time of this Application. As explained in more detail in section 4.2.1.1 of this Application, the existing Riel IPL and future 500kV

transmission lines (Dorsey IPL and Bipole III) will be arranged to avoid crossing each other. To accomplish this, a segment of the existing Riel IPL (approximately 24 km) will be utilized as a portion of the new Dorsey IPL. A portion of the Riel IPL will be moved from its current location and be built on new structures over the same 24 km distance just north of its current location within the transmission corridor. As proposed, the Dorsey IPL will parallel the Riel IPL for 22.8 km separated by a distance of 45.7 m. At the point where the Dorsey IPL exits the RVTC to the south on a New ROW, the Riel IPL will route back and connect to its existing structures.

- d. New ROW: After exiting the RVTC, the Dorsey IPL will proceed south-east within a New ROW as shown on Map 2-3 of the EIS.⁴⁸ The New ROW passes through a portion of southeast Manitoba that has a variety of land uses. From a point south of Anola, Manitoba and east of PTH 12, the proposed route turns south through agricultural land. The proposed route crosses the Greater Winnipeg Water District (“GWWD”) aqueduct and the GWWD Rail Line. At this point, the landscape starts to change from primarily agricultural land to a combination of pasture land and forested area. Land tenure consists of provincial Crown and private land. The proposed route parallels the existing intraprovincial 230kV transmission line (R49R) from Ridgeway Station to Richer South Station for just over 4 km. The proposed route continues southeast, then turns south crossing over R49R, then paralleling it on the west side in a southeasterly direction for approximately 8 km. The proposed route runs east of Cottonwood and Oakwood Golf Courses and crosses the TransCanada Highway for the third time. The proposed route separates from R49R at Richer South Station and turns southwest. It runs through several parcels of land at Richer South Station that are currently being studied to determine if they will be proposed for protection under Manitoba’s Protected Areas Initiative. From that point the proposed route crosses PR 302 and then heads generally south for approximately 37 km. The proposed route then runs along the eastern edge of La Verendrye Golf Course, then crosses PR 210 and the Canadian National Railway. It then turns southeast running adjacent to the western boundary of the Watson P. Davidson Wildlife Management Area (“WMA”). At the south end of the WMA, the proposed route runs southeast passing through the Caliento Bog. The proposed route stays west of the Spur Woods WMA then runs east-southeast through mixed pasture and natural areas, then turns southeast running west of Piney Creek. The proposed route then crosses over Piney Creek and meets the international border just east of Piney Creek at the following geographic coordinates: approximately 49.0000 degrees latitude and - 95.9140 degrees longitude.

⁴⁸ EIS, Volume 1, Chapter 2, *supra* note 40.

4.1.3 Location of Associated Facilities

- a. Dorsey Converter Station: Modifications and additions will be undertaken at the existing Dorsey Converter Station northwest of Winnipeg in Rosser, Manitoba to connect the Dorsey IPL to the existing electrical network.⁴⁹
- b. Riel Converter Station: Modifications will be undertaken at the Riel Converter Station located east of the Red River Floodway and north of the City of Winnipeg's Deacon Water Supply Reservoir in the Rural Municipality of Springfield.⁵⁰ All modifications will be contained within the fenced area of the 500 kV switchyard portion of the Riel Converter Station.
- c. Glenboro IPL and Glenboro South Station: Site modifications will be undertaken at Manitoba Hydro's Glenboro South Station, located 1.5 km south of the junction of PTH 2 and PTH 5 in a predominantly agricultural area (GPS coordinates 49°32'18"N, 99°17'02" W). This station contains the terminal facilities of the Glenboro IPL. In addition, modifications to two intraprovincial lines (S53G, G37C) and the Glenboro IPL (G82P) will be required. Map 2-6 provided in the EIS displays the location of the proposed site expansion and relocation.⁵¹

4.1.4 New ROW Width and Criteria

- a. Width: The New ROW required for the Dorsey IPL is proposed to vary in width. In general, the New ROW will range from 80 m, in areas where self-supporting steel lattice towers are used, to 100 m in areas where guyed steel lattice towers are used. However, some sections of the proposed IPL may require supplementary ROW area for marshalling or supply of construction materials (ex. aggregate for tower foundations), or for construction and maintenance access. Such requirements cannot be identified until post-approval field surveys and detailed design is complete and construction has commenced.
- b. Criteria: Manitoba Hydro's proposed ROW widths are based on operating considerations and related safety requirements for a 500 kV alternating current transmission line on self-supporting and guyed structures. For example, to allow for the effects of wind on the conductors (conductor swing-out), the ROW width must be sufficient under severe wind conditions to provide lateral separation between the conductors and any object located at the edge of the ROW. ROW widths are also designed to avoid damage to adjacent property in the event of a structure failure and to reduce electric and magnetic field ("EMF") effects, such as radio interference and audible noise, which decrease with increasing distance from the lines. Related design parameters are based on CSA standards, reliability criteria and internal Manitoba Hydro

⁴⁹ EIS, Volume 1, Chapter 2, *supra* note 40, Map 2-4.

⁵⁰ EIS, Volume 1, Chapter 2, *supra* note 40, Map 2-5.

⁵¹ EIS Volume 1, Chapter 2, *supra* note 40, Map 2-6.

Transmission Line Design Guidelines. ROW widths also reflect access requirements for line construction and maintenance. Access is typically made by surface vehicles and equipment but may also involve helicopters. Access is generally made on or along the ROW (i.e. down-line) from intersecting roadways. In cases of remote location or difficult terrain, however, it may be necessary to provide for secondary surface access to, or along, segments of the ROW.

4.2 Project Components and Activities

4.2.1 Engineering Design Details, Project Activities, Federal Authorizations

4.2.1.1 Engineering Design Details

a. Dorsey IPL

- i. IPL Design: The proposed IPL will be a single circuit, 500 kV alternating current transmission line. The transmission towers will support one set of triple Aluminum Core Steel Reinforced conductor bundles for each of the three phases suspended from insulators. The phase sub-conductors will be 33 mm in diameter. **As referenced below, one shield wire 7 No.7 (Alumoweld) will be Size 10 (11 mm). The other shield wire (Optical Ground Wire) is expected to be 10-13 mm. However, the exact diameter cannot be determined until the close of the construction tender process as Optical Ground Wires are typically custom manufactured.** Additional specifications are included in the EIS.⁵² The IPL will be constructed of self-supporting lattice steel towers on agricultural and rural residential land and guyed lattice steel towers on non-agricultural lands. Three types of towers will be used: tangent towers, angle towers and dead-end towers. It is estimated that 526 new tangent angle towers will need to be constructed. Approximately 61 existing tangent and angle self-supporting lattice steel towers from the Riel IPL will form part of the Dorsey IPL. Further descriptions of these towers are provided in the EIS.⁵³ It is to be noted that the EIS does not provide information regarding the number and dimensions of dead-end towers as this information is dependent on site conditions. Strings of interconnected porcelain or glass disc insulators of approximately 5 m in length will be placed between the conductor bundles and the towers to prevent arcing and grounding. Towers will be placed approximately 400 **to 500** m apart, depending on site conditions. The IPL structure height **in most circumstances** is expected to range from 50-60 m, depending on terrain conditions and environmental sensitivity. **Tower span and height may differ from this norm at certain locations, such as river crossings.**

*
*
*
*
*
*

*
*
*
*

⁵² EIS, Volume 1, Chapter 2, Table 2-8, online:

https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtip_eis_chapter02_project_description.pdf.

⁵³ EIS, Volume 1, Chapter 2, *supra* note 52, s. 2.9.2.

* Two **shield** wires will be strung along the tops of the towers to provide lightning protection. One of the skywires will be equipped as an Optical Ground Wire (“OPGW”). The OPGW is designed to provide system protection and communication for the IPL. An underground fibre optic cable (400 m long) will be installed on Manitoba Hydro’s Existing ROW from the corner tower of the IPL to the Richer South Station control building to provide connection to the Station’s repeater equipment. The tower foundation design will vary with soil and terrain conditions. **The tower foundations will be as described in the EIS (mat or pile).**⁵⁴ **Although not referenced in the EIS, based on recent discussions with the Province of Manitoba regarding structures near the Red River Floodway (as referenced in Section 8.3 of this Application) large earthen mounds will be constructed around tower footprints to protect tower foundations for the Red River crossing located south of the Manitoba Floodway control structure. These mounds are intended to mitigate potential tower damage during high water levels caused by operation of the floodway.**

ii. Technical Drawings: A single-line diagram identifying all of the facilities that constitute the Dorsey IPL (noted in blue and brown) is provided in Appendix 14 of this Application.

iii. Transfer Capability: The power transfer capability of the Dorsey IPL will be limited by the Iron Range Station transformer rating of 1200 MVA. The summer and winter System Operating Limit for the IPL is 1200 MVA.

iv. Design of Associated Modifications: In order to construct the Dorsey IPL, modifications will also be required to the terminal facilities of the IPL at Manitoba Hydro’s Dorsey Converter Station which contains a 500 kV switchyard and 230 kV switchyard. Modifications within the 500 kV yard include a 500 kV bus extension and bay modifications, and the addition of the following: one 500 kV circuit breaker, 500 kV single-phase current transformers, a 500 kV line termination and a 500 kV single-phase shunt reactor. The addition of these components will require concrete foundations, steel structures and equipment supports. As detailed in the EIS, a fence extension is required on the west side of the 500 kV switchyard and insulators will be replaced within the 230 kV switchyard.⁵⁵

b. Riel IPL Alterations

i. Design of IPL Alterations: Manitoba Hydro proposes to move a portion of the Riel IPL 45.7 m north within the existing transmission line corridor. This will allow the proposed routing of the Dorsey IPL without the construction of two 500 kV crossovers that would otherwise be required to

⁵⁴ EIS, Volume 1, Chapter 2, *supra* note 52, s. 2.12.5.

⁵⁵ EIS, Volume 1, Chapter 2, *supra* note 52, s. 2.15.1.1.

enable the Dorsey IPL to cross over the Riel IPL. As discussed in section 4.5 of this Application, crossovers were avoided for reliability reasons. Appendices 15 and 16 to this Application contain two figures depicting the details of the relocation. Tower 6 of the Riel IPL will be removed and the existing segment of the IPL from Towers 5 through 7 (442.5 m long) will be relocated to two new towers shown as “B” and “C” on Figure A (Appendix 15). These new towers will consist of a light angle self-supporting suspension tower and a dead-end self-supporting angle tower. The Riel IPL will then continue eastward along a new section of line from Tower C (which will be designated as new Tower 7), as shown in yellow on Figure A, for 22.8 km to existing Tower 63 as shown on Figure B (Appendix 16). The former portion of the Riel IPL between existing Tower 7 and existing Tower 60 will become part of the Dorsey IPL with the replacement of Tower 60. Existing Towers 61 and 62 of the Riel IPL and approximately 1.07 km of transmission line will be removed and salvaged.

- ii. Technical Drawings: Since the general configuration and length of the Riel IPL will be unchanged, a revised single-line diagram is not provided. However, a revised plan, profile and book of reference for the proposed relocation of the Riel IPL is attached as Appendix 17.
 - iii. Design of Associated Modifications: Modifications inside the 500 kV yard at Riel Converter Station will be required to provide sufficient capacity to allow the proposed increase in firm transfer capability. These modifications include the addition of: one 500 kV to 230 kV autotransformer; 500 kV and 230 kV breakers; 500 kV and 230 kV single-phase, 400 MVA current transformers. The addition of these components will also include all the necessary concrete foundations, steel structures and equipment supports. The foundations will be slab-on-grade or deep piled, depending on the particular equipment weight and geotechnical conditions. Steel structures will be placed on foundations to support the electrical apparatus and hardware being added to the switchyard.
- c. Glenboro IPL Alterations:
- i. Design of IPL Alterations: Alterations to the Glenboro IPL will consist of the addition of two series connected 300 MVA (230 kV + - 40 degrees) phase shifting transformers to the terminal facilities at Glenboro Station. This alteration is required in order to mitigate pre-contingency overloads on the Riel IPL resulting from increased power flows over the Manitoba-U.S. interface once the Dorsey IPL is in service, as identified in Manitoba Hydro’s Preliminary Report on Group Facilities Study.⁵⁶ In order to accommodate the phase shifting transformers, a segment of the IPL must be relocated. **This relocation will take place in two stages. First, a** portion of the IPL from Glenboro Station to Tower 3 spanning

*

⁵⁶ Manitoba Hydro, Preliminary Report on Group Facilities Study, Appendix 3, *supra* note 23, p. 40.

*
*
*
*
*
*
*
*
*
*
*
*
*
*
*

approximately 345 m will be salvaged, as well as Tower 1 and Tower 2. **During this phase, a temporary segment of the IPL (approximately 320m) will be erected using two temporary wood Gulfport structures and one tubular steel structure to connect to the existing Glengoro Station. During the second phase, a new segment of the IPL (approximately 230 m) will be erected, using one wood Gulfport structure and one tubular steel structure (relocated from the first phase) from Tower 3 to connect to the expanded Glenboro Station. The temporary facilities will be salvaged. Manitoba Hydro notes that completion of the second stage of the modifications may be delayed, depending on when, if the Board approves the Project, authorization would be issued. The window of time available for working on the expansion of Glenboro Station, construction of a new tower and segment of IPL is restricted due to the inaccessibility of access roads to the site in certain seasons. Accordingly, the temporary connection and structures may still be in place once the Dorsey IPL is placed in service.**

- ii. Technical Drawings: A single-line diagram of the modified Glenboro IPL is provided in Appendix 18 to this Application.
- iii. Design of Associated Modifications: Certain modifications to the Glenboro South Station (“Station”) are associated with the above-referenced IPL alterations. The Station must be expanded 130 m by 91 m east of the 230 kV switchyard to accommodate the addition of phase shifting transformers.⁵⁷ The oil containment pit for these transformers will also be integrated into the Station’s oil containment system. Two 230 kV breakers will also be added to the Station.

4.2.1.2 Project Activities and Workforce

- a. Construction Phase: Construction activities and preparatory activities preceding construction will generally consist of: mobilizing staff and equipment, development of access routes and any necessary bypass trails, ROW clearing, geotechnical investigations, transmission tower construction, conductor stringing, establishment of marshalling yards, establishment of borrow sources, arrangements for worker accommodations and demobilization of the workforce. A detailed description of these activities and the workforce required for construction of the Project is provided in the EIS.⁵⁸ Manitoba Hydro notes that it will not be excavating using explosives within 30 m of the Riel IPL. In a few instances, excavation using power-operated equipment may be conducted within 30 m of the Riel IPL, however, Manitoba Hydro adheres to CAN/CSA-C22.3 No.1 – M87, as noted in section 4.2.2.c of this

⁵⁷ EIS, Volume 1, Chapter 2, *supra* note 40, Map 2-6.
⁵⁸ EIS, Volume 1, Chapter 2, *supra* note 52, s. 2.12, 2.15, 2.16 and 2.17.

Application.⁵⁹ Construction of the Project will require a range of skills, including the following: heavy equipment operators, trade helpers, construction labourers, teamsters, crane operators, industrial welders, linemen, millwrights and electricians. Construction of the Project is expected to generate 124 person- years of direct employment.⁶⁰

- b. Operation and Maintenance Phase: A detailed description of the activities and workforce requirements involved in the operational stage of the Project, such as inspection, maintenance and vegetation management is provided in the EIS.⁶¹ Skills required include transmission system operators, electrical technicians, mechanical technicians and maintenance utility workers. Manitoba Hydro expects to use both existing staff and contractors as required during this phase of the Project, dependent on the work required during emergencies. This phase of the Project is expected to result in two (2) person-years of employment annually in Manitoba.⁶²

4.2.1.3 Other Federal Permits, Licences and Authorizations Required

- a. Prior Federal Authorizations Required: The following authorizations are required prior to commencing construction of the Project.
 - i. *Aeronautics Act*⁶³: Manitoba Hydro must provide notice to the Minister of Transport of the construction of the Dorsey IPL pursuant to section 601.24 of the Canadian Aviation Regulations (SOR/96-433).
 - ii. *Explosives Regulations, 2013*⁶⁴: Manitoba Hydro has all of the required magazine licences for the Project and its contractor holds an import permit for import of the explosives that are necessary for the Project. An approval letter from the Chief Director of Explosives or equivalent documentation for employees or contractors who have access to high hazard explosives will be required pursuant to section 178.
 - iii. *International Boundary Commission Act*⁶⁵: Approval from the International Boundary Commission is required to place the IPL within ten feet of the international boundary.
 - iv. Fisheries Act, SARA: While the *Fisheries Act*⁶⁶ and the *Species at Risk Act*⁶⁷ have potential application to the Project, Manitoba Hydro

⁵⁹ Accordingly, leave of the Board is not required pursuant to the *Power Line Crossing Regulations*, SOR/95-500, s.3.

⁶⁰ EIS, Volume 3, Chapter 14, s. 14.5.2.2, online:

https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtt_chapter14_employment_and_economy.pdf.

⁶¹ EIS, Volume 1, Chapter 2, *supra* note 52, s. 2.13.

⁶² EIS, Volume 3, Chapter 14, *supra* note 60, s.14.5.2.2.

⁶³ R.S.C. 1985, c. A-2.

⁶⁴ SOR/2013-211.

⁶⁵ R.S.C. 1985, c. I-16.

has designed the Dorsey IPL to avoid serious harm to fish and fish habitat caused by IPL water crossings and does not anticipate that authorizations under these statutes will be necessary. However, based on the Memorandum of Understanding in place between the Board and Fisheries and Oceans Canada, Manitoba Hydro understands that the Board's review of Manitoba Hydro's Application may result in a determination that authorizations under these Acts are necessary.

- b. Other Federal Requirements: As outlined in Appendix 19 to this Application, several pieces of federal legislation have general application to the Project and have been used by Manitoba Hydro as guidance during the course of developing the proposed design and route for the Project. For instance, with respect to the *Migratory Birds Convention Act, 1994*⁶⁸ and the *Species at Risk Act* for terrestrial species, the Project has been designed to avoid any sensitive locations and time periods as much as possible. The Project has also been designed to avoid any Indian Reserves, national parks or national canals, historic museums established under the *Historic Sites and Monuments Act*,⁶⁹ federal heritage buildings, historic places in Canada, or federal archaeology. The referenced federal legislation in Appendix 19 also prescribes various notifications and other requirements that must be followed during implementation of the construction phase of the Project and will be instrumental in developing mitigation measures.

⁶⁶ R.S.C. 1985, c. F-14.

⁶⁷ S.C. 2002, c. 29.

⁶⁸ S.C. 1994, c.22.

⁶⁹ R.S.C. 1985, c.H-4.

4.2.2 Engineering Design Philosophy

- a. Reliability Standards: The Project has been designed in accordance with applicable NERC reliability standards that are binding on Manitoba Hydro pursuant to provincial law⁷⁰ and pursuant to the Board's General Order on Reliability.⁷¹ Specifically, the Project meets the requirements of NERC transmission planning standards TPL 001-0.1, TPL-002-0b, TPL-003-0a and TPL-004-0. These standards require the performance of an assessment that demonstrates that a Planning Authority's portion of the interconnected transmission system is planned to meet certain criteria. NERC Standard FAC-008-3 regarding the establishment of transmission facility ratings is also applicable. Manitoba Hydro has ensured that the ratings for the Project facilities and equipment are consistent with the Manitoba Hydro Bulk Electric System Transmission Facility Ratings Methodology dated February 27, 2015, Version 8.
- b. Provincial Interconnection Requirements: The Project design also complies with Manitoba Hydro's Transmission System Interconnection Requirements ("TSIR"), July, 2016, Version 4, which were established under the authority of *The Manitoba Hydro Act*.⁷² Sections 2.0 and 6.0 of the TSIR apply to the design of new transmission facilities equal to or exceeding 100 kV and substantial modifications to certain transmission facilities. Manitoba Hydro's TSIR and Facility Ratings Methodology incorporate by reference numerous IEEE standards related to design and material selection. Manitoba Hydro confirms that these corporate documents comply with applicable codes and standards for the Project.
- c. CSA Standards: CSA Standards CSA 22.3 No.1-10 "Overhead Systems" standard 2010a will be adhered to, as well as CAN/CSA C22.3 No. 60826-2010 "Design Criteria of Overhead Transmission Lines". With respect to CSA C22.3 No.1-10, Manitoba Hydro clarifies for the Board that clearances for the portion of the Dorsey IPL that consists of an existing segment of the Riel IPL will conform to the requirements in place under this standard as of the date of construction (1977). Newly constructed segments of the Dorsey IPL will conform to the requirements in place as of the date of construction. This approach is consistent with section 1.2 of CSA C22.3 No.1-10 which provides that "Existing installations (including maintenance replacements, additions and alterations) meeting the original designs that currently comply with prior editions of this Standard, need not be modified to comply with this edition of the Standard, except as might be required for safety reasons by the authority having jurisdiction". Can/CSA 12.3 No.608-10 will be followed by Manitoba Hydro for structural and mechanical design. Design loads will be based on a one hundred fifty (150) year return period, in accordance with the Reliability

⁷⁰ *Reliability Standards Regulation*, Man. Reg. 25/2012 as am. by Man. Reg. 98/2014.

⁷¹ MO-036-2012.

⁷² *Supra* note 1, s. 15(5).

Based Design method. This basis is consistent with CSA standards for transmission lines over 230 kV in the Reliability Level II category which, in turn, reflects recommendations of the International Electrotechnical Commission.

- d. Other Industry Standards: ASCE 10 “Design of Latticed Steel Transmission Structures” will be followed for transmission tower structural design and foundations will be designed in accordance with IEEE 691 “Guide For Transmission Structure Foundation Design and Testing”.

4.3 Impacts on the Bulk Power System

4.3.1 Temporary Impact

During the construction phase of the Project, the Riel IPL and Glenboro IPL will be taken out of service temporarily in order to carry out the proposed alterations to these IPLs. The required duration of the outages is not known at the time of filing this Application. To ensure reliability of service and to avoid potential adverse impacts on the bulk power system, Manitoba Hydro will: (i) coordinate the scheduling of the outages with directly affected Canadian and U.S. transmission owners and operators; (ii) perform operating studies in accordance with applicable NERC standards;⁷³ (iii) provide notice of the outages to its Reliability Coordinator and affected operators pursuant to applicable NERC standards. Further details of the steps to be taken by Manitoba Hydro are outlined below.

- a. Scheduling Coordination: Manitoba Hydro meets annually with the following interconnected U.S. transmission owners to coordinate the scheduling of transmission outages to the Manitoba-U.S. interface on a long term basis: Northern States Power Company, Minnesota Power, OtterTail Power Company, Minnkota Power Cooperative, Inc., Great River Energy and Montana-Dakota Utilities. MISO also attends these annual meetings as Reliability Coordinator for the transmission owners. Since the Glenboro IPL and Riel IPL form part of the Manitoba-U.S. interface, the proposed schedules for outages to these IPLs will be discussed at the outage coordination meeting approximately one to two years in advance of the planned work. Manitoba Hydro anticipates discussing these outages at the upcoming meeting in early 2017. In the shorter term, Manitoba Hydro and MISO also coordinate the scheduling of transmission outages as adjacent transmission service providers through a Seams Operating Agreement between the parties⁷⁴ and business practices

⁷³ Adopted pursuant to Man. Reg. 98/2014, s.3.

⁷⁴ See Seams Operating Agreement, s.7.4, originally filed in FERC Docket No. ER05-560-001, 119 ¶¶FERC 61,140 (2007), most recently amended by Letter Order dated September 15, 2016 in FERC Docket No. ER16-1794-002.

adopted by the parties.⁷⁵ This outage coordination with MISO as Manitoba Hydro's Reliability Coordinator is also required pursuant to NERC Standard TOP-001-1a.R.7.2. Outage schedules for the Riel and Glenboro IPLs will be submitted by Manitoba Hydro via the MISO Outage Scheduler before the first day of the month during which the outage will commence. MISO must analyze and respond to the outage schedule no later than one month after its submission, unless further study or an operating guide is required. Pursuant to an operating procedure in place between Manitoba Hydro and IESO,⁷⁶ the Riel IPL is considered a "Critical Facility" that impacts Ontario system transfer limits. Accordingly, scheduling of the Riel IPL outage will be coordinated with IESO pursuant to sections 2.4, 2.5 and 3.0 of the operating procedure.

- b. Operating Studies: Pursuant to NERC Standard TOP-002-2.1b, Manitoba Hydro will perform an operating study for each outage at least seven days prior to the outage, on the day prior to the outage and on each day of the outage. A temporary operating guide will be issued to MISO and posted on the Open Access Same Time Information System.
- c. Notice: In accordance with NERC Standards TOP-001.R.7.1 and TOP-003-1.R.6.2, Manitoba Hydro will notify its neighbouring transmission operators SaskPower and IESO of the scheduled outages for the Riel IPL and Dorsey IPL. In addition, during the operating horizon MISO, as Manitoba Hydro's Reliability Coordinator, must notify affected Reliability Coordinators, such as SaskPower and IESO, of the planned outages pursuant to IRO-014-1, R1.1.3.

4.3.2 Impact on Transfer Capability

- a. Dorsey IPL Component: The existing long-term power transfer capability of the Manitoba-U.S. interface, including a 75 MW reliability margin is 2175 MW (summer and winter) for exports and 775 MW (summer and winter) for imports. With the proposed Dorsey IPL in place, the export power transfer capability is expected to increase by 883 MW to 3058 (summer and winter) and the import transfer capability is expected to increase by 698 MW to 1473 MW (summer and winter). While the Manitoba Hydro Group Facilities Study determined that the import transfer capability could increase by 883 MW without causing a criteria violation in Manitoba, the MH-US TSR Sensitivity Analysis, System Impact Study identified a constraint in the U.S. that limits the power transfer capability to 698 MW.⁷⁷ These transfer capabilities apply to both the Manitoba and U.S. systems. The criteria for transfer capability determination are identified in Manitoba Hydro's Report on Group

⁷⁵ See MISO Outage Operations Business Practices Manual, BPM-008- r10, online:

<https://www.misoenergy.org/Library/BusinessPracticesManuals/Pages/BusinessPracticesManuals.aspx>.

⁷⁶ See MH-IESO C07-R1 effective December 7, 2012 at Appendix 20.

⁷⁷ See Manitoba Hydro, Group Facilities Study, Appendix 5, *supra* note 27, p.11.

Facilities Study⁷⁸ and in the MISO Report entitled “MH-U.S. TSR Sensitivity Analysis, System Impact Study” dated September 4, 2014.⁷⁹ These criteria include compliance with NERC TPL standards, thermal criteria and voltage criteria.

- b. Riel and Glenboro IPL Alterations: The relocation of a segment of the Riel IPL will not impact the transfer capability of the Riel IPL or the Manitoba-U.S. interface, since the length and capacity of the modified Riel IPL will be substantially the same as the existing Riel IPL. The addition of phase shifters to the Glenboro IPL will impact the transfer capability of the Glenboro IPL, but not that of the Manitoba-U.S. interface. The facility rating of the IPL will decrease from 390 MVA in summer to 300 MVA.

4.3.3 Impact on Neighbouring Systems

- a. Canadian Systems: In accordance with NERC Standard FAC-002 -1 R 1.1.⁸⁰ Manitoba Hydro has performed an assessment to confirm that the Project will not cause adverse impacts on the neighbouring Canadian transmission systems in Ontario and Saskatchewan.⁸¹ For the purposes of NERC standards related to transmission planning, Manitoba Hydro performs the NERC functions of Transmission Owner, Transmission Planner and Planning Authority for the Manitoba transmission system. Accordingly, MH was the sole party performing the assessment. There is no requirement in applicable NERC standards for such an assessment to be reviewed or approved by NERC or Manitoba’s Regional Reliability Organization (the Midwest Reliability Organization or “MRO”). However, the assessment will be provided to MRO on request (in accordance with NERC Standard FAC-002-1 R2) and has been provided to neighbouring transmission owner/operators. SaskPower, Hydro One Networks Inc. and IESO have concurred in this assessment, as discussed in section 5.5.1 of this Application.
- b. U.S. Systems: An assessment of the impact of the Dorsey IPL on neighbouring U.S. systems has been performed by MISO, in conjunction with affected transmission owners, through the MISO Tariff studies related to the Great Northern Transmission Line. As mentioned previously, MH and MISO coordinated their respective transmission studies related to the Dorsey IPL and the U.S. transmission facilities with which the Dorsey IPL will be interconnected. The “MH-U.S. TSR

⁷⁸ Manitoba Hydro, Group Facilities Study, Appendix 5, *supra* note 27, s. 5.0.

⁷⁹ See Appendix 21, s. 4.2.

⁸⁰ Adopted pursuant to Man. Reg. 25/2012 as am. by Man. Reg. 98/2014, s.3.

⁸¹ Manitoba Hydro, Study of the Impact of Manitoba-Minnesota Transmission Project on Saskatchewan Power Corporation’s Bulk Electric System, March 26, 2015, Appendix 22; and Manitoba Hydro, Study of the Impact of Manitoba-Minnesota Transmission Project on the Bulk Electric System of the Independent Electricity System Operator of Ontario, April 2, 2015, Appendix 23.

Sensitivity Analysis” issued by MISO confirms that there will be no harm to reliability in the MISO-administered region.⁸²

4.3.4 Interconnection Agreements

Attached as Appendix 24 is a copy of the Transmission to Transmission Interconnection Agreement for the Dorsey-Iron Range International Power Line dated September 29, 2016 between Manitoba Hydro and Minnesota Power, a division of ALLETE, Inc.

4.3.5 Compliance with Reliability Standards

The operation of the Dorsey IPL will be subject to the NERC standards adopted in Manitoba that fall under the following categories: BAL, CIP, COM, EOP, FAC, INT, IRO, MOD, PER, PRC, TOP and VAR. The specific NERC standards in effect in Manitoba at the time of filing this Application are identified in Manitoba Hydro’s January 26, 2016 filing pursuant to the Board’s General Order on Reliability.⁸³ Manitoba Hydro confirms that, in accordance with the Board’s General Order on Reliability, Manitoba Hydro intends to comply with NERC standards applicable to the design, construction and operation of the proposed IPL as specified in Manitoba Regulation 25/2012 as amended from time to time. This includes standards related to Critical Infrastructure Protection.

4.4 Project Schedule and Other Required Approvals

4.4.1 Provincial Approvals:

- a. Approvals Required: As indicated in section 3.1.3 of this Application, the proposed Project has already been subject to a Needs For and Alternatives To review by a panel of the Public Utilities Board of Manitoba. On June 20, 2014 a report was issued recommending to the Province of Manitoba that Manitoba Hydro proceed with the Project.⁸⁴ An Order in Council was issued on December 10, 2014 by the Province of Manitoba under *The Manitoba Hydro Act* authorizing Manitoba Hydro to enter into all necessary agreements and take all necessary steps for the construction and operation of the proposed IPL.⁸⁵ In view of the Order in Council designating the Minister of Conservation and Water Stewardship (now Manitoba Sustainable Development) as the provincial regulatory agency for the Project, the only other provincial authorization that must be obtained prior to commencing any Project activities is a licence pursuant

⁸² MISO, MH-US TSR Sensitivity Analysis System Impact Study, September 4, 2014, Appendix 21, s.6, p. 7-10.

⁸³ See NEB Filing A75290.

⁸⁴ The Public Utilities Board Report on the Needs For and Alternatives To (NFAT) Review of Manitoba Hydro’s Preferred Development Plan, *supra* note 36.

⁸⁵ Manitoba Order in Council No. 545/2014, December 10, 2014, Appendix 25.

to section 12(1) of *The Environment Act*, for a Class 3 development.⁸⁶ If the Project is approved, a number of permits will be obtained after commencement of construction for various Project activities as outlined in Appendix 19 to this Application although, as an agent of the Crown, Manitoba Hydro may not be legally bound to obtain some of the referenced permits.

- b. Environment Act Approval Process: The provincial environmental review for this type of project commences with the filing of a proposal, accompanied by an environmental impact statement (“EIS”), unless waived by the director.⁸⁷ Pursuant to section 12(5) of *The Environment Act*, the Minister may do any or all of the following for the purposes of assessing the proposal of a Class 3 development: (i) require information from the proponent; (ii) issue guidelines and instructions for the assessment and require the proponent to carry out public consultations; (iii) review the assessment report; and (iv) initiate a public hearing. Following the completion of a hearing, a report with recommendations is provided to the Minister, following which the Minister decides whether to issue a licence.⁸⁸
- c. Status and Description of Review:

November 21, 2014: Manitoba Hydro filed a proposal for the Project with Manitoba Conservation and Water Stewardship (“MCWS”). The submission included a draft Scoping Document that described the proposed scope and content of the EIS.

January 8, 2015: MCWS published the proposal and draft Scoping Document on its website and the public was given until February 9, 2015 to provide comments. During this time the proposal was also reviewed by a provincial Technical Advisory Committee (“TAC”) composed of experts from provincial departments with knowledge and expertise on the potential issues (ex: Manitoba Infrastructure and Transportation; Historic Resources Branch; Manitoba Agriculture, Food and Rural Development; Office of Drinking Water; Lands Branch; Parks and Protected Spaces Branch; Water Control Works and Drainage Licensing). MCWS also forwarded the draft Scoping Document to the National Energy Board for review.

April 24, 2015: MCWS posted the results of the TAC/public review of the draft Scoping Document on its website.⁸⁹

⁸⁶ *Classes of Development Regulation*, Man. Reg. 164/88, s. 4.

⁸⁷ *Licensing Procedures Regulation*, Man. Reg. 163/88, s.1(1)(j)

⁸⁸ *Supra* note 2, s. 12(8).

⁸⁹ Public Utilities Board, Public Registry File 5750.00 Manitoba Hydro, Manitoba-Minnesota Transmission Project, online: <http://www.gov.mb.ca/sd/eal/registries/5750mbhydrombminnesota/index.html>

May 5, 2015: MCWS provided Manitoba Hydro with a letter containing instructions for revisions required to the draft Scoping Document, based on the TAC/public review process.

June 24, 2015: MCWS posted the final Scoping Document on its website defining the scope and contents of the EIS.

September 22, 2015: Manitoba Hydro filed the EIS for the Project with MCWS.

December 22, 2015: Information Request No.1 was issued to Manitoba Hydro.

December 29, 2015: Three sets of public comments were posted to the MCWS website for the Project.

December 31, 2015: Minister Tom Nevaakshonoff directed the Clean Environment Commission (“CEC”) to hold public hearings on the proposed Project. The Terms of Reference specify the scope of review.⁹⁰

February 9 , 2016: Information Request No. 2 was issued.

February 10, 2016: TAC comments on the EIS were posted on the MCWS website for the Project.

March 9, 2016: Information Request No. 1 was replaced by MCWS.

April 29, 2016: Manitoba Hydro provided responses to Information Requests Nos. 1 and 2 and filed errata to the EIS with MCWS.

October 3, 2016: Manitoba Sustainable Development, Environmental Approvals Branch issued a letter to the CEC advising that the concerns raised during the review of the EIS had been addressed by Manitoba Hydro’s responses to information requests or could be addressed in licensing conditions.

October 15, 2016: CEC announced that it was accepting applications for participation in the MMTP hearing and available funding until November 25, 2016. The Manitoba CEC Hearing Directive for the MMTP and Guidelines for the Participant Assistance Program can be accessed at the link below.⁹¹ As proposed, the CEC hearing will include two rounds of information requests and the submission of written evidence by participants prior to the oral hearing. Hearings will be held in Winnipeg

⁹⁰ Clean Environment Commission, Manitoba-Minnesota Transmission Project, Terms of Reference, online: <http://www.cecmanitoba.ca/hearings/index.cfm?hearingid=43>.

⁹¹ Clean Environment Commission, Manitoba-Minnesota Transmission, Project, Hearing Directive and Guidelines for the Participant Assistance Program, *supra* note 90.

and other communities. Participation in Indigenous languages and French will be accommodated.

4.4.2 U.S. Approvals:

- a. Approvals Required: Minnesota Power requires the following approvals in order to construct the Great Northern Transmission Line: (i) Presidential Permit from the United States Department of Energy; (ii) a Certificate of Need from the Minnesota Public Utilities Commission (“MPUC”); and (iii) a Route Permit from MPUC.
- b. Status of Approvals: Minnesota Power filed an application for a Presidential Permit in April of 2014 and an amendment to the application on October 29, 2014. U.S. federal and state agencies agreed to perform a joint review of the Great Northern Transmission Line. The Presidential Permit was issued on November 16, 2016. MPUC issued a Certificate of Need on June 30, 2015 and a Route Permit on April 11, 2016.

4.4.3 Regulatory Approval and Project Schedule:

- a. Project Schedule: Attached as Appendix 26 is the schedule for obtaining the federal and provincial regulatory approvals for the Project and constructing the Project.⁹² Manitoba Hydro requires the requested Board authorizations and a licence under *The Environment Act* by August 31 of 2017 to meet the proposed in-service date of May 31, 2020. Although construction is not scheduled until December 15, 2017, it is anticipated that, if approvals are received, several weeks may be required to fulfill provincial and/or federal licence/permit conditions and to mobilize the workforce. Attached as Appendix 27 is the schedule for construction of the Great Northern Transmission Line in the United States.
- b. Schedule Dependencies: Manitoba Hydro’s proposed construction schedule is dependent on a number of factors. Receipt of regulatory approvals prior to August 31 of 2017 is the factor that, if not achieved, has the potential to cause the most significant delay. Clearing associated with the Project must be conducted during the winter season. Accordingly, if approvals are not received and any conditions fulfilled before winter 2017, a one year delay to the schedule is likely to result. Delays may also be encountered at the land acquisition stage. Securing rights to Crown land under provincial legislation may be delayed beyond the projected schedule depending on the progress and outcome of section 35 consultations by the Province of Manitoba. Similarly, the amount of time required to negotiate easement agreements with private landowners may postpone the start of construction. Once construction has commenced, the need to perform work in wetlands (and upstream activities) under frozen conditions and

⁹² Note that the asterisks beside some entries in the Project Schedule are for internal administrative purposes only.

avoiding certain periods of time that would be disruptive to wildlife (ex. bird breeding periods) have the potential to cause delays in completion.⁹³

4.5 Alternatives

4.5.1 Alternative Routes and Transmission Line Routing Methodology

- a. **Background:** The route for the Dorsey IPL that is being proposed in this Application represents the culmination of years of study with respect to thousands of alternative routes. The process of developing alternatives and selecting the route included data gathering and analysis, multiple rounds of engagement with the public, First Nations and Metis, and multiple rounds of alternative route evaluation. In order to find a route that balances several types of land use and interests, and reduces potential adverse effects, Manitoba Hydro used a transparent and comprehensive routing process based on the EPRI-GTC methodology. This transmission line routing methodology uses criteria-based models to develop, evaluate and compare route alternatives and support decision-making.
- b. **Basis For Routing Methodology:** The EPRI-GTC methodology is a quantitative, computer-based methodology developed by the Electric Power Research Institute and Georgia Transmission Corporation for use in siting overhead transmission lines. This methodology is informed by geospatial information and incorporates input from internal “stakeholders” (i.e. Project proponent’s personnel and consultants) as well as external interested parties (such as First Nations and Metis, public, non-government organizations and government branches responsible for the management of various land uses). The models and decision-making methodology make use of three perspectives that represent the various interests: the engineering environment, the natural environment and the socio-economic environment. A fourth perspective is also employed that balances these three perspectives equally. Feedback is collected during the proponent’s engagement processes and is considered in the determination of a preferred route. Manitoba Hydro selected this methodology because it has been successfully applied in more than two hundred projects in North America and because it provides a structured, transparent method of representing the compromises necessary to balance different interests and land uses. Due to siting complexities associated with the Project (ex: three potential border crossings), Manitoba Hydro modified the EPRI-GTC process by repeating the alternative route evaluation step multiple times. Modifications were also made to allow more opportunities to incorporate feedback generated from Manitoba Hydro’s consultations with the public, First Nations and Metis. This feedback informed route planning and evaluation, leading to the addition of route segments that addressed concerns and took advantage of opportunities. These additions were evaluated alongside the alternative

⁹³ EIS, Volume 1, Chapter 2, *supra* note 52, s. 2.11.1, 2.11.2 and 2.11.3.

routes planned initially by Manitoba Hydro. A detailed description of Manitoba Hydro's transmission line routing methodology is provided in the EIS.⁹⁴

- c. Overview of Routing Methodology: During the preliminary planning stages of the Project and prior to the development of route alternatives, border crossing areas were determined in cooperation with Minnesota Power. Then the EPRI-GTC approach was used to develop macro corridors that subsequently helped to define a route planning area for the Project. Next, an alternative corridor model was developed using input from Manitoba Hydro personnel and consultants to generate corridors that represented areas suitable for transmission line development within the route planning area. From there, alternative routes were developed for consideration in each of the rounds of subsequent engagement feedback incorporation, analysis, evaluation and selection. Alternative routes were evaluated using an Alternative Route Evaluation Model (based on built, natural and engineering environment criteria), followed by a Preference Determination Model using broader criteria such as cost, environment and community feedback. In the first round of routing over 750,000 alternatives were compared. This was reduced to 550,000 in the second round. Finally, in the last round of Final Preferred Route determination, nearly 4000 alternatives were compared.
- d. Role of Engagement Feedback: Two of the central issues that were raised during Manitoba Hydro's engagement process and evaluated throughout the transmission line routing process were: (i) the competing values with respect to the use of private versus Crown Lands and (ii) the relative effect of the IPL on natural habitat versus farmland or residences. The models and related criteria used in the route evaluation process represented these trade-offs in the decision-making process and helped guide the selection of a route that aimed to balance these concerns. On a smaller scale, considerable efforts were made throughout the routing and engagement processes to understand the concerns and preferences of individual landowners that would be directly affected by the IPL. Wherever possible route adjustments were made to address these concerns, or alternative mitigation measures explored such as tower spotting, or selection of tower type (see sections 5.3.4.b and 5.4.3.b of this Application for more details).
- e. Implementation of Methodology:
 - i. Round 1: In this round, the objective was to determine a border crossing for the IPL. Using the steps of the methodology to guide the decision-making, a preferred crossing point was selected by first selecting a preferred route to each possible crossing point and then comparing the strongest routes to each crossing point against each

⁹⁴ EIS, Volume 1, Chapter 5, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtip_eis_chapter05_transmission_line_routing.pdf.

other. The statistics generated by the models (Alternative Route Evaluation Model and Preference Determination Model) gave Manitoba Hydro a clear understanding of the strengths and weaknesses associated with each border crossing and the routes used to connect the crossing to the Project start point (Dorsey Converter Station). Three potential border crossing points were considered: Gardenton, Piney East and Piney West. Map 5-15 in the EIS⁹⁵ depicts the locations of these alternative crossing points and their associated land use features. As described in detail in the EIS⁹⁶, a comparative evaluation of various alternative routes to these border crossings resulted in Gardenton being the preferred border crossing for Manitoba Hydro. However, the Gardenton crossing was not considered feasible by Minnesota Power due to a higher amount of prime agricultural land and due to concerns that the U.S. transmission line might need to be routed west through land recognized as having outstanding biological diversity. Considerable concerns had been expressed by land owners, thus increasing potential for delays in land acquisition. Piney East was not considered to be a feasible option for Manitoba Hydro for the following reasons: (i) it traverses areas of high biological diversity that have been noted by both governmental agencies and environmental non-government organizations; (ii) the area consists primarily of Crown land and Manitoba Hydro had previously received feedback from its provincial regulator raising concerns regarding the use of undeveloped Crown land for siting transmission lines; (iii) construction cost. Given these assessments, both of these crossings were removed from consideration and Piney West was identified as a reasonable compromise by the parties. Further detail on this evaluation is provided in the EIS.⁹⁷ The key routing criteria agreed to by Manitoba Hydro and Minnesota Power are also identified in Table 5-2 of the EIS.⁹⁸

- ii. Round 2: The objective for this round was to select a preferred route to the selected border crossing. With the benefit of the analysis and feedback received during Round One of Manitoba Hydro's engagement processes and new data collected from the field (ex. birds, vegetation, wetland surveys), alternative routes were developed to the border crossing and their associated 12 route segments were presented to the public, First Nations and Metis.⁹⁹ Previous engagement feedback had indicated a strong preference for the Dorsey IPL to be routed in existing corridors as much as possible. Manitoba Hydro made the decision at this point to allow the evaluation of an alternative

⁹⁵ EIS, Volume 1, Chapter 5, Transmission Line Routing Map Folio, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtpl_eis_chapter05_transmission_line_routing_maps.pdf.

⁹⁶ EIS, Volume 1, Chapter 5, *supra* note 94, s. 5.4.3.1.

⁹⁷ EIS, Volume 1, Chapter 5, *supra* note 94, s. 5.4.3.2-5.4.3.5.

⁹⁸ EIS, Volume 1, Chapter 5, *supra* note 94, Table 5-2.

⁹⁹ EIS, Volume 1, Chapter 5, Transmission Line Routing Map Folio, *supra* note 95 Map 5-16.

that would make use of Manitoba Hydro's existing Riel-Vivian Transmission Corridor, which would result in the Dorsey IPL paralleling an existing and a future 500 kV line. While this represents a potential risk to reliability, Manitoba Hydro is able to manage this risk because the parallel sections are in close proximity to Winnipeg so that repairs can be quickly performed in the event of a multi-line outage event. After conducting alternative route evaluation a preferred route was selected that uses existing corridors from Dorsey Converter Station to the Anola area and then proceeds south and east on new ROW to the Piney West border crossing. The route also parallels existing transmission line ROWs for 24 km.

- iii. Border Crossing Change: A change in the border crossing location was requested by Minnesota Power after Round Two of Manitoba Hydro's engagement processes.¹⁰⁰ With this late change in a fairly key decision point, the routing and engagement processes were adjusted to include development of new route segments and to solicit additional stakeholder input on the location change. A new border crossing point was adopted 6.6 km east of the original location with the input provided by affected landowners, stakeholders, First Nations and Metis.
- iv. Route Preference Determination: Subsequent to the feedback received from Round Two engagement regarding 12 alternative route segments and additional engagement regarding the changed border crossing location, Manitoba Hydro developed numerous additional alternative route segments in an effort to mitigate concerns. The possible combinations of all of these segments generated over 550,000 possible routes. Through successive analyses and comparison, the top route from each of the four perspectives were determined (i.e. built, natural, engineering and simple average), as well as one additional route that made use of an existing corridor: Routes AY, URQ, URV, SGZ and SIL. The locations of these alternative routes and their corresponding land use features are depicted on Map 5-18 of the EIS.¹⁰¹ After the preference determination step, which included consideration of cost, reliability, schedule, potential socio-economic and environmental effects, plus the community perspective (representing feedback from the engagement process), Route SIL was ranked first. A comparison of these routes is provided in Table 5-26 of the EIS.¹⁰²
- v. Preferred Route SIL: Route SIL runs west of the Watson P. Davidson Wildlife Management Area ("WMA") through land with a higher proportion of private landholdings, across more agricultural lands and in closer proximity to homes than options farther east that traversed more natural area east of the WMA. This decision was made after

¹⁰⁰ See EIS, Volume 1, Chapter 5, *supra* note 94, s. 5.5.3 for more detail.

¹⁰¹ EIS, Volume 1, Chapter 5, Transmission Line Routing Map Folio, *supra* note 95.

¹⁰² EIS, Volume 1, Chapter 5, *supra* note 94, p. 5-83.

Careful analysis and consideration of feedback from all perspectives. The route selected was determined to be the preferred option because it mitigates concerns related to habitat fragmentation, effects on high quality wildlife habitat, and lands of importance identified through the First Nations and Metis engagement process. Concerns pertaining to effects on private lands, proximity to residential development and effects on agricultural activities were considered carefully. Every effort was made to address concerns of individual landowners and producers through more discrete route re-alignments and other mitigative measures (ex: tower type, tower placement, biosecurity protocols).

- vi. Round 3: The objective for this round was to finalize the placement of the preferred route selected in Round Two. Usually finalizing the preferred route would entail gathering input from Manitoba Hydro's engagement processes and discipline specialists and making small changes to the route within a one mile wide buffer. However, because of the level of concern received from Round Three of the Public Engagement Process regarding the proximity of the route to residential developments near the town of La Broquerie, larger deviations than usual were considered at this stage. For this reason the exercise of finalizing the preferred route became more complicated and required a rigorous comparison of alternative options, using the alternative route evaluation and preference determination models to guide decision-making.
- vii. Modifications To Route SIL: Several modifications were made to Route SIL in response to concerns raised during Manitoba Hydro's preceding engagement processes.¹⁰³ A modified Route SIL, as shown on Map 5-19 of the EIS, was presented in Round Three of the engagement processes, after which several additional alternative segments for the route were developed and evaluated.¹⁰⁴ The combination of these alternative segments generated 3,942 alternative routes for evaluation. The top 5 of these alternative routes from the natural, built and engineering perspectives (Routes BWZ, BXP, BMX, BMY and BOB) then underwent a preference determination.¹⁰⁵
- viii. Selection of Final Preferred Route: Route BMY as depicted on Map 5-22 of the EIS¹⁰⁶ was selected as the Final Preferred Route based on the same criteria and weighting as used in the Round 2 preference determination: cost (40%), system reliability (10%), risk to schedule (5%), natural environment (7.5%), built environment (7.5%) and community (30%). Comparisons of these top five routes is found in

¹⁰³ EIS, Volume 1, Chapter 5, *supra* note 94, s. 5.6.2.

¹⁰⁴ EIS, Volume 1, Chapter 5, Transmission Line Routing Map Folio, *supra* note 95, Map 5-20.

¹⁰⁵ EIS, Volume 1, Chapter 5, Transmission Line Routing Map Folio, *supra* note 95, Map 5-21.

¹⁰⁶ EIS, Volume 1, Chapter 5, Transmission Line Routing Map Folio, *supra* note 95.

Tables 5-32 and 5-35 of the EIS.¹⁰⁷ The resulting 213 km long Final Preferred Route represents a reasonable balance of perspectives and values, incorporating mitigation proposed during Manitoba Hydro's Public Engagement Process and First Nations and Metis Engagement Process. By making use of 92 km of existing corridors that are owned or under easement by Manitoba Hydro, only 121 km of new ROW is required for the Dorsey IPL. Of this new ROW, approximately 30% is owned by the Provincial Crown and 70% is privately owned. The proposed route also mitigates the following: biosecurity concerns related to livestock operations at La Broquerie, concerns with respect to lands used for private conservation and recreation, and concerns regarding lands of recognized cultural importance to First Nations.

4.5.2 Alternate Designs

- a. Voltage: As discussed in section 3.1.3 of this Application, the option of a 230 kV transmission line was initially considered in the transmission studies that were performed by Manitoba Hydro pursuant to its Open Access Transmission Tariff ("OATT"). The System Impact Study Results issued on January 24, 2013 indicated that "... either a 500 kV transmission line or a 230 kV transmission line from Riel to the Manitoba-U.S. border is needed in Manitoba for accommodating all or parts of the TSRs...".¹⁰⁸ While the early stages of the ensuing Facilities Study continued to analyze the 230 kV option, the transmission customer, Manitoba Hydro Export Power Marketing ("MHEM") chose to eliminate this option prior to completion of the Facilities Study, as a 230 kV transmission line would only provide the transmission capacity required for two of the twelve transmission service requests that had been submitted. Selection of the 500 kV option was also supported by the Provincial NFAT review, as indicated in section 3.1(c) of this Application.
- b. Termination Points: The Manitoba Hydro Preliminary Report on Group Facility Study dated October 2, 2013¹⁰⁹ outlined five options for a new transmission line - four involving a 500 kV IPL originating at Dorsey Converter Station and one option involving a 230 kV IPL originating at Riel Converter Station. Terminating a new 500 kV transmission line at Riel Converter Station was not considered a desirable option from a reliability perspective, given that there is an existing 500 kV IPL terminating at Riel and given that Bipole III, which is currently under construction, will terminate at this station. This termination point would also be more expensive than a terminal point at Dorsey Converter Station, as it would also require a new 500 kV line from Dorsey Converter Station to Riel Converter Station. Since MHEM eliminated the 230 kV option, Dorsey Converter Station became the terminal point in Canada. The subsequent Manitoba Hydro Preliminary Report on Group Facilities Study

¹⁰⁷ EIS, Volume 1, Chapter 5, *supra* note 94, p. 5-113, 5-119.

¹⁰⁸ Manitoba Hydro, System Impact Study Results, Appendix 2, *supra* note 22, p. 4.

¹⁰⁹ Manitoba Hydro, Preliminary Report on Group Facility Study, October 2, 2013, Appendix 28.

(Appendix 3) outlined four different alternatives for a 500 kV line to meet the capacity requirements of MHEM's transmission service requests. Two of the alternatives proposed a termination point in the U.S. in the Iron Range region of Minnesota and the other two alternatives proposed a U.S. termination point in Fargo, North Dakota at the Bison Station. MHEM chose to eliminate the options related to a Fargo termination point based on the lack of a U.S. party willing to fund such a configuration. Based on the PPAs with Minnesota Power referenced in section 3.1.3 of this Application, Minnesota Power was willing to contribute to the funding of the transmission line terminating at a station within its service territory (Iron Range Station).¹¹⁰

- c. Single Versus Double Circuit: There were several technical alternatives to achieving the Manitoba to U.S. transfer capability increase that was requested under the OATT. Overhead construction of a single circuit 500 kV or a double circuit 345 kV transmission line were two viable options. A double circuit 345 kV transmission line was analyzed in some detail and found to perform technically similar to a single circuit 500 kV line. However, there was a cost premium of 25% to build a double circuit 345 kV line, that could not be justified.
- d. Overhead Versus Underground: A 500 kV alternating current underground cable was not considered a feasible alternative for several reasons. There is limited industry experience world-wide with 500 kV underground transmission lines. Existing installations are typically confined to lengths of less than 20 km and to urban supply applications, neither of which correspond to the proposed installation. Cable joints for an underground facility also pose a reliability concern given that there is no experience available for high voltage cables installed with winter ambient temperatures less than zero degrees Celsius. Failure rates and repair times for underground installations are expected to be much higher than those applicable to overhead lines. Finally, the cost of underground cable is expected to be at least ten times more expensive than a comparable overhead transmission line. Not only is the cable itself expensive, but reactive power compensation stations are required roughly every 25 km to compensate for the high capacitance of the cable.
- e. Tower Type: Steel lattice towers were chosen rather than the alternative tubular structures. While steel lattice towers require larger ROWs than tubular towers, there are several advantages. Steel lattice towers allow for longer span lengths, thereby reducing the number of obstacles that land owners may need to avoid when operating agricultural equipment. An increased span length reduces the total number of towers required, thereby reducing the total area of tower footprint that will be disturbed during construction of the IPL. The use of steel lattice towers also reduces the

¹¹⁰ Note that while the Manitoba Hydro Preliminary Report on Group Facilities Study refers to a terminal point at Blackberry Station, during negotiation of the interconnection agreement (Appendix 24) it was agreed that a new Iron Range Station would be constructed.

vertical spread of the IPL which, in turn, reduces avian collision zones. These three attributes provide mitigation against potential adverse impacts of the IPL. Self-supporting towers were chosen over guyed towers in cultivated areas to mitigate adverse impacts by reducing tower footprints and the amount of land required for a ROW. Guyed towers were chosen for other locations due to lower costs and for tower stability in saturated soils.

- f. **Crossovers Versus Relocation:** As described in detail in section 4.2.1 of this Application, the decision to relocate a segment of the Riel IPL, rather than the alternative of constructing two 500 kV line crossover structures, was based primarily on reliability considerations. A crossover creates the risk of an outage to two IPLs arising from a conductor failure, tower failure or flashover event.

5. Consultation

5.1 Guiding Principles and Goals for Consultation Program

5.1.1 Guiding Principles

- a. **Corporate Policies:** The foundation of Manitoba Hydro's Corporate Strategic Plan that was in place at the time Manitoba Hydro designed its engagement program for MMTP is the following Vision Statement: "To be recognized as a leading utility in North America with respect to safety, reliability, rates, customer satisfaction and environmental leadership."¹¹¹ In order to achieve this vision, protection of the environment is recognized as a key area of focus in the Corporate Strategic Plan. Environmental protection is realized by the Corporation in many ways, including through Manitoba Hydro's Sustainable Development Policy which includes public participation as a guiding principle. Manitoba Hydro's approach to implementing this corporate policy, is to undertake generation and transmission project developments in a manner that is sensitive to impacts on the environment and the rights of affected parties informed by public engagement programs that are designed on a project-specific basis, rather than adopting a "one-size fits all" approach. The specific design of the engagement program for MMTP was influenced by the type of project, the land use of the Project area, anticipated impacts on land use, feedback from provincial regulators and participants in previous proceedings related to transmission projects, and the input received by Manitoba Hydro during the preliminary phase leading up to the engagement program
- b. **Regulatory and Industry Guidelines:** Guidance in developing the details of Manitoba Hydro's engagement program was obtained from regulatory publications such as the National Energy Board Electricity Filing Manual, the Canadian Environmental Assessment Agency Key Elements of

¹¹¹ Manitoba Hydro, Corporate Strategic Plan, November 2013, online: <http://www.hydro.mb.ca/corporate/csp/>

Meaningful Public Participation¹¹² and the Province of Manitoba's Environment Act Proposal Guidelines.¹¹³ Manitoba Hydro also took into consideration the International Association for Public Participation Core Values¹¹⁴ and the International Association for Impact Assessment Principles of Best Practices¹¹⁵.

5.1.2 Goals

- a. General: Sensitive to the different engagement needs of those who would be impacted by the Project, Manitoba Hydro developed and implemented an engagement program consisting of two separate processes: a Public Engagement Process ("PEP") and a First Nations and Metis Engagement Process ("FNMEP"). It should be noted that Manitoba Hydro views its FNMEP as distinct from Crown consultations conducted pursuant to section 35 of the *Constitution Act, 1982*¹¹⁶ ("section 35 consultations"). Manitoba Hydro submits that the legal obligation to undertake section 35 consultations with respect to MMTP lies with Canada and the Province of Manitoba and has not been delegated to Manitoba Hydro.
- b. PEP Goals: The goals of the PEP were the following: (i) to share Project information; (ii) to obtain feedback for use by Manitoba Hydro in the route selection and environmental assessment process; (iii) to gather and understand local interests and concerns; (iv) to integrate interests and concerns into the routing and assessment process; and (v) to review potential mitigation measures.
- c. FNMEP Goals and Principles: The over-arching goal of this component of Manitoba Hydro's engagement program was to include First Nations and Metis throughout all stages of pre-Project activities (i.e. design of the engagement process, route selection, environmental assessment and the regulatory review process), as well as the construction and operational phases of the Project. In addition to the five specific goals of the PEP previously mentioned, Manitoba Hydro's FNMEP sought to: (i) build and strengthen working relationships with First Nations and Metis in Manitoba; and (ii) provide opportunities for First Nations and Metis to provide meaningful input and contributions to the Project. Manitoba Hydro's approach to the FNMEP for the Project was guided by the following principles. (i) The diversity of First Nations and Metis cultures and worldviews should be understood and appreciated. (ii) Manitoba Hydro should work with First Nations and Metis to better understand

¹¹² Canadian Environmental Assessment Agency, 2013. "Public Participation Guide – A Guide for Meaningful Public Participation in Environmental Assessments Under the Canadian Environmental Assessment Act, 2013"

¹¹³ Manitoba Conservation and Water Stewardship, Information Bulletin-Environment Act Proposal Report Guidelines, December 2015, online: http://www.gov.mb.ca/sd/eal/pubs/info_eap.pdf.

¹¹⁴ International Association for Public Participation – Canada "IAP2 Core Values"

¹¹⁵ International Association for Impact Assessment, Institute of Environmental Assessment – U.K. Principles of Environmental Impact Assessment Best Practice, Fargo: IAIA, 1999

¹¹⁶ *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (UK), 1982, c. 11.

perspectives and to determine mutual approaches to address concerns and build relationships. (iii) First Nations and Metis should be provided with opportunities to communicate their concerns early on in the process and on an ongoing basis. (iv) First Nations and Metis have a responsibility to respond to requests during the engagement process and participate in relationship-building in good faith to make their concerns known.

5.2 Design of the Public Engagement Process

5.2.1 Overview

Manitoba Hydro designed the PEP for the Project to be adaptive and inclusive, offering a wide variety of mechanisms and opportunities for stakeholder groups, affected landowners, local municipalities, government departments and the general public to receive information, provide input and voice concerns regarding MMTP. Engagement began with the solicitation of input into the design of the PEP and is planned to continue through the operation and maintenance of the proposed Dorsey IPL. Manitoba Hydro initially designed the pre-regulatory phase of the PEP (i.e. the period preceding filing of the EIS) to consist of a Pre-Engagement Phase (designed to announce the Project, identify interested parties and receive input into the design of the PEP), followed by three rounds of public engagement, each with multiple engagement methods and a progressively narrower area of focus. However, subsequent to Round Two of the PEP, a modification was made to the border-crossing location which led Manitoba Hydro to initiate additional engagement with interested parties. Over the course of the pre-regulatory phase of the PEP which lasted over two years, 33 open houses/landowner information centres were held, over 70 stakeholder meetings/workshops were convened, 850 emails/telephone calls were responded to and at least three rounds of letters were sent to potentially affected landowners. There were over 1500 participants in the pre-regulatory phase of the PEP.

5.2.2 Recording and Addressing Input

Manitoba Hydro's design for the PEP included recording the input received from the various engagement methods through the following: (i) the logging of telephone calls, email, letters and faxes; (ii) the preparation of summaries of meetings and workshops; and (iii) the recording of input received at open houses and workshops on both iPad maps and hard copy maps. This feedback, as well as the feedback from Comment Sheets and Landowner Forms, was compiled into a Public Comments Database and categorized according to the type of issue and the source of the feedback. Categorization of the feedback assisted in having appropriate personnel review the feedback for analysis and incorporation, where feasible, into either the relevant subject matter under environmental assessment, the route selection process or modifications to the PEP. Additional detail regarding Manitoba Hydro's

methodology for recording and incorporating input is provided in the EIS.¹¹⁷ A detailed summary of the feedback received during the PEP and Manitoba Hydro's responses can be found in Table 3-4 of the EIS.¹¹⁸

5.3 Implementation and Outcome of PEP

5.3.1 PEP Engagement Materials

Extensive information describing the Project, the route selection process, potential effects, the regulatory process and other related matters was made available by Manitoba Hydro throughout the course of the PEP. This included maps, newsletters, videos, brochures and other materials that were made available at public forums and online. Table 3-2 in the EIS provides a detailed list of engagement materials employed during the PEP.¹¹⁹ As noted, the materials included the NEB handout entitled "Information for Proposed Pipeline or Power Line Projects that Do Not Involve a Hearing", which provides interested parties with process and contact information for communicating concerns to the Board regarding the Project. As described in more detail below, Manitoba Hydro also established a Project webpage that provided information regarding the Project, the engagement process and Manitoba Hydro's intention to apply for provincial and federal authorizations.

5.3.2 Pre-Engagement Phase

- a. Purpose: Manitoba Hydro initiated a preliminary "Pre-Engagement Phase" to seek input into the design of the PEP.
- b. Components: The Pre-Engagement Phase consisted of the following six components.
 - (i) News release: On June 28, 2013 Manitoba Hydro issued a news release in both official languages announcing the Project to 78 different media outlets across the province of Manitoba including newspapers, television stations and radio stations. The news release provided a high-level description of MMTP, the general route of the proposed Dorsey IPL and invited input into the planning process. Contact information via telephone and email was included in the release, as well as notice that Project information and online registration would be available on Manitoba Hydro's website. A copy of the news release is provided as Appendix 29. This initial invitation to provide input preceded Manitoba Hydro's filing of a Draft Scoping Document with the Province of Manitoba under The Environment Act by more than 18 months.

¹¹⁷ EIS, Volume 1, Chapter 3, s. 3.4.7 and 3.5, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtp_eis_chapter03_public_engagement.pdf

¹¹⁸ EIS, Volume 1, Chapter 3, *supra* note 117, p. 3-35.

¹¹⁹ EIS, Volume 1, Chapter 3, *supra* note 117, p. 3-26.

- (ii) Project Website: On July 2, 2013, a few days after the news release, a webpage dedicated to the Project was launched (www.hydro.mb.ca/mmtp) for the purposes of providing ongoing information regarding the Project, describing federal and provincial regulatory approvals, and soliciting input. Project information on the website included the following: narrative descriptions of the Project (ex: voltage level of IPL, a description of tower design criteria, station modifications, general location of the IPL, a general description of the proposed route, in-service date, purpose of the Project, costs); maps showing termination points and potential international border crossing locations; and a short video regarding the importance of the IPL. The webpage also contained information regarding the environmental assessment, route selection and public engagement processes. The public was invited to complete a questionnaire to assist Manitoba Hydro in refining its PEP and to register for email notification of Project activities. The questionnaire sought input regarding such matters as: preferred methods of providing Project information (ex. open house, letter, social media) preferred methods of notification of Project activities, preferred times of day and week for public events, preferences for online rather than in-person events; preferred methods of providing input and the identification of issues of importance for Manitoba Hydro to be aware of during the PEP.
- (iii) Information Line and Dedicated Email Address: Concurrently with establishment of the MMTP webpage, Manitoba Hydro established a dedicated email address and a toll-free Project information line for receiving questions and concerns about the Project. Manitoba Hydro staff undertook efforts to respond to each telephone and email inquiry over the course of the PEP.
- (iv) Stakeholder Letters: In August of 2013, letters were mailed to all of the stakeholder groups identified on Manitoba Hydro's Master Stakeholder List. The letter contained general information regarding MMTP and notified stakeholders that they would be contacted by telephone to determine their level of interest and their preferred method of engagement. A copy of the stakeholder letter is attached as Appendix 30. Manitoba Hydro's Master Stakeholder List (attached as Appendix 31) containing over 150 stakeholder groups, each representing a common interest, was compiled using various methods. The initial list was based on the stakeholder list for Manitoba Hydro's Bipole III Transmission Project that received a provincial licence under *The Environment Act* in 2013. Both MMTP and Bipole III involve the construction of 500 kV overhead transmission lines that are considered Class III developments under *The Environment Act*. Accordingly, similar environmental impacts can be anticipated and therefore, similar stakeholder groups. Comparable existing land uses (i.e. agricultural and Provincial Crown land) also made the comparison

appropriate. This base list included applicable regulatory personnel from Manitoba Conservation and Water Stewardship, as well as its Technical Advisory Committee consisting of representatives from various provincial departments under Manitoba Conservation and Water Stewardship such as Crown Land Programs and Parks and Protected Spaces Branch. Municipalities, conservation districts and planning districts within the route planning area were also added to the base stakeholder list. Finally, Manitoba Hydro conducted internet searches of the websites of local municipalities for potentially interested organizations, including Environmental Non-Government Organizations, and made inquiries of other stakeholders to complete the stakeholder list. An understanding of local interests related to land use in the proposed route planning area (ex. skidoo clubs, other recreational organizations, wildlife organizations, plant societies, outfitters, historical groups) contributed to the identification of stakeholder groups. Throughout the PEP, stakeholder groups were added as additional interests were identified.

- (v) Stakeholder Survey: The fifth step in the Pre-Engagement Phase was the performance of a telephone survey in August of 2013 of all the stakeholder groups identified on the Master Stakeholder List. The survey consisted of six questions related to the stakeholder group's level of interest in the Project, whether they were interested in being notified of Project milestones, their interest in attending workshops or open houses, their preferred method of contact and the best contact person. If no contact was made after three (3) attempts, the stakeholder group was classified as receiving "information only".
 - (vi) Postcards: Postcards were mailed to over 26,000 residents within the route planning area in October of 2013 providing notice of the proposed Project and the MMTP webpage. The postcards included a map of the route planning area with proposed border crossing locations and contact information. Residents were also invited to complete the online pre-engagement survey and to register for receiving future email notifications in order to keep informed about Project developments.
- c. Outcome: The results of the Pre-Engagement Phase influenced the following features of Manitoba Hydro's PEP: the level of information provided via the MMTP webpage; the methods of contacting interested parties; days of the week and times for open houses; the offering of public engagement through email notification, telephone calls and meetings with Manitoba Hydro personnel; and the identification of a comprehensive list of stakeholder groups.

5.3.3 PEP Rounds

- a. Overview: The Pre-Engagement Phase was followed by three rounds of public engagement, each aimed at key decisions. As detailed in section 4.5 of this Application, Manitoba Hydro's transmission line routing methodology was coordinated with the PEP in order to provide information and gather feedback at key stages of route selection. Each round of the PEP consisted of several open houses for the public, stakeholder meetings and stakeholder workshops. Based on previous feedback from the public, open houses were not held during seeding and harvesting periods. Comment sheets were distributed for feedback at each open house. Stakeholder meetings and workshops were convened with one or more stakeholder groups at the request of the stakeholder group. Workshops involved a presentation by Manitoba Hydro staff regarding the Project, routing and evaluation, whereas stakeholder meetings were more general in nature. Locations for open houses were chosen to minimize travel time and resulted in 15 different locations.¹²⁰ Manitoba Hydro personnel used iPads and mapping stations to record information and concerns relayed at the open houses and stakeholder meetings, such as denoting sensitive sites, tower location preferences, and segment feedback on maps of the Project area. Notifications for the rounds of engagement were made via letters to residents in the route planning area, email, posters, postcards, press releases, newspaper notices, radio spots, social media and Manitoba Hydro's Project webpage. Additional methods of notification for particular rounds of engagement are noted below.

- b. Round One: The first round of engagement, held from October, 2013 to April, 2014, introduced the Project, including its description and purpose, and provided an opportunity for questions and the documenting of concerns. Numerous alternative routes were presented terminating at three alternative points on the Manitoba-Minnesota border. The specific notification methods for this round of engagement are provided in Table 3-5 of the EIS.¹²¹ Engagement consisted of 11 public open houses, 22 stakeholder meetings/workshops and 76 telephone/email exchanges. Additional detail regarding Round One activities can be found in the EIS.¹²² Feedback received during Round One of the PEP assisted in determining issues to be addressed in the environmental assessment, the development of criteria for the evaluation of the alternative routes and the determination of a preferred border crossing point. One of the open houses during Round One was held in Glenboro, Manitoba to outline expansion plans for Glenboro Station. The four potentially affected landowners were contacted and provided with information as well as an invitation to meet with Manitoba Hydro staff. Manitoba Hydro met with one potentially affected landowner at their home to discuss potential tower placement on their property.

¹²⁰ EIS, Volume 1, Chapter 3, *supra* note 117, s. 3.4.4.1 for a list of locations and map.

¹²¹ EIS, Volume 1, Chapter 3, *supra* note 117, p. 3-56.

¹²² EIS, Volume 1, Chapter 3, *supra* note 117, s. 3.7.

- c. Round Two: The second round of pre-regulatory engagement occurred during April through August of 2014 and focused on two issues: (i) the identification of a preferred route from a set of numerous alternatives; and (ii) route selection criteria for environmental assessment (i.e. Valued Components), particularly socio-economic considerations. Round Two consisted of 11 open houses, 25 stakeholder meetings, 5 landowner meetings and 322 email/telephone exchanges. Notifications for Round 2 included both email and telephone notifications, as per the request of the interested party. Feedback from Round Two with respect to concerns and local knowledge assisted in the determination of a preferred route. Additional detail regarding Round Two engagement can be found in the EIS.¹²³
- d. Border-Crossing Modification Engagement: As detailed in section 4.5 of this Application, following the completion of Round Two engagement, the location of the proposed border-crossing that was acceptable to both Manitoba Hydro and Minnesota Power was moved approximately 6.6 km east from its original location. In response, Manitoba Hydro conducted additional engagement in November of 2014 consisting of a public open house, a landowner meeting and a stakeholder meeting. Additional detail regarding this phase of engagement is provided in the EIS.¹²⁴
- e. Round Three: The final round of pre-regulatory engagement was held from January through August of 2015. During this round Manitoba Hydro presented its preferred route. Participants were provided with opportunities to identify further constraints or adjustments. Potential effects of the Project and possible mitigation measures were also canvassed. For this round, affected landowners (located along the route of the IPL) were identified using the tax roll and were notified by letter sent via express Canada Post. A signature was required to confirm receipt of the letter. Letters were also sent via regular mail to landowners within one mile of the proposed route of the IPL. Round Three consisted of 10 public open houses, 16 landowner information centres, 7 landowner meetings, 20 stakeholder meetings and 421 telephone/email exchanges. In addition, landowner forms were mailed to all potentially affected landowners. Landowner forms were designed to be completed jointly by Manitoba Hydro personnel and the landowner in order to provide detailed information regarding these parcels of land for environmental assessment (ex. weeds, fur-bearing animals). Completion of 106 of these forms was done at open houses, meetings and over the phone. Additional detail regarding Round Three can be found in the EIS.¹²⁵

¹²³ EIS, Volume 1, Chapter 3, *supra* note 117, s. 3.8.

¹²⁴ EIS, Volume 1, Chapter 3, *supra* note 117, s. 3.9.

¹²⁵ EIS, Volume 1, Chapter 3, *supra* note 117, s. 3.10.

5.3.4 Feedback and Outcomes

- a. **General Feedback:** The main concerns raised by PEP participants related to potential impacts to property and health. These included: EMF exposure, impediments to future land development, impact on property values, increased potential for trespass on private property, impediments to agricultural activities and the preservation of protected areas. Concerns and preferences came mainly from those in close proximity to the proposed alternative routes. PEP participants noted that the effects to agricultural areas included challenges in working around the tower structures (ex. aerial spraying). Participants in rural residential areas expressed concerns regarding potential increases in the number of hunters and off road vehicles that would access the ROW and trespass onto private property. The predominant routing preference from PEP participants was to use unoccupied Crown lands in order to avoid agricultural or residential areas and privately held landholdings. Another general preference regarding siting of the IPL that emerged from participants in the PEP was to follow existing transmission lines. A summary of the concerns raised and Manitoba Hydro's responses is provided in the EIS.¹²⁶
- b. **Development of Mitigative Segments:** Specific feedback from the PEP that related to the route of the IPL was collected and then classified by individually numbered route segments for consideration in determining the proposed route. Analysis of the concerns took into consideration the number of concerns raised for the particular segment and the impact of any potential mitigation to address the concern. As a result of these analyses, numerous "mitigative segments" were developed. The mitigative segments were then evaluated by members of Manitoba Hydro's Project team to determine feasible alternative routes for presentation at the next round of the PEP and for inclusion in the final preferred route. The numerous mitigative segments that were developed in response to concerns raised during the PEP are described in Chapter 3 of the EIS.¹²⁷
- c. **Impact on Routing Methodology:** A comparison of the feedback from the PEP and the FNMEP revealed two competing preferences for siting the IPL: the preference to avoid use of private land so as to minimize impacts to farmlands and residences, versus the preference to avoid use of Crown land so as to minimize impacts to natural habitat. The models and related criteria used in Manitoba Hydro's route evaluation process incorporated these competing objectives and helped guide the selection of a proposed route that aimed to balance these concerns.
- d. **Other Impacts on Project:** In addition to the development of mitigative segments, there were many other outcomes of the PEP. Information collected from affected landowners through the PEP will be used, where possible, to locate towers along the proposed route of the IPL so as to

¹²⁶ EIS, Volume 1, Chapter 3, *supra* note 117, Table 3-4, p.3-35.

¹²⁷ EIS, Volume 1, Chapter 3, *supra* note 117, s. 3.7.2, 3.8.1.4, 3.8.1.5, 3.9.2 and 3.10.2.

minimize impacts on agriculture and residential areas. The feedback gained from the PEP was also incorporated where possible in the environmental assessment process. The PEP resulted in the incorporation of additional information on future land development for Manitoba Hydro's consideration, the identification of sensitive sites and the development or enhancement of various mitigation measures. These mitigation measures include: (i) environmental protection plans, (ii) construction scheduling aimed at minimizing impacts on wildlife, (iii) the selection of tower type and placement to minimize impacts on agricultural and livestock operations, and (iv) the use of roads and cut lines as access routes during construction to limit the potential for an increase in unauthorized access to private lands and hunting areas.

- e. Impact on PEP Design: Outcomes related to the design of the PEP include the addition of stakeholder group participants to the Master Stakeholder List, the inclusion of additional engagement activities such as meetings with stakeholders groups and landowners at their request, additional open houses and the development of additional information materials (ex. handout for "MMTP and Ridgeland Cemetery").

5.3.5 Ongoing Engagement

Manitoba Hydro is committed to sharing information with the public throughout the regulatory, construction and operation phases of the Project. Mechanisms for ongoing engagement include the following: (i) updates to the Project webpage will be made regarding the provincial and federal regulatory review processes (including regulatory contact information), the status of the Project and environmental monitoring reports; (ii) email contact regarding upcoming milestones with those on Manitoba Hydro's list of email contacts; (iii) letters to potentially affected landowners, stakeholder groups regarding regulatory approvals; (iv) continuation of Manitoba Hydro's toll-free information line and dedicated Project email address for asking questions and voicing concerns; (v) meetings on request; and (vi) discussions with impacted parties during easement negotiations.¹²⁸ Formal inquiries and concerns will be recorded and reviewed by members of the Environmental Protection Management Team for response. Further details on these ongoing engagement activities and others can be found in the EIS.¹²⁹

¹²⁸ EIS, Volume 1, Chapter 3, *supra* note 117, s. 3.11.

¹²⁹ EIS, Volume 1, Chapter 3, *supra* note 117, s. 3.11; and EIS, Volume 4, Chapter 22, s. 22.2.4, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtp_chapter22_envpp.pdf

5.4 First Nations and Metis Engagement Process

5.4.1. Design of FNMEP

5.4.1.1 Pre-Regulatory Engagement

The First Nations and Metis Engagement Process (“FNMEP”) for the Project was designed to engage First Nations, Metis and Aboriginal Organizations early in the process and at every stage and to provide input to the transmission line routing methodology. The FNMEP consisted of an initial pre-engagement phase followed by three rounds of engagement that were designed to: (i) share information concerning MMTP; (ii) receive information and feedback from First Nations and Metis at each stage of the Project; and (iii) allow participants the opportunity to review how their input informed the Project. The methods of engagement were varied and were individually tailored to suit the preferences indicated by each participant. The methods of engagement offered by Manitoba Hydro included: meetings with community leaders and representatives; opportunities to review and comment on draft meeting notes; community open houses; Project site tours; tours of similar projects; community information sessions; routing workshops; community-specific engagement checklists; Project comment sheets; telephone calls; self-directed Aboriginal Traditional Knowledge (“ATK”) and land use or occupancy studies; and opportunities to review Manitoba Hydro’s interpretation and use of ATK information. In order to assist in the administration of the engagement process, Manitoba Hydro also encouraged the development of community engagement plans and offered funding for community engagement coordinator positions within the communities. Further details regarding these methods of engagement are provided below and in the EIS.¹³⁰

5.4.1.2 Ongoing Engagement

Manitoba Hydro is committed to sharing information with First Nations, Metis and Aboriginal organizations throughout the regulatory, construction and operation and maintenance phases of the Project. As indicated in section 5.3.5, Manitoba Hydro will continue its toll-free information line and dedicated Project email address for asking questions and voicing concerns throughout all stages of the Project. Formal inquiries and concerns will be recorded and reviewed by members of the Environmental Protection Management Team for response. Continuing engagement that is specific to FMNEP participants is described below.

- a. Regulatory Phase: Activities planned during the regulatory review phase include holding meetings with First Nations, the MMF and interested Aboriginal organizations to provide Project updates. It is

¹³⁰ EIS, Volume 1, Chapter 4, s. 4.3.2, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtpeis_chapter04_first_nation_and_m_etis_engagement.pdf.

also anticipated that outstanding final ATK reports will be received during this phase. Manitoba Hydro will offer meetings with these communities to review and discuss the findings and how the information shared will inform the Environmental Protection Program for the Project.

- b. Construction Phase: Various methods of engagement will continue through the construction Phase of the Project, as described below.
 - i. Meetings: During the development of Environmental Protection Plans for the construction phase of the Project, Manitoba Hydro intends to meet with First Nations, the MMF and interested Aboriginal organizations to discuss concerns about culturally and environmentally sensitive sites identified in the ATK reports. The meetings will provide an opportunity to discuss how concerns could be addressed and mitigated to the extent possible.
 - ii. Field Trips: Individual First Nations and MMF representatives will be invited to attend regular field trips to construction areas, focusing on the highly valued undisturbed land, land with little disturbance and areas identified as sensitive sites. Field trips will be guided by various Manitoba Hydro personnel, depending on the topic of the particular field trip (ex. environmental inspectors, construction supervisors, environmental specialists) and will be supported by a translator where required. During these field trips, attendees will learn about and witness activities associated with the following topics: Project schedule, mitigation measures, clearing and construction practices, inspection results and monitoring results.
 - iii. Monitoring Program Reports: A Cultural and Heritage Resources Protection Plan will be developed for monitoring the discovery of heritage sites during construction and the ongoing monitoring of known heritage sites for disturbance. Results from this monitoring program will be reported to interested First Nations, the MMF and Aboriginal organizations annually and as required by applicable regulatory authorities.
 - iv. Construction Progress Reports: Manitoba Hydro will also implement its standard practice of preparing an annual report on construction progress, environmental protection measures and monitoring results for the Project. The reports will be designed for reading by the general public and will provide opportunities for review and feedback on the Project as it is constructed.

- c. Operation and Maintenance Phase:
 - i. Electronic, Written and Telephone Communications: Updates regarding the Project during this phase will be provided via the Project webpage, emails, letters, and phone calls. Manitoba Hydro's dedicated email address and telephone line will continue to be available for questions and concerns. Monitoring reports related to the Environmental Monitoring Plan will be shared with interested First Nations and the MMF and will also be published on the Project webpage.
 - ii. Meetings: Manitoba Hydro will meet with communities upon request during this phase of the Project to discuss matters about ongoing maintenance, such as vegetation management.
 - iii. Field Trips: Feedback from self-directed ATK reports and ATK field trips associated with the FMNEP for the Project indicated a desire for further investigation and mapping of sensitive sites, the transfer of knowledge from Elders to youth and involvement in follow-up and monitoring. Accordingly, in consultation with interested First Nations and the MMF, Manitoba Hydro intends to arrange follow-up and monitoring field trips during which attendees can participate in monitoring activities such as surveys related to vegetation, traditional plants, birds, mammal tracking and stream crossings. These field trips will offer an opportunity to receive informative materials and voice any concerns or ask questions about the Project. Separate field trips would be made available for opportunities to transfer traditional knowledge between youth and Elders. Additional details regarding these field trips are provided in the EIS.¹³¹

5.4.2 Implementation of FNMEP

- a. Identification of Affected Communities:
 - i. Criteria: Manitoba Hydro developed five criteria to determine the potentially impacted communities and organizations for the FNMEP. These criteria were as follows:
 - (i) signatories to Treaty No. 1;
 - (ii) not signatories to Treaty No. 1, but located in the area encompassed by Treaty No. 1;
 - (iii) located within 40 km of the Project region;
 - (iv) expressed an interest in MMTP (through webpage, phone, email, etc.);

¹³¹ EIS, Volume 4, Chapter 22, *supra* note 129, s. 22.3.1.

- (v) Aboriginal organizations with interests or mandates related to the Project region.

Factors taken into consideration when developing these criteria included: (i) the proposed route for the Dorsey IPL is located on lands that are within the district of Treaty No. 1; (ii) there are Metis local offices in the Project region;¹³² (iii) the IPL is proposed to be located within a Recognized Area for Metis Natural Resource Harvesting.

- ii. Initial Communities Identified: Based on these criteria, Manitoba Hydro identified the following 15 potential participants in the FNMEP:

- Brokenhead Ojibway Nation;
- Buffalo Point First Nation;
- Dakota Ojibway Tribal Council;
- Dakota Plains Wahpeton First Nation;
- Dakota Tipi First Nation;
- Long Plain First Nation;
- Peguis First Nation;
- Roseau River Anishinabe First Nation;
- Sagkeeng First Nation;
- Sandy Bay Ojibway First Nation;
- Swan Lake First Nation;
- Aboriginal Chamber of Commerce;
- Assembly of Manitoba Chiefs;
- Manitoba Metis Federation;
- Southern Chiefs Organization.

- iii. Additional Communities: Manitoba Hydro also added Black River First Nation to the FNMEP in May of 2014 when it learned of their interest in the Project through the Aboriginal Traditional Knowledge Study (“ATKS”) Management Team that was formed by Swan Lake and Long Plain First Nations. Manitoba Hydro also subsequently learned of two additional First Nations that might have an interest in the Project and in July of 2015 sent letters to Iskatewizagegan 39 Independent First Nation and Shoal Lake 40 First Nation.

- b. Pre-Regulatory FNMEP Activities: The following is an overview of the engagement activities comprising the FNMEP prior to filing the EIS.

¹³² As defined in the EIS, Volume 1, Chapter 6, “Project region” includes the area in southeastern Manitoba from the Dorsey Converter Station near Rosser to the Manitoba-Minnesota border and the area of the Glenboro South Station in the rural municipality of South Cypress, south of the Village of Glenboro, online:
https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtp_eis_chapter06_environmental_and_socioeconomic_setting.pdf

More detailed information regarding the engagement activities with each participant is found in Tables 4A-1 to 4A-17 of the EIS.¹³³

- i. Pre-Engagement Phase (August, 2013): During the Pre-Engagement Phase of the FNMEP letters were sent to the leaders of each of the 15 above-referenced communities and organizations providing general information regarding the Project, its purpose, and the necessary regulatory reviews, inviting questions and/or input regarding the Project and offering a meeting with the community. Attached as Appendix 32 is a sample of the pre-engagement letters that were sent. Manitoba Hydro followed up with phone calls or emails to ensure receipt of the letters and to schedule leadership meetings, open houses and information sessions. Six meetings were held during this phase. Some First Nations, such as Peguis and Roseau River Anishinabe, began discussions regarding ATK studies during this phase.¹³⁴
- ii. Round One: (October, 2013 to April, 2014): Manitoba Hydro invited input from FNMEP participants to assist the Corporation in evaluating 59 alternative routes and identification of a preferred border-crossing location. To initiate this round, letters were sent on October 31, 2013 to community leaders and/or delegated representatives. Attached as Appendix 33 is a sample of the Round One letter. The engagement took place through a total of 13 meetings, open houses and information sessions with the following communities and organizations: Dakota Plains Wahpeton First Nation, Long Plain First Nation, Manitoba Metis Federation, Peguis First Nation, Roseau River Anishinabe First Nation, Sagkeeng First Nation and Swan Lake First Nation. A follow-up letter was sent to community leaders and/or delegated representatives in December of 2013 offering various methods of engagement, including ATK studies, and attaching a draft engagement plan. Attached as Appendix 34 is a sample of the follow-up letter. Discussions with MMF, Sagkeeng First Nation and Long Plains First Nation began during Round One.
- iii. Round Two (April to August, 2014): Round Two was initiated with a letter to all leaders and/or delegated representatives identifying and seeking input related to Manitoba Hydro's preferred border crossing area and 12 alternative routes that were refined based on Round One engagement. Attached as Appendix 35 is a sample Round Two letter. This letter was followed by phone and/or email contacts. From April through December of 2014, 43 meetings, open houses, workshops and community information sessions were held with the following communities: ATKS Management Team (representing Swan Lake First Nation, Long Plain First Nation and Black River First Nation), Black River First Nation, Dakota Plains Wahpeton First Nation, Long Plain First Nation, Manitoba Metis Federation, Peguis First Nation,

¹³³ EIS, Volume 1, Chapter 4, *supra* note 130, Appendix 4A.

¹³⁴ EIS, Volume 1, Chapter 4, *supra* note 130, s. 4.3.

Roseau River Anishinabe First Nation, Sagkeeng First Nation and Swan Lake First Nation. On August 8 of 2014, a letter regarding Manitoba Hydro funding for community coordinator positions was sent to the leaders and/or delegated representatives of communities that did not have coordinators in place. Discussions regarding ATK studies took place with several First Nations and MMF. The “ATKS Management Team” (formed by Black River, Long Plain and Swan Lake First Nations), as well as Dakota Plains Wahpeton, Peguis, and Roseau River Anishinabe First Nations began their ATK studies in Round Two. Field visits were also coordinated with the ATKS Management Team.

- iv. Border Crossing Modification Engagement (November, 2014): On November 6, 2014 Manitoba Hydro sent emails to FNMEP participants to inform them of a change in the proposed border crossing and the development of new alternative routes as a result of the previously mentioned discussions between Minnesota Power and Manitoba Hydro.¹³⁵ Meetings were subsequently held with interested communities to present the new alternative route segments and invite input. Field visits to the border crossing area were also conducted with communities. During this round Manitoba Hydro also extended the ATK study timeline for Long Plain First Nation, Swan Lake First Nation and Black River First Nation to February of 2015 in order to allow additional verification activities required as a result of alternative route changes. A field visit was also coordinated with the ATKS Management Team.
- v. Round Three (January to September, 2015): During this round Manitoba Hydro presented its preferred route for the IPL based on input received from previous rounds, as well as an environmental assessment of alternative routes. The purpose of this round of engagement was to gather additional feedback to consider making any final adjustments to the preferred route. Round Three began with a letter to all identified First Nations, MMF and Aboriginal organization leaders and/or delegated representatives dated January 16, 2015, attached as Appendix 36. In total, this round consisted of 28 meetings, open houses, workshops and community information sessions with the following participants: ATKS Management Team, Dakota Plains Wahpeton First Nation, Dakota Tipi First Nation, Peguis First Nation, Roseau River Anishinabe First Nation and Sagkeeng First Nation. During Round Three field visits were also conducted. Three participants submitted draft ATK reports, two First Nations began their ATK studies and discussions continued with MMF regarding an ATK study.

¹³⁵ See s.4.5.1.e.iii of Application.

c. Engagement Materials and Tools:

- i. Information: Project information for the FNMEP was disseminated through letters sent directly to community leaders and/or delegated representatives, advertisements in local newspapers, local radio spots, telephone, email and social media. Project brochures and newsletters were also distributed at community information sessions and Project posters were displayed at open houses. Manitoba Hydro's Project webpage was also a prominent feature of the communication strategy. During Round Three, posters at the community information sessions included NEB contact information and the NEB pamphlet entitled "Information for Proposed Pipeline or Power Line Projects That Do Not Involve A Hearing" was made available. Additional detail regarding the information provided during the FNMEP is provided in the EIS.¹³⁶
- ii. Tools: Manitoba Hydro also developed various engagement tools that were provided to facilitate participation in the FNMEP such as: a sample engagement work plan, an ATK proposal template, an ATK draft protocol, ATK Table of Contents template and a community-specific engagement plan checklist. Descriptions and samples of these engagement tools are provided in the EIS.¹³⁷

5.4.3 Feedback and Results of the Consultation

- a. Feedback: The FNMEP generated feedback through the identification of concerns and through the submission of ATK studies and land use or occupancy studies.
 - i. Concerns: The feedback that Manitoba Hydro received from each of the participants in the FNMEP and Manitoba Hydro's responses are summarized in the EIS.¹³⁸ The following common Project concerns were raised from the various participants:
 - Protection of wildlife, intact natural areas and plant harvest areas;
 - Impacts of construction on unidentified cultural, heritage and burial sites;
 - Impact of herbicides on vegetation;
 - Adequacy of time to develop ATK reports;
 - Impact on future Treaty Land Entitlement ("TLE") selections; and
 - Adequacy of the Crown consultation process.

¹³⁶ EIS, Volume 1, Chapter 4, *supra* note 130, s. 4.4.

¹³⁷ EIS, Volume 1, Chapter 4, *supra* note 130, s. 4.3.2.10 and Appendices 4D through 4H.

¹³⁸ EIS, Volume 1, Chapter 4, *supra* note 130, s. 4.5.3- 4.5.23 and Appendix 4B.

- ii. Studies: At the time of filing this Application, ATK and/or land use or occupancy studies have been received from the following FNMEP participants: ATKS Management Team, Dakota Plains Wahpeton First Nation, Peguis First Nation, Roseau River Anishinabe First Nation and Sagkeeng First Nation. The Manitoba Metis Federation has provided Manitoba Hydro with a Metis Specific Interests Report. The draft or final ATK studies received prior to filing the EIS with Manitoba Conservation and Water Stewardship (Roseau River Anishinabe First Nation, Peguis First Nation, Sagkeeng First Nation, Black River First Nation, Long Plain First Nation and Swan Lake First Nation) are provided in the EIS.¹³⁹

b. Outcomes:

- i. Impact on Transmission Line Routing: A key goal of the FNMEP was to integrate perspectives raised through engagement into the routing and assessment process. Through multiple rounds of engagement, FNMEP concerns were incorporated into route preferences by considering both general and specific areas described as important. When available, this information was used in routing workshops (involving Manitoba Hydro personnel and consultants) where preferred route determinations took place. As an example, Swan Lake and Long Plain First Nation took part in a Round One preliminary routing discussion that resulted in the development of a map that highlighted the cultural and historical importance of areas east of Watson P. Davidson Wildlife Management Area. A Swan Lake First Nation representative indicated that First Nations would place a higher value on the lands closest to the wooded areas (east side) as the wooded areas have hundreds of relevant sites for First Nations. During these early routing discussions, First Nation representatives also indicated a north/south preference by placing a much higher value on the southern zone, indicating they have very little interest in the northern zone, other than a small area in the northeast corner of the corridor where Roseau River Anishinabe First Nation indicated interest in TLE. This feedback, along with information received from other interested parties, informed the selection of a border crossing area for the Project. Several specific routing preferences that were shared through draft ATK studies, preliminary mapping and in the formal rounds of engagement also influenced Manitoba Hydro's selection of the proposed route. For instance, specific sites identified during the Round One preliminary routing discussion noted areas in the Marchand area, a high potential for burials along the border and important sites along the Rat River. Peguis First Nation provided early spatial data indicating the results of land use and occupancy surveys. During Round Two, the ATKS Management Team, Peguis First Nation and Roseau River Anishinabe First Nation were in the

¹³⁹ EIS, Volume 4, Appendix A, Aboriginal Traditional Knowledge Studies, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmt_p_a_atk_reports.pdf

process of conducting self-directed ATK studies and were able to contribute preliminary findings to help inform the selection of the preferred route. A map provided by Roseau River during Round Two indicated specific routing preferences in the area between Menisino and the border. These site-specific areas of concern contributed to routing decisions. Roseau River Anishinabe First Nation representatives also expressed concerns about the line traversing a private property that is of importance to the First Nation near Sundown. Manitoba Hydro developed and subsequently adopted a modification in response to this concern as part of the Final Preferred Route. Details concerning other specific outcomes of the FNMEP attributable to each participant can be found in the EIS.¹⁴⁰

- ii. Impact on EPP: Manitoba Hydro anticipates that the studies conducted by Dakota Plains First Nation, Dakota Tipi First Nation, Sagkeeng First Nation and the MMF will help inform the Environmental Protection Program (EPP) for the Project. First Nations, the MMF or Aboriginal organizations that chose to participate or conduct ATK studies in later stages of the engagement process for the Project were notified that their information would be used to inform the EPP.

5.4.4 Section 35 Crown Consultations

The Crown (Manitoba) has initiated consultation processes with First Nations and Metis Communities that may be affected by the Project to inform Crown (Manitoba) decisions relating to the Project. The consultation processes are being conducted in accordance with provincial policy and procedure and is intended to meet the Crown's duty of consultation to Aboriginal peoples arising out of s. 35 of the *Constitution Act, 1982*. The consultation process is being led by Manitoba Sustainable Development on behalf of the Crown. Manitoba Sustainable Development is the government department responsible for both environmental assessment and licensing under *The Environment Act* and the use and allocation of provincial Crown land under *The Crown Lands Act*.¹⁴¹ The Crown's involvement in the consultation process is guided by a provincial steering committee consisting of officials in relevant Manitoba government departments, including Sustainable Development, Indigenous and Municipal Relations and Justice. Manitoba Hydro understands that the Crown has identified the 21 First Nations and Metis communities listed in the table below that it has initiated consultations with based on an initial assessment of the Crown's duty of consultation relating to the Project.

¹⁴⁰ EIS, Volume 1, Chapter 4, *supra* note 130, s. 4.5.3- 4.5.23.

¹⁴¹ C.C.S.M. c.C340.

Prov.		First Nation/Metis Community
1	ON	Animakee Wa Zhing #37
2	ON	Anishinaabeg of Naongashiing
3	ON	Shoal Lake 40 First Nation
4	ON	Northwest Angle No. 33
5	ON	Iskatewizaagegan 39 First Nation
6	MB	Birdtail Sioux First Nation
7	MB	Sandy Bay Ojibway First Nation
8	MB	Sioux Valley Dakota First Nation
9	MB	Waywayseecappo First Nation
10	MB	Canupawakpa Dakota First Nation
11	MB	Dakota Plains Wahpeton First Nation
12	MB	Dakota Tipi First Nation
13	MB	Black River First Nation
14	MB	Long Plain First Nation
15	MB	Swan Lake First Nation
16	MB	Brokenhead Ojibway Nation
17	MB	Buffalo Point First Nation
18	MB	Peguis First Nation
19	MB	Roseau River Anishinabe First Nation
20	MB	Sagkeeng First Nation
21	MB	Manitoba Metis Federation

5.5 Notification to Affected Third Parties

5.5.1 Interconnected Canadian Parties

In accordance with its standard practice, Manitoba Hydro has notified its interconnected transmission owner/operators in the neighbouring provinces of Saskatchewan and Ontario of the Project. Initial notification was given in October of 2014 by Manitoba Hydro providing the base transmission planning models that it had developed for the Project study to SaskPower (“SPC”), Hydro One Networks Inc. (“HONI”) and Independent Electricity System Operator (“IESO”) for review and comments. During the following month, Manitoba Hydro circulated to all three parties its proposed scope of work for the impact studies that were to be conducted. Finally, upon completion of the impact studies in the spring of 2015, Manitoba Hydro provided the applicable report on each impact study with a covering letter via electronic mail to SPC, IESO and HONI on March 31, April 10 and April 24, 2015 respectively. Attached as Appendices 37 to 39 are the letters of notification. Their accompanying reports, referenced in section 4.3.3 of this Application, have been

provided as Appendices 22 and 23. By letters dated April 23, 2015, May 13, 2015 and May 14, 2015, respectively, IESO, SPC and HONI confirmed that they were in agreement with Manitoba Hydro's assessment that the Project would not have any material negative impacts on the Ontario or Saskatchewan interconnected systems. Attached as Appendices 40 through 42 are the letters of confirmation.

5.5.2 Interconnected U.S. Parties

As referenced in section 4.3.3 Manitoba Hydro worked jointly with MISO and Minnesota Power in studying the impact of the Project and the interconnected U.S. facilities (Great North Transmission Line) that constituted the necessary upgrades to provide several transmission service requests submitted under both the Manitoba Hydro and MISO Tariffs for accommodating transactions between Manitoba and Minnesota. Since MISO was in receipt of the transmission service requests under its Tariff, and the parties were coordinating their respective studies, formal notice was not considered necessary. The studies performed by MISO (as referenced in section 4.3.3) ensure that appropriate upgrades will be undertaken so as to preserve the reliability of the MISO-administered transmission system.

5.5.3 Other Interested Parties

Manitoba Hydro confirms that no party has self-identified as an interested third party.

6. Environmental and Socio-Economic Assessment

6.1 Overview

6.1.1 Results of ESA

Manitoba Hydro has conducted an environmental assessment of the proposed Project in accordance with applicable provincial and federal legislation. As noted in section 3.1.2.a of this Application, Manitoba Sustainable Development (formerly Manitoba Conservation and Water Stewardship or "MCWS") has been designated as the provincial regulatory agency for the Project. As required by provincial regulations governing the submission of proposals under *The Environment Act*,¹⁴² an Environmental Impact Statement ("EIS") was filed with MCWS on September 22, 2015 describing the potential impacts of the Project on the environment. As documented in the EIS, Manitoba Hydro has concluded based on its assessment that the Project will not cause significant adverse environmental effects.¹⁴³ Moreover, the Project will have positive economic effects in the form of increased local and regional employment, procurement, contribution to GDP and government revenue.¹⁴⁴ The construction phase of the Project alone is expected to result in 951 person-years of direct, indirect and induced employment in Canada.¹⁴⁵ Manitoba Hydro will have Indigenous content in the evaluation criteria for the procurement process for

¹⁴² *Licensing Procedures Regulation*, *supra* note 87, s.1(1)(j).

¹⁴³ EIS, Volume 4, Chapter 24, *supra* note 139, p.24-1.

¹⁴⁴ EIS, Volume 3, Chapter 14, *supra* note 60, s. 14.10.

¹⁴⁵ EIS, Volume 3, Chapter 14, *supra* note 60, s. 14.5.2.2 and Table 14-13.

construction contracts for MMTP. These criteria will provide incentives for both Indigenous hiring and business opportunities.

6.1.2 Mitigation of Potential Adverse Impacts

More than 40% of the proposed IPL will be routed within existing Manitoba Hydro transmission corridors, thus reducing the amount of land required for new ROW and potential adverse environmental and socio-economic impacts. As described in section 4.5 of this Application, Manitoba Hydro's transmission line routing methodology incorporated an environmental assessment of alternative routes and feedback from the engagement program. This approach contributed to a proposed route that minimizes the overall potential adverse effects of the IPL. Specifically, the proposed route mitigates effects to fish and fish habitat by spanning watercourses and avoiding sensitive sites. Effects on vegetation and wetlands were mitigated by avoiding areas of large intact native vegetation patches where possible, particularly any areas of ecological concern and by plans to schedule a substantial portion of construction under frozen ground conditions. The majority of potential negative effects on wildlife and wildlife habitat were mitigated by considering sensitive wildlife habitat and movement areas, including protected areas and large tracts of intact forests and wetlands and by scheduling construction during periods when many species have migrated. Known heritage sites and those identified during the FNMEP were also considered and avoided where possible. The transmission line routing methodology also reduced interference with existing transportation, utility and communication infrastructure to the extent possible. Potential adverse impacts on agriculture were reduced by routing a substantive portion of the Dorsey IPL within existing transmission corridors. Visual effects were also considered during routing through the consideration of proximity of route alternatives to residences, communities, parks, cultural sites, and other such locations, and will be given further consideration in final design and tower spotting. Manitoba Hydro's transmission routing methodology also took into consideration the proximity of the proposed IPL to potential human health receptors such as houses, schools, daycares, recreational centres, sites of worship, campgrounds, and picnic areas.

6.2 Scope of Assessment

6.2.1 Scope of Facilities

a. Upstream Facilities

Although the purposes of the Project include the delivery of contracted energy under new export sales agreements made possible, in part, with the addition of Keeyask Generating Station ("Keeyask"), the scope of the environmental assessment that has been conducted for the Project does not include the environmental effects of this upstream facility. Section 2 of CEAA, 2012 defines a "designated project" as including one or more physical activities that are designated by the regulations made under paragraph 84(a) (such as the construction of certain international power lines), as well as any physical activity that is "incidental" to those physical activities. For a number of

reasons, Keeyask is not considered incidental to the Project. First, the Project is not dependent on Keeyask in particular. As demonstrated in the NFAT proceeding referenced in section 3.1.3.d of this Application, the Project is justified based on a variety of factors, including the increased opportunity for imports to Manitoba either to support reliability in times of drought or other emergencies; or when economically beneficial. These factors are unrelated to the construction of Keeyask. Furthermore, even though the Project will also be used for exporting surplus energy, this surplus is sourced from Manitoba Hydro's integrated system which includes numerous other generating facilities and cannot be linked specifically to generation sourced from Keeyask. Secondly, the construction of Keeyask is not dependent on the Project. The resulting report from the Provincial NFAT proceeding justified the construction of Keeyask based on a number of factors, including domestic resource needs, and recommended proceeding with the construction of Keeyask without imposing any conditions related to the construction of MMTP. Similarly, the Order in Council authorizing the construction of Keeyask is not conditional on construction of the Project (Manitoba Order in Council 0029/2014). Furthermore, the assessment of the environmental effects related to the construction and operation of generating stations in Manitoba falling under provincial jurisdiction is regulated under the provisions of *The Environment Act*. The environmental assessment for the Keeyask Generation Project has already been conducted and an Environment Act Licence was issued on July 2, 2014. Similarly, a federal review under the former Canadian Environmental Assessment Act¹⁴⁶ was completed on June 27, 2014. Construction of Keeyask began in July of 2014, well in advance of any filings for approvals for this Project. Manitoba Hydro's rationale for excluding Keeyask from the scope of the Project and therefore the scope of the assessment is consistent with previous decisions of the National Energy Board, such as Hearing Order OH-001-2014 regarding the TransMountain Expansion Project, and OH-1-2007 issued with respect to the TransCanada Keystone Pipeline.

b. Downstream Facilities

With respect to downstream facilities, Manitoba Hydro does not consider the Great Northern Transmission Line ("GNTL") as falling within the scope of the Project and its associated environmental assessment. Although MMTP will be interconnected with the GNTL, this downstream facility is a separate project that is being developed by separate proponents – Minnesota Power and 6690271 Manitoba Ltd. Accordingly, the U.S. transmission line is not under the sole control of the proponent of the Project - Manitoba Hydro. The GNTL is subject to environmental assessment procedures under U.S. law at both the federal and state levels. Furthermore, the exclusion of downstream facilities is consistent with the general approach taken by the National Energy Board as stated in previous decisions such as OH-001-2014 in the TransMountain Pipeline matter.

¹⁴⁶ S.C. 1992, c.37.

6.2.2 Scope of Biophysical and Socio-economic Elements

The elements included within the scope of Manitoba Hydro's environmental assessment for the Project were those biophysical and socio-economic elements identified in section 19 of CEAA, 2012 and Table 6-1 of the National Energy Board Electricity Filing Manual (May, 2015).

6.2.3 Scope of Spatial Boundaries

Spatial boundaries for the environmental assessment were selected principally in consideration of the geographic extent over which Project activities and their effects on the Valued Components ("VCs") were likely to occur, as well as other ecological, technical and social considerations. For assessment purposes, three types of areas were defined, as follows:

- The Project development area (PDA) consists of the area physically disturbed by the Project and includes an 80 to 100 m wide ROW along the New ROW for the Final Preferred Route, and a 177 to 245 m wide corridor along the existing transmission corridor. In addition, the PDA includes the three station modification footprints at Dorsey Converter Station, Riel Converter Station and Glenboro South Station, and also the associated access roads and marshalling yards. The PDA is the same for all VCs.
- The local assessment area (LAA) encompasses the area in which both: a) Project-related environmental effects (direct or indirect) can be predicted or measured with a level of confidence that allows for assessment; and b) there is a reasonable expectation that those potential effects in the LAA will be a concern. The LAA encompasses the PDA and is selected principally in consideration of the geographic extent of effects. Consequently it is VC-specific.
- The regional assessment area (RAA) is the area that establishes the context for determining significance of project-specific effects. It is also the area within which potential cumulative effects are assessed. The RAA encompasses the PDA and the LAA, and is VC-specific.

6.3 Description of the Environmental and Socio-Economic Setting

6.3.1 Overview

The Project region¹⁴⁷ is located within Treaty 1 territory and is in close proximity to Treaty 3 territory. This is a region of southern Manitoba in which the original native ecology has been substantially affected by more than one hundred years of human development, resulting in a gradual displacement of natural features. The largest impact has been the conversion of native prairie to agricultural lands, accompanied by urban and rural settlements, public infrastructure and various other land uses. The

¹⁴⁷ The term "Project region" is defined as the broad area of southeastern Manitoba where the Project is located, from the Dorsey Converter Station near Rosser to the Manitoba-Minnesota border and the area of the Glenboro South Station in the R.M. of South Cypress, *supra* note.

majority of land in the Project region consists of agricultural cropland. Contiguous forest cover encompasses large sections of the eastern portion of the Project region. Cultivation has been hindered in this area by the presence of mineral soils, peatland and upland mixed forests, where remaining natural characteristics provide opportunities for forestry, mining, recreation and land conservation. Much of the landscape has been influenced by implementation of the section-township-range survey system and the construction of roads and railways. Urban areas and settlement centres surrounding the City of Winnipeg have witnessed an increase in rural residential and subdivision development over the past decade. Human disturbances are present in the New ROW portion of the RAA, but much of this area is still composed of native vegetation and wetlands containing sensitive wildlife habitats and key wetlands.

6.3.2 Specific Features

Chapter 6 in Volume 1 of the EIS describes the environmental and socio-economic setting in detail. The filing requirements specified in section 6.5 of the Electricity Filing Manual can be found in the following sections and maps in Chapter 6 of the EIS (except where specified otherwise).

- a. A description of the study area(s) and how they were established is provided in section 7.3.2.4.1 of Chapter 7 of Volume 1 the EIS under the heading “Spatial Boundaries”.
- b. A description of the ecological land classification and key terrain features of the Project region is provided in section 6.2 under the heading “Biophysical Environment”. Map 6-3 depicts the ecoregions and ecozones in the Project region. Numerous other maps included in Chapter 6 depict the key terrain features such as: major waterbodies, forest land, geology, plant habitats, conservation districts, ground water wells, sand and gravel aquifers. Surficial geology in the Project Region is depicted in Maps 4-2 and 4-4 of the EIS.¹⁴⁸
- c. A description of the locations of any nearby communities and residences is provided in section 6.3.7.1 under the heading “Municipal and Urban Centres”, and in section 6.3.7.3.2 under “Private Residential Development”. Significant landmarks are discussed in section 6.3.2 under the heading “Heritage Resources”.
- d. The current local economy and trends are discussed in sections 6.3.5.1 and 6.3.5.2 under the heading “Employment and Economy”.
- e. Current land and resource use is discussed in three major sections: section 6.3.1 on Traditional Land and Resource Use; section 6.3.6 on Agricultural Land Use and section 6.3.7 under the heading “Land and Resource Use”.

¹⁴⁸ EIS, Biophysical Technical Data Reports, Part 1, Physical Environment, Groundwater, s. 1.1.2 Maps 4-2 and 4-4, online:
https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtp_tdr_biophys_groundwater.pdf

- f. The potential to encounter heritage resources is discussed in section 6.3.2.
- g. The areas of physical and environmental constraints are described in the aforementioned sections regarding current land and resource use as well as section 6.2 under the heading “Biophysical Environment”. Maps 6-1 through 6-19 also depict the physical and environmental constraints.¹⁴⁹
- h. Navigable waterways that may be affected by the Project are discussed in section 6.2.3 and more specifically in section 16.5.3.1.2. See also Maps 6-7 and 6-8.
- i. Consistency between the Project and any regional land use plans is described in section 6.3.7.2.
- j. Designated lands and protected areas are described in section 6.3.7.4. See also Map 6-16. Specific areas of special concern that were identified during the course of Manitoba Hydro’s First Nations and Metis Engagement Process through ATK Reports, are detailed in section 6.3.1.3. These include areas for hunting, trapping and fishing, areas important to berry picking for medicinal use, trails and travelways, historical routes, burial sites and cultural sites. The Assiniboine River Clam Beds, a 100 ha stretch of river west of the City of Winnipeg, were identified as a candidate ecological reserve by MCWS during Round Three of the PEP. This candidate ecological reserve supports eleven of the twelve species of clam found in Manitoba. A map indicating the location of this candidate ecological reserve is provided in the second map of Map Series A, attached as Appendix 12 to this Application. The location is identified on the legend as an “Area of Special Interest”. A search of the SARA Public Registry and the Manitoba Conservation Data Centre did not identify any endangered species within the PDA as listed under *The Endangered Species and Ecosystems Act*¹⁵⁰ (“MBESEA”) or species listed federally under the *Species at Risk Act* (“SARA”). No SARA or MBESEA-listed species were observed during field surveys within the PDA. Any data gaps that exist along the PDA will be addressed through pre-construction surveys where buffers and setbacks will be applied should listed species be identified at tower locations and along the ROW. 45 Species of Conservation Concern have the potential to occur in the regional assessment area, 17 of which were identified during baseline surveys.
- k. The locations of all proposed facilities for the Dorsey IPL are identified in Maps 6-1 through 6-19. In addition, the maps referenced in section 4.1 of this Application indicate the sites of other Project facilities.
- l. A description of other projects and/or activities in the Project region is provided in section 6.3.4 under the heading “Infrastructure and Services”.

¹⁴⁹ See also EIS, Executive Volume, Project Maps, *supra* note 41, Map series 1-100.

¹⁵⁰ C.C.S.M. c.E111.

In addition to the foregoing, Manitoba Hydro also examined the following elements as part of the baseline environmental and socio-economic setting: climate (s.6.2.1), community health and well-being (s.6.3.8), population (s.6.3.3), employment and economy (s.6.3.5) and human health risk (s.6.3.9).

6.4 Effects Assessment

6.4.1 Identification and Analysis of Effects

- a. **Assessment Methodology:** Manitoba Hydro's methodology for assessing the effects of the Project was based on a Valued Components approach, as described in Chapter 7 of the EIS. Such an approach began with focused field work, technical studies of the Project area to understand base line conditions and the identification of biophysical and socio-economic elements that may interact with the Project and that were of particular value to regulators and participants in Manitoba Hydro's engagement program.¹⁵¹ Those elements that interacted with any Project component were considered VCs. The potential spatial and temporal boundaries of the assessment were developed at a local and regional level, followed by an analysis of potential positive and negative effects. Mitigation measures were developed and the residual effects were characterized using specific criteria. The significance of each residual effect was then determined by evaluating it against available established thresholds. An analysis of cumulative effects was then conducted by gathering information about other certain and reasonably foreseeable planned projects in the future, and analyzing effects using a similar process and thresholds as described above.

- b. **Valued Components:** Based on the analysis set forth in Table 7-1 of the EIS, the following VCs were selected for the assessment:
 - i. fish and fish habitat;
 - ii. wildlife and wildlife habitat;
 - iii. vegetation and wetlands;
 - iv. traditional land and resource use;
 - v. heritage resources;
 - vi. infrastructure and services;
 - vii. employment and economy;
 - viii. agriculture;
 - ix. land and resource use;
 - x. visual quality;
 - xi. human health risk;
 - xii. community health and well-being.

¹⁵¹ EIS, Volume 1, Chapter 7, s. 7.3.2 and Table 7-1, p. 7-7, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mmtpeis_chapter07_assessment_method_s.pdf.

- c. Potential Interactions: The assessment of potential effects of the Project on these VCs involved an analysis of interactions between Project activities or Project components (physical works) and the VCs, as illustrated in Table 7-2 of the EIS.¹⁵² The potential interactions are described in individual chapters of the EIS governing each VC (Volume 2, Chapters 8 through 10, Volume 3, Chapters 11-19).
- d. Analysis of Effects: Once VCs were selected, an analysis of effects was conducted. Discipline specialists, with topic-specific expertise described potential resulting effects of the Project, suggested appropriate mitigation measures and then assessed residual effects remaining after the implementation of mitigation measures. The significance of residual effects was described for each VC in accordance with the procedure and criteria outlined in sections 7.3.2.3 through 7.3.4.3 of the EIS. The effects assessment for each VC, its significance, mitigation measures and a cumulative effects assessment can be found in the EIS chapter related to each VC.¹⁵³ Mitigation measures identified in these chapters will be addressed through implementing an Environmental Protection Program as detailed in Volume 4, Chapter 22. A summary of the assessment for each VC, during each phase of the Project is provided in Table 24-1,¹⁵⁴ along with key mitigation measures.
- e. Future Climate Change Scenarios: Manitoba Hydro also undertook an Historic and Future Climate Study for the Project that identified the range of possible changes to climatic parameters. Sensitivity of the Project and cumulative effects predictions to potential climate change scenarios were analyzed. The significance prediction for each VC was reviewed to evaluate if these predictions would change as a result of climate change (see EIS Volume 1, Chapter 7, s.7.3.6.3).
- f. Specific Project Effects: Potential effects from accidents, malfunctions and unplanned events is addressed in Chapter 21 of the EIS.¹⁵⁵ As required by the National Energy Board Electricity Regulations, the EIS addresses the following additional specific potential effects: adverse visual effects (Volume 3, Chapter 17, s.17.5.3); the levels of radio and television interference (Volume 3, Chapter 13, s.13.4.7, s.13.5.6.2, s.13.5.6.3, Socio-Economic Technical Data Reports 2.8); noise and electric and magnetic field levels (Volume 3, Chapter 18, s.18.5.4, Table 18-9, s.18.5.4.1.2, s.18.5.5.1.1, Table 18-10, Biophysical Technical Data Report 1.1.4); pesticides and herbicides (Volume 1, Chapter 2, s.2.13.3, Volume 2, Chapter 10, s.10.5.3.2; s.10.5.3.3.2; s.10.5.4.1.2; s.10.5.4.3.2;

¹⁵² EIS, Volume 1, Chapter 7, *supra* note 151, p.7-14 and 7-15.

¹⁵³ EIS, Volume 2, Chapters 8-10; and EIS, Volume 3, Chapters 11-19, online: https://www.hydro.mb.ca/projects/mb_mn_transmission/document_library.shtml.

¹⁵⁴ EIS, Volume 4, Chapter 24, *supra* note 139, p. 24-3 to 24-8.

¹⁵⁵ EIS, Volume 4, Chapter 21, online:

https://www.hydro.mb.ca/projects/mb_mn_transmission/pdfs/eis/mntp_chapter21_accidents_and_malfunctions.pdf; and EIS, Volume 1, Chapter 7, *supra* note 151, s. 7.5.

s.10.5.6.1.2; s.10.5.6.2; s.10.5.6.3.2; s.10.5.6.4; s.10.5.7.1.2; s.10.5.7.2; s.10.5.7.3.2; s.10.5.8; Volume 4, Chapter 22, s.22.2.6.7); and plans for surface restoration and disposal of debris (Volume 1, Chapter 2, s.2.12.9; Volume 4, Chapter 22, s.22.2.6.5).

- g. Environmental Effects on Project: An analysis of the effects of the environment on the Project is provided in Volume 4, Chapter 20 of the EIS.

6.5 Inspection, Monitoring and Follow-Up

6.5.1 Components

Manitoba Hydro is certified under the International Organization for Standardization (“ISO”) 14001 Environmental Management System standard. Consistent with this standard, Manitoba Hydro commits to complying with legislation, licences, permits and guidelines and to conducting inspections, monitoring and reviewing results for adherence to requirements. Chapter 22 of Manitoba Hydro’s EIS describes in detail the proposed Environmental Protection Program for the Project.¹⁵⁶ This Program provides the framework for implementing managing, monitoring and evaluating environmental protection measures related to the Project, including: environmental protection plans for each stage of the Project, management plans, and inspection and monitoring programs. A draft Construction Environmental Protection Plan, an Access Management Plan and an Environmental Monitoring Plan have been provided as appendices to Chapter 22. Other plans that form part of the Program will be prepared as the Project progresses in accordance with frameworks developed by Manitoba Hydro. For the purposes of CEAA, 2012, Manitoba Hydro considers all of the elements contained in the follow up and monitoring proposal outlined in Chapter 22 of the EIS as constituting “follow-up” for the purposes of that act. As part of MH’s ISO 14001 registration process, the Environmental Protection Plans will also be subject to internal and external audit.

6.5.2 Relationship to Engagement Program

Manitoba Hydro notes that the monitoring and inspection programs for the Project are inter-woven with components of Manitoba Hydro’s ongoing engagement program, as detailed in the EIS.¹⁵⁷ For example: First Nations and MMF representatives will be invited to attend field trips to the Project’s construction areas to witness or participate in monitoring activities; annual monitoring reports will be shared with the public, First Nations and the MMF; and Manitoba Hydro will endeavour to meet with interested First Nations and the MMF prior to finalizing the Construction Environmental Protection Plan in order to discuss, address and attempt to mitigate concerns with cultural and environmentally sensitive sites.

6.5.3 Qualifications of Monitoring Personnel

¹⁵⁶ EIS, Volume 4, Chapter 22, *supra* note 127.

¹⁵⁷ EIS, Volume 4, Chapter 22, *supra* note 127, s.22.3 and 22.4.

Monitoring and inspection personnel for the Project will be required to have a two year diploma in Environmental Studies or Technology from an institute of recognized standing. A minimum of two years of related work experience and a demonstrated working competency in environmental inspection and monitoring will also be required. Personnel must also have the following specific skills and aptitudes: (i) a thorough working knowledge of federal and provincial environmental legislation and policies; (ii) strong computer skills and a proficiency in other technical equipment; (iii) a thorough understanding of workplace safety and health rules and safe work procedures related to the position; (iv) the ability to perform job planning duties as the “Person in Charge” as defined by workplace safety and health regulations; and (v) a thorough understanding of all components of the Project Environmental Protection Plan.

7. Economics

7.1 Economics

7.1.1 MISO Market

- a. Overview: Manitoba Hydro’s existing international power lines are interconnected with a regional power market in the United States operated by the Midcontinent Independent System Operator, Inc. (“MISO”). MISO is a not-for-profit, regional transmission organization that administers wholesale electricity markets, open access transmission service, reliability coordination and long-term transmission planning for its region. An overview of the MISO market, including its scope of operations, is provided on the MISO website under the heading “Corporate Information”.¹⁵⁸ MISO’s Corporate Information webpage states the following.
 - MISO manages one of the world’s largest energy and operating reserves markets using security-constrained economic dispatch of generation.
 - The reliability coordination area covers all or part of 15 states¹⁵⁹ as well as one Canadian province.
 - Gross annual market charges in 2015 were US\$24.7 billion.
 - The Historic Summer Peak load for the market footprint, at July 20, 2011, was 127,125 MW.
- b. MP Service Area: The proposed Dorsey IPL will interconnect with the Great Northern Transmission Line (“GNTL”) which will terminate in

¹⁵⁸ MISO Corporate Information Data Sheet, September 2016, online: <https://www.misoenergy.org/Library/Repository/Communication%20Material/Corporate/Corporate%20Fact%20Sheet.pdf>

¹⁵⁹ In alphabetical order: Arkansas, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, North Dakota, South Dakota, Wisconsin, and Texas.

Minnesota Power’s service area located within the MISO market footprint. As indicated in section 3.2, Minnesota Power, an operating division of ALLETE Inc., is the owner and operator of the proposed GNTL. Minnesota Power’s demand and supply information is included in the MISO market supply and demand data. However, Minnesota Power, and not MISO, is ultimately responsible for ensuring adequate supply resources to meet its own demand. Therefore, Minnesota Power prepares its own integrated resource plan every two years in accordance with Minnesota state regulatory requirements. Minnesota Power’s 2015 Integrated Resource Plan¹⁶⁰ provides demand and supply information specific to Minnesota Power’s service area.

7.1.2 MISO Regional Transmission Planning

Each year, MISO develops the MISO Transmission Expansion Plan (“MTEP”). The MTEP is a comprehensive process that involves analyzing the myriad regulatory policy and reliability issues impacting the energy sector and developing a portfolio of transmission projects designed to maintain a reliable electric grid and deliver the lowest-cost energy to customers in the MISO market region. On December 10, 2015, the MISO board of directors approved the MTEP for 2015 (“MTEP15”),¹⁶¹ representing \$2.7 billion in new transmission investment across the MISO region, including the GNTL. MTEP15 contains the regional supply, demand assumptions that formed the basis for the recommendations of the new transmission expansion projects.

7.1.3 MISO Market Demand

- a. Regional: Load-serving entities within the MISO market footprint submit demand forecasts for the upcoming ten years. MISO utilizes these forecasts to calculate a MISO Business-as-Usual load growth. Based on these forecasts, MISO anticipates a system-wide average growth rate of 0.8 percent for the period from 2015 to 2025.

The studies which support MTEP15 contain the following load data.¹⁶²

MISO Region and Sub-Region Peak Demand

Period	June 2016 - May 2017	June 2017 - May 2018	June 2024 - May 2025
Region			
MISO System Peak Demand (MW)	129,367	130,690	138,091

¹⁶⁰ Minnesota Power, 2015 Integrated Resource Plan, September 1, 2015, online: <http://www.mnpower.com/Content/documents/Environment/2015-ResourcePlan.pdf>

¹⁶¹ The MTEP15 report document and related appendices are available online: <https://www.misoenergy.org/Planning/TransmissionExpansionPlanning/Pages/MTEP15.aspx>

¹⁶² MISO, Loss of Load Expectation Working Group, Planning Year 2015-2016 Loss of Load Expectation Study Report, November 1, 2014, s. 5.3 and 6.1, online: <https://www.misoenergy.org/Library/Repository/Study/LOLE/2015%20LOLE%20Study%20Report.pdf>.

LRZ-1 MN/ND ¹⁶³ Peak Demand (MW)	18,236	18,479	Not provided
LRZ-2 WI ¹⁶⁴ Peak Demand (MW)	12,582	12,950	Not provided

In addition to the Business as Usual scenario, MISO studies four other future scenarios in order to provide a robust analysis. The other future scenarios studied by MISO are the High Growth, Limited Growth, Generation Shift and Public Policy Scenarios, as shown in Table 7-1 below.¹⁶⁵ The projected Demand and Energy growth rates are positive in all scenarios, and in four of the five scenarios studied, the Effective Growth Rate (i.e after reduction due to demand side management program) is greater than 0.7% in four of the five scenarios studied.

Table 7-1: MISO MTEP15 Demand and Energy Growth Assumptions by Future Scenario

Future Scenarios	Baseline Growth Rates		Effective Growth Rates	
	Demand	Energy	Demand	Energy
Business as Usual	0.80%	0.80%	0.75%	0.76%
High Growth	1.50%	1.50%	1.44%	1.45%
Limited Growth	0.14%	0.14%	0.08%	0.10%
Generation Shift	0.80%	0.80%	0.71%	0.73%
Public Policy	0.80%	0.80%	0.71%	0.73%

This information demonstrates that the proposed IPL will be interconnected to a large regional power market with a growing load that is capable of absorbing the surplus power supplied through the proposed IPL.

- b. Minnesota Power Demand: As indicated earlier, Minnesota Power prepares its own integrated resource plan every two years in accordance with Minnesota state regulatory requirements. Minnesota Power’s 2015 Integrated Resource Plan¹⁶⁶ provides demand and supply information specific to Minnesota Power’s service area. Minnesota Power’s 2015 Integrated Resource Plan states:

¹⁶³ Local Resource Zone 1, which is that portion of the MISO market in the states of Minnesota and North Dakota.

¹⁶⁴ Local Resource Zone 2, which is that portion of the MISO market in the state of Wisconsin.

¹⁶⁵ MISO, MTEP15, *supra* note 161, Table 5.2-2: MTEP15 effective demand and energy growth rates.

¹⁶⁶ Minnesota Power, 2015 Integrated Resource Plan, *supra* note 160.

“Minnesota Power’s system load forecast reflects a projected (summer) peak demand of 1,970 MW by 2026 and 2,070 MW by 2028 with a winter peak between 30 and 40 MW higher. While Minnesota Power’s load growth can be unpredictable due to industrial changes, about a one percent underlying demand growth is projected through the forecast period. Energy requirements continue to dominate the Company’s supply picture, as the industrial load contributes an average system load factor of approximately 80 percent—still one of the highest in the nation.”¹⁶⁷

7.1.4 MISO Market Supply and Impending Coal Generation Retirements

- a. Regional Supply Portfolio: For 2014, coal generation represented the most common fuel type of generation capacity in the MISO market, composing 46% of the 143,610 MW of generation capacity, as indicated in Table 7-2 below. On an energy basis, coal generation is heavily utilized and produced 58% of the energy generated within the MISO market footprint in 2014. Renewable generation, primarily wind and hydro, only produced about 7% of the energy generated within the MISO market footprint in 2014.¹⁶⁸

¹⁶⁷ Minnesota Power, 2015 Integrated Resource Plan, *supra* note 160, page 27.

¹⁶⁸ Energy generated within the MISO market footprint does not include any supply from Manitoba Hydro, which is an external market participant in MISO market.

Table 7-2: MISO Market 2014 Capacity and Energy Output by Fuel Type¹⁶⁹

	Installed Capacity (Summer)		Share of Energy Output (%)
	Total (MW)	Share (%)	
Nuclear	12,763	9%	16%
Coal	66,658	46%	58%
Natural Gas	55,852	39%	17%
Oil	3,125	2%	0%
Hydro	3,621	3%	1%
Wind	1,027	1%	6%
Other	564	0%	1%
Total	143,610		

The states of Wisconsin, Minnesota and North Dakota have a greater proportion of their energy coming from coal generation than the MISO market as a whole. As shown in Table 7-3 below, the share of energy generated from coal in 2014 in Wisconsin, Minnesota and North Dakota varies from 59 to 85%, with the portion of energy generated from renewables being under 10% for each of the three states.

- b. Coal Retirements in Region: Given the prevalence of coal generation in the MISO market, and particularly in Minnesota, North Dakota and Wisconsin, the age of the existing coal generation fleet in the MISO market,¹⁷⁰ and the requirement to reduce carbon emissions under the Clean Power Plan as described in a subsequent section, there is significant pressure on coal generators in MISO to reduce coal generation and in turn coal/carbon emissions. In its analysis for MTEP 15, MISO modeled a minimum of 12,600 MW of coal generation retirements in all future scenarios, and considered coal generation retirements of 29,800 MW in its Generation Shift scenario.

Table 7-3: Source of 2014 Energy Generated by Fuel Type - Wisconsin, Minnesota and North Dakota.¹⁷¹

¹⁶⁹ Information sourced from Potomac Economics, 2014 State of the Market Report for the MISO Electricity Markets- Analytical Appendix, June 2015, Table 1, online: <https://www.misoenergy.org/Library/Repository/Report/IMM/2014%20State%20of%20the%20Market%20Report.pdf>. Note the capacity figures represent their contribution to resource adequacy rather than the nameplate rating. The contribution of wind to resource adequacy is about 15% of its nameplate rating; for most other resources the contribution to resource adequacy is about 90-95% of nameplate rating.

¹⁷⁰ Average coal unit in MISO is more than 30 years old, MISO, Age of Generation Fleet in MISO and MISO South, June 27, 2013, online: <https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/Workshops%20and%20Special%20Meetings/2013/Gas%20Study%20Phase%20III%20Workshops/20130627/20130627%20Phase%20III%20Gas%20Study%20Southern%20Assessment%20Workshop%20Age%20of%20Generation%20in%20MISO%20and%20MISOS.pdf>

¹⁷¹ US Department of Energy Information Administration (DOE EIA), Electricity Data Browser, Net Generation for Electric Utility data, filtered by state, online: <http://www.eia.gov/electricity/data/browser/>.

	Wisconsin		Minnesota		North Dakota	
Fuel Type	Energy Generated (GWh)	Share (%)	Energy Generated (GWh)	Share (%)	Energy Generated (GWh)	Share (%)
Coal	36597	77.4%	27248	59.3%	27334	85.2%
Natural Gas	7025	14.9%	3140	6.8%	213	0.7%
Nuclear	0	0.0%	12707	27.6%	0	0.0%
Hydro	2214	4.7%	348	0.8%	2531	7.9%
Non-hydro renewables (includes wind)	1307	2.8%	2302	5.0%	1953	6.1%
Other	159	0.3%	218	0.5%	57	0.2%
Total	47302	100.0%	45963	100.0%	32088	100.0%

c. Minnesota Power Supply and Impending Coal Generation Retirements

- i. Supply Portfolio: In 2013, the generation resources owned by Minnesota Power had a net annual generation of 9,669,152 MWh, as shown in Table 7-4 below. About 87% of this annual generation was from coal generation, and about 11% from wind and hydro resources owned by Minnesota Power.

Table 7-4: Minnesota Power 2013 Power Plant Data Report¹⁷²

Plant Name	Number of Units	Primary Fuel	Summer Peak Capacity (MW)	Net Annual Generation (MWh)	Portion of Net Annual Generation
Boswell Energy Centre	4	Coal	958.6	6,869,392	71.0%
Laskin Energy Centre	2	Coal	98.2	471,771	4.9%
Taconite Harbour	3	Coal	237.75	1,064,434	11.0%
M.L. Hibbard Rapids Energy Centre	2	Wood	58.5	25,216	0.3%
Cloquet	4	Gas/ Wood	26.7	113,357	1.2%
Small Hydro - 10 Plants	1	Wood	22.8	98,022	1.0%
Taconite Ridge	32	Hydro	102.6	190,270	2.0%
Wind	N/A	Wind	25	55,891	0.6%
Bison 1,2&3 Wind	N/A	Wind	292	780,799	8.1%
TOTAL				9,669,152	100.0%

ii. Energy Forward Strategy: On January 30, 2013, Minnesota Power announced its EnergyForward resource strategy.¹⁷³ Components of Minnesota Power's EnergyForward resource strategy include the following:

- Renewable energy investments
- Sustained energy conservation programs
- Construction of a major transmission line to facilitate delivery of carbon free hydropower
- Investments to reduce emissions at existing facilities and improve efficiencies
- Fleet transition of small coal units
- Addition of natural gas resources

iii. Role of Manitoba Hydro Generation: The January 20, 2013 Minnesota Power announcement further stated:

¹⁷² Minnesota Power, 2015 Integrated Resource Plan, *supra* note 160, Appendix A, Minnesota Power's 2014 Annual Electric Utility Forecast Report.

¹⁷³ Minnesota Power, Press Release, Minnesota Power outlines its EnergyForward resource strategy, January 30, 2013, online: http://www.mnpower.com/Content/Documents/Company/PressReleases/2013/20130130_NewsRelease.pdf

“Minnesota Power will further leverage its renewable resources through a power purchase agreement with Manitoba Hydro for 250 megawatts of hydropower beginning in 2020. The company is proposing to deliver the carbon free energy on a new 500-kilovolt transmission line stretching from the Canadian border to northeastern Minnesota, expected to be completed by 2020.”

On November 16, 2014 Minnesota Power filed an application with the Minnesota Public Utilities Commission seeking approval of a 20 year Energy Sale Agreement to purchase 133 megawatts of energy from Manitoba Hydro, attached as Appendix 9. The power purchase agreement was approved by the Minnesota Public Utilities Commission on January 30, 2015 and Minnesota Power incorporated the agreement into its Energy Forward resource strategy. In its Petition for Approval of the Minnesota Power 2015 Resource Plan, Minnesota Power stated:

“In 2011 and 2014, the Company signed 15 and 20-year agreements to buy 383 MW of carbon-free hydroelectricity from Manitoba Hydro beginning in 2020. Minnesota Power is planning the construction of the Great Northern Transmission Line (“GNTL”) to carry this Canadian hydropower to the heart of its industrial base on the Iron Range of Minnesota.”¹⁷⁴

- iv. Conversions and Retirements: On July 2, 2015, Minnesota Power announced that it had completed the conversion of the two coal fired generation units at the Laskin Energy Centre to natural gas.¹⁷⁵ On July 9, 2015, Minnesota Power provided an update on its EnergyForward plan.¹⁷⁶ This update stated Minnesota Power plans to cease coal operations at Taconite Harbor Units 1 and 2 by the end of 2020. In addition, Unit 3 at Taconite Harbor was retired in May 2015. On October 19, 2016, Minnesota Power announced plans to retire two units of the Boswell Energy Center in 2018. It was stated that: “The decision to retire units 1 and 2 at Boswell ... is consistent with Minnesota Power’s Energy Forward Strategy of diversifying its energy

¹⁷⁴ See Petition for Approval, p.2, *supra* note 160.

¹⁷⁵ Minnesota Power, Press Release, Laskin Energy Center conversion to natural gas advances EnergyForward, July 2, 2015, online:

http://www.mnpower.com/Content/Documents/Company/PressReleases/2015/20150702_NewsRelease.pdf.

¹⁷⁶ Minnesota Power, Press Release, Minnesota Power advances EnergyForward: less coal, more natural gas and solar power, and additional energy efficiency savings, July 9, 2015, online:

http://www.mnpower.com/Content/Documents/Company/PressReleases/2015/20150709_NewsRelease.pdf.

mix, reducing its carbon footprint and evolving away from smaller, older coal generators.”¹⁷⁷

7.1.5 U.S. Regulatory Outlook

- a. Federal Regulation: On August 3, 2015 the United States Environmental Protection Agency (“US EPA”) finalized the Clean Power Plan Rule to cut carbon pollution from existing power plants.¹⁷⁸ The US EPA claims that when the Clean Power Plan is fully in place in 2030, carbon pollution from the power sector in the US will be 32 percent below 2005 levels.¹⁷⁹ The Clean Power Plan requires individual states to develop and implement plans that ensure that the power plants in their state – individually, together or in combination with other measures – achieve the interim CO₂ emissions performance rates over the period of 2022 to 2029 and the final CO₂ emission performance goals by 2030. The ability of the US EPA to implement the Clean Power Plan is uncertain at the current time given legal challenges from numerous states and the upcoming federal administration change in early 2017. However the U.S. Supreme Court ruled in 2007 that greenhouse gases, which include CO₂, meet the definition of an air pollutant under the Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare based upon EPA findings.¹⁸⁰ In 2009 the EPA signed a final rule that concluded that six greenhouse gases, which include CO₂, constitute a threat to public health and the welfare of current and future generations.¹⁸¹ Therefore, if the U.S. EPA is not able to implement the Clean Power Plan, the agency still has a legal obligation pursuant to the Clean Air Act and based on the EPA’s assessment of the scientific evidence concerning the risks of climate change, to regulate the emissions of CO₂ from the U.S. electricity generation sector.

- b. State Regulation: Details of how states will implement the Clean Power Plan will depend upon the state level implementation plans. Apart from any initiatives related to the Clean Power Plan, there are significant state level renewable portfolio standards and state emission requirements that must be met, and individual states within the MISO footprint will continue to pursue renewable and non-carbon emitting resources. The figure below provides a summary of renewable portfolio standards for various U.S. states.

¹⁷⁷ Minnesota Power, Press Release, Decision to retire two small coal units consistent with Minnesota Power’s EnergyForward plan, October 19, 2016, online:

http://www.mnpower.com/Content/Documents/Company/PressReleases/2016/20161019_NewsRelease.pdf.

¹⁷⁸ Information on the Clean Power Plan is published on the EPA website, online:

<http://www.epa.gov/cleanpowerplan>.

¹⁷⁹ US EPA, Fact Sheet: Overview of the Clean Power Plan, June 27, 2016, online:

<http://www.epa.gov/cleanpowerplan/fact-sheet-overview-clean-power-plan>.

¹⁸⁰ *Massachusetts v. EPA*, 549 U.S. 497 (2007) (U.S.S.C.)

¹⁸¹ Carbon Pollution: EPA Policies and Programs, published by the US EPA, available at:

https://www.epa.gov/sites/production/files/2016-02/documents/conf12_rand.pdf

MISO has studied the impact of the Clean Power Plan Final Rule, should it be implemented, on generation supply and emissions within the MISO market footprint. Key observations from MISO's Near Term Analysis of EPA's Final Clean Power Plan¹⁸⁴ include the following.

- The coal fleet faces increased risks under the Clean Power Plan.
- New non-CO2 emitting resources would be needed to mitigate large changes in generation dispatch or to mitigate CO2 price increases.
- In comparison with a Business as Usual Scenario and under a mass based compliance assumption, a Gas Wind Solar Build Out scenario in which 30% of the existing coal fleet in MISO is retired to meet Clean Power Plan emission objectives results in MISO coal generation in 2030 decreasing from 380 TWh to 260 TWh, a reduction of about 32%. At the same time, renewable generation would increase from 66 TWh to 115 TWh in 2030, a 74% increase. Hence it can be seen that the Clean Power Plan is expected to have a profound impact on the MISO generation mix, moving from more carbon intensive coal generation to less carbon intensive renewable generation including wind, solar and hydro.

The U.S. Department of Energy's Energy Information Administration (DOE EIA) studied the absence of the Clean Power Plan (the No CPP case) in its Annual Energy Outlook 2016 and found that 60,000 MW (60 GW) of coal generation could close by 2030 even without the Clean Power Plan:

“Even in the absence of the CPP, the extension of renewable tax credits, as well as declining capital costs for solar photovoltaics (PV), other emissions regulations that affect coal, and low natural gas prices contribute to a reduction in coal's share of total generation. In the No CPP case, coal-fired generation changes little from 2015–40, and the coal share of total electricity generation falls from 33% in 2015 to 26% in 2040. Additions to coal-fired capacity are limited in the near term by emission regulations and in the long term by low natural gas prices and increased pressure from renewable generation. In the No CPP case, 60 GW of coal-fired generating capacity is retired from 2016–30.”¹⁸⁵

Renewable energy from Manitoba Hydro that would be delivered over the new IPL to load-serving entities in MISO has significant potential to help

¹⁸⁴ MISO Planning Advisory Committee, Results for MISO's Near Term Analysis of EPA's Final Clean Power Plan, January 20, 2016, online: <https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/PAC/2016/20160120/20160120%20PAC%20Item%2002aii%20CPP%20Final%20Rule%20Analysis%20Near%20Term%20Results.pdf>.

¹⁸⁵ US Department of Energy Information Administration Annual Energy Outlook 2016, page ES3. [http://www.eia.gov/outlooks/aeo/pdf/0383\(2016\).pdf](http://www.eia.gov/outlooks/aeo/pdf/0383(2016).pdf).

meet federal and state level objectives by reducing U.S. CO2 emissions through the displacement of non-renewable generation.

- c. Minnesota Power Response to the US Regulatory Outlook: Minnesota Power's 2015 Integrated Resource Plan states:

"Minnesota Power has taken action to timely address environmental regulations and strongly position its customers for compliance with the Environmental Protection Agency's ("EPA") just finalized Clean Power Plan ("CPP"). The Company expects a 90 percent reduction in air emissions and 30 percent reduction in greenhouse gas emissions by 2025, from 2005 levels, with the 2015 Plan short and long-term action plans proposed. The final CPP Rule is being closely examined while state compliance plans are in formation for later this decade. As such, Minnesota Power does not attempt to contemplate a specific compliance outcome in this 2015 Plan. The Company's transformation since 2005 to a less carbon intense power supply through competitive renewable resources, reductions in coal-fired generation, and high performing energy efficiency programs are consistent with state emission reduction policies and aligning with national goals being set."¹⁸⁶

Minnesota Power's 2015 Integrated Resource Plan further states that:

"Minnesota Power will reduce carbon emissions by about 20 percent on its system by 2020 and 30 percent by 2025 while serving about 20 percent more load, meeting the 2015 and 2025 state goals for carbon reduction, and aligning for longer-term greenhouse gas targets compared to 2005 levels."¹⁸⁷ These carbon emission reductions are consistent with Minnesota's emission reduction targets of 30% by 2025 and 80% by 2050.

7.1.6 MISO Resource Adequacy Outlook

- a. Planning Reserve Margin: Resource adequacy is the ability of the electric system to supply the aggregate electrical demand and energy requirements of the end-use customers at almost all times. Ensuring resource adequacy requires, among other things, ensuring sufficient accredited generation capacity above peak load, called the planning reserve margin requirement ("PRMR"), to take into account expected but unscheduled outages of system elements and weather-related load forecast uncertainty. The planning reserve margin requirements in MISO can vary slightly from year to year based on technical studies, but for the 2015-2016 planning

¹⁸⁶ Minnesota Power, 2015 Integrated Resource Plan, *supra* note 160, p. 3.

¹⁸⁷ Minnesota Power, 2015 Integrated Resource Plan, *supra* note 160, p. 4.

year, spanning from June 1, 2015, through May 31, 2016, is 14.3 percent above forecasted peak load on an installed capacity basis.

- b. MISO Forecast: As part of the MTEP planning process, MISO conducts an analysis of resource adequacy for its market footprint. MISO is not ultimately responsible for ensuring resource adequacy for its market footprint, but rather the load serving entities within MISO are ultimately responsible for ensuring sufficient supply to meet their load. However, MISO plays an important role by tracking accredited capacity resources and forecast loads, and providing a regional view of the aggregate supply and demand situation. In the Resource Adequacy section of MTEP15, MISO concludes:

“MISO forecasts the reserve margin will drop below the PRMR of 14.3 percent beginning in 2020, and will remain below the PRMR for the rest of the assessment period (Table 7-5 below). Falling below the PRMR signifies that the MISO region is projected to operate at a reliability level lower than the one-day-in-10 standard in 2020 and beyond.”¹⁸⁸

THIS LEFT INTENTIONALLY BLANK

¹⁸⁸ MISO, MTEP15, Book 2, Chapter 6 Resource Adequacy, *supra* note 161, p. 13.

Table 7-5: MISO anticipated PRMR details (cumulative)

In (ICAP)	GW	PY 2016 /17	PY 2017 /18	PY 2018 /19	PY 2019 /20	PY 2020 /21	PY 2021 /22	PY 2022 /23	PY 2023 /24	PY 2024 /25	PY 2025 /26
(+) Existing Resources		151.9	151.5	151.2	150.5	150.4	150.4	150.4	150.4	150.4	150.4
(+) New Resources		0.7	2.1	2.1	2.5	2.6	2.6	2.6	2.6	2.6	2.6
(+) Imports		4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
(-) Exports		3.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
(-) Low Certainty Resources		0.6	0.5	1.1	1.0	2.3	3.0	3.7	4.4	5.7	8.6
(-) Transfer Limited Available Resources		3.4	3.0	2.6	1.9	1.6	1.4	1.2	1.0	0.8	0.6
Demand		128.9	130.4	131.2	132.4	133.3	134.1	134.9	135.9	136.6	137.7
PRMR		147.3	149.0	150.0	151.3	152.3	153.2	154.2	155.3	156.2	157.4
PRMR Shortfall		1.7	2.6	1.1	0.2	-1.8	-3.2	-4.6	-6.2	-8.2	-12.2
Reserve Margin Percent (%)		15.6%	16.3%	15.1%	14.5%	13.0%	11.9%	10.9%	9.7%	8.3%	5.5%

MISO’s analysis for MTEP15 indicates that current resource plans show insufficient resources to meet the reliability standard in 2020 and beyond, which is the time period during which the new IPL comes into service.

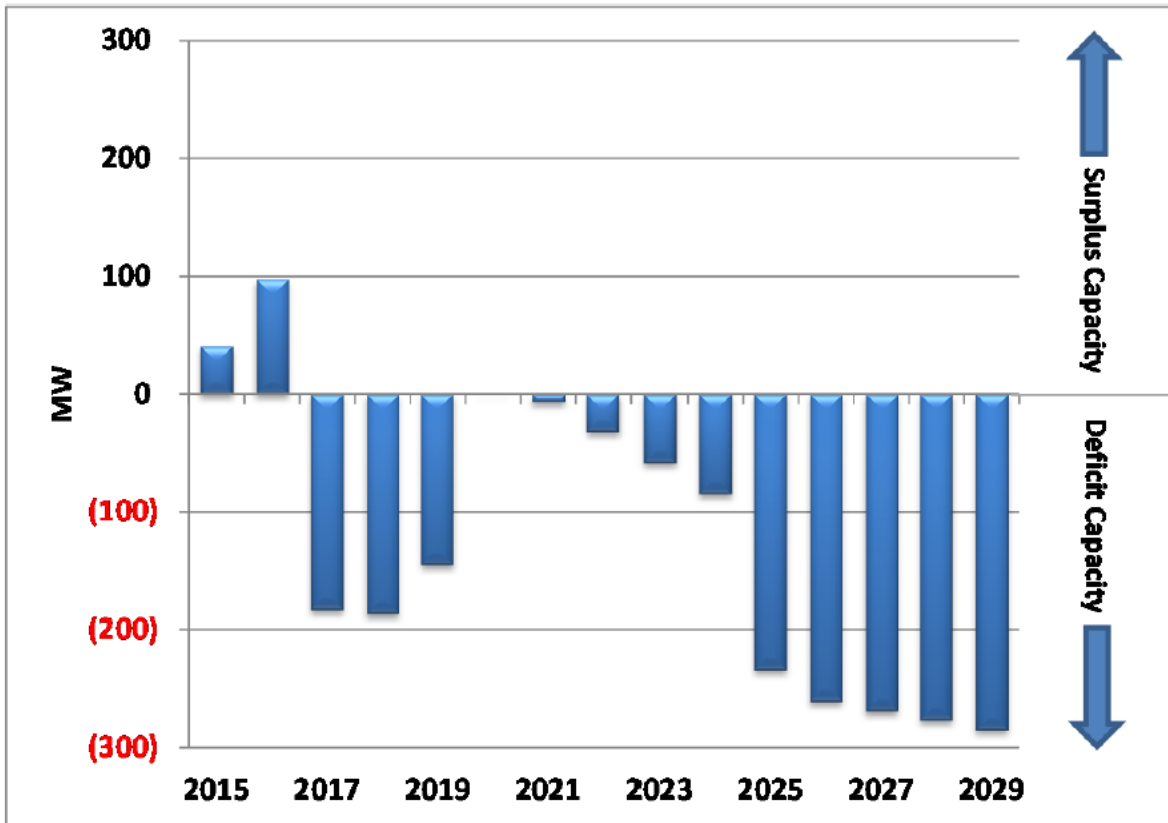
7.1.7 Minnesota Power Resource Adequacy Outlook

Minnesota Power’s 2015 Integrated Resource Plan outlines Minnesota Power’s supply and demand balance over the next 15 years. Figure 7-6 below¹⁸⁹ shows Minnesota’s Power’s net capacity position through 2029, based on their resource planning assumptions. Minnesota Power states in regard in to their capacity position shown in Figure 7-6 that:

¹⁸⁹ Minnesota Power, 2015 Integrated Resource Plan, *supra* note 160, Figure 19, p.60.

“Minnesota Power identified it would need approximately 200 MW of capacity from 2017- 2019 due to the idling of THEC1&2.¹⁹⁰ In 2020, the Manitoba Hydro 250 MW transaction begins bringing the power supply back to a neutral position before the next significant capacity need. The need for 200 MW to 300 MW begins in 2025 due to end of life of BEC1&2, and remains through the study period to 2029.”¹⁹¹

Figure 7-6: Minnesota Power Summer Season Capacity Position with Preferred Coal Strategy (No New Resource Additions)



Manitoba Hydro notes that Minnesota Power’s capacity deficits in the post 2020 period shown in Figure 7-6 already include 250 MW of capacity supply from Manitoba Hydro. In other words, the post 2020 period capacity deficits would be 250 MW larger if the 250 MW of capacity supply from Manitoba Hydro that will be delivered on the proposed IPL is not available. To eliminate the capacity deficits, Minnesota Power is proposing, in addition to the 250 MW capacity purchase from Manitoba Hydro, that it purchase capacity under bilateral agreement from the MISO market until 2019, and then build a 200-400 MW natural gas resource sometime after 2019. Minnesota Power’s contracted purchases of capacity and renewable energy from Manitoba Hydro are an

¹⁹⁰ THEC1&2 are two units at Minnesota Power’s Taconite Harbor Energy Centre. Minnesota Power plans to cease coal operations at Taconite Harbor Units 1 and 2 by the end of 2020. In addition, Unit 3 at Taconite Harbor was retired in May 2015.

¹⁹¹ Minnesota Power, 2015 Integrated Resource Plan, *supra* note 160, p. 60.

important part of its plans to diversify its resource portfolio and reduce carbon emissions from its existing coal fired generation.

7.2 Finance

7.2.1 Overview of Financial Strength and Ability to Attract Capital;

- a. Financial Strength of Manitoba Hydro: As stated, in section 3.1.3 of this Application, Manitoba Hydro is a Crown Corporation. However, Manitoba Hydro operates on a self-sustaining commercial basis independent of the Province of Manitoba, subject to its rates for domestic customers being regulated by the Public Utilities Board of Manitoba and all debt financing being raised either: (i) through debt issued by the Province of Manitoba and subsequently advanced to Manitoba Hydro, or (ii) on the credit of the Corporation, subject to Lieutenant Governor in Council approval. Manitoba Hydro maintains the financial strength to meet its corporate objectives and withstand the risks and uncertainties inherent in its operations through three key financial targets. These financial targets include a debt/equity ratio (achieving and maintaining a minimum debt/equity ratio of 75:25), an EBITDA interest coverage ratio (with a minimum target of 1.80) and a capital coverage ratio (maintaining a capital coverage ratio, excluding major new generation and related transmission, of greater than 1.20), although these financial targets need not be achieved during years of major generation and transmission system investment. For the most recent fiscal period ending March 31, 2016, Manitoba Hydro achieved an equity ratio of 17%, an EBITDA interest coverage ratio of 1.55 and a capital coverage ratio of 1.37. Manitoba Hydro's most recent annual report is provided at the link below.¹⁹²
- b. Ability to Attract Capital: Manitoba Hydro is viewed by the Credit Rating Agencies as being able to meet its financial obligations without support from the tax-base of the Province of Manitoba. However, since Manitoba Hydro is a provincial Crown corporation, its financial strength is supplemented by receiving a flow through credit rating from its owner, the Province of Manitoba. The Province of Manitoba currently has a long-term credit rating of AA-2 by Standard and Poors, A (high) by DBRS, and Aa-2 by Moody's Investors Service. Manitoba Hydro's long-term debt is predominately provided through advances from the Province of Manitoba. Therefore, the Province of Manitoba's strong credit rating and capital market liquidity provide Manitoba Hydro with an exceptional ability to attract debt capital. Manitoba Hydro's financial strength and ability to attract capital is not expected to be affected by the borrowing requirements of the MMTP.

¹⁹² Manitoba Hydro, Working for You: Manitoba Hydro-Electric Board 65th Annual Report For the Year Ending March 31, 2016, July 29, 2016, online: http://www.hydro.mb.ca/corporate/ar/pdf/annual_report_2015_16.pdf.

- c. Financial Strength of Minnesota Power: Attached as Appendix 43 is the most recent annual report for ALLETE Inc., of which Minnesota Power is a division.

7.2.2 Proposed Method of Financing the Facilities;

Manitoba Hydro finances its capital expenditure program through a combination of funds generated from operations and long-term debt advances from the Province of Manitoba. Manitoba Hydro's capital program includes the construction of several new major generation and transmission projects (Keeyask Generating Station, Bi-Pole III transmission line) during the same timeframe that MMTP is expected to be constructed. As a result of this overlap, the vast majority of the MMTP capital expenditures are anticipated to be funded through long-term debt advances from the Province of Manitoba.

8. Lands Information

8.1 Land Area Requirements

8.1.1 Permanent Requirements

Manitoba Hydro requires new ROW for a length of 121 km for the Dorsey IPL component of the Project. The width of the ROW will vary between 80 m (in locations where self-supporting towers will be used) and 100 m (in locations where guyed towers will be used). Map 2-7 in the EIS illustrates the length and width of the ROW for the proposed route.¹⁹³ No additional land is required for the alterations to the Riel IPL and Glenboro IPL.

8.1.2 Temporary Requirements

The exact number and locations of marshalling yards for the storage of construction materials and equipment has not been determined. These locations will be determined during development of contract specifications. Construction methods used by the contractor will dictate the size of marshalling yards. Typical dimensions range from 2 – 10 ha. Similarly, borrow locations for sourcing aggregates used in foundations have not been identified at this time. However, borrow pits are typically located along the ROW. Borrow pits vary in size depending on the methodology used and amount of borrow material required, but are typically 100 m by 50 m. No additional land is anticipated to be necessary for access roads,¹⁹⁴ associated facilities or other Project components.

8.2 Land Rights

Land ownership along the proposed route is 26.1% provincial Crown land (804.36 ha), 22.8% privately owned (703.21 ha) and 51.7% owned or under easement by Manitoba Hydro (1576.49 ha). Of the land that must be acquired for the new ROW,

¹⁹³ EIS, Volume 1, Chapter 2, *supra* note 40.

¹⁹⁴ EIS, Volume 1, Chapter 2, *supra* note 52, s. 2.12.3.

approximately 30% is provincial Crown land and 70% is privately owned. Manitoba Hydro intends to acquire easements from the 125 private landowners along the proposed route. Easements must also be acquired from the Province of Manitoba under section 7(1) of *The Crown Lands Act*.

8.3 Land Rights Acquisition Process

As noted in section 5.3.3 of this Application, all affected landowners have been provided notice of the Project through Manitoba Hydro's engagement program. Manitoba Hydro's engagement program provided affected landowners with various opportunities to meet with Manitoba Hydro personnel to discuss compensation. At the time of filing this Application, negotiations with affected landowners has not commenced. In the event that agreement cannot be reached with a landowner, Manitoba Hydro may exercise its power of expropriation.¹⁹⁵ Manitoba Hydro has submitted applications to the Crown Lands Property Agency for all of the required easements over provincial Crown land. Granting of these easements is not expected until after issuance of The Environment Act licence for the Project. Manitoba Hydro and the Province of Manitoba ("Manitoba") are parties to a 1985 Memorandum of Agreement granting Manitoba Hydro an easement over certain portions of the Red River Floodway for the placement, operation and maintenance of Manitoba Hydro's distribution and transmission lines and other related facilities. Manitoba Hydro and Manitoba are, at the time of filing this Application, engaged in negotiating an agreement for the placement of Manitoba Hydro's facilities, including the Dorsey IPL, on portions of the Red River Floodway in the vicinity of Floodway inlet control structures that are outside the scope of the 1985 Memorandum of Agreement. The new agreement will continue for approximately 15 years as per its terms, unless extended by mutual written agreement of Manitoba and Manitoba Hydro. Upon execution of this agreement, Manitoba will grant authority for Manitoba Hydro's facilities under *The Water Resources Administration Act*.¹⁹⁶

8.4 Land Acquisition Agreements

Attached as Appendix 44 is a sample of Manitoba Hydro's standard Transmission Line Statutory Easement agreement.

¹⁹⁵ *Supra* note 1, s. 16(1).

¹⁹⁶ C.C.S.M. c.W128.

8.5 Plan of Survey

In accordance with section 5(j) of the National Energy Board Electricity Regulations, attached as Appendix 45 is a plan of survey from which the international boundary crossover point can be accurately determined on the ground.

ALL OF WHICH IS RESPECTFULLY SUBMITTED,

December 16, 2016

“K. Jennifer Moroz”

K. Jennifer Moroz
Barrister and Solicitor
Manitoba Hydro Law Department
22nd Floor – 360 Portage Avenue
Winnipeg, Manitoba, R3C 2P4
(204) 360-4539
(204) 360-6147 (fax)
kjmoroz@hydro.mb.ca

TO: Ms. Azure-Dee Ashton
Senior Legal Counsel, Law, Land and Regulatory Affairs
SaskPower
2025 Victoria Avenue
REGINA, Saskatchewan S4P 0S1
Email: aashton@saskpower.com

Mr. James Scarlett
Office of the Executive Vice-President and
Chief Legal Officer
Hydro One Inc.
483 Bay Street
TORONTO, Ontario M5G 2C9
Email: Jennifer.Joseph@hydroone.com

Mr. John Rattray
General Counsel, Secretary &
Chief Reliability Compliance Officer
Independent Electricity System Operator
655 Bay Street, Suite 410
TORONTO, Ontario M5G 2K4
Email: john.rattray@ieso.ca

LIST OF APPENDICES

- Appendix 1 Manitoba Order in Council No. 00386/2013
- Appendix 2 Manitoba Hydro System Impact Study Results dated January 24, 2013
- Appendix 3 Manitoba Hydro Preliminary Report on Group Facilities Study dated April 3, 2014 [*contains Confidential Material*]
- Appendix 4 Manitoba Hydro Report on Group System Impact Study dated October 1, 2014
- Appendix 5 Manitoba Hydro Report on Group Facilities Study dated June 5, 2015 [*contains Confidential Material*]
- Appendix 6 Facilities Construction Agreement dated October 5, 2015
- Appendix 7 250 MW System Power Sale Agreement dated May 19, 2011 [*contains Confidential Material*]
- Appendix 8 Energy Exchange Agreement dated May 19, 2011 [*contains Confidential Material*]
- Appendix 9 133 MW Energy Sale Agreement dated July 30, 2014 [*contains Confidential Material*]
- Appendix 10 2014 Energy Exchange Agreement dated July 30, 2014 [*contains Confidential Material*]
- Appendix 11 Notice of Application and Directions on Procedure
- Appendix 12 Map Series A: Features of Proposed Route
- Appendix 13 Map B: International Boundary Crossover Point
- Appendix 14 Dorsey IPL Single-Line Diagram [*Confidential Material*]
- Appendix 15 Riel IPL Relocation – Figure A
- Appendix 16 Riel IPL Relocation – Figure B
- Appendix 17 Plan, Profile and Book of Reference for Riel IPL Alterations
- Appendix 18 Glenboro IPL Single-Line Diagram [*Confidential Material*]
- Appendix 19 Environmental Statutes
- Appendix 20 Operating Procedure: MH-IESO C07-R1
- Appendix 21 MH-U.S. TSR Sensitivity Analysis, System Impact Study
- Appendix 22 Manitoba Hydro Report – Study of the Impact of Manitoba –Minnesota Transmission Project on SPC’s Bulk Electric System
- Appendix 23 Manitoba Hydro Report – Study of the Impact of Manitoba-Minnesota Transmission Project on the Bulk Electric System of The Independent Electricity System Operator of Ontario
- Appendix 24 Transmission to Transmission Interconnection Agreement For the Dorsey-Iron Range International Power Line [*contains Confidential Material*]
- Appendix 25 Manitoba Order in Council No. 545/2014
- Appendix 26 Project Schedule
- Appendix 27 Great Northern Transmission Line Schedule
- Appendix 28 Manitoba Hydro Preliminary Report on Group Facility Study dated October 2, 2013 [*contains Confidential Material*]
- Appendix 29 June 28, 2013 News Release
- Appendix 30 August 2013 Letter to Stakeholders
- Appendix 31 Master Stakeholder List
- Appendix 32 FNMEP Pre-Engagement Letter
- Appendix 33 FNMEP Round One Letter

- Appendix 34 FNMEP Follow-up Letter with Sample Engagement Plan
- Appendix 35 FNMEP Round Two Letter
- Appendix 36 FNMEP Round Three Letter
- Appendix 37 Letter to Wayne Guttormson, SaskPower, dated March 31, 2015
- Appendix 38 Letter to Hardeep Kandola, IESO, dated April 10, 2015
- Appendix 39 Letter to Ibrahim El-Nahas, Hydro One Networks Inc., dated April 24, 2015
- Appendix 40 Letter from IESO to D. Jacobson, dated April 23, 2015
- Appendix 41 Letter from SaskPower to D. Jacobson, dated May 13, 2015
- Appendix 42 Letter from Hydro One Networks Inc. to D. Jacobson, dated May 14, 2015
- Appendix 43 Annual Report for ALLETE, Inc.
- Appendix 44 Transmission Line Statutory Easement Agreement
- Appendix 45 Plan of Survey of International Boundary Crossover Point