Manitoba-Minnesota Transmission Project

Round 1 – Public Engagement
Alternative Routes & Potential Border Crossings

What is it?

Manitoba Hydro is proposing construction of a 500-kilovolt (kV) alternating current (AC) transmission line from the Dorsey Station to the international border between Manitoba and Minnesota. Known as the Manitoba-Minnesota Transmission Project, this line is needed to export surplus electricity and enhance the reliability of the province's electricity supply in emergency and drought situations.

The project also includes upgrades to associated stations at Dorsey, Riel and Glenboro. The anticipated in-service date for the project is 2020.

Where is it?

The Manitoba-Minnesota Transmission Project will originate at the Dorsey Converter Station, located near Rosser, northwest of Winnipeg, and travel south around Winnipeg along what is known as the Southern Loop corridor. (Please see map on page three.) From southeast Winnipeg, the transmission line will continue south crossing the Manitoba-Minnesota border at one of the border crossing locations currently under consideration. (Please see map on pages four and five.) It will then connect to the Great Northern Transmission Line, which will be constructed by Minnesota Power, and ultimately terminate at the Blackberry Station located northwest of Duluth, Minnesota.

Part of Manitoba Hydro's plan to meet future electricity needs

Electricity use in Manitoba is projected to grow by 1.6 per cent annually (80 megawatts per year) over the next two decades. New sources of electricity will be needed to supply the province by 2023.

To meet this need, Manitoba Hydro is continuing a path of investing in predominantly hydro generation with enhanced access to export markets.

Specifically, Manitoba Hydro's development plan includes:

- construction of the 695-megawatt Keeyask Generating Station on the Nelson River;
- construction of the 1,485-megawatt Conawapa Generating Station;
- construction of domestic AC transmission facilities associated with the future Keeyask and Conawapa generating stations;
- a new Manitoba to U.S. transmission interconnection, the Manitoba-Minnesota Transmission Project, to provide additional capacity for new export sales, allow for imports during droughts and enhance reliability;
- expansion of electricity exports.

Manitoba Hydro

What will the line look like?

The Manitoba-Minnesota Transmission Project will use steel lattice towers. A self-supporting design will be used in cultivated agricultural areas and guyed structures (see illustrations below) will be used in all other terrain. The design will:

- range from 40 to 60 metres (130 to 200 feet) in height.
- be spaced 400 to 500 metres (1,300 to 1,650 feet) apart (on average).
- utilize a right-of-way width of 80 to 100 metres (260 to 330 feet).

Additional information on tower design and more detailed specifications will be provided in later rounds of the project's environmental assessment process.

Why does Manitoba Hydro import and export power?

Manitoba Hydro exports surplus electricity that results from normal operation of a hydroelectric system. Revenue from these export sales helps to keep rates low in Manitoba. In 2012–13, for example, Manitoba Hydro's electricity export sales totalled $353 million with 88 per cent derived from the U.S. market and 12 per cent from Canadian markets.

U.S. utilities who purchase our electricity want long-term price certainty and stability. These utilities see value in purchasing hydroelectricity from Manitoba Hydro through long-term fixed contracts that are not linked to volatile natural gas prices or subject to future changes in regulatory requirements associated with air emissions.

The Manitoba-Minnesota Transmission Project will serve a 250-megawatt (MW) power sale with Minnesota Power and will provide increased access to additional markets in the U.S.

Adding a second 500-kV interconnection will also increase Manitoba Hydro's ability to import electricity, strengthening the reliability of the province's electricity supply. In times of extreme drought or an unforeseen outage, transmission interconnections to other utilities provide access to electricity needed to meet demand in Manitoba.

Route selection and environmental assessment processes

Manitoba Hydro is developing potential transmission line routes for discussion with the public. Our approach includes early stakeholder input and takes into account engineering considerations as well as the built and natural environment. This approach is based on the EPRI –GTC (Electric Power Research Institute – Georgia Transmission Corporation) Methodology.

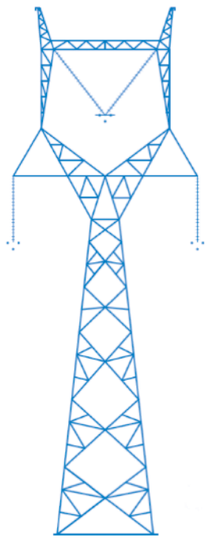
The project will require a Class 3 Licence under *The Environment Act* (Manitoba) and National Energy Board authorization.

The environmental assessment for the project will include:

- study area characterization through field work and background investigation;
- public engagement to obtain input and feedback into route selection;
- assessment of potential environmental and socio-economic effects;
- assessment of cumulative effects;
- development of mitigation measures and monitoring plans;
- development of an environmental protection program;

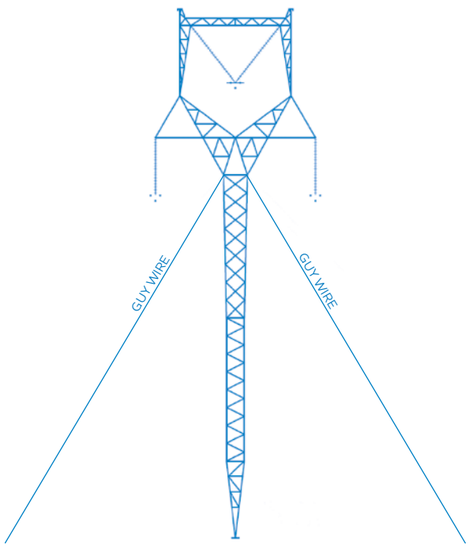
It is anticipated the environmental impact statement will be submitted to regulatory authorities in spring 2015.

Preliminary tower design parameters



500-kV Self-Supporting Lattice Steel Tower

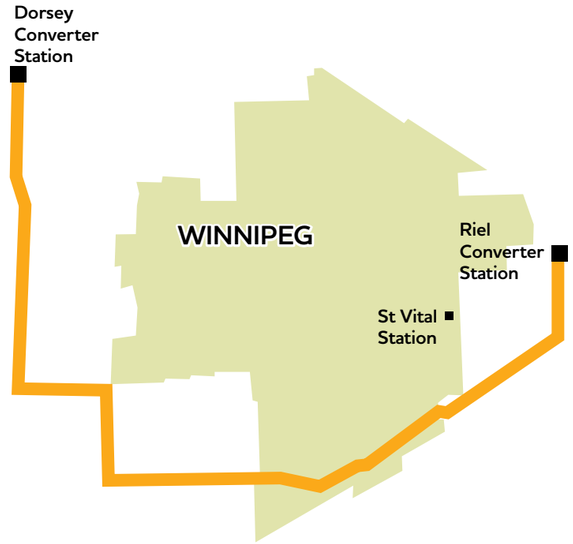
(Towers are not drawn to scale — conceptual only.)



500-kV Guyed Suspension Steel Tower

(Angle of guy wires depicted on tower are not accurate — conceptual only.)

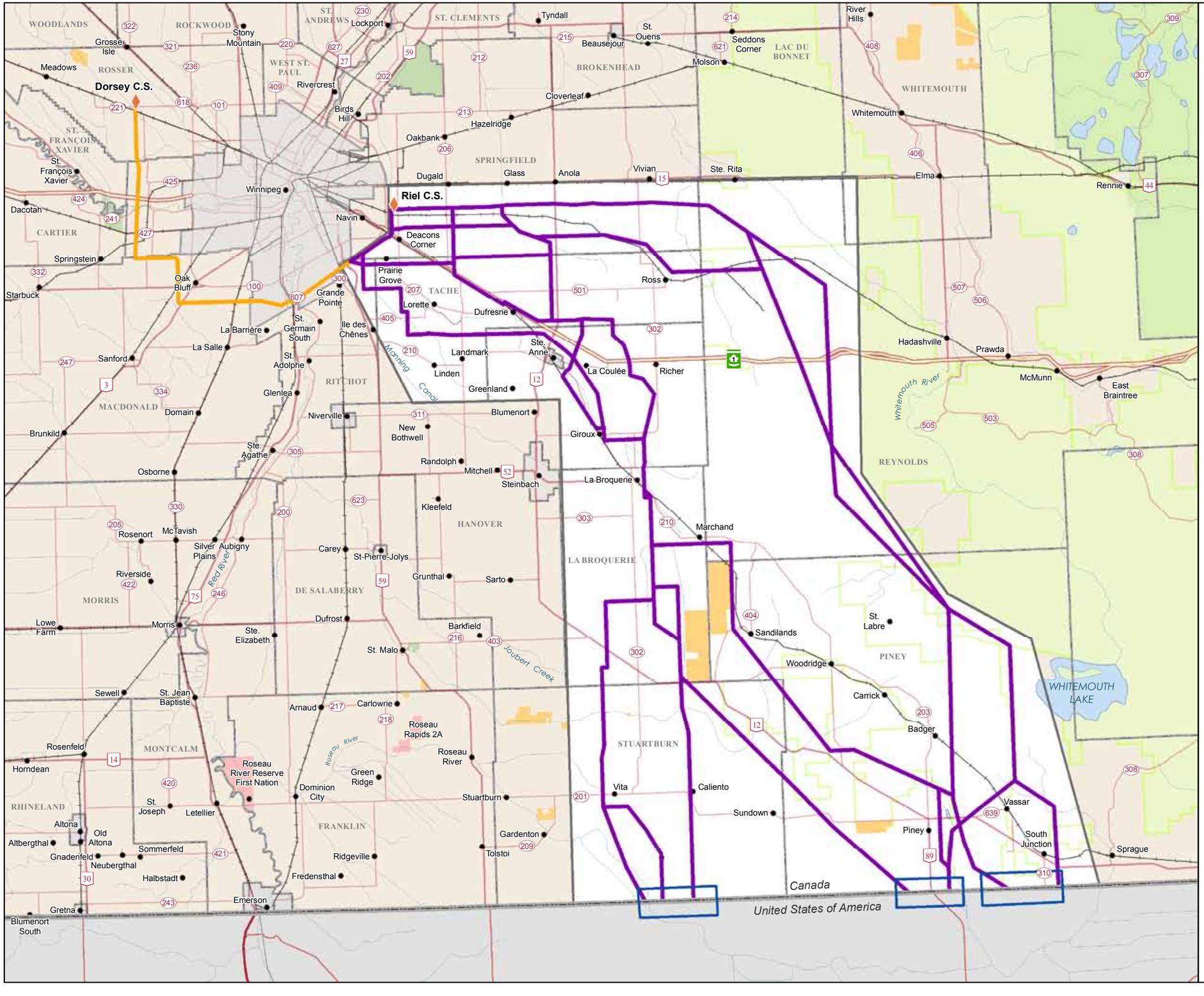
Southern Loop transmission corridor



The Southern Loop is a dedicated transmission corridor that will accommodate multiple transmission lines necessary for system reliability and to help to meet future energy demands.

Located between the Dorsey Converter Station (near Rosser) and the Riel Station (east of Winnipeg), the transmission corridor follows the western and southern boundaries of the City of Winnipeg.

Manitoba Hydro has been acquiring property rights for the Southern Loop for many years. Placing the Manitoba-Minnesota transmission line in this corridor reduces the number of independent rights-of-way on the landscape.



Manitoba-Minnesota Transmission Project

Project Infrastructure

- Alternative Route
- Potential Border Crossing
- Alternative Route Study Area

Infrastructure

- Converter Station
- Southern Loop Transmission Corridor

Landbase

- Community
- Trans Canada Highway
- Provincial Highway
- Provincial Road
- Railway
- City / Town
- Rural Municipality
- First Nation
- Wildlife Management Area
- Provincial Park
- Provincial Forest
- Watercourse
- Waterbody

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: October 21, 2013

N

0 5 10 Kilometres
0 5 10 Miles

1:500,000

Alternative Routes

Project timelines

We are here.

Round 1

- Alternative routes and proposed border crossings: October to February 2014.

Round 2

- Preferred border crossing with refined alternative routes: March 2014 to July 2014.

Round 3

- Preferred route: October 2014 to December 2014.

Anticipated next steps

- Environmental Impact Statement (EIS) Filing: Spring 2015.
- Regulatory review process: early 2015 to mid-2016.
- Licence decision: mid-2016.
- Construction: 2016 to 2020.
- In-service date: 2020.

Why do we have surplus electricity?

Manitoba Hydro's generating stations are designed to produce electricity even when the water supply is equal to the lowest flows on record. This is called dependable flow. Building to dependable flow ensures we're capable of meeting our electricity commitments to our Manitoba customers.

Most of the time, water flows are well above this dependable flow level. In fact, in almost every year since 1900, our water supply has produced more electricity than is required in the province. Export sales provide an outlet for this excess electricity and a revenue stream that helps keep energy prices low in the province.

Who is Minnesota Power?

Minnesota Power is a private utility company based in Duluth, Minnesota that provides electricity to a 67,000 square kilometre electric service area in the northeastern part of that state. It supplies retail electric service to 144,000 customers and wholesale electric service to 16 municipalities.

In 2011, Minnesota Power signed a long-term agreement to purchase 250-MW of electricity from Manitoba Hydro. This will allow Minnesota Power to increase the renewable resources in their energy portfolios, while providing price stability that natural gas-fuelled sources cannot. Purchasing power from Manitoba Hydro will also allow Minnesota Power to replace energy supplied by coal-fired generating stations that will be retired in the next decade and meet increased load growth. The utility is willing to build a new transmission interconnection in Minnesota to be able to do so.

This proposed transmission interconnection, named the Great Northern Transmission Line, would run from the Manitoba-U.S. border to the Mesabi Iron Range near Duluth, Minnesota. It is currently in the development stage, with the company recently filing it's Certificate of Need. The company is also in the process of finalizing route options. In addition to providing access to clean, affordable and reliable energy for Minnesota Power customers and the region, other factors driving the need for the Great Northern Transmission Line include:

- increased industrial load growth on Minnesota's Iron Range associated with iron ore mining;
- the need to strengthen system reliability for Minnesota Power and the region.

For more information on Minnesota Power, visit **www.mnpower.com**. For more information on the Great Northern Transmission Line, visit **www.greatnortherntransmissionline.com**.

How can you be involved?

Manitoba Hydro will seek input from local landowners, First Nations, the Manitoba Métis Federation, local municipalities, stakeholder groups, government departments and the general public during the route selection and environmental assessment process.

The goals for the Manitoba-Minnesota Transmission Project public engagement process are to:

- share project information as soon it becomes available;
- obtain feedback for use in the route selection and environmental assessment processes;
- gather and understand local interests and concerns;
- integrate interests and concerns into the routing and assessment processes;
- review potential mitigation measures.

We will meet these goals by:

- involving the public throughout the route selection and environmental assessment stages.;
- providing clear, timely and relevant information and responses;
- delivering a public engagement process that is adaptive and inclusive;
- informing the public as to how their feedback influenced the project;
- documenting and reporting on feedback.

Meetings, open houses, workshops and a range of other methods will provide opportunities for interested groups and individuals to participate in the route selection and environmental impact assessment.

We would like to hear from you.

Please contact:

Licensing & Environmental Assessment Department
Phone (Toll-free) 1-877-343-1631,
(in Winnipeg) 204-360-4305, or
email: mmtp@hydro.mb.ca

Visit **www.hydro.mb.ca/mmtp** for up-to-date information on the Manitoba-Minnesota Transmission Project and to register for updates.

For more on Manitoba Hydro's development plan visit **www.hydro.mb.ca.**

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