

Manitoba-Minnesota Transmission Project

Route Selection Process

What methodology are we using to select a preferred route?

We are using a process based on the EPRI-GTC (Electric Power Research Institute-Georgia Transmission Corporation) Overhead Electric Transmission Line Siting Methodology.

This process:

- incorporates routing preferences from internal and external stakeholders that considers engineering, natural, and socio-economic perspectives;
- uses these perspectives in the route planning process to help minimize impact on people and the environment.



Has this methodology been used elsewhere?

Manitoba Hydro first applied this methodology in 2013 on the St. Vital Transmission Complex. It has been used on over 200 transmission projects across North America. We are working with Quantum Spatial Inc. (previously PhotoScience Inc.), who have many years of experience in high-voltage transmission line siting and are one of the developers of the methodology.

What are the timelines for route selection?

The steps of route selection are closely associated with public engagement and environmental assessment activities. Assessment activities are undertaken by discipline specialists including biologists, archaeologists, engineers, as well as many others throughout the route selection process.

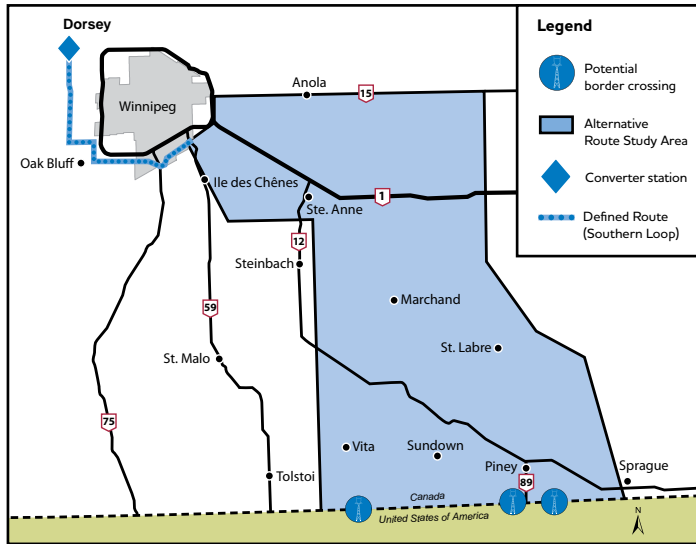
The schedule and steps are as follows:

- Round 1 (fall 2013): alternative routes and three potential border crossing areas;
- Round 2 (spring 2014): refined alternative routes and a preferred border crossing area;
- Round 3 (fall 2014): preferred route;
- Environmental impact statement submission (spring 2015): final preferred route.

What are the stages in the route selection?

Manitoba Hydro will go through a number of stages in the route selection process. The following five stages outline how a route planning area with multiple possible endpoints will lead to a final preferred route and border crossing location.

1. Route Planning Area and 3 border crossing areas



- Start and end points are determined and a broad route planning area is defined by considering constraints and opportunities on the landscape.

2. Alternative routes and 3 border crossing areas

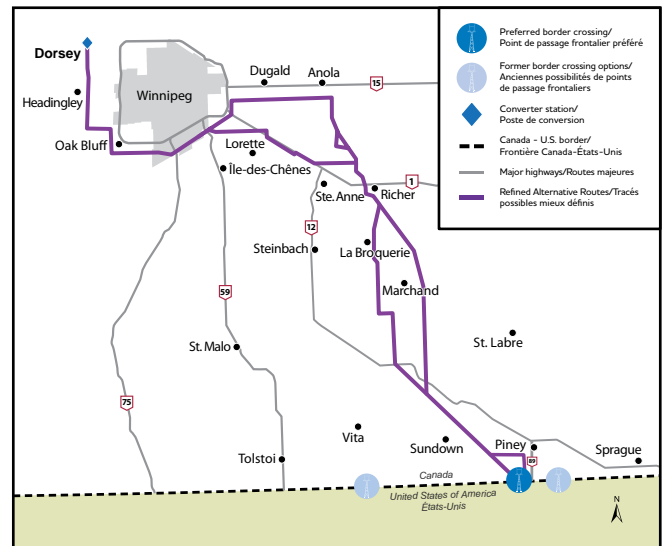
Based on understanding the existing landscape and gathering of more detailed opportunities and constraints, alternative routes are developed to the alternative border crossings.



- Discipline specialists evaluate route options.
- Round 1 of public engagement is undertaken to gather feedback.

3. Preferred border crossing and refined alternative routes

Based on information from Round 1 and discipline specialists, routes were compared using criteria and a preferred border crossing was determined.



- Route segments are removed and others added based on feedback from the public and discipline specialists.
- Discipline specialists focus their evaluations to a more defined area.
- Round 2 of public engagement is undertaken to gather feedback.

4. Preferred Route

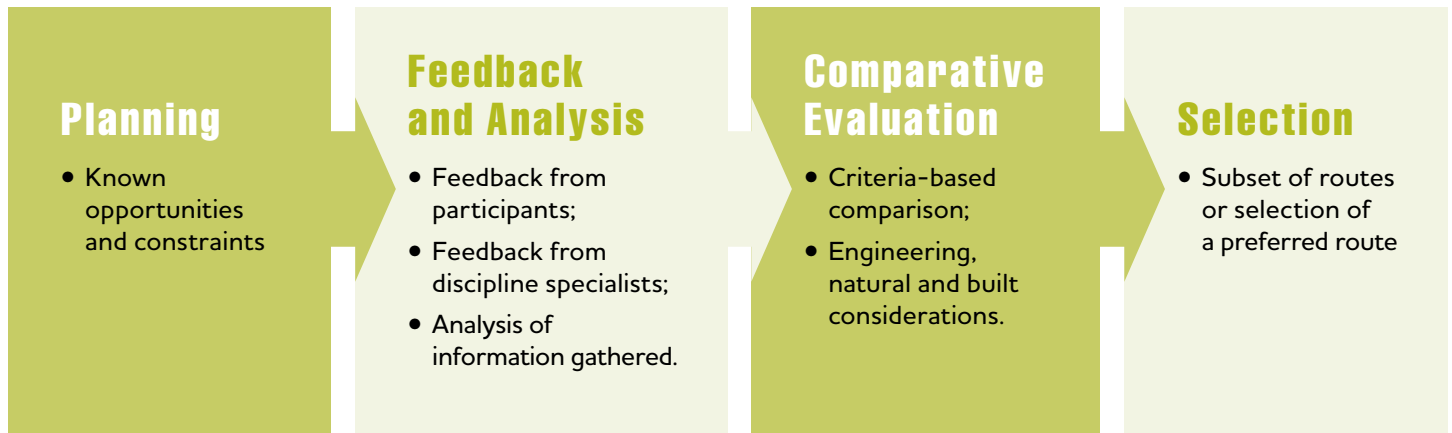
- Route modifications provided by Round 2 participants will be considered by the Project team.
- Based on information from Round 2 and discipline specialists, routes will be compared and a preferred route determined.
- Discipline specialists are now focused to a preferred location for assessment.
- Round 3 of public engagement is undertaken to gather feedback.

5. Final Preferred Route

- With feedback received from Round 3, proposed modifications to the preferred route will be considered.
- Upon the submission of the environmental impact statement to regulatory authorities, the route is deemed a final preferred route.

How do we move between each stage?

Manitoba Hydro undertakes planning, collection of feedback, analysis and evaluation throughout each of the stages of route selection. The diagram below outlines the process in which we make decisions regarding routing.



This cycle is repeated each round until a preferred route is determined for the Project. The total feedback gathered from the public and throughout the environmental assessment process increases as the location and area of analysis narrows.

What Criteria are used for the comparative evaluation?

A set of criteria, determined by stakeholder and public feedback as well as discipline specialists, is used to provide the project team with a method in which to compare all routing options being presented. Criteria based on natural, built and engineering perspectives allow the Project team to review the options and see where strengths and weaknesses exist. Examples of the criteria being used include:

- Natural: acres of natural forest, acres of wetland area, stream and river crossings;
- Engineering: project cost, existing transmission line crossings, length;
- Built: proximity to residences, land use & capability, historic resources, public use areas.

Further comparison is undertaken prior to determining a subset of routes or a preferred route. Comparative values include:

- cost;
- reliability;
- community considerations;
- risk to schedule;
- built environment and the natural environment.



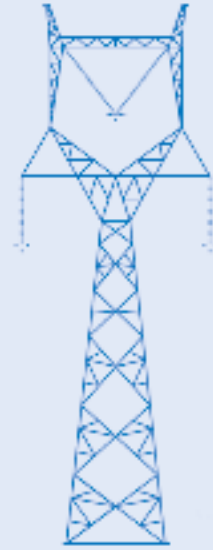
How is public input incorporated into the route selection process?

- Public input is collected throughout the route selection process and is considered by the project team.
- Site specific issues are documented, route alterations are brought forward to the project team, concerns and preferences are compiled and general transmission line routing feedback is analyzed and represented in the decision making process.
- Public feedback is important in determining a route which minimizes impact on people and the environment

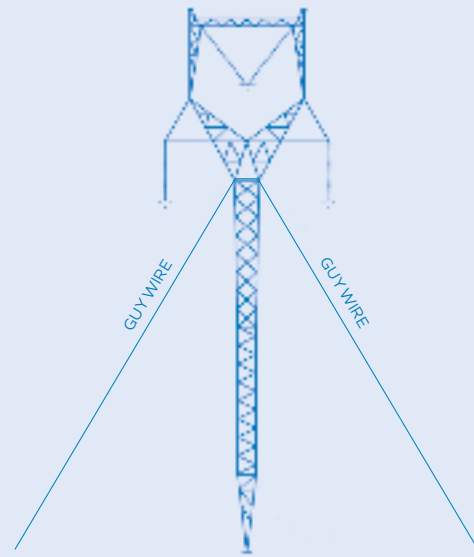
Where can I get more information on the route selection process?

- Visit www.hydro.mb.ca/mmtp for a detailed outline of the stages of the EPRI-GTC methodology.
- You can also speak with a Manitoba Hydro representative by phoning the Manitoba-Minnesota Transmission Project information line at **1-877-343-1631** (toll-free) or emailing mmtp@hydro.mb.ca.

Preliminary tower design



500-kV Self-Supporting Lattice Steel Tower



500-kV Guyed Suspension Steel Tower
(Towers are not drawn to scale — conceptual only.)