- Biophysical - Terrestrial/Aquatic (includes requirements for water crossings, and effects of forest loss, wetland/marsh impacts, muskeg impacts, and to wild rice areas)
- Existing Infrastructure (includes road/railway impacts, impacts on built-up areas and potential road distance)
- Socio-Economic (includes historical resource impacts, First Nation traditional land use impacts, recreation/cottage disturbance and a species at risk assessment)

Operational Issues

Criteria used to compare each alignment option with respect to operation issues included consideration of the following factors:

- Geometry (includes the percentage of passing opportunity, number of curves, length of tangents and overall route length)
- Intersections (includes location of spur road intersections)
- Stream Crossing Structure (includes the type of stream crossing structure required)
- Length of Alignment through Unsuitable Subgrade Material
- Use of Existing Railway Embankment

Implementation

Criteria used to compare the implementation of each alignment option included consideration of the following factors:

- Impacts on the Existing Rail Line During Construction for each alignment
- Impacts on the Existing Communication Line During Construction for each alignment

Cost

Criteria used to compare the cost of each alignment option included consideration of the following factors:

- Right-of-Way Acquisition (includes determining the requirement for additional land to provide the required right-of-way was determined for each alignment)
- Total Estimated Cost for each alignment

A ranking system was used by Earth Tech (Canada) to assign a low, medium or high value, corresponding to numerical values of 1 to 3. A high value (score of 3) indicated least environmental concern and greatest desirability. The higher the numeric values for engineering criteria, the higher the desirability relative to the other options. Therefore, the highest total score indicated the most desirable option. Table 2.1 illustrates the comparison of each alignment option and the total points assigned to each option.

After review of the environmental, operational, implementation and cost factors associated with each alignment option, Earth Tech (Canada) determined that Option 1 was the most desirable option. Manitoba Hydro selected Alignment Option 1 at the conclusion of the planning study process and has proceeded to the detailed design stage for this option.

Alignment Option 1, shown on Figure 2.2 is the subject of the environmental assessment documented in this Environmental Impact Statement.

3.0 PROJECT DESCRIPTION

3.1 ROAD DESIGN

Based on a functional design study prepared for an all weather road (Earth Tech [Canada] Inc, 2007) the following general design parameters were identified:

- Design to current geometric and loading standards for Manitoba Infrastructure and Transportation Classification System Collector Class B Criteria
- Economical to construct
- Make the best use of the existing tramway right-of-way (RoW)
- Consider the 1982 Whiteshell Master Plan and the Park's Main Thoroughfares and Park Entrances in the design

A gravel surface roadway was considered sufficient to meet the needs of Manitoba Hydro. For this project, the road will originate at the current tramway loading dock in Pointe du Bois and will terminate at the powerhouse building at the Slave Falls Generating Station.

Table 2.1: Alignment Evaluation

Evaluation Criteria	Alignment Options		
	Alignment 1	Alignment 2	Alignment 3
Environmental Screening			
Ungulates	3	1	2
Upland Birds	3	2	1
Bear	3	2	1
Trapping	3	1	2
Species at Risk	1	2	2
Beaver	1	2	3
Fish	2	1	1
Waterfowl	1	2	3
Amphibians	1	2	2
Water Crossing	3	1	1
Forest Loss	3	2	1
Wetlands/Marsh	1	2	3
Muskeg	3	1	2
Roads/Railway	3	2	1
Built-up Areas	3	3	3
Potential Road Distance	3	1	2
Historic Resources	3	2	1
Wild Rice	n/a	n/a	n/a
Crown Land Holdings	1	1	1
Private Land Holdings	2	2	1
First Nation Traditional Use	1	1	1
Game Refuges	1	3	3
Operational Issues			
Geometry	1	3	2
Intersections	3	3	3
Stream Crossing Structures	3	1	1
Length through Unsuitable Subgrade Material	1	3	2
Use of Existing Railway Embankment	3	2	1
Implementation			
Impacts on Tramway During Construction	2	3	3
Impacts on Communications Line During Construction	2	3	3
Right-of-Way Acquisition	3	1	1
Cost			
Total Estimated Cost	3	1	1
Point Total	**66**	**54**	**53**

Source: Earth Tech Canada 2007