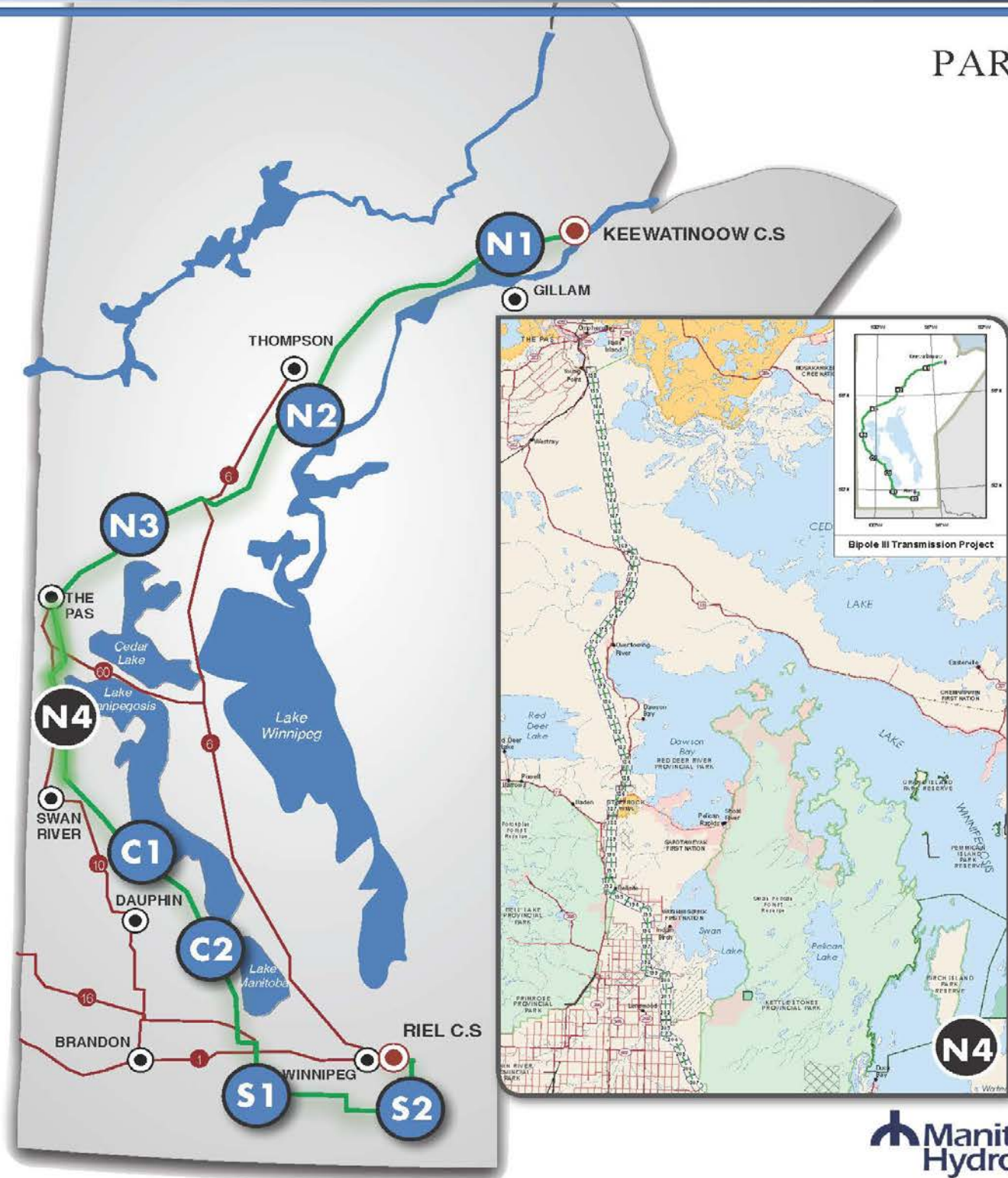


BIPOLE III TRANSMISSION PROJECT CONSTRUCTION ENVIRONMENTAL PROTECTION PLAN - SECTION N4

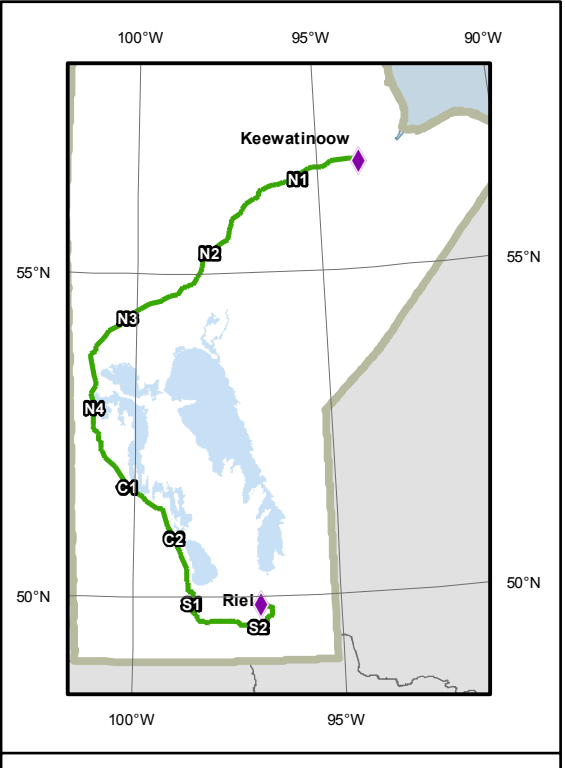
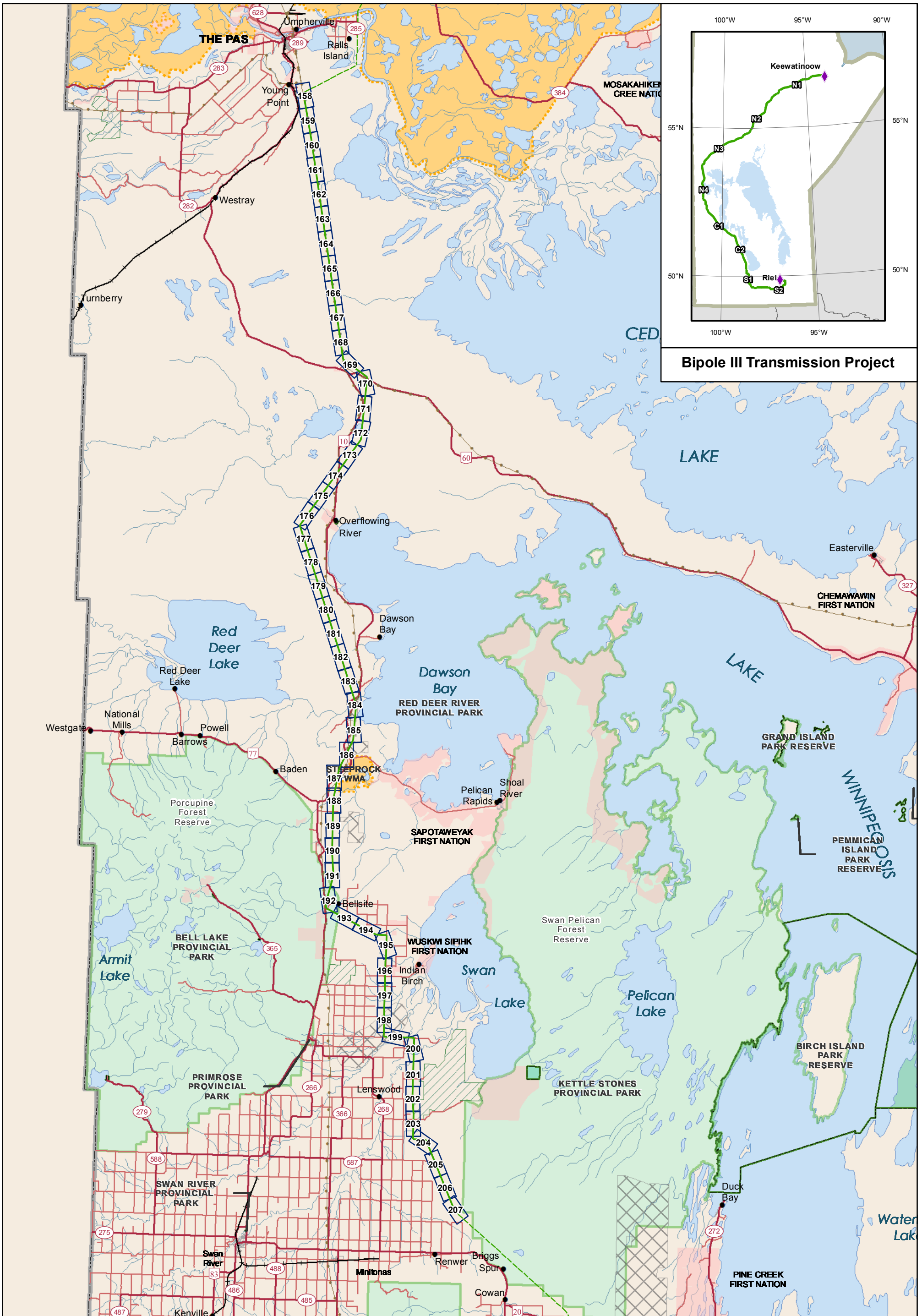
Mapbook

PART 2



Aboriginal Traditional Knowledge

Manitoba Hydro recognizes the unique relationship Aboriginal communities have with their areas of use and is appreciative to all the communities who took time to share information about their history and culture as well as their valued knowledge and perspectives with regards to the Bipole III study area and Project. The ATK that has been shared assisted Manitoba Hydro in: developing a greater understanding of the study area; identifying potential Project effects; planning and designing the Project; developing potential mitigation measures, some of which can be found throughout this document.



Bipole III Transmission Project



Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, Stantec, ProvMB, NRCAN
 Date Created: April 10, 2014

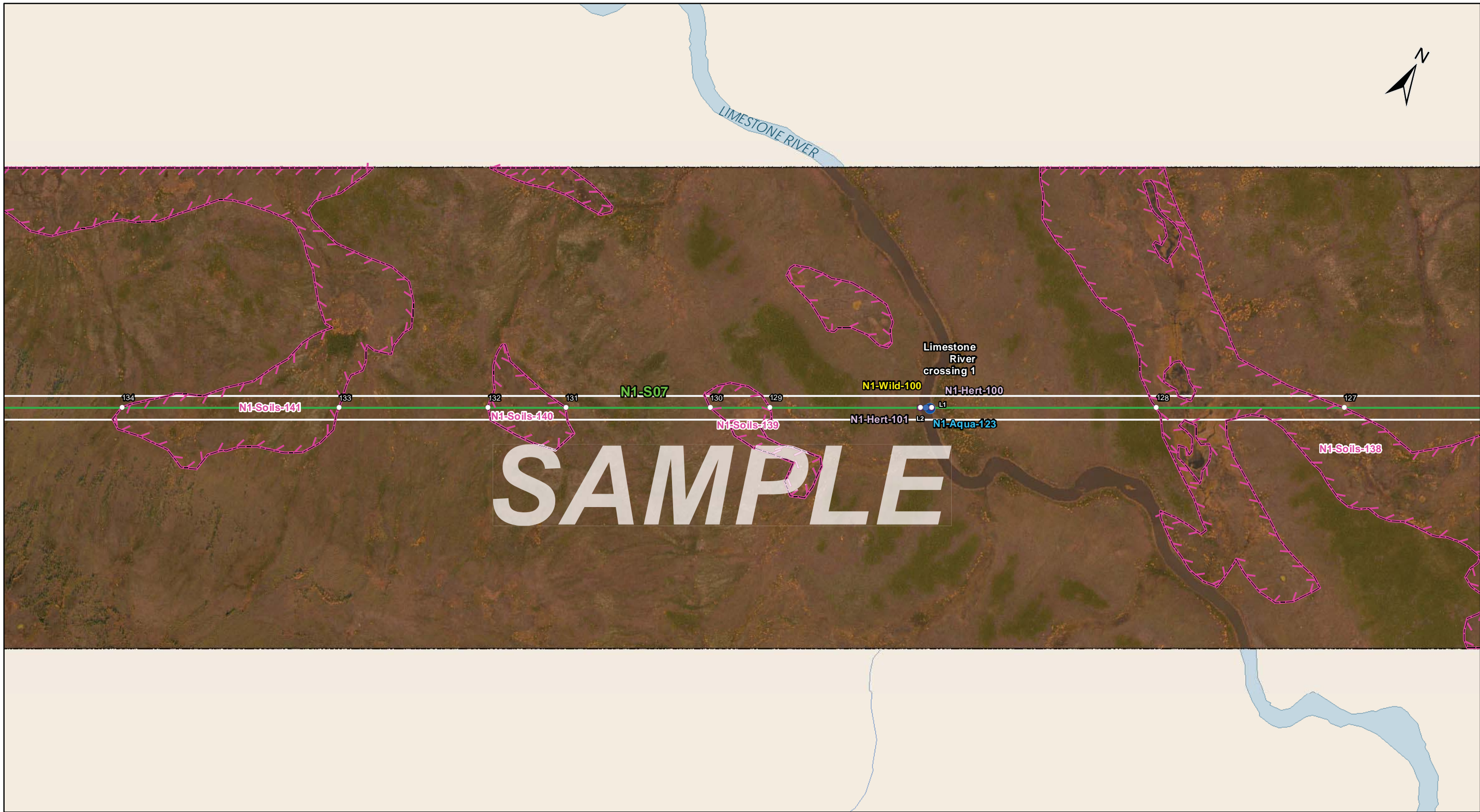
0 7.5 15 Kilometres
 0 5 10 Miles

1:550,000

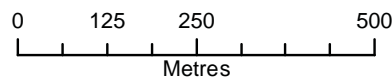
Legend	
	Final Preferred Route
	Section N2
	Map Index Grid (1:10,000)
	Transmission Line
	Mineral Rights
	First Nation
	Community Pasture
	Provincial Forest
	Provincial Park

Bipole III Transmission Line Project
Construction Environmental Protection Plan
 N4 Construction Section
 Key Map Index

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Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: December 09, 2013



1:10,000

Land Base

- Transmission Line
- Highway
- Major Road
- Local Road
- Winter Road
- +— Railway (Operational)
- +— Railway (Discontinued)
- ⊠ Mining

Project Infrastructure

- * Angle Tower Locations
- BPIII Final Preferred Route
- 66 m Right of Way

Points of Access*

- Proposed Access Point
 - Major Stream Crossing
 - ▲ Abandoned Rail Crossing
 - ▲ Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPIII Access Management Database

ESS Features

- Heritage
- Archaeological
- Water
- Water Crossing
- Wildlife
- Birds and Habitat
- Soils and Terrain
- Permafrost

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section N1
 Environmentally Sensitive Site Locations**

SAMPLE MITIGATION TABLE (see adjacent KEY for additional information)

MAP NUMBER : 17 ¹

ESS Group : Water Crossing ²

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S07	N1-Aqua-123	Limestone River	754280	6280471	14N	12m	12m	Low	Important

3

Potential Effects: ⁴

Habitat loss & contamination from structure foundations & installations; increased erosion & sedimentation of streams; damage to stream banks; loss of riparian vegetation; fish habitat disturbance & impeded fish movement

Specific Mitigation: ⁵

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Use existing trails, roads or cut lines whenever possible as access routes

ESS Group : Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S07	N1-Wild-100	Limestone River crossing; movement route for raptors and waterfowl	Site: L1 to L2	E- 754292 N- 6280478	E- 754267 N- 6280463	14N	29 m

3

Potential Effects: ⁴

Higher risk of wire collision, risk of wire collision is localized to the right-of-way

Specific Mitigation: ⁵

- Adhere to reduced risk timing windows for protection of birds (August 1- April 30)
- Maintain setback during timing window

ESS Group : Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S07	N1-Soils-138	Permafrost	Site: 127 to 128	E-755259 N-6281038	E-754819 N-6280783	14N	509 m

3

Potential Effects: ⁴

Melting or loss of permafrost due to disturbance of the active layer

Specific Mitigation: ⁵

- Carry out construction activities on frozen ground to minimize surface damage and rutting
- Use existing trails, roads or cut lines whenever possible as access routes
- Avoid organic soils containing permafrost to the extent possible
- Remove trees by low-disturbance methods

**ESS and mitigation shown includes only a sample of actual mitigation for the ESS features listed; refer to the Construction Environmental Protection plan for all specific mitigation measures recommended*

KEY to SAMPLE MITIGATION TABLE

1 Map on which ESS listed in the ESS Location Summary tables are illustrated

2 ESS Group classification of ESS shown on the map

3 ESS location summary; includes the following fields:

- Sec-Seg - ID of the construction section (i.e. N1) and segment (i.e. S03) for ESS location
- ESS ID - Site specific ID assigned to each ESS according to **naming convention** listed below
- ESS Name - Brief name/description of ESS
- Easting/Northing - UTM coordinates of ESS location (for points only)
- Location - site identification numbers for the start and stop site points of ESS intersection with the ROW (lines and polygons only)
- Start/Stop - UTM coordinates of the start/stop identification numbers listed in the "Location" field (lines and polygons only)
- Characteristics of stream crossings identified in the ESS Location Summary tables (where applicable and as information is available)

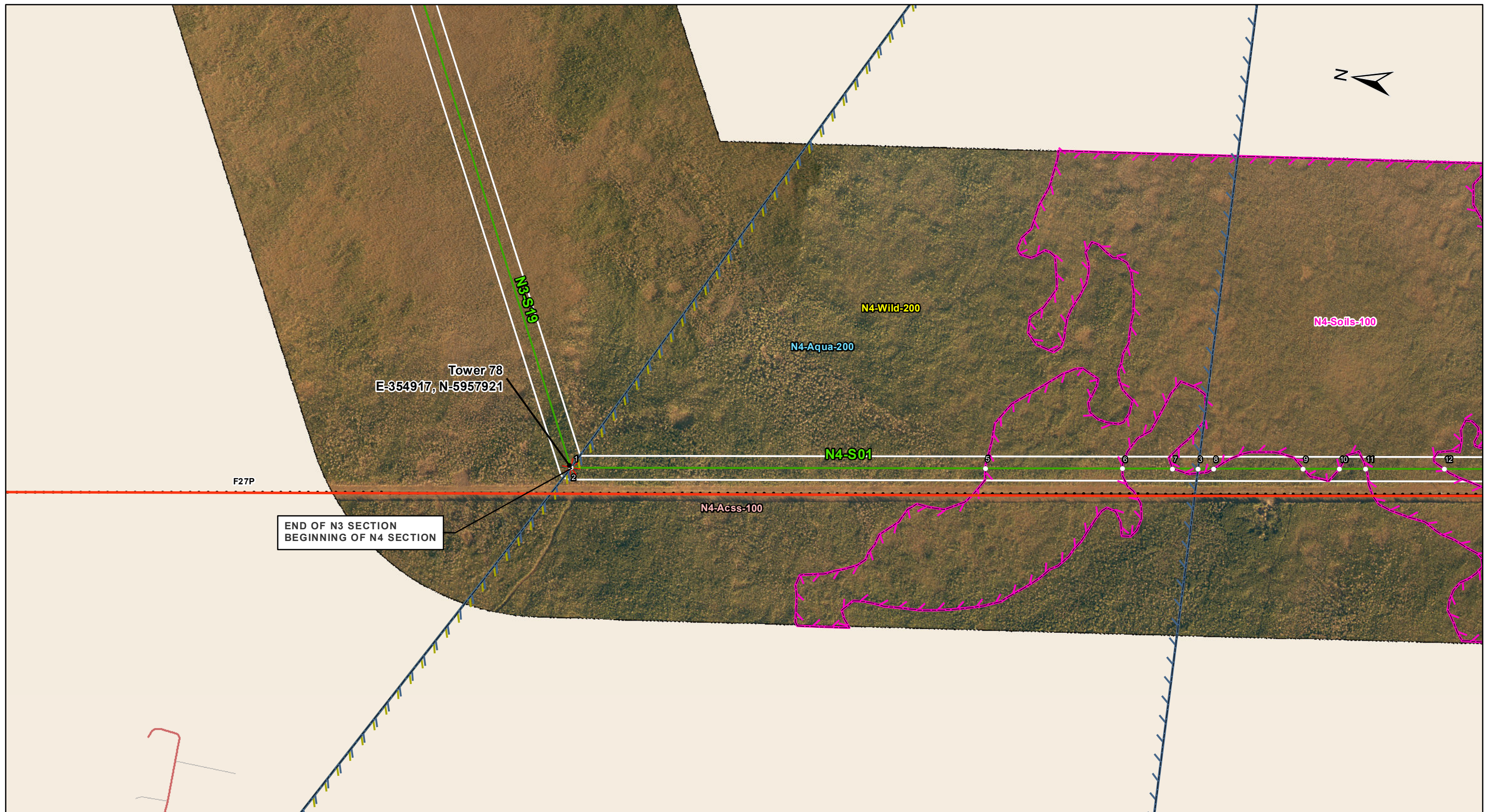
4 Potential effects identified for ESS listed in the ESS Location Summary table

5 Mitigation measures identified for ESS listed in the ESS Location Summary table

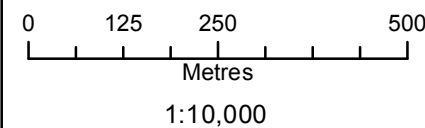
ESS NAMING CONVENTION

CATEGORY	GROUP (Number Series Representing Group)	ESS ID (Section ID-Category-Group Number)	
Access	Intersection (100)	N1-Acss-100	
	Ecosystem	Habitat (100)	N1-Eco-100
		Research (200)	N1-Eco-200
Heritage	Species of Concern (300)	N1-Eco-300	
	Heritage	Archaeological (100)	N1-Hert-100
		Cultural (200)	N1-Hert-200
Land Use	Historic (300)	N1-Hert-300	
	Land Use	Conservation (100)	N1-LUse-100
		Crown Land Encumbrance (200)	N1-LUse-200
		Recreation (300)	N1-LUse-300
Residential (400)		N1-LUse-400	
Resource Use	Agriculture (100)	N1-RUse-100	
	Food/Medicinal (200)	N1-RUse-200	
	Forestry (300)	N1-RUse-300	
	Hunting/Fishing (400)	N1-RUse-400	
	Trapping (500)	N1-RUse-500	
	Soils and Terrain	Permafrost (100-200)	N1-Soils-100
Erosion (300)		N1-Soils-300	
Terrain (400)		N1-Soils-400	
Water	Water Crossing (100)	N1-Aqua-100	
	Groundwater (200)	N1-Aqua-200	
	Wetlands (300)	N1-Aqua-300	
Wildlife	Birds and Habitat (100)	N1-Wild-100	
	Mammal and Habitat (200)	N1-Wild-200	
	Reptiles/Amphibians and Habitat (300)	N1-Wild-300	

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Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: April 10, 2014
 Version: Draft



- Land Base**
- Transmission Line
 - Highway
 - Major Road
 - Local Road
 - Winter Road
 - Railway (Operational)
 - Railway (Discontinued)
 - First Nation
 - Mining
 - Provincial Forest

- Project Infrastructure**
- * Angle Tower Locations
 - BPIII Final Preferred Route
 - 66 m Right of Way

- Points of Access***
- Proposed Access Point
 - Major Stream Crossing
 - ▲ Abandoned Rail Crossing
 - ▲ Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPIII Access Management Database

- ESS Features**
- Access
 - Intersection
 - Wildlife**
 - Mammals and Habitat
 - Soils and Terrain**
 - Permafrost
 - Water**
 - Groundwater

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section N4
 Environmentally Sensitive Site Locations**

Draft: For Discussion Purposes Only

ESS Group: Mammals and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S01	N4-Wild-200	MCWS Caribou Sensitive Area	Site: 1 to 4	E-354917 N-5957921	E-361228 N-5915591	14N	42800 m

Potential Effects:

The Bog Woodland Caribou Range Sensitive Area

Specific Mitigation:

- Manitoba Hydro will not support development of designated motorized recreational trail use within areas described above if requested.
- Extension of wildlife crossing and vegetation management measures to the 230 kV line running adjacent to the Bipole III transmission line in this range. Location of specific measures on the 230kV line to be determined in conjunction with Wildlife Branch.
- No shear blading to clear the right of way (ROW) in the sensitive range. Selective cutting methods will only be used leaving low shrub and herb plant communities on the ROW.
- Maintenance trails to be maintained to reduce line of sight for hunters and predators.
- Annual ground inspection of towers to occur late in winter season to avoid creating packed snow trails that facilitate predator use of the ROW.
- At PTH 10 and 60 crossings a vegetated buffer zone x m wide will be left at the edge of the ROW to reduce visibility and access on to the ROW from the highways. A maintenance trail will still be needed on to the ROW from the highway.
- Any access trails used to access the ROW for construction that will not be needed for future maintenance will be decommissioned on completion of construction.
- Any culverts or road improvements will be removed and the first 100 m from of the trail dug up to the extent possible. Available slash < 1 m in height will also be evenly distributed over the access trail to reduce the possibility of use be ATV traffic.

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S01	N4-Aqua-200	Aquifers Vulnerable to contamination	Site: 2 to 3	E-354917 N-5957921	E-355209 N-5956248	14N	1698 m

Potential Effects:

Potential groundwater contamination from a contingency event (e.g., spill)

Specific Mitigation:

- Marshalling yards will be located on upland sites where possible.
- An Emergency Preparedness and Spill Response Plan will be developed and an emergency response spill kit will be kept on-site at all times in case of fluid leaks or spills from machinery.
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions.
- Emergency response plans for sealing/grouting and pumping will be implemented as required.

ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S01	N4-Soils-100	Permafrost	Site: 5 to 6	E-355110 N-5956815	E-355174 N-5956449	14N	371m
N4-S01	N4-Soils-100	Permafrost	Site: 7 to 8	E-355197 N-5956316	E-355216 N-5956207	14N	110m
N4-S01	N4-Soils-100	Permafrost	Site: 9 to 10	E-355258 N-5955967	E-355275 N-5955870	14N	98m
N4-S01	N4-Soils-100	Permafrost	Site: 11 to 12	E-355287 N-5955800	E-355324 N-5955591	14N	212m

Potential Effects:

Melting or loss of permafrost due to disturbance of the active layer

Specific Mitigation:

- Carry out construction activities on frozen ground to minimize surface damage and rutting.
- Use existing trails, roads or cut lines whenever possible as access routes
- Avoid organic soils containing permafrost to the extent possible
- Maintain shrub and herbaceous vegetation to the extent possible
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Implement erosion protection before commencing construction in accordance with Erosion/Sediment Control Plan

ESS Group: Intersection

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
N4-S04	N4-Acss-100	C1	Snowmobile Trail	E-360362 N-5897633	14N

Potential Effects:

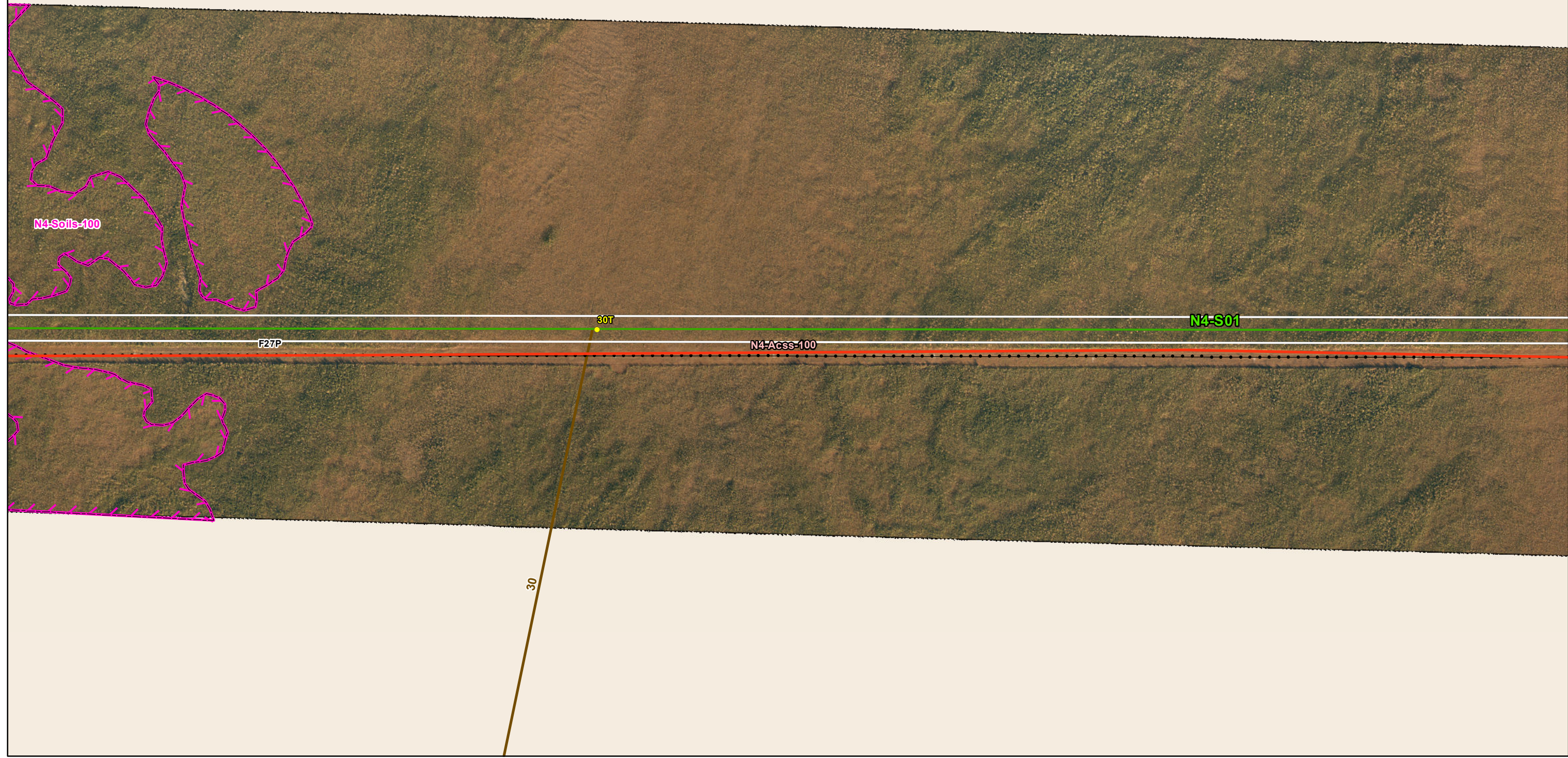
Potential interference with snowmobilers; safety issues

Specific Mitigation:

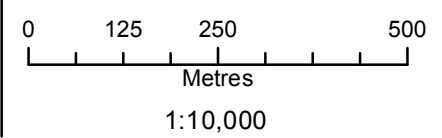
- Identify and flag prior to start of work
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

MAP SHEET FULLY WITHIN THE N4-WILD-200 FEATURE

N4-Wild-200



Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: April 10, 2014
 Version: Draft



- Land Base**
- Transmission Line
 - Highway
 - Major Road
 - Local Road
 - Winter Road
 - Railway (Operational)
 - Railway (Discontinued)
 - First Nation
 - Mining
 - Provincial Forest

- Project Infrastructure**
- * Angle Tower Locations
 - BPiII Final Preferred Route
 - 66 m Right of Way

- Points of Access***
- Proposed Access Point
 - Major Stream Crossing
 - ▲ Abandoned Rail Crossing
 - ▲ Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPiII Access Management Database

- ESS Features**
- Access
 - Intersection
 - Wildlife
 - Mammals and Habitat
 - Soils and Terrain
 - Permafrost

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section N4
 Environmentally Sensitive Site Locations**

Draft: For Discussion Purposes Only

ESS Group: Mammals and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S01	N4-Wild-200	MCWS Caribou Sensitive Area	Site: 1 to 4	E-354917 N-5957921	E-361228 N-5915591	14N	42800m

Potential Effects:

The Bog Woodland Caribou Range Sensitive Area

Specific Mitigation:

- Manitoba Hydro will not support development of designated motorized recreational trail use within areas described above if requested.
- Extension of wildlife crossing and vegetation management measures to the 230 kV line running adjacent to the Bipole III transmission line in this range. Location of specific measures on the 230kV line to be determined in conjunction with Wildlife Branch.
- No shear blading to clear the right of way (ROW) in the sensitive range. Selective cutting methods will only be used leaving low shrub and herb plant communities on the ROW.
- Maintenance trails to be maintained to reduce line of sight for hunters and predators.
- Annual ground inspection of towers to occur late in winter season to avoid creating packed snow trails that facilitate predator use of the ROW.
- At PTH 10 and 60 crossings a vegetated buffer zone x m wide will be left at the edge of the ROW to reduce visibility and access on to the ROW from the highways. A maintenance trail will still be needed on to the ROW from the highway.
- Any access trails used to access the ROW for construction that will not be needed for future maintenance will be decommissioned on completion of construction.
- Any culverts or road improvements will be removed and the first 100 m from of the trail dug up to the extent possible. Available slash < 1 m in height will also be evenly distributed over the access trail to reduce the possibility of use be ATV traffic.

ESS Group: Intersection

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
N4-S04	N4-Acss-100	C1	Snowmobile Trail	E-360362 N-5897633	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

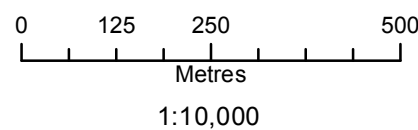
- Identify and flag prior to start of work
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

MAP SHEET FULLY WITHIN THE N4-WILD-200 FEATURE

N4-Wild-200



Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: April 10, 2014
 Version: Draft



- Land Base**
- Transmission Line
 - Highway
 - Major Road
 - Local Road
 - Winter Road
 - Railway (Operational)
 - Railway (Discontinued)
 - First Nation
 - Mining
 - Provincial Forest

- Project Infrastructure**
- * Angle Tower Locations
 - BPiII Final Preferred Route
 - 66 m Right of Way

- Points of Access***
- Proposed Access Point
 - Major Stream Crossing
 - ▲ Abandoned Rail Crossing
 - ▲ Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPiII Access Management Database

- ESS Features**
- Ecosystem**
 - Species of Concern
 - Access**
 - Intersection
 - Wildlife**
 - Mammals and Habitat
 - Ecosystem**
 - Habitat

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section N4
 Environmentally Sensitive Site Locations**

Draft: For Discussion Purposes Only

ESS Group: Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S01	N4-Eco-100	Patterned Fen	Site: 13 to 14	E-356426 N-5949046	E-356635 N-5947594	14N	1466m

Potential Effects:

Potential loss of plants of conservation concern and habitat disturbance from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Use existing access roads and trails to the extent possible
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Install erosion protection and sediment control measures in accordance with Erosion/Sediment Control Plan

ESS Group: Mammals and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S01	N4-Wild-200	MCWS Caribou Sensitive Area	Site: 1 to 4	E-354917 N-5957921	E-361228 N-5915591	14N	42800 m

Potential Effects:

The Bog Woodland Caribou Range Sensitive Area

Specific Mitigation:

- Manitoba Hydro will not support development of designated motorized recreational trail use within areas described above if requested.
- Extension of wildlife crossing and vegetation management measures to the 230 kV line running adjacent to the Bipole III transmission line in this range. Location of specific measures on the 230kV line to be determined in conjunction with Wildlife Branch.
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- Any access trails used to access the ROW for construction that will not be needed for future maintenance will be decommissioned on completion of construction.
- Any culverts or road improvements will be removed and the first 100 m from of the trail dug up to the extent possible. Available slash < 1 m in height will also be evenly distributed over the access trail to reduce the possibility of use be ATV traffic.

ESS Group: Intersection

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
N4-S04	N4-Acss-100	C1	Snowmobile Trail	E-360362 N-5897633	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

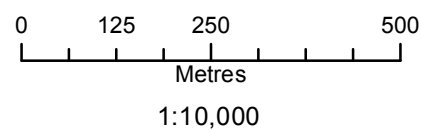
- Identify and flag prior to start of work
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

MAP SHEET FULLY WITHIN THE N4-WILD-200 FEATURE

N4-Wild-200



Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: April 10, 2014
 Version: Draft



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 - ▲ Abandoned Rail Crossing
 - ▲ Rail Crossing
 - Transmission Line Crossing
 - Proposed Access Route
- *Labels correspond to BPIII Access Management Database

- ESS Features**
- Access
 - Intersection
 - Wildlife
 - Mammals and Habitat
 - Ecosystem
 - Habitat

**Bipole III Transmission Project
 Construction Environmental Protection Plan
 Construction Section N4
 Environmentally Sensitive Site Locations**

Draft: For Discussion Purposes Only

ESS Group: Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S01	N4-Eco-100	Patterned Fen	Site: 13 to 14	E-356426 N-5949046	E-356635 N-5947594	14N	1466m

Potential Effects:

Potential loss of plants of conservation concern and habitat disturbance from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Use existing access roads and trails to the extent possible
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Install erosion protection and sediment control measures in accordance with Erosion/Sediment Control Plan

ESS Group: Mammals and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N4-S01	N4-Wild-200	MCWS Caribou Sensitive Area	Site: 1 to 4	E-354917 N-5957921	E-361228 N-5915591	14N	42800 m

Potential Effects:

The Bog Woodland Caribou Range Sensitive Area

Specific Mitigation:

- Manitoba Hydro will not support development of designated motorized recreational trail use within areas described above if requested.
- Extension of wildlife crossing and vegetation management measures to the 230 kV line running adjacent to the Bipole III transmission line in this range. Location of specific measures on the 230kV line to be determined in conjunction with Wildlife Branch.
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- Any culverts or road improvements will be removed and the first 100 m from of the trail dug up to the extent possible. Available slash < 1 m in height will also be evenly distributed over the access trail to reduce the possibility of use be ATV traffic.

ESS Group: Intersection

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
N4-S04	N4-Acss-100	C1	Snowmobile Trail	E-360362 N-5897633	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

- Identify and flag prior to start of work
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction