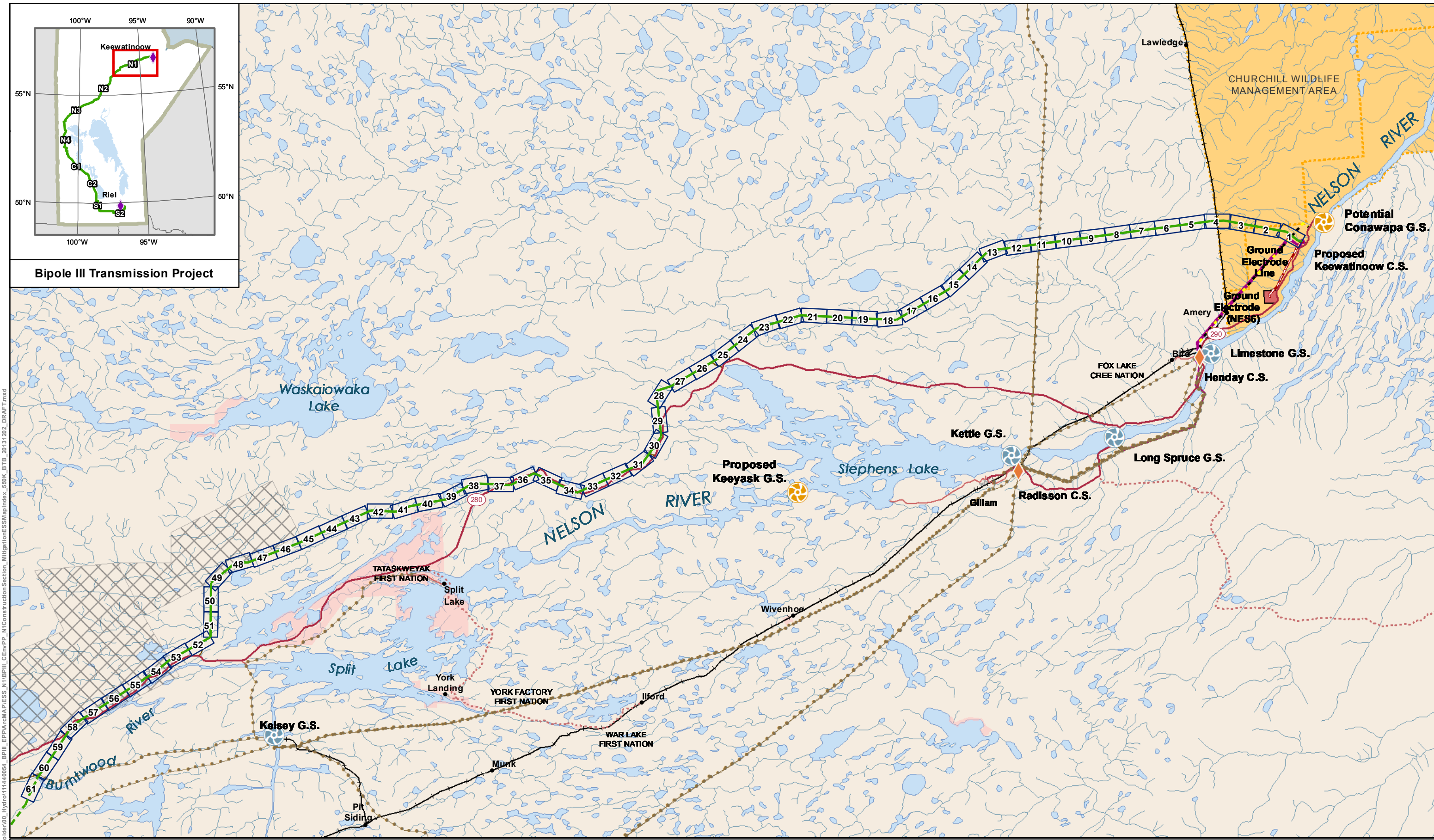


Bipole III Transmission Project



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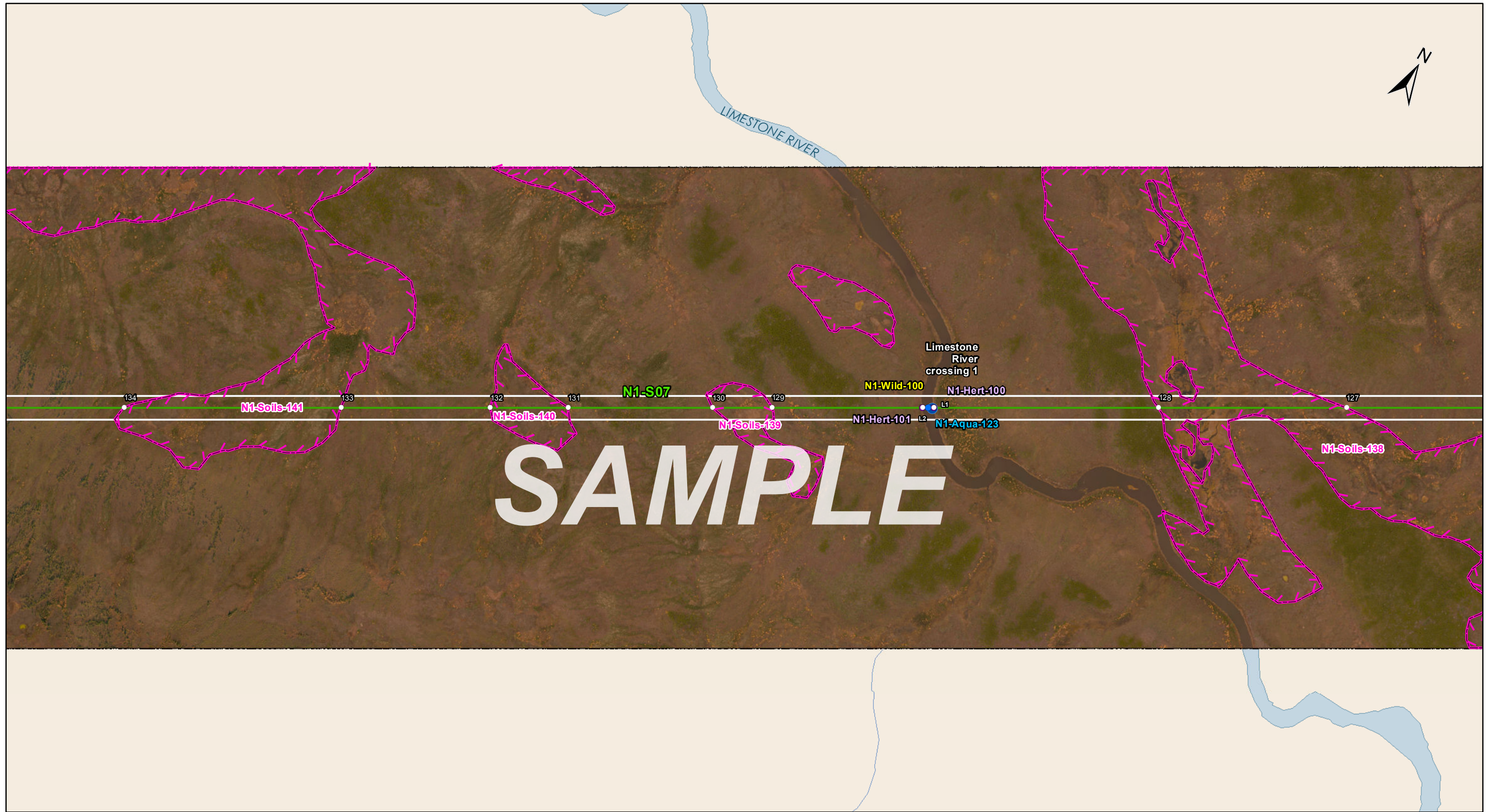


Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, Stantec, ProvMB, NRCAN
 Date Created: December 04, 2013



Legend	
	Final Preferred Route
	Section N1
	Converter Station
	Existing G.S.
	Proposed G.S.
	Transmission Line
	Ground Electrode
	Mineral Rights
	First Nation
	Wildlife Management Area

Bipole III Transmission Line Project
Construction Environmental Protection Plan
 N1 Construction Section
 Key Map Index



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

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- 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 N2 1
 Environmentally Sensitive Site Locations**

SAMPLE MITIGATION TABLE (see adjacent KEY for additional information)

MAP NUMBER : 17¹

ESS Group : Water Crossing²

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)

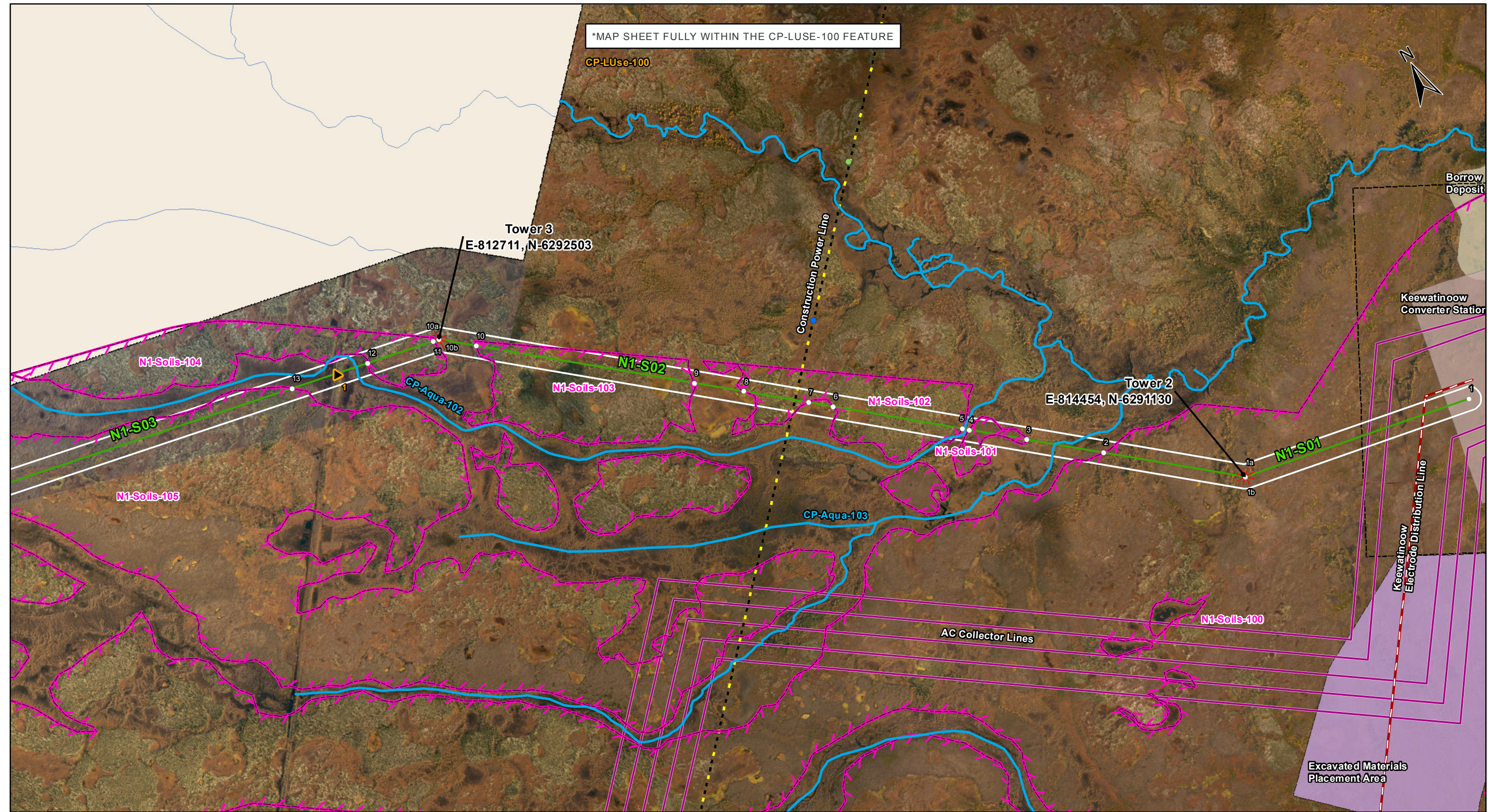
4 Potential effects identified for ESS listed in the ESS Location Summary table

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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*MAP SHEET FULLY WITHIN THE CP-LUSE-100 FEATURE

Manitoba Hydro

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

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<p>Land Base</p> <ul style="list-style-type: none"> Transmission Line Highway Major Road Local Road Winter Road Railway (Operational) Railway (Discontinued) Mining 	<p>Project Infrastructure</p> <ul style="list-style-type: none"> Angle Tower Locations BPIII Final Preferred Route 66 m Right of Way Construction Power (KN36) Ground Electrode Line AC Collector Line Borrow Deposits Excavated Material Placement Area Keewatinoo Converter Station 	<p>Points of Access*</p> <ul style="list-style-type: none"> Proposed Access Point Major Stream Crossing Abandoned Rail Crossing Rail Crossing Transmission Line Crossing Proposed Access Route <p><small>*Labels correspond to BPIII Access Management Database</small></p>
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ESS Features

Ecosystem

- Species of Concern

Water

- Water Crossing
- Water Crossing

Land Use

- Conservation

Soils and Terrain

- Permafrost

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

Map 1

MAP NUMBER : 1

ESS Group : Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S02	CP-Aqua-103	Unnamed Tributary of Goose Creek	814041	6291454	14N	N/A	N/A	Moderate	N/A
N1-S02	CP-Aqua-102	Unnamed Tributary of Goose Creek	813847	6291607	14N	N/A	N/A	Moderate	N/A
N1-S03	CP-Aqua-102	Unnamed Tributary of Goose Creek	812478	6292544	14N	N/A	N/A	Moderate	N/A

Potential Effects:

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

Specific Mitigation:

- 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
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream works or fording from April 15 - July 15

ESS Group: Conservation

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S01	CP-LUse-100	Churchill Wildlife Management Area	Site: 1 to 1A	E-815087 N-6291026	E-815087 N-6291026	14N	642 m
N1-S02	CP-LUse-100	Churchill Wildlife Management Area	Site: 1B to 10A	E-815087 N-6291026	E-812711 N-6292503	14N	2218 m
N1-S02	CP-LUse-100	Churchill Wildlife Management Area	Site: 10B to 37A	E-812711 N-6292503	E-802831 N-6294268	14N	10036 m

Potential Effects:

Within the Churchill Wildlife Management Area

Specific Mitigation:

- Must not place food for the purpose of attracting, feeding or holding polar bears
- All project staff must record all polar bears encountered/observed on a daily basis, any observations of polar bears or polar bear tracks must be reported to the MH Site Environmental Officer or MH Environmental Inspector
- All garbage must be stored in bear proof containers or within electric fencing and removed from Wildlife Management Area
- Clearing within the ROW will be kept to a minimum and with non -non-hazard trees removed. Any trees that are cleared must be cut, piled and burned under safe conditions
- Carry out construction activities on well frozen ground in wetlands

ESS Group : Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S01	N1-Soils-100	Permafrost	Site: 1 to 1A	E-815087 N-6291026	E-814454 N-6291130	14N	m
N1-S02	N1-Soils-100	Permafrost	Site: 1B to 2	E-814454 N-6291130	E-814147 N-6291371	14N	m
N1-S02	N1-Soils-101	Permafrost	Site: 3 to 4	E-813981 N-6291502	E-813857 N-6291600	14N	157 m
N1-S02	N1-Soils-102	Permafrost	Site: 5 to 6	E-813842 N-6291611	E-813562 N-6291831	14N	355 m
N1-S02	N1-Soils-102	Permafrost	Site: 7 to 8	E-813509 N-6292067	E-813370 N-6291983	14N	177 m
N1-S02	N1-Soils-103	Permafrost	Site: 9 to 10	E-813370 N-6293398	E-812792 N-6292438	14N	599 m
N1-S03	N1-Soils-104	Permafrost	Site: 11 to 12	E-812695 N-6292505	E-812511 N-6292538	14N	187 m
N1-S03	N1-Soils-105	Permafrost	Site: 13 to 14	E-812298 N-6292576	E-811331 N-6292749	14N	982 m

Potential Effects:

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

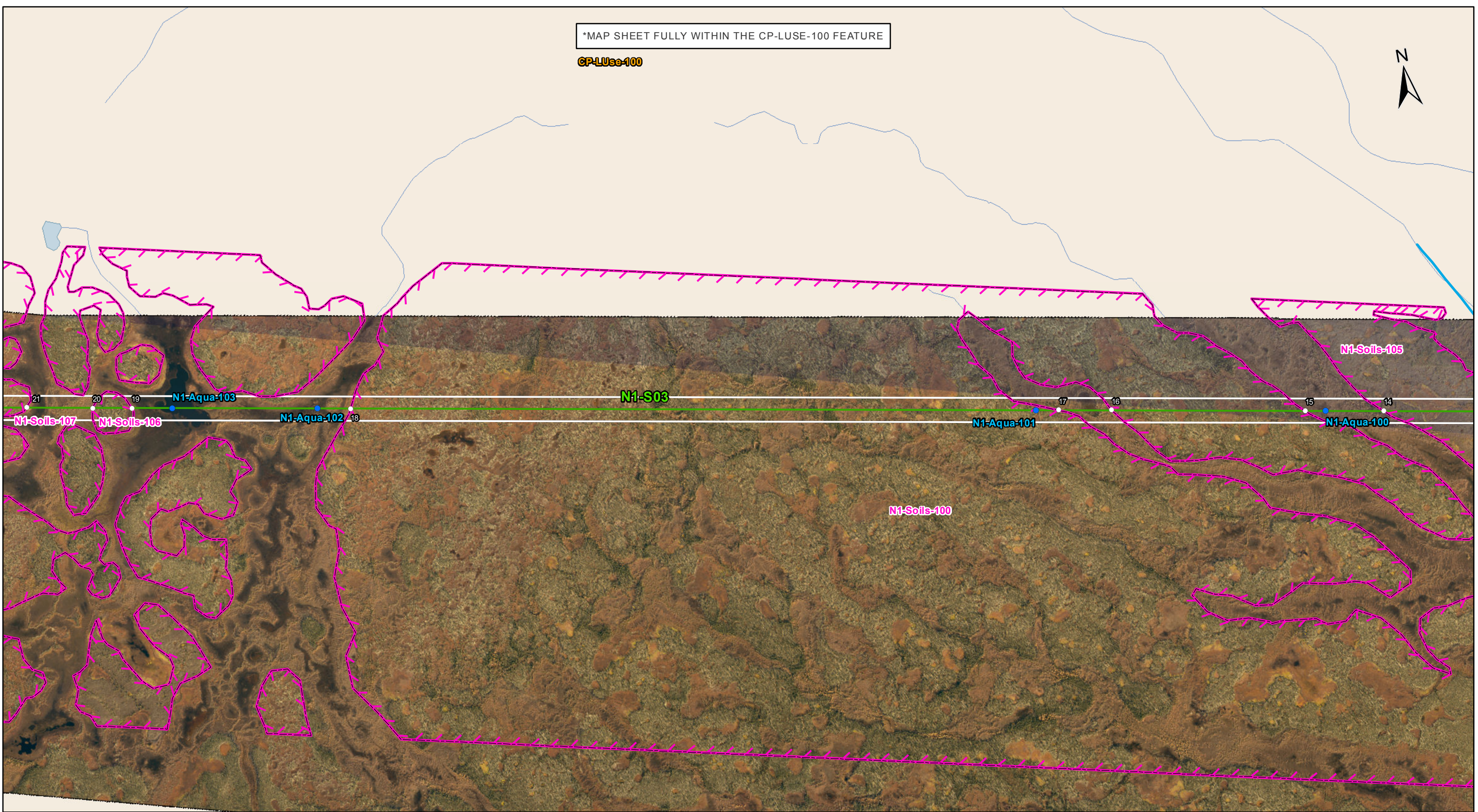
Specific Mitigation:

- 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

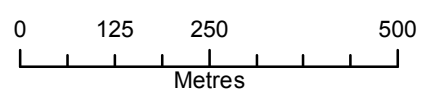
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*MAP SHEET FULLY WITHIN THE CP-LUSE-100 FEATURE

CP-LUse-100



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



- 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**
- Water
 - Water Crossing
 - Water
 - Water Crossing
 - Land Use
 - Conservation
 - Soils and Terrain
 - Permafrost

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

MAP NUMBER : 2

ESS Group : Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S03	N1-Aqua-100	Unnamed Tributary of Goose Creek	811177	6292777	14N	N/A	N/A	Moderate	Marginal
N1-S03	N1-Aqua-101	Unnamed Tributary of Goose Creek	810401	6292915	14N	N/A	N/A	Moderate	Marginal

Potential Effects:

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; rutting of floodplain

Specific Mitigation:

- 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
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream works or fording from April 15 - July 15

ESS Group : Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S03	N1-Aqua-102	Unnamed Tributary of Tiny Creek	808477	6293259	14N	N/A	N/A	Moderate	Marginal
N1-S03	N1-Aqua-103	Unnamed wetland	808089	6293329	14N	378m	43m	Low	No Fish Habitat

Potential Effects:

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

Specific Mitigation:

- 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
- Identify and flag buffer areas prior to start of work

- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction
- No instream works or fording from April 1 – June 30

ESS Group : Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S01	N1-Soils-100	Permafrost	Site: 15 to 16	E-811121 N-6292786	E-810603 N-6292879	14N	526 m
N1-S01	N1-Soils-100	Permafrost	Site: 17 to 18	E-810461 N-6292904	E-808566 N-6293243	14N	1925 m
N1-S03	N1-Soils-105	Permafrost	Site: 13 to 14	E-812298 N-6292576	E-811331 N-6292749	14N	982 m
N1-S03	N1-Soils-106	Permafrost	Site: 19 to 20	E-807979 N-6293348	E-807875 N-6293366	14N	105 m
N1-S03	N1-Soils-107	Permafrost	Site: 21 to 22	E-807698 N-6293398	E-807340 N-6293462	14N	363 m

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

MAP NUMBER : 2 cont'd

ESS Group: Conservation

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S02	CP-LUse-100	Churchill Wildlife Management Area	Site: 10B to 37A	E-812711 N-6292503	E-802831 N-6294268	14N	10036 m

Potential Effects:

Within the Churchill Wildlife Management Area

Specific Mitigation:

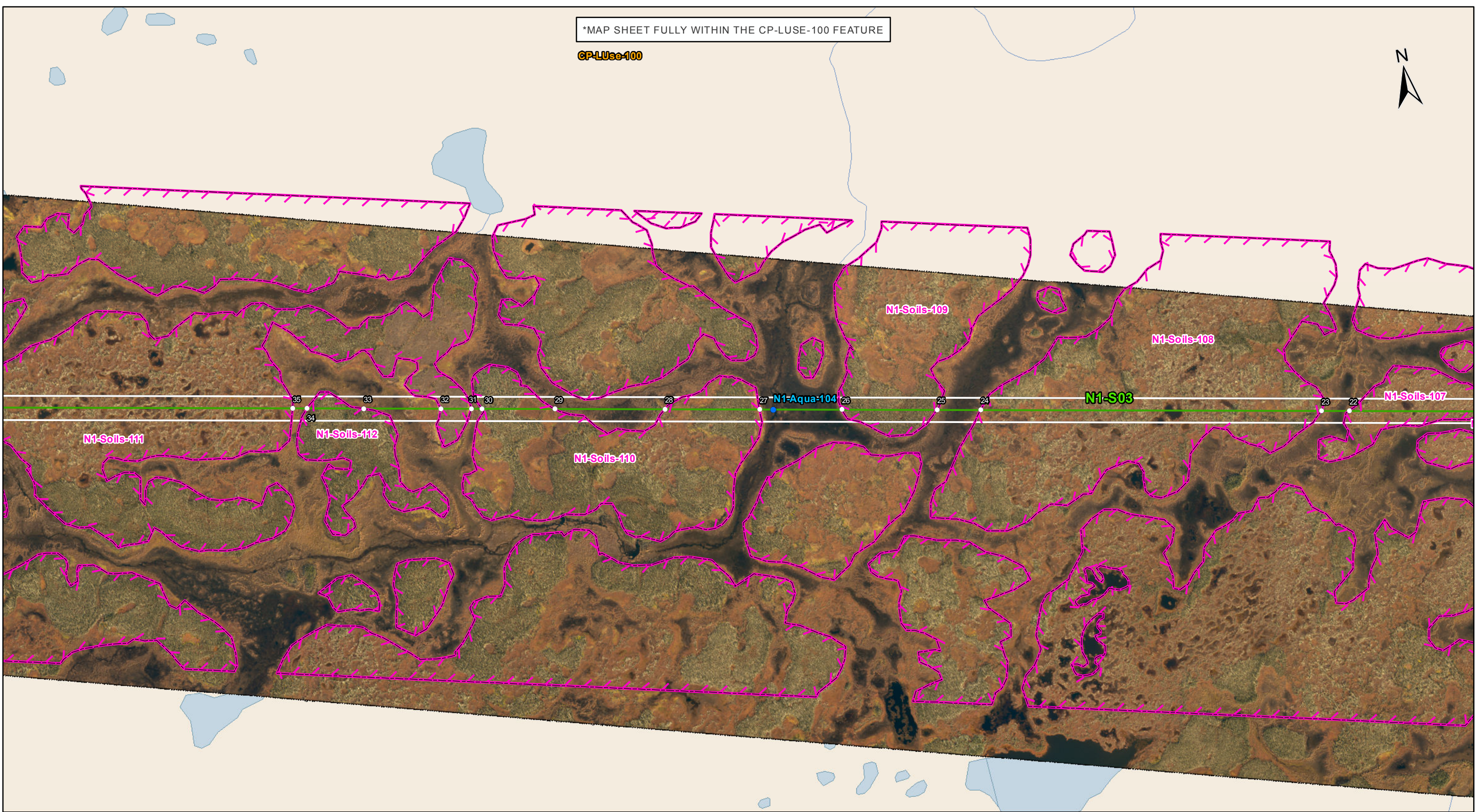
- Must not place food for the purpose of attracting, feeding or holding polar bears
- All project staff must record all polar bears encountered/observed on a daily basis, any observations of polar bears or polar bear tracks must be reported to the MH Site Environmental Officer or MH Environmental Inspector
- All garbage must be stored in bear proof containers or within electric fencing and removed from Wildlife Management Area
- Clearing within the ROW will be kept to a minimum and with non -non-hazard trees removed. Any trees that are cleared must be cut, piled and burned under safe conditions
- Carry out construction activities on well frozen ground in wetlands

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*MAP SHEET FULLY WITHIN THE CP-LUSE-100 FEATURE

CP-LUse-100



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 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: December 09, 2013

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- Land Base**
- Transmission Line
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 - Railway (Discontinued)
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- 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**
- Water**
 - Water Crossing
 - Land Use**
 - Conservation
 - Soils and Terrain**
 - Permafrost

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

MAP NUMBER : 3

ESS Group : Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
N1-S03	N1-Aqua-104	Unnamed Tributary of Goose Creek	805799	6293738	14N	N/A	5m	Moderate	Marginal

Potential Effects:

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; rutting of floodplain

Specific Mitigation:

- 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
- Identify and flag buffer areas prior to start of work
- Riparian Buffers shall be a minimum of 30m and increase in size based on slope of land entering waterway. Within these buffers shrub and herbaceous understory veg will be maintained along with trees that do not violate MH Veg Clearance Requirements
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Adhere to Department of Fisheries and Oceans (DFO) Operational Statements for Temporary Stream Crossings, Ice Bridges and Snow Fills, and Overhead Line Construction

ESS Group: Conservation

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S02	CP-LUse-100	Churchill Wildlife Management Area	Site: 10B to 37A	E-812711 N-6292503	E-802831 N-6294268	14N	10036 m

Potential Effects:

Within the Churchill Wildlife Management Area

Specific Mitigation:

- Must not place food for the purpose of attracting, feeding or holding polar bears
- All project staff must record all polar bears encountered/observed on a daily basis, any observations of polar bears or polar bear tracks must be reported to the MH Site Environmental Officer or MH Environmental Inspector
- All garbage must be stored in bear proof containers or within electric fencing and removed from Wildlife Management Area
- Clearing within the ROW will be kept to a minimum and with non -non-hazard trees removed. Any trees that are cleared must be cut, piled and burned under safe conditions
- Carry out construction activities on well frozen ground in wetlands

ESS Group : Permafrost

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
N1-S03	N1-Soils-107	Permafrost	Site: 21 to 22	E-807698 N-6293398	E-807340 N-6293462	14N	363 m
N1-S03	N1-Soils-108	Permafrost	Site: 23 to 24	E-807266 N-6293475	E-806353 N-6293638	14N	926 m
N1-S03	N1-Soils-109	Permafrost	Site: 25 to 26	E-806237 N-6293659	E-805982 N-6293705	14N	259 m
N1-S03	N1-Soils-110	Permafrost	Site: 27 to 28	E-805762 N-6293744	E-805508 N-6293789	14N	257 m
N1-S03	N1-Soils-110	Permafrost	Site: 29 to 30	E-805213 N-6293842	E-805019 N-6293877	14N	197 m
N1-S03	N1-Soils-111	Permafrost	Site: 31 to 32	E-804990 N-6293882	E-804908 N-6293897	14N	83 m
N1-S03	N1-Soils-111	Permafrost	Site: 35 to 36	E-804512 N-6293968	E-803669 N-6294118	14N	856 m
N1-S03	N1-Soils-112	Permafrost	Site: 33 to 34	E-804702 N-6293934	E-804551 N-6293960	14N	152 m

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