

BIPOLE III TRANSMISSION PROJECT CONSTRUCTION ENVIRONMENTAL PROTECTION PLAN - SECTION C2

MAPBOOK

PART 2



Aboriginal Traditional Knowledge

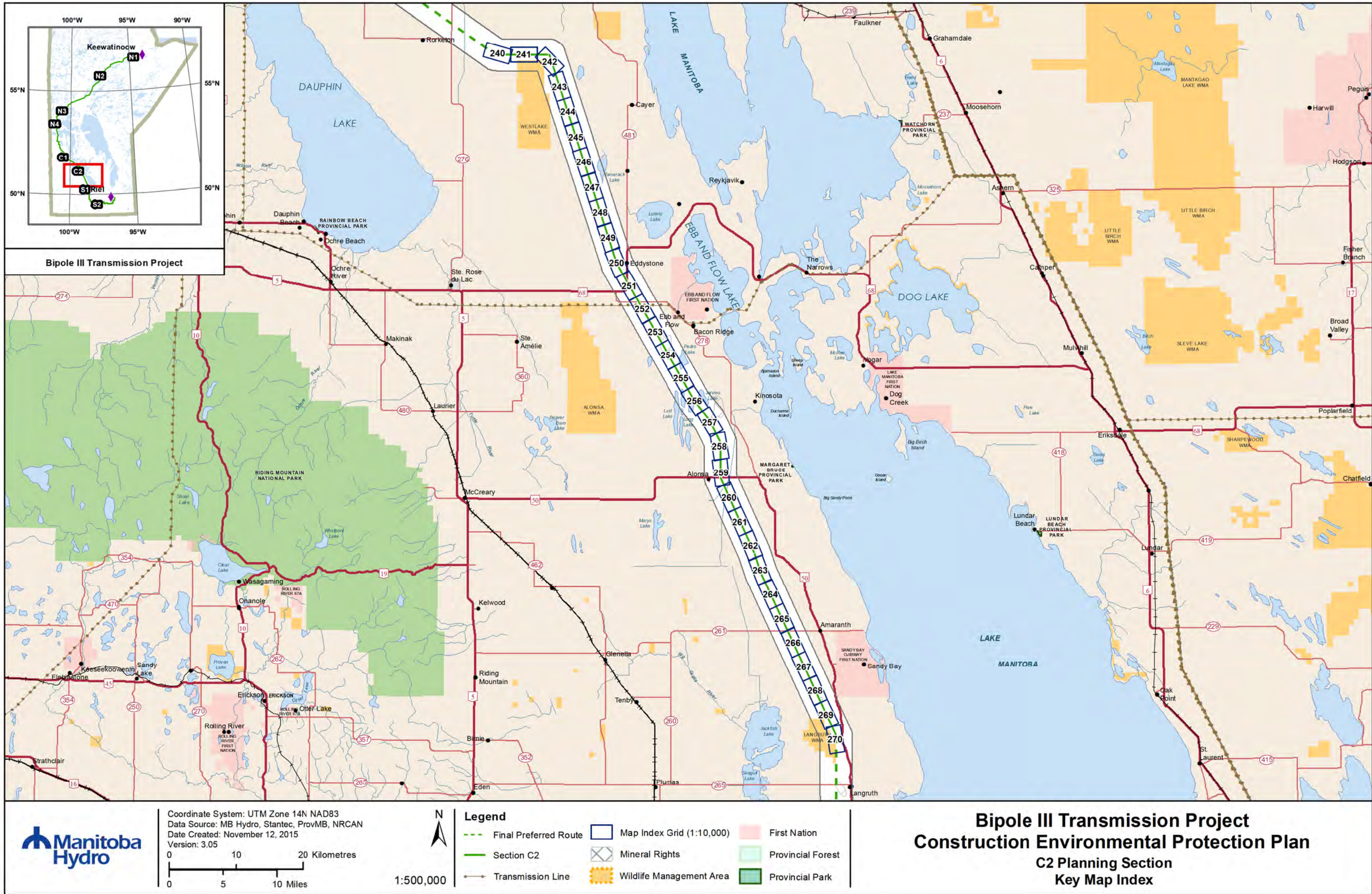
Manitoba Hydro recognizes the unique relationship Aboriginal communities have with their areas of use and is appreciative to all the communities who took time to share information about their history and culture as well as their valued knowledge and perspectives with regards to the Bipole III study area 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.

Document Owner:
Licensing and Environmental Assessment Department
Transmission Planning and Design Division
Transmission Business Unit
Manitoba Hydro

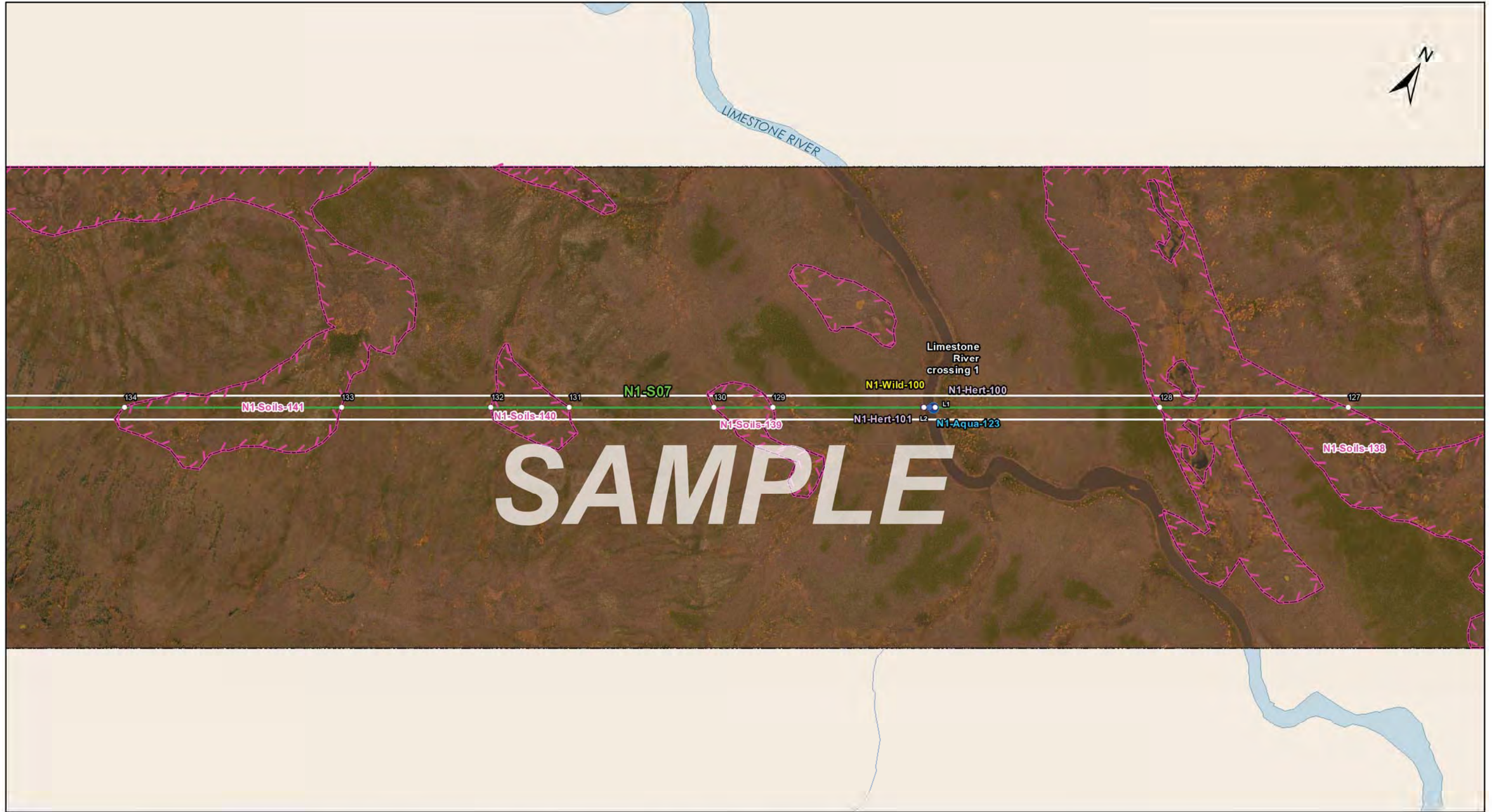
Final 4.0

List of Revisions- BP/III Environmental Protection Plan C2 Section

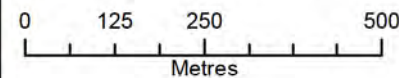
Number	Nature of Revision	Page/Map #	Revised By	Date
2.01	Non-Subterranean Black Bear Den "C2-Wild-108" (Existing Feb 2015)	Map 242	Kris Watts	2015-02-02
2.02	Computer scripting error discovered for C2-Ruse-300 to C2-Ruse-303, Coordinates were entered as identical, Update assigned accurate coordinates.	Page 242	Kris Watts	2015-03-06
2.03	Removed Mitigation measure that referred to DFO operational statement as Fisheries and Oceans Canada no longer uses operational statements but rather "Measures to Avoid Causing Harm to Fish and Fish Habitat" These measures are reflected in the text of the CEnvPP	Any mitigation text for stream crossings or water bodies	Kris Watts	2015-03-27
3.00	Sensitive sites will now be symbolized in grey with white Halos for better visibility	All maps with SS	Stantec	Oct 6 2015
3.01	Updates to Access trails as well as the addition of Bypass utilized during construction	Any associated map	Manitoba Hydro	Oct 6 2015
3.02	Removed the Bird Sensitive timing window mitigation measure statement that indicates a timing window as this is observed throughout the project not just at that specific ESS and indicated in the appendix of the text CEnvPP document	Any map with ESS Group: Birds and Habitat on it	Manitoba Hydro	Oct 6 2015
3.03	Removed Bird Sensitivity Area Line features that were used to indicate locations of intended bird diverter installations. This will be indicated to the contractor through engineer drawings	Removed from any associated map	Manitoba Hydro	Oct 6 2015
3.04	Removed labels from major stream crossings, rail crossing and transmission line crossings, and access route points. Labels for access routes remain.	Any associated Map	Manitoba Hydro	20151103
3.05	Incorporation of additional access routes from the 2014 construction season	Any associated Map	Stantec	20151112
3.06	Mitigation measures for Aqua points have included a timing window statement that considered fall spawning fish "No instream works or fording from September to..." These fish are unlikely to occur in streams and therefore aren't a concern in stream crossings. This statement will be updated in subsequent versions to read "No instream works or fording from April 1 - July 15"	Pages 256, 259-261	Manitoba Hydro	20150203
4.0	Addition of Annotation of Rural Road Layer	Any associated map	Stantec	20161103



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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**
- Water**
- Wildlife**
- Soils and Terrain**
- Permafrost

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

Map 17

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 construct on 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

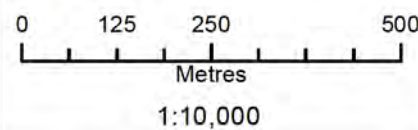
- 1 Map on which ESS listed in the ESS Location Summary tables are illustrated
- 2 ESS Group classification of ESS shown on the map
- 3 ESS location summary; includes the following fields:
- Sec-Seg - ID of the construction section (i.e. N1) and segment (i.e. S03) for ESS location
 - ESS ID - Site specific 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
	Species of Concern (300)	N1-Eco-300
Heritage	Archaeological (100)	N1-Hert-100
	Cultural (200)	N1-Hert-200
	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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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*
- Towers (Preliminary)*
- BPIII Final Preferred Route
- 66 m Right of Way

*Towers are subject to change, and are only used as a rough guide

Sensitive Sites*

- Point Features
- Linear Features
- Area Features

*Currently outside the Project footprint

Points of Access*

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- Major Stream Crossing
- Abandoned Rail Crossing
- Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Approved Access Route

ESS Features

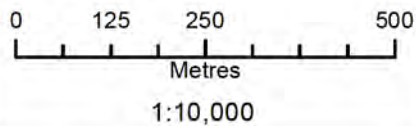
Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section C2
Environmentally Sensitive Site Locations

Map 240

No specific mitigation measures for this map, page intentionally left blank



Coordinate System: UTM Zone 14N NAD83
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- Land Base**
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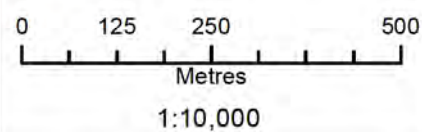
ESS Features

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section C2
Environmentally Sensitive Site Locations

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Land Base

- Transmission Line
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Project Infrastructure

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- ▲ Towers (Preliminary)*
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Sensitive Sites*

- Point Features
- Linear Features
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Points of Access*

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- ▲ Abandoned Rail Crossing
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ESS Features

Resource Use

- Forestry

Wildlife

- Mammals and Habitat

Bipole III Transmission Project **Construction Environmental Protection Plan** **Construction Section C2** **Environmentally Sensitive Site Locations**

ESS Group: Forestry

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
C2-S2	C2-RUse-300	Shelterbelt	476349	5690958	14N
C2-S2	C2-RUse-301	Shelterbelt	477954	5690918	14N
C2-S2	C2-RUse-302	Shelterbelt	477986	5690818	14N
C2-S2	C2-RUse-303	Shelterbelt	477997	5690786	14N

Potential Effects:

Removal in area of ROW intersect

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Identify and flag prior to start of work
- If Burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- Notify landowner regarding construction activities and schedule, and address concerns prior to start of work
- Use existing access trails, roads or cut lines whenever possible as access routes
- Limit all equipment to project footprint only, where possible
- No damage to vegetation on the edge of the Right of Way
- No pushing debris into adjacent timber

ESS Group: Mammals and Habitat

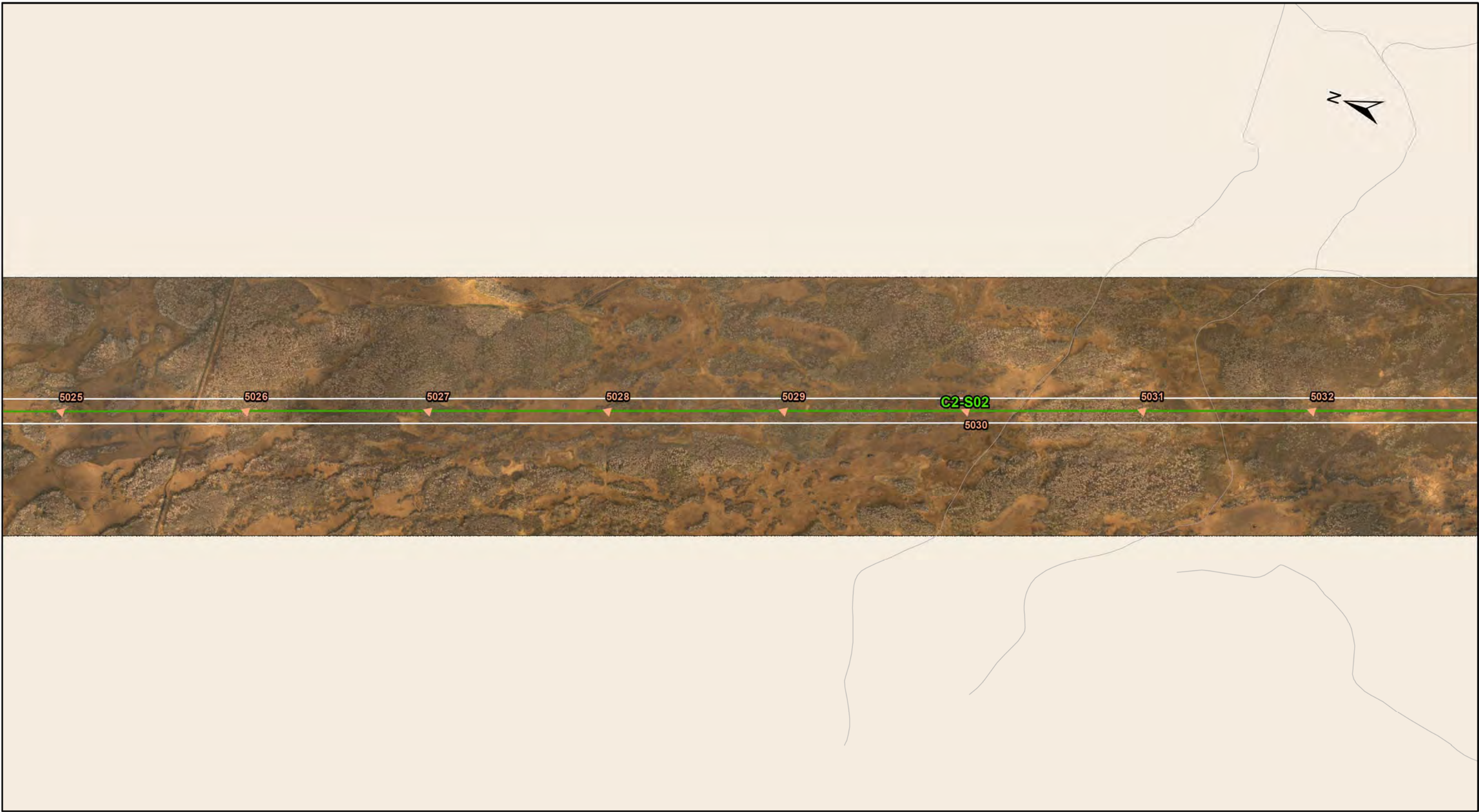
Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
C2-S1	C2-Wild-108	Black Bear Den	477084	5690959	14N

Potential Effects:

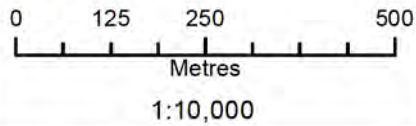
Habitat loss and disruption of wildlife

Specific Mitigation:

- Identify and flag out a 150m setback around den site prior to start of work
- Report location to regional conservation officer
- Remove trees within the flagged area between May1st and September 30th



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Sensitive Sites*

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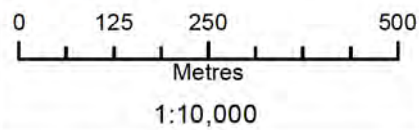
ESS Features

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section C2
Environmentally Sensitive Site Locations

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ESS Features

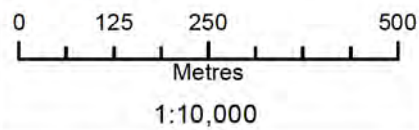
Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section C2
Environmentally Sensitive Site Locations

Map 244

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ESS Features

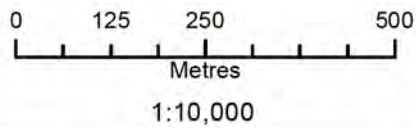
Bipole III Transmission Project
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Environmentally Sensitive Site Locations

Map 245

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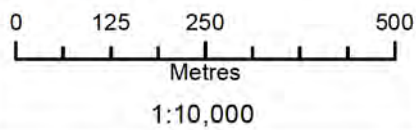
ESS Features

Bipole III Transmission Project
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- ESS Features**
- Resource Use**
- Forestry

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section C2
Environmentally Sensitive Site Locations

ESS Group: Forestry

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C2-S2	C2-RUse-304	Shelterbelt	Site: 1 to 2	E-484045 N-5672007	E-484056 N-5671973	14N	35m

Potential Effects:

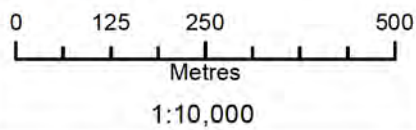
Removal in area of ROW intersect

Specific Mitigation:

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- Notify landowner regarding construction activities and schedule, and address concerns prior to start of work
- Use existing access trails, roads or cut lines whenever possible as access routes
- Limit all equipment to project footprint only, where possible
- No damage to Vegetation on the edge of the Right of Way
- No pushing debris into adjacent timber



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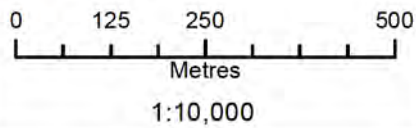
ESS Features

Bipole III Transmission Project
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Environmentally Sensitive Site Locations

No specific mitigation measures for this map, page intentionally left blank



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- ESS Features**
- Water**
- Water Crossing

Bipole III Transmission Project
Construction Environmental Protection Plan
Construction Section C2
Environmentally Sensitive Site Locations

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C2-S2	C2-Aqua-100	Unnamed wetland	Site: 3 to 4	E-487196 N-5662226	E-487204 N-5662201	14N	26m

Potential Effects:

Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation

Specific Mitigation:

- 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.



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ESS Features

Ecosystem

- Habitat

Land Use

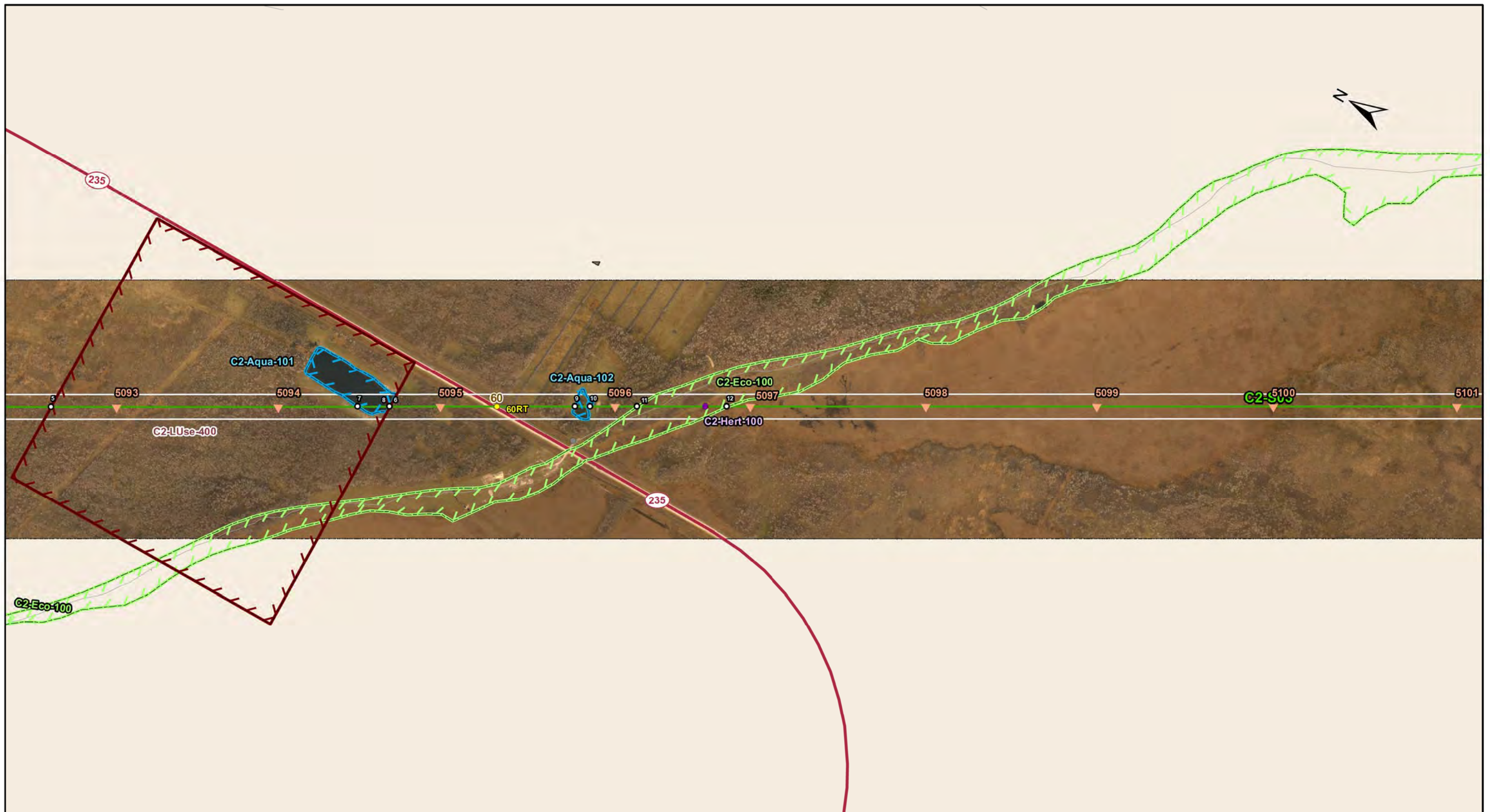
- Residential

Water

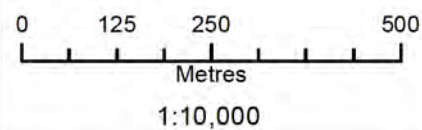
- Water Crossing

Bipole III Transmission Project
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No specific mitigation measures for this map, page intentionally left blank



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- ▲ Rail Crossing
- Transmission Line Crossing
- Bypass Trails
- Approved Access Route

ESS Features

Heritage

- Archaeological

Ecosystem

- Habitat

Land Use

- Residential

Water

- Water Crossing

Bipole III Transmission Project **Construction Environmental Protection Plan** **Construction Section C2** **Environmentally Sensitive Site Locations**

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
C2-S3	C2-Hert-100	Creek near PTH 235	489800	5656547	14N

Potential Effects:

Potential disturbance to Heritage Resource

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Identify and flag prior to start of work
- Conduct site investigation with Archaeologist post clearing and prior to construction
- Minimize surface disturbance around the site to the extent possible
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C2-S3	C2-Aqua-101	Small, unnamed waterbody	Site: 7 to 8	E-489343 N-5657365	E-489386 N-5657289	14N	87 m
C2-S3	C2-Aqua-102	Small, unnamed waterbody	Site: 9 to 10	E-489634 N-5656853	E-489654 N-5656817	14N	41 m

Potential Effects:

Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation

Specific Mitigation:

- 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.

ESS Group: Residential

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C2-S3	C2-LUse-400	Recreational Development – Crown land encumbrance	Site: 5 to 6	E-488933 N- 5658085	E-489386 N- 5657289	14N	916m

Potential Effects:

Potential disruption to recreational use activities

Specific Mitigation:

- Notify Manitoba Conservation, local authorities and operator regarding construction activities and schedule, and address concerns prior to construction
- Observe municipal and local by-laws and protocols including noise and work scheduling
- Minimize noise, dust and other emissions from work activities and maintain clean and aesthetic appearance of work site
- Provide warning signage for vehicle traffic and public safety

ESS Group: Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
C2-S3	C2-Eco-100	Dry Upland Prairie	Site: 11 to 12	E-489717 N-5656707	E-489837 N-5656496	14N	242 m

Potential Effects:

Potential loss of plants of conservation concern and grassland species/communities from clearing, construction, maintenance and decommissioning activities if route is moved to include this site.

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
- Remove trees by low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible
- Stabilize sites immediately after construction and re-vegetate disturbed areas in accordance with site Rehabilitation Plan