BIPOLE III TRANSMISSION PROJECT CONSTRUCTION ENVIRONMENTAL PROTECTION PLAN - SECTION S1



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.





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

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

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:

 - ESS Name Brief name/description of ESS
 - •
 - with the ROW (lines and polygons only)
 - field (lines and polygons only) ٠
 - 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

• 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

• Easting/Northing - UTM coordinates of ESS location (for points only)

Location - site identification numbers for the start and stop site points of ESS intersection

• Start/Stop - UTM coordinates of the start/stop identification numbers listed in the "Location"

Characteristics of stream crossings identified in the ESS Location Summary tables (where



Manitoba Hydro	Coordinate System: UTM Zone 14N NAD83 Data Source: MB Hydro, ProvMB, NRCAN Date Created: July 23, 2014 Version: Draft 0 125 250 500 Metres 1:10,000	Land Base ← Transmission Line Highway Major Road Local Road ← Local Road ← Railway (Operational) ← Railway (Discontinued) First Nation Mining Provincial Forest Township/Range	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 Wildlife - Birds and Habitat Ecosystem 2 Species of Concern	Cons
-------------------	---	---	---	---	---	------

Discussion Purposes Only

Map 270

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S1-S01	S1-Aqua- 100	Unnamed Creek	520826	5588398	14N	N/A	N/A	None	None

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 work or fording from April 1 to June 30

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Wild-100	Nearby black tern colony	Site: L1 to L2	E-520847 N-5588926	E-520846 N-5588414	14N	511m

Potential Effects:

Higher risk of wire collision, Disturbance during breeding and nesting, Risk of wire collision is localized to the right-ofway while construction disturbance can effect colonies up to 400 meters away

Specific Mitigation:

- Adhere to reduced risk timing windows for protection of birds (August 1- April 30)
- Maintain applicable setback during nesting and breeding timing window
- Conduct priority assessment for bird diverters and other measures prior to transmission line stringing
- Install bird diverters or other measures at high priority sites

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Eco-300	Species of Concern (Plant)	Site: 1 to 2	E-520847 N-5588813	E-520879 N-5573746	14N	15067m

Potential Effects:

Potential loss of previously known plants of conservation concern 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
- 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

Version: DRAFT



Transmission Line Crossing

1

Metres

1:10,000

First Nation

Provincial Forest

Township/Range

🛛 Mining

 Proposed Access Route 	
*Labels correspond to BPIII Access Management Database	Draft:

Construction Section S1 Environmentally Sensitive Site Locations

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Eco-300	Species of Concern (Plant)	Site: 1 to 2	E-520847 N-5588813	E-520879 N-5573746	14N	15067m

Potential Effects:

Potential loss of previously known plants of conservation concern 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
- 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

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Aqua-101	Small, unnamed waterbody	Site: 3 to 4	E-520841 N-5583360	E-520841 N-5583351	14N	8 m

Potential Effects:

Increased erosion and sedimentation; rutting of floodplains; 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 work or fording from April 1 to June 30

Version: DRAFT





Draft: For Discussion Purposes Only

Map 272

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
S1-S01	S1-Aqua- 103	Unnamed drain	520836	5581809	14N	N/A	N/A	None	None

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 work or fording from April 1 to June 30

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Eco-300	Species of Concern (Plant)	Site: 1 to 2	E-520847 N-5588813	E-520879 N-5573746	14N	15067m

Potential Effects:

Potential loss of previously known plants of conservation concern 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
- 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

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Aqua-102	Small, unnamed waterbody	Site: 5 to 6	E-520840 N-5581955	E-520840 N-5581889	14N	65 m

Potential Effects:

Increased erosion and sedimentation; rutting of floodplains; 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 work or fording from April 1 to June 30



Manitoba Hydro	Coordinate System: UTM Zone 14N NAD83 Data Source: MB Hydro, ProvMB, NRCAN Date Created: July 23, 2014 Version: Draft 0 125 250 500 Metres 1:10,000	Land Base Transmission Line Highway Major Road Local Road Railway (Operational) + Railway (Operational) First Nation Mining Provincial Forest Townshio/Range	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 BPIIl Access Management Database	ESS Features Water Water Crossing Ecosystem Species of Concern	Cons Draft: For
-------------------	---	--	--	---	--	--------------------

Map 273

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Eco-300	Species of Concern (Plant)	Site: 1 to 2	E-520847 N-5588813	E-520879 N-5573746	14N	15067m

Potential Effects:

Potential loss of previously known plants of conservation concern 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
- 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

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Aqua-104	Small, unnamed waterbody	Site: 7 to 8	E-520867 N-5576333	E-520867 N-5576318	14N	15 m

Potential Effects:

Increased erosion and sedimentation; rutting of floodplains; 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 work or fording from April 1 to June 30

Version: DRAFT



Manitoba Hydro	Coordinate System: UTM Zone 14N NAD83 Data Source: MB Hydro, ProvMB, NRCAN Date Created: July 23, 2014 Version: Draft 0 125 250 500 Metres	Land Base Transmission Line Highway Major Road Local Road Railway (Operational) + Railway (Discontinued) First Nation	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	ESS Features Ecosystem Species of Concern	Cons
riyaro	Metres	First Nation		Transmission Line Crossing		
	1:10,000	Provincial Forest		*Labels correspond to BPIII Access Management Database		Draft: For D

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Eco-300	Species of Concern (Plant)	Site: 1 to 2	E-520847 N-5588813	E-520879 N-5573746	14N	15067m

Potential Effects:

Potential loss of previously known plants of conservation concern 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
- 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

Version: DRAFT



Manitoba Hydro	Coordinate System: UTM Zone 14N NAD83 Data Source: MB Hydro, ProvMB, NRCAN Date Created: July 23, 2014 Version: Draft 0 125 250 500 Metres 1:10,000	Land Base Transmission Line Highway Major Road Local Road Railway (Operational) First Nation Mining Provincial Forest Township/Range	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	Cons
-------------------	---	---	---	---	---	------

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
S1-S01	S1-Aqua-105	Small, unnamed waterbody	Site: 9 to 10	E-520889 N-5569667	E-520889 N-5569638	14N	29 m
S1-S01	S1-Aqua-106	Small, unnamed waterbody	Site: 11 to 12	E-520892 N-5568136	E-520892 N-5568100	14N	36 m

Potential Effects:

Increased erosion and sedimentation; rutting of floodplains; 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 work or fording from April 1 to June 30

Version: DRAFT