



Coordinate System: UTM Zone 14N NAD83
 Data Source: MB Hydro, ProvMB, NRCAN
 Date Created: November 15, 2016
 Version: Final 4.0

0 125 250 500
 Metres
 1:10,000

Land Base

- Transmission Line
- Highway
- Major Road
- Local Road
- Winter Road
- Railway (Operational)
- Railway (Discontinued)
- ⊠ Mining
- ▭ Provincial Forest

Project Infrastructure

- BPIII Final Preferred Route
- Ground Electrode Line
- Construction Power Line
- ▭ Borrow Deposits
- ▭ Excavated Material Placement Area
- ▭ Keewatinohk
- ▭ Converter Station
- ▭ Ground Electrode

▭ Manitoba Hydro & Contractor Work Area

▭ Access Road

▭ Security Gatehouse

▭ Preliminary Tower Location

ESS Legend

BPIII ESS - Points

Ecosystem

- Species of Concern

BPIII ESS - Lines

Water

- Water Crossing

Wildlife

- Birds and Habitat

BPIII ESS - Poly

RecUse

- ▭ Intersection

Bipole III Transmission Project
Construction Environmental Protection Plan
AC Collector Lines,
Construction Power Line and Station
Environmentally Sensitive Site Locations

ESS Group: Water Crossing

Sec ID	ESS ID	ESS Name	Location	Start	Stop	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
CL	CLCP-Aqua-115	Limestone River	Site: L46 to L47	E-798849 N-6273719	E-798645 N-6273731	52	49	Important	Moderate

Potential Effects:

Habitat loss & contamination from structure foundations & installations; increased erosion & sedimentation of streams; damage to stream banks; loss of riparian vegetation; 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 vegetation will be maintained along with trees that do not violate Manitoba Hydro Vegetation 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: Birds and Habitat

Sec ID	ESS ID	ESS Name	Location	Start	Stop
CL	CL-Wild-100	Limestone River - movement route for waterfowl and raptors	Site: L46 to L47	E-429753 N-6263725	E-429551 N-6263754

Potential Effects:

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

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: Permafrost

Sec-Seg ID	ESS ID	ESS Name
CLCP	CLCP-Soils-100	Permafrost

Potential Effects:

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

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage and rutting. Construction matting will be used to protect the area from rutting and exposure to mineral soil during wet conditions
- Construction exceptions exist for the tower spans involving L61K (Str121-122), K61H-K64H (Str 60and 61), K61H & K62H (Str 62), K63H & K64H (Str. 64), K63H & K64H (Str 63.)
- 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 >3m 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: Access

Sec ID	ESS ID	ESS Name	Location	Start	Stop
CLCP	CLCP-Acss-100	Henday Rail Spur	Site: 49 to 50	E-799202 N-6273267	E-799214 N-6273209
CLCP	CLCP-Acss-100	Henday Rail Spur	Site: 51 to 52	E-799108 N-6273199	E-799129 N-6273177
CLCP	CLCP-Acss-100	Henday Rail Spur	Site: 53 to 54	E-798612 N-6273300	E-798603 N-6273284

Potential Effects:

Potential disruption or damage to surrounding habitat

Specific Mitigation:

- Existing trails, portages and other travel ways shall not be altered so as to interfere with other users
- The permittee will ensure that any work done near a waterbody is done in accordance with the Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, May 1996
- No pushing debris into adjacent timber. Any debris shall be piled and burnt in windrows (max height .6 meters) no closer than 1 meter to the bush line. Burn piles must be 15 meters from standing timber
- Locate fuel and equipment servicing areas a minimum distance of 100m from any waterbody
- The Natural Resource Officer in Gillam 204-652-2273, shall be notified no less than one week prior to completion of operations to allow for final inspection of the operation.
- Follow all other conditions found in the work permit 2014-01-11-026

ESS Group: Species of Concern

Sec ID	ESS ID	ESS Name	Easting	Northing
CP	CP-Eco-308	Species of Concern (plant)	798498	6273110

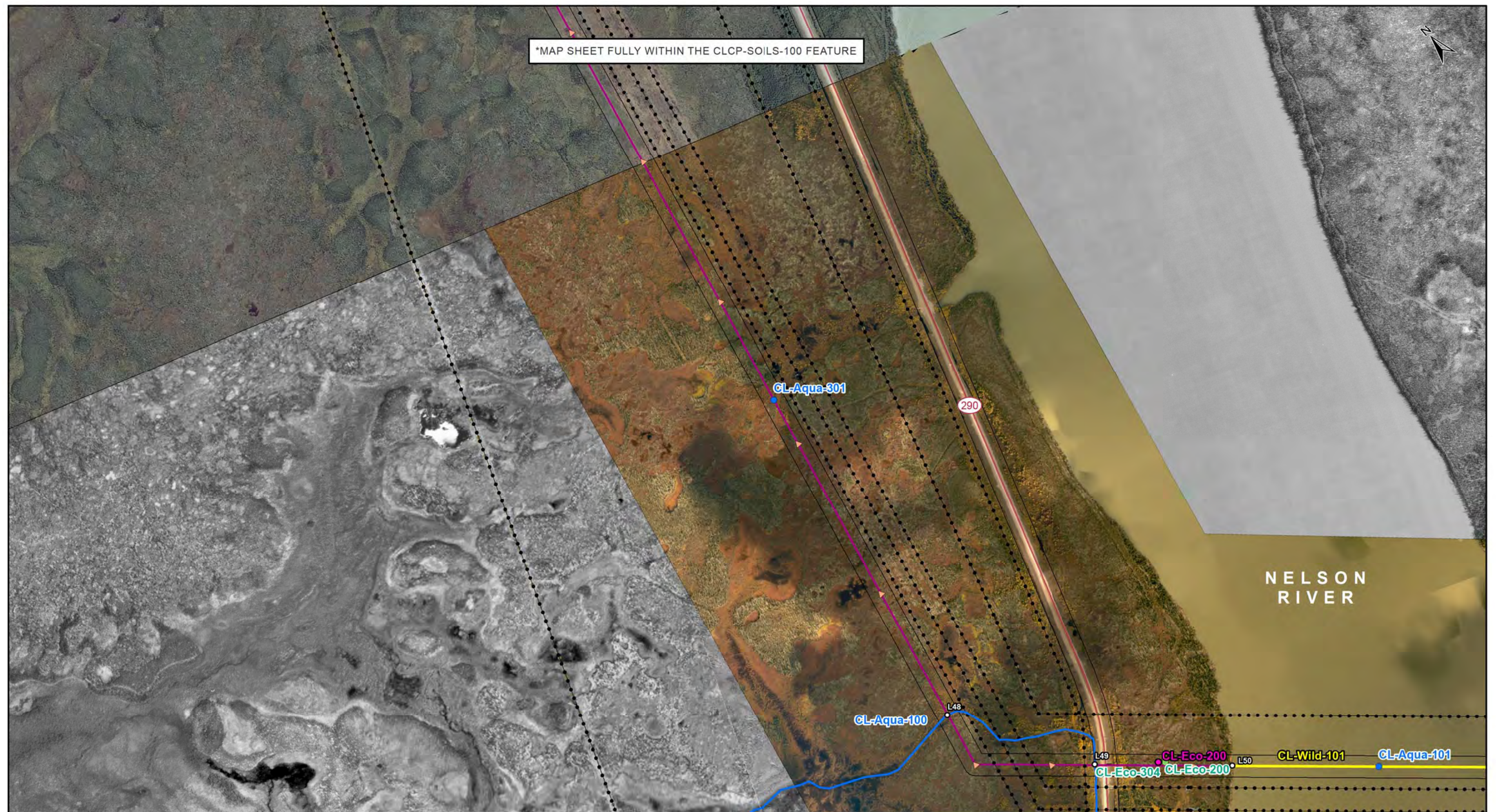
Potential Effects:

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

Specific Mitigation:

- Identify and flag prior to start of work
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Provide 5m vegetated (shrub and herbaceous) buffer around site
- Remove trees by hand or other low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible

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ESS Group: Wetland

Sec ID	ESS ID	ESS Name	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
CL	CL-Aqua-301	Unnamed Wetland	798522	6269524	24	0	No Fish Habitat	Low

Potential Effects:

Habitat loss and 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
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods within buffer
- The application of herbicides is prohibited within buffer

ESS Group: Water Crossing

Sec ID	ESS ID	ESS Name	Location	Start	Stop	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
CL	CL-Aqua-100	Unnamed Tributary of Nelson River	Site: L48 to L49	E-798317 N-6268571	E-798530 N-6268208	9	0	Marginal	Moderate
CL	CL-Aqua-101	Nelson River	Site: L50 to L51	E-798810 N-6267961	E-799373 N-6267466	739	731	Important	Moderate

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 vegetation will be maintained along with trees that do not violate Manitoba Hydro Vegetation 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: Species of Concern

Sec ID	ESS ID	ESS Name	Easting	Northing
CL	CL-Eco-304	Species of Concern (plant)	798678	6268088

Potential Effects:

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

Specific Mitigation:

- Identify and flag prior to start of work
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Provide 5m vegetated (shrub and herbaceous) buffer around site
- Remove trees by hand or other low-disturbance methods
- Confine vehicle traffic to established trails to the extent possible

ESS Group: Birds and Habitat

Sec ID	ESS ID	ESS Name	Location	Start	Stop
CL	CL-Wild-101	Nelson River Crossing	Site: L50 to L51	E-798810 N-6267961	E-799373 N-6267466

Potential Effects:

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

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: Permafrost

Sec-Seg ID	ESS ID	ESS Name
CLCP	CLCP-Soils-100	Permafrost

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 >3m 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: Research

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
CL	CL-Eco-200	Permafrost Monitoring Site	798669	6268091	14N

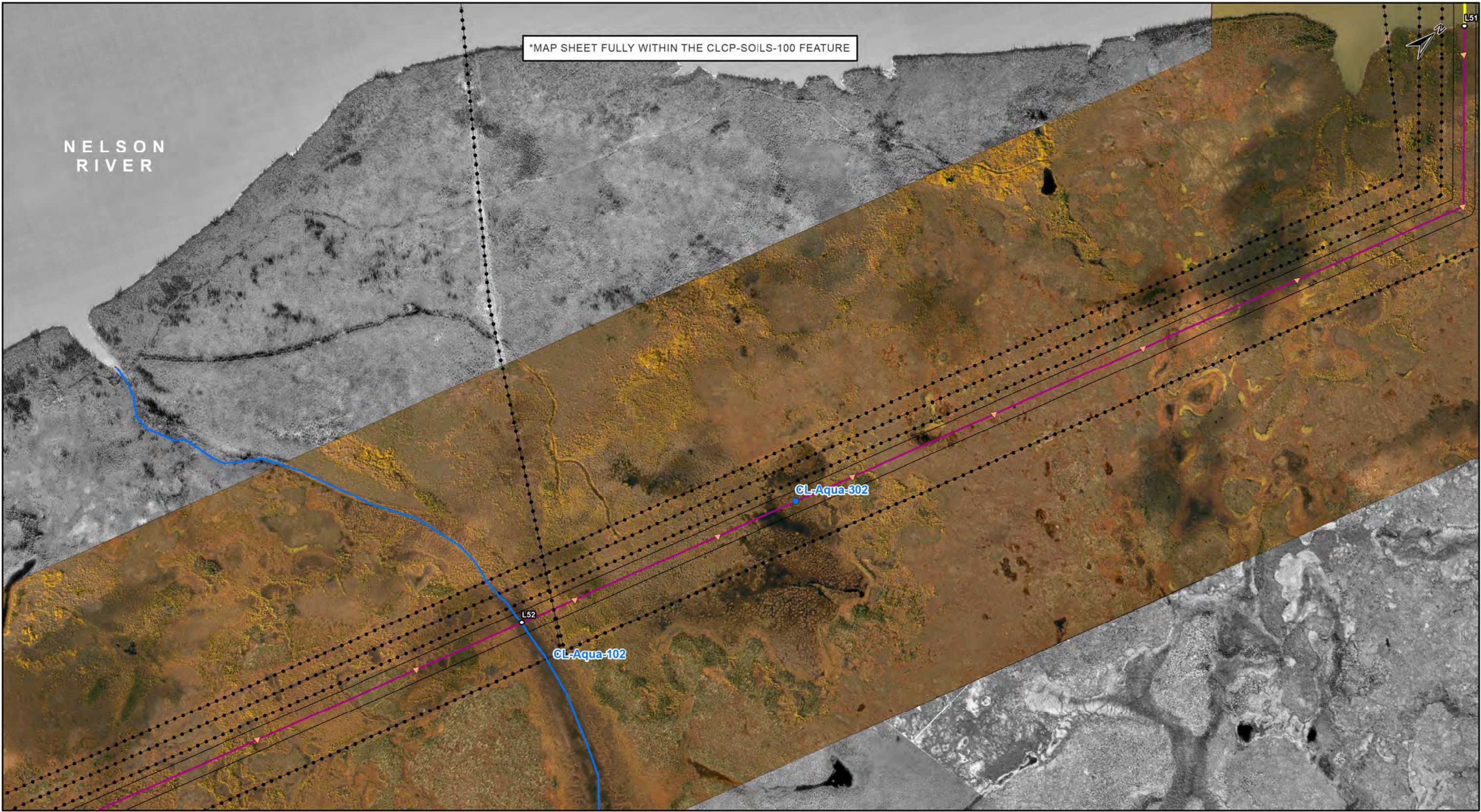
Potential Effects:

Permafrost monitoring site, buried thermistor is exposed 5-10cm at the surface and is susceptible to damage

Specific Mitigation:

- Identify and flag sensor's location to protect it damage
- Notify construction crews of sensor location

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| • Transmission Line | BP/III Final Preferred Route | Access Road |
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- ESS Legend**
- | | |
|----------------------------|---------------------|
| BP/III ESS - Points | Wildlife |
| Water | • Birds and Habitat |
| • Water Crossing | |
| BP/III ESS - Lines | |
| Water | |
| — Water Crossing | |

Bipole III Transmission Project
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ESS Group: Water Crossing

Sec ID	ESS ID	ESS Name	Location	Start	Stop	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
CL	CL-Aqua-101	Nelson River	Site: L50 to L51	E-798810 N-6267961	E-799373 N-6267466	739	731	Important	Moderate

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
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- 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
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ESS Group: Birds and Habitat

Sec ID	ESS ID	ESS Name	Location	Start	Stop
CL	CL-Wild-101	Nelson River Crossing	Site: L50 to L51	E-798810 N-6267961	E-799373 N-6267466

Potential Effects:

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

Specific Mitigation:

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ESS Group: Wetland

Sec ID	ESS ID	ESS Name	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
CL	CL-Aqua-302	Unnamed Wetland	799156	6265253	N/A	N/A	No Fish Habitat	Low

Potential Effects:

Habitat loss and 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
- Provide 30 m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods within buffer
- The application of herbicides is prohibited within buffer

ESS Group: Water Crossing

Sec ID	ESS ID	ESS Name	Location	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
CL-S10	CL-Aqua-102	Unnamed Tributary of Nelson River	L52	798917	6264477	N/A	5	Marginal	Moderate

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
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ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name
CLCP	CLCP-Soils-100	Permafrost

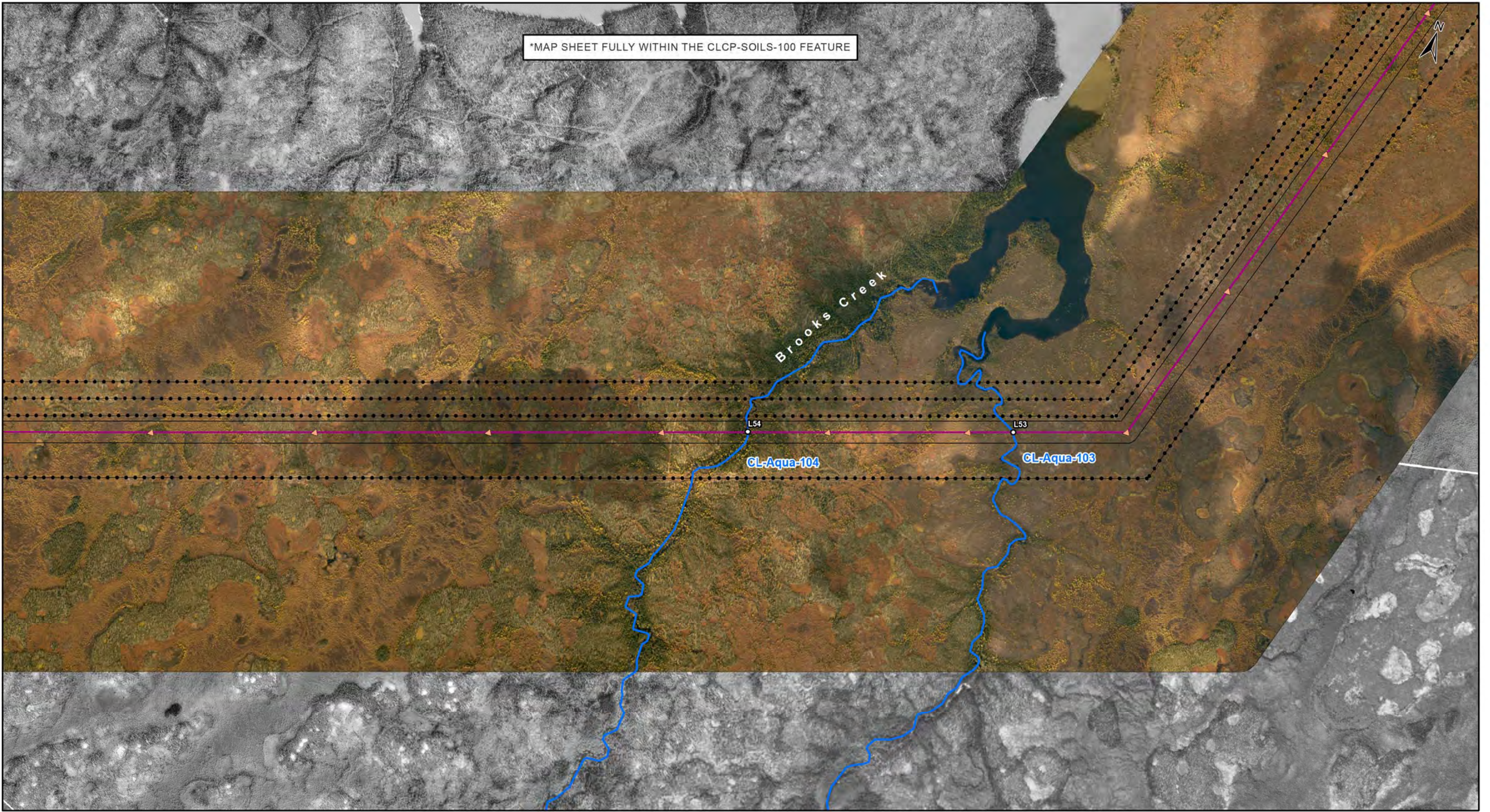
Potential Effects:

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Specific Mitigation:

- Carry out construction activities on frozen ground to minimize surface damage and rutting
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- Avoid organic soils containing permafrost to the extent possible
- Maintain shrub and herbaceous vegetation to the extent possible
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| ☒ Mining | | |
| ▭ Provincial Forest | | |

- ESS Legend**
- BP/III ESS - Lines**
- Water**
- Water Crossing

Bipole III Transmission Project
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AC Collector Lines,
Construction Power Line and Station
Environmentally Sensitive Site Locations

ESS Group: Water Crossing

Sec ID	ESS ID	ESS Name	Location	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
CL	CL-Aqua-103	Unnamed Tributary of Nelson River	L53	797843	6261835	2	2	Important	Moderate

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 vegetation will be maintained along with trees that do not violate Manitoba Hydro Vegetation Clearance Requirements.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
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- No instream works or fording from April 15 - July 15

ESS Group: Water Crossing

Sec ID	ESS ID	ESS Name	Location	Easting	Northing	Channel Width (m)	Wet Width (m)	Fish Habitat Class	Habitat Sensitivity
CL	CL-Aqua-104	Brooks Creek	L54	797159	6261608	N/A	6	Important	Moderate

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 vegetation will be maintained along with trees that do not violate Manitoba Hydro Vegetation Clearance Requirements.
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ESS Group: Permafrost

Sec-Seg ID	ESS ID	ESS Name
CLCP	CLCP-Soils-100	Permafrost

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 >3m 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