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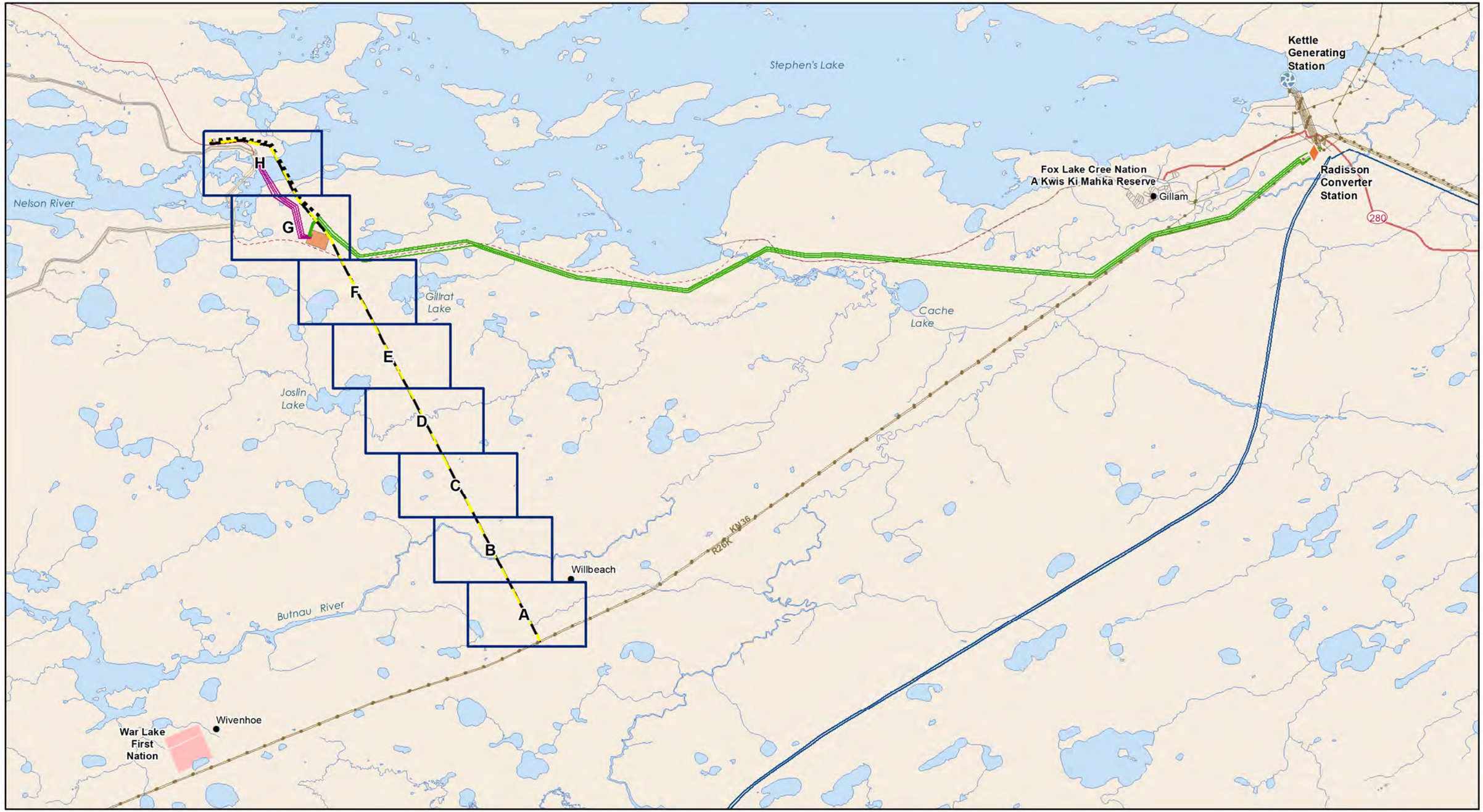
Transmission Business Unit
Manitoba Hydro

Final 4.0

List of Revisions – Keeyask Transmission Project CEnvPP KN36/KR1T section

Number	Nature of Revision	Page/Map #	Revised By	Date
3.00	Updated Imagery	All	Kris Watts	2015-12-23
4.00	As per Transmission Line Design Department updated "KN36T" to "KR1T" line designations	Map H	Kris Watts	20161212



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: April 17, 2014
Version: FINAL

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Legend

- Generation Outlet Transmission Lines
- Construction Power Line (KN36) Preferred Route
- Construction Power Line (Temporary)
- Unit Lines
- Construction Power Station Site
- Switching Station Site
- Keeyask Generation Infrastructure
- Converter Station
- Generating Station
- Bipole I and II (Existing 500 kV DC Line)
- Transmission Line
- North Access Road
- South Access Road (Proposed)
- First Nation

Keeyask Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations
Key Map Index

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Coordinate System: UTM Zone 15N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
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Land Base
- Bipole I and II
- Transmission Line
- Proposed Roads
- Active Railway
- Abandoned Railway

Project Infrastructure
- Towers (Preliminary)*
- Construction Power Line (Kn36)
- Project Footprint (ROW)

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

ESS Features
- Archaeological Site
- Historical
- Water Crossing
- Birds and Habitat
- Mammals and Habitat
- Marsh Habitat
- Water and Wetland Habitat
- Permafrost

Keeyask Transmission Project
Construction Environmental Protection Plan

Environmentally Sensitive Site Locations

KN36 and KR1T Lines

Map A

ESS Group: Water Crossing

Sec-ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
KN36	KN36-Aqua-104	Unnamed Tributary	373348	6231409	15N	N/A	N/A	N/A	N/A

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

ESS Group: Birds and Habitat

Sec-ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
KN36	KN36-Wild-104	Unnamed Tributary	373348	6231409	15N

Potential Effects:

Potential loss of Species at Risk habitat; Higher risk of wire collision within the ROW

Specific Mitigation:

- Adhere to reduced risk timing windows for protection of birds by conducting clearing activities between August 1st and April 30th
- Maintain applicable setback during nesting and breeding timing window (May 1st to July 31st)
- Conduct priority assessment for bird diverters and other measures prior to transmission line stringing
- Install bird diverters or other measures at high priority sites
- Where possible maintain a 100m buffer of shrub and herbaceous vegetation around lakes and off-system marsh locations.
- Where possible, maintain 15 metres of riparian area from the high water mark of 1st and 2nd order creeks, and 30 metres from the high water mark of 3rd order and higher streams and rivers

ESS Group: Permafrost

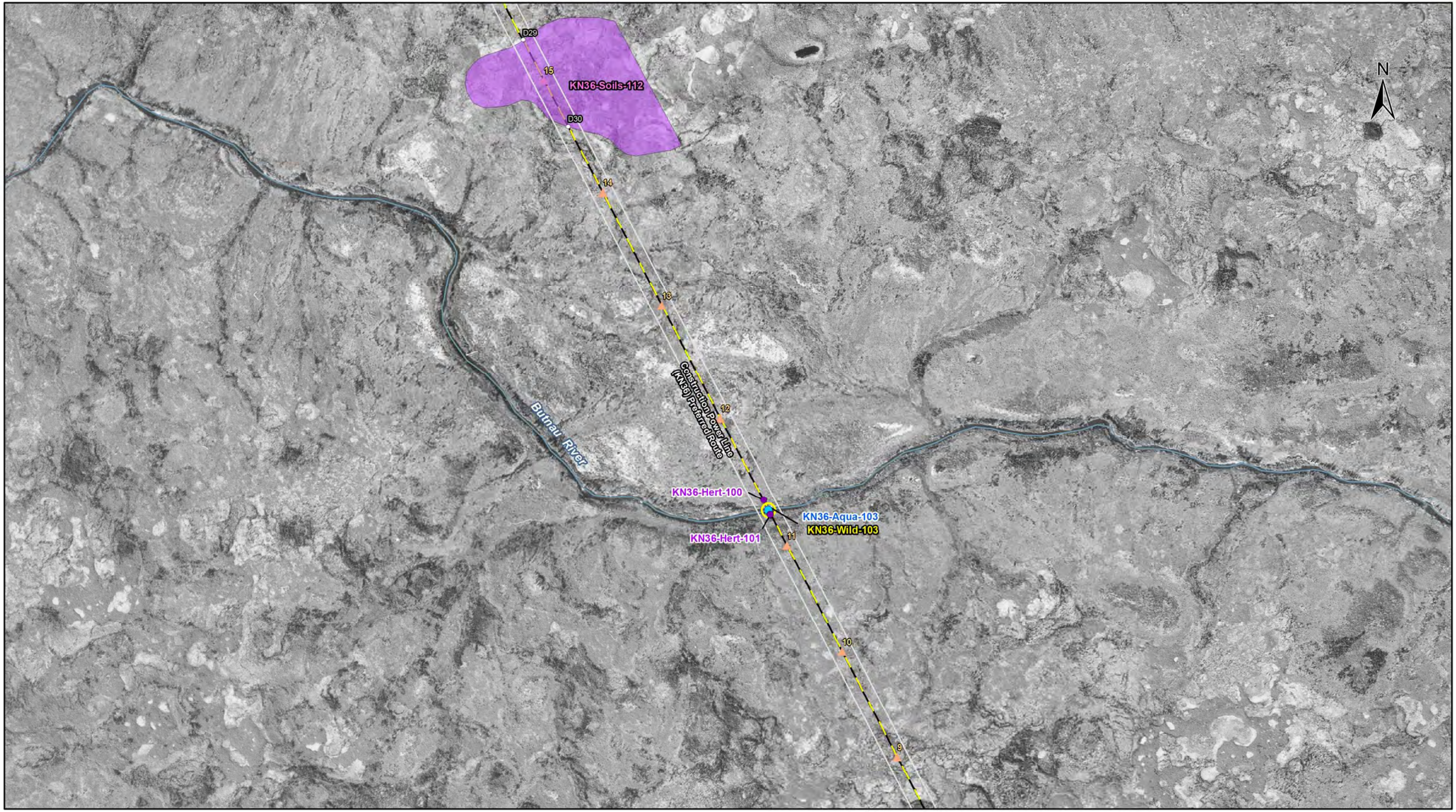
Sec-ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
KN36	KN36-Soils-113	Permafrost-Extensive Discontinuous	Site: D31 to D32	E-372833 N-6232394	E-372865 N-6232332	15N	69 m
KN36	KN36-Soils-114	Permafrost-Extensive Discontinuous	Site: D33 to D34	E-372878 N-6232307	E-372898 N-6232270	15N	41 m
KN36	KN36-Soils-114	Permafrost-Extensive Discontinuous	Site: D35 to D36	E-373055 N-6231970	E-373122 N-6231842	15N	144 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 disturbance to the organic layer
- 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



Manitoba Hydro

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0 120 240 480
Metres

1:10,000

Land Base
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- Transmission Line
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- Active Railway
- Abandoned Railway

Project Infrastructure
- Towers (Preliminary)*
- Construction Power Line (Kn36)
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*Towers are subject to change, and are only use as a rough guide

ESS Features
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Keeyask Transmission Project
Construction Environmental Protection Plan

Environmentally Sensitive Site Locations

KN36 and KR1T Lines

Map B

ESS Group: Archaeological

Sec-ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
KN36	KN36-Hert-100	Potential Archaeological Site	372127	6233752	15N
KN36	KN36-Hert-101	Potential Archaeological Site	372146	6233712	15N

Potential Effects:

Potential discovery for unknown heritage resources

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Project Archaeologist to conduct site investigation with Archaeologist post clearing and prior to construction
- Minimize surface disturbance around the site to the extent possible

ESS Group: Water Crossing

Sec-ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Fish Habitat Class	Habitat Sensitivity
KN36	KN36-Aqua-103	Butnau River	372139	6233725	15N	N/A	N/A	N/A	N/A

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

ESS Group: Permafrost

Sec-ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
KN36	KN36-Soils-112	Permafrost-Extensive Discontinuous	Site: D29 to D30	E-371458 N-6235027	E-371584 N-6234787	15N	270m

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 disturbance to the organic layer
- 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

ESS Group: Birds and Habitat

Sec-ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
KN36	KN36-Wild-103	Butnau River	372139	6233725	15N

Potential Effects:

Potential loss of Species at Risk habitat; Higher risk of wire collision within the ROW

Specific Mitigation:

- Adhere to reduced risk timing windows for protection of birds by conducting clearing activities between August 1st and April 30th
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