List of Revisions- MMTP Construction Environmental Protection Plan Mapbook

<table>
<thead>
<tr>
<th>Number</th>
<th>Nature of Revision</th>
<th>Page/Map #</th>
<th>Revised By</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft</td>
<td>Added Archaeological Points and a Polygon and renumbered</td>
<td>Maps 29,33 and 52</td>
<td>Manitoba Hydro</td>
<td>20180803</td>
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<tr>
<td></td>
<td>Added Aqua-400 and Aqua-401 for aquatic Invasive Species mitigation</td>
<td>Map 13</td>
<td>Manitoba Hydro</td>
<td>20180803</td>
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<tr>
<td></td>
<td>MMTP access routes updated by type - “new trail”, “field access”, “existing gravel/dirt road”, “existing gravel road” and “restricted access”.</td>
<td>Various Pages</td>
<td>Manitoba Hydro</td>
<td>20181127</td>
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<tr>
<td></td>
<td>Moved Hert-101 to 14 U 612886 5525221</td>
<td>Map 4</td>
<td>Manitoba Hydro</td>
<td>20181218</td>
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<td></td>
<td>Moved MMTP-Aqua-120 to drain</td>
<td>Map 31</td>
<td>Manitoba Hydro</td>
<td>20181218</td>
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<tr>
<td></td>
<td>Added 12 Species of Concern Points</td>
<td>Map 43, 47, 48 and 52</td>
<td>Manitoba Hydro</td>
<td>20190213</td>
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<tr>
<td></td>
<td>Updated and modified mitigation measure text for ESS with the following Specific Mitigation Measure ID#s- 204, 206, 213, 312, 402, 408, 710, 711 &amp; 716.</td>
<td>Various Pages</td>
<td>Manitoba Hydro</td>
<td>20190226</td>
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<tr>
<td></td>
<td>Updated the following mitigation keys adding the provision of construction matting during saturated soil conditions #201,204,205,206,215,301,313,318,408,504,505,710,715,716</td>
<td>Various Pages</td>
<td>Manitoba Hydro</td>
<td>20190405</td>
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<tr>
<td></td>
<td>Eco-300 polygon was removed as it was within a tower footprint which requires stripping and grubbing of the site making impact on the plant species non-mitigatable at that location</td>
<td>Map #4</td>
<td>Manitoba Hydro</td>
<td>20190405</td>
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<tr>
<td></td>
<td>Updated mitigation key #205 removing the word “mineral” from the statement: Construction matting will be used to protect the area from rutting and exposure to mineral soil during Non-frozen ground conditions</td>
<td>Various Pages</td>
<td>Manitoba Hydro</td>
<td>20190405</td>
</tr>
<tr>
<td></td>
<td>For mitigation key #408 a mitigation statement was added: “No trees will be removed from outside of the ROW edge, except the removal of danger trees on the ROW edge as identified by Manitoba Hydro”</td>
<td>Page 12 and Page 33</td>
<td>Manitoba Hydro</td>
<td>20190405</td>
</tr>
<tr>
<td>Number</td>
<td>Nature of Revision</td>
<td>Page/Map #</td>
<td>Revised By</td>
<td>Date</td>
</tr>
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<td>--------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>------------</td>
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<td>------------</td>
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<tr>
<td>Hert-200</td>
<td>removed as it was previously investigated and are developed as part of Red River Floodway</td>
<td>Map 2</td>
<td>Manitoba Hydro</td>
<td>20190411</td>
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<tr>
<td>Added</td>
<td>Headlingly Grand Trunk Trail as RecUse-100A</td>
<td>Map 4</td>
<td>Manitoba Hydro</td>
<td>20190411</td>
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<tr>
<td>Sensitive Avian habitat Bird Diverters ESS locations adjusted to nearest tower to align with engineering drawings</td>
<td>Various Pages</td>
<td>Manitoba Hydro</td>
<td>20190411</td>
<td></td>
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<tr>
<td>Hert-116</td>
<td>removed as no longer a concern as sites was recently developed with lagoon.</td>
<td>Map 33</td>
<td>Manitoba Hydro</td>
<td>20190411</td>
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<td>Field access route symbology changed to yellow.</td>
<td>Various Pages</td>
<td>Manitoba Hydro</td>
<td>20190425</td>
<td></td>
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<tr>
<td>Removed</td>
<td>“restricted access” route near tower 162 close to Deacon’s Reservoir.</td>
<td>Map 17</td>
<td>Manitoba Hydro</td>
<td>20190425</td>
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<tr>
<td>Retired</td>
<td>Eco-307B and Eco-307C because they were within the tower footprint which will be grubbed and can’t be protected. Added Ruse-310 point species of concern.</td>
<td>Map 47</td>
<td>Manitoba Hydro</td>
<td>20190510</td>
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<tr>
<td>Added</td>
<td>an Ruse-311 point species of concern.</td>
<td>Map 48</td>
<td>Manitoba Hydro</td>
<td>20190510</td>
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<tr>
<td>Added</td>
<td>Aqua-204 point which represents an artesian wellhead and surrounding area</td>
<td>Map 24</td>
<td>Manitoba Hydro</td>
<td>20190510</td>
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<tr>
<td>Updated</td>
<td>transmission line modifications, right-of-way and station expansion footprint for Glenboro South Station.</td>
<td>Map 54</td>
<td>Manitoba Hydro</td>
<td>20190527</td>
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</table>
SAMPLE MITIGATION TABLE (See KEY below for additional Information)

ESS Group: Wetlands

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-301</td>
<td>Wetland</td>
<td>21 to 22</td>
<td>E:671537</td>
<td>N:5525458</td>
<td>43</td>
</tr>
</tbody>
</table>

Potential Effects: Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID #205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion.
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site.
- Remove trees by low-disturbance methods.
- The application of herbicides is prohibited.
- Maintain shrub and herbaceous vegetation to the extent possible.

KEY to Sample Mitigation Table

1. ESS Group classification of Environmentally Sensitive Sites (ESS) which are shown on the map.
2. Notation indicates the geometry type of the ESS feature.
   - ESS ID - Site specific ID assigned to each ESS according to naming convention (See ESS naming convention table).
   - ESS Name - Brief name/description of ESS.
   - Site - identification numbers for the start and stop site points of ESS intersection with the ROW (lines and polygons only).
   - Easting/Northing - UTM Zone 14 coordinates of ESS location (for points only).
   - Start/Stop - UTM Zone 14 coordinates of the start/stop identification numbers listed in the “Location” field (lines and polygons only).
   - Distance – length of ESS feature in meters.
3. Potential effects identified for ESS listed in the ESS Location Summary table.
4. Mitigation measures identified for a specific site. The ID number indicates a specific combination of mitigation measures.
5. Map on which ESS listed in the ESS Location Summary tables are illustrated.

ESS NAMING CONVENTION

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>GROUP (Number Series Representing Group)</th>
<th>ESS ID (Category-Group Number)</th>
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<tbody>
<tr>
<td>Access</td>
<td>Intersection (100)</td>
<td>RecUse-100</td>
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<tr>
<td>Ecosystem</td>
<td>Habitat (100)</td>
<td>Eco-100</td>
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<tr>
<td></td>
<td>Research (200)</td>
<td>Eco-200</td>
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<tr>
<td></td>
<td>Species of Concern (300)</td>
<td>Eco-300</td>
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<tr>
<td></td>
<td>Invasive Species (400)</td>
<td>Eco-400</td>
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<tr>
<td></td>
<td>Traditional Use (500)</td>
<td>Eco-500</td>
</tr>
<tr>
<td>Heritage</td>
<td>Archaeological (100)</td>
<td>Hert-100</td>
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<tr>
<td></td>
<td>Cultural (200)</td>
<td>Hert-200</td>
</tr>
<tr>
<td></td>
<td>Historic (300)</td>
<td>Hert-300</td>
</tr>
<tr>
<td>Land Use</td>
<td>Conservation (100)</td>
<td>LUse-100</td>
</tr>
<tr>
<td></td>
<td>Crown Land Encumbrance (200)</td>
<td>LUse-200</td>
</tr>
<tr>
<td></td>
<td>Recreation (300)</td>
<td>LUse-300</td>
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<tr>
<td></td>
<td>Residential (400)</td>
<td>LUse-400</td>
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<tr>
<td>Resource Use</td>
<td>Agriculture (100)</td>
<td>RUse-100</td>
</tr>
<tr>
<td></td>
<td>Food/Medicinal (200)</td>
<td>RUse-200</td>
</tr>
<tr>
<td></td>
<td>Forestry (300)</td>
<td>RUse-300</td>
</tr>
<tr>
<td></td>
<td>Hunting/Fishing (400)</td>
<td>RUse-400</td>
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<td></td>
<td>Trapping (500)</td>
<td>RUse-500</td>
</tr>
<tr>
<td>Soils and Terrain</td>
<td>Permafrost (100-200)</td>
<td>Soils-100</td>
</tr>
<tr>
<td></td>
<td>Erosion (300)</td>
<td>Soils-300</td>
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<tr>
<td></td>
<td>Terrain (400)</td>
<td>Soils-400</td>
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<td></td>
<td>Wetlands (300)</td>
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<tr>
<td></td>
<td>Aquatic Invasive Species (400)</td>
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<td>Wildlife</td>
<td>Birds and Habitat (100)</td>
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<td></td>
<td>Mammal and Habitat (200)</td>
<td>Wild-200</td>
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<tr>
<td></td>
<td>Reptiles/Amphibians and Habitat (300)</td>
<td>Wild-300</td>
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<tr>
<td></td>
<td>Line of Sight Buffer (400)</td>
<td>Wild-400</td>
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</table>
Map 1
Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations

ess Features

Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Provincial Forest
- Parcel Fabric
- Rural Municipality

Project Infrastructure
- Tower Locations
- Angle Tower Location
- N602F Final Preferred Route
- Right of Way
- Station Expansion
- Converter Station Footprint
- M602F Modification (Salvage)
- M602F Modification (New)
- Sensitive Sites
- Point Features
- Linear Features
- Area Features
- Points of Access
- Existing Gravel/Dirt Road
- Field Access
- New Trail
- Restricted Access
* Some road names have not been verified
* Tower locations subject to final design

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 24, 2019
Version: Final 1.0

DOCUMENT PATH: \GEODATA\TLEA1\GIS\ORIENTIS\PRJ_EPIMS\MANAGEDPLANSLEA\MMTP\ENVIRONMENTPROTECTIONPLAN\MMTP_CENVPP_MAPBOOK_MH_20190523.MXD
No specific mitigation measures for this map, page intentionally left blank
ESS Group: Forestry

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUe-300</td>
<td>Shelterbel</td>
<td>E-612765 - N-5532162</td>
</tr>
</tbody>
</table>

Potential Effects:
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

Specific Mitigation (ID# 505):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber

ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-100</td>
<td>Sturgeon Creek Crossing</td>
<td>E-612901 N-5531443</td>
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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 (ID# 710):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations
ESS Group: Trail
*Features represented as lines

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>RecUse-100</td>
<td>Trail PT30</td>
<td>C1</td>
<td>E-613020</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>N-5528354</td>
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</table>

Potential Effects:
Potential interference with trail users; safety issues

Specific Mitigation (ID# 103):
- Identify and flag where trail intersects ROW
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location during construction
- MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction
ESS Group: Archaeological
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Hert-100</td>
<td>Third Creek Crossing</td>
<td>E-612919 - N-5525945</td>
</tr>
<tr>
<td>Hert-101</td>
<td>Area of Potential Use</td>
<td>E-612896 - N-5525221</td>
</tr>
<tr>
<td>Hert-102</td>
<td>Area of Potential Use</td>
<td>E-612879 - N-5524929</td>
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<tr>
<td>Hert-103</td>
<td>Assiniboine River Crossing</td>
<td>E-612875 - N-5524839</td>
</tr>
<tr>
<td>Hert-104</td>
<td>Relict Stream Crossing</td>
<td>E-612847 - N-5524146</td>
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</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

ESS Group: Birds and Habitat
*Features represented as lines

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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</thead>
<tbody>
<tr>
<td>Wild-100</td>
<td>Assiniboine River crossing</td>
<td>L1 to L2</td>
<td>E-612896 N-5525363</td>
<td>E-612882 N-5524260</td>
<td>1104</td>
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</table>

Potential Effects:
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

Specific Mitigation (ID# 827):
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Forestry
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUse-301</td>
<td>Shelterbelt</td>
<td>E-612818 - N-5523379</td>
</tr>
</tbody>
</table>

Potential Effects:
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

Specific Mitigation (ID# 505):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber

ESS Group: Species of Concern
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<tbody>
<tr>
<td>Eco-301</td>
<td>Plant Species of Concern</td>
<td>1 to 2</td>
<td>E-612876 N-5524852</td>
<td>E-612873 N-5524787</td>
<td>65</td>
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</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confini vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures
**ESS Group: Trail**

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecUse-100A</td>
<td>Headingley Grand Trunk Trail</td>
<td>C2</td>
<td>E-612817 N-5523371</td>
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</tbody>
</table>

**Potential Effects:** Potential interference with trail users; safety issues

**Specific Mitigation (ID# 103):**
- Identify and flag where trail intersects ROW
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location during construction
- MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

**ESS Group: Water Crossing**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-101</td>
<td>Third Creek Crossing</td>
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<td>3</td>
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<tr>
<td>Aqua-102</td>
<td>Unnamed Creek Crossing</td>
<td>E-612893 N-5525289</td>
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<td>15</td>
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**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 (ID# 710):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector
- Use existing trails, roads or cut lines whenever possible as access routes
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge)
- If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required
- Locate crossings perpendicular to the bank, whenever possible
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site
**ESS Group:** Water Crossing

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-103</td>
<td>Assiniboine River Clam Beds</td>
<td>E-612878 N-5524895</td>
<td>108</td>
<td>99</td>
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</table>

**Potential Effects:**
Potential disturbance and habitat loss of clam beds

**Specific Mitigation (ID# 716):**

- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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.
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- No fording of Assiniboine River
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
- Temporary signs stating "Construction Activity" will be:
  - placed and maintained 200m upstream and 200m downstream of the work
  - legible from a minimum distance of 100m downstream of the work
  - placed and maintained during all periods of conductor stringing during the open water season on all navigable waters
  - visible from all points of marine approach and when snowmobile traffic exists during frozen water conditions
- Ice bridges will be constructed of clean (ambient) water, ice and snow and snowfills will be constructed of clean snow. Materials such as gravel, rock and loose woody material will NOT be used. Crossings will not impede water flow at any time of the year
- Where logs are required for use in stabilizing shoreline approaches, they will be clean and securely bound together and they will be removed before the spring freshet
- When the crossing season is over and where it is safe to do so, a v-notch will be created in the centre of the ice bridge to allow it to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding. Compacted snow and all crossing materials will be removed prior to the spring freshet
- No logs or woody debris will be left within the waterway or on the banks or shoreline where they can wash back into the waterway.
No specific mitigation measures for this map, page intentionally left blank
Map 6

Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProxMB, NRCAN
Date Created: May 24, 2019
Version: Final 1.0

± 1:10,000
0 125 250 500 Metres

- Transmission Line
- Highway
- Major Road
- Railway (Operational)
- Railway ( Decommissioned)
- First Nation
- Provincial Forest
- Rural Municipality
- Project Infrastructure
- Tower Locations
- Angle Tower Location
- M602F Final Preferred Route
- Right of Way
- Station Expansion
- Converter Station Footprint
- M602F Modification (Existing)
- M602F Modification (New)
- Tower locations in subject to final design

- Sensitive Sites
- Point Features
- Line Features
- Area Features
- Points of Access
- Existing Gravel Road
- Existing Gravel/Dirt Road
- Field Access
- New Trail
- Restricted Access
- Some road names have not been verified
- Tower locations subject to final design

ESS Features
- Red

DOCUMENT PATH: \GEODATA\TLEA1\GIS\ORIENTIS\PRJ_EPIMS\MANAGEDPLANSLEA\MMTP\ENVIRONMENTPROTECTIONPLAN\MMTP_CENVPP_MAPBOOK_MH_20190523.MXD
ESS Group: Wetland

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<tbody>
<tr>
<td>Aqua-300A</td>
<td>Wetland</td>
<td>3 to 4</td>
<td>E-613281</td>
<td>E-613504</td>
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<td></td>
<td></td>
<td>N-5518098</td>
<td>N-5518103</td>
<td></td>
</tr>
</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions.
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site.
- Refer to Clearing Management Plan for clearing prescription.
- The application of herbicides is prohibited.
- Maintain shrub and herbaceous vegetation to the extent possible.
Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 24, 2019
Version: Final 1.0

± 1:10,000

0 125 250 500 Metres

1:10,000

DOCUMENT PATH: \GEODATA\TLEA1\GIS\ORIENTIS\PRJ_EPIMS\MANAGEDPLANSLEA\MMTP\ENVIRONMENTPROTECTIONPLAN\MMTP_CENVPP_MAPBOOK_MH_20190523.MXD
No specific mitigation measures for this map, page intentionally left blank
ESS Group: Water Crossing

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-105</td>
<td>Unnamed Drain Crossing</td>
<td>E-618449 N-5515051</td>
<td>N/A</td>
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<tr>
<td>Aqua-106</td>
<td>Oak Bluff Drain Crossing</td>
<td>E-618468 N-5514203</td>
<td>N/A</td>
<td>N/A</td>
</tr>
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</table>

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 (ID# 715):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector
- Use existing trails, roads or cut lines whenever possible as access routes
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge)
- If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required
- Locate crossings perpendicular to the bank, whenever possible
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site
ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
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<tbody>
<tr>
<td>Aqua-107</td>
<td>Oak Bluff Drain Crossing</td>
<td>E-620707, N-5512076</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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 (ID# 715):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector
- Use existing trails, roads or cut lines whenever possible as access routes
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge)
- If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required
- Locate crossings perpendicular to the bank, whenever possible
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site
**ESS Group: Birds and Habitat**

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-101</td>
<td>Brady Landfill migratory route</td>
<td>L3 to L4</td>
<td>E-627981 N-5512214</td>
<td>E-631353 N-5511917</td>
<td>3411</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Higher risk of wire collision, Risk of wire collision is localized to the right-of-way

**Specific Mitigation (ID# 827):**
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

**ESS Group: Forestry**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUse-302</td>
<td>Shelterbelt</td>
<td>E-628294 - N-5512222</td>
</tr>
<tr>
<td>RUse-303</td>
<td>Shelterbelt</td>
<td>E-629003 - N-5512241</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

**Specific Mitigation (ID# 505):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber
Environmentally Sensitive Site Locations

**SITES**
- Heritage
- Archaeological
- Water
- Water Crossing
- Wildlife
- Birds and Habitat
- Land Use
- Resource Use
- Forestry
- Recreation
- Resource Use
- Forestry

**PROJECT INFRASTRUCTURE**
- Transmission Line
- Right of Way
- Tower Locations
- Angle Tower Location
- M602F Final Preferred Route
- Station Expansion
- Converter Station Footprint
- M602F Modification (Existing)
- M602F Modification (New)

**SENSITIVE SITES**
- Plots Features
- Linear Features
- Area Features

**FEATURES**
- Point Features
- Linear Features
- Area Features

**POINTS OF ACCESS**
- Restricted Access
- New Trail
- Existing Gravel/Dirt Road
- Existing Gravel Road
- Existing Stone Road

**MAP BASE**
- Provincial Forest
- Rural Municipality
- Local Road
- Major Road
- Transmission Line
- Highway

**OTHER**
- Restricted Access
- New Trail
- Existing Gravel/Dirt Road
- Existing Gravel Road
- Existing Stone Road

**DATA SOURCES**
- Manitoba Hydro
- Provincial Forest
- Rural Municipality
- Local Road

**DATE CREATED**
- May 24, 2019
**ESS Group:** Archaeological

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-105</td>
<td>La Salle River Crossing</td>
<td>E-633224 - N-5512064</td>
</tr>
<tr>
<td>Hert-106</td>
<td>La Salle River Crossing</td>
<td>E-633267 - N-5512083</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disturbance to Heritage Resources

**Specific Mitigation (ID# 301):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction.
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector.
- Implement additional mitigation from site investigation.
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered.
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance.

---

**ESS Group:** Birds and Habitat

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-101</td>
<td>Brady Landfill migratory route</td>
<td>L3 to L4</td>
<td>E-627981 N-5512124</td>
<td>E-631353 N-5511917</td>
<td>3411</td>
</tr>
<tr>
<td>Wild-102</td>
<td>La Salle River crossing</td>
<td>L5 to L6</td>
<td>E-632815 N-5511830</td>
<td>E-633820 N-5512200</td>
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</table>

**Potential Effects:**
Higher risk of wire collision, Risk of wire collision is localized to the right-of-way

**Specific Mitigation (ID# 827):**
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires.
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans.

---

**ESS Group:** Forestry

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUse-304</td>
<td>Shelterbelt</td>
<td>5 to 6</td>
<td>E-632368 N-5511689</td>
<td>E-632382 N-5511686</td>
<td>14</td>
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</tbody>
</table>

**Potential Effects:**
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

**Specific Mitigation (ID# 505):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber.

---

**ESS Group:** Recreation

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>LUse-300</td>
<td>Southwood Golf and Country Club</td>
<td><em>See Map</em></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption to golf course

**Specific Mitigation (ID# 408):**
- Carry out construction activities following any applicable noise bylaws.
- MH to notify golf course manager of major noise-generating activities.
- Where the golf course borders the ROW limit all equipment to the project footprint only, where possible.
- Where the golf course borders the ROW No damage to vegetation on the edge of the Right of Way or pushing debris onto adjacent property.
- No trees will be removed from outside of the ROW edge, except the removal of danger trees on the ROW edge as identified by Manitoba Hydro.
**ESS Group:** Recreation

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUse-301</td>
<td>Duff Roblin</td>
<td>Provincial Park</td>
<td>7 to 8</td>
<td>E-633986</td>
<td>E-634309</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N-5512197</td>
<td>N-5512289</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption to Provincial Park use

**Specific Mitigation (ID# 409):**
- Follow all provincial park work permit conditions
- 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 work site
- Provide warning signage for vehicle traffic and public safety

**ESS Group:** Water Crossing

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
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<tbody>
<tr>
<td>Aqua-108</td>
<td>La Salle River Crossing</td>
<td>E-633240</td>
<td>31</td>
<td>24</td>
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<td></td>
<td></td>
<td>N-5512074</td>
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</table>

**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 (ID# 711):**
- Carry out construction activities on frozen or dry 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
- Temporary signs stating "Construction Activity" will be:
  - placed and maintained 200m upstream and 200m downstream of the work
  - legible from a minimum distance of 100m downstream of the work
  - placed and maintained during all periods of conductor stringing during the open water season on all navigable waters
  - visible from all points of marine approach and when snowmobile traffic exists during frozen water conditions
- Ice bridges will be constructed of clean (ambient) water, ice and snow and snowfills will be constructed of clean snow. Materials such as gravel, rock and loose woody material will NOT be used. Crossings will not impede water flow at any time of the year
- Where logs are required for use in stabilizing shoreline approaches, they will be clean and securely bound together and they will be removed before the spring freshet
- When the crossing season is over and where it is safe to do so, a v-notch will be created in the centre of the ice bridge to allow it to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding. Compacted snow and all crossing materials will be removed prior to the spring freshet
- No logs or woody debris will be left within the waterway or on the banks or shoreline where they can wash back into the waterway.
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### ESS Group: AIS

*Features represented as polygons*

<table>
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<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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</thead>
<tbody>
<tr>
<td>Aqua-400</td>
<td>Aquatic Invasive Species Control Zone</td>
<td>11 to 12</td>
<td>E-634534 N-5512418</td>
<td>E-634664 N-5512493</td>
<td>151</td>
</tr>
<tr>
<td>Aqua-401</td>
<td>Aquatic Invasive Species Control Zone</td>
<td>13 to 14</td>
<td>E-635111 N-5512749</td>
<td>E-635274 N-5512842</td>
<td>187</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential spread of Aquatic Invasive Species from a control zone to unaffected water bodies

**Specific Mitigation (ID# 719):**
- If equipment or watercraft are required to be in contact with the water or shoreline please refer to the "Aquatic Biosecurity Mitigation Measures" found in the Appendix of the Biosecurity Management Plan

### ESS Group: Birds and Habitat

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<tbody>
<tr>
<td>Wild-103</td>
<td>Red River crossing</td>
<td>L7 to L8</td>
<td>E-634144 N-5512194</td>
<td>E-634926 N-5512643</td>
<td>902</td>
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</tbody>
</table>

**Potential Effects:**
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

**Specific Mitigation (ID# 827):**
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

### ESS Group: Recreation

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUse-301A</td>
<td>Duff Roblin Provincial Park</td>
<td>9 to 10</td>
<td>E-634536 N-5512419</td>
<td>E-634344 N-5512309</td>
<td>222</td>
</tr>
<tr>
<td>LUse-301</td>
<td>Duff Roblin Provincial Park</td>
<td>7 to 8</td>
<td>E-633986 N-5512197</td>
<td>E-634309 N-5512289</td>
<td>347</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption to Provincial Park use

**Specific Mitigation (ID# 409):**
- Follow all provincial park work permit conditions
- 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 work site
- Provide warning signage for vehicle traffic and public safety

### ESS Group: Water Crossing

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-110</td>
<td>Red River Floodway Crossing</td>
<td>E-635189 N-5512793</td>
<td>193</td>
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</table>

**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 (ID# 710):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
ESS Group: Water Crossing

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
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<td>Aqua-109</td>
<td>Red River Crossing</td>
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<td>149</td>
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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 (ID# 711):
- Carry out construction activities on frozen or dry 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
- Temporary signs stating "Construction Activity" will be:
  - placed and maintained 200m upstream and 200m downstream of the work
  - legible from a minimum distance of 100m downstream of the work
  - placed and maintained during all periods of conductor stringing during the open water season on all navigable waters
  - visible from all points of marine approach and when snowmobile traffic exists during frozen water conditions
- Ice bridges will be constructed of clean (ambient) water, ice and snow and snowfills will be constructed of clean snow. Materials such as gravel, rock and loose woody material will NOT be used. Crossings will not impede water flow at any time of the year
- Where logs are required for use in stabilizing shoreline approaches, they will be clean and securely bound together and they will be removed before the spring freshet
- When the crossing season is over and where it is safe to do so, a v-notch will be created in the centre of the ice bridge to allow it to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding. Compacted snow and all crossing materials will be removed prior to the spring freshet
- No logs or woody debris will be left within the waterway or on the banks or shoreline where they can wash back into the waterway.
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No specific mitigation measures for this map, page intentionally left blank
### ESS Group: Trail

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecUse-101</td>
<td>Trail CT710</td>
<td>RecUse-101-1 to</td>
<td>E-64194</td>
<td>N-5517560</td>
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<tr>
<td></td>
<td></td>
<td>RecUse-101-2</td>
<td>E-644386</td>
<td>N-5519264</td>
<td>3006</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential interference with trail users; safety issues

**Specific Mitigation (ID# 103):**
- Identify and flag where trail intersects ROW
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location during construction
- MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

### ESS Group: Water Crossing

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-111</td>
<td>Seine River Bypass Crossing</td>
<td>E-640893 to N-5516973</td>
<td>22</td>
<td>18</td>
</tr>
</tbody>
</table>

**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 (ID# 711):**
- Carry out construction activities on frozen or dry 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
- Temporary signs stating "Construction Activity" will be:
  - placed and maintained 200m upstream and 200m downstream of the work
  - legible from a minimum distance of 100m downstream of the work
  - placed and maintained during all periods of conductor stringing during the open water season on all navigable waters
  - visible from all points of marine approach and when snowmobile traffic exists during frozen water conditions
- Ice bridges will be constructed of clean (ambient) water, ice and snow and snowfills will be constructed of clean snow. Materials such as gravel, rock and loose woody material will NOT be used. Crossings will not impede water flow at any time of the year
- Where logs are required for use in stabilizing shoreline approaches, they will be clean and securely bound together and they will be removed before the spring freshet
- When the crossing season is over and where it is safe to do so, a v-notch will be created in the centre of the ice bridge to allow it to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding. Compacted snow and all crossing materials will be removed prior to the spring freshet
- No logs or woody debris will be left within the waterway or on the banks or shoreline where they can wash back into the waterway.
ESS Group: Water Crossing
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-112</td>
<td>Old Prairie Grove Drain Crossing</td>
<td>E-641655 N-5517486</td>
<td>11</td>
<td>4.5</td>
</tr>
</tbody>
</table>

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 (ID# 715):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector.
- Use existing trails, roads or cut lines whenever possible as access routes.
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge).
- If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required.
- Locate crossings perpendicular to the bank, whenever possible.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
**ESS Group:** Trail

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecUse-101</td>
<td>Trail CT710</td>
<td>C3</td>
<td>E-646990</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N-5521015</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential interference with trail users; safety issues

**Specific Mitigation (ID# 103):**

- Identify and flag where trail intersects ROW
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location during construction
- MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

---

**ESS Group:** Trail

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecUse-101</td>
<td>Trail CT710</td>
<td>RecUse-101-1 to RecUse-101-2</td>
<td>E-641914 N-5517560</td>
<td>E-644386 N-5519264</td>
<td>3006</td>
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</tbody>
</table>

**Potential Effects:**
Potential interference with trail users; safety issues

**Specific Mitigation (ID# 103):**

- Identify and flag where trail intersects ROW
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location during construction
- MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction
### ESS Group: Birds and Habitat

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-104</td>
<td>Deacon’s Reservoir waterfowl sensitive area</td>
<td>L9 to L10</td>
<td>E-647508 N-5522860</td>
<td>E-649978 N-5524806</td>
<td>4402</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

**Specific Mitigation (ID# 827):**
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

### ESS Group: Water Crossing

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-113</td>
<td>Prairie Grove Drain Crossing</td>
<td>E-647503 N-5523042</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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 (ID# 715):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector
- Use existing trails, roads or cut lines whenever possible as access routes
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge)
- If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required
- Locate crossings perpendicular to the bank, whenever possible
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site

### ESS Group: Trail

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecUse-101</td>
<td>Trail CT710</td>
<td>C4</td>
<td>E-647554 N-5521616</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential interference with trail users; safety issues

**Specific Mitigation (ID# 103):**
- Identify and flag where trail intersects ROW
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location during construction
- MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction
**ESS Group:** Birds and Habitat

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-104</td>
<td>Deacon's Reservoir waterfowl sensitive area</td>
<td>L9 to L10</td>
<td>E-649978</td>
<td>E-647508</td>
<td>4402</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N-5524806</td>
<td>N-5522860</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Potential Effects:**
*Higher risk of wire collision, Risk of wire collision is localized to the right-of-way*

**Specific Mitigation (ID# 827):**
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans
No specific mitigation measures for this map, page intentionally left blank
No specific mitigation measures for this map, page intentionally left blank
### ESS Group: Groundwater

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-200</td>
<td>Flowing Aquifer</td>
<td>15 to 16</td>
<td>E-663359</td>
<td>E-672760</td>
<td>9410</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N-5525376</td>
<td>N-5525382</td>
<td></td>
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</tbody>
</table>

**Potential Effects:**
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

**Specific Mitigation** (ID# 705):
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture

### ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-114</td>
<td>Cooks Creek Crossing</td>
<td>E-662607</td>
<td>30</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N-5525303</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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** (ID# 711):
- Carry out construction activities on frozen or dry 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
- Temporary signs stating "Construction Activity" will be:
  - placed and maintained 200m upstream and 200m downstream of the work
  - legible from a minimum distance of 100m downstream of the work
  - placed and maintained during all periods of conductor stringing during the open water season on all navigable waters
  - visible from all points of marine approach and when snowmobile traffic exists during frozen water conditions
- Ice bridges will be constructed of clean (ambient) water, ice and snow and snowfills will be constructed of clean snow. Materials such as gravel, rock and loose woody material will NOT be used. Crossings will not impede water flow at any time of the year
- Where logs are required for use in stabilizing shoreline approaches, they will be clean and securely bound together and they will be removed before the spring freshet
- When the crossing season is over and where it is safe to do so, a v-notch will be created in the centre of the ice bridge to allow it to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding. Compacted snow and all crossing materials will be removed prior to the spring freshet
- No logs or woody debris will be left within the waterway or on the banks or shoreline where they can wash back into the waterway.
ESS Group: Archaeological
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-109</td>
<td>Edie Creek Crossing</td>
<td>E-667637 - N-5525451</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disturbance to Heritage Resources

**Specific Mitigation (ID# 301):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

ESS Group: Groundwater
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-200</td>
<td>Flowing Aquifer</td>
<td>25 to 26</td>
<td>E-671689 N-5525406</td>
<td>E-672285 N-5521842</td>
<td>3963</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

**Specific Mitigation (ID# 705):**
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture

ESS Group: Water Crossing
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-115</td>
<td>Edie Creek Crossing</td>
<td>17 to 18</td>
<td>E-667523 N-5525478</td>
<td>E-667948 N-5525488</td>
<td>425</td>
</tr>
</tbody>
</table>

**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 (ID# 710):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
**ESS Group: Birds and Habitat**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-105</td>
<td>Sensitive Avian Habitat</td>
<td>31 to 32</td>
<td>E-671701 N-5524787</td>
<td>E-671720 N-5523774</td>
<td>1013</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation (ID# 826):**
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

**ESS Group: Birds and Habitat**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-104A</td>
<td>Sharp-tailed grouse lek</td>
<td>21 to 22</td>
<td>E-669181 N-5525519</td>
<td>E-671147 N-5525474</td>
<td>1968</td>
</tr>
<tr>
<td>Wild-104B</td>
<td>Sharp-tailed grouse lek</td>
<td>33 to 34</td>
<td>E-671704 N-5524653</td>
<td>E-672299 N-5521282</td>
<td>3771</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption of mating success for sharp-tailed grouse

**Specific Mitigation (ID# 830):**
- Do not plan to carry out construction activities within this area between April 15 to June 1st
- If construction activity is required within this area between April 15 to June 1st, contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

**ESS Group: Forestry**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUse-305</td>
<td>Shelterbelt</td>
<td>E-671692 - N-5525286</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

**Specific Mitigation (ID# 505):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber

**ESS Group: Groundwater**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-200</td>
<td>Flowing Aquifer</td>
<td>15 to 16</td>
<td>E-663359 N-5525376</td>
<td>E-672760 N-5525362</td>
<td>9410</td>
</tr>
<tr>
<td>Aqua-200</td>
<td>Flowing Aquifer</td>
<td>25 to 26</td>
<td>E-671689 N-5525406</td>
<td>E-672285 N-5521842</td>
<td>3963</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

**Specific Mitigation (ID# 705):**
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture
ESS Group: Habitat
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-100</td>
<td>Prairie Grassland</td>
<td>*See Map</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
• Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
• Use existing access roads and trails to the extent possible
• Refer to Clearing Management Plan for clearing prescription
• Confine vehicle traffic to established trails to the extent possible
• In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

ESS Group: Trail
*Features represented as lines

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecUse-102</td>
<td>Trail PT50</td>
<td>C5</td>
<td>E-669809</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N-5526530</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential interference with trail users; safety issues

Specific Mitigation (ID# 103):
• Identify and flag where trail intersects ROW
• Avoid surface damage to and obstruction of access route
• Post warning markers and signs at snowmobile trail location during construction
• MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

ESS Group: Water Crossing
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-115A</td>
<td>Unnamed Creek</td>
<td>E-671528</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Crossing</td>
<td>N-5525459</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 (ID# 715):
• Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
• If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector
• Use existing trails, roads or cut lines whenever possible as access routes
• A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
• Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge)
• If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required
• Locate crossings perpendicular to the bank, whenever possible
• Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site
### ESS Group: Wetland

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-300</td>
<td>Wetland</td>
<td>19 to 20</td>
<td>E-668871 N-5525511</td>
<td>E-668988 N-5525514</td>
<td>117</td>
</tr>
<tr>
<td>Aqua-301</td>
<td>Wetland</td>
<td>23 to 24</td>
<td>E-671537 N-5525458</td>
<td>E-671581 N-5525456</td>
<td>43</td>
</tr>
<tr>
<td>Aqua-302</td>
<td>Wetland</td>
<td>27 to 28</td>
<td>E-671696 N-5525056</td>
<td>E-671702 N-5524720</td>
<td>336</td>
</tr>
<tr>
<td>Aqua-302</td>
<td>Wetland</td>
<td>29 to 30</td>
<td>E-671704 N-5524652</td>
<td>E-671710 N-5524308</td>
<td>344</td>
</tr>
</tbody>
</table>

### Potential Effects:

*Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat*

### Specific Mitigation (ID# 205):

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during non-frozen ground conditions.
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site.
- Refer to Clearing Management Plan for clearing prescription.
- The application of herbicides is prohibited.
- Maintain shrub and herbaceous vegetation to the extent possible.
Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 24, 2019
Version: Final 1.0

Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations

DOCUMENT PATH: \GEODATA\TLEA1\GIS\ORIENTIS\PRJ_EPIMS\MANAGEDPLANSLEA\MMTP\ENVIRONMENTPROTECTIONPLAN\MMTP_CENVPP_MAPBOOK_MH_20190523.MXD
ESS Group: Birds and Habitat
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<tbody>
<tr>
<td>Wild-105</td>
<td>Sensitive Avian Habitat</td>
<td>31 to 32</td>
<td>E-671701 N-5524787</td>
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<td>Wild-106</td>
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<td>E-671733 N-5523132</td>
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Potential Effects:
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation (ID# 826):
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

ESS Group: Birds and Habitat
*Features represented as polygons

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<th>Distance (m)</th>
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<tbody>
<tr>
<td>Wild-104B</td>
<td>Sharp-tailed grouse lek</td>
<td>33 to 34</td>
<td>E-671704 N-5524653</td>
<td>E-672299 N-5521282</td>
<td>3771</td>
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</tbody>
</table>

Potential Effects:
Potential disruption of mating success for sharp-tailed grouse

Specific Mitigation (ID# 830):
- Do not plan to carry out construction activities within this area between April 15 to June 1st
- If construction activity is required within this area between April 15 to June 1st. Contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

ESS Group: Groundwater
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
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<th>Distance (m)</th>
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<tbody>
<tr>
<td>Aqua-200</td>
<td>Flowing Aquifer</td>
<td>25 to 26</td>
<td>E-671689 N-5525406</td>
<td>E-672285 N-5521842</td>
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<tr>
<td>Aqua-201</td>
<td>Flowing Aquifer</td>
<td>43 to 44</td>
<td>E-672326 N-5520215</td>
<td>E-672624 N-5518730</td>
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</tbody>
</table>

Potential Effects:
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

Specific Mitigation (ID# 705):
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture

ESS Group: Groundwater
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
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<tbody>
<tr>
<td>Aqua-204</td>
<td>Artesian Well</td>
<td>E-672322 - N-5521498</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential damage to wellhead or potential groundwater contamination from a contingency even (e.g., spill)

Specific Mitigation (ID# 720):
- Locate and flag a 10m buffer around wellhead
- No fueling or servicing of vehicles within 100m of wellhead
- No fuel or hazardous materials storage within 100m of wellhead
ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
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<tbody>
<tr>
<td>Aqua-116</td>
<td>Edie Creek Crossing</td>
<td>E-671723 N-5523620</td>
<td>N/A</td>
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</table>

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 (ID# 710):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats

ESS Group: Wetland

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
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<th>Site</th>
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<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-303</td>
<td>Wetland</td>
<td>35 to 36</td>
<td>E-671718 N-5523877</td>
<td>E-671720 N-5523816</td>
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<tr>
<td>Aqua-304</td>
<td>Wetland</td>
<td>37 to 38</td>
<td>E-671726 N-5523490</td>
<td>E-671726 N-5523474</td>
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<tr>
<td>Aqua-304</td>
<td>Wetland</td>
<td>39 to 40</td>
<td>E-671729 N-5523304</td>
<td>E-672257 N-5522900</td>
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Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
This page was left intentionally blank.
ESS Group: Archaeological
*Features represented as points

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<tr>
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<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-110</td>
<td>Cooks Creek Crossing</td>
<td>E-672774 - N-5518337</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

ESS Group: Birds and Habitat
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<tbody>
<tr>
<td>Wild-107</td>
<td>Sensitive Avian Habitat</td>
<td>57 to 58</td>
<td>E-672670 N-5518609</td>
<td>E-675858 N-5513172</td>
<td>6431</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation (ID# 826):
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

ESS Group: Groundwater
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<td>1536</td>
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Potential Effects:
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

Specific Mitigation (ID# 705):
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture

ESS Group: Habitat
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<th>Distance (m)</th>
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<tbody>
<tr>
<td>Eco-101</td>
<td>Prairie Grassland</td>
<td>55 to 56</td>
<td>E-672568 N-5518878</td>
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Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures
ESS Group: Water Crossing
*Features represented as points

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<tr>
<th>ESS ID</th>
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<tbody>
<tr>
<td>Aqua-117</td>
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<td>E-672775 N-5518336</td>
<td>N/A</td>
<td>N/A</td>
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</tbody>
</table>

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 (ID# 711):
- Carry out construction activities on frozen or dry 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
- Temporary signs stating "Construction Activity" will be:
  - placed and maintained 200m upstream and 200m downstream of the work
  - legible from a minimum distance of 100m downstream of the work
  - placed and maintained during all periods of conductor stringing during the open water season on all navigable waters
  - visible from all points of marine approach and when snowmobile traffic exists during frozen water conditions
- Ice bridges will be constructed of clean (ambient) water, ice and snow and snowfills will be constructed of clean snow. Materials such as gravel, rock and loose woody material will NOT be used. Crossings will not impede water flow at any time of the year
- Where logs are required for use in stabilizing shoreline approaches, they will be clean and securely bound together and they will be removed before the spring freshet
- When the crossing season is over and where it is safe to do so, a v-notch will be created in the centre of the ice bridge to allow it to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding. Compacted snow and all crossing materials will be removed prior to the spring freshet
- No logs or woody debris will be left within the waterway or on the banks or shoreline where they can wash back into the waterway.

ESS Group: Wetland
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<tbody>
<tr>
<td>Aqua-305</td>
<td>Wetland</td>
<td>45 to 46</td>
<td>E-672335</td>
<td>N-5519905</td>
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<td>Aqua-306</td>
<td>Wetland</td>
<td>47 to 48</td>
<td>E-672338</td>
<td>N-5519783</td>
<td>E-672339</td>
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<tr>
<td>Aqua-307</td>
<td>Wetland</td>
<td>49 to 50</td>
<td>E-672340</td>
<td>N-5519695</td>
<td>E-672343</td>
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<td>Aqua-308</td>
<td>Wetland</td>
<td>51 to 52</td>
<td>E-672388</td>
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<td>Aqua-308</td>
<td>Wetland</td>
<td>53 to 54</td>
<td>E-672432</td>
<td>N-5519234</td>
<td>E-672615</td>
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</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
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**ESS Group: Birds and Habitat**

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**Potential Effects:**
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation (ID# 826):**
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

---

**ESS Group: Forestry**

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<th>Distance (m)</th>
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<tbody>
<tr>
<td>RUse-311</td>
<td>Large Berry Picking Area</td>
<td>61 to 62</td>
<td>E-673702 N-5515906</td>
<td>E-673854 N-5515507</td>
<td>427</td>
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</table>

**Potential Effects:**
Unnecessary damage to fruit and berry trees

**Specific Mitigation (ID# 504):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Minimize surface disturbance around the site to the extent possible
- No Herbicide to be applied during construction
- Confining vehicle traffic to established trails to the extent possible
- Refer to Clearing Management Plan for clearing prescriptions

---

**ESS Group: Line of Sight Buffer**

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<tbody>
<tr>
<td>Wild-400</td>
<td>Line of Sight Buffer</td>
<td>71 to 72</td>
<td>E-675325 N-5513870</td>
<td>E-675363 N-5513820</td>
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</tbody>
</table>

**Potential Effects:**
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

**Specific Mitigation (ID# 833):**
- Remove all trees
- Remove all shrubs >4m tall.
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

---

**ESS Group: Species of Concern**

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<table>
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<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<tr>
<td>Eco-301A</td>
<td>Plant Species of Concern</td>
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<td>E-675325 N-5513870</td>
<td>E-675380 N-5513799</td>
<td>90</td>
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**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confining vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures
### ESS Group: Species of Traditional Use

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<tr>
<th>ESS ID</th>
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<tbody>
<tr>
<td>Eco-500</td>
<td>Traditional Use</td>
<td>63 to 64</td>
<td>E-673868 N-5515471</td>
<td>E-674979 N-5514221</td>
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<td>Plant Species</td>
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<td>Eco-501</td>
<td>Traditional Use</td>
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**Potential Effects:** 
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confining vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

### ESS Group: Wetland

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<tbody>
<tr>
<td>Aqua-309</td>
<td>Wetland</td>
<td>59 to 60</td>
<td>E-673665 N-5516003</td>
<td>E-673683 N-5515956</td>
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<td>Aqua-310</td>
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<td>E-674641 N-5514540</td>
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**Potential Effects:** 
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 205):**
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
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- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
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<tbody>
<tr>
<td>Hert-111</td>
<td>Fish Creek Crossing</td>
<td>E-676917 - N-5511783</td>
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Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

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<tbody>
<tr>
<td>Wild-108</td>
<td>Sensitive Avian Habitat</td>
<td>73 to 74</td>
<td>E-676235 N-5512678</td>
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<td>Sensitive Avian Habitat</td>
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<td>E-677157 N-5511471</td>
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Potential Effects:
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation (ID# 626):
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

ESS Group: Habitat
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-102</td>
<td>Prairie Grassland</td>
<td>75 to 76</td>
<td>E-676547 N-5512270</td>
<td>E-676660 N-5512122</td>
<td>186</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

ESS Group: Water Crossing
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-118</td>
<td>Fish Creek Crossing</td>
<td>E-676922 N-5511779</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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 (ID# 710):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
ESS Group: Wetland

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-311</td>
<td>Wetland</td>
<td>79 to 80</td>
<td>E-677626 N-5510857</td>
<td>E-677765 N-5510674</td>
<td>230</td>
</tr>
<tr>
<td>Aqua-312</td>
<td>Wetland</td>
<td>81 to 82</td>
<td>E-677776 N-5510660</td>
<td>E-678614 N-5509562</td>
<td>1381</td>
</tr>
</tbody>
</table>

Potential Effects:
*Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat*

Specific Mitigation (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during non-frozen ground conditions.
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site.
- Refer to Clearing Management Plan for clearing prescription.
- The application of herbicides is prohibited.
- Maintain shrub and herbaceous vegetation to the extent possible.
This page was left intentionally blank.
**ESS Group: Birds and Habitat**
*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-110</td>
<td>Sensitive Avian Habitat</td>
<td>83 to 84 E-678602 N-5509578</td>
<td>E-679131 N-5507941</td>
<td>1819</td>
<td></td>
</tr>
<tr>
<td>Wild-111</td>
<td>Sensitive Avian Habitat</td>
<td>97 to 98 E-679125 N-5507447</td>
<td>E-679344 N-5505623</td>
<td>1863</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation** (ID# 826):
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

**ESS Group: Cultural**
*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-201</td>
<td>Protected Tree</td>
<td>E-678935 - N-5509123</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disturbance to Heritage Resources

**Specific Mitigation** (ID# 317):
- Identify and flag large diameter tree establish a buffer of 10m prior to start of work
- Minimize surface disturbance around the site to the extent possible
- Remove trees that aren’t identified using a selective clearing method within buffer and fell them away from the identified tree
- Should minor trimming of the identified tree be required to facilitate construction, any activities must be approved by a Manitoba Hydro Environmental Officer

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**ESS Group: Wetland**
*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-319</td>
<td>Wetland</td>
<td>99 to 100 E-679122 N-5507264</td>
<td>E-679123 N-5507297</td>
<td>33</td>
<td></td>
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<tr>
<td>Aqua-320</td>
<td>Wetland</td>
<td>101 to 102 E-679115 N-5506655</td>
<td>E-679115 N-5506645</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Aqua-321</td>
<td>Wetland</td>
<td>103 to 104 E-679114 N-5506595</td>
<td>E-679114 N-5506569</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Aqua-322</td>
<td>Wetland</td>
<td>105 to 106 E-679113 N-5506519</td>
<td>E-679111 N-5506343</td>
<td>176</td>
<td></td>
</tr>
<tr>
<td>Aqua-312</td>
<td>Wetland</td>
<td>81 to 82 E-677776 N-5510660</td>
<td>E-676814 N-5509562</td>
<td>1381</td>
<td></td>
</tr>
<tr>
<td>Aqua-313</td>
<td>Wetland</td>
<td>85 to 86 E-678789 N-5509333</td>
<td>E-678801 N-5509318</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Aqua-314</td>
<td>Wetland</td>
<td>87 to 88 E-678873 N-5509223</td>
<td>E-678883 N-5509210</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Aqua-315</td>
<td>Wetland</td>
<td>89 to 90 E-678966 N-5509102</td>
<td>E-679000 N-5509057</td>
<td>56</td>
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<tr>
<td>Aqua-316</td>
<td>Wetland</td>
<td>91 to 92 E-679025 N-5509024</td>
<td>E-679062 N-5508975</td>
<td>61</td>
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<tr>
<td>Aqua-317</td>
<td>Wetland</td>
<td>93 to 94 E-679141 N-5508793</td>
<td>E-679141 N-5508749</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Aqua-318</td>
<td>Wetland</td>
<td>95 to 96 E-679130 N-5507853</td>
<td>E-679124 N-5507379</td>
<td>474</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation** (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
### ESS Group: Archaeological

**Features represented as points**

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-112</td>
<td>Area of Potential Use</td>
<td>E-680630 - N-5503150</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Potential disturbance to Heritage Resources

**Specific Mitigation (ID# 301):**

- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

### ESS Group: Birds and Habitat

**Features represented as polygons**

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-112</td>
<td>Sensitive Avian Habitat</td>
<td>113 to 114</td>
<td>E-679906 N-5504116</td>
<td>E-680593 N-5503200</td>
<td>1145</td>
</tr>
<tr>
<td></td>
<td></td>
<td>97 to 96</td>
<td>E-679125 N-5507447</td>
<td>E-679344 N-5505623</td>
<td>1863</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation (ID# 626):**

- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

### ESS Group: Recreation

**Features represented as polygons**

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUse-302</td>
<td>Cottonwood Golf Course</td>
<td>107 to 108</td>
<td>E-679286 N-5505796</td>
<td>E-679339 N-5505638</td>
<td>167</td>
</tr>
</tbody>
</table>

**Potential Effects:**

Potential disruption to golf course

**Specific Mitigation (ID# 408):**

- Carry out construction activities following any applicable noise bylaws
- MH to notify golf course manager of major noise-generating activities
- Where the golf course borders the ROW limit all equipment to the project footprint only, where possible
- Where the golf course borders the ROW No damage to vegetation on the edge of the Right of Way or pushing debris onto adjacent property
- No trees will be removed from outside of the ROW edge, except the removal of danger trees on the ROW edge as identified by Manitoba Hydro

### ESS Group: Species of Concern

**Features represented as polygons**

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-302A</td>
<td>Plant Species of Concern</td>
<td>109 to 110</td>
<td>E-679652 N-5504715</td>
<td>E-679620 N-5504231</td>
<td>514</td>
</tr>
<tr>
<td>Eco-302B</td>
<td>Plant Species of Concern</td>
<td>111 to 112</td>
<td>E-679903 N-5504120</td>
<td>E-680696 N-5503061</td>
<td>1323</td>
</tr>
</tbody>
</table>

**Potential Effects:**

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

**Specific Mitigation (ID# 215):**

- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confinement to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan and for mitigation measures
- Pre-construction survey may be conducted to confirm presence of Species of Concern
ESS Group: Trail
*Features represented as lines

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecUse-103</td>
<td>Trail PT21</td>
<td>C6</td>
<td>E-679839</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N-5504205</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential interference with trail users; safety issues

Specific Mitigation (ID# 103):
- Identify and flag where trail intersects ROW
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location during construction
- MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

ESS Group: Wetland
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-322A</td>
<td>Wetland</td>
<td>115 to 116</td>
<td>E-680234</td>
<td>N-5503678</td>
<td>E-680463</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N-550372</td>
<td>E-680463</td>
<td>N-5503372</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions.
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
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### ESS Group: Birds and Habitat
*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-113</td>
<td>Sensitive Avian Habitat</td>
<td>117 to 118</td>
<td>E-681321 N-5502229</td>
<td>E-682169 N-5501100</td>
<td>1412</td>
</tr>
<tr>
<td>Wild-114</td>
<td>Sensitive Avian Habitat</td>
<td>127 to 128</td>
<td>E-682607 N-5500516</td>
<td>E-682997 N-5498510</td>
<td>2255</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation (ID# 826):**
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

### ESS Group: Species of Concern
*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-303</td>
<td>Plant Species of Concern</td>
<td>E-683222 N-5499546</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 201):**
- 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 10m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- Confin vehicle traffic to established trails to the extent possible

### ESS Group: Species of Concern
*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-302C</td>
<td>Plant Species of Concern</td>
<td>119 to 120</td>
<td>E-681327 N-5502221</td>
<td>E-682160 N-5501111</td>
<td>1389</td>
</tr>
<tr>
<td>Eco-302D</td>
<td>Plant Species of Concern</td>
<td>125 to 126</td>
<td>E-682533 N-5500614</td>
<td>E-683229 N-5499501</td>
<td>1360</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of plants of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 215):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible.
- Refer to Clearing Management Plan for clearing prescription.
- Confin vehicle traffic to established trails to the extent possible.
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan and for mitigation measures.
- Pre-construction survey may be conducted to confirm presence of Species of Concern.
**ESS Group:** Water Crossing

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-119</td>
<td>Unnamed Creek Crossing</td>
<td>E-682237 N-5501008</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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 (ID# 710):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats

**ESS Group:** Wetland

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-323</td>
<td>Wetland</td>
<td>121 to 122</td>
<td>E-681539 N-5501939</td>
<td>E-681557 N-5501914</td>
<td>31</td>
</tr>
<tr>
<td>Aqua-324</td>
<td>Wetland</td>
<td>123 to 124</td>
<td>E-682161 N-5501110</td>
<td>E-682839 N-5502020</td>
<td>1129</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 205):**
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
This page was left intentionally blank.
**ESS Group: Birds and Habitat**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-114</td>
<td>Sensitive Avian Habitat</td>
<td>127 to 128</td>
<td>E-682607 N-5500516</td>
<td>E-682997 N-5498510</td>
<td>2255</td>
</tr>
<tr>
<td>Wild-116</td>
<td>Sensitive Avian Habitat</td>
<td>135 to 136</td>
<td>E-682850 N-5497881</td>
<td>E-682644 N-5497001</td>
<td>903</td>
</tr>
<tr>
<td>Wild-117</td>
<td>Sensitive Avian Habitat</td>
<td>139 to 140</td>
<td>E-682466 N-5496241</td>
<td>E-682140 N-5494851</td>
<td>1427</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation (ID# 826):**
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Typically 5-10 perch site trees must be retained per span where feasible

---

**ESS Group: Birds and Habitat**

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
</table>

**Potential Effects:**
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

**Specific Mitigation (ID# 827):**
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

---

**ESS Group: Conservation**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUse-100</td>
<td>Balsam Willows Proposed Ecological Reserve</td>
<td><em>See Map</em></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption to Ecological Reserve

**Specific Mitigation (ID# 407):**
- Absolutely no activities are to extend into the boundaries of this area

---

**ESS Group: Water Crossing**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-120</td>
<td>Unnamed Creek Crossing</td>
<td>E-682919 N-5498179</td>
<td>2.5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**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 (ID# 710):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
ESS Group: Wetland

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-325</td>
<td>Wetland</td>
<td>129 to 130</td>
<td>E-683104 N-5498969</td>
<td>E-683091 N-5498911</td>
<td>59</td>
</tr>
<tr>
<td>Aqua-325</td>
<td>Wetland</td>
<td>131 to 132</td>
<td>E-683080 N-5498868</td>
<td>E-683042 N-5498703</td>
<td>169</td>
</tr>
<tr>
<td>Aqua-325</td>
<td>Wetland</td>
<td>133 to 134</td>
<td>E-683015 N-5498589</td>
<td>E-682846 N-5497966</td>
<td>742</td>
</tr>
<tr>
<td>Aqua-326</td>
<td>Wetland</td>
<td>137 to 138</td>
<td>E-682795 N-5497649</td>
<td>E-682707 N-5497273</td>
<td>386</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
This page was left intentionally blank.
ESS Group: Archaeological
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-113</td>
<td>Unnamed Creek Crossing</td>
<td>E-681912 - N-5491380</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disturbance to Heritage Resources

**Specific Mitigation (ID# 301):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

ESS Group: Birds and Habitat
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-117</td>
<td>Sensitive Avian Habitat</td>
<td>139 to 140</td>
<td>E-682466 N-5496241</td>
<td>E-682140 N-5494851</td>
<td>1427</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of habitat for Golden-winged Warbler from clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation (ID# 826):**
- Refer to Clearing Management Plan for detailed clearing prescriptions
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Typically 5-10 perch site trees must be retained per span where feasible

ESS Group: Forestry
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUse-306</td>
<td>Shelterbelt</td>
<td>E-681861 - N-5492719</td>
</tr>
<tr>
<td>RUse-307</td>
<td>Shelterbelt</td>
<td>E-681912 - N-5491242</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

**Specific Mitigation (ID# 505):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber

ESS Group: Groundwater
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-202</td>
<td>Flowing Aquifer</td>
<td>143 to 144</td>
<td>E-681891 N-5491992</td>
<td>E-682785 N-5483579</td>
<td>8768</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

**Specific Mitigation (ID# 705):**
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture
ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-122</td>
<td>Unnamed Creek Crossing</td>
<td>E-661913 N-5491373</td>
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</tr>
</tbody>
</table>

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 (ID# 710):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats

ESS Group: Wetland

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
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<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-327</td>
<td>Wetland</td>
<td>141 to 142</td>
<td>E-682032 N-5494396</td>
<td>E-682025 N-5494370</td>
<td>27</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
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Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProxMB, NRCAN
Date Created: May 24, 2019
Version: Final 1.0
±1:10,000

Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations

Map 33
ESS Group: Archaeological

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-114</td>
<td>Seine River Crossing</td>
<td>E-681936 - N-5488555</td>
</tr>
<tr>
<td>Hert-115</td>
<td>Seine River Crossing</td>
<td>E-681877 - N-5488478</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction.
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector.
- Implement additional mitigation from site investigation.
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered.
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance.

ESS Group: Birds and Habitat

*Features represented as lines

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-118</td>
<td>Seine River crossing</td>
<td>L13 to L14</td>
<td>E-682010 N-5488651</td>
<td>E-681842 N-5488433</td>
<td>275</td>
</tr>
</tbody>
</table>

Potential Effects:
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

Specific Mitigation (ID# 827):
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires.
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans.

ESS Group: Forestry

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUse-308</td>
<td>Shelterbelt</td>
<td>E-681925 - N-5491056</td>
</tr>
<tr>
<td>RUse-309</td>
<td>Shelterbelt</td>
<td>E-681956 - N-5490246</td>
</tr>
</tbody>
</table>

Potential Effects:
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

Specific Mitigation (ID# 505):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber.

ESS Group: Groundwater

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-202</td>
<td>Flowing Aquifer</td>
<td>143 to 144</td>
<td>E-681891 N-5491982</td>
<td>E-682785 N-5483579</td>
<td>8768</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

Specific Mitigation (ID# 705):
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions.
- Emergency response plans for sealing/grouting and pumping will be implemented as required.
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture.

Map Number: 33
**ESS Group: Invasive Species**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-401</td>
<td>Invasive Plant Species</td>
<td>E-681860 - N-5488012</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased risk of spreading invasive weeds

**Specific Mitigation (ID# 213):**
- Implement Biosecurity cleaning measures as per the Biosecurity Management Plan
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

**ESS Group: Invasive Species**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-400</td>
<td>Invasive Plant Species</td>
<td>151 to 152</td>
<td>E-681876</td>
<td>N-5488477</td>
<td>162</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased risk of spreading invasive weeds

**Specific Mitigation (ID# 213):**
- Implement Biosecurity cleaning measures as per the Biosecurity Management Plan
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

**ESS Group: Recreation**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU303</td>
<td>La Verendrye Golf Course</td>
<td><em>See Map</em></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption to golf course

**Specific Mitigation (ID# 408):**
- Carry out construction activities following any applicable noise bylaws
- MH to notify golf course manager of major noise-generating activities
- Where the golf course borders the ROW limit all equipment to the project footprint only, where possible
- Where the golf course borders the ROW No damage to vegetation on the edge of the Right of Way or pushing debris onto adjacent property
- No trees will be removed from outside of the ROW edge, except the removal of danger trees on the ROW edge as identified by Manitoba Hydro

**ESS Group: Species of Traditional Use**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-502</td>
<td>Traditional Use Plant Species</td>
<td>145 to 146</td>
<td>E-681979</td>
<td>N-5489664</td>
<td>412</td>
</tr>
<tr>
<td>Eco-503</td>
<td>Traditional Use Plant Species</td>
<td>147 to 148</td>
<td>E-681985</td>
<td>N-5488619</td>
<td>65</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures
ESS Group: Water Crossing

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-124</td>
<td>Unnamed Creek Crossing</td>
<td>E-681856 N-5488115</td>
<td>8</td>
<td>0.3</td>
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</tbody>
</table>

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 (ID# 710):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats

ESS Group: Water Crossing

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<tr>
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</thead>
<tbody>
<tr>
<td>Aqua-123</td>
<td>Seine River Crossing</td>
<td>149 to 150 E-681945 N-5488567</td>
<td>E-681876 N-5488477</td>
<td>114</td>
<td></td>
</tr>
</tbody>
</table>

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 (ID# 711):
- Carry out construction activities on frozen or dry 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats
- Temporary signs stating "Construction Activity" will be:
  - placed and maintained 200m upstream and 200m downstream of the work
  - legible from a minimum distance of 100m downstream of the work
  - placed and maintained during all periods of conductor stringing during the open water season on all navigable waters
  - visible from all points of marine approach and when snowmobile traffic exists during frozen water conditions
- Ice bridges will be constructed of clean (ambient) water, ice and snow and snowfalls will be constructed of clean snow. Materials such as gravel, rock and loose woody material will NOT be used. Crossings will not impede water flow at any time of the year
- Where logs are required for use in stabilizing shoreline approaches, they will be clean and securely bound together and they will be removed before the spring freshet
- When the crossing season is over and where it is safe to do so, a v-notch will be created in the centre of the ice bridge to allow it to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding. Compacted snow and all crossing materials will be removed prior to the spring freshet
- No logs or woody debris will be left within the waterway or on the banks or shoreline where they can wash back into the waterway.
**ESS Group: Forestry**

*Features represented as polygons*

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<tr>
<th>ESS ID</th>
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<th>Stop</th>
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<tbody>
<tr>
<td>RUse-310</td>
<td>Shelterbelt</td>
<td>155 to 156</td>
<td>E-682629</td>
<td>N-5485596</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-682631</td>
<td>N-5485580</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

**Specific Mitigation (ID# 505):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber

**ESS Group: Groundwater**

*Features represented as polygons*

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<tr>
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<td>N-5491992</td>
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<td></td>
<td></td>
<td></td>
<td>E-682785</td>
<td>N-5483579</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

**Specific Mitigation (ID# 705):**
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture

**ESS Group: Trail**

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RecUse-104</td>
<td>Trail PT29</td>
<td>C7</td>
<td>E-681920</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>N-5486684</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential interference with trail users; safety issues

**Specific Mitigation (ID# 103):**
- Identify and flag where trail intersects ROW
- Avoid surface damage to and obstruction of access route
- Post warning markers and signs at snowmobile trail location during construction
- MH to notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

**ESS Group: Wetland**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-328</td>
<td>Wetland</td>
<td>153 to 154</td>
<td>E-682627</td>
<td>N-5485629</td>
<td>43</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>E-682630</td>
<td>N-5485586</td>
<td></td>
</tr>
<tr>
<td>Aqua-329</td>
<td>Wetland</td>
<td>157 to 158</td>
<td>E-682643</td>
<td>N-5485426</td>
<td>156</td>
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<tr>
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<td></td>
<td></td>
<td>E-682655</td>
<td>N-5485270</td>
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</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 205):**
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
ESS Group: Archaeological

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-117</td>
<td>Area of Potential Use</td>
<td>163 to 164</td>
<td>E-682930 N-5479758</td>
<td>E-682966 N-5478657</td>
<td>1101</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
• Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
• Conduct site investigation with Archaeologist prior to construction
• Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
• Implement additional mitigation from site investigation
• Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
• Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

ESS Group: Archaeological

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-118</td>
<td>Area of Potential Use</td>
<td>E-682973 - N-5478217</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 313):
• Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
• Identify and flag 30m buffer around site 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: Birds and Habitat

*Features represented as lines

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-119</td>
<td>Breeding habitat sensitive area</td>
<td>L15 to L16</td>
<td>E-682938 N-5479543</td>
<td>E-683032 N-5476671</td>
<td>2874</td>
</tr>
</tbody>
</table>

Potential Effects:
Higher risk of wire collision, Risk of wire collision is localized to the right-of-way

Specific Mitigation (ID# 827):
• Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
• Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Birds and Habitat

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-119A</td>
<td>Sharp-tailed grouse lek</td>
<td>161 to 162</td>
<td>E-682927 N-5479861</td>
<td>E-683021 N-5476992</td>
<td>2871</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disruption of mating success for sharp-tailed grouse

Specific Mitigation (ID# 830):
• Do not plan to carry out construction activities within this area between April 15 to June 1st
• If construction activity is required within this area between April 15 to June 1st. Contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

ESS Group: Invasive Species

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-402</td>
<td>Invasive Plant Species</td>
<td>E-682803 - N-5483133</td>
</tr>
<tr>
<td>Eco-403</td>
<td>Invasive Plant Species</td>
<td>E-682945 - N-5479875</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased risk of spreading invasive weeds

Specific Mitigation (ID# 213):
• Implement Biosecurity cleaning measures as per the Biosecurity Management Plan
• Confining vehicle traffic to established trails to the extent possible
• In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures
ESS Group: Species of Traditional Use

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-504</td>
<td>Traditional Use Plant Species</td>
<td>159 to 160</td>
<td>E-682817 N-5483135</td>
<td>E-682830 N-5482713</td>
<td>422</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-125</td>
<td>Unnamed Drain Crossing</td>
<td>E-682942 N-5479404</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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 (ID# 715):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector
- Use existing trails, roads or cut lines whenever possible as access routes
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge)
- If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required
- Locate crossings perpendicular to the bank, whenever possible
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site
This page was left intentionally blank.
ESS Group: Archaeological
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
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</thead>
<tbody>
<tr>
<td>Hert-117</td>
<td>Area of Potential Use</td>
<td>163 to 164</td>
<td>E-682930</td>
<td>N-5479758</td>
<td>E-682966</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

ESS Group: Birds and Habitat
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-119A</td>
<td>Sharp-tailed grouse lek</td>
<td>161 to 162</td>
<td>E-682927</td>
<td>N-5479861</td>
<td>E-683021</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disruption of mating success for sharp-tailed grouse

Specific Mitigation (ID# 830):
- Do not plan to carry out construction activities within this area between April 15 to June 1st
- If construction activity is required within this area between April 15 to June 1st. Contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

ESS Group: Invasive Species
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-404</td>
<td>Invasive Plant Species</td>
<td>E-682972</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased risk of spreading invasive weeds

Specific Mitigation (ID# 213):
- Implement Biosecurity cleaning measures as per the Biosecurity Management Plan
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

Potential Effects:
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

Specific Mitigation (ID# B27):
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans
Retain shrubs and herbaceous vegetation < 4m tall to the extent possible
Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confining vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-401</td>
<td>Line of Sight Buffer</td>
<td>165 to 166</td>
<td>E-682979 N-5478252</td>
<td>E-682981 N-5478202</td>
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</tr>
<tr>
<td>Wild-402</td>
<td>Line of Sight Buffer</td>
<td>169 to 170</td>
<td>E-682981 N-5478202</td>
<td>E-682982 N-5478152</td>
<td>50</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

**Specific Mitigation (ID# 833):**
- Remove all trees
- Remove all shrubs >4m tall
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-505</td>
<td>Traditional Use Plant Species</td>
<td>167 to 168</td>
<td>E-682981 N-5478202</td>
<td>E-682989 N-5477947</td>
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<tr>
<td>Eco-506</td>
<td>Traditional Use Plant Species</td>
<td>175 to 176</td>
<td>E-682986 N-5478039</td>
<td>E-683015 N-5477165</td>
<td>874</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-330</td>
<td>Wetland</td>
<td>171 to 172</td>
<td>E-682986 N-5478047</td>
<td>E-682987 N-5478002</td>
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<tr>
<td>Aqua-330</td>
<td>Wetland</td>
<td>173 to 174</td>
<td>E-682989 N-5477957</td>
<td>E-682991 N-5477900</td>
<td>57</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 205):**
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion.
- Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
This page was left intentionally blank.
**ESS Group:** Birds and Habitat

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-119B</td>
<td>Sharp-tailed</td>
<td>179 to 180</td>
<td>E-683280 N-5472593</td>
<td>E-683570 N-5470897</td>
<td>1721</td>
</tr>
<tr>
<td></td>
<td>grouse lek</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Potential Effects:**
*Potential disruption of mating success for sharp-tailed grouse*

**Specific Mitigation** (ID# 830):
- Do not plan to carry out construction activities within this area between April 15 to June 1st
- If construction activity is required within this area between April 15 to June 1st. Contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

**ESS Group:** Wetland

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<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-331</td>
<td>Wetland</td>
<td>177 to 178</td>
<td>E-683128 N-5473917</td>
<td>E-683315 N-5472391</td>
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</tbody>
</table>

**Potential Effects:**
*Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat*

**Specific Mitigation** (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations
ESS Group: Birds and Habitat

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<td>Sharp-tailed grouse lek</td>
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<td>E-683280</td>
<td>E-683570</td>
<td>1721</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N-5472593</td>
<td>N-5470897</td>
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</tr>
</tbody>
</table>

Potential Effects:
Potential disruption of mating success for sharp-tailed grouse

Specific Mitigation (ID# 830):

- Do not plan to carry out construction activities within this area between April 15 to June 1st
- If construction activity is required within this area between April 15 to June 1st, contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

ESS Group: Wetland

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<th>Site</th>
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<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-332</td>
<td>Wetland</td>
<td>181 to 182</td>
<td>E-683527</td>
<td>E-683577</td>
<td>298</td>
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<td></td>
<td></td>
<td>N-5471154</td>
<td>N-5470860</td>
<td></td>
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<tr>
<td>Aqua-333</td>
<td>Wetland</td>
<td>183 to 184</td>
<td>E-683895</td>
<td>E-683918</td>
<td>135</td>
</tr>
<tr>
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<td></td>
<td>N-5469000</td>
<td>N-5468867</td>
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</tr>
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</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
No specific mitigation measures for this map, page intentionally left blank
ESS Group: Line of Sight Buffer
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-403</td>
<td>Line of Sight Buffer</td>
<td>187 to 188</td>
<td>E-685959 N-5462069</td>
<td>E-686012 N-5462012</td>
<td>78</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

Specific Mitigation (ID# 833):
- Remove all trees
- Remove all shrubs >4m tall.
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

ESS Group: Species of Traditional Use
*Features represented as polygons

<table>
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<tr>
<th>ESS ID</th>
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<th>Site</th>
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<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-507</td>
<td>Traditional Use Plant Species</td>
<td>185 to 186</td>
<td>E-685430 N-5462643</td>
<td>E-686012 N-5462012</td>
<td>858</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures
**ESS Group:** Conservation

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUse-101</td>
<td>Watson P. Davidson WMA</td>
<td>E-687712 - N-5460336</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption to Ecological Reserve

**Specific Mitigation (ID# 407):**

- Absolutely no activities are to extend into the boundaries of this area

---

**ESS Group:** Wetland

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-333A</td>
<td>Wetland</td>
<td>189 to 190</td>
<td>E-687747 N-5460237</td>
<td>E-688036 N-5459960</td>
<td>400</td>
</tr>
<tr>
<td>Aqua-334</td>
<td>Wetland</td>
<td>191 to 192</td>
<td>E-689988 N-5458083</td>
<td>E-690088 N-5457987</td>
<td>138</td>
</tr>
<tr>
<td>Aqua-335</td>
<td>Wetland</td>
<td>193 to 194</td>
<td>E-690160 N-5457917</td>
<td>E-690373 N-5457713</td>
<td>295</td>
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<tr>
<td>Aqua-336</td>
<td>Wetland</td>
<td>195 to 196</td>
<td>E-690438 N-5457650</td>
<td>E-690632 N-5457464</td>
<td>268</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 205):**

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
**ESS Group: Birds and Habitat**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-119C</td>
<td>Stick Nest</td>
<td>E-692822 - N-5455347</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption of stick nest

**Specific Mitigation (ID# 824):**
- Nest tree will be located by Environmental Inspector, georeferenced and marked with Flagging tape
- A 200 m setback will be applied during the breeding season (April 30 to July 31) to minimize sensory disturbance during the breeding season
- If nest removal is required, Manitoba Hydro will consult with Sustainable Development to develop mitigation measures for the relocation of the nest

---

**ESS Group: Line of Sight Buffer**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
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<th>Site</th>
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</thead>
<tbody>
<tr>
<td>Wild-404</td>
<td>Line of Sight Buffer</td>
<td>201 to 202</td>
<td>E-692794</td>
<td>N-5455385</td>
<td>71</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

**Specific Mitigation (ID# 833):**
- Remove all trees
- Remove all shrubs >4m tall
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

---

**ESS Group: Species of Concern**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-304A</td>
<td>Plant Species of Concern</td>
<td>E-692674 - N-5455480</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 201):**
- 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 10m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- Confin[e vehicle traffic to established trails to the extent possible

---

**ESS Group: Species of Traditional Use**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-508</td>
<td>Traditional Use Plant Species</td>
<td>199 to 200</td>
<td>E-692293</td>
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</table>

**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confin[e vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures
ESS Group: Wetland

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<td>Wetland</td>
<td>203 to 204</td>
<td>E-692904 N-5455280</td>
<td>E-692972 N-5455215</td>
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</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
This page was left intentionally blank.
ESS Group: Archaeological
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-119</td>
<td>Rat River Crossing</td>
<td>E-696175 - N-5452135</td>
</tr>
<tr>
<td>Hert-120</td>
<td>Rat River Crossing</td>
<td>E-696185 - N-5452126</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

ESS Group: Birds and Habitat
*Features represented as lines

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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</thead>
<tbody>
<tr>
<td>Wild-120</td>
<td>Rat River crossing</td>
<td>L17 to L18</td>
<td>E-695775 - N-5452520</td>
<td>E-696365 - N-5451953</td>
<td>818</td>
</tr>
</tbody>
</table>

Potential Effects:
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

Specific Mitigation (ID# 827):
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Line of Sight Buffer
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<td>Wild-405</td>
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<td>E-694226 - N-5454009</td>
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</tr>
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<td>Wild-406</td>
<td>Line of Sight Buffer</td>
<td>207 to 208</td>
<td>E-694239 - N-5453996</td>
<td>E-694277 - N-5453960</td>
<td>52</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

Specific Mitigation (ID# 833):
- Remove all trees
- Remove all shrubs >4m tall.
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

ESS Group: Species of Concern
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-304B</td>
<td>Plant Species of Concern</td>
<td>E-694270 - N-5453930</td>
</tr>
<tr>
<td>Eco-305</td>
<td>Plant Species of Concern</td>
<td>E-694292 - N-5453924</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 201):
- 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 10m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
ESS Group: Species of Concern
*Features represented as polygons

<table>
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<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<tbody>
<tr>
<td>Eco-304</td>
<td>Plant Species of Concern</td>
<td>211 to 212</td>
<td>E-694328 N-5453911</td>
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<td>56</td>
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</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

ESS Group: Species of Traditional Use
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-509</td>
<td>Traditional Use Plant Species</td>
<td>209 to 210</td>
<td>E-694239 N-5453996</td>
<td>E-694963 N-5453301</td>
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</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
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ESS Group: Water Crossing
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
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<tbody>
<tr>
<td>Aqua-126</td>
<td>Rat River Crossing</td>
<td>E-696180 N-5452131</td>
<td>14</td>
<td>10</td>
</tr>
</tbody>
</table>

Potential Effects:
Habitual 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 (ID# 710):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats

ESS Group: Wetland
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-338</td>
<td>Wetland - Caliento Bog</td>
<td>213 to 214</td>
<td>E-695558 N-5452729</td>
<td>E-695998 N-5452691</td>
<td>55</td>
</tr>
<tr>
<td>Aqua-339</td>
<td>Wetland - Caliento Bog</td>
<td>215 to 216</td>
<td>E-695679 N-5452612</td>
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<tr>
<td>Aqua-340</td>
<td>Wetland - Caliento Bog</td>
<td>217 to 218</td>
<td>E-695850 N-5452448</td>
<td>E-695905 N-5452395</td>
<td>76</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplain; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 206):
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible

Map Number: 43
Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProcMB, NRCAN
Date Created: May 24, 2019
Version: Final 1.0

±1:10,000

Map 44
ESS Group: Archaeological
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Hert-121</td>
<td>Area of Potential Use</td>
<td>E-696651 - N-5451678</td>
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</tbody>
</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
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ESS Group: Birds and Habitat
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<tr>
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<tbody>
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<td>E-696365</td>
<td>818</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N-5452520</td>
<td>N-5451953</td>
<td></td>
</tr>
<tr>
<td>Wild-121</td>
<td>Waterfowl sensitivity area</td>
<td>L19 to L20</td>
<td>E-698929</td>
<td>E-699635</td>
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<td></td>
<td>N-5449488</td>
<td>N-5448809</td>
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</tbody>
</table>

Potential Effects:
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

Specific Mitigation (ID# 827):
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Habitat
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
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<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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</thead>
<tbody>
<tr>
<td>Eco-103</td>
<td>Prairie Grassland</td>
<td>229 to 230</td>
<td>E-699070</td>
<td>E-699119</td>
<td>69</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>N-5449353</td>
<td>N-5449305</td>
<td></td>
</tr>
</tbody>
</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
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- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

ESS Group: Line of Sight Buffer
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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<tbody>
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<tr>
<td>Wild-408</td>
<td>Line of Sight Buffer</td>
<td>233 to 234</td>
<td>E-699071</td>
<td>E-699111</td>
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<td></td>
<td>N-5449352</td>
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<td></td>
</tr>
</tbody>
</table>

Potential Effects:
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

Specific Mitigation (ID# 833):
- Remove all trees
- Remove all shrubs >4m tall.
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor
**ESS Group:** Species of Traditional Use

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<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
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</thead>
<tbody>
<tr>
<td>Eco-510</td>
<td>Traditional Use</td>
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<td>Eco-511</td>
<td>Traditional Use</td>
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**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**

- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible.
- Refer to Clearing Management Plan for clearing prescription.
- Confine vehicle traffic to established trails to the extent possible.
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**ESS Group:** Wetland

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<table>
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<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-341</td>
<td>Wetland - Caliento Bog</td>
<td>219 to 220</td>
<td>E-696418</td>
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<td>Aqua-342</td>
<td>Wetland - Caliento Bog</td>
<td>221 to 222</td>
<td>E-696866</td>
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<td>Aqua-343</td>
<td>Wetland - Caliento Bog</td>
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<td>E-698836</td>
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<td>N-5449699</td>
<td>N-5449577</td>
<td></td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 206):**

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion.
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site.
- Refer to Clearing Management Plan for clearing prescription.
- The application of herbicides is prohibited.
- Maintain shrub and herbaceous vegetation to the extent possible.
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### ESS Group: Birds and Habitat

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<table>
<thead>
<tr>
<th>ESS ID</th>
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<td>E-699635 N-5448809</td>
<td>979</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

**Specific Mitigation (ID# 827):**
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

### ESS Group: Cultural

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-202</td>
<td>Cemetery</td>
<td>E-699074 - N-5449196</td>
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</tbody>
</table>

**Potential Effects:**
Potential disturbance to Heritage Resources

**Specific Mitigation (ID# 312):**
- MH to contact RM prior to conducting work in the area and adjust timing of construction and maintenance to avoid any religious ceremonies/practices or interments at the cemetery

### ESS Group: Habitat

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
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<tbody>
<tr>
<td>Eco-103</td>
<td>Prairie Grassland</td>
<td>229 to 230</td>
<td>E-699070 N-5449353</td>
<td>E-699119 N-5449305</td>
<td>69</td>
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</tbody>
</table>

**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
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### ESS Group: Line of Sight Buffer

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<table>
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<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-408</td>
<td>Line of Sight Buffer</td>
<td>233 to 234</td>
<td>E-699071 N-5449352</td>
<td>E-699111 N-5449313</td>
<td>56</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

**Specific Mitigation (ID# 833):**
- Remove all trees
- Remove all shrubs >4m tall
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

### ESS Group: Species of Traditional Use

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-511</td>
<td>Traditional Use Plant Species</td>
<td>231 to 232</td>
<td>E-699070 N-5449352</td>
<td>E-699508 N-5448931</td>
<td>608</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

Map Number: 45
**ESS Group:** Wetland

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-344</td>
<td>Wetland - Sundown Bog</td>
<td>235 to 236</td>
<td>E-699525 N-5448915</td>
<td>E-700049 N-5448411</td>
<td>728</td>
</tr>
<tr>
<td>Aqua-345</td>
<td>Wetland - Sundown Bog</td>
<td>237 to 238</td>
<td>E-700614 N-5447775</td>
<td>E-700671 N-5447703</td>
<td>92</td>
</tr>
<tr>
<td>Aqua-346</td>
<td>Wetland - Sundown Bog</td>
<td>239 to 240</td>
<td>E-700700 N-5447665</td>
<td>E-700719 N-5447641</td>
<td>31</td>
</tr>
<tr>
<td>Aqua-347</td>
<td>Wetland - Sundown Bog</td>
<td>241 to 242</td>
<td>E-700772 N-5447574</td>
<td>E-700914 N-5447395</td>
<td>228</td>
</tr>
<tr>
<td>Aqua-347</td>
<td>Wetland - Sundown Bog</td>
<td>243 to 244</td>
<td>E-700976 N-5447316</td>
<td>E-701619 N-5446501</td>
<td>1038</td>
</tr>
<tr>
<td>Aqua-348</td>
<td>Wetland - Sundown Bog</td>
<td>245 to 246</td>
<td>E-701732 N-5446358</td>
<td>E-702450 N-5445448</td>
<td>1159</td>
</tr>
</tbody>
</table>

**Potential Effects:**

*Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat*

**Specific Mitigation (ID# 206):**

- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
This page was left intentionally blank.
### ESS Group: Birds and Habitat

*Features represented as lines*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-122</td>
<td>Sundown Lake and wetland sensitive area</td>
<td>L21 to L22</td>
<td>E-701928 N-5446109</td>
<td>E-704027 N-5443450</td>
<td>3388</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Higher risk of wire collision. Risk of wire collision is localized to the right-of-way

**Specific Mitigation (ID# 827):**
- Bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

### ESS Group: Historic

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-301</td>
<td>Historic Trail</td>
<td>247 to 248</td>
<td>E-701778 N-5446299</td>
<td>E-702566 N-5445301</td>
<td>1272</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disturbance to heritage or historic trail

**Specific Mitigation (ID# 318):**
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion.
- Construction matting will be used to protect the area from rutting and exposure to mineral soil during wet ground conditions
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered

### ESS Group: Wetland

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-348</td>
<td>Wetland - Sundown Bog</td>
<td>245 to 246</td>
<td>E-701732 N-5446358</td>
<td>E-702450 N-5445448</td>
<td>1159</td>
</tr>
<tr>
<td>Aqua-349</td>
<td>Wetland - Sundown Bog</td>
<td>249 to 250</td>
<td>E-702982 N-5444774</td>
<td>E-704329 N-5443067</td>
<td>2175</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 206):**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations

Map 47
ESS Group: Food/Medicinal
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUse-310</td>
<td>Plant Harvest</td>
<td>E-709116 - N-5440525</td>
</tr>
</tbody>
</table>

Potential Effects:
Loss of vegetation as a result of clearing, construction, maintenance and decommissioning activities.

Specific Mitigation (ID# 201):
- 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 10m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible

ESS Group: Forestry
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUse-310</td>
<td>Shelterbelt</td>
<td>155 to 156</td>
<td>E-682629 N-5485596</td>
<td>E-682631 N-5485580</td>
<td>16</td>
</tr>
</tbody>
</table>

Potential Effects:
Removal in area of ROW intersect pending species composition confirmation and lidar analysis of vegetation height complete or partial removal may be required

Specific Mitigation (ID# 505):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Identify and flag 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 pushing debris into adjacent timber

ESS Group: Line of Sight Buffer
*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-409</td>
<td>Line of Sight Buffer</td>
<td>253 to 254</td>
<td>E-704921 N-5442317</td>
<td>E-704957 N-5442271</td>
<td>58</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

Specific Mitigation (ID# 833):
- Remove all trees
- Remove all shrubs >4m tall.
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

ESS Group: Species of Concern
*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-305A</td>
<td>Plant Species of Concern</td>
<td>E-704915 - N-5442331</td>
</tr>
<tr>
<td>Eco-306</td>
<td>Plant Species of Concern</td>
<td>E-704951 - N-5442249</td>
</tr>
<tr>
<td>Eco-307</td>
<td>Plant Species of Concern</td>
<td>E-704966 - N-5442236</td>
</tr>
<tr>
<td>Eco-307A</td>
<td>Plant Species of Concern</td>
<td>E-704965 - N-5442210</td>
</tr>
<tr>
<td>Eco-307D</td>
<td>Plant Species of Concern</td>
<td>E-705344 - N-5441723</td>
</tr>
</tbody>
</table>

Potential Effects:
Loss of vegetation as a result of clearing, construction, maintenance and decommissioning activities.

Specific Mitigation (ID# 201):
- 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 10m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
ESS Group: Species of Traditional Use

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-512</td>
<td>Traditional Use</td>
<td>251 to 252</td>
<td>E-704921</td>
<td>N-542317</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plant Species</td>
<td></td>
<td>E-709225</td>
<td>N-5439550</td>
<td>1001</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

Specific Mitigation (ID# 204):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-127</td>
<td>Unnamed Drain Crossing</td>
<td>E-704495</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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 (ID# 715):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector
- Use existing trails, roads or cut lines whenever possible as access routes
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge)
- If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required
- Locate crossings perpendicular to the bank, whenever possible
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site

ESS Group: Wetland

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-349</td>
<td>Wetland - Sundown Bog</td>
<td>249 to 250</td>
<td>E-702982</td>
<td>N-5444774</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-704329</td>
<td>N-5443067</td>
<td>2175</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 206):
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
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Ecosystems
Species of Concern
Resource Use
Food/Medicinal
Water
Wetland
Wildlife
Line of Sight
Land Base
Transmission Line
Highway
Major Road
Local Road
Railway (Operational)
Railway (Discontinued)
First Nation
Provincial Forest
Parcel Fabric
Rural Municipality
Project Infrastructure
Tower Locations
Angle Tower Location
M602F Final Preferred Route
Right of Way
Station Expansion
Converter Station Footprint
M602F Modification (Salvage)
M602F Modification (New)
Points of Access
Existing Gravel/Dirt Road
Existing Gravel Road
Gravel Road
New Trail
Restricted Access
Sensitive Sites
Point Features
Linear Features
Area Features
Points of Access
Existing Gravel Road
Existing Gravel/Dirt Road
Field Access
New Trail
Restricted Access
EES Features
Existing Engineering
Sensitive Sites
Resource Use
Restricted Access
Use of Signs
Right of Way
Tower Locations
Station Expansion
Converter Station Footprint
M602F Modification (Salvage)
M602F Modification (New)
Sensitive Sites
Point Features
Linear Features
Area Features
Points of Access
Existing Gravel Road
Existing Gravel/Dirt Road
Field Access
New Trail
Restricted Access
EES Features
Existing Engineering
Sensitive Sites
Resource Use
Restricted Access
Use of Signs
Manitoba-Hydro

Manitoba-Minnesota Transmission Project
Construction Environmental Protection Plan
Environmentally Sensitive Site Locations

Map 48
**ESS Group: Food/Medicinal**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>RU-311</td>
<td>Plant Harvest</td>
<td>E-705112 - N-5442058</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Loss of vegetation as a result of clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation (ID# 201):**
- 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 10m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible

---

**ESS Group: Line of Sight Buffer**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site Start Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-411</td>
<td>Line of Sight Buffer</td>
<td>251 to 252 E-709164 N-5439561 to E-790225 N-5439550</td>
<td>62</td>
</tr>
<tr>
<td>Wild-410</td>
<td>Line of Sight Buffer</td>
<td>255 to 256 E-709113 N-5439569 to E-790164 N-5439561</td>
<td>51</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

**Specific Mitigation (ID# 833):**
- Remove all trees
- Remove all shrubs >4m tall.
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

---

**ESS Group: Species of Concern**

*Features represented as points*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-310</td>
<td>Plant Species of Concern</td>
<td>E-709132 - N-5440347</td>
</tr>
<tr>
<td>Eco-311</td>
<td>Plant Species of Concern</td>
<td>E-709132 - N-5440434</td>
</tr>
<tr>
<td>Eco-312</td>
<td>Plant Species of Concern</td>
<td>E-709128 - N-5440456</td>
</tr>
<tr>
<td>Eco-313</td>
<td>Plant Species of Concern</td>
<td>E-709132 - N-5440475</td>
</tr>
<tr>
<td>Eco-314</td>
<td>Plant Species of Concern</td>
<td>E-709123 - N-5440487</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Loss of vegetation as a result of clearing, construction, maintenance and decommissioning activities.

**Specific Mitigation (ID# 201):**
- 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 10m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible

---

**ESS Group: Wetland**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site Start Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-350</td>
<td>Wetland - Sundown Bog</td>
<td>259 to 260 E-709334 N-5439532 to E-709384 N-5439523</td>
<td>51</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 206):**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-128</td>
<td>Unnamed Creek Crossing</td>
<td>E-714471 N-5438663</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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 (ID# 710):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing trails, roads or cut lines wherever 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
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats

ESS Group: Wetland

*Features represented as polygons

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-351</td>
<td>Wetland - Sundown Bog</td>
<td>261 to 262</td>
<td>E-710728 N-5439297</td>
<td>E-711740 N-5439125</td>
<td>1028</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 206):
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
**ESS Group: Birds and Habitat**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-123</td>
<td>Sharp-tailed</td>
<td>267 to 268</td>
<td>E-717981 N-5438069</td>
<td>E-719885 N-5437842</td>
<td>1924</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential disruption of mating success for sharp-tailed grouse

**Specific Mitigation (ID# 830):**
- Do not plan to carry out construction activities within this area between April 15 to June 1st
- If construction activity is required within this area between April 15 to June 1st, Contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

---

**ESS Group: Groundwater**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-203</td>
<td>Flowing Aquifer</td>
<td>265 to 266</td>
<td>E-716324 N-5438350</td>
<td>E-723883 N-5434129</td>
<td>9636</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

**Specific Mitigation (ID# 705):**
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture

---

**ESS Group: Species of Traditional Use**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-513</td>
<td>Traditional Use</td>
<td>269 to 270</td>
<td>E-718080 N-5438053</td>
<td>E-719071 N-5437885</td>
<td>1005</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confin e vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures

---

**ESS Group: Wetland**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-352</td>
<td>Wetland - Piney Bog</td>
<td>263 to 264</td>
<td>E-715915 N-5438419</td>
<td>E-719052 N-5437888</td>
<td>3182</td>
</tr>
</tbody>
</table>

**Potential Effects:**
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

**Specific Mitigation (ID# 206):**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
**ESS Group: Birds and Habitat**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-123</td>
<td>Sharp-tailed grouse lek</td>
<td>267 to 268</td>
<td>E-717981 N-5438069</td>
<td>E-719885 N-5437842</td>
<td>1924</td>
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<tr>
<td>Wild-124</td>
<td>Sharp-tailed grouse lek</td>
<td>275 to 276</td>
<td>E-721732 N-5437236</td>
<td>E-722224 N-5436401</td>
<td>970</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Potential disruption of mating success for sharp-tailed grouse

**Specific Mitigation (ID# 830):**
- Do not plan to carry out construction activities within this area between April 15 to June 1st
- If construction activity is required within this area between April 15 to June 1st, Contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

**ESS Group: Groundwater**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Site</th>
<th>Start</th>
<th>Stop</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Aqua-203</td>
<td>Flowing Aquifer</td>
<td>265 to 266</td>
<td>E-716324 N-5438350</td>
<td>E-723883 N-5434129</td>
<td>9636</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

**Specific Mitigation (ID# 705):**
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture

**ESS Group: Line of Sight Buffer**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
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<th>Site</th>
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<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild-412</td>
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<td>E-719004 N-5437897</td>
<td>E-719071 N-5437885</td>
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</tr>
</tbody>
</table>

**Potential Effects:**
- Potential for increased hunting and predation pressure on wildlife due to ROW vegetation clearing crossing the roadway

**Specific Mitigation (ID# 833):**
- Remove all trees
- Remove all shrubs >4m tall.
- Retain shrubs and herbaceous vegetation <4m tall to the extent possible
- Develop an access trail that is 7m wide along a path to be determined onsite through consultation between MH and the Contractor

**ESS Group: Species of Traditional Use**

*Features represented as polygons*

<table>
<thead>
<tr>
<th>ESS ID</th>
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<th>Stop</th>
<th>Distance (m)</th>
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</thead>
<tbody>
<tr>
<td>Eco-513</td>
<td>Traditional Use Plant Species</td>
<td>269 to 270</td>
<td>E-718080 N-5438053</td>
<td>E-719071 N-5437885</td>
<td>1005</td>
</tr>
</tbody>
</table>

**Potential Effects:**
- Potential loss of species of conservation concern from clearing, construction, maintenance and decommissioning activities

**Specific Mitigation (ID# 204):**
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Use existing access roads and trails to the extent possible
- Refer to Clearing Management Plan for clearing prescription
- Confine vehicle traffic to established trails to the extent possible
- In the event of ground disturbance refer to Rehabilitation and Invasive Species Management Plan for mitigation measures
**ESS Group:** Wetland

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<td>3182</td>
</tr>
<tr>
<td>Aqua-352A</td>
<td>Wetland - Piney Bog</td>
<td>273 to 274</td>
<td>E-720756 N-5437879</td>
<td>E-721084 N-5437893</td>
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</tr>
</tbody>
</table>

**Potential Effects:**
*Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat*

**Specific Mitigation (ID# 206):**
- Carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
- Refer to Clearing Management Plan for clearing prescription
- The application of herbicides is prohibited
- Maintain shrub and herbaceous vegetation to the extent possible
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ESS Group: Archaeological

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-122</td>
<td>Pine Creek</td>
<td>E-723259 - N-5434948</td>
</tr>
</tbody>
</table>

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):
- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- Implement additional mitigation from site investigation
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance

ESS Group: Archaeological

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<tr>
<th>ESS ID</th>
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<td>N-5437236</td>
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Potential Effects:
Potential disruption of mating success for sharp-tailed grouse

Specific Mitigation (ID# 830):
- Do not plan to carry out construction activities within this area between April 15 to June 1st
- If construction activity is required within this area between April 15 to June 1st. Contact Manitoba Hydro Environmental Officer to discuss potential mitigation options

ESS Group: Groundwater

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<td>N-5438350</td>
<td>N-5434129</td>
<td></td>
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Potential Effects:
Potential to disturb groundwater quantity through the unintended discharge of aquifers in artesian areas of flowing wells and springs.

Specific Mitigation (ID# 705):
- Qualified driller with appropriate experience will be contracted to work in areas affected by artesian conditions
- Emergency response plans for sealing/grouting and pumping will be implemented as required
- Follow up inspections of installed foundations will be undertaken to monitor for excess moisture
ESS Group: Water Crossing

*Features represented as points

<table>
<thead>
<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
<th>Channel Width (m)</th>
<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-129</td>
<td>Pine Creek Diversion Crossing</td>
<td>E-722728 N-5435667</td>
<td>N/A</td>
<td>N/A</td>
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</tbody>
</table>

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 (ID# 715):

- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- If wet conditions exist, one time fording or the use construction matting for low water levels or temporary bridge for higher water levels must be authorized by MH Environmental Officer/Inspector
- Use existing trails, roads or cut lines whenever possible as access routes
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Limit machinery fording of the watercourse to a one-time event (over and back) only if no alternative crossing method is available (i.e. matting or temporary bridge)
- If repeated fording of the watercourse is necessary, prior approval from the MH Environmental Officer/Inspector is required
- Locate crossings perpendicular to the bank, whenever possible
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site
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ESS Group: Archaeological

*Features represented as points

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<tr>
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<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hert-124</td>
<td>Pine Creek Crossing</td>
<td>E-724843 - N-5432435</td>
</tr>
<tr>
<td>Hert-125</td>
<td>Pine Creek Crossing</td>
<td>E-724871 - N-5432386</td>
</tr>
</tbody>
</table>

Potential Effects: Potential disturbance to Heritage Resources

Specific Mitigation (ID# 301):

- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- Conduct site investigation with Archaeologist prior to construction.
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector.
- Implement additional mitigation from site investigation.
- Cultural and Heritage Resources Protection Plan will be followed when a suspected cultural or heritage resource is discovered.
- Should heritage resources be discovered during a pre-construction survey an archaeologist may prescribe construction matting to be used to protect the area from disturbance.

ESS Group: Water Crossing

*Features represented as points

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<tr>
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<th>Location</th>
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<th>Wet Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-130</td>
<td>Pine Creek Crossing</td>
<td>E-724843 - N-5432435</td>
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<td>3.5</td>
</tr>
<tr>
<td>Aqua-131</td>
<td>Pine Creek Crossing</td>
<td>E-724877 - N-5432375</td>
<td>9</td>
<td>3.5</td>
</tr>
</tbody>
</table>

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 (ID# 710):

- Construction matting will be used along access trail to protect the area from rutting and exposure of soil during saturated soil conditions.
- 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.
- A minimum 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.
- Construction contractor will have flag persons in boats both upstream and downstream of the ROW during stringing activities to direct safe passage of boats.

ESS Group: Wetland

*Features represented as polygons

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<tr>
<th>ESS ID</th>
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<th>Site</th>
<th>Start</th>
<th>Stop</th>
<th>Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-353</td>
<td>Wetland</td>
<td>279 to 280</td>
<td>E-724876 - N-5432377</td>
<td>E-724883 - N-5432365</td>
<td>14</td>
</tr>
<tr>
<td>Aqua-353</td>
<td>Wetland</td>
<td>281 to 282</td>
<td>E-724886 - N-5432359</td>
<td>E-725424 - N-5432111</td>
<td>619</td>
</tr>
</tbody>
</table>

Potential Effects: Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions.
- Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site.
- Refer to Clearing Management Plan for clearing prescription.
- The application of herbicides is prohibited.
- Maintain shrub and herbaceous vegetation to the extent possible.
ESS Group: Wetland

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<table>
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<tr>
<th>ESS ID</th>
<th>ESS Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua-354</td>
<td>Wetland</td>
<td>*See Map</td>
</tr>
</tbody>
</table>

Potential Effects:
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID# 205):
  • Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to soil during Non-frozen ground conditions
  • Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site
  • Refer to Clearing Management Plan for clearing prescription
  • The application of herbicides is prohibited
  • Maintain shrub and herbaceous vegetation to the extent possible