

Manitoba-Minnesota Transmission Project Operation and Maintenance Environmental Protection Plan Mapbook



Winnipeg Region: Tower 1-139
May 2020

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

Version Final 1.0
List of Revisions - MMTP Operation & Maintenance Environmental Protection Plan Mapbook

| Number | Nature of Revision | Map/Table # | Revised By | Date |
|-----------|---|-------------|----------------|----------|
| Draft | Mapbook and report created | Maps 1-53 | Manitoba Hydro | 20200302 |
| Final 1.0 | Approved by Conservation and Climate Manitoba | | | 20200514 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

SAMPLE MITIGATION TABLE (See KEY below for additional Information)

ESS Group: Wetlands¹

²
**Features represented as polygons*

| ESS ID | ESS Name | Site | Start | Stop | Distance (m) |
|----------|----------|----------|-----------------------|-----------------------|--------------|
| Aqua-301 | Wetland | 21 to 22 | E-671537 N-5525458 | E-671580 N-5525456 | 43 |

Potential Effects:⁴
Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat

Specific Mitigation (ID #205):⁵

- 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
- 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
- 3

ESS location summary; includes the following fields:
 - 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
- 4

Potential effects identified for ESS listed in the ESS Location Summary table
- 5

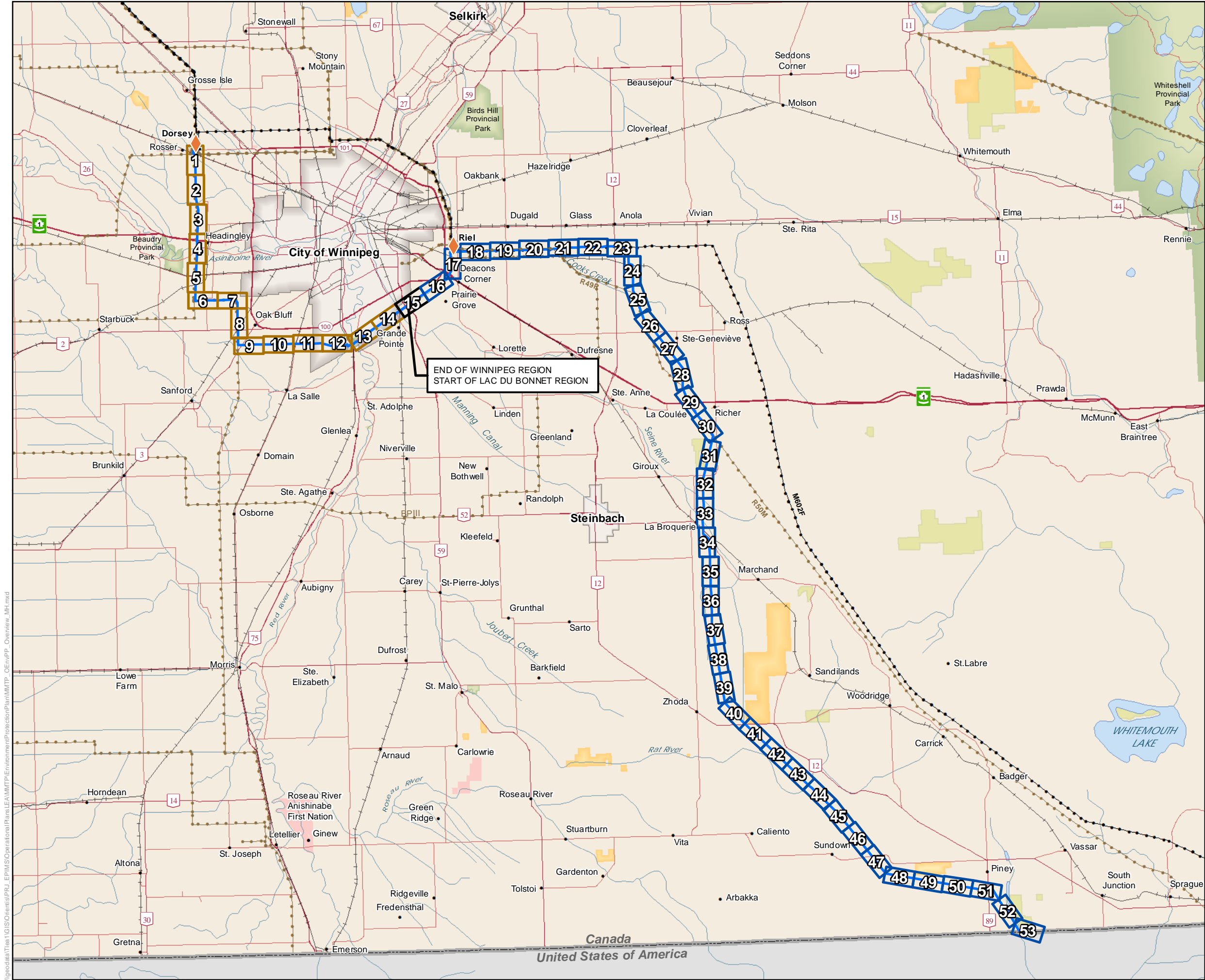
Mitigation measures identified for a specific site. The ID number indicates a specific combination of mitigation measures
- 6

Map on which ESS listed in the ESS Location Summary tables are illustrated

ESS NAMING CONVENTION

| CATEGORY | GROUP (Number Series Representing Group) | ESS ID (Category-Group Number) |
|-------------------|---|-----------------------------------|
| Access | Intersection (100) | RecUse-100 |
| Ecosystem | Habitat (100) | Eco-100 |
| | Research (200) | Eco-200 |
| | Species of Concern (300) | Eco-300 |
| | Invasive Species (400) | Eco-400 |
| | Traditional Use (500) | Eco-500 |
| Heritage | Archaeological (100) | Hert-100 |
| | Cultural (200) | Hert-200 |
| | Historic (300) | Hert-300 |
| Land Use | Conservation (100) | LUse-100 |
| | Crown Land Encumbrance (200) | LUse-200 |
| | Recreation (300) | LUse-300 |
| | Residential (400) | LUse-400 |
| Resource Use | Agriculture (100) | RUse-100 |
| | Food/Medicinal (200) | RUse-200 |
| | Forestry (300) | RUse-300 |
| | Hunting/Fishing (400) | RUse-400 |
| | Trapping (500) | RUse-500 |
| Soils and Terrain | Permafrost (100-200) | Soils-100 |
| | Erosion (300) | Soils-300 |
| | Terrain (400) | Soils-400 |
| Water | Water Crossing (100) | Aqua-100 |
| | Groundwater (200) | Aqua-200 |
| | Wetlands (300) | Aqua-300 |
| | Aquatic Invasive Species (400) | Aqua-400 |
| Wildlife | Birds and Habitat (100) | Wild-100 |
| | Mammal and Habitat (200) | Wild-200 |
| | Reptiles/Amphibians and Habitat (300) | Wild-300 |
| | Line of Sight Buffer (400) | Wild-400 |

This page was left intentionally blank.



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- D6041

Infrastructure

- Existing 500kV Transmission Line
- Existing 230kV Transmission Line

Map Tile Index - 1:10,000

- Winnipeg Region (Map 1-14)
- Winnipeg and Lac Du Bonnet Region (Map 15)
- Lac Du Bonnet Region (Map 16-53)

Landbase

- Community
- Railway
- Trans Canada
- Provincial Highway
- Provincial Road
- City
- First Nation Lands
- Ecological Reserve
- Wildlife Management Area
- Provincial Park

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: May 14, 2020

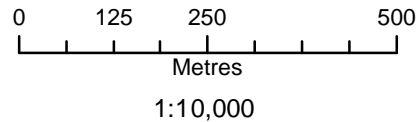
0 5 10 Kilometres
0 5 10 Miles

1:500,000

Operation and Maintenance Environmental Protection Plan Key Map Index



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0



- 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 Locations
 - D604I
 - Right of Way
 - Station Expansion
 - Converter Station Footprint
 - M602F Modification (Salvage)
 - M602F Modification (New)

- Sensitive Sites**
- Point Features
 - Linear Features
 - Area Features
- * Some road names have not been verified
* Tower locations subject to final design

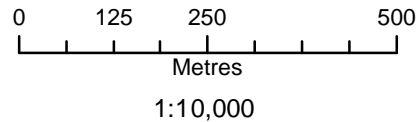
ESS Features

**Manitoba-Minnesota Transmission Project
Operation and Maintenance
Environmental Protection Plan
Environmentally Sensitive Site Locations**

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



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0



- 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 Locations
 - D604I
 - Right of Way
 - Station Expansion
 - Converter Station Footprint
 - M602F Modification (Salvage)
 - M602F Modification (New)

- Sensitive Sites**
- Point Features
 - Linear Features
 - Area Features
- * Some road names have not been verified
* Tower locations subject to final design

- ESS Features**
- Heritage**
- Cultural or Historic
- Resource Use**
- Forestry
- Water**
- Water Crossing

Manitoba-Minnesota Transmission Project
Operation and Maintenance
Environmental Protection Plan
Environmentally Sensitive Site Locations
Map 2

ESS Group: Cultural

**Features represented as points*

| ESS ID | ESS Name | Location |
|----------|----------|----------------------|
| Hert-200 | Cemetery | E-613141 - N-5532133 |

Potential Effects:
Potential disturbance to Heritage Resources

Specific Mitigation (ID# 3280):

- Observe the presence of cemetery and minimize/avoid use of road during ceremony or services

Standard Mitigation - *See appendix for details*

**Features represented as points (Mitigation ID# 14)*

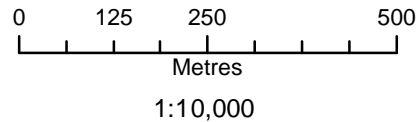
| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|-------------------------|-----------------------|-------------------|---------------|
| Aqua-100 | Sturgeon Creek Crossing | E-612901 N-5531443 | 18 | 11 |

**Features represented as points (Mitigation ID# 2)*

| ESS ID | ESS Name | Location |
|----------|-------------|----------------------|
| RUse-300 | Shelterbelt | E-612765 - N-5532162 |



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0



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

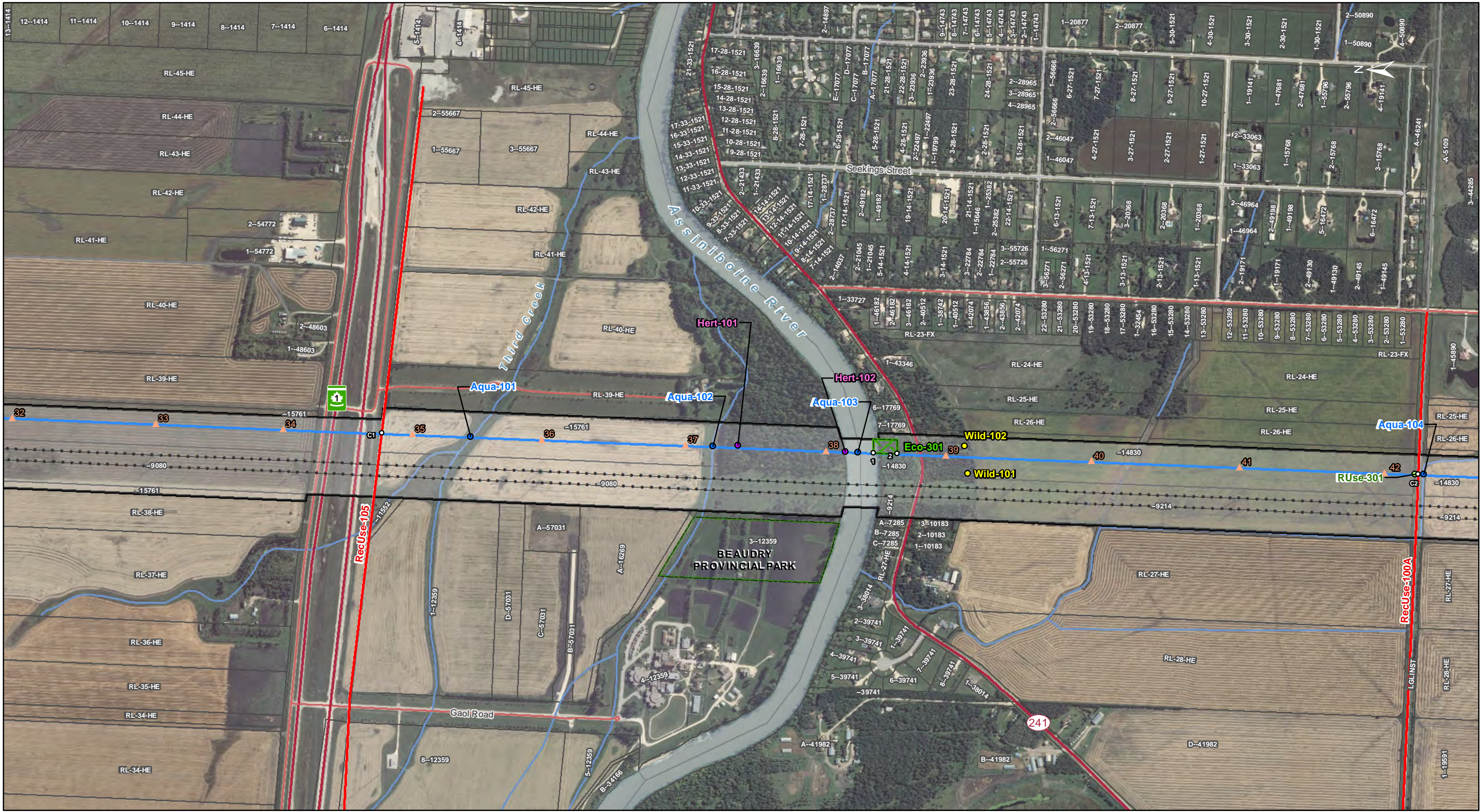
- Project Infrastructure**
- Tower Locations
 - Angle Tower Locations
 - D604I
 - Right of Way
 - Station Expansion
 - Converter Station Footprint
 - M602F Modification (Salvage)
 - M602F Modification (New)

- Sensitive Sites**
- Point Features
 - Linear Features
 - Area Features
- * Some road names have not been verified
* Tower locations subject to final design

ESS Features

**Manitoba-Minnesota Transmission Project
Operation and Maintenance
Environmental Protection Plan
Environmentally Sensitive Site Locations**

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



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0

0 125 250 500
Metres
1:10,000

- 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 Locations
 - D6041
 - Right of Way
 - Station Expansion
 - Converter Station Footprint
 - M602F Modification (Salvage)
 - M602F Modification (New)

- Sensitive Sites**
- Point Features
 - Linear Features
 - Area Features
- * Some road names have not been verified
* Tower locations subject to final design

- ESS Features**
- Heritage**
- Archaeological
- Resource Use**
- Forestry
- Water**
- Water Crossing
- Wildlife**
- Birds and Habitat
- Rec Use**
- Trail
- Ecosystem**
- Species of Concern

Manitoba-Minnesota Transmission Project Operation and Maintenance Environmental Protection Plan Environmentally Sensitive Site Locations Map 4

ESS Group: Archaeological

*Features represented as points

| ESS ID | ESS Name | Location |
|----------|--------------------------------|----------------------|
| Hert-101 | Registered Archaeological Site | E-612896 - N-5525221 |
| Hert-102 | Registered Archaeological Site | E-612879 - N-5524929 |

Potential Effects:

Potential disturbance to Heritage Resources

Specific Mitigation (ID# 3180):

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Specialist
- Minimize surface disturbance around the site to the extent possible
- Refer to the Heritage Resources Mitigation Measures found in the Heritage Resource Protection Plan when a suspected cultural heritage resource is discovered

ESS Group: Birds and Habitat

*Features represented as points

| ESS ID | ESS Name | Location |
|----------|------------|----------------------|
| Wild-101 | Stick Nest | E-612820 - N-5524596 |
| Wild-102 | Stick Nest | E-612894 - N-5524604 |

Potential Effects:

Potential disruption of stick nest

Specific Mitigation (ID# 8240):

- Nest tree will be located and marked with Flagging tape
- During the breeding season (April 30 to July 31) if work activities may cause a sensory disturbance during the breeding season the environmental specialist will be contacted and will refer to OMEnvPP text on appropriate setback distance
- If nest removal is required, Environmental Specialist will be contacted to verify the nest is empty

ESS Group: Water Crossing

*Features represented as points

| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|-----------------------------|-----------------------|-------------------|---------------|
| Aqua-103 | Assiniboine River Clam Beds | E-612878 N-5524895 | 108 | 99 |

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# 1500):

- 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 will not violate MH Veg Clearance Requirements
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Where possible carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Wash, refuel and service machinery and store fuel and other materials for the machinery at least 100m from high water mark, preventing any deleterious substances from entering the water
- Do not wash buckets and equipment in the watercourse

Standard Mitigation - See appendix for details

*Features represented as points (Mitigation ID# 2)

| ESS ID | ESS Name | Location |
|----------|-------------|----------------------|
| RUse-301 | Shelterbelt | E-612818 - N-5523379 |

*Features represented as polygons (Mitigation ID# 1)

| ESS ID | ESS Name | Site | Start | Stop | Distance (m) |
|---------|--------------------------|--------|-----------------------|-----------------------|--------------|
| Eco-301 | Plant Species of Concern | 1 to 2 | E-612876 N-5524852 | E-612873 N-5524787 | 65 |

*Features represented as lines (Mitigation ID# 7)

| ESS ID | ESS Name | Site | Location |
|-------------|------------------------------|------|-----------------------|
| RecUse-105 | Snoman Trail CT355 | C1 | E-612929 N-5526190 |
| RecUse-100A | Headingley Grand Trunk Trail | C2 | E-612817 N-5523371 |

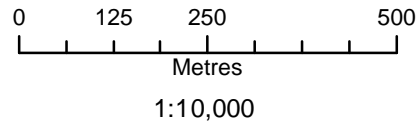
**Features represented as points (Mitigation ID# 14)*

| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|------------------------|-----------------------|-------------------|---------------|
| Aqua-101 | Third Creek Crossing | E-612919 N-5525948 | 43.0 | 3.0 |
| Aqua-102 | Unnamed Creek Crossing | E-612893 N-5525289 | 23.0 | 15.0 |
| Aqua-104 | Unnamed Drain Crossing | E-612817 N-5523357 | N/A | N/A |

This page was left intentionally blank.



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0



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 Locations
- D604I
- Right of Way
- Station Expansion
- Converter Station Footprint
- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites

- Point Features
- Linear Features
- Area Features
- * Some road names have not been verified
- * Tower locations subject to final design

ESS Features

**Manitoba-Minnesota Transmission Project
Operation and Maintenance
Environmental Protection Plan
Environmentally Sensitive Site Locations**

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

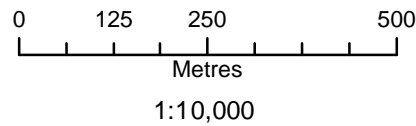
Standard Mitigation - See appendix for details

**Features represented as polygons (Mitigation ID# 9)*

| ESS ID | ESS Name | Site | Start | Stop | Distance (m) |
|-----------|----------|--------|-----------------------|-----------------------|--------------|
| Aqua-300A | Wetland | 3 to 4 | E-613281 N-5518098 | E-613504 N-5518103 | 223 |



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0



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 Locations
- D604I
- Right of Way
- Station Expansion
- Converter Station Footprint
- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites

- Point Features
- Linear Features
- Area Features
- * Some road names have not been verified
- * Tower locations subject to final design

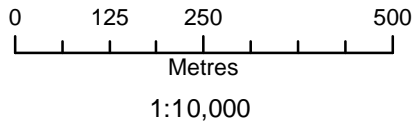
ESS Features

**Manitoba-Minnesota Transmission Project
Operation and Maintenance
Environmental Protection Plan
Environmentally Sensitive Site Locations**

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



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0



- 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 Locations
 - D604I
 - Right of Way
 - Station Expansion
 - Converter Station Footprint
 - M602F Modification (Salvage)
 - M602F Modification (New)

- Sensitive Sites**
- Point Features
 - Linear Features
 - Area Features
- * Some road names have not been verified
* Tower locations subject to final design

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

Manitoba-Minnesota Transmission Project Operation and Maintenance Environmental Protection Plan Environmentally Sensitive Site Locations Map 8

Standard Mitigation - See appendix for details

*Features represented as points (Mitigation ID# 14)

| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|--------------------------|-----------------------|-------------------|---------------|
| Aqua-105 | Unnamed Drain Crossing | E-618449 N-5515051 | N/A | N/A |
| Aqua-106 | Oak Bluff Drain Crossing | E-618468 N-5514203 | N/A | N/A |

Standard Mitigation - See appendix for details

*Features represented as lines (Mitigation ID# 7)

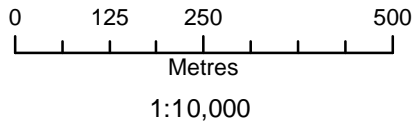
| ESS ID | ESS Name | Site | Location |
|------------|--------------------|------|-----------------------|
| RecUse-106 | Snoman Trail CT124 | C3 | E-620859 N-5512080 |

*Features represented as points (Mitigation ID# 14)

| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|--------------------------|-----------------------|-------------------|---------------|
| Aqua-107 | Oak Bluff Drain Crossing | E-620707 N-5512076 | N/A | N/A |



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0



- 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 Locations
 - D604I
 - Right of Way
 - Station Expansion
 - Converter Station Footprint
 - M602F Modification (Salvage)
 - M602F Modification (New)

- Sensitive Sites**
- Point Features
 - Linear Features
 - Area Features
- * Some road names have not been verified
* Tower locations subject to final design

ESS Features

**Manitoba-Minnesota Transmission Project
Operation and Maintenance
Environmental Protection Plan
Environmentally Sensitive Site Locations**

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



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0

0 125 250 500
Metres
1:10,000

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 Locations
- D604I
- Right of Way
- Station Expansion
- Converter Station Footprint
- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites

- Point Features
- Linear Features
- Area Features

* Some road names have not been verified
* Tower locations subject to final design

ESS Features
Resource Use

- Forestry

Manitoba-Minnesota Transmission Project Operation and Maintenance Environmental Protection Plan Environmentally Sensitive Site Locations

Standard Mitigation - See appendix for details

**Features represented as points (Mitigation ID# 2)*

| ESS ID | ESS Name | Location |
|----------|-------------|----------------------|
| RUse-302 | Shelterbelt | E-628294 - N-5512222 |
| RUse-303 | Shelterbelt | E-629003 - N-5512241 |



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0

0 125 250 500
Metres
1:10,000

- | | | |
|---|--|---|
| Land Base <ul style="list-style-type: none">Transmission LineHighwayMajor RoadLocal RoadRailway (Operational)Railway (Discontinued)First NationProvincial ForestParcel FabricRural Municipality | Project Infrastructure <ul style="list-style-type: none">Tower LocationsAngle Tower LocationsD6041Right of WayStation ExpansionConverter Station FootprintM602F Modification (Salvage)M602F Modification (New) | Sensitive Sites <ul style="list-style-type: none">Point FeaturesLinear FeaturesArea Features <p>* Some road names have not been verified * Tower locations subject to final design</p> |
|---|--|---|

- ESS Features**
- Water**
 - Water Crossing
- Land Use**
 - Recreation
- Resource Use**
 - Forestry

Manitoba-Minnesota Transmission Project Operation and Maintenance Environmental Protection Plan Environmentally Sensitive Site Locations

ESS Group: Recreation

**Features represented as polygons*

| ESS ID | ESS Name | Location |
|----------|---------------------------------|----------|
| LUse-300 | Southwood Golf and Country Club | *See Map |

Potential Effects:
Potential disruption to recreational use activities

Specific Mitigation (ID# 4080):

- Carry out construction activities following any applicable noise bylaws
- MH to notify golf course manager of major noise-generating activities

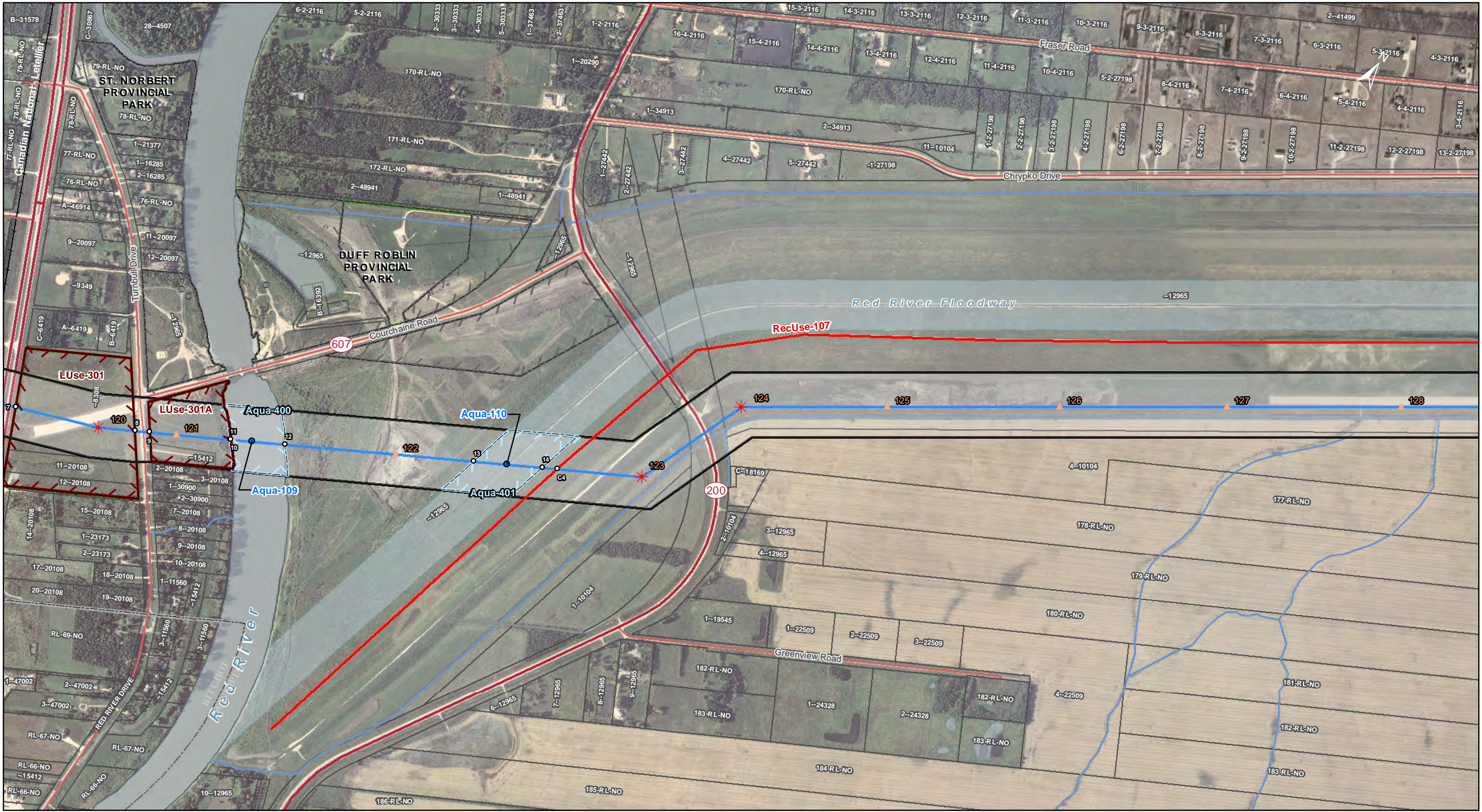
Standard Mitigation - *See appendix for details*

**Features represented as points (Mitigation ID# 14)*

| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|-------------------------|-----------------------|-------------------|---------------|
| Aqua-108 | La Salle River Crossing | E-633240 N-5512074 | 31 | 24 |

**Features represented as polygons (Mitigation ID# 2)*

| ESS ID | ESS Name | Site | Start | Stop | Distance (m) |
|----------|-------------|--------|-----------------------|-----------------------|--------------|
| RUse-304 | Shelterbelt | 5 to 6 | E-632368 N-5511689 | E-632382 N-5511686 | 14 |



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0

0 125 250 500
Metres
1:10,000

- | | | |
|---|--|---|
| Land Base <ul style="list-style-type: none">Transmission LineHighwayMajor RoadLocal RoadRailway (Operational)Railway (Discontinued)First NationProvincial ForestParcel FabricRural Municipality | Project Infrastructure <ul style="list-style-type: none">Tower LocationsAngle Tower LocationsD604IRight of WayStation ExpansionConverter Station FootprintM602F Modification (Salvage)M602F Modification (New) | Sensitive Sites <ul style="list-style-type: none">Point FeaturesLinear FeaturesArea Features <p>* Some road names have not been verified * Tower locations subject to final design</p> |
|---|--|---|

- ESS Features**
- Water**
 - Water Crossing
- Rec Use**
 - Trail
- Land Use**
 - Recreation
- Water**
 - AIS

Manitoba-Minnesota Transmission Project Operation and Maintenance Environmental Protection Plan Environmentally Sensitive Site Locations

ESS Group: AIS

*Features represented as points

| ESS ID | ESS Name | Site | Start | Stop | Distance (m) |
|----------|---------------------------------------|----------|-----------------------|-----------------------|--------------|
| Aqua-400 | Aquatic Invasive Species Control Zone | 11 to 12 | E-634534 N-5512418 | E-634664 N-5512493 | 151 |
| Aqua-401 | Aquatic Invasive Species Control Zone | 13 to 14 | E-635111 N-5512749 | E-635274 N-5512842 | 187 |

Potential Effects:

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

Specific Mitigation (ID# 7190):

- If equipment or watercraft are required to be in contact with the water or shoreline please refer to the "Aquatic Invasive Species" mitigation sheet found in the OMEnvPP

ESS Group: Recreation

*Features represented as points

| ESS ID | ESS Name | Site | Start | Stop | Distance (m) |
|-----------|-----------------------------|---------|-----------------------|-----------------------|--------------|
| LUse-301A | Duff Roblin Provincial Park | 9 to 10 | E-634536 N-5512419 | E-634344 N-5512309 | 222 |
| LUse-301 | Duff Roblin Provincial Park | 7 to 8 | E-634006 N-5512156 | E-634309 N-5512289 | 331 |

Potential Effects:

Potential disruption to Provincial Park use

Specific Mitigation (ID# 4090):

- Obtain and follow all provincial park work permit conditions
- Provide warning signage for vehicle traffic and public safety

ESS Group: Water Crossing

*Features represented as points

| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|--------------------|-----------------------|-------------------|---------------|
| Aqua-109 | Red River Crossing | E-634586 N-5512448 | 149 | 145 |

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# 1500):

- 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 will not violate MH Veg Clearance Requirements
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing
- Where possible carry out construction activities on frozen ground to minimize surface damage, rutting and erosion
- Wash, refuel and service machinery and store fuel and other materials for the machinery at least 100m from high water mark, preventing any deleterious substances from entering the water
- Do not wash buckets and equipment in the watercourse

ESS Group: Water Crossing

*Features represented as points

| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|-----------------------------|-----------------------|-------------------|---------------|
| Aqua-110 | Red River Floodway Crossing | E-635189 N-5512793 | 193 | 9 |

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# 1700):

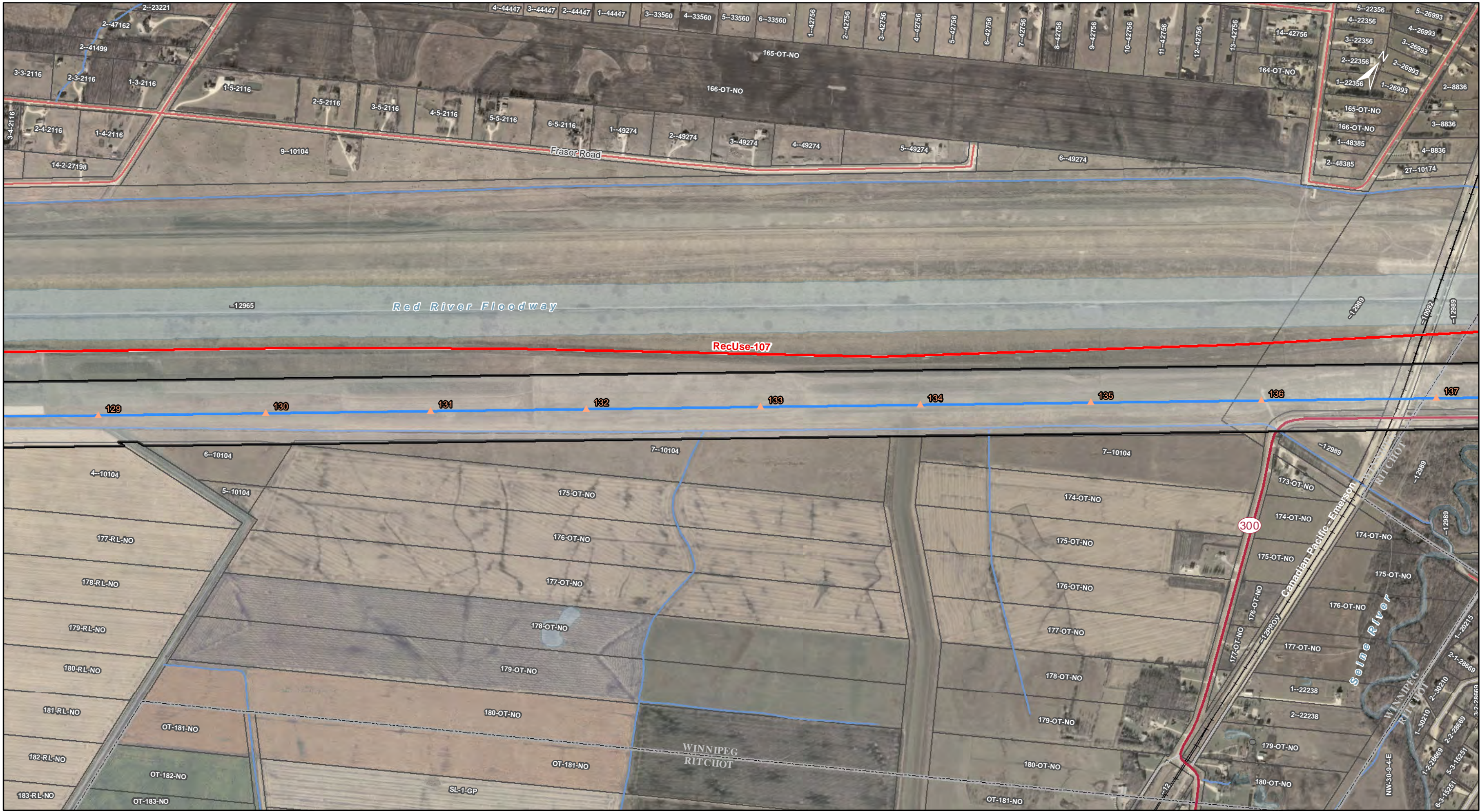
- Please refer to Section 11 (Ongoing Operation and Maintenance of Facilities and Flood Area) of the Memorandum of Agreement between the Government of Manitoba and The Manitoba Hydro-Electric Board Dated December 8th, 2017 Found in Appendix

Standard Mitigation - See appendix for details

*Features represented as lines (Mitigation ID# 7)

| ESS ID | ESS Name | Site | Location |
|------------|--------------------|------|-----------------------|
| RecUse-107 | Snoman Trail CT710 | C4 | E-635309 N-5512862 |

This page was left intentionally blank.

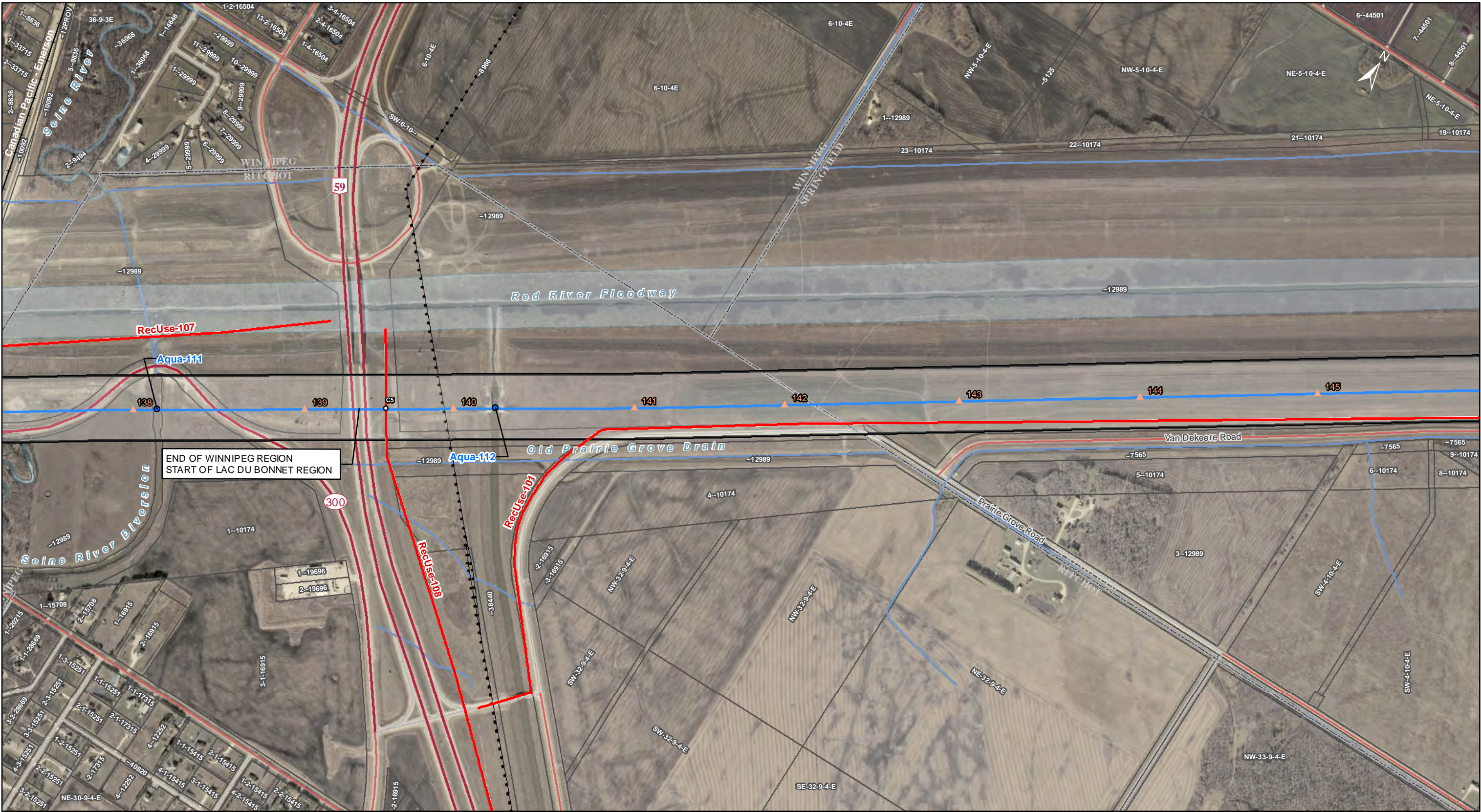


Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0

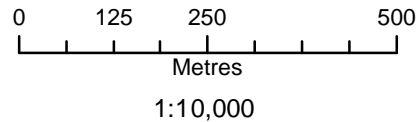
0 125 250 500
Metres
1:10,000

- | | | | |
|---|--|--|---|
| Land Base <ul style="list-style-type: none">Transmission LineHighwayMajor RoadLocal RoadRailway (Operational)Railway (Discontinued)First NationProvincial ForestParcel FabricRural Municipality | Project Infrastructure <ul style="list-style-type: none">Tower LocationsAngle Tower LocationsD604IRight of WayStation ExpansionConverter Station FootprintM602F Modification (Salvage)M602F Modification (New) | Sensitive Sites <ul style="list-style-type: none">Point FeaturesLinear FeaturesArea Features <p><small>* Some road names have not been verified * Tower locations subject to final design</small></p> | ESS Features <ul style="list-style-type: none">Rec UseTrail |
|---|--|--|---|

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



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: May 14, 2020
Version: Final 1.0



- 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 Locations
 - D604I
 - Right of Way
 - Station Expansion
 - Converter Station Footprint
 - M602F Modification (Salvage)
 - M602F Modification (New)

- Sensitive Sites**
- Point Features
 - Linear Features
 - Area Features
- * Some road names have not been verified
* Tower locations subject to final design

- ESS Features**
- Water**
- Water Crossing
- Rec Use**
- Trail

Manitoba-Minnesota Transmission Project Operation and Maintenance Environmental Protection Plan Environmentally Sensitive Site Locations






Standard Mitigation - See appendix for details


*Features represented as points (Mitigation ID# 14)

| ESS ID | ESS Name | Location | Channel Width (m) | Wet Width (m) |
|----------|----------------------------------|-----------------------|-------------------|---------------|
| Aqua-111 | Seine River Bypass Crossing | E-640893 N-5516973 | 22 | 18.0 |
| Aqua-112 | Old Prairie Grove Drain Crossing | E-641655 N-5517486 | 11 | 4.5 |

*Features represented as lines (Mitigation ID# 7)

| ESS ID | ESS Name | Site | Location |
|------------|--------------------|------|-----------------------|
| RecUse-108 | Snoman Trail CT710 | C5 | E-641409 N-5517320 |

| Site Specific Standard Mitigation Measures | | | | |
|---|----------|--------------------------|---|---|
| Symbol | MIT ID # | ESS Group | Potential Effects | Specific Mitigations |
|  Species of Concern | 1 | Species of Concern | <i>Potential loss of previously known plants of conservation concern from clearing, construction, maintenance and decommissioning activities.</i> | <ul style="list-style-type: none"> Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion Identify and flag a 5m vegetated (shrub and herbaceous) buffer around site if work activity poses a risk to area Confine vehicle traffic to established trails to the extent possible Remove trees using selective cutting methods No Herbicide application with Polygon or buffered area |
|  Forestry | 2 | Shelterbelt | <i>Removal in area of ROW intersect</i> | <ul style="list-style-type: none"> 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 trails, roads or cut lines whenever possible as access routes No pushing debris into adjacent timber |
|  Intersection | 7 | Trails, Routes and Roads | <i>Potential interference with trail users; safety issues</i> | <ul style="list-style-type: none"> Notify local snow mobile club/trail owner of work crossing trails Provide temporary signage that work is taking place on the trail to warn users Do not leave debris or obstruct the trail |
|  Wetland | 9 | Wetland | Increased erosion and sedimentation; rutting of floodplains; loss of riparian vegetation; potential impact to reptile and amphibian habitat | <ul style="list-style-type: none"> Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting or low ground pressure equipment will be used to protect the area from rutting and exposure of soil during Non-frozen ground conditions Identify and flag a 30 m vegetated (shrub and herbaceous) buffer around site No Herbicide application with Polygon or buffered area Maintain shrub and herbaceous vegetation to the extent possible Use existing access trails, roads or cut lines whenever possible as access routes Equipment operators will be trained in low impact driving techniques for traversing water courses and wetlands in non- frozen conditions |
|  Line of Sight | 13 | Line of Sight Buffer | Reducing line of sight down the ROW to reduce hunting pressure and increase wildlife protection. | <ul style="list-style-type: none"> Remove only trees and all shrubs >4m tall Retain shrubs and herbaceous vegetation <4m tall to the extent possible Use existing access trails, roads or cut lines whenever possible as access routes |

| Site Specific Standard Mitigation Measures | | | | |
|--|----------|----------------|--|---|
| Symbol | MIT ID # | ESS Group | Potential Effects | Specific Mitigations |
| <div> Water Crossing</div> | 14 | Water Crossing | Increased erosion and sedimentation of streams and waterbodies | <ul style="list-style-type: none">• 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 will not violate MH Vegetation Clearance Requirements• 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing• Where possible carry out construction activities on frozen ground to minimize surface damage, rutting and erosion• Equipment operators will be trained in low impact driving techniques for traversing water courses and wetlands in non- frozen conditions• Use existing trails, roads whenever possible and crossing point will be perpendicular to the bank whenever possible• Limit machinery fording of the watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure or add matting• Use temporary crossing structures or other practices to cross steep and highly erodible banks and beds. If fording is required and minor rutting is likely to occur, use stream bank and bed protection methods (e.g., swamp mats, pads)• If banks appear to be damaged as a result of crossing contact the MH Environmental Specialist• Ensure that machinery is maintained free of fluid leaks, invasive species and noxious weeds• Wash, refuel and service machinery and store fuel and other materials for the machinery at least 100m from high water mark, preventing any deleterious substances from entering the water• Do not wash buckets and equipment in the watercourse• No Vegetation or Woody debris is to be left in water after work activities |