Manitoba-Minnesota Transmission Project

Project Infrastructure

- Converter Station (Existing)
- Final Preferred Route (FPR)
- G37C Salvage
- G82R Salvage
- Existing/New Glenboro Station Access
- New Glenboro Station Access
- Station Expansion
- Existing ROW
- Project Development Area (PDA)
- Converter Station Footprint

Infrastructure

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

Map Tile Index - 1:10,000

- Map Series Tile

Landbase

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

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Date Created: September 09, 2015

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Index of Map Series
Construction Environmental Protection Plan

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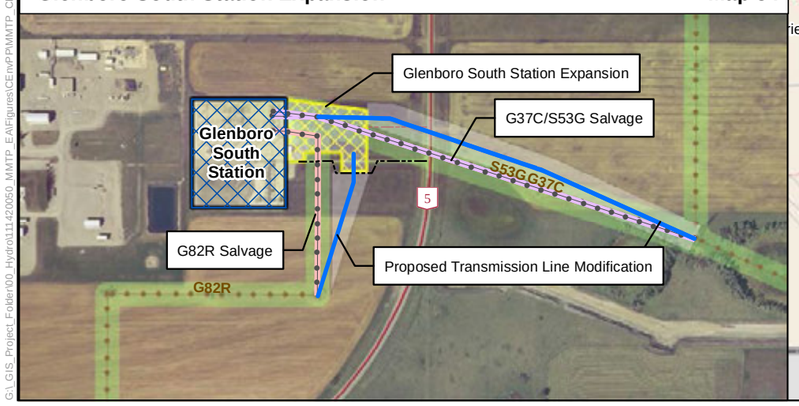
Glenboro South Station Expansion — Map 54



See Inset for Map 54

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Manitoba Hydro

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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features

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

Map 1

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features
Heritage
- Cultural or Historic

Resource Use
- Forestry

Water
- Water Crossing

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

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Map 2

ESS Group: Forestry

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S03	RUse-300	Shelterbelt	612774	5532162	14N

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:

- 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 conditions
- Identify and flag prior to start of work
- If burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- 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
- All burn piles to be extinguished with water and then scanned for hotspots with handheld infrared scanners

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S04	Aqua-100	Sturgeon Creek Crossing	612910	5531443	14N	18	11	Moderate

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
RecUse
- Trail

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

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Map 3

ESS Group: Trail

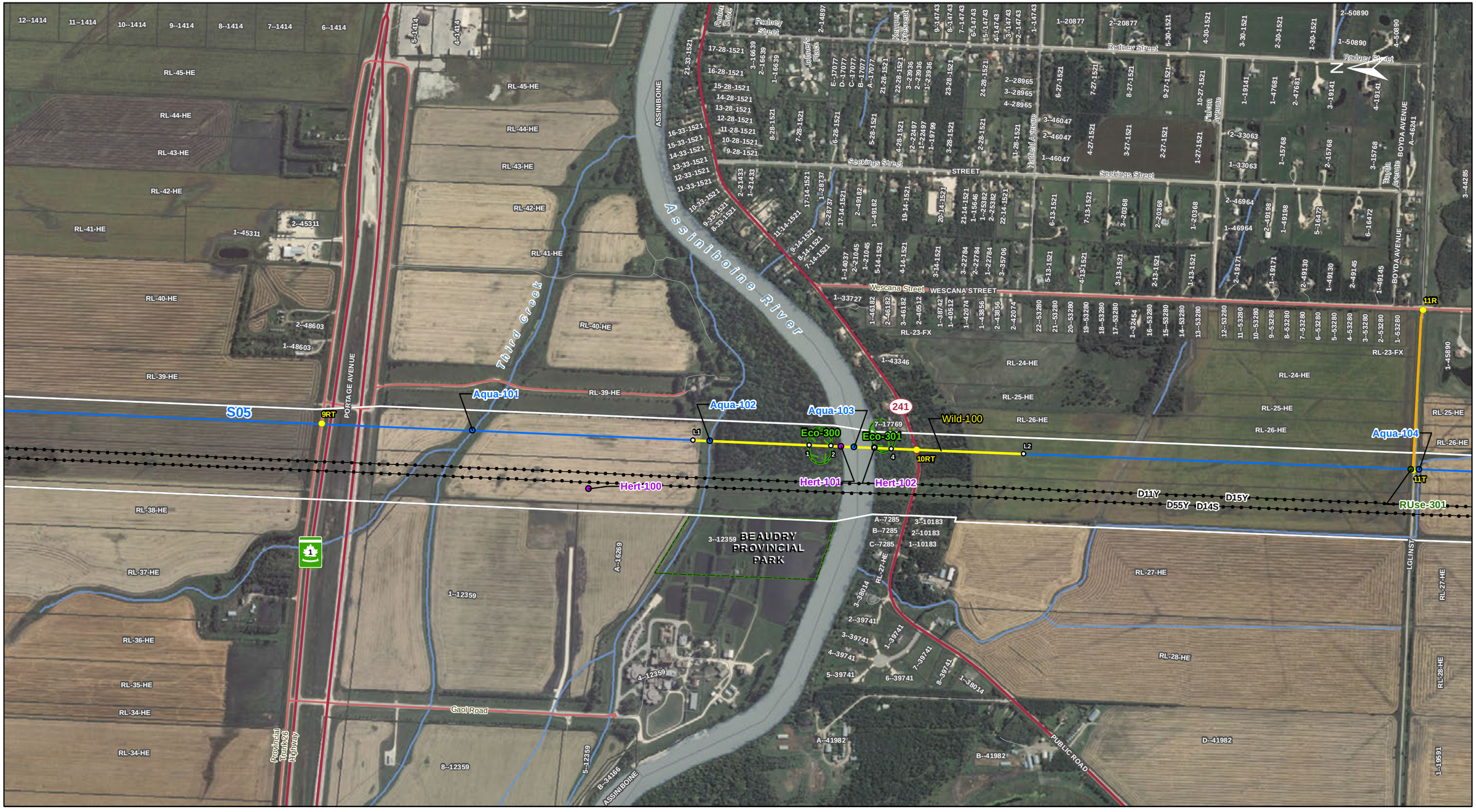
Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
MMTP-S05	RecUse-100	C1	Trail PT30	E-613035 N-5528354	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

- 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
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction



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Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Heritage
- Archaeological

Resource Use
- Forestry

Water
- Water Crossing

Wildlife
- Birds and Habitat

Ecosystem
- Species of Concern

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

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Map 4

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S05	Hert-100	Area of Potential Use	612772	5525618	14N
MMTP-S05	Hert-101	Area of Potential Use	612887	5524931	14N
MMTP-S05	Hert-102	Assiniboine River Crossing	612883	5524839	14N

Potential Effects:

Potential disturbance to Heritage Resources

Specific Mitigation:

- 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 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: Forestry

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S05	RUse-301	Shelterbelt	612825	5523378	14N

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:

- 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 conditions
- Identify and flag prior to start of work
- If burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- 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
- All burn piles to be extinguished with water and then scanned for hotspots with handheld infrared scanners

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S05	Aqua-101	Third Creek Crossing	612931	5525935	14N	43	3	Low
MMTP-S05	Aqua-102	Unnamed Creek Crossing	612903	5525289	14N	23	15	Low
MMTP-S05	Aqua-103	Assiniboine River Clam Beds	612886	5524895	14N	108	99	High
MMTP-S05	Aqua-104	Unnamed Drain Crossing	612825	5523357	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S05	Wild-100	Assiniboine River crossing	Site: L1 to L2	E-612904 N-5525333	E-612866 N-5524433	14N	900m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S05	Eco-300	Plant Species of Concern	Site: 1 to 2	E-612891 N-5525018	E-612888 N-5524958	14N	60 m
MMTP-S05	Eco-301	Plant Species of Concern	Site: 3 to 4	E-612883 N-5524839	E-612881 N-5524794	14N	44 m

Potential Effects:

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

Specific Mitigation:

- Identify and flag prior to start of work
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to mineral soil during wet conditions
- Provide 5m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods that protect shrubs and understory
- Confine vehicle traffic to established trails to the extent possible

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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features

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

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Map 5

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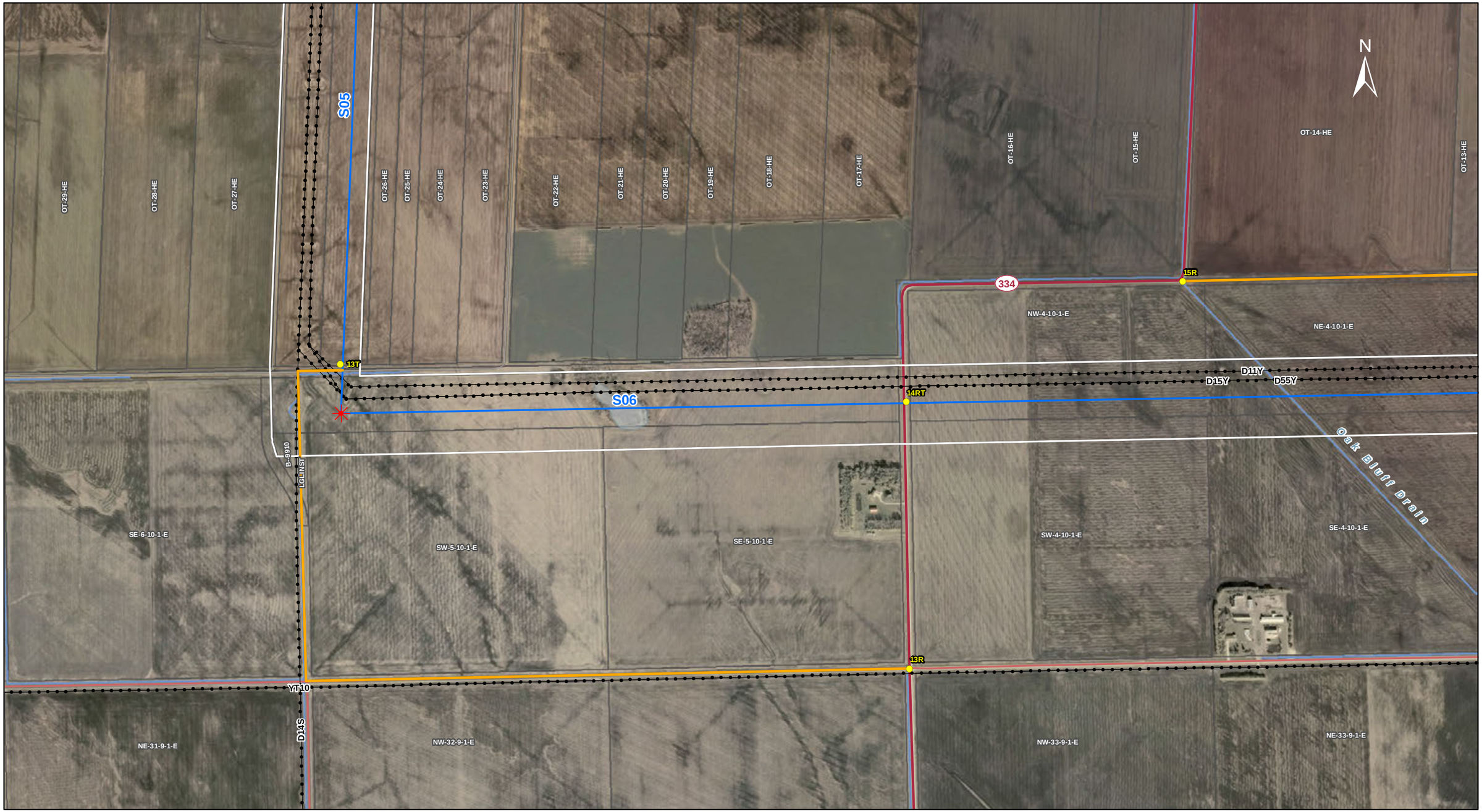

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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features

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

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Map 6

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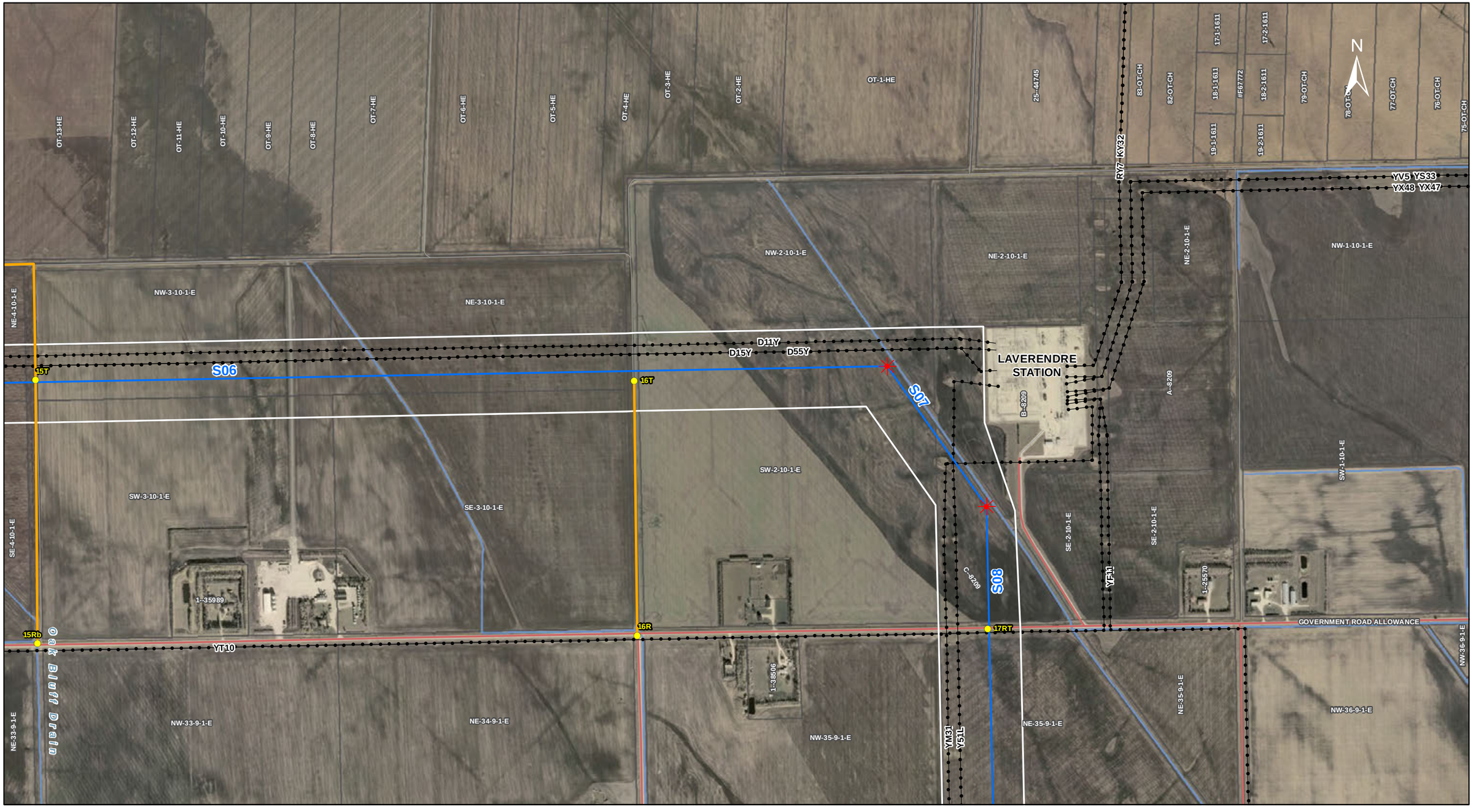

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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features

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

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Map 7

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Coordinate System: UTM Zone 14N NAD83
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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

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

Map 8

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ESS Group: Water Crossing

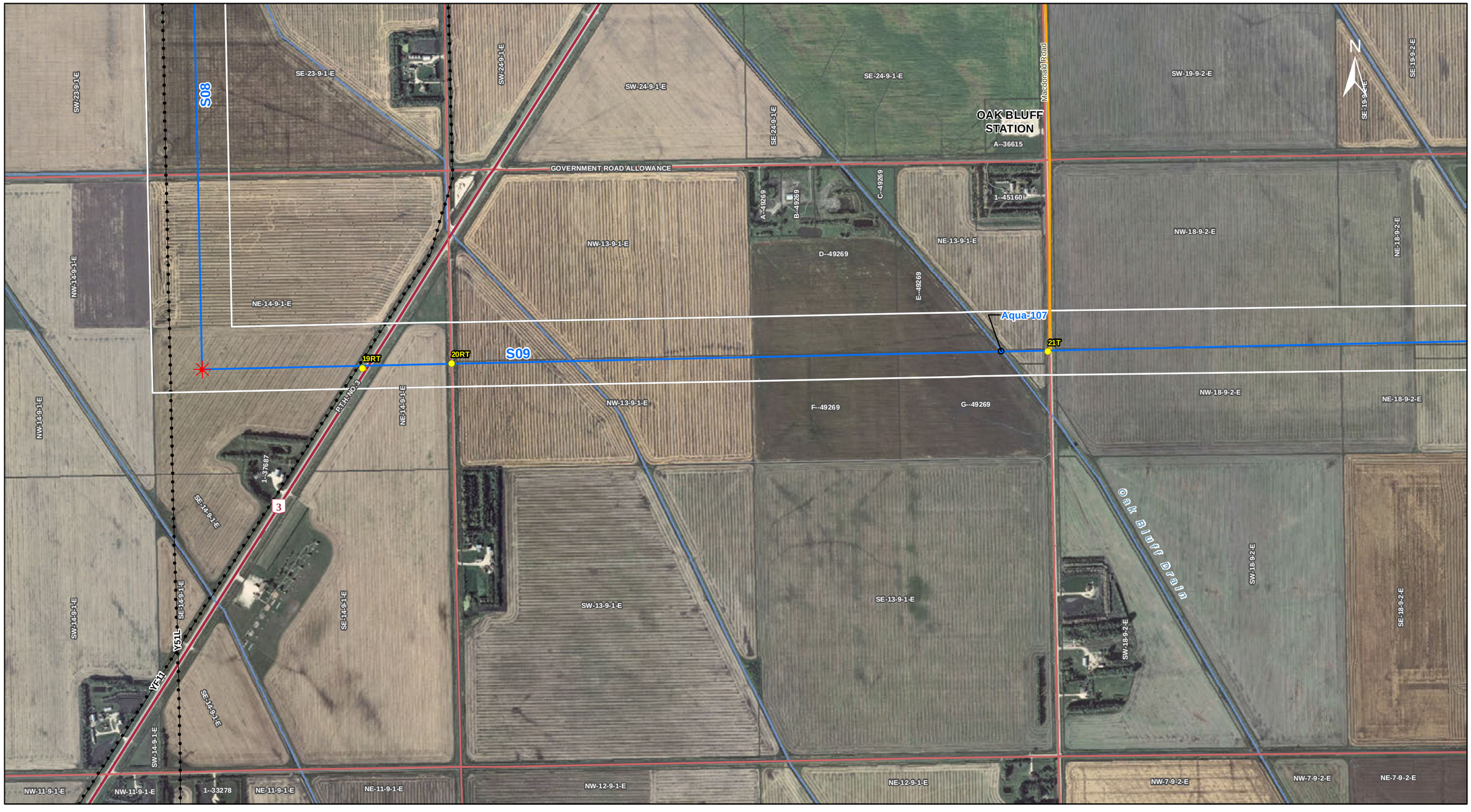
Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S08	Aqua-105	Unnamed Drain Crossing	618457	5515033	14N	TBD	TBD	Low
MMTP-S08	Aqua-106	Oak Bluff Drain Crossing	618475	5514203	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 conditions
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing



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Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features
Water
- Water Crossing

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

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Map 9

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S09	Aqua-107	Oak Bluff Drain Crossing	620716	5512060	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 conditions
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing

Manitoba Hydro

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Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features

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

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Map 10

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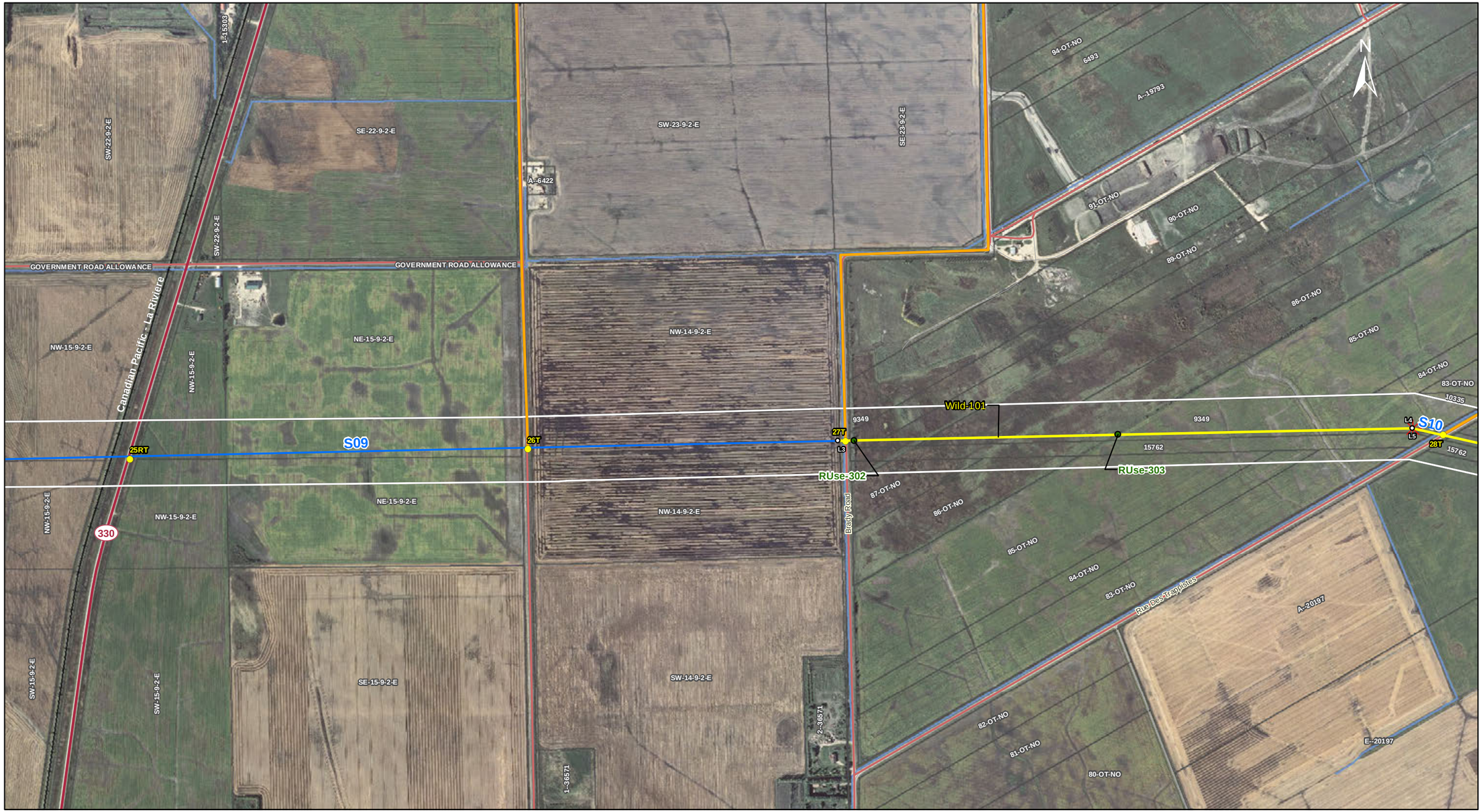

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Resource Use
- Forestry

Wildlife
- Birds and Habitat

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

Draft: For Discussion Purposes Only

Map 11

ESS Group: Forestry

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S09	RUse-302	Shelterbelt	628295	5512228	14N
MMTP-S09	RUse-303	Shelterbelt	629012	5512244	14N

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:

- 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 conditions
- Identify and flag prior to start of work
- If burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- 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
- All burn piles to be extinguished with water and then scanned for hotspots with handheld infrared scanners

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S09	Wild-101	Brady Landfill migratory route	Site: L3 to L4	E-628251 N-5512227	E-629811 N-5512261	14N	1559m
MMTP-S10	Wild-101	Brady Landfill migratory route	Site: L5 to L6	E-629811 N-5512261	E-631445 N-5511891	14N	1675m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

0 125 250 500
Metres
1:10,000

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features
Heritage
- Archaeological

Water
- Water Crossing

Wildlife
- Birds and Habitat

Land Use
- Recreation

Resource Use
- Forestry

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

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Map 12

ESS Group:

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S11	LUse-300	Southwood Golf and Country Club	632998	5512039	14N

Potential Effects:

Potential disruption of recreational activities.

Specific Mitigation:

- Conduct construct activities following any applicable noise bylaws
- Notify golf course manager of major noise-generating activities and coordinate around special events
- 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

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S11	Hert-103	La Salle River Crossing	633222	5512056	14N
MMTP-S11	Hert-104	La Salle River Crossing	633253	5512074	14N

Potential Effects:

Potential disturbance to Heritage Resources

Specific Mitigation:

- 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 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: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S11	Aqua-108	La Salle River Crossing	633238	5512065	14N	31	24	High

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S10	Wild-101	Brady Landfill migratory route	Site: L5 to L6	E-629811 N-5512261	E-631445 N-5511891	14N	1675m
MMTP-S11	Wild-102	La Salle River crossing	Site: L7 to L8	E-632873 N-5511856	E-633482 N-5512205	14N	702m
MMTP-S12	Wild-102	La Salle River crossing	Site: L9 to L10	E-633482 N-5512205	E-633644 N-5512189	14N	163m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Forestry

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S10	RUse-304	Shelterbelt	Site: 5 to 6	E-632359 N-5511684	E-632372 N-5511681	14N	13m

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:

- 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 conditions
- Identify and flag prior to start of work
- If Burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- 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
- All burn piles to be extinguished with water and then scanned for hotspots with handheld infrared scanners

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Coordinate System: UTM Zone 14N NAD83
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Date Created: September 09, 2015
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Land Base
- Transmission Line
- Highway
- Major Road
- Local Road
- Railway (Operational)
- Railway (Discontinued)
- First Nation
- Provincial Forest
- Parcel Fabric

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Heritage
- Archaeological

Water
- Water Crossing

Wildlife
- Birds and Habitat

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

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Map 13

ESS Group:

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S13	LUse-301	Duff Roblin Provincial Heritage Park	634860	5512713	14N

Potential Effects:

Potential disruption to Provincial Park

Specific Mitigation:

- 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 and tidy of work site
- Provide warning signage for vehicle traffic and public safety

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S13	Hert-105	Red River Crossing	634532	5512417	14N
MMTP-S13	Hert-106	Red River Crossing	634677	5512500	14N

Potential Effects:

Potential disturbance to Heritage Resources

Specific Mitigation:

- 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 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: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S13	Aqua-109	Red River Crossing	634582	5512445	14N	151	147	High
MMTP-S13	Aqua-110	Red River Floodway Crossing	635190	5512794	14N	193	9	Moderate

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

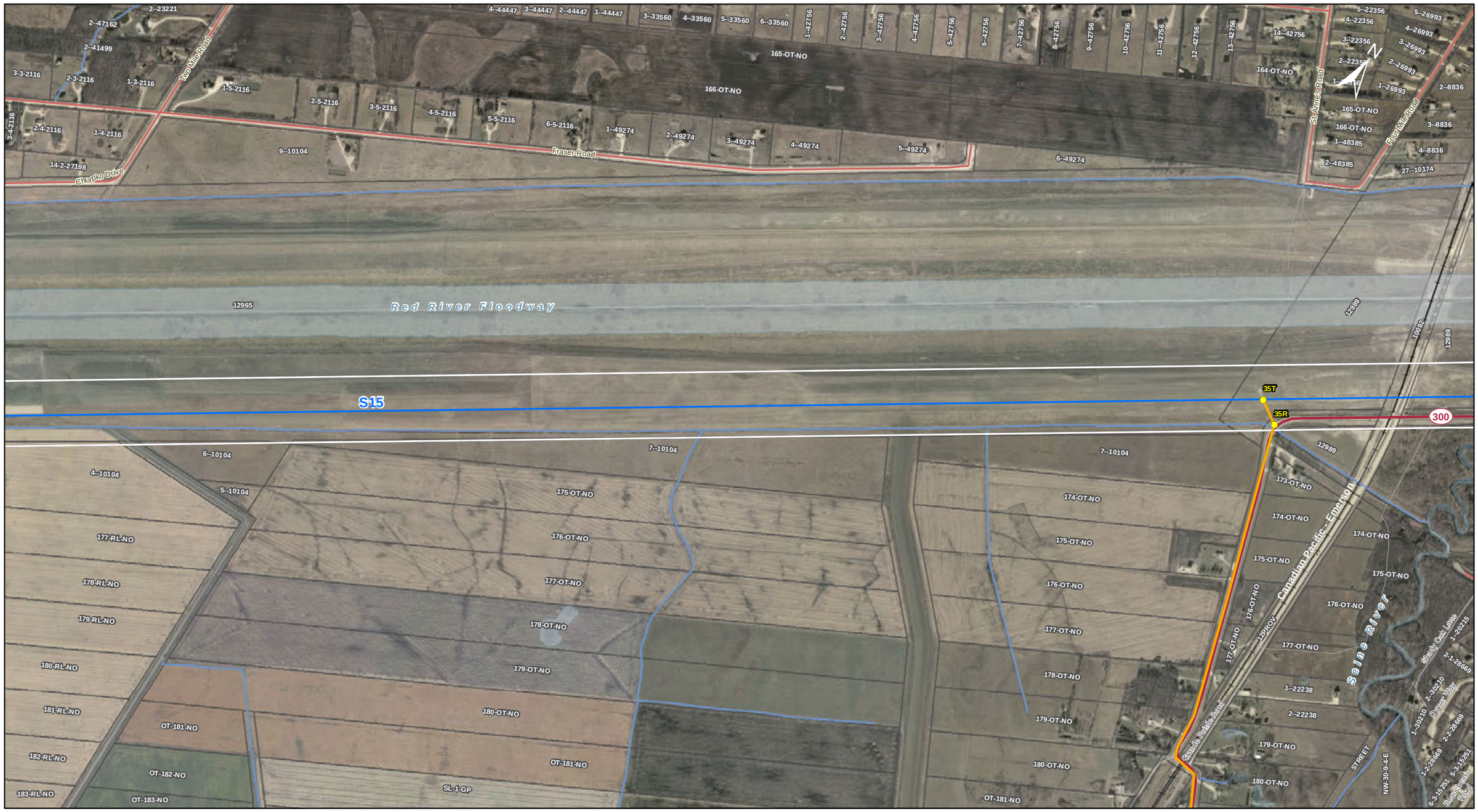
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S13	Wild-103	Red River crossing	Site: L11 to L12	E-634255 N-5512258	E-634920 N-5512639	14N	766m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans



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Land Base
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- Local Road
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Project Infrastructure
- Angle Tower Locations
- MMTP Final Preferred Route
- Right of Way
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- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites
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- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features

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

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Map 14

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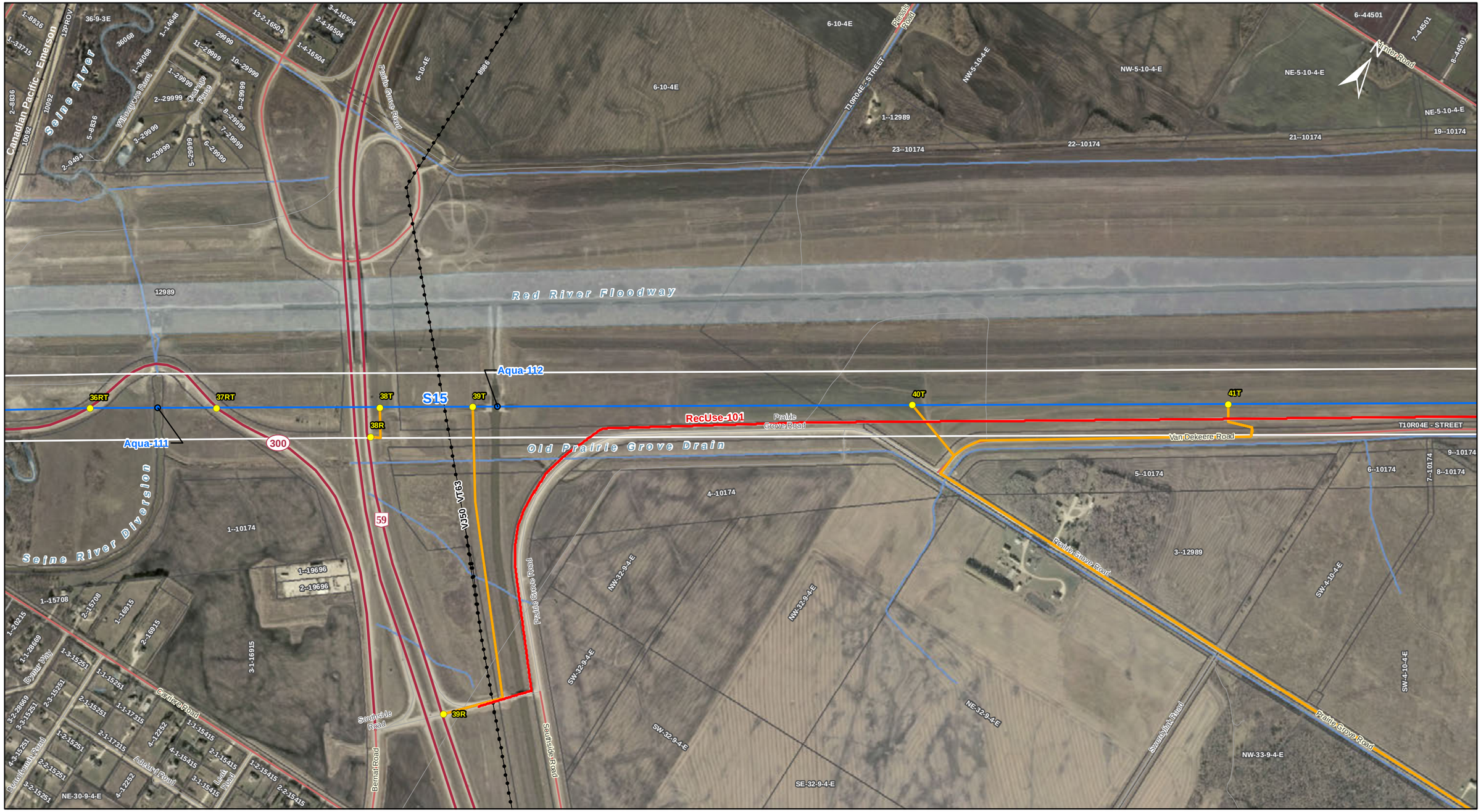

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- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

RecUse
- Trail

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

Map 15

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ESS Group: Water Crossing

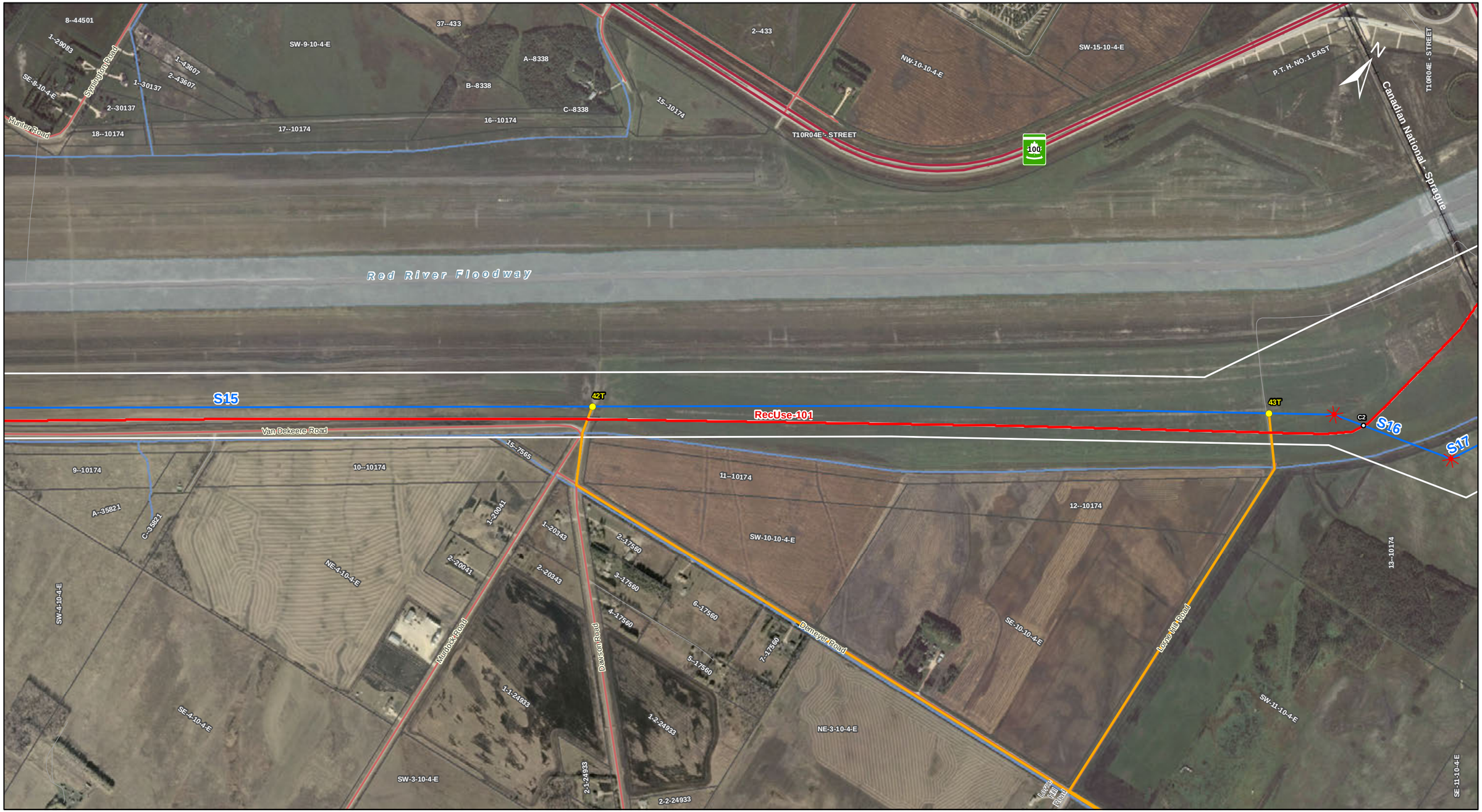
Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S15	Aqua-111	Seine River Bypass Crossing	640893	5516973	14N	22	18	Moderate
MMTP-S15	Aqua-112	Old Prairie Grove Drain Crossing	641659	5517489	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 conditions
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing



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Version: Draft

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Land Base
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- Railway (Discontinued)
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- Provincial Forest
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Project Infrastructure
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- MMTP Final Preferred Route
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- Converter Station Footprint
- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
RecUse
- Trail

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

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Map 16

ESS Group: Trail

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
MMTP-S16	RecUse-101	C2	Trail CT710	E-646986 N-5521009	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

- 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
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

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Version: Draft

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Land Base
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- Converter Station Footprint
- M602F Modification (Salvage)
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Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

RecUse
- Trail

Wildlife
- Birds and Habitat

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

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Map 17

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S18	Aqua-113	Prairie Grove Drain Crossing	647519	5523041	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 conditions
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing

ESS Group: Trail

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
MMTP-S17	RecUse-101	C3	Trail CT710	E-647540 N-5521626	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

- 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
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S18	Wild-104	Deacon's Reservoir waterfowl sensitive area	Site: L13 to L14	E-647516 N-5522748	E-647465 N-5524742	14N	1994m
MMTP-S19	Wild-104	Deacon's Reservoir waterfowl sensitive area	Site: L15 to L16	E-647465 N-5524742	E-649889 N-5524803	14N	2425m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

Coordinate System: UTM Zone 14N NAD83
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Version: Draft

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Land Base
- Transmission Line
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- Major Road
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- Railway (Operational)
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- Parcel Fabric

Project Infrastructure
- Angle Tower Locations
- MMTP Final Preferred Route
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- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Wildlife
- Birds and Habitat

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

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Map 18

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S19	Wild-104	Deacon's Reservoir waterfowl sensitive area	Site: L15 to L16	E-647465 N-5524742	E-649889 N-5524803	14N	2425m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

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Date Created: September 10, 2015
Version: Draft

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Land Base
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Project Infrastructure
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- Converter Station Footprint
- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features

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

Map 19

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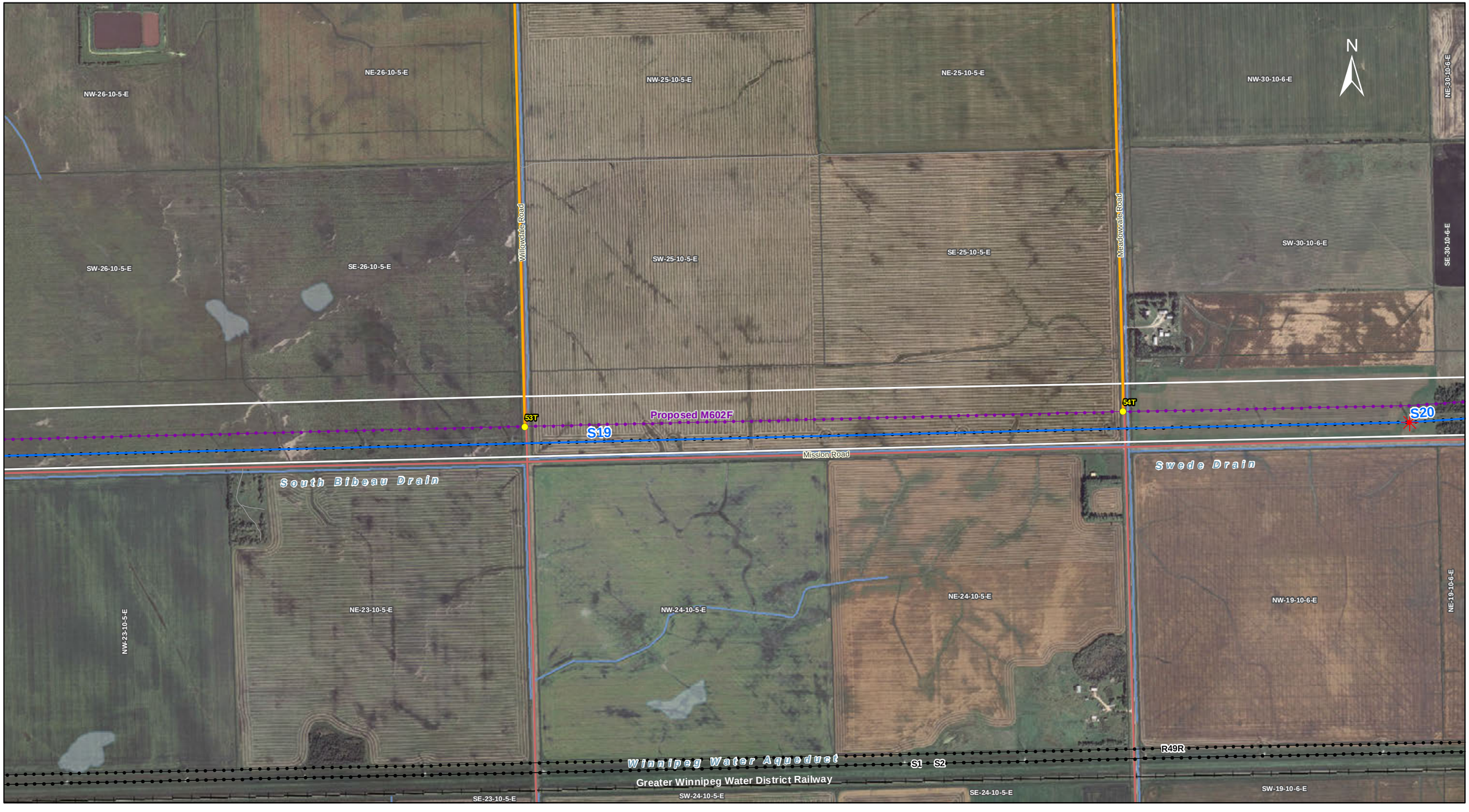

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Version: Draft

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Land Base
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Project Infrastructure
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Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features

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

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Map 20

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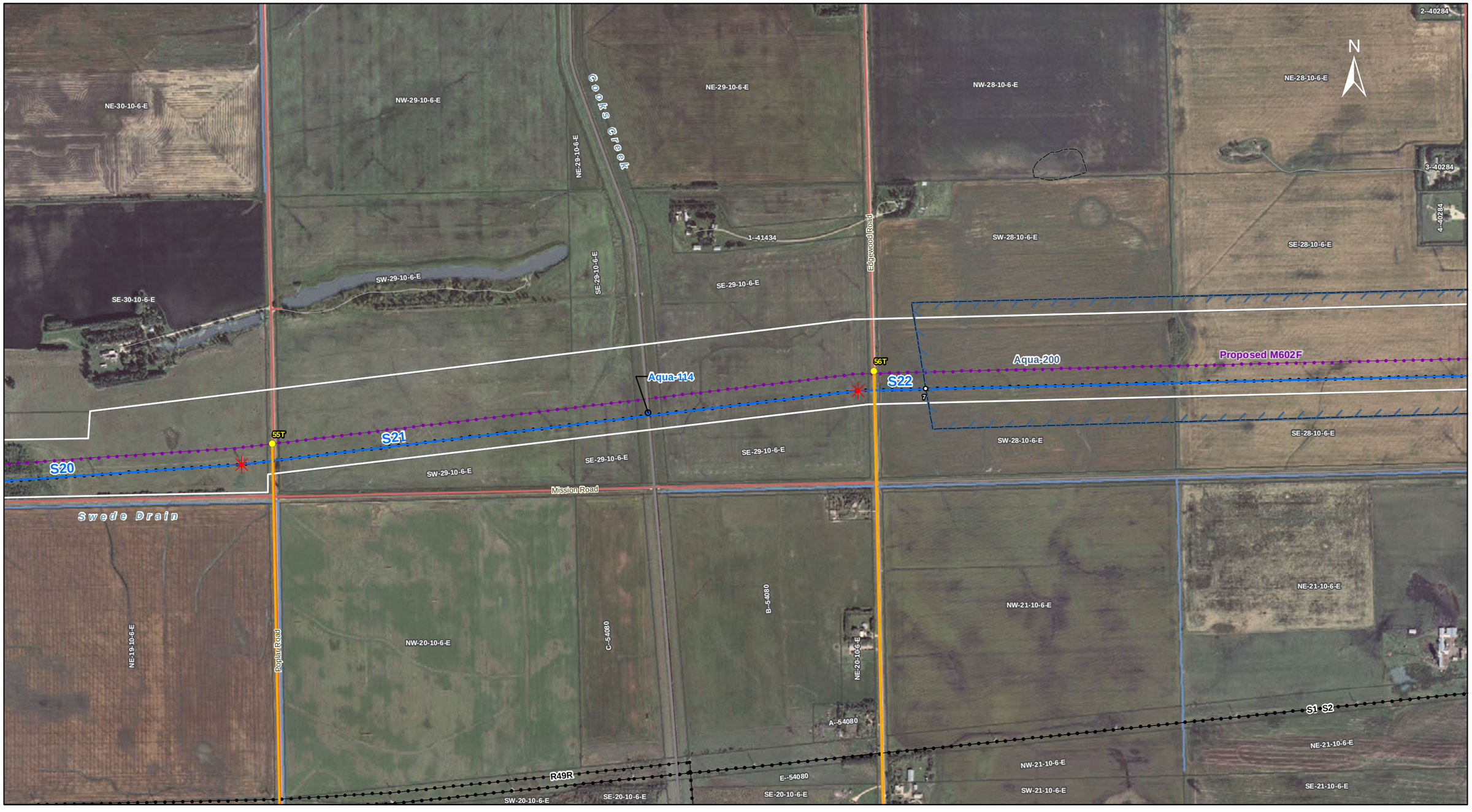

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Land Base
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- M602F Modification (New)

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Groundwater

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

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Map 21

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S21	Aqua-114	Cooks Creek Crossing	662609	5525264	14N	30	6	High

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S22	Aqua-200	Flowing Aquifer	Site: 7 to 8	E-663366 N-5525330	E-669745 N-5525486	14N	6380m

Potential Effects:

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

Specific Mitigation:

- 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.

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Land Base
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Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Groundwater
- Wetland

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

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Map 22

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S22	Aqua-115	Edie Creek Crossing	667940	5525448	14N	22	8	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Groundwater

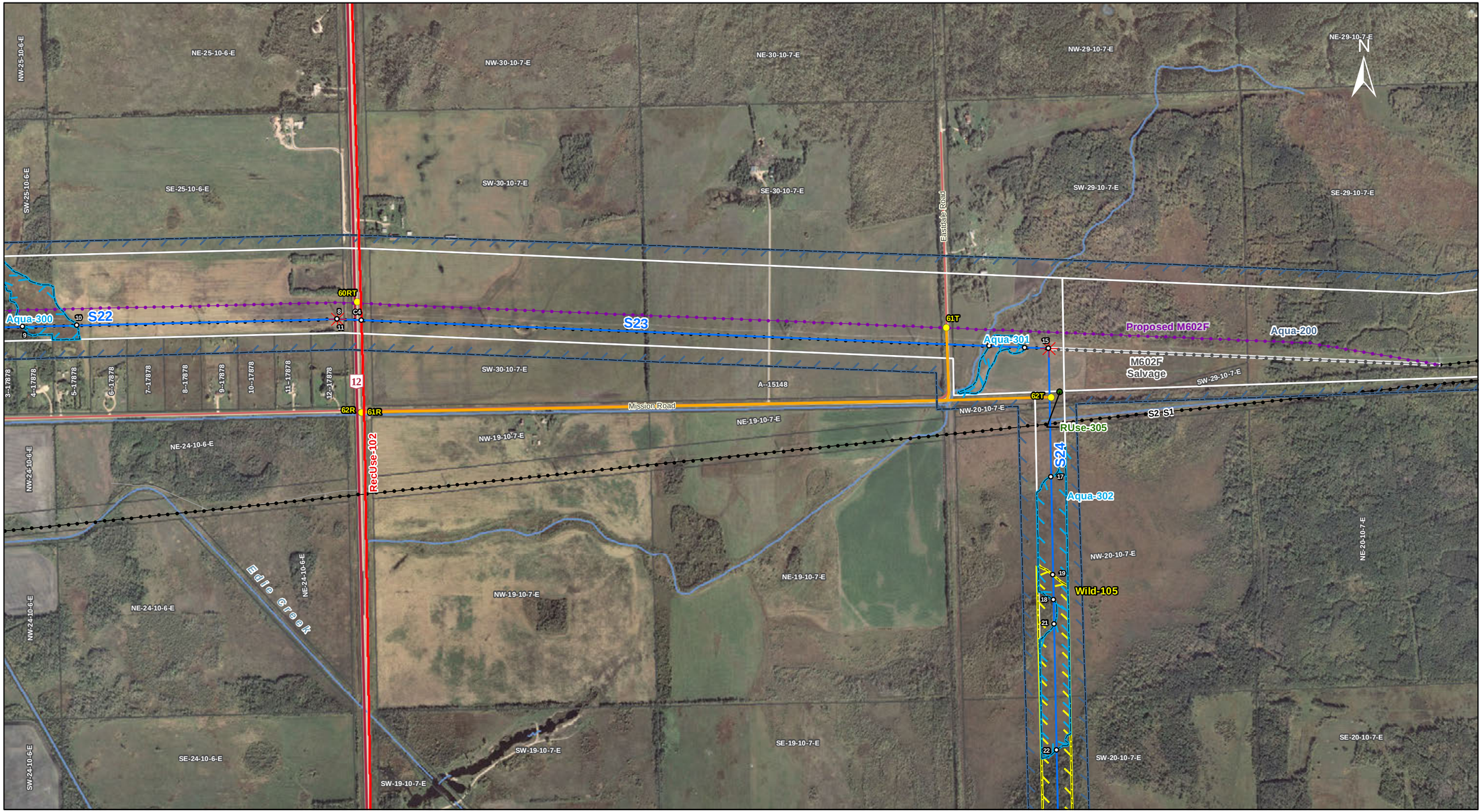
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S22	Aqua-200	Flowing Aquifer	Site: 7 to 8	E-663366 N-5525330	E-669745 N-5525486	14N	6380 m

Potential Effects:

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

Specific Mitigation:

- 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.



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Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Resource Use
- Forestry

RecUse
- Trail

Water
- Groundwater
- Wetland

Wildlife
- Birds and Habitat

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

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Map 23

ESS Group: Forestry

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S24	RUse-305	Shelterbelt	671719	5525287	14N

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:

- 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 conditions
- Identify and flag prior to start of work
- If burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- 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
- All burn piles to be extinguished with water and then scanned for hotspots with handheld infrared scanners

ESS Group: Trail

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
MMTP-S23	RecUse-102	C4	Trail PT50	E-669810 N-5525483	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

- 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
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S24	Wild-105	Sensitive Avian Habitat	Site: 19 to 20	E-671701 N-5524787	E-671720 N-5523774	14N	1013 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LIDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S22	Aqua-200	Flowing Aquifer	Site: 7 to 8	E-663366 N-5525330	E-669745 N-5525486	14N	6380 m
MMTP-S23	Aqua-200	Flowing Aquifer	Site: 11 to 12	E-669745 N-5525486	E-671689 N-5525405	14N	1945 m
MMTP-S24	Aqua-200	Flowing Aquifer	Site: 15 to 16	E-671689 N-5525405	E-671733 N-5523088	14N	2318 m

Potential Effects:

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

Specific Mitigation:

- 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: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S22	Aqua-300	Wetland	Site: 9 to 10	E-668884 N-5525465	E-669032 N-5525469	14N	148 m
MMTP-S23	Aqua-301	Wetland	Site: 13 to 14	E-671526 N-5525412	E-671623 N-5525408	14N	97 m
MMTP-S24	Aqua-302	Wetland	Site: 17 to 18	E-671696 N-5525055	E-671702 N-5524719	14N	336 m
MMTP-S24	Aqua-302	Wetland	Site: 21 to 22	E-671703 N-5524652	E-671710 N-5524308	14N	344 m

Potential Effects:

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

Specific Mitigation:

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

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Manitoba Hydro

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Groundwater
- Wetland

Wildlife
- Birds and Habitat

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

Draft: For Discussion Purposes Only

Map 24

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S24	Aqua-116	Edie Creek Crossing	671723	5523621	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S24	Wild-105	Sensitive Avian Habitat	Site: 19 to 20	E-671701 N-5524787	E-671720 N-5523774	14N	1013 m
MMTP-S24	Wild-106	Sensitive Avian Habitat	Site: 29 to 30	E-671732 N-5523131	E-671733 N-5523088	14N	43 m
MMTP-S25	Wild-106	Sensitive Avian Habitat	Site: 31 to 34	E-671733 N-5523088	E-672245 N-5522950	14N	530 m
MMTP-S26	Wild-106	Sensitive Avian Habitat	Site: 38 to 42	E-672245 N-5522950	E-672309 N-5520779	14N	2171 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LIDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S24	Aqua-200	Flowing Aquifer	Site: 15 to 16	E-671689 N-5525405	E-671733 N-5523088	14N	2318 m
MMTP-S25	Aqua-200	Flowing Aquifer	Site: 32 to 35	E-671733 N-5523088	E-672245 N-5522950	14N	530 m
MMTP-S26	Aqua-200	Flowing Aquifer	Site: 37 to 41	E-672245 N-5522950	E-672278 N-5521836	14N	1114 m
MMTP-S26	Aqua-201	Flowing Aquifer	Site: 43 to 44	E-672325 N-5520215	E-672348 N-5519451	14N	764 m

Potential Effects:

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

Specific Mitigation:

- 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: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S24	Aqua-303	Wetland	Site: 23 to 24	E-671718 N-5523876	E-671719 N-5523815	14N	61 m
MMTP-S24	Aqua-304	Wetland	Site: 25 to 26	E-671725 N-5523489	E-671726 N-5523473	14N	16 m
MMTP-S24	Aqua-304	Wetland	Site: 27 to 28	E-671729 N-5523304	E-671733 N-5523088	14N	216 m
MMTP-S25	Aqua-304	Wetland	Site: 33 to 36	E-671733 N-5523088	E-672245 N-5522950	14N	530 m
MMTP-S26	Aqua-304	Wetland	Site: 39 to 40	E-672245 N-5522950	E-672247 N-5522900	14N	50 m

Potential Effects:

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

Specific Mitigation:

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

Manitoba Hydro

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Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Groundwater
- Wetland

Wildlife
- Birds and Habitat

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

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Map 25

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S27	Aqua-117	Cooks Creek Crossing	672786	5518328	14N	TBD	TBD	High

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S27	Wild-107	Sensitive Avian Habitat	Site: 57 to 58	E-672669 N-5518609	E-673986 N-5515157	14N	3694 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LIDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S26	Aqua-201	Flowing Aquifer	Site: 43 to 44	E-672325 N-5520215	E-672348 N-5519451	14N	764 m
MMTP-S27	Aqua-201	Flowing Aquifer	Site: 51 to 52	E-672348 N-5519451	E-672623 N-5518730	14N	771 m

Potential Effects:

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

Specific Mitigation:

- 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: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S26	Aqua-305	Wetland	Site: 45 to 46	E-672335 N-5519904	E-672336 N-5519869	14N	34 m
MMTP-S26	Aqua-306	Wetland	Site: 47 to 48	E-672338 N-5519783	E-672340 N-5519732	14N	50 m
MMTP-S26	Aqua-307	Wetland	Site: 49 to 50	E-672341 N-5519695	E-672344 N-5519594	14N	100 m
MMTP-S27	Aqua-308	Wetland	Site: 53 to 54	E-672387 N-5519349	E-672397 N-5519321	14N	30 m
MMTP-S27	Aqua-308	Wetland	Site: 55 to 56	E-672431 N-5519232	E-672614 N-5518753	14N	512 m

Potential Effects:

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

Specific Mitigation:

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

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Wetland

Wildlife
- Birds and Habitat

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

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Map 26

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S27	Wild-107	Sensitive Avian Habitat	Site: 57 to 58	E-672669 N-5518609	E-673986 N-5515157	14N	3694 m
MMTP-S28	Wild-107	Sensitive Avian Habitat	Site: 61 to 62	E-673986 N-5515157	E-675260 N-5513955	14N	1751 m
MMTP-S29	Wild-107	Sensitive Avian Habitat	Site: 65 to 66	E-675260 N-5513955	E-675858 N-5513172	14N	984 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LIDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S27	Aqua-309	Wetland	Site: 59 to 60	E-673664 N-5516002	E-673682 N-5515955	14N	50 m
MMTP-S28	Aqua-310	Wetland	Site: 63 to 64	E-674641 N-5514540	E-674764 N-5514423	14N	170 m

Potential Effects:

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

Specific Mitigation:

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

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- M602F Modification (New)

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Wetland

Wildlife
- Birds and Habitat

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

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Map 27

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S29	Aqua-118	Fish Creek Crossing	676923	5511779	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S29	Wild-108	Sensitive Avian Habitat	Site: 67 to 68	E-676235 N-5512678	E-676526 N-5512297	14N	479 m
MMTP-S29	Wild-109	Sensitive Avian Habitat	Site: 69 to 70	E-676668 N-5512110	E-677157 N-5511470	14N	805 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LIDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Wetland

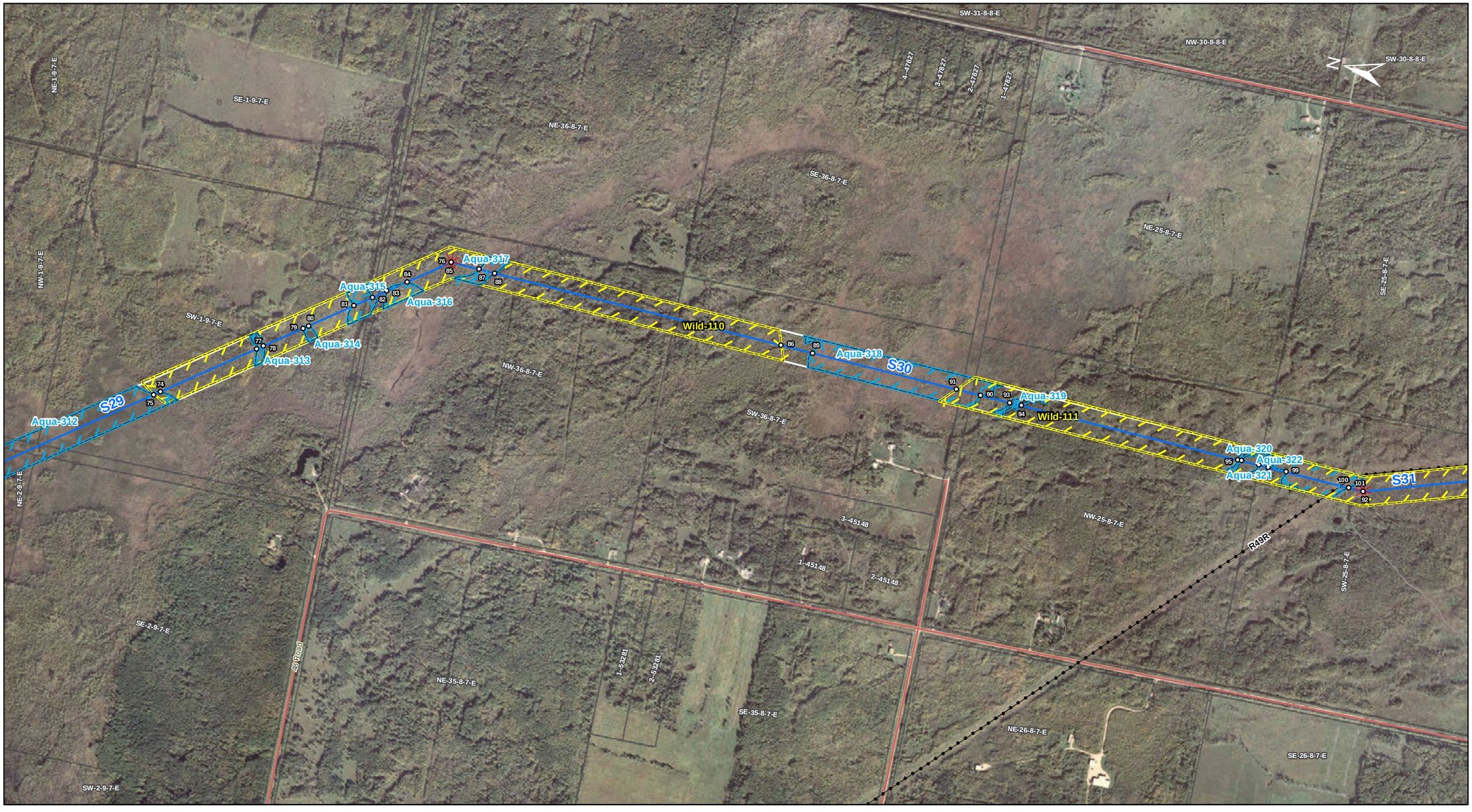
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S29	Aqua-311	Wetland	Site: 71 to 72	E-677626 N-5510856	E-677765 N-5510673	14N	229 m
MMTP-S29	Aqua-312	Wetland	Site: 73 to 74	E-677776 N-5510660	E-678614 N-5509562	14N	1380 m

Potential Effects:

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

Specific Mitigation:

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



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Land Base
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Project Infrastructure
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- Station Expansion
- Converter Station Footprint
- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Wetland

Wildlife
- Birds and Habitat

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

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Map 28

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S29	Wild-110	Sensitive Avian Habitat	Site: 75 to 76	E-678602 N-5509577	E-679142 N-5508870	14N	889 m
MMTP-S30	Wild-110	Sensitive Avian Habitat	Site: 85 to 86	E-679142 N-5508870	E-679130 N-5507941	14N	929 m
MMTP-S30	Wild-111	Sensitive Avian Habitat	Site: 91 to 92	E-679124 N-5507447	E-679110 N-5506302	14N	1144 m
MMTP-S31	Wild-111	Sensitive Avian Habitat	Site: 101 to 102	E-679110 N-5506302	E-679344 N-5505620	14N	721 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LIDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S29	Aqua-312	Wetland	Site: 73 to 74	E-677776 N-5510660	E-678614 N-5509562	14N	1380 m
MMTP-S29	Aqua-313	Wetland	Site: 77 to 78	E-678789 N-5509333	E-678800 N-5509317	14N	19 m
MMTP-S29	Aqua-314	Wetland	Site: 79 to 80	E-678872 N-5509223	E-678883 N-5509209	14N	16 m
MMTP-S29	Aqua-315	Wetland	Site: 81 to 82	E-678965 N-5509101	E-678999 N-5509057	14N	56 m
MMTP-S29	Aqua-316	Wetland	Site: 83 to 84	E-679025 N-5509023	E-679062 N-5508975	14N	61 m
MMTP-S30	Aqua-317	Wetland	Site: 87 to 88	E-679141 N-5508792	E-679140 N-5508748	14N	44 m
MMTP-S30	Aqua-318	Wetland	Site: 89 to 90	E-679129 N-5507853	E-679123 N-5507379	14N	473 m
MMTP-S30	Aqua-319	Wetland	Site: 93 to 94	E-679122 N-5507296	E-679122 N-5507264	14N	32 m
MMTP-S30	Aqua-320	Wetland	Site: 95 to 96	E-679115 N-5506654	E-679114 N-5506644	14N	10 m
MMTP-S30	Aqua-321	Wetland	Site: 97 to 98	E-679114 N-5506595	E-679114 N-5506569	14N	25 m
MMTP-S30	Aqua-322	Wetland	Site: 99 to 100	E-679113 N-5506518	E-679111 N-5506342	14N	175 m

Potential Effects:

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

Specific Mitigation:

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

Coordinate System: UTM Zone 14N NAD83
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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
RecUse
- Trail

Ecosystem
- Species of Concern

Land Use
- Recreation

Wildlife
- Birds and Habitat

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

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Map 29

ESS Group: Trail

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
MMTP-S32	RecUse-103	C5	Trail PT21	E-679842 N-5504205	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

- 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
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S31	Wild-111	Sensitive Avian Habitat	Site: 101 to 102	E-679110 N-5506302	E-679344 N-5505620	14N	721 m
MMTP-S32	Wild-112	Sensitive Avian Habitat	Site: 109 to 110	E-679909 N-5504116	E-680595 N-5503200	14N	1144 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LIDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S31	Eco-302	Plant Species of Concern	Site: 105 to 106	E-679669 N-5504670	E-679816 N-5504239	14N	455m
MMTP-S32	Eco-302	Plant Species of Concern	Site: 107 to 108	E-679816 N-5504239	E-683233 N-5499680	14N	5696m

Potential Effects:

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

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to mineral soil during wet conditions
- Use existing access roads and trails to the extent possible
- Remove trees by low-disturbance methods that protect shrubs and understory
- Confine vehicle traffic to established trails to the extent possible
- Stabilize sites immediately after construction and re-vegetate disturbed areas in accordance with site Rehabilitation Plan

ESS Group: Recreation

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S31	LUse-302	Cottonwood Golf Course	Site: 103 to 104	E-679284 N-5505796	E-679339 N-5505634	14N	170 m

Potential Effects:

Potential disruption to recreational use activities

Specific Mitigation:

- Conduct construct activities following any applicable noise bylaws
- Notify Golfcourse manager of major noise-generating activities and coordinate around special events
- Where the Golfcourse borders the ROW limit all equipment to the project footprint only, where possible
- Where the Golfcourse borders the ROW No damage to Vegetation on the edge of the Right of Way or pushing debris onto adjacent property

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 10, 2015
Version: Draft

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Metres

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Wildlife
- Birds and Habitat

Ecosystem
- Species of Concern

Water
- Wetland

Wildlife
- Birds and Habitat

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

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Map 30

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S32	Aqua-119	Unnamed Creek Crossing	682214	5501015	14N	TBD	TBD	Not Fish Habitat

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S32	Wild-113	Sensitive Avian Habitat	Site: 111 to 112	E-681323 N-5502228	E-682169 N-5501099	14N	1410 m
MMTP-S32	Wild-114	Sensitive Avian Habitat	Site: 117 to 118	E-682605 N-5500519	E-683261 N-5499642	14N	1095 m
MMTP-S33	Wild-114	Sensitive Avian Habitat	Site: 119 to 120	E-683261 N-5499642	E-682995 N-5498506	14N	1167 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LiDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S32	Wild-115	Waterfowl sensitivity area near reservoir	Site: L17 to L18	E-682272 N-5500963	E-683261 N-5499642	14N	1649m
MMTP-S33	Wild-115	Waterfowl sensitivity area near reservoir	Site: L19 to L20	E-683261 N-5499642	E-683051 N-5498746	14N	920m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S32	Eco-302	Plant Species of Concern	Site: 107 to 108	E-679816 N-5504239	E-683233 N-5499680	14N	5696m

Potential Effects:

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

Specific Mitigation:

- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to mineral soil during wet conditions
- Use existing access roads and trails to the extent possible
- Remove trees by low-disturbance methods that protect shrubs and understory
- Confine vehicle traffic to established trails to the extent possible
- Stabilize sites immediately after construction and re-vegetate disturbed areas in accordance with site Rehabilitation Plan

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S32	Aqua-323	Wetland	Site: 113 to 114	E-681539 N-5501940	E-681557 N-5501916	14N	30 m
MMTP-S32	Aqua-324	Wetland	Site: 115 to 116	E-682162 N-5501109	E-682839 N-5500207	14N	1127 m

Potential Effects:

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

Specific Mitigation:

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

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Manitoba Hydro

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Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPII Access Management Database

ESS Features
Water
- Water Crossing

Wildlife
- Birds and Habitat

Land Use
- Conservation

Water
- Wetland

Wildlife
- Birds and Habitat

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

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Map 31

ESS Group: Conservation

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S33	LUse-100	Balsam Willows Proposed Ecological Reserve	682170	5495191	14N

Potential Effects:

Potential disruption to Ecological Reserve

Specific Mitigation:

• Absolutely no activities are to extend into the boundaries of this ecological reserve

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S33	Aqua-120	Unnamed Creek Crossing	682853	5497891	14N	2.5	2.5	Not Fish Habitat

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

• Carry out construction activities on frozen 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 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.
• 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S33	Wild-115	Waterfowl sensitivity area near reservoir	Site: L19 to L20	E-683261 N-5499642	E-683051 N-5498746	14N	920m

Potential Effects:

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

Specific Mitigation:

• As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
• Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S33	Wild-114	Sensitive Avian Habitat	Site: 119 to 120	E-683261 N-5499642	E-682995 N-5498506	14N	1167 m
MMTP-S33	Wild-116	Sensitive Avian Habitat	Site: 127 to 128	E-682848 N-5497880	E-682642 N-5497000	14N	903 m
MMTP-S33	Wild-117	Sensitive Avian Habitat	Site: 131 to 132	E-682465 N-5496244	E-682138 N-5494851	14N	1431 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

• This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
• The use of LiDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
• Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S33	Aqua-325	Wetland	Site: 121 to 122	E-683103 N-5498969	E-683090 N-5498911	14N	59 m
MMTP-S33	Aqua-325	Wetland	Site: 123 to 124	E-683080 N-5498867	E-683041 N-5498702	14N	169 m
MMTP-S33	Aqua-325	Wetland	Site: 125 to 126	E-683015 N-5498589	E-682845 N-5497866	14N	742 m
MMTP-S33	Aqua-326	Wetland	Site: 129 to 130	E-682794 N-5497649	E-682706 N-5497272	14N	387 m

Potential Effects:

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

Specific Mitigation:

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

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Version: Draft

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- First Nation
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Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features

Resource Use
- Forestry

Water
- Water Crossing

Land Use
- Conservation

Water
- Groundwater
- Wetland

Wildlife
- Birds and Habitat

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

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Map 32

ESS Group: Forestry

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S34	RUse-306	Shelterbelt	681859	5492719	14N
MMTP-S34	RUse-307	Shelterbelt	681912	5491242	14N

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:

- 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 conditions
- Identify and flag prior to start of work
- If burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- 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
- All burn piles to be extinguished with water and then scanned for hotspots with handheld infrared scanners

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S34	Aqua-121	Unnamed Drain Crossing	682026	5494362	14N	TBD	TBD	Low
MMTP-S34	Aqua-122	Unnamed Creek Crossing	681908	5491370	14N	6.5	5	High

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S33	Wild-117	Sensitive Avian Habitat	Site: 131 to 132	E-682465 N-5496244	E-682138 N-5494851	14N	1431 m

Potential Effects:

Potential loss of habitat for species of conservation concern from clearing, construction, maintenance and decommissioning activities.

Specific Mitigation:

- This area of potential golden-winged warbler habitat will undergo further analysis prior to construction
- The use of LIDAR and ground truthing to assess vegetation composition and structure to determine candidate areas where selective clearing of trees while maintaining shrubs and understory will occur
- Centerline trail and tower footprints will require complete clearing to facilitate construction

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S33	Aqua-327	Wetland	Site: 133 to 134	E-682032 N-5494395	E-682026 N-5494370	14N	26m

Potential Effects:

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

Specific Mitigation:

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

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S34	Aqua-202	Flowing Aquifer	Site: 135 to 136	E-681887 N-5491994	E-682009 N-5488650	14N	3346 m

Potential Effects:

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

Specific Mitigation:

- 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.

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Manitoba Hydro

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Land Base
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- Converter Station Footprint
- M602F Modification (Salvage)
- M602F Modification (New)

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Heritage
- Archaeological
Resource Use
- Forestry
Water
- Water Crossing
RecUse
- Trail
Wildlife
- Birds and Habitat

Land Use
- Recreation
Water
- Groundwater

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

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Map 33

ESS Group:

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S36	LUse-303	La Verendrye Golf Course	681823	5488383	14N

Potential Effects:

Potential disruption to golf course

Specific Mitigation:

- Conduct construct activities following any applicable noise bylaws
- Notify golf course manager of major noise-generating activities and coordinate around special events
- 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

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S35	Hert-107	Seine River Crossing	681935	5488555	14N
MMTP-S35	Hert-108	Seine River Crossing	681876	5488478	14N

Potential Effects:

Potential disturbance to Heritage Resources

Specific Mitigation:

- 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 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: Forestry

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S34	RUse-308	Shelterbelt	681919	5491057	14N
MMTP-S34	RUse-309	Shelterbelt	681947	5490246	14N

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:

- 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 conditions
- Identify and flag prior to start of work
- If burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- 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
- All burn piles to be extinguished with water and then scanned for hotspots with handheld infrared scanners

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S36	Aqua-123	Seine River Crossing	681924	5488540	14N	18	8	High
MMTP-S36	Aqua-124	Unnamed Creek Crossing	681859	5488119	14N	8	0.3	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S34	Wild-118	Seine River crossing	Site: L21 to L22	E-682007 N-5488717	E-682009 N-5488650	14N	66m
MMTP-S35	Wild-118	Seine River crossing	Site: L23 to L24	E-682009 N-5488650	E-681846 N-5488438	14N	267m
MMTP-S36	Wild-118	Seine River crossing	Site: L25 to L26	E-681846 N-5488438	E-681848 N-5488371	14N	67m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S34	Aqua-202	Flowing Aquifer	Site: 135 to 136	E-681887 N-5491994	E-682009 N-5488650	14N	3346m
MMTP-S35	Aqua-202	Flowing Aquifer	Site: 137 to 138	E-682009 N-5488650	E-681846 N-5488438	14N	267m
MMTP-S36	Aqua-202	Flowing Aquifer	Site: 139 to 140	E-681846 N-5488438	E-681931 N-5486323	14N	2116m

Potential Effects:

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

Specific Mitigation:

- 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.

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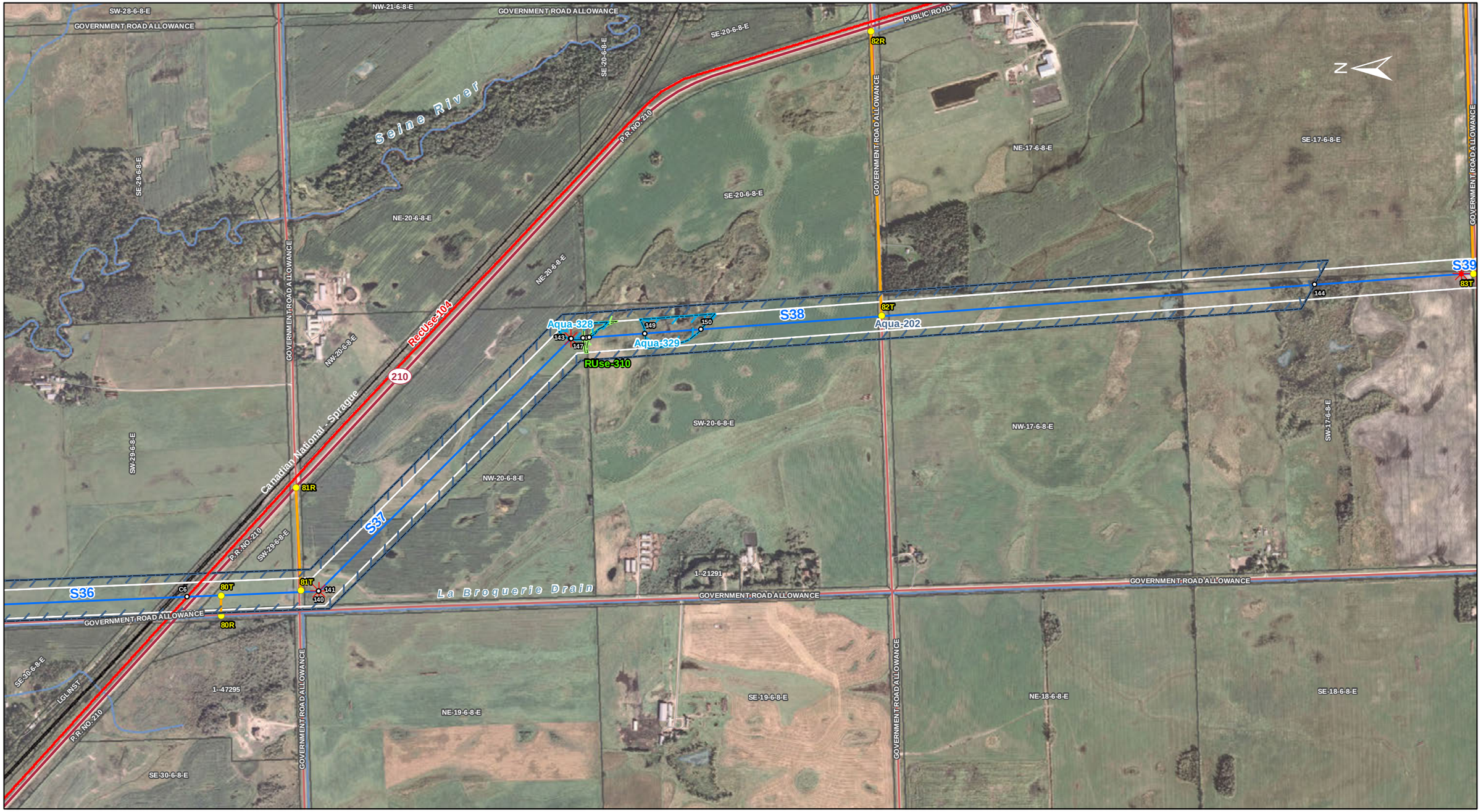

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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Metres

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Land Base
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- Provincial Forest
- Parcel Fabric

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- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
RecUse
- Trail

Resource Use
- Forestry

Water
- Groundwater
- Wetland

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

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Map 34

ESS Group: Trail

Sec-Seg ID	ESS ID	Location	ESS Name	Crossing Coordinates	UTM Zone
MMTP-S36	RecUse-104	C6	Trail PT29	E-681917 N-5486686	14N

Potential Effects:

Potential interference with snowmobilers; safety issues

Specific Mitigation:

- 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
- Notify snowmobile club/users and local authorities regarding construction activities and schedule, and address concerns prior to construction

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S36	Aqua-202	Flowing Aquifer	Site: 139 to 140	E-681846 N-5488438	E-681931 N-5486323	14N	2116 m
MMTP-S37	Aqua-202	Flowing Aquifer	Site: 141 to 142	E-681931 N-5486323	E-682626 N-5485631	14N	980 m
MMTP-S38	Aqua-202	Flowing Aquifer	Site: 143 to 144	E-682626 N-5485631	E-682776 N-5483584	14N	2052 m

Potential Effects:

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

Specific Mitigation:

- 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: Forestry

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S38	RUse-310	Shelterbelt	Site: 147 to 148	E-682629 N-5485595	E-682630 N-5485579	14N	16 m

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:

- 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 conditions
- Identify and flag prior to start of work
- If Burning of clearing debris is required it must be conducted during winter months only and ensure that all fires are extinguished prior to spring break-up
- 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
- All burn piles to be extinguished with water and then scanned for hotspots with handheld infrared scanners

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S38	Aqua-328	Wetland	Site: 145 to 146	E-682626 N-5485628	E-682630 N-5485587	14N	41 m
MMTP-S38	Aqua-329	Wetland	Site: 149 to 150	E-682641 N-5485426	E-682653 N-5485271	14N	154 m

Potential Effects:

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

Specific Mitigation:

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

Manitoba Hydro

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Date Created: September 09, 2015
Version: Draft

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1:10,000

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Heritage
- Archaeological

Water
- Water Crossing

Wildlife
- Birds and Habitat

Heritage
- Archaeological

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

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Map 35

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S39	Hert-109	Area of Potential Use	Site: 151 to 152	E-682925 N-5479759	E-682964 N-5478657	14N	1102m

Potential Effects:

Potential disturbance to Heritage Resource

Specific Mitigation:

- 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 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: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S39	Hert-110	Area of Potential Use	682973	5479217	14N

Potential Effects:

Potential disturbance to Heritage Resources

Specific Mitigation:

- 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 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: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S39	Aqua-125	Unnamed Drain Crossing	682941	5479405	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 conditions
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S39	Wild-119	Breeding habitat sensitive area	Site: L27 to L28	E-682930 N-5479624	E-683037 N-5476563	14N	3062m

Potential Effects:

Higher risk of wire collision. Disturbance during breeding and nesting

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Wildlife
- Birds and Habitat

Heritage
- Archaeological

Water
- Wetland

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

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Map 36

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MTP-S39	Wild-119	Breeding habitat sensitive area	Site: L27 to L28	E-682930 N-5479624	E-683037 N-5476563	14N	3062m

Potential Effects:

Higher risk of wire collision. Disturbance during breeding and nesting

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S39	Aqua-330	Wetland	Site: 153 to 154	E-682985 N-5478046	E-682987 N-5478001	14N	44m
MMTP-S39	Aqua-330	Wetland	Site: 155 to 156	E-682988 N-5477956	E-682990 N-5477899	14N	56m

Potential Effects:

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

Specific Mitigation:

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

ESS Group: Archaeological

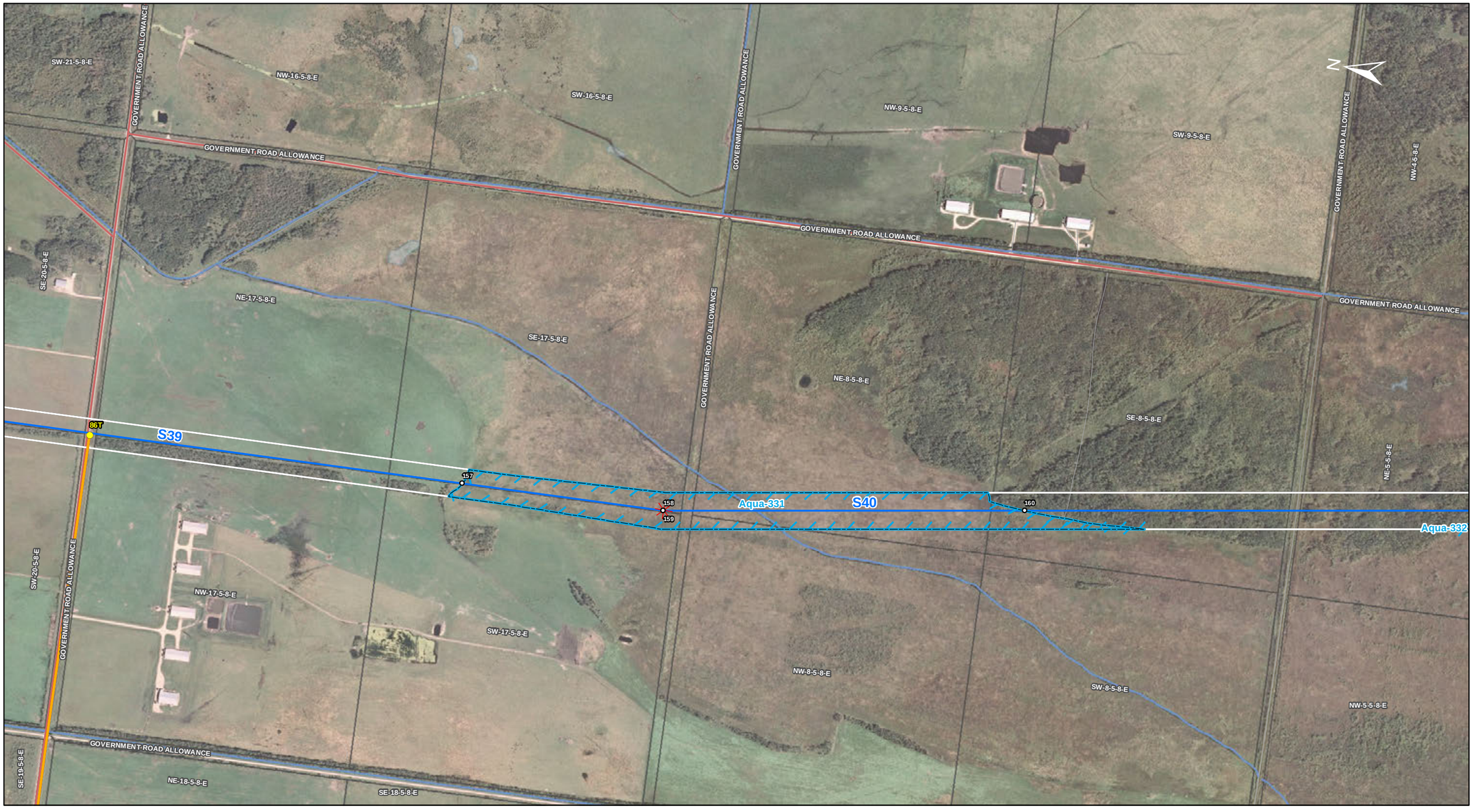
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S39	Hert-109	Area of Potential Use	Site: 151 to 152	E-682925 N-5479759	E-682964 N-5478657	14N	1102 m

Potential Effects:

Potential disturbance to Heritage Resource

Specific Mitigation:

- 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 conditions
- Conduct site investigation with Archaeologist post clearing and prior to construction
- 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



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Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Wetland

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

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Map 37

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S39	Aqua-331	Wetland	Site: 157 to 158	E-683129 N-5473916	E-683148 N-5473364	14N	552 m
MMTP-S40	Aqua-331	Wetland	Site: 159 to 160	E-683148 N-5473364	E-683315 N-5472391	14N	987 m

Potential Effects:

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

Specific Mitigation:

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

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Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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Land Base
- Transmission Line
- Highway
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- Railway (Discontinued)
- First Nation
- Provincial Forest
- Parcel Fabric

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features
Water
- Wetland

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

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Map 38

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S40	Aqua-332	Wetland	Site: 161 to 162	E-683526 N-5471153	E-683576 N-5470859	14N	298 m
MMTP-S40	Aqua-333	Wetland	Site: 163 to 164	E-683894 N-5469000	E-683917 N-5468866	14N	135 m

Potential Effects:

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

Specific Mitigation:

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

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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features

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

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Map 39

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Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features

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

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Map 40

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Manitoba Hydro

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Date Created: September 10, 2015
Version: Draft

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- Provincial Forest
- Parcel Fabric

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features
Water
- Wetland

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

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Map 41

ESS Group: Conservation

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S42	LUse-101	Watson P. Davidson WMA	687712	5460336	14N

Potential Effects:

Potential disruption to protected area

Specific Mitigation:

• No disturbance permitted within legally protected area

ESS Group: Wetland

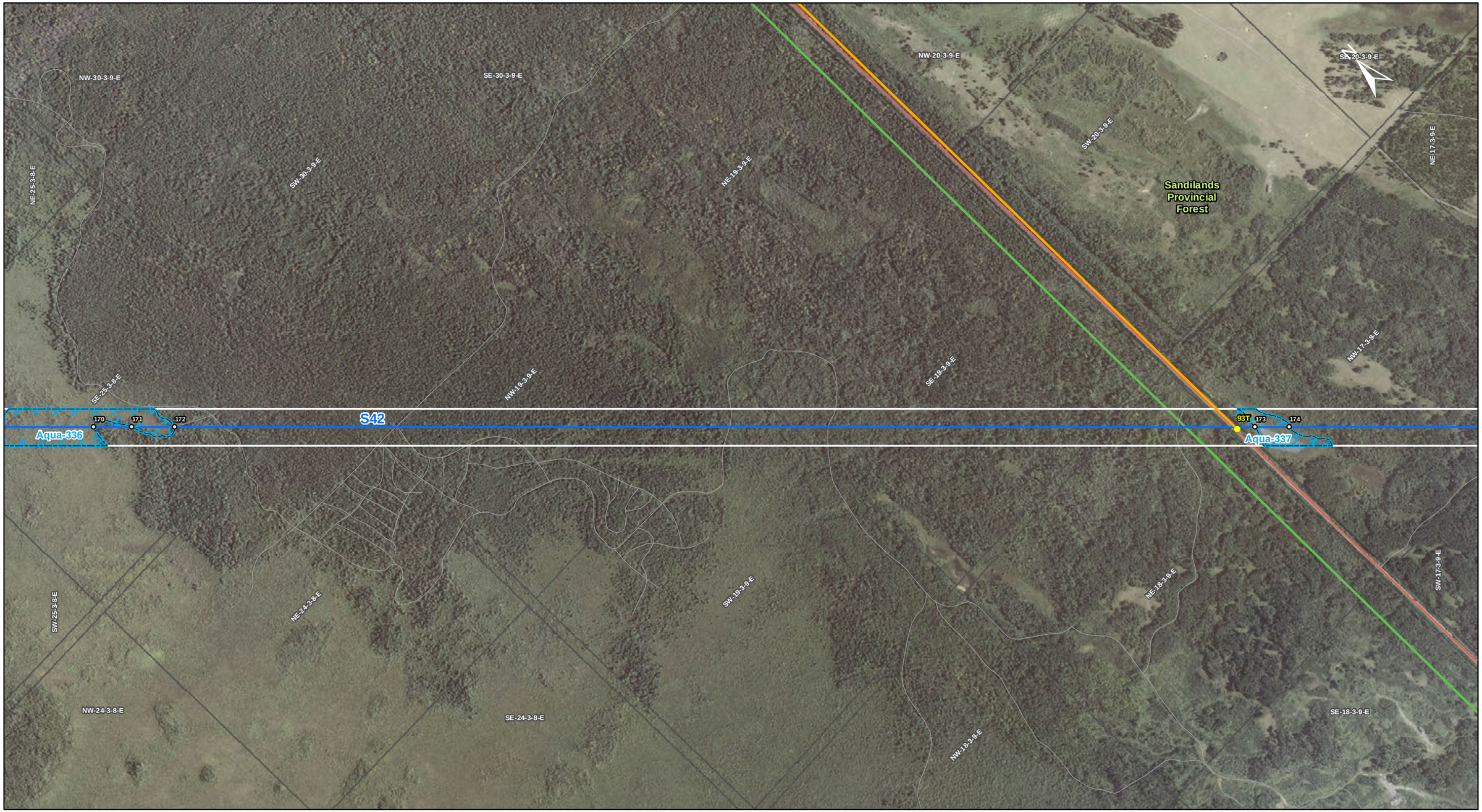
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Aqua-334	Wetland	Site: 165 to 166	E-689987 N-5458082	E-690087 N-5457987	14N	138 m
MMTP-S42	Aqua-335	Wetland	Site: 167 to 168	E-690160 N-5457917	E-690372 N-5457712	14N	294 m
MMTP-S42	Aqua-336	Wetland	Site: 169 to 170	E-690438 N-5457650	E-690631 N-5457464	14N	268 m

Potential Effects:

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

Specific Mitigation:

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



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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Wetland

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

Map 42

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ESS Group: Wetland

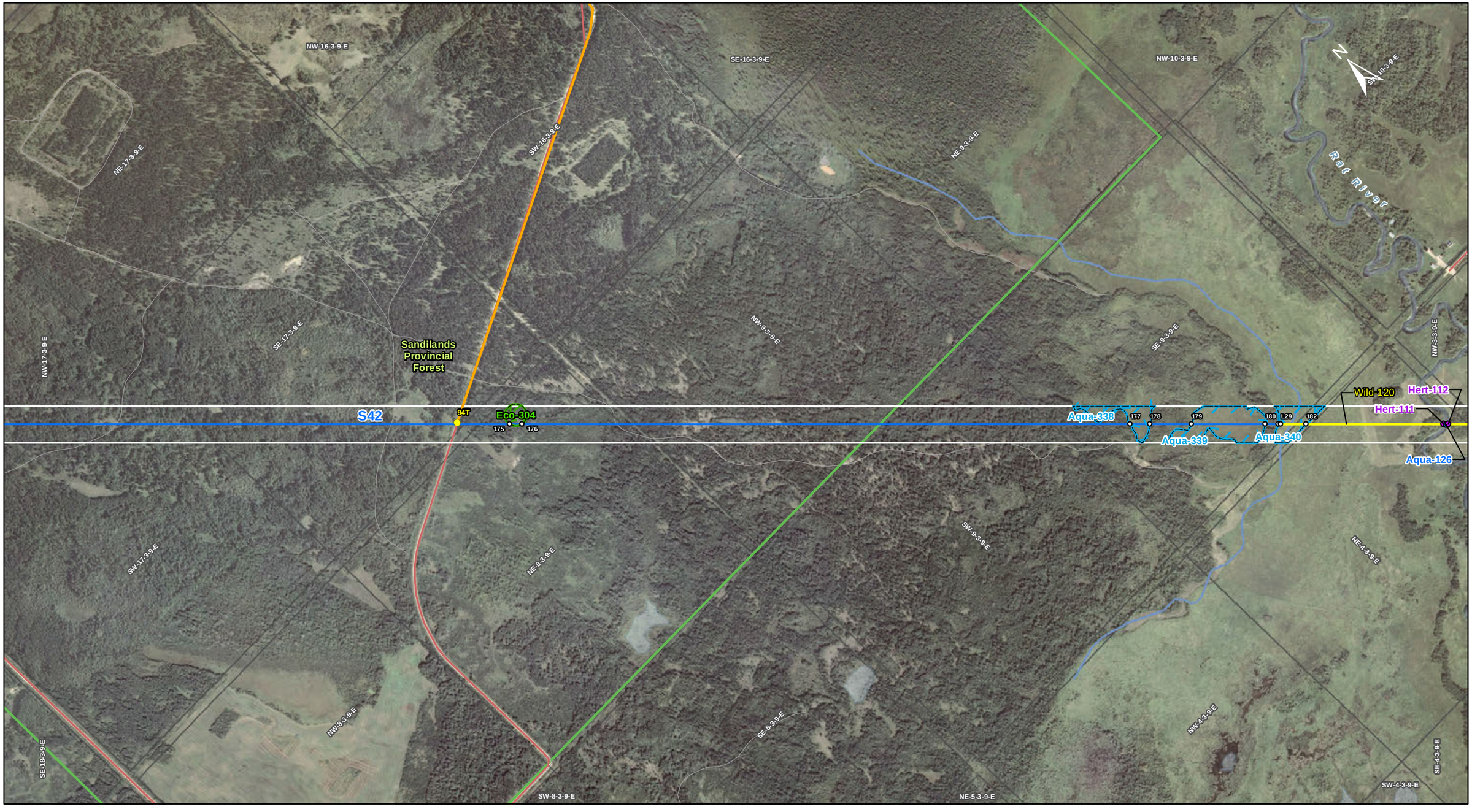
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Aqua-336	Wetland	Site: 169 to 170	E-690438 N-5457650	E-690631 N-5457464	14N	268 m
MMTP-S42	Aqua-336	Wetland	Site: 171 to 172	E-690705 N-5457392	E-690790 N-5457311	14N	117 m
MMTP-S42	Aqua-337	Wetland	Site: 173 to 174	E-692903 N-5455279	E-692971 N-5455214	14N	94 m

Potential Effects:

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

Specific Mitigation:

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



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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Heritage
- Archaeological
Water
- Water Crossing
Wildlife
- Birds and Habitat
Ecosystem
- Species of Concern
Water
- Wetland

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

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Map 43

ESS Group: Archaeological

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone
MMTP-S42	Hert-111	Rat River Crossing	696176	5452135	14N
MMTP-S42	Hert-112	Rat River Crossing	696185	5452126	14N

Potential Effects:

Potential disturbance to Heritage Resources

Specific Mitigation:

- 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 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: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S42	Aqua-126	Rat River Crossing	696180	5452130	14N	14	10	High

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Wild-120	Rat River crossing	Site: L29 to L30	E-695855 N-5452443	E-696337 N-5451979	14N	669m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Species of Concern

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Eco-304	Plant Species of Concern	Site: 175 to 176	E-694336 N-5453903	E-694359 N-5453880	14N	33m

Potential Effects:

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

Specific Mitigation:

- Identify and flag prior to start of work
- Carry out construction activities on frozen or dry ground to minimize surface damage, rutting and erosion. Construction matting will be used to protect the area from rutting and exposure to mineral soil during wet conditions
- Provide 5m vegetated (shrub and herbaceous) buffer around site
- Remove trees by low-disturbance methods that protect shrubs and understory
- Confine vehicle traffic to established trails to the extent possible

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Aqua-338	Wetland	Site: 177 to 178	E-695557 N-5452728	E-695597 N-5452690	14N	54 m
MMTP-S42	Aqua-339	Wetland	Site: 179 to 180	E-695679 N-5452612	E-695824 N-5452472	14N	201 m
MMTP-S42	Aqua-340	Wetland	Site: 181 to 182	E-695850 N-5452447	E-695904 N-5452395	14N	75 m

Potential Effects:

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

Specific Mitigation:

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

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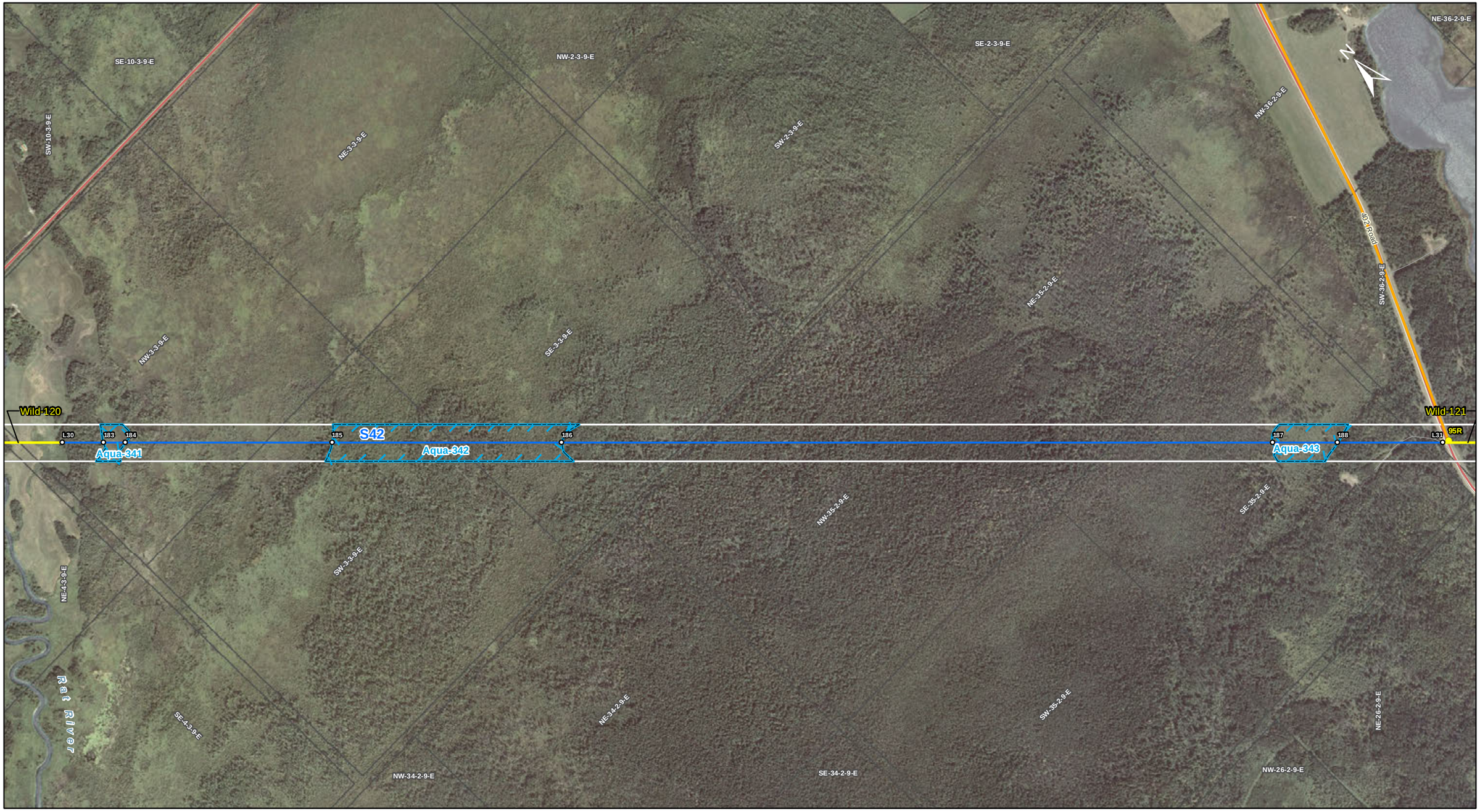

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Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

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ESS Features
Wildlife
- Birds and Habitat

Water
- Wetland

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

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Map 44

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Wild-120	Rat River crossing	Site: L29 to L30	E-695855 N-5452443	E-696337 N-5451979	14N	669m
MMTP-S42	Wild-121	Waterfowl sensitivity area	Site: L31 to L32	E-699042 N-5449378	E-699548 N-5448892	14N	701m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Aqua-341	Wetland	Site: 183 to 184	E-696418 N-5451901	E-696461 N-5451860	14N	59 m
MMTP-S42	Aqua-342	Wetland	Site: 185 to 186	E-696866 N-5451470	E-697315 N-5451038	14N	623 m
MMTP-S42	Aqua-343	Wetland	Site: 187 to 188	E-698709 N-5449699	E-698836 N-5449577	14N	175 m

Potential Effects:

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

Specific Mitigation:

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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Metres

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Heritage
- Cultural or Historic

Wildlife
- Birds and Habitat

Water
- Wetland

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

Draft: For Discussion Purposes Only

Map 45

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Wild-121	Waterfowl sensitivity area	Site: L31 to L32	E-699042 N-5449378	E-699548 N-5448892	14N	701m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Wetland

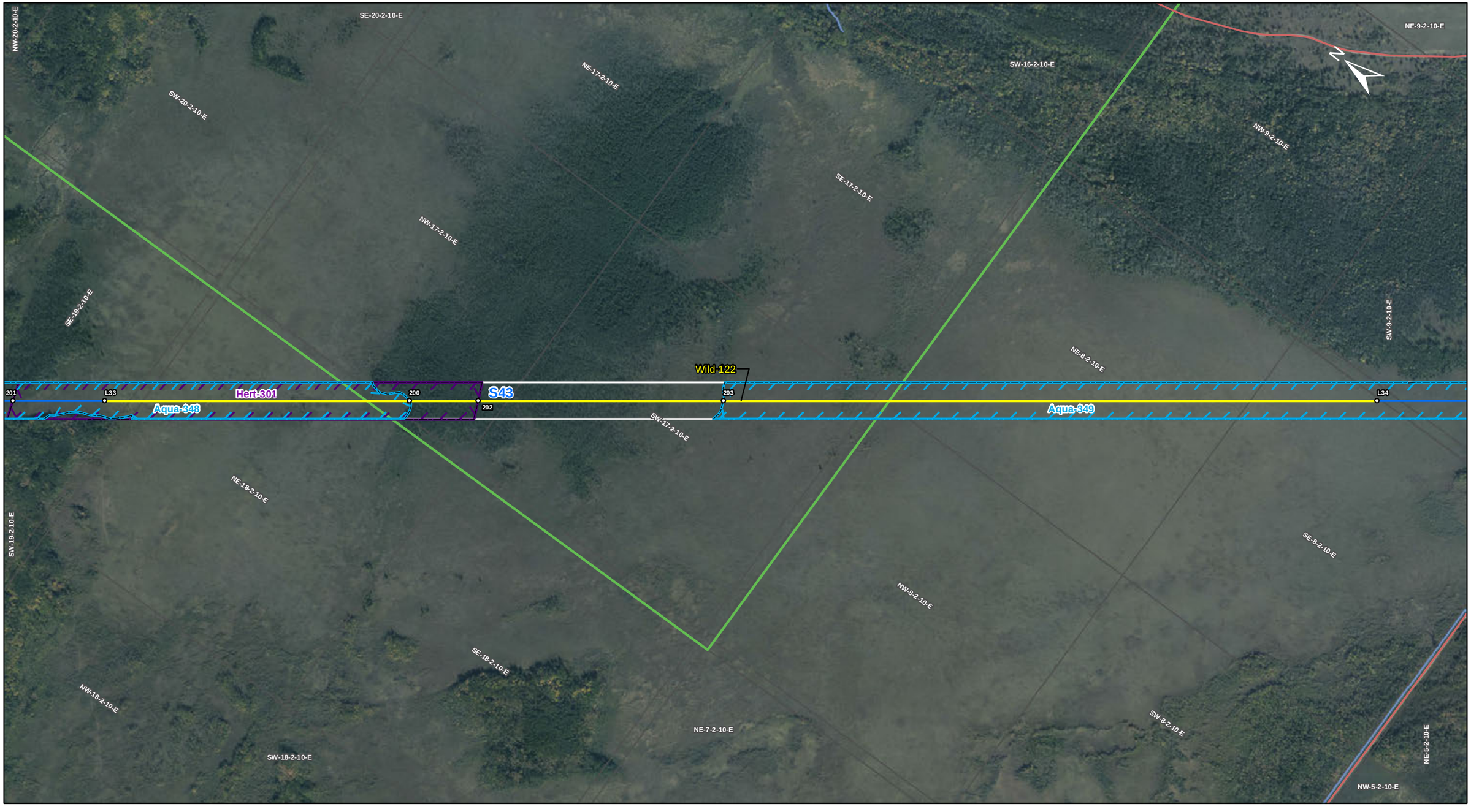
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S42	Aqua-344	Wetland	Site: 189 to 190	E-699524 N-5448915	E-700049 N-5448411	14N	727 m
MMTP-S43	Aqua-345	Wetland	Site: 191 to 192	E-700613 N-5447775	E-700670 N-5447702	14N	92 m
MMTP-S43	Aqua-346	Wetland	Site: 193 to 194	E-700700 N-5447665	E-700719 N-5447641	14N	30 m
MMTP-S43	Aqua-347	Wetland	Site: 195 to 196	E-700772 N-5447574	E-700913 N-5447395	14N	228 m
MMTP-S43	Aqua-347	Wetland	Site: 197 to 198	E-700976 N-5447316	E-701619 N-5446501	14N	1037 m
MMTP-S43	Aqua-348	Wetland	Site: 199 to 200	E-701731 N-5446358	E-702449 N-5445448	14N	1159 m

Potential Effects:

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

Specific Mitigation:

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



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Wildlife
- Birds and Habitat

Heritage
- Historic

Water
- Wetland

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

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Map 46

ESS Group: Birds and Habitat

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S43	Wild-122	Sundown Lake and wetland sensitive area	Site: L33 to L34	E-701934 N-5446101	E-704088 N-5443371	14N	3478m

Potential Effects:

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

Specific Mitigation:

- As per industry standards, bird diverters will be installed in a manner to maximize visibility by alternating between reflective and spiral diverters along the two skywires
- Install bird diverter with spacing as per Transmission Line Design specifications for these spans

ESS Group: Historic

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S43	Hert-301	Historic Trail	Site: 201 to 202	E-701778 N-5446299	E-702566 N-5445301	14N	1271m

Potential Effects:

Potential disturbance to heritage or historic trail

Specific Mitigation:

- 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 conditions
- Inspect excavated materials or surface disturbance for heritage resources and report any finds to Environmental Inspector
- If any heritage resources are discovered , Archaeologist to conduct site investigation and recommend any additional mitigation measures

ESS Group: Wetland

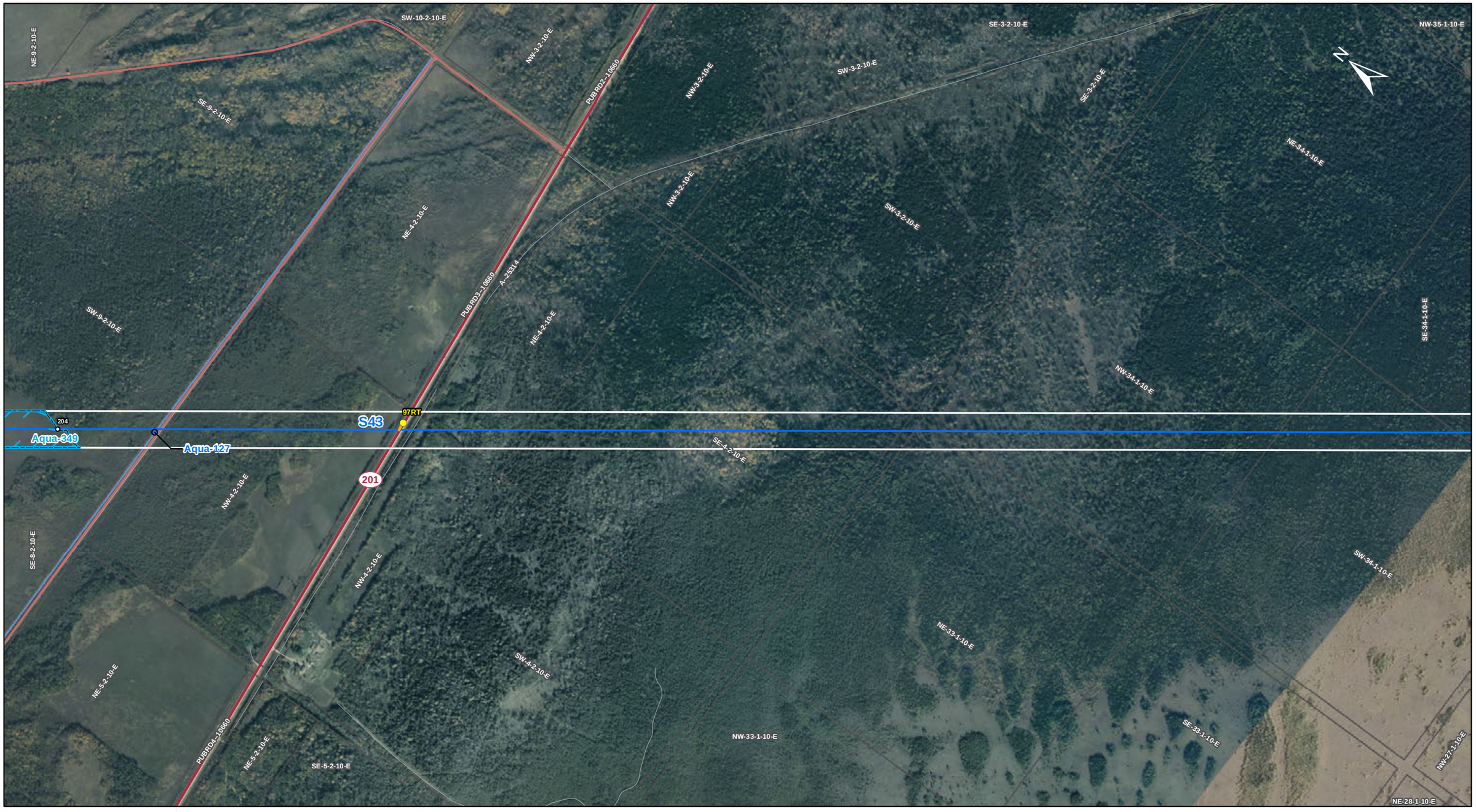
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S43	Aqua-348	Wetland	Site: 199 to 200	E-701731 N-5446358	E-702449 N-5445448	14N	1159 m
MMTP-S43	Aqua-349	Wetland	Site: 203 to 204	E-702981 N-5444774	E-704328 N-5443067	14N	2174 m

Potential Effects:

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

Specific Mitigation:

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



Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Wetland

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

Draft: For Discussion Purposes Only

Map 47

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S43	Aqua-127	Unnamed Drain Crossing	704486	5442853	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 conditions
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S43	Aqua-349	Wetland	Site: 203 to 204	E-702981 N-5444774	E-704328 N-5443067	14N	2174m

Potential Effects:

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

Specific Mitigation:

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

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 10, 2015
Version: Draft

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Metres

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Wetland

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

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Map 48

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S44	Aqua-350	Wetland	Site: 205 to 206	E-709334 N-5439531	E-709384 N-5439523	14N	51 m

Potential Effects:

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

Specific Mitigation:

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

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 10, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Wetland

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

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Map 49

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S44	Aqua-128	Unnamed Creek Crossing	714475	5438668	14N	TBD	TBD	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S44	Aqua-351	Wetland	Site: 207 to 208	E-710726 N-5439296	E-711740 N-5439125	14N	1028m

Potential Effects:

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

Specific Mitigation:

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 10, 2015
Version: Draft

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Metres

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Groundwater
- Wetland

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

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Map 50

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S44	Aqua-352	Wetland	Site: 209 to 210	E-715914 N-5438419	E-719051 N-5437888	14N	3181m

Potential Effects:

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

Specific Mitigation:

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

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S44	Aqua-203	Flowing Aquifer	Site: 211 to 212	E-716323 N-5438349	E-719289 N-5437848	14N	3008 m

Potential Effects:

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

Specific Mitigation:

- 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.

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 10, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Groundwater
- Wetland

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

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Map 51

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S44	Aqua-352	Wetland	Site: 209 to 210	E-715914 N-5438419	E-719051 N-5437888	14N	3181m

Potential Effects:

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

Specific Mitigation:

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

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S44	Aqua-203	Flowing Aquifer	Site: 211 to 212	E-716323 N-5438349	E-719289 N-5437848	14N	3008 m
MMTP-S45	Aqua-203	Flowing Aquifer	Site: 213 to 214	E-719289 N-5437848	E-721347 N-5437888	14N	2058 m
MMTP-S46	Aqua-203	Flowing Aquifer	Site: 215 to 216	E-721347 N-5437888	E-722374 N-5436145	14N	2023 m

Potential Effects:

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

Specific Mitigation:

- 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.

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Groundwater

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

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Map 52

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S47	Aqua-129	Pine Creek Diversion Crossing	722732	5435667	14N	11	8	Moderate

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 conditions
- Use existing trails, roads or cut lines whenever possible as access routes
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing

ESS Group: Groundwater

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S46	Aqua-203	Flowing Aquifer	Site: 215 to 216	E-721347 N-5437888	E-722374 N-5436145	14N	2023m
MMTP-S47	Aqua-203	Flowing Aquifer	Site: 217 to 218	E-722374 N-5436145	E-723263 N-5434941	14N	1496m
MMTP-S48	Aqua-203	Flowing Aquifer	Site: 219 to 220	E-723263 N-5434941	E-723568 N-5434683	14N	400m
MMTP-S49	Aqua-203	Flowing Aquifer	Site: 221 to 222	E-723568 N-5434683	E-723882 N-5434129	14N	636m

Potential Effects:

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

Specific Mitigation:

- 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.

Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 09, 2015
Version: Draft

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Metres

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

Project Infrastructure
- Angle Tower Locations
- MMTP 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*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Water Crossing

Water
- Wetland

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

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Map 53

ESS Group: Water Crossing

Sec-Seg ID	ESS ID	ESS Name	Easting	Northing	UTM Zone	Channel Width	Wet Width	Habitat Sensitivity
MMTP-S49	Aqua-130	Pine Creek Crossing	724847	5432437	14N	10	4	Moderate
MMTP-S49	Aqua-131	Pine Creek Crossing	724879	5432380	14N	9	3.5	Low

Potential Effects:

Habitat loss and contamination from structure foundations & installations; increased erosion & sedimentation of streams; Damage to stream banks; Loss of riparian vegetation; Fish habitat disturbances and impeded fish movement; Rutting of floodplain

Specific Mitigation:

- Carry out construction activities on frozen 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 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.
- 7m no machine zone will restrict equipment in close proximity to the waterbody except at the trail crossing.

ESS Group: Wetland

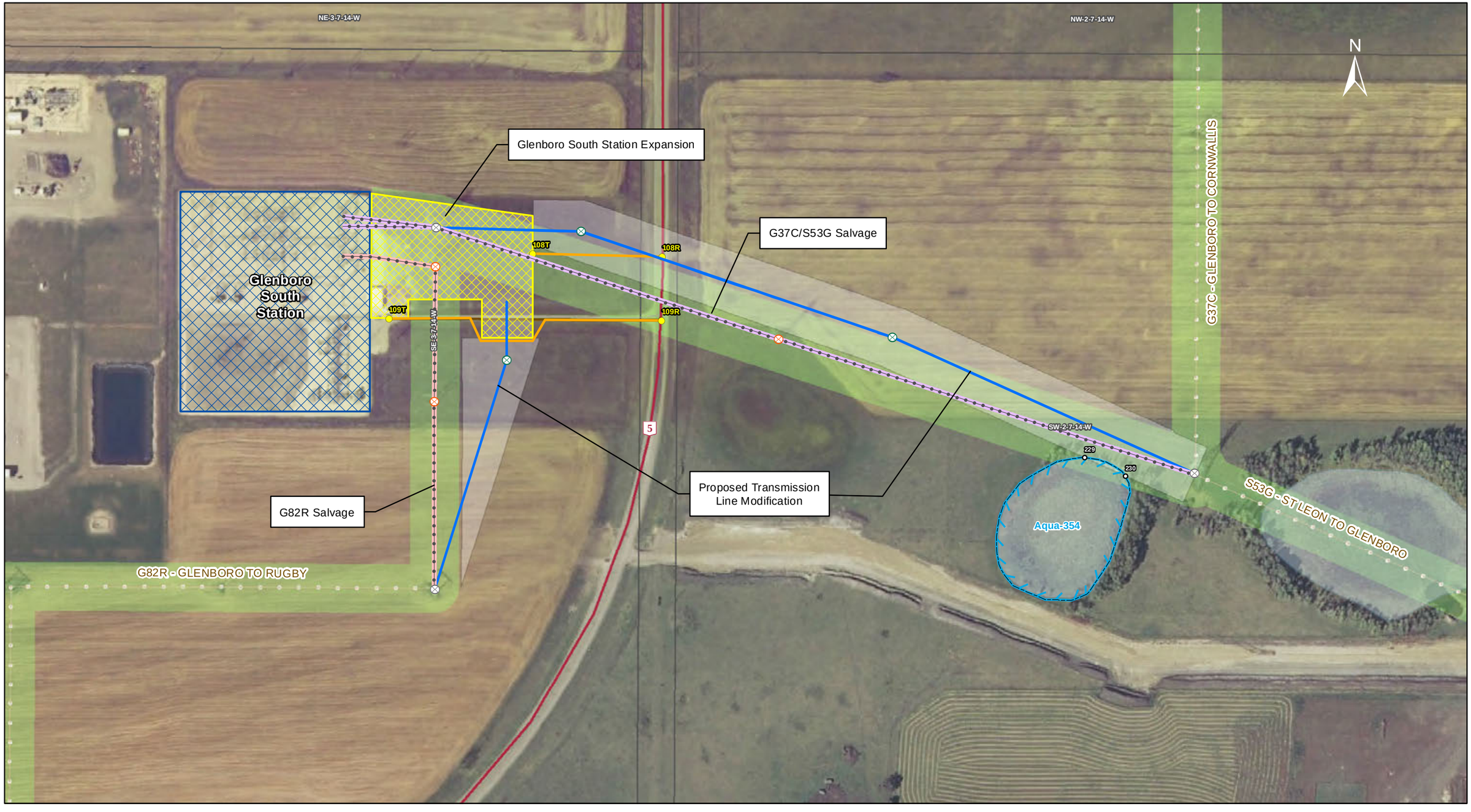
Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
MMTP-S49	Aqua-353	Wetland	Site: 223 to 224	E-724876 N-5432376	E-724882 N-5432364	14N	13m
MMTP-S49	Aqua-353	Wetland	Site: 225 to 226	E-724886 N-5432358	E-724943 N-5432257	14N	116m
MMTP-S50	Aqua-353	Wetland	Site: 227 to 228	E-724943 N-5432257	E-725424 N-5432110	14N	502m

Potential Effects:

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

Specific Mitigation:

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



Manitoba Hydro

Coordinate System: UTM Zone 14N NAD83
Data Source: MB Hydro, ProvMB, NRCAN
Date Created: September 10, 2015
Version: Draft

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

Project Infrastructure
- Existing Tower Location
- New Tower Location
- Existing Tower Location (Salvage)
- Transmission Line Modifications
- Existing Right of Way
- Proposed Right of Way
- Station Expansion
- Converter Station Footprint
- G37C Salvage
- G82R Salvage

Sensitive Sites
- Point Features
- Linear Features
- Area Features

Points of Access*
- Proposed Access Point
- Proposed Access Route

*Labels correspond to BPIII Access Management Database

ESS Features
Water
- Wetland

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

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Map 54

ESS Group: Wetland

Sec-Seg ID	ESS ID	ESS Name	Location	Start	Stop	UTM Zone	Distance
Glenboro South Stn Line Modification	Aqua-354	Wetland	Site: 229 to 230	E-480117 N-5487200	E-480151 N-5487185	14N	37m

Potential Effects:

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

Specific Mitigation:

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