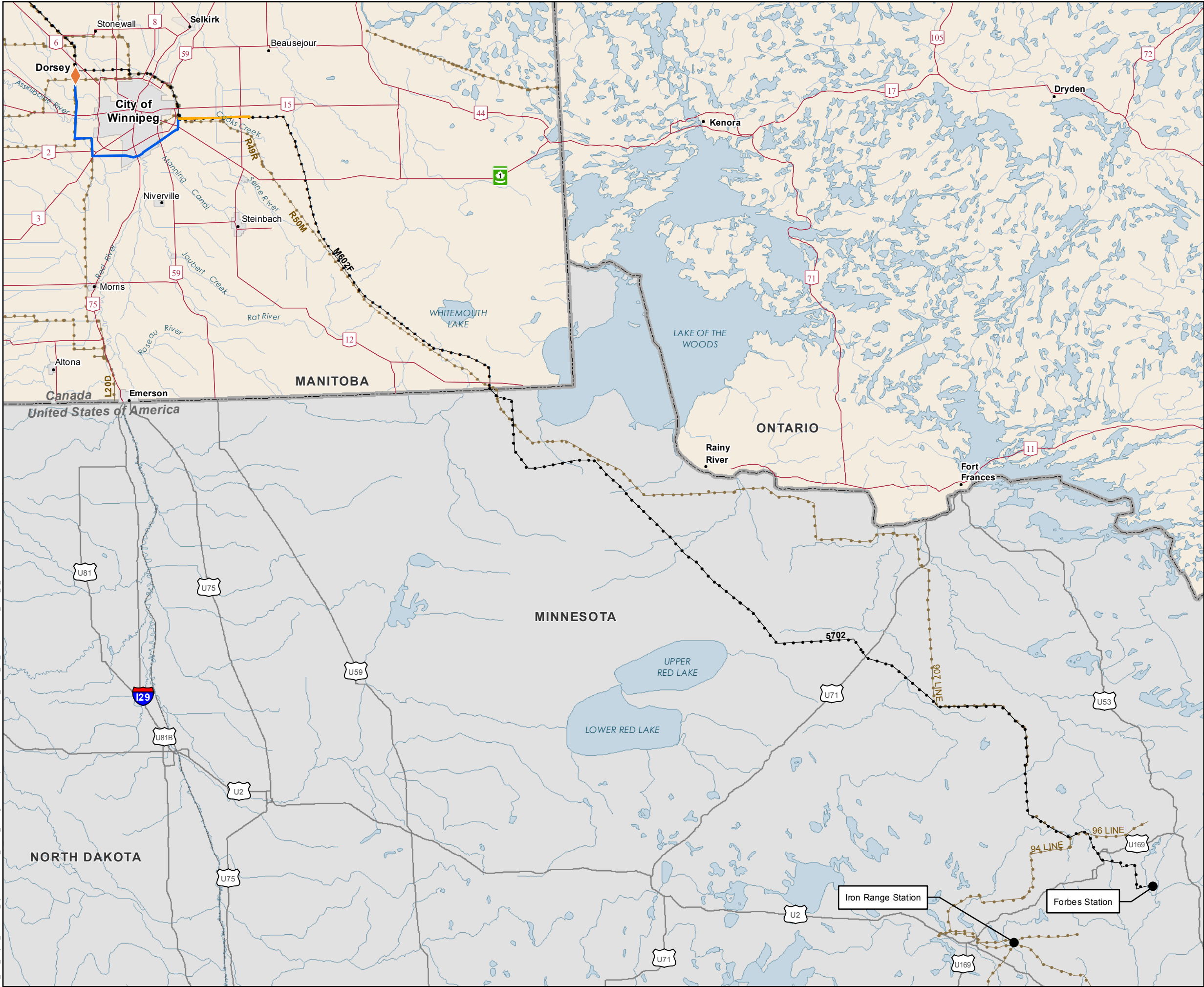


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Manitoba-Minnesota Transmission Project

Project Infrastructure

- Converter Station (Existing)
- Southern Loop Transmission Corridor (SLTC)
- Riel to Vivian Transmission Corridor (RVTC)

Infrastructure

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

Landbase

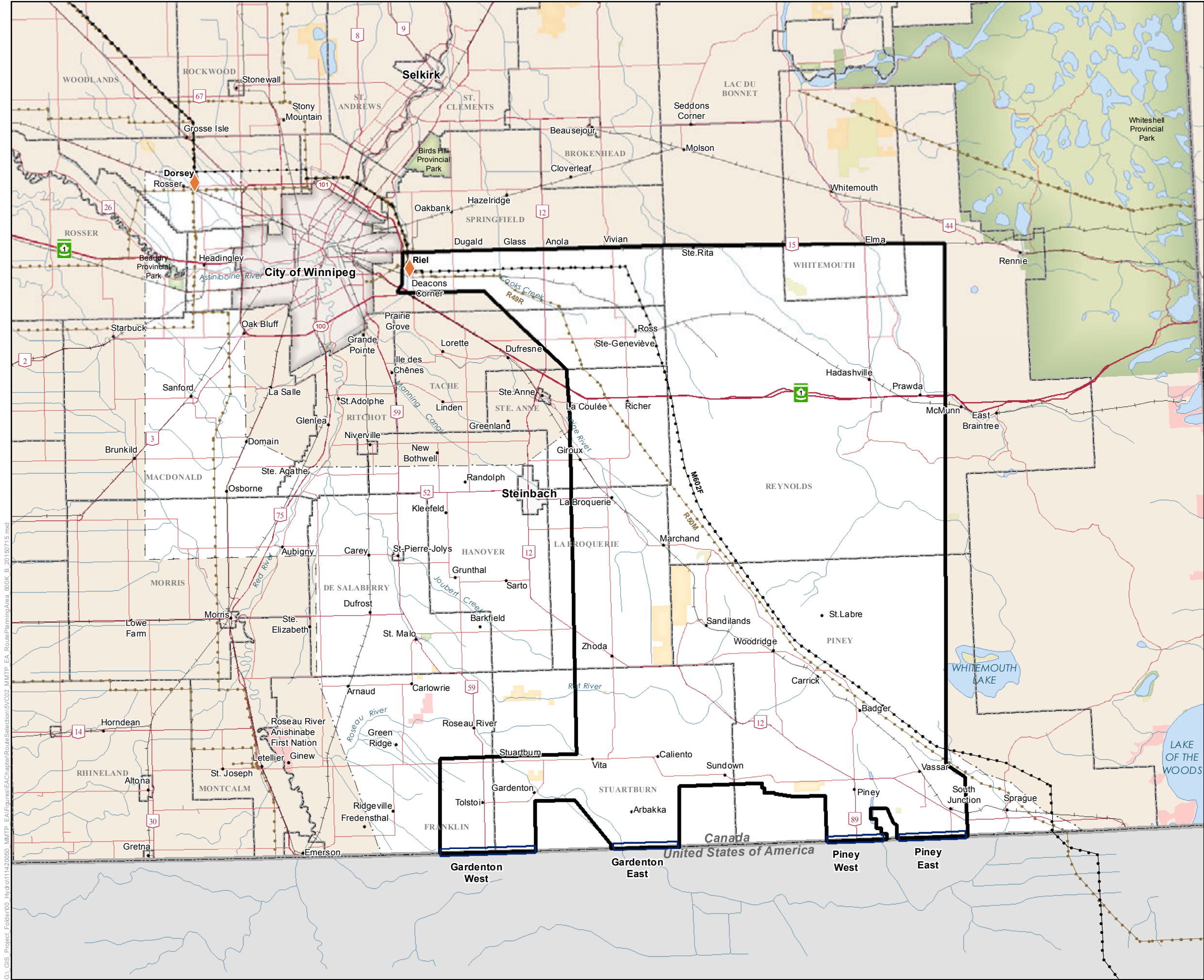
- Community
- Trans Canada Highway
- Provincial Highway
- USA Highways
- City / Town
- Provincial Boundary

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

0 10 20 Kilometres
0 5 10 20 Miles

1:1,250,000

Dorsey Converter Station to Iron Range Station



Manitoba-Minnesota
Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)

Infrastructure

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

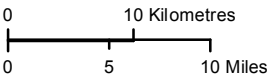
Assessment Area

- Border Crossing Area
- Refined Preliminary Planning Area
- Preliminary Planning Area

Landbase

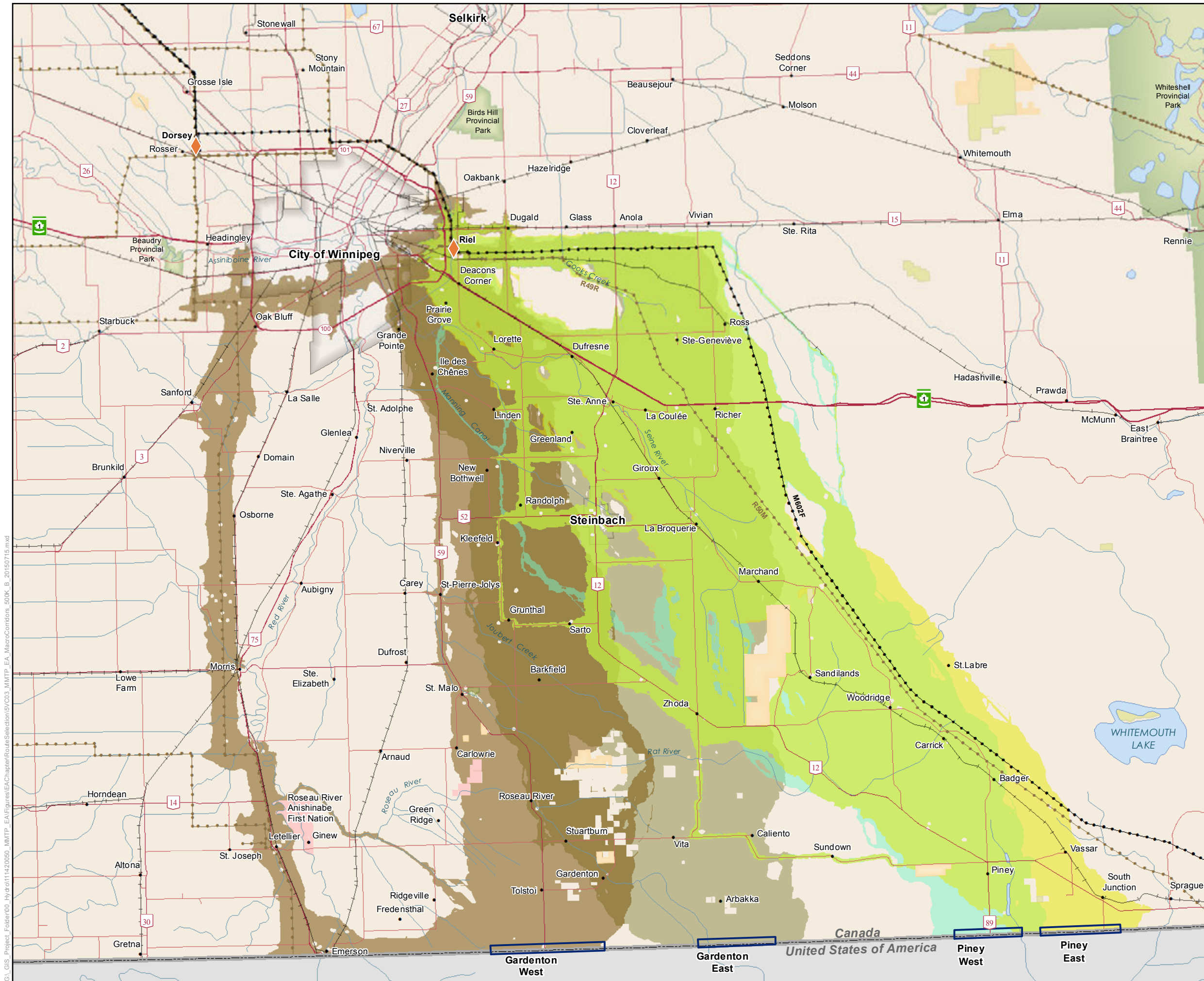
- Community
- Railway
- Trans Canada
- Provincial Highway
- Provincial Road
- City
- First Nation Lands
- Ecological Reserve
- Wildlife Management Area
- Provincial Park
- Rural Municipality

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015



Preliminary Planning Area

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Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)

Infrastructure

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

Route Planning Area

- Border Crossing Area

Macro Corridor

- Piney East
- Piney West
- Gardenton West
- Gardenton East

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

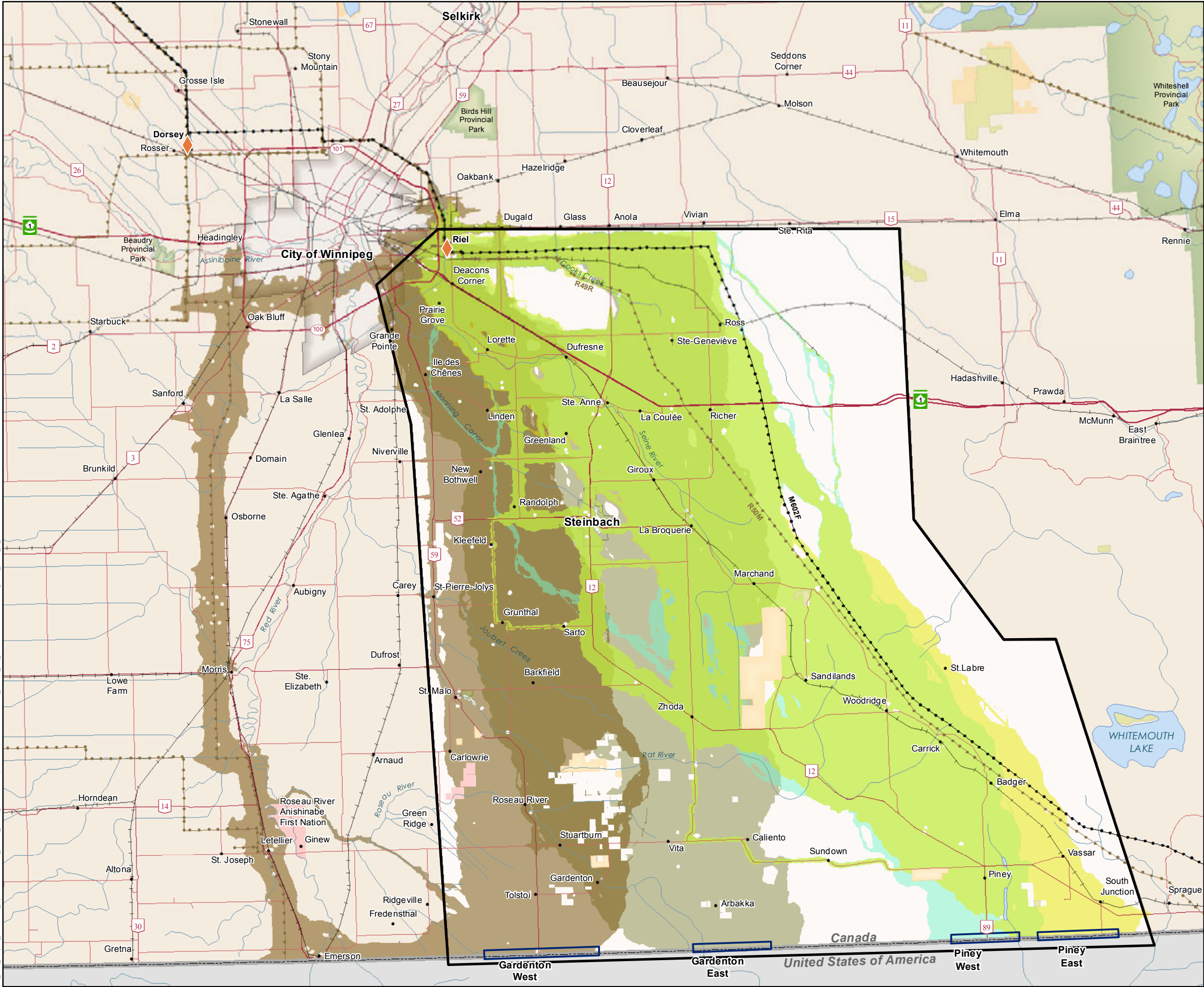


0 5 10 Kilometres
0 5 10 Miles

1:500,000

Macro Corridors

G:\GIS_Projects\Folder00_Hydro\11420000_MMTP_EA\Figures\EAChapterRouteSelection\SV\004_MMTP_EA_EPRI\GTORoutePlanning\area_500K_B_20150715.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)

Infrastructure

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

Planning Area

- Border Crossing Area
- Route Planning Area

Macro Corridor

- Piney East
- Piney West
- Gardenton West
- Gardenton East

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

0 5 10 Kilometres
0 5 10 Miles

1:500,000

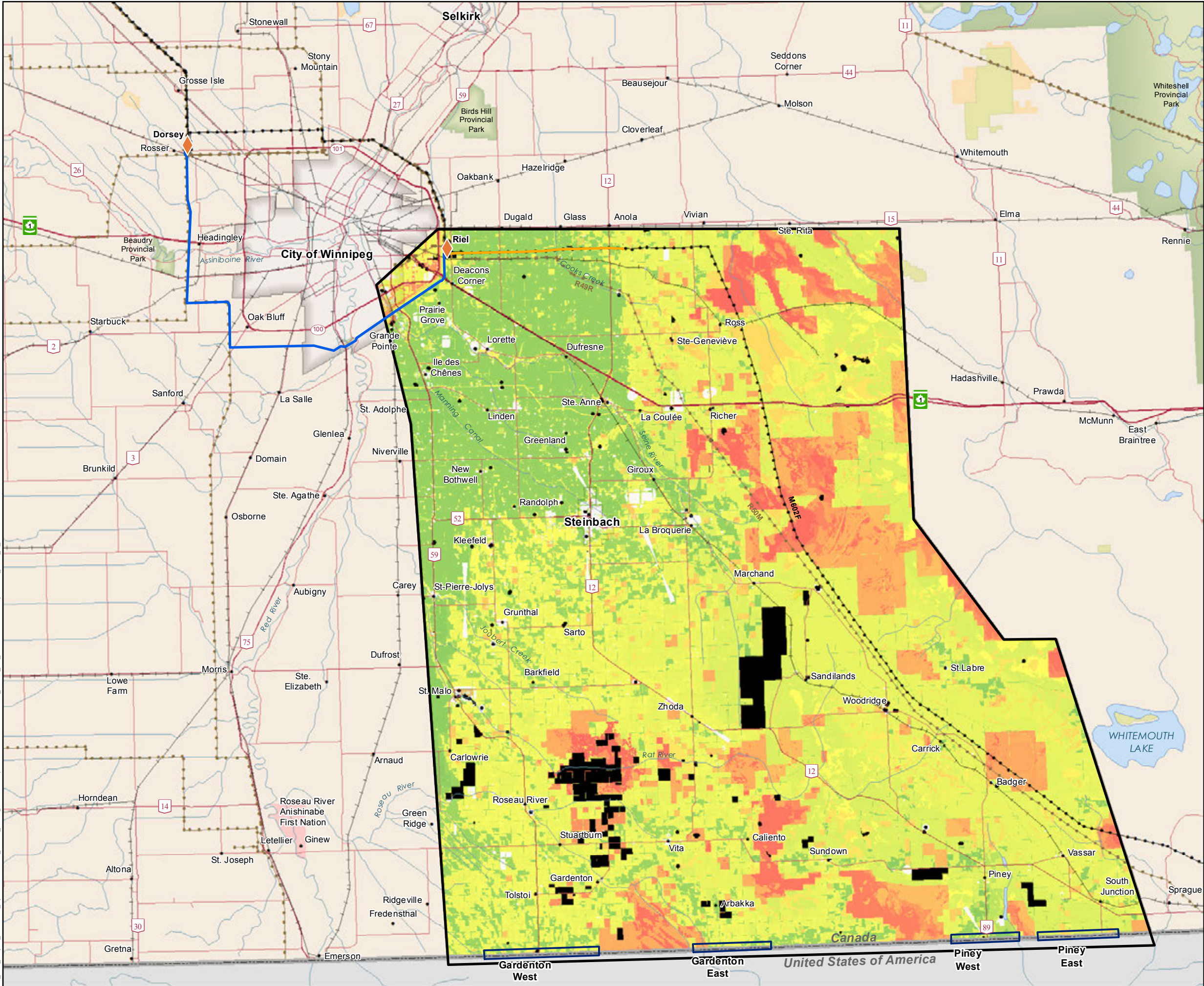
Route Planning Area

This map displays the Riel area in Manitoba, Canada, with a color-coded overlay indicating various land use or suitability zones. The map includes the following features:

- Geographical Features:** Assiniboine River, Red River, Cooks Creek, Manning Canal, Seine River, Joubert Creek, Rat River, Roseau River, and Whitemouth Lake.
- Urban and Municipal Areas:** City of Winnipeg, Steinbach, Riel, Deacons Corner, Prairie Grove, Lorette, Dufresne, Ste. Geneviève, Ross, Ste. Anne, La Coulee, Richer, Marchand, Sandilands, Woodridge, Carrick, Badger, Vassar, Piney, South Junction, Sprague, Gardenont West, Gardenont East, Piney West, and Piney East.
- Roads and Highways:** Various roads and highways are shown, including routes 2, 3, 14, 30, 52, 59, 67, 75, 100, 101, 11, 12, 15, 26, 27, 44, and 89.
- Other Landmarks:** Birds Hill Provincial Park, Beaudry Provincial Park, Stonewall, Stony Mountain, Grosse Isle, Rosser, Headingley, Oak Bluff, Sanford, Brunkild, Lowe Farm, Horndean, Altona, Gretna, Emerson, Ridgeville, Fredensthal, and Whiteshell Provincial Park.

The map is labeled with numerous place names and geographical features, providing a detailed view of the Riel area and its surroundings.

GA_GIS_Project_Folder00_Hydro\11420000_MMTPP_EA\Figures\EAChapterRouteSelection\SV000_MMTPP_EA_NaturalEnvSuitabilitySurface_500K_E_20160715.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- Converter Station (Existing)
- Southern Loop Transmission Corridor
- Riel to Vivian Transmission Corridor (Existing)

Infrastructure

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

Suitability Surface

- Area of Least Preference
- Natural Environment
- Less Suitable (9)
- More Suitable (1)

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

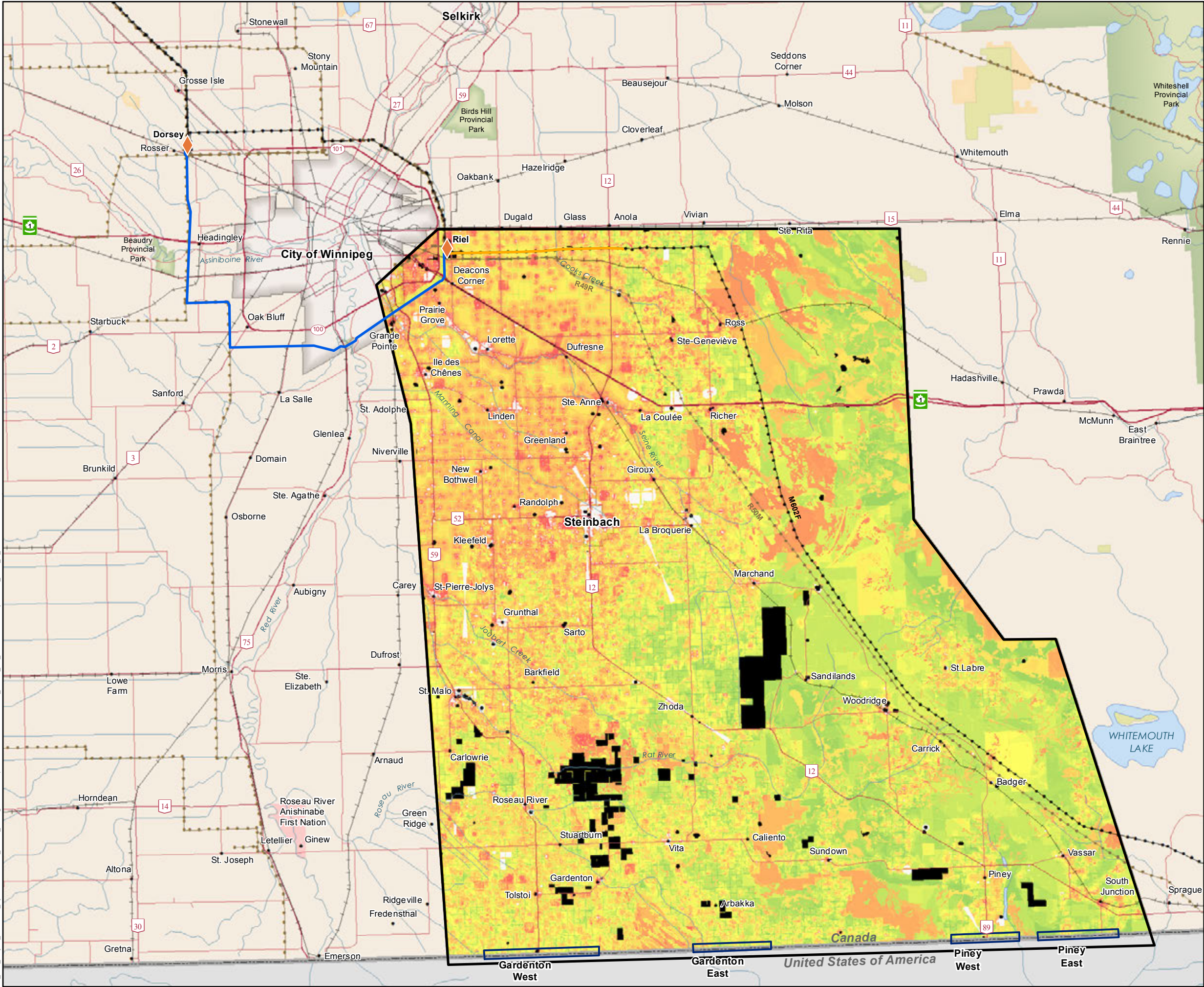
0 5 10 Kilometres
0 5 10 Miles



1:500,000

Natural Environment Suitability Surface

G:\GIS_Projects\Folder00_Hydro\11420000_MMTPP_EA\Figures\EA\ChapterRouteSelection\SV\037_MMTPP_EA_BuildEnvSuitabilitySurface_500K_B_20150715.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Southern Loop Transmission Corridor
- Riel to Vivian Transmission Corridor (Existing)

Infrastructure

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

Suitability Surface

- Area of Least Preference
- Built Environment
- Less Suitable (9)
- More Suitable (1)

Landbase

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

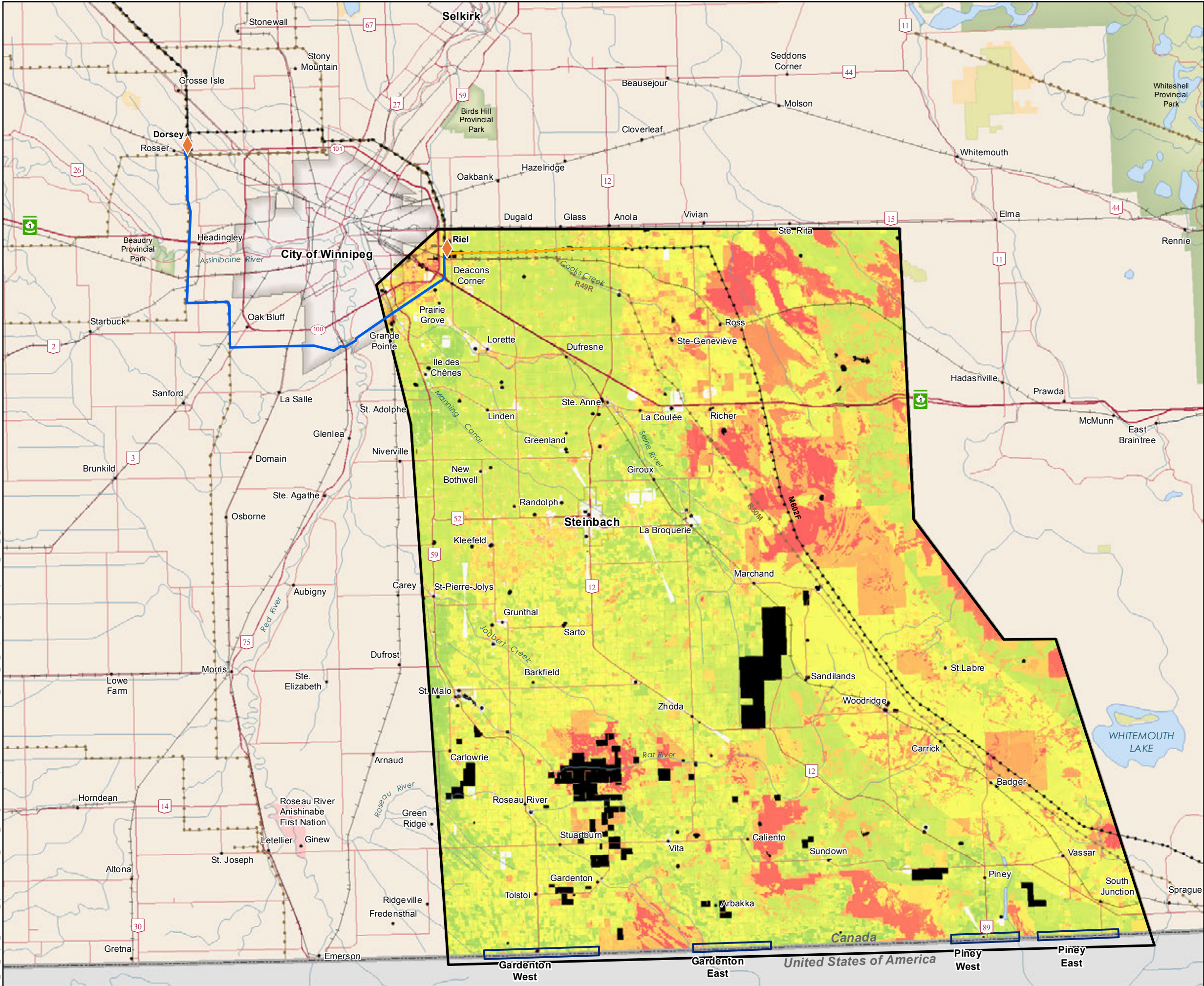
Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

0 5 10 Kilometres
0 5 10 Miles

1:500,000

Built Environment Suitability Surface

G:\GIS_Projects\Folder00_Hydro\11420000_MMTP_EA\Figures\EAChapterRouteSelection\SV008_MMTP_EA_SimpleAverageSuitabilitySurface_300K_B_20150715.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Southern Loop Transmission Corridor
- Riel to Vivian Transmission Corridor (Existing)

Infrastructure

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

Suitability Surface

- Area of Least Preference
- Simple Average
- Less Suitable
- More Suitable

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

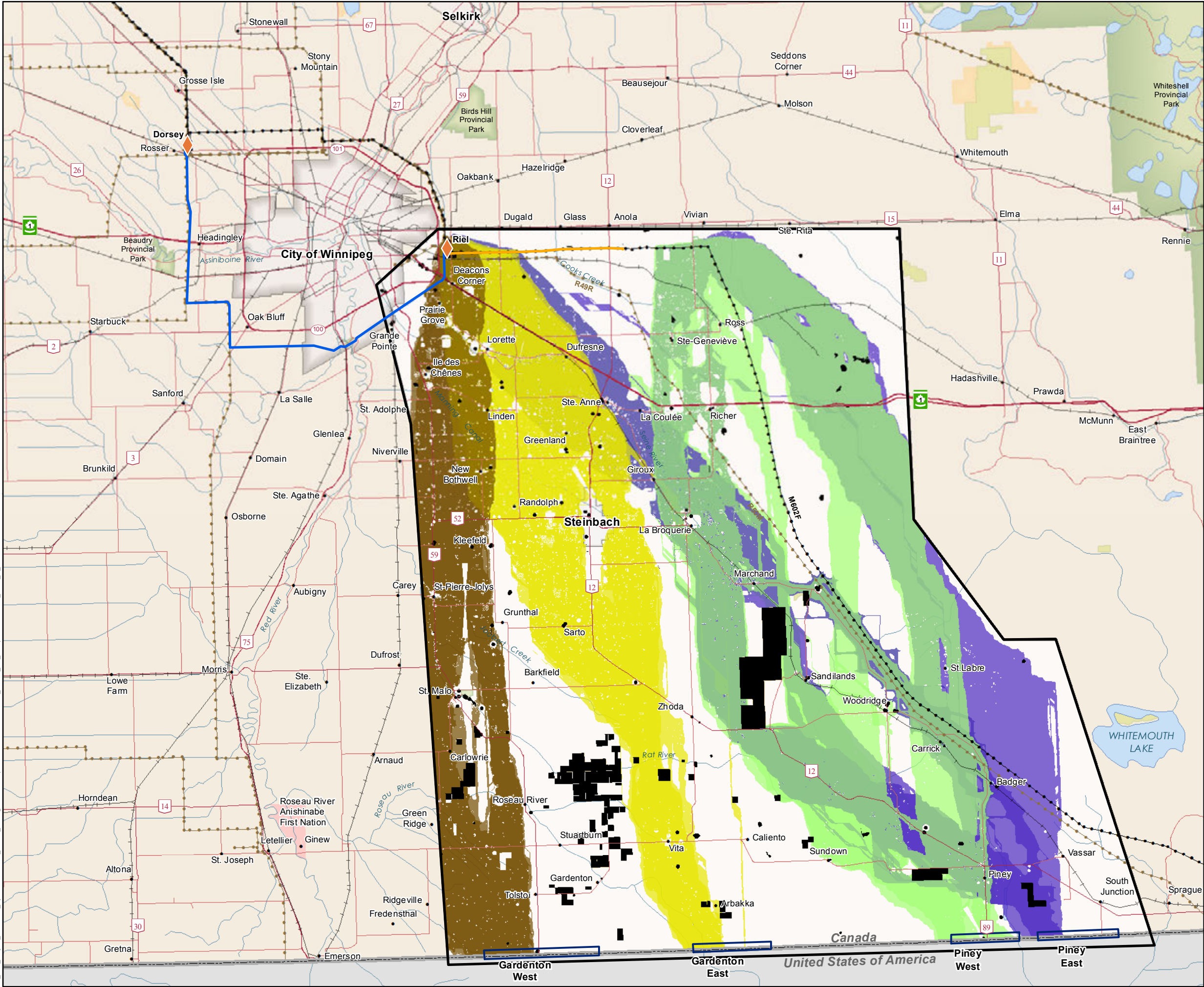
0 5 10 Kilometres
0 5 10 Miles



1:500,000

Simple Average Suitability Surface

G:\GIS\Project_Folder\00_Hydro\11420000_MMTP_EA\Figures\EA\Chapter\RouteSelection\SV\010_MMTP_EA_CompositeCorridors_500k_B_20160715.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Southern Loop Transmission Corridor
- Riel to Vivian Transmission Corridor (Existing)

Infrastructure

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

Composite Corridors

- Gardenton West
- Gardenton East
- Piney West
- Piney East
- Area of Least Preference

Planning Area

- Border Crossing Area
- Route Planning Area

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

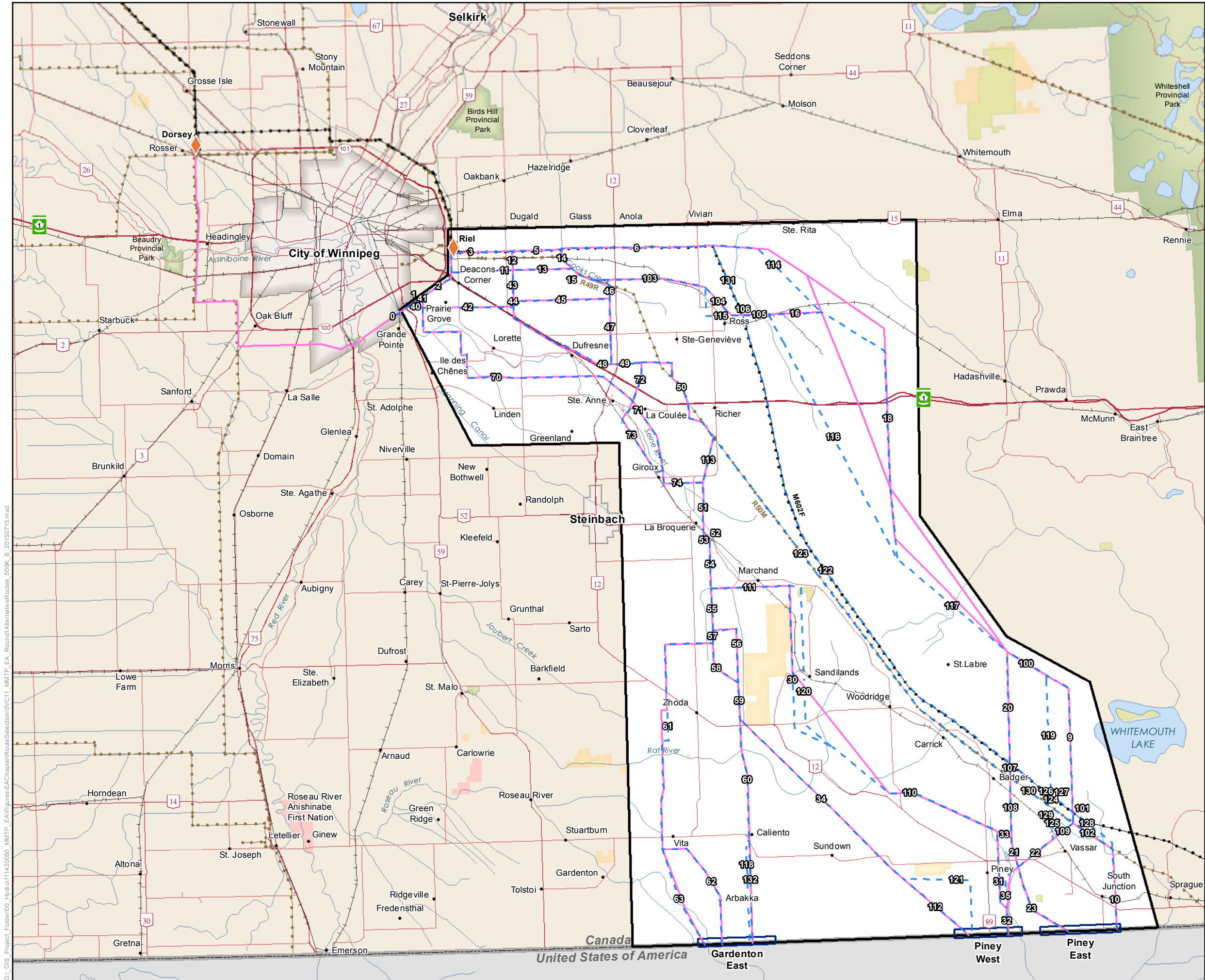
0 5 10 Kilometres
0 5 10 Miles

1:500,000

Composite Corridors

Map 5-10

GA_GIS_Project_Folder00_Hydro11420000_MMTP_EA\Figures\EAChapterRouteSelection\SV\011_MMTP_EA_Round1AlternativeRoutes_500kV_B_20150715.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- 100 Round 1 Evaluation Routes and Segment Number
- Round 1 Alternative Routes

Infrastructure

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

Assessment Area

- Border Crossing Area
- Route Planning Area

Landbase

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

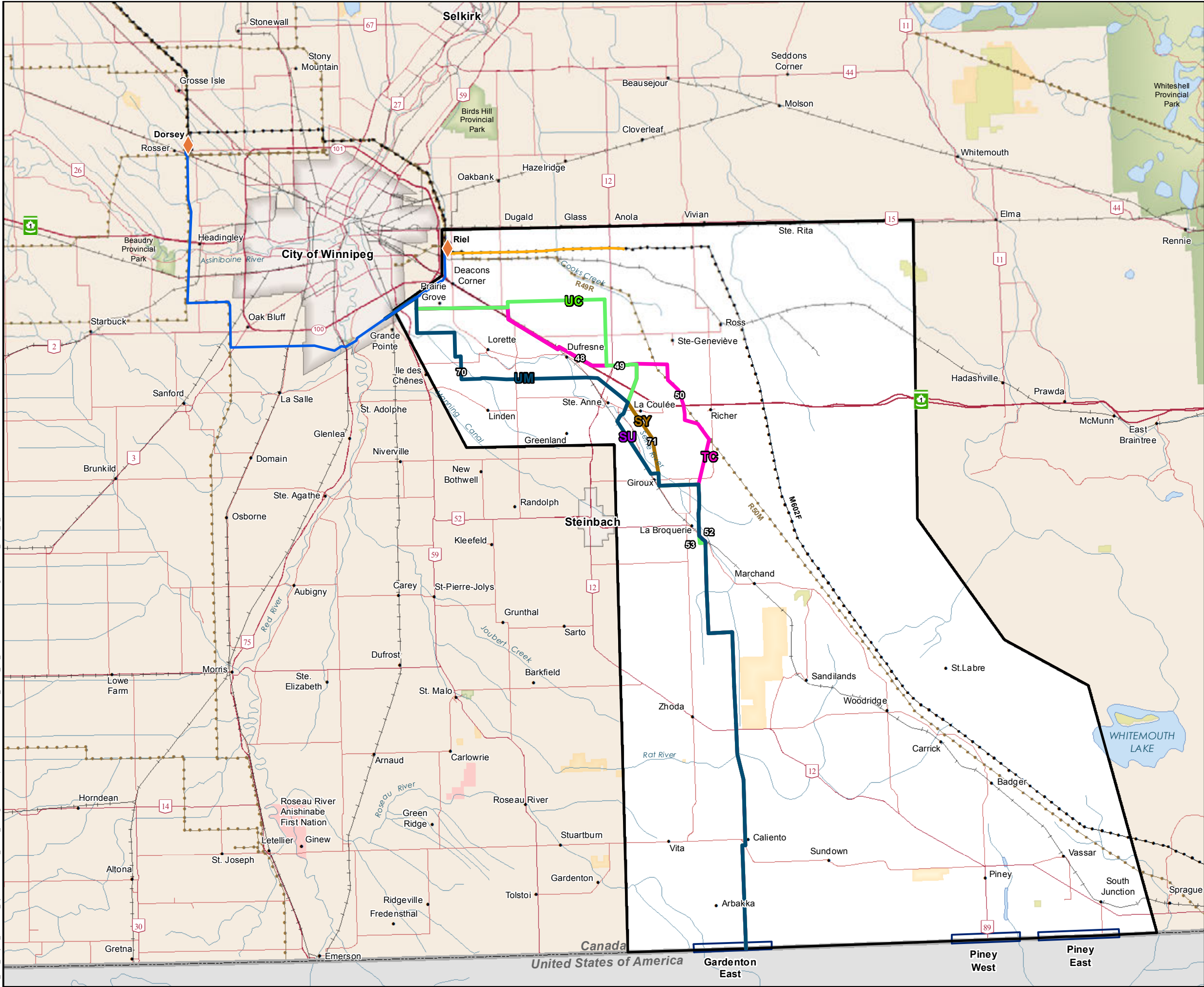
Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: July 20, 2015

0 5 10 Kilometres
0 5 10 Miles

1:500,000

Round 1 Alternative Routes

GA_LIS_Project_Folder00_Hydro\11420000_MMTP_EA\Figures\EAChapterRouteSelection\SV\012_MMTP_EA_GardentonBorderCrossingFinalRoute_500K_B_20160720.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Riel to Vivian Transmission Corridor (RVTC)
- Southern Loop Transmission Corridor (SLTC)
- Gardenton Route Finalists
 - Route SU
 - Route SY
 - Route TC
 - Route UC
 - Route UM

Infrastructure

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

Route Planning Area

- Route Planning Area
- Border Crossing Area

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

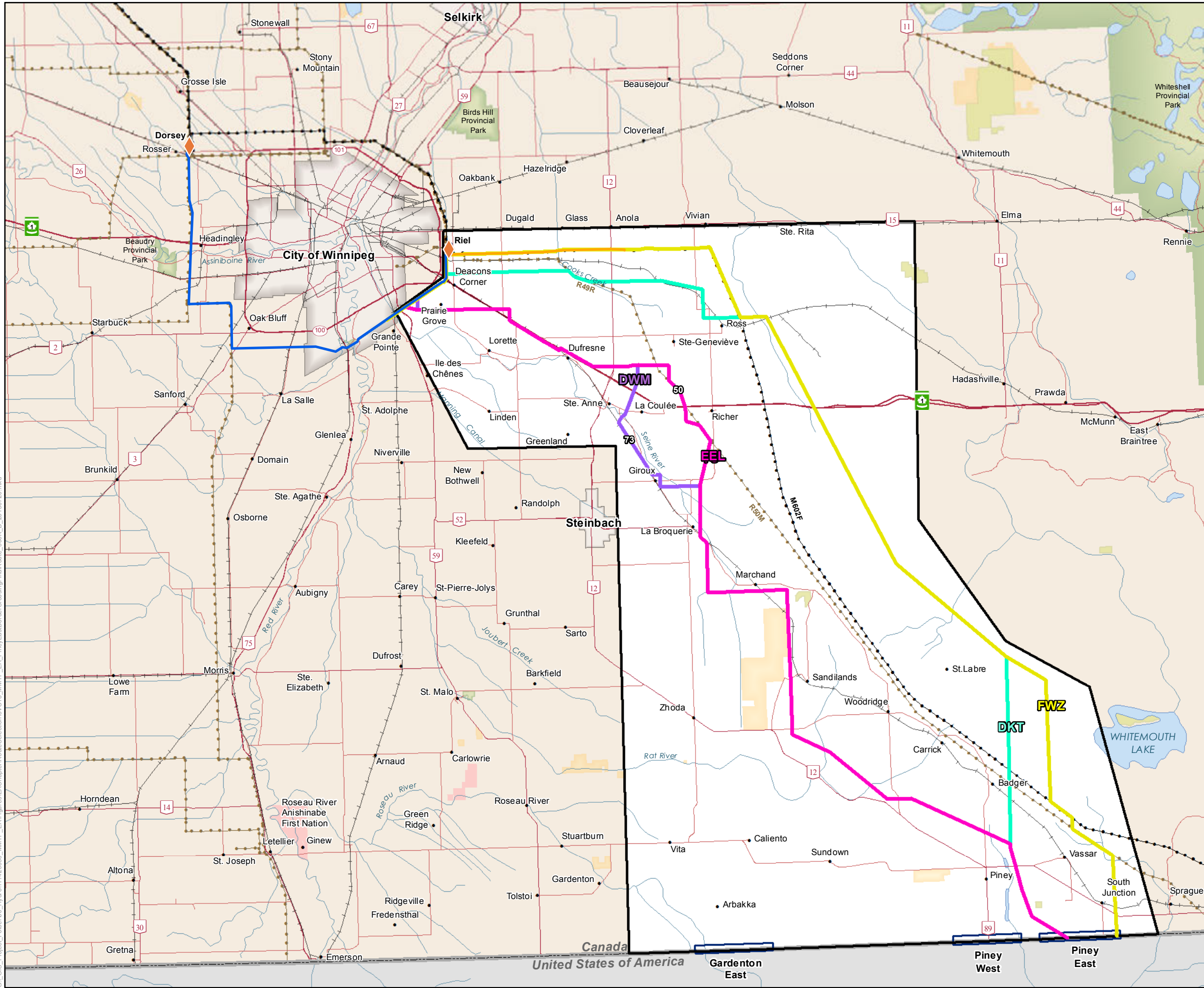
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0 5 10 Miles

1:500,000

Gardenton Border Crossing Preference Determination Routes

Map 5-12

G:\GIS_Projects\Folder00_Hydro\11420000_MMTP_EA\Figures\EAChapterRouteSelection\SV\013_MMTP_EA_PineyEastBorderCrossingFinalRoute_500K_B_20130720.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Riel to Vivian Transmission Corridor (RVTC)
- Southern Loop Transmission Corridor (SLTC)
- Piney East Route Finalists**
- Route DKT
- Route DWM
- Route EEL
- Route FWZ

Infrastructure

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

Route Planning Area

- Route Planning Area
- Border Crossing Area

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

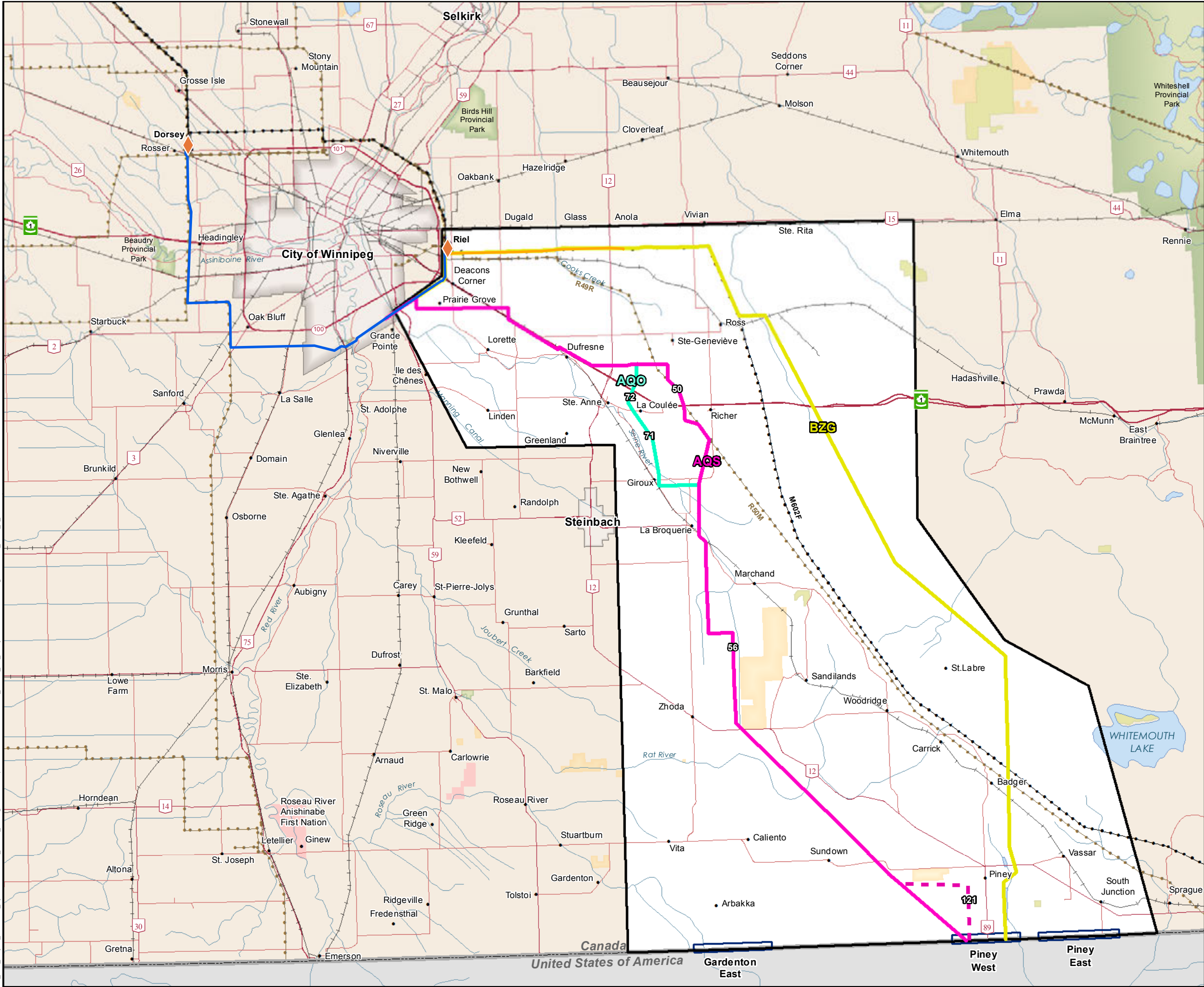
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0 5 10 Miles

1:500,000

Piney East Border Crossing Preference Determination Routes

Map 5-13

G:\GIS_Projects\Folder00_Hydro\11420000_MMTP_EA\Figures\EAChapterRouteSelection\SV\14_MMTP_EA_PineyWestBorderCrossing\FinalRoute_500K_B_20150720.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Riel to Vivian Transmission Corridor (RVTC)
- Southern Loop Transmission Corridor (SLTC)
- Piney West Route Finalists
 - Route AQS
 - Route AQO
 - Route BZG
 - Route AQS (Alternative Route)

Infrastructure

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

Route Planning Area

- Route Planning Area
- Border Crossing Area

Landbase

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

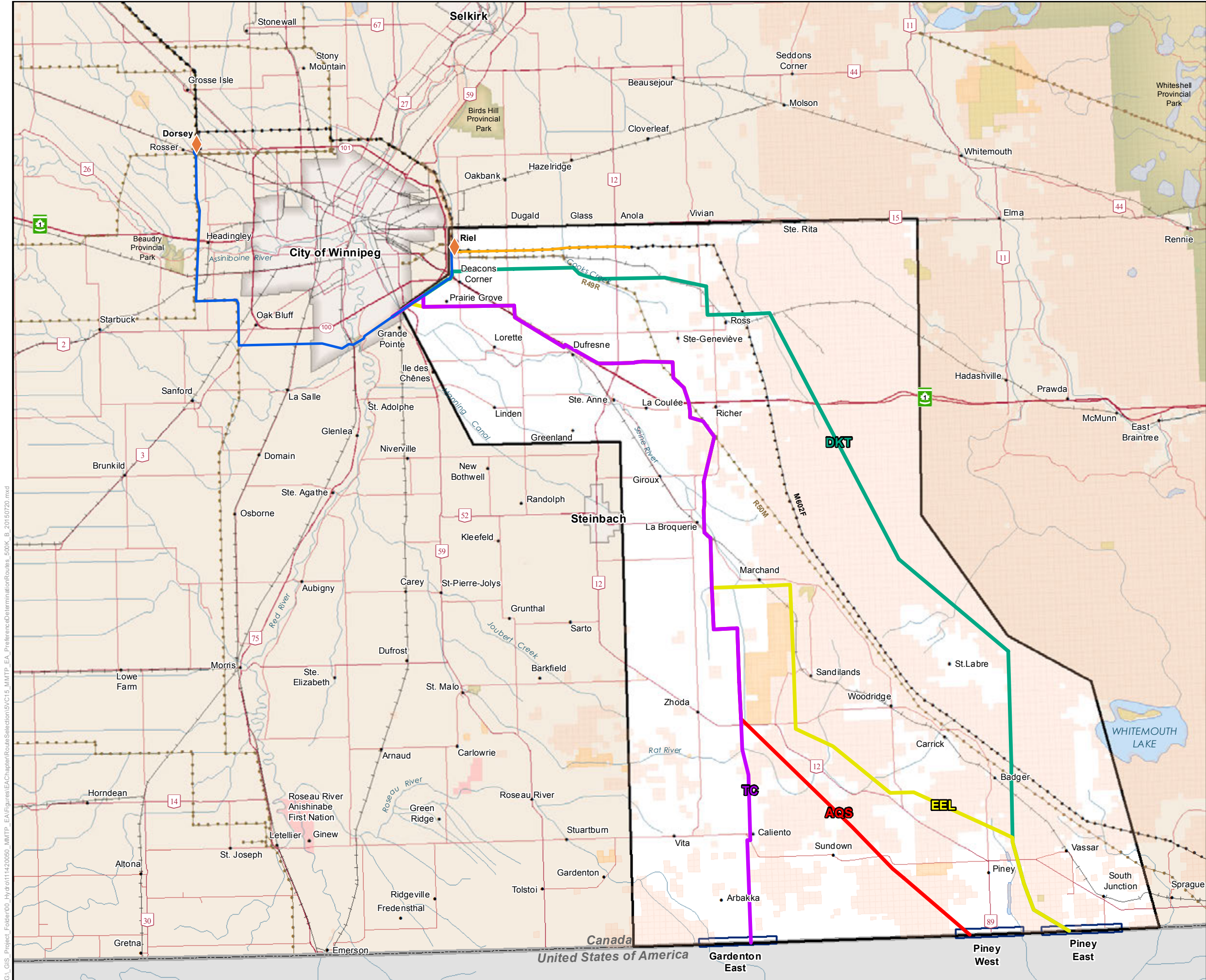
Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

0 5 10 Kilometres
0 5 10 Miles

1:500,000

Piney West Border Preference Determination Routes

GA_LGIS_Project_Folder00_Hydro\11420090_MMTPP_EA\Figures\EAChapterRouteSelection\SV\015_MMTPP_EA_PreferenceDeterminationRoutes_500K_B_20150720.mxd



Manitoba-Minnesota Transmission Project

Project Infrastructure

- Converter Station (Existing)
- Riel to Vivian Transmission Corridor (RVTC)
- Southern Loop Transmission Corridor (SLTC)
- Alternative Route Finalists
 - Route AQS
 - Route DKT
 - Route EEL
 - Route TC

Infrastructure

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

Route Planning Area

- Route Planning Area
- Border Crossing Area

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

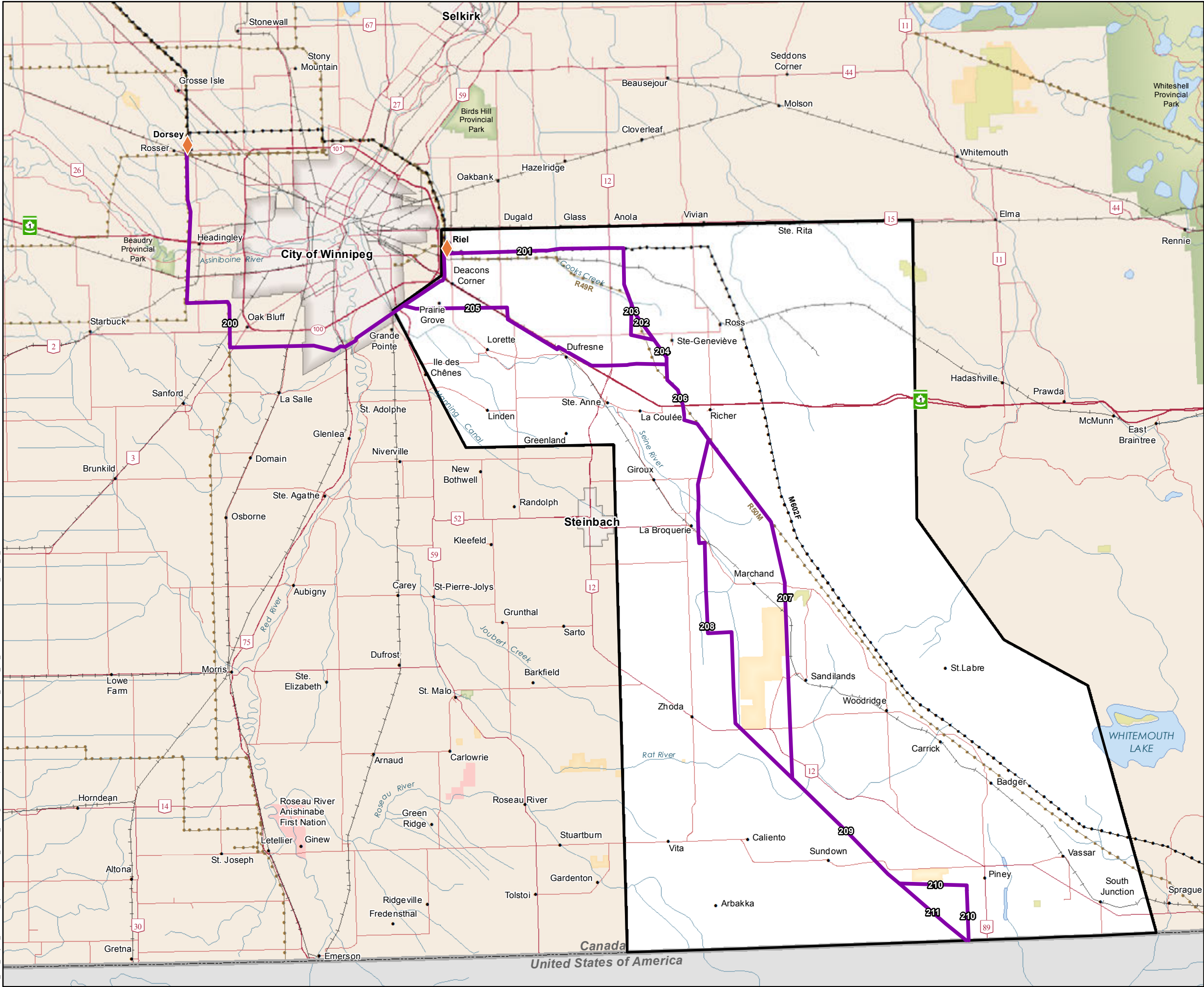
0 5 10 Kilometres
0 5 10 Miles



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Preference Determination Routes TC, AQS, EEL and DKT

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Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- 200 Round 2 Alternative Route and Segment Number

Infrastructure

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

Assessment Area

- Route Planning Area

Landbase

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

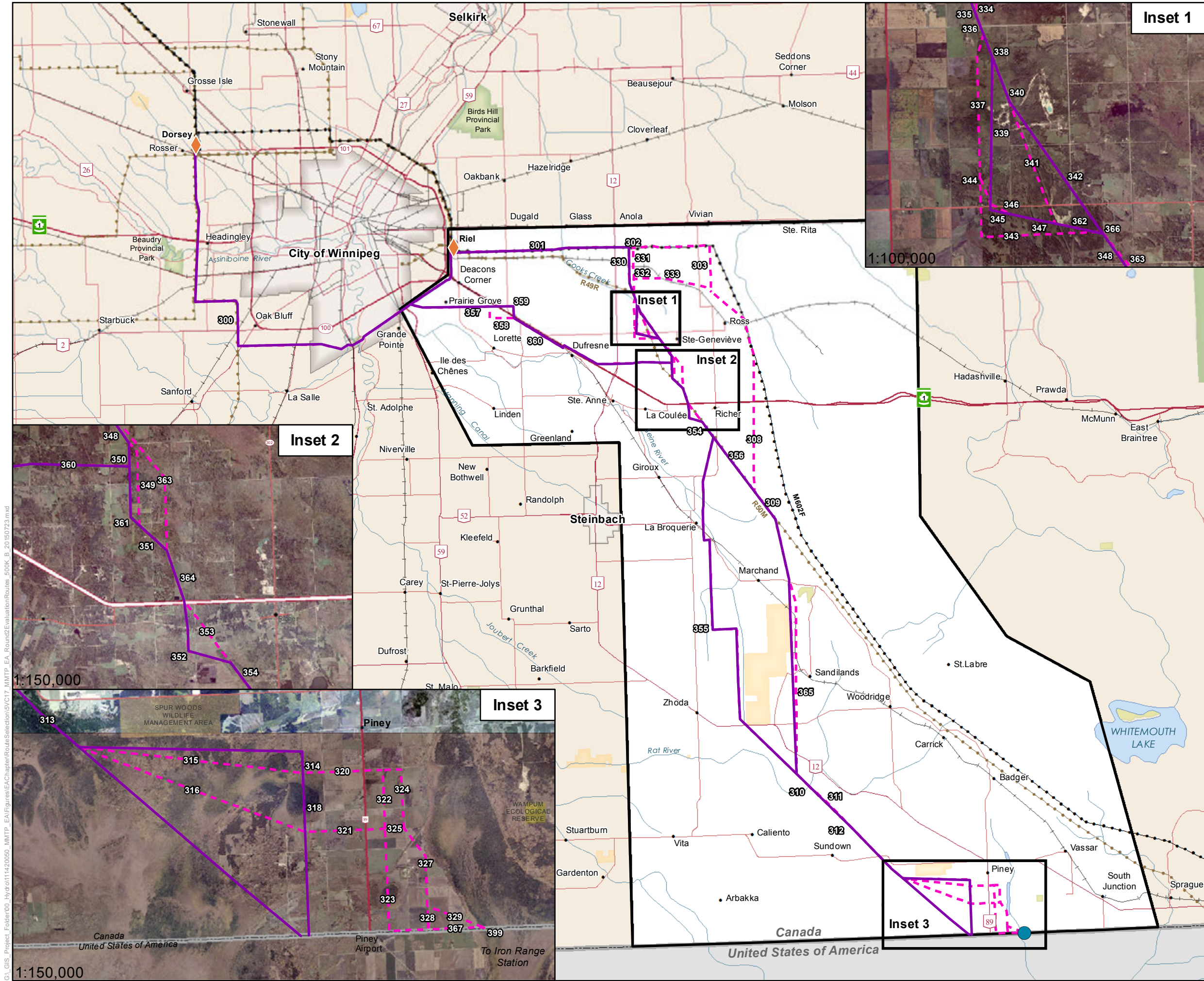
Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: July 15, 2015

0 5 10 Kilometres
0 5 10 Miles



1:500,000

Round 2 Alternative Routes



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Round 2 Alternate Routes
- - - Round 2 Evaluation Routes

Infrastructure

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

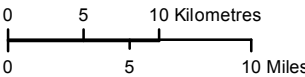
Route Planning Area

- Adjusted Border Crossing
- Route Planning Area

Landbase

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

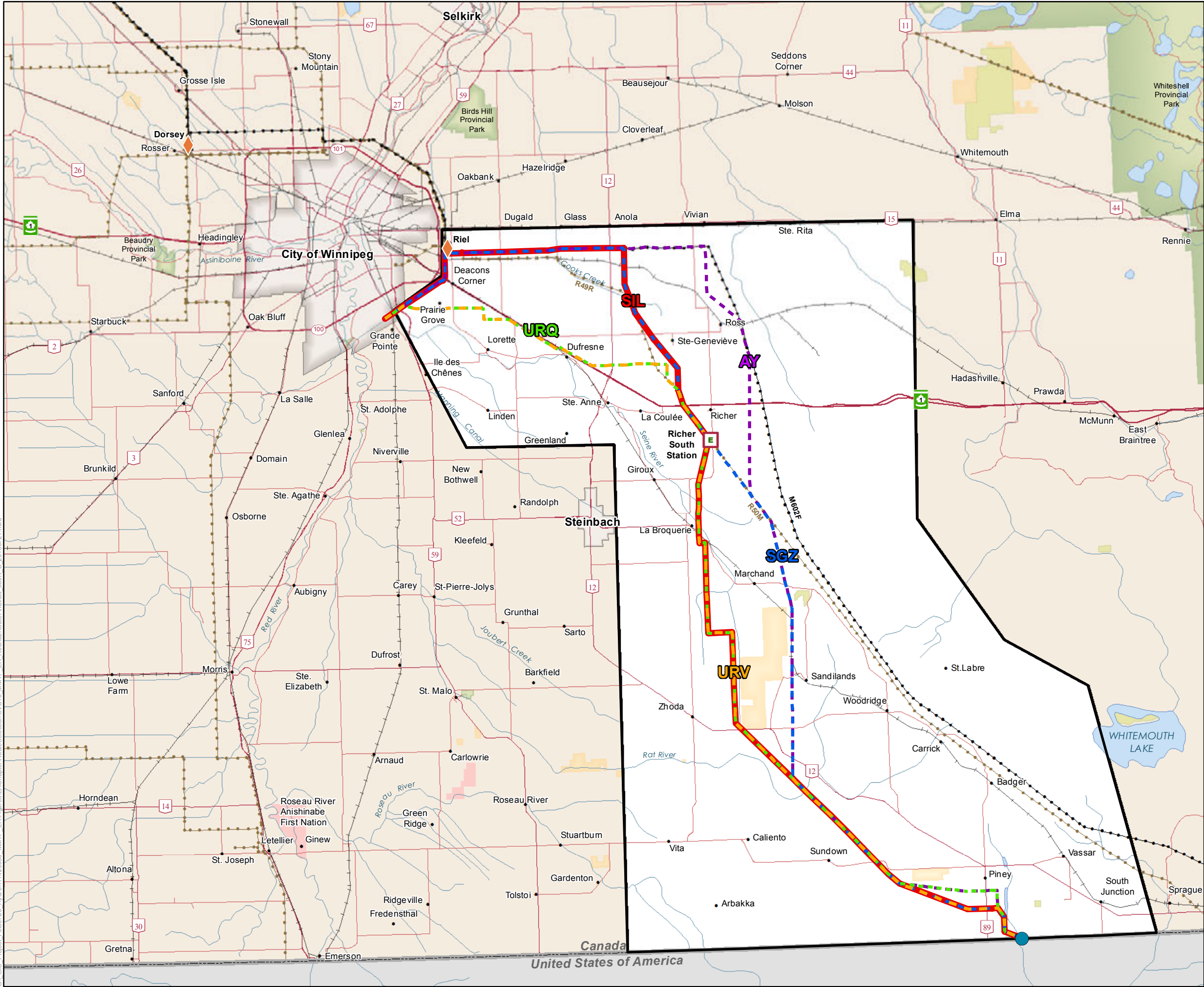
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Data Source: MBHydro, ProvMB, NRCAN
Date Created: July 23, 2015



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Round 2 Evaluation Routes

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Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Route Finalist SIL
- Route Finalist AY
- Route Finalist SGZ
- Route Finalist URQ
- Route Finalist URV

Infrastructure

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

Route Planning Area

- Adjusted Border Crossing
- Route Planning Area

Landbase

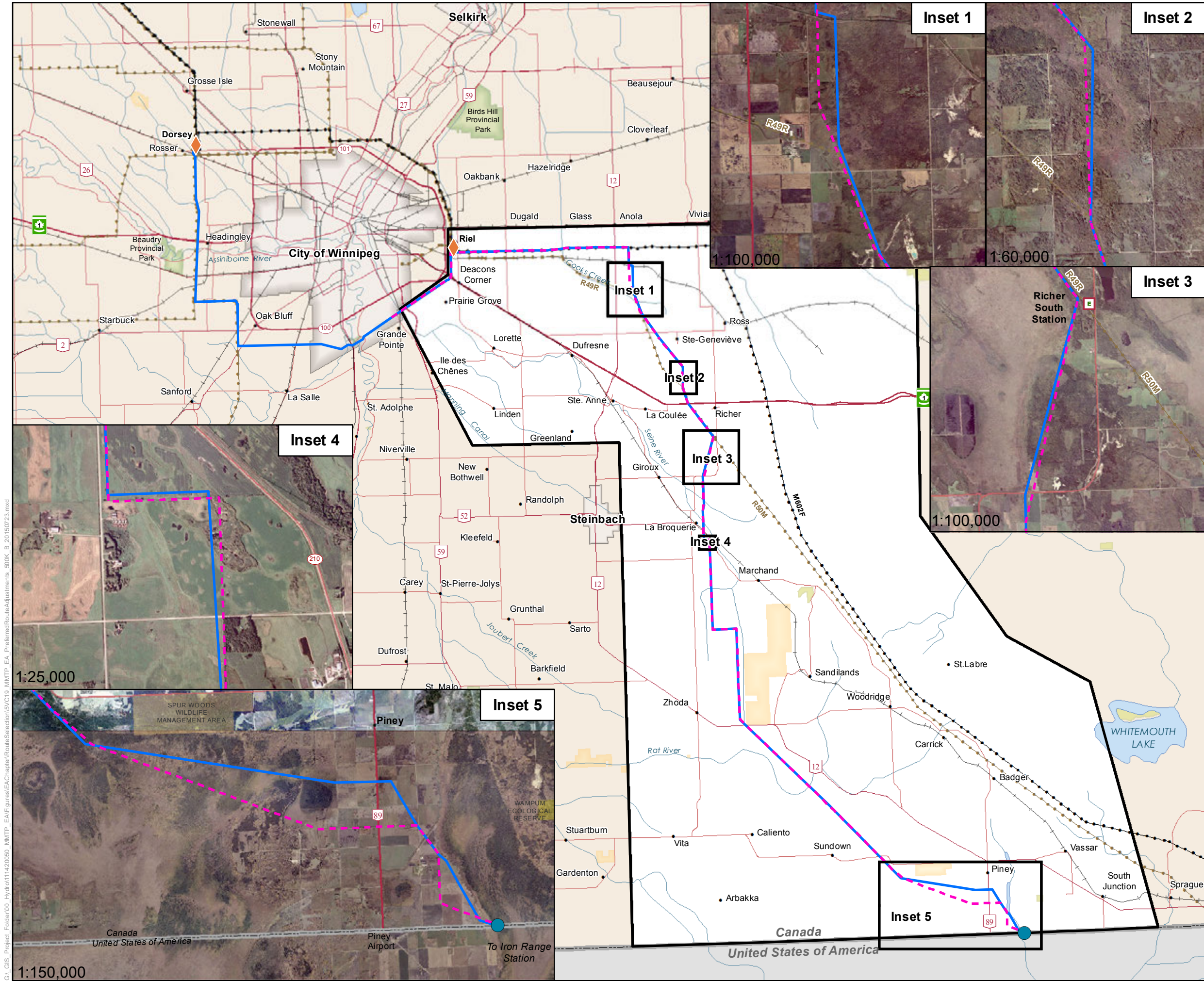
- Community
- Railway
- Trans Canada
- Provincial Highway
- Provincial Road
- City
- First Nation Lands
- Ecological Reserve
- Wildlife Management Area
- Provincial Park

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015

0 5 10 Kilometres
0 5 10 Miles

1:500,000

Round 2 Preference Determination Routes



Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Preferred Route
- Route Finalist SIL

Infrastructure

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

Route Planning Area

- Adjusted Border Crossing
- Route Planning Area

Landbase

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

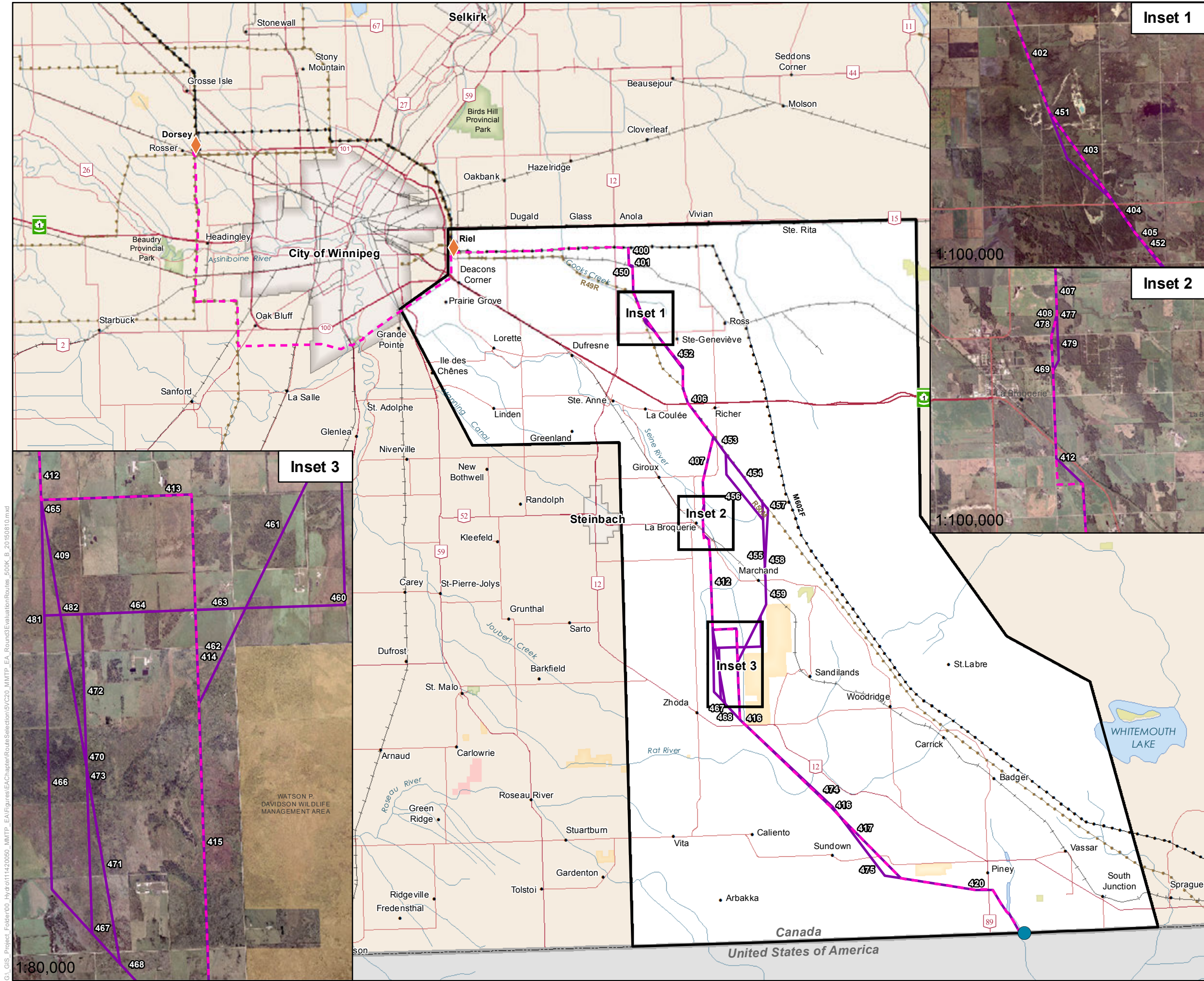
Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015



0 5 10 Kilometres
0 5 10 Miles

1:500,000

Preferred Route Adjustments



Manitoba-Minnesota
Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Preferred Route
- Round 3 Evaluation Routes

Infrastructure

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

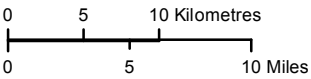
Route Planning Area

- Adjusted Border Crossing
- Route Planning Area

Landbase

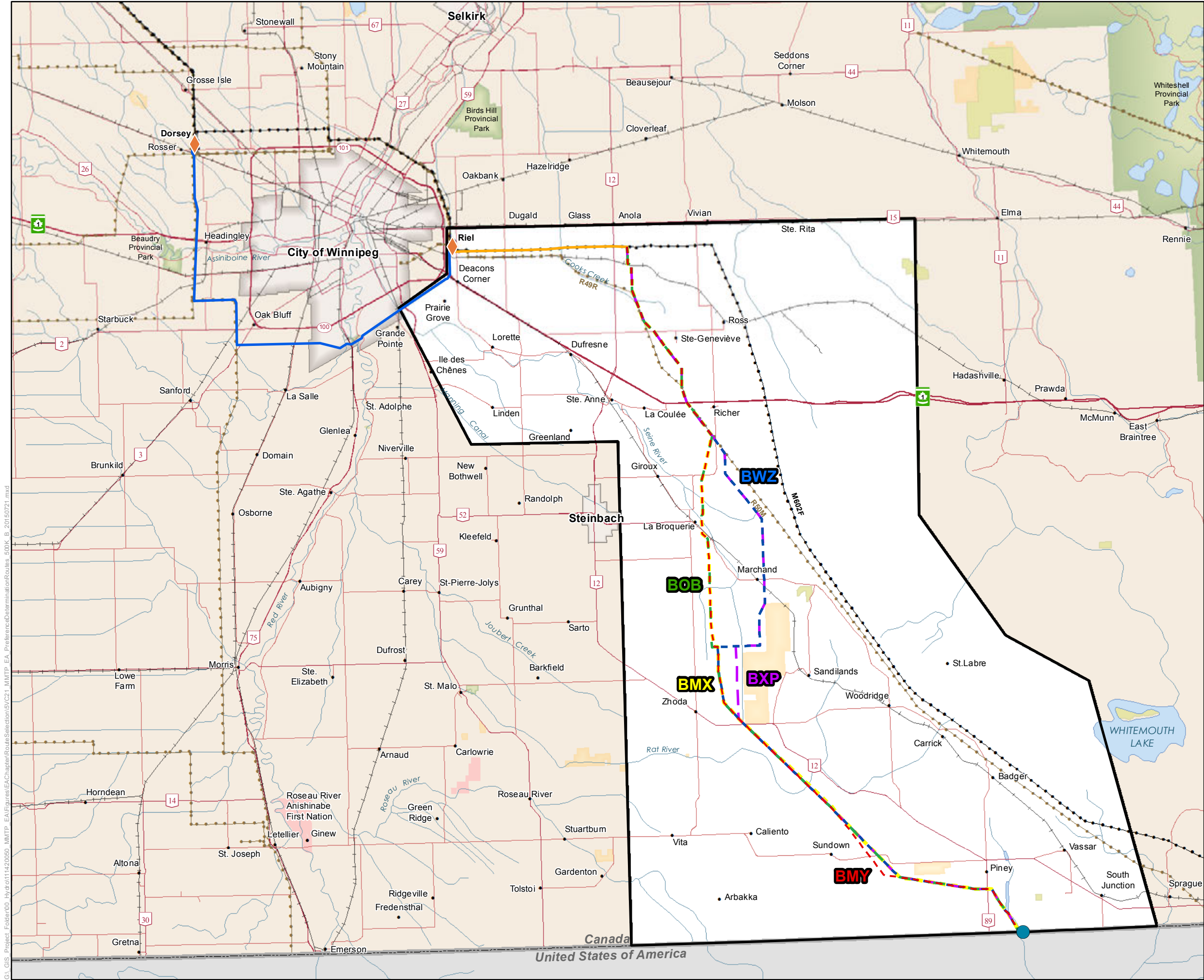
- Community
- Railway
- Trans Canada
- Provincial Highway
- Provincial Road
- City
- First Nation Lands
- Ecological Reserve
- Wildlife Management Area
- Provincial Park

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015



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Round 3 Evaluation Routes



Manitoba-Minnesota Transmission Project

Project Infrastructure

- Converter Station (Existing)
- Southern Loop Transmission Corridor
- Riel to Vivian Transmission Corridor (Existing)
- Route BMX
- Route BMY
- Route BOB
- Route BWZ
- Route BXP

Infrastructure

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

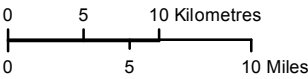
Route Planning Area

- Adjusted Border Crossing
- Route Planning Area

Landbase

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

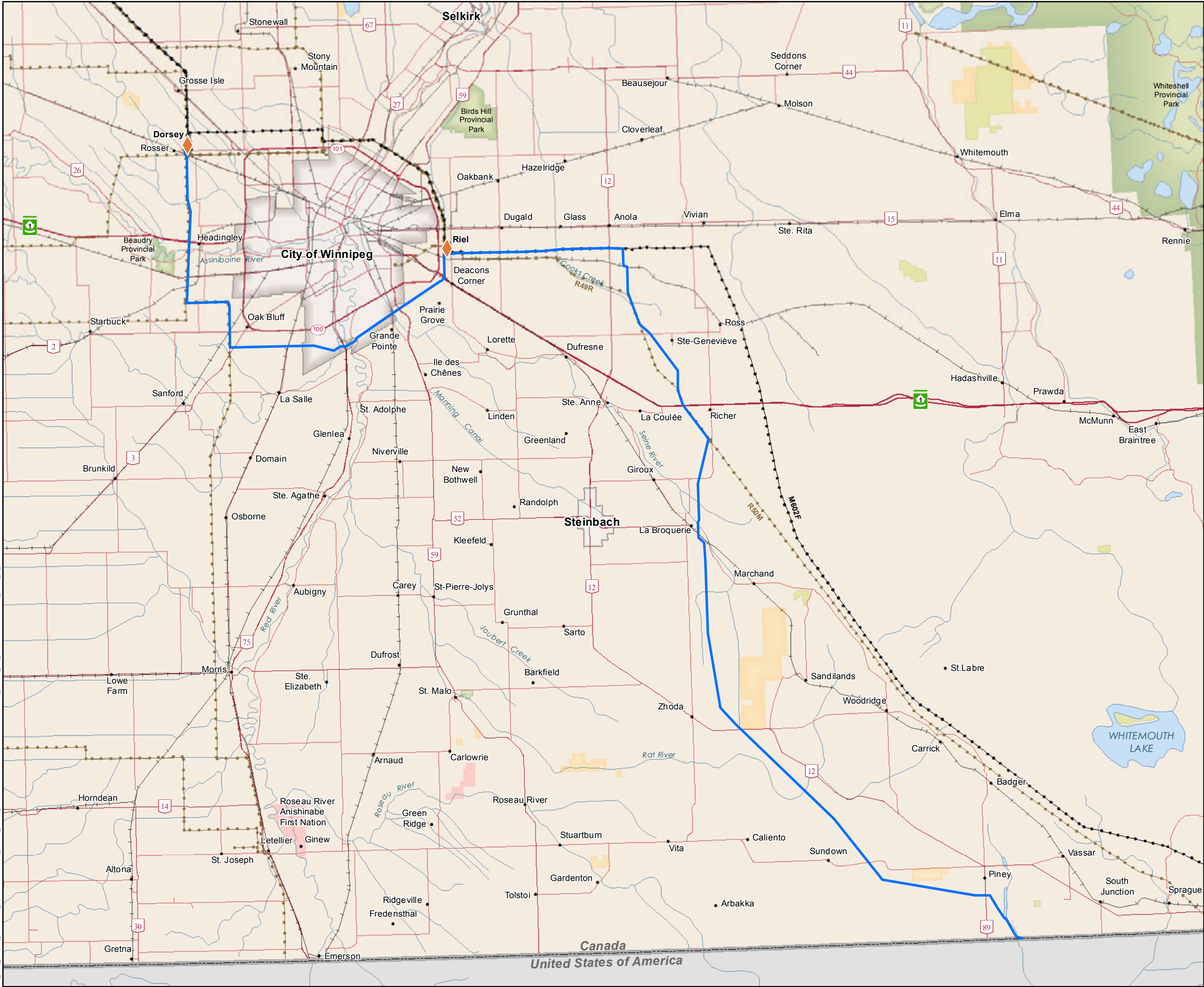
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Data Source: MBHydro, ProvMB, NRCAN
Date Created: August 10, 2015



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Preference Determination Routes BMX, BWZ, BXP, BOB, and BMY

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Manitoba-Minnesota Transmission Project

Project Infrastructure

- ◆ Converter Station (Existing)
- Final Preferred Route (FPR)

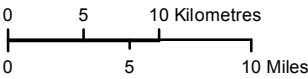
Infrastructure

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

Landbase

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

Coordinate System: UTM Zone 14N NAD83
Data Source: MBHydro, ProvMB, NRCAN
Date Created: July 21, 2015



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Final Preferred Route