

MANITOBA HYDRO

## **St. Vital Transmission Complex**

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# **Environmental Assessment Report**

**Terrestrial Technical Memorandum**

**Prepared By:**



**Transmission Planning and Design Division  
Licensing and Environmental Assessment**

**5/28/2014**

**Prepared for:**

**Manitoba Conservation, Environmental Approvals Branch**



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# 1.0 INTRODUCTION

Manitoba Hydro is proposing the development of two new 230-kV transmission lines in southern Manitoba, both originating from the St. Vital Station in Winnipeg. One proposed transmission line travels from the St. Vital Station, through south-central Manitoba (via the Steinbach area) and terminates at the Letellier Station, while the second extends from the St. Vital Station and terminates at the La Verendrye Station near Oak Bluff (Map 1-1).

The following report provides a description of desktop and field-based studies carried out to document existing conditions for the terrestrial environment within the Project Area (Map 1-1); this documentation is supplemental to information reported in the St. Vital Transmission Complex Environmental Assessment Report. Desktop-based studies of the terrestrial environment within the Project Area included accessing the Manitoba Conservation Data Centre to compile a list of federally and provincially listed species, consulting range maps for flora and fauna distribution within the area of interest and researching and reporting the findings of previous environmental assessments conducted in the local area. Field studies were conducted to further support existing information on flora and fauna communities within the Project Area.



## 2.0 EXISTING DATA SOURCES AND MODELING

The federal Land Cover Classification data (Government of Canada 2009) indicates that the great majority of the PROJECT AREA occurs in disturbed or altered habitats (Table 2.1-1; Map 2-1). Land cover types are predominantly cropland (60%), grassland/herb/pasture (20%), developed land (15%), and forest and wetlands/waterbodies (5%) (Map 2-1). With the exception of Duff Roblin Heritage Park and St. Malo Recreation Park, no protected areas, wildlife management areas or other designated conservation lands fall within the Project Area.

**Table 2.1-1: Land Cover Types Within the Project Area**

Land Cover Type	Project Area	
	Area (ha)	% of Total Area
Annual Cropland	137981.88	58.55
Developed	8913.02	3.78
Grassland	45056.18	19.12
Perennial Cropland and Pasture	11120.82	4.72
Broadleaf Dense Forest	5995.43	2.54
Broadleaf Open Forest	7715.25	3.27
Mixedwood Dense	3.55	<0.01
Mixedwood Open	25.07	0.01
Herb	7879.47	3.34
Tall Shrub	7756.28	3.29
Water	1276.66	0.54
Other	1928.27	0.82
Total	235651.88	100

## 2.1 VEGETATION

Existing environmental conditions for vegetative communities in the Project Area were initially assessed through analysis of federal land cover classification (LCC; Government of Canada 2009) for the local area. This analysis assisted in determining general habitat diversity of land within the Project Area, as well as the potential of these land cover types to support rare plants and/or vegetative communities (i.e. wetlands, native prairie). Federal and provincial lists of species at risk and species of conservation concern (MESA 1990; SARA 2002) as well as

Manitoba Conservation Data Centre (MBCDC 2013) records of species concern assisted in this assessment.

Additional information on the occurrence of rare plant communities within the Project Area was obtained from the Nature Conservancy of Canada, which has assigned conservation rankings to remnant parcels of tall-grass prairie located in south eastern Manitoba (MBCWS 2014).

Locations of these parcels relative to the proposed Project were reviewed and any lands that were assigned a high conservation ranking by NCC were visited to confirm current potential of these sites to support tall-grass prairie or other rare plants (see Section 3.1).

This field program also consisted of general reconnaissance of other grassland habitats in the area, as identified by the federal LCC, as well as stream assessments of watercourses with potential to be crossed by the proposed Project; this information assisted in documenting current vegetation communities within the Project Area.

Further details on locations of site visits and data collected during the field survey are discussed in Section 4.1 and survey results are reported in Section 4.1.

## **2.2 WILDLIFE**

### **2.2.1 Invertebrates**

Invertebrate presence in the Project Area was estimated based on species range maps published by the MBCDC Rare Species surveys in Manitoba (2002–2012), COSEWIC (2013), descriptions of invertebrate communities in Manitoba grasslands (Floate 2011), and descriptions of aquatic invertebrates likely to be present in association with prairie wetlands (Wrubleski and Ross 2011). The likelihood of these species occurring in the Project Area was determined based on Ecoregion and Ecodistrict descriptions of vegetation communities and presence of suitable habitat such as native grassland, pasture, woodlands. Similarly, areas expected to have low invertebrate species diversity or were determined based on presence of cultivated and human developed land areas (Natural Resources Canada, 2001). Invertebrate data collection was conducted through desktop screening, and was supported with incidental observations of invertebrate species encountered during avian and other field surveys in the Project Area.

### **2.2.2 Amphibians and Reptiles**

Range maps for reptile and amphibian species in southern Manitoba were confirmed online at the Canadian Amphibian and Reptile Conservation Network (CARCNET, 2013). Evaluation of habitat with the potential to support amphibians and reptiles in the Project Area was conducted through desktop screenings of several online databases.

Estimations of areas likely to support high densities of reptiles and amphibians were made using:



- Land cover classification from Natural Resources Canada (2001).
- Documentation of existing amphibian and reptile species accessed through a membership-based interactive mapping program (Manitoba Herps Atlas 2013).
- Records of species observations held by Manitoba Conservation Data Centre (2013).

Maps of shallow limestone deposits were obtained from Manitoba Energy and Mines; Mineral Resources and Geological Survey of Canada (2006) to aid in predicting overwintering habitat for snakes in the Project Area. Areas where surface limestone formations occurred in proximity to permanent watercourses and waterbodies were identified as possible locations for snake hibernacula.

### **2.2.3 Birds**

Documentation of existing environment conditions for bird communities in the Project Area was completed through an assessment of federal land cover classification (LCC; Government of Canada 2009), to determine bird habitat availability and potential of these habitats to support various bird groups as well as bird species of conservation concern. This data was further used to calculate total areas of potential direct habitat loss through Project related activities as part of the Project effects assessment (see Section 9 in the St. Vital Transmission Complex Environmental Assessment Report). Direct habitat loss was calculated for key indicator bird species specific to the Project including Canada goose and sharp-tailed grouse; these numbers are reported in Section 9 of the Environmental Assessment.

Multi-year bird survey results were reviewed to determine species of birds utilizing habitats in the Project Area. Bird survey information was obtained from the North American Breeding Bird Survey routes that transected the Project Area (USGS 2013; Map 2-2), as well as the Manitoba Breeding Bird Atlas (2013) (Map 2-2). Records from Manitoba Conservation Data Centre (MBCDC 2013) of species of conservation concern recorded in the Regional Assessment Area (RAA) also assisted in this documentation. Data from previous bird survey work completed by TetrES (2007) for a previously proposed (but not developed) project within the southwestern corner of the Project Area (Map 2-2) was consulted to provide additional information on confirmed bird species presence within the local area.

Analysis of all available bird survey data determined that sufficient data on existing bird communities was available for the majority of the Project Area, with the exception of the south eastern corner. As this area supported some of the most diverse bird habitat available in the Project Area (i.e., greater representations of grassland and forested land cover relative to annual cropland) additional road-based breeding bird surveys were conducted by Stantec Consulting Ltd., in June 2013, along roads that transected grassland and deciduous forest habitats. Data collected from these surveys provided information on bird communities utilizing habitat types in this section of the Project Area and supplemented data from existing information

sources. Further details on survey locations and methods are discussed in Section 3.2.1 and survey results are reported in Section 4.2.3.

## **2.2.4 Mammals**

Aerial photography and federal land cover classification (Government of Canada 2009) were used to determine existing land usage throughout the Project Area. These data were used to estimate the distribution, abundance and species richness of the area. This data was coupled with published range maps for mammal species expected to reside within or migrate through the Project Area to determine the likelihood of each species' occurrence. These combined data sources were also used to conduct habitat suitability modelling in order to guide field studies (Section 3.2.2).

Literature describing habitat requirements for representative species was consulted in order to predict mammal species assemblages. In particular, COSEWIC Species Assessment Reports for Species at Risk were consulted to determine critical habitat and management concerns for at risk species.

A search of the Manitoba Conservation Data Centre database returned no results of at risk mammal species within the study area. No mammal species at risk have been noted in other Environmental Assessments that have been conducted in the Study Area.

## **2.3 SPECIES OF CONSERVATION CONCERN**

### **2.3.1 Vegetation**

A number of plant species that are assessed by COSEWIC and/or listed by the federal Species at Risk Act (SARA) or the Manitoba Endangered Species Act (MESA) may be found in the Project Area (Project Area; Table 2.3-1). Manitoba Conservation Data Centre (MBCDC) lists plant species of conservation concern and provides a conservation status rank. All plant species of conservation concern that may occur in the Project Area were identified through information available from MBCDC (Table 2.3-1). Most of the plants of conservation concern are those that occur in native prairie or open thickets adjacent to forested areas.

**Table 2.3-1: Plant Species of Conservation Concern Potentially Existing within the Project Area**

Species	CDC Rank1	Habitat2	Habitat Description
<b>MANITOBA'S LAKE MANITOBA PLAIN ECOREGION</b>			
<b>Upland Plants</b>			
<i>Allium cernuum var obtusum</i> (LILIACEAE)	S2?	FACU	
<i>Asclepias verticillata</i> (ASCLEPIADACEAE)	S2	U	Dry soil, parklands
<i>Aster sericeus</i> (ASTERACEAE)***	S1	U	Dry soil, grassland
<i>Astragalus neglectus</i> (FABACEAE)	S1	U	
<i>Atriplex argentea</i> (CHENOPODIACEAE)	S2	FACU/FAC	
<i>Botrychium pallidum</i> (OPHIOGLOSSACEAE)	S1	U	Open fields, grassland
<i>Bouteloua curtipendula</i> (POACEAE)	S2	U	Grassland, parklands
<i>Calamagrostis montanensis</i> (POACEAE)	S3	FACU	Moderately dry grassland, prairie
<i>Carex albicans var albicans</i> (CYPERACEAE)	SU	U	
<i>Carex douglasii</i> (CYPERACEAE)	S3?	FACU/FAC	
<i>Celtis occidentalis</i> (ULMACEAE) **	S1	FACU/FAC	
<i>Chamaesaracha grandiflora</i> (SOLANACEAE)	S3	U	Open woods, boreal forest
<i>Circaea quadrisulcata var Canadensis</i> (ONAGRACEAE)	S2	FACU	Moist woods, boreal forest
<i>Cirsium discolor</i> (ASTERACEAE)	S1	U	
<i>Clematis ligusticifolia</i> (RANUNCULACEAE)	S1	FACU	
<i>Clematis virginiana</i> (RANUNCULACEAE)	S2	FACU/FAC	
<i>Cornus alternifolia</i> (CORNACEAE)	S2S3	FAC	Southeastern parklands
<i>Cyperus houghtonii</i> (CYPERACEAE)	S2	U	Sandy areas, boreal forest, parklands
<i>Cyperus schweinitzii</i> (CYPERACEAE)	S2S2	FACU	
<i>Desmodium canadense</i> (FABACEAE)	S2S3	FACU/FAC	
<i>Elymus hystrix</i> (POACEAE)	S2	U	Dry upland forests and prairies
<i>Festuca obtuse</i> (POACEAE)	S1	FACU	Open woods, boreal forest, parklands

**Table 2.3-1: Plant Species of Conservation Concern Potentially Existing within the Project Area**

<b>Species</b>	<b>CDC Rank1</b>	<b>Habitat2</b>	<b>Habitat Description</b>
<i>Franseria acanthicarpa</i> (ASTERACEAE)	S2	U	Sand dunes, prairies
<i>Galium aparine</i> (RUBIACEAE)	S2	FACU	
<i>Gentiana puberulenta</i> (GENTIANACEAE)	S2	U	Grassland, parklands
<i>Gerardia aspera</i> (SCROPHULARIACEAE)	S1S2	U	Dry woods
<i>Gerardia tenuifolia var parviflora</i> (SCROPHULARIACEAE)	S2S3	U	Dry woods
<i>Krigia biflora</i> (ASTERACEAE)	S1	FACU	
<i>Lactuca floridana</i> (ASTERACEAE)	S1	FACU/FAC	
<i>Lechea intermedia</i> (CISTACEAE)	S1	U	Sandy soil, boreal forest
<i>Lotus purshianus</i> (FABACEAE)	S2S3	FACU/FAC	Dry to moist grasslands, parklands
<i>Lygodesmia rostrata</i> (ASTERACEAE)	S1S2	U	Sand dunes, prairies
<i>Orobanche ludoviciana</i> (OROBANCHACEAE)	S2	U	
<i>Osmorhiza depauperata</i> (APIACEAE)	S2?	U	Woodlands
<i>Panicum perlongum</i> (POACEAE)	S2?	U	Sandy soil, parklands
<i>Polygala verticillata var isocycla</i> (POLYGALACEAE)	S2	U	
<i>Polygala verticillata</i> (POLYGALACEAE)	S2	U	
<i>Sanguinaria Canadensis</i> (PAPAVERACEAE)	S2	U	
<i>Sisyrinchium campestre</i> (IRIDACEAE)	SU	U	Rock outcrops, prairies
<i>Sporobolus neglectus</i> (POACEAE)	S3?	U	
<i>Verbena bracteata</i> (VERBENACEAE)	S3	FACU	
<b>Wetland Plants</b>			
<i>Alisma gramineum</i> (ALISMATACEAE)	S1	OBL	
<i>Amorpha fruticosa</i> (FABACEAE)	S1S2	FACW	
<i>Arisaema triphyllum ssp triphyllum</i> (ARACEAE)	S2	FACW	
<i>Boltonia asteroides var recognita</i> (ASTERACEAE)	S2S3	FACW/OBL	
<i>Cardamine bulbosa</i> (BRASSICACEAE)	S1	OBL	
<i>Carex crawei</i> (CYPERACEAE)	S3S4	FACW	

**Table 2.3-1: Plant Species of Conservation Concern Potentially Existing within the Project Area**

Species	CDC Rank1	Habitat2	Habitat Description
<i>Carex cristatella</i> (CYPERACEAE)	S2	FACW	Swamps, wet meadows, prairies
<i>Carex emoryi</i> (CYPERACEAE)	S2?	OBL	Wet meadows
<i>Carex hallii</i> (CYPERACEAE)	S3	FAC/FACW	Swamps, wet meadows, boreal forest
<i>Carex hystericina</i> (CYPERACEAE)	S3?	OBL	
<i>Carex livida</i> (CYPERACEAE)	S3	OBL	
<i>Carex muricata</i> (CYPERACEAE)	S2?S2	<b>FAC/FACW</b>	Moist woods, bogs, boreal forest
<i>Carex parryana</i> (CYPERACEAE)	S3?	FACW	
<i>Carex projecta</i> (CYPERACEAE)	S2?	FACW	
<i>Carex supina</i> var <i>spaniocarpa</i> (CYPERACEAE)	S2?	<b>OBL</b>	Beaches, boreal forest, parklands
<i>Carex tetanica</i> (CYPERACEAE)	S2	FACW	
<i>Carex tribuloides</i> (CYPERACEAE)	S2?	FACW	
<i>Carex vulpinoidea</i> (CYPERACEAE)	S3?	OBL	
<i>Cornus alternifolia</i> (CORNACEAE)	S2S3	FAC	
<i>Cuscuta pentagona</i> var <i>pentagona</i> (CUSCUTACEAE)	S1?	<b>FAC/FACW</b>	Moist areas, prairies, parkland
<i>Cyperus erythrorhizos</i> (CYPERACEAE)	S1	OBL	
<i>Cypripedium candidum</i> (ORCHIDACEAE)***	S1	OBL	
<i>Elatine triandra</i> var <i>Americana</i> (ELATINACEAE)	S1S1	OBL	
<i>Elodea nuttallii</i> (HYDROCHARITACEAE)	S1	OBL	
<i>Heteranthera dubia</i> (PONTEDERIACEAE)	S2	OBL	
<i>Leersia oryzoides</i> (POACEAE)	S3?	OBL	
<i>Penthorum sedoides</i> (CRASSULACEAE)	S1S2	OBL	
<i>Ranunculus cymbalaria</i> var <i>saximontanus</i> (RANUNCULACEAE)	S1S2	OBL	
<i>Scirpus rufus</i> (CYPERACEAE)	S2	OBL	
<i>Solidago riddellii</i> (ASTERACEAE) ***	S1	OBL	
<i>Sporobolus asper</i> (POACEAE)	S1	<b>FAC/FACW</b>	Moist soils, prairie

**Table 2.3-1: Plant Species of Conservation Concern Potentially Existing within the Project Area**

Species	CDC Rank1	Habitat2	Habitat Description
<i>Steironema quadriflorum</i> (PRIMULACEAE)	S2	<b>FACW/OBL</b>	
<i>Vernonia fasciculata ssp corymbosa</i> (ASTERACEAE) **	S1?	FAC/FACW	
Source: Scoggin 1957; Looman and Best 1987; U.S Army Corps of Engineers 1987; U.S. Fish and Wildlife Service 1997; Smith, et al. 1998; Manitoba Conservation Data Centre 2004.			
* deemed species at risk by COSEWIC	deemed species at risk by COSEWIC		
** deemed species at risk by MESA	deemed species at risk by MESA		
*** deemed species at risk by MESA and COSEWIC	deemed species at risk by MESA and COSEWIC		

1 Conservation Data Centre Rank:

S1 - Critically imperilled because of extreme rarity (5 or fewer occurrences).

S2 - Imperilled because of rarity (6 - 20 occurrences).

S3 - Rare or uncommon (on the order of 21 - 100 occurrences).

S4 - Apparently secure, with many occurrences (>100).

2 Individual species habitat descriptions (values in bold are estimates derived from published habitat descriptions):

U - Obligate Upland Plants.

FACU - Facultative Upland Plants found most often in non-wetlands.

FAC - Facultative Plants found equally in wetlands and non-wetlands.

FACW - Facultative Wetland Plants found most often in wetlands.

OBL - Obligate Wetland Plants.

? - Inexact or uncertain; for numeric ranks, denotes inexactness.

There are several communities that are of conservation concern (Table 2.3-2) that occur within the adjacent Interlake Plain Eco-region, thus there is a possibility that these communities could occur in the Project Area. However, given the extensive studies that have occurred on the tall-grass prairie and associated plant communities in south-central Manitoba, it is likely they would have been detected, if they were present.

**Table 2.3-2: Plant Communities of Conservation Concern with the Potential to Occur in the Project Area**

Community Name	Scientific Name	Global Rank	Provincial Rank
Big Bluestem (Marsh Reed Grass) mat Muhly Herbaceous Vegetation	<i>Andropogon gerardii-(calamagrostis canadensis)-muhlenbergia richardsonis herbaceous vegetation</i>	GNR	S1
Big Bluestem-(Indian Grass) Herbaceous Vegetation	<i>Andropogon gerardii-(sorghastrum nutans) herbaceous vegetation</i>	G2G3	S1
Big Bluestem-prairie Dropseed-little Bluestem Herbaceous Vegetation	<i>Andropogon gerardii-sporobolus heterolepis-andropogon scoparius herbaceous vegetation</i>	GNR	S1
Bur Oak Tallgrass Wooded Herbaceous Vegetation	<i>Quercus macrocarpa tallgrass wooded herbaceous vegetation</i>	G1Q	S1
Cord Grass-northern Reed Grass-sedge Herbaceous Vegetation	<i>Spartina pectinata-calamagrostis inexpansa-carex spp. Herbaceous vegetation</i>	G2G3	S1S2

Source: Manitoba Conservation Data Centre 2013

## 2.3.2 Wildlife

### 2.3.2.1 Invertebrates

#### *Arthropods*

The Dakota skipper (*Hesperoia dacotae*) is provincially and federally protected, with “Threatened” status in both the Species At Risk Act (SARA) and the Manitoba Endangered Species Act (MESA). In Canada, the Dakota skipper is known to occur only in low-land tall-grass prairie and upland mixed-grass prairie sites. In Manitoba, all known existing populations of Dakota skipper are associated with the wet-to-moderately moist tall-grass prairie. The closest known population to the Study Area is in the Manitoba Tall Grass Prairie Preserve, which lies adjacent to the southeastern Study Area boundary. Dakota skipper has not been detected by Manitoba rare species surveys at this site since 2002 (COSEWIC 2003).

The monarch butterfly (*Danaus plexippus*) is federally protected, with “Special Concern” status in SARA. Monarchs breed in the southern portions of all provinces of Canada, with limited distribution in the Northwest Territories. Breeding habitat corresponds with the northern range limit of milkweeds (*Asclepias* spp.), since leaves of these plants are the only food utilized by Monarch caterpillars. Monarchs are fairly common in the south of the province, where

milkweeds grow in a variety of environments, such as short and tall grass prairie, fallow agricultural fields, pastureland, along roadsides and irrigation ditches, open wetlands, river banks and in gardens (COSEWIC 2010). In the Study Area, monarch presence and breeding habitat is expected to be mainly confined to pastureland and grasslands where milkweed is most common.

### *Bivalves*

The mapleleaf mussel (*Quadrula quadrula*) is recognized as “Endangered” in the MESA and as “Threatened” in SARA. This fresh-water species of bivalve is limited in its Canadian distribution to Manitoba and Ontario. In Manitoba, the mapleleaf mussel is known to exist only in the Red-Assiniboine watershed (COSEWIC 2006). Mapleleaf mussel populations have been documented in the Red River and in the lower reaches of the Assiniboine and Roseau rivers. The Department of Fisheries and Oceans notes that these populations are in decline and mussel beds in the Roseau River may no longer exist (DFO 2010; COSEWIC 2006).

### **2.3.2.2 Amphibians and Reptiles**

Three at-risk species of amphibians and reptiles potentially occur within the Project Area according to federally produced range maps and habitat preferences (COSEWIC 2014).

#### *Northern Leopard Frog (No Status – MESA; Special Concern– SARA, COSEWIC)*

Northern leopard frogs are considered semi-terrestrial amphibians. They breed and overwinter in ponds, but the adults spend the entire summer and early fall foraging period in grassy meadows, open shrub areas, or damp woods, often far from any water.

Northern leopard frogs hibernate underwater from October to April on the bottom of ice-covered ponds that do not freeze to the bottom. In Manitoba that may require ponds as deep as 3m, and thus their habitat is often a limiting factor. They will often hibernate in shallow excavated pits on the surface of the mud bottom at water with a clear space around them to facilitate respiration.

#### *Eastern Snapping Turtle (No Status – MESA; Special Concern– SARA, COSEWIC)*

Eastern snapping turtle (*Chelydra serpentina*) has been recorded within RAA boundaries, with one record of a snapping turtle observed north of La Rochelle.

Snapping turtles prefer slow-moving water with a soft mud bottom and dense aquatic vegetation. Established populations are most often located in ponds, sloughs, shallow bays or river edges, and slow streams, or areas combining several of these wetland habitats. While tolerant to water pollution, environmental contamination is known to diminish their already low reproductive success. As cold-blooded animals, basking on rocks and logs can be common in snapping turtles, depending on environmental temperature.

Nest building occurs in sand or gravel banks along waterways. Snapping turtles overwinter underwater, protected by submerged debris or overhanging banks in small streams that do not



free solid. They can also hibernate buried in deep mud in marshy areas or beneath floating mats of vegetation.

*Western Tiger Salamander (No Status – MESA, SARA; Special Concern– COSEWIC)*

In the spring of 2013, the western tiger salamander (*Ambystoma mavortium*, Prairie / Boreal population) was recognized by COSEWIC as a Species of Conservation Concern (SOCC). The western tiger salamander is more numerous in southwestern Manitoba, west of the Red River. This species of salamander inhabits moist grasslands and woodlands near wetlands and is considered unlikely to occur within the PDA and LAA. Land with highest likelihood of supporting tiger salamanders in the LAA is a small area of grassland habitat, approximately 3 km west of Grunthal.

### **2.3.2.3 Birds**

Eighteen bird species of conservation concern, as listed by the Manitoba Endangered Species Act (MESA), the federal Species at Risk Act (SARA) and/or classified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), have the potential to occur within the Project Area and/or RAA (MESA 1990, SARA 2002, COSEWIC 2013; Table 2.3-3). Sixteen of these species have been recorded within Project Area/RAA (Table 2.3-3; USGS 2013, Manitoba Breeding Bird Atlas 2013; Stantec 2007). Legal classifications of these species are listed in Table 2.3-3 and a brief description of each species and its habitat preferences is provided below this table.



**Table 2.3-3: Bird Species of Conservation Concern (SOCC) with Potential to Occur in the Project Area and/or RAA**

Common Name	Scientific Name	MESA	SARA	COSEWIC	MBCDC Rank	General Preferred Habitat	MBCDC Records in the RAA	Confirmed Observation in Project Area and/or RAA**
Bank Swallow	<i>Riparia riparia</i>	No Status	No Status	Threatened	S4B	Riparian		✓
Barn Swallow	<i>Hirundo rustica</i>	No Status	No Status	Threatened	S4B	Agricultural/ Developed		✓
Bobolink	<i>Dolichonyx oryzivorus</i>	No Status	No Status	Threatened	S4B	Grassland	✓	✓
Canada Warbler	<i>Cardellina canadensis</i>	Endangered	Threatened	Threatened	S4B	Forest	✓	✓
Chimney Swift	<i>Chaetura pelagica</i>	Threatened	Threatened	Threatened	S2B	Developed	✓	✓
Common Nighthawk	<i>Chordeiles minor</i>	Threatened	Threatened	Threatened	S3B	Open Habitats and Forests		✓
Eastern Wood-peewee	<i>Contopus virens</i>	No Status	No Status	Special Concern	??	Deciduous Forest		✓
Ferruginous Hawk	<i>Buteo regalis</i>	Endangered	Threatened	Threatened	S2	Open Grassland/Shrubland		✓
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	Threatened	Threatened	Threatened	S3B	Forest/Shrub		✓
Horned Grebe	<i>Podiceps auritus</i>	No Status	No Status	Special Concern	S3B	Wetland		
Least Bittern	<i>Ixobrychus exilis</i>	Endangered	Threatened	Threatened	S2S3B	Wetland		✓
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Endangered	Endangered	Endangered	S1B	Grassland/ Shrub	✓	
Olive-sided Flycatcher	<i>Contopus cooperi</i>	No Status	Threatened	Threatened	??	Forest edges		✓
Peregrine Falcon	<i>Falco peregrinus</i>	Endangered	Special Concern	Special Concern	S1B	Grassland/ Developed		✓
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Threatened	Threatened	Threatened	S2B	Forest/ Grassland	✓	✓

**Table 2.3-3: Bird Species of Conservation Concern (SOCC) with Potential to Occur in the Project Area and/or RAA**

Common Name	Scientific Name	MESA	SARA	COSEWIC	MBCDC Rank	General Preferred Habitat	MBCDC Records in the RAA	Confirmed Observation in Project Area and/or RAA**
Short-eared Owl	<i>Asio flammeus</i>	Threatened	Special Concern	Special Concern	S2S3B	Grassland		✓
Whip-poor-will	<i>Antrostomus vociferus</i>	Threatened	Threatened	Threatened	S3B	Forest		
Yellow Rail	<i>Coturnicops noveboracensis</i>	No Status	Special Concern	Special Concern	S3S4B	Wetland		✓

Source: Manitoba Conservation Data Centre

**S1** – Very rare throughout its range or in the province (5 or fewer occurrences, or very few remaining individuals). May be especially vulnerable to extirpation.

**S2** – Rare throughout its range or in the province (6 to 20 occurrences). May be vulnerable to extirpation.

**S3** – Uncommon throughout its range or in the province (21 to 100 occurrences).

**S4** – Widespread, abundant, and apparently secure throughout its range or in the province, with many occurrences, but the element is of long-term concern (> 100 occurrences).

**S5** – Demonstrably widespread, abundant, and secure throughout its range or in the province, and essentially impossible to eradicate under present conditions.

**B** – Breeding status of a migratory species. Example: S1B,SZN - breeding occurrences for the species are ranked S1 (critically imperiled) in the province, nonbreeding occurrences are not ranked in the province.

**N** – Non-breeding status of a migratory species. Example: S1B,SZN - breeding occurrences for the species are ranked S1 (critically imperiled) in the province, nonbreeding occurrences are not ranked in the province.

\*\*As per bird survey data available from the North American Breeding Bird Survey Program (USGS 2013), MB Breeding Bird Atlas (2013), and/or Stantec (2007, 2013)

*Bank Swallow (No Status – MESA, SARA; Threatened – COSEWIC)*

Bank swallow is a colony nesting passerine that typically nests in vertical banks and cliffs of alluvial soils (Garrison 1999). Potential population declines for this species include loss of breeding and foraging habitat, nest destruction during aggregate excavation, vehicle collisions and widespread pesticide use affecting prey abundance (COSEWIC 2013). River and stream banks within the Project Area/RAA offer potential bank swallow habitat, although limited in availability. Presence of bank swallow in the Project Area/RAA has been recorded by the North American breeding bird survey program (2013) and Manitoba Breeding Bird Atlas (2013).

*Barn Swallow (No Status – MESA, SARA; Threatened – COSEWIC)*

Barn swallow habitat is typically found in close association with human habitation such as agricultural areas, cities and suburbs and along highways; nests are of mud construction and are fixated to vertical or horizontal substrates underneath a roof or ceiling structure (Brown and Brown 1999). While loss of nesting habitat in agricultural areas (i.e., barns, bridges, etc.) has occurred, recent population decline of this species is not well understood (COSEWIC 2011). Presence of bank swallow in the Project Area/RAA has been recorded by the North American breeding bird survey program (2013) and Manitoba Breeding Bird Atlas (2013).

*Bobolink (No Status – MESA, SARA; Threatened – COSEWIC)*

This ground nesting songbird inhabits grassland and some low disturbance agricultural areas such as hay fields and pastures (Carey et al. 2003). Grassland occupies 19% of the Project Area, while pastureland occupies 5%. Likely causes of recent declines in bobolink populations include habitat alteration and fragmentation and pesticide use on breeding and wintering grounds (COSEWIC 2010). This species is regularly observed on established North American Breeding Bird Survey routes in the Project Area/RAA (USGS 2013).

*Canada Warbler (Endangered – MESA; Threatened – SARA; Threatened – COSEWIC)*

Canada warbler is a migratory songbird species with preference for deciduous and coniferous forests (Reitsma 2010). Forested habitat is limited in availability within the Project local assessment areas - broadleaf forests occupy close to 6% of the Project Area. In addition to limited availability of Canada warbler habitat, the Project Area/RAA are also on the southern edge of this species' distribution range, both of which contribute to the fact that observations of this species in the local area are rare (MB Breeding Bird Atlas 2013). Habitat loss is suspected to be contributing to the current population decline of this species (COSEWIC 2008a).

*Chimney Swift (Threatened – MESA, SARA, COSEWIC)*

Chimney swift breeds primarily in urban areas and small towns in Manitoba, migrating south in winter (Carey et al. 2003). Nesting sites are usually out of sight, occurring in large chimneys or other man-made structures. The Manitoba Chimney Swift Initiative conducts annual swift

monitoring of some of the known nest sites in Manitoba, including sites at St. Jean Baptiste (just inside the western Project Area boundary) and St. Adolphe (4 km west of the Project Area; MCSI 2013); nesting swifts were observed at both sites in 2013. Potential causes for population decline of this species includes loss of breeding and roosting sites such as large hollow trees, abandoned buildings and chimneys (COSEWIC 2007a).

*Common Nighthawk (Threatened – MESA, SARA, COSEWIC)*

Common nighthawk is an aerial insectivore that prefers breeding habitats of natural, open areas such as forest clearings, short-grass prairies, pastures, marshes, gravel roads, river banks and regenerating forests (COSEWIC 2007b). Other than one single observation recorded in the Manitoba Breeding Bird Atlas data (2013), existing bird survey data does not have any records of common nighthawk in the Project Area/RAA, however due to its crepuscular nature, common nighthawk abundance is not adequately represented by breeding bird surveys (which are conducted in the morning). Potential mortality factors resulting in population declines of this species includes habitat loss, decline in insect populations, increased predation in urban centers (cats, skunks, crows) and vehicle collisions (COSEWIC 2007b).

*Eastern Wood-Pewee (No Status – MESA, SARA; Threatened – COSEWIC)*

The eastern wood-pewee distribution extends across the southernmost quarter of the province. This tree nesting, insectivorous flycatcher inhabits a variety of forested habitats but shows a general preference to intermediate aged forests (McCarty 1996). Forested habitats are limited within the Project Area/RAA (broadleaf forests occupy approximately 6 % of the Project Area). Recorded observations from the North American BBS and the Manitoba Breeding Bird Atlas show occasional observations of this species in the Project Area/RAA (USGS 2013; MB Breeding Bird Atlas 2013). Causes of population decline in this species is not well understood but may be linked to habitat loss on wintering grounds in South America or changes in availability of insect prey (Environment Canada 2013a).

*Golden-winged Warbler (Threatened – MESA, SARA, COSEWIC)*

This songbird is described as an uncommon and localized breeder of the prairie-forest transition region of Manitoba and prefers forest regeneration or shrub habitats (Carey et al. 2003). Observations of this species in the Project Area/RAA have been rare (USGS BBS 2013), likely due to its limited distribution range and limited availability of habitat in the local area. Habitat loss is one of the main factors threatening the survival of this species (Environment Canada 2013b).

*Loggerhead Shrike (Endangered – MESA, SARA, COSEWIC)*

The loggerhead shrike feeds primarily on insects, but is also the only passerine that feeds on small vertebrates (i.e. small birds, frogs, rodents), using its sharply hooked bills to kill its prey (Government of Canada 2013). This species occupies open habitats that are composed of short

grass and occasional trees and shrubs. The Project Area is situated at the eastern edge of the loggerhead shrike distribution range (Peterson 2002). Potential loggerhead shrike habitat within the Project Area/RAA may occur within grassland and/or pastureland land cover. The North American BBS (USGS 2013) or Manitoba Breeding Bird Atlas data (2013) has no records of this species in Project Area/RAA.

*Olive-sided Flycatcher (No Status – MESA, Threatened – SARA, Threatened – COSEWIC)*

Olive-sided flycatcher is an insectivorous passerine that breeds in habitats with sparse canopy cover along forest edges and openings such as marshes, open water, forest openings and burns (Altman and Sallabanks 2012; COSEWIC 2007c). The Project Area is just within the southeastern extent of the olive-sided flycatcher distribution range (Peterson 2002) and potential habitat within the Project Area/RAA is limited. North American BBS data does not have any recorded observations of this species within the RAAs, while Manitoba Breeding Bird Atlas has minimal observations, none of which have confirmed evidence of this species breeding in the local area (USGS 2013; MB Breeding Bird Atlas 2013).

*Red-headed Woodpecker (Threatened – MESA, SARA, COSEWIC)*

Red-headed woodpecker range in Manitoba is limited to the southern quarter of the province where its distribution generally corresponds to agricultural areas and wooded grasslands (COSEWIC 2007d). In agricultural areas, this species prefers forests with shrub cover grazed by livestock and with a high snag density (COSEWIC 2007d). It will also occupy forest edges, wooded pastures, riparian forests and burns. Potential red-headed woodpecker habitat within the Project Area/RAA is limited in availability. Main factors contributing to declines in red-headed woodpecker populations are attributed to habitat loss, including disappearance of nesting sites in agricultural areas as a result of intensive farming, loss of riparian forests and the systematic removal of dead trees in riparian areas (COSEWIC 2007d). Presence of red-headed woodpecker in the Project Area and RAAs has been documented by the North American breeding bird survey program (2013) and Manitoba Breeding Bird Atlas (2013).

*Eastern Whip-poor-will (Threatened – MESA, SARA, COSEWIC)*

The eastern whip-poor-will is a nocturnal, insectivorous species whose range extends across southern Manitoba (Cink 2002). Preferred habitats include partly open, upland deciduous or mixed-wood forest (Carey et al. 2003), which is limited in availability within the Project Area/RAA. Due to its crepuscular nature, cryptic behavior and plumage, little information on confirmed occurrences of whip-poor-will within the Project Area/RAA is available.

*Short-eared Owl (Threatened – MESA; Special Concern – SARA, COSEWIC)*

The short-eared owl is a ground-nesting species characteristic of open habitats such as marshes, grasslands, pastures and occasionally fields planted with row-crops (COSEWIC 2008b). Once known to be a species typical of prairie habitats, the short-eared owl is now

uncommon in these areas. Potential factors contributing to this species decline include habitat loss (especially of coastal marshes and grasslands), habitat fragmentation (resulting in increased nest depredation), reduction in prey abundance and collisions with vehicles, utility lines and barbed wire fences (COSEWIC 2008b). Short-eared owl habitat within the Project Area/RAA may potentially occur within areas designated as grassland and pasture land cover. Observations of short-eared owl in North American breeding bird survey data (USGS 2013) and Manitoba Breeding Bird Atlas data (MB Breeding Bird Atlas 2013) are infrequent and rare within the Project Area/RAA.

*Peregrine Falcon (Endangered – MESA; Special Concern – SARA, COSEWIC)*

Peregrine falcons are considered to be an uncommon migrant in Manitoba with limited confirmed nesting sites within the province. Habitat requirements vary considerably and are dependent on sufficient access and supply of food resources (COSEWIC 2007e). Peregrines are occasionally encountered in southern Manitoba, usually in early to late fall and generally near rivers, lakes and wetlands (Carey et al. 2003). Data available from the Hawk Count migration monitoring site at St. Adolphe, MB indicate that 16 peregrine falcons were recorded migrating along the Red River in spring of 2013 (Hawk Count 2013). Potential for peregrine falcon to utilize habitats within the Project Area/RAA for breeding purposes is low. Population declines have been attributed to widespread use of organochlorine pesticides in the 1940s to 1970s, human disturbance and urban development (COSEWIC 2007e).

*Ferruginous Hawk (Endangered – MESA; Special Concern – SARA, COSEWIC)*

Distribution of ferruginous hawk within Manitoba is generally concentrated to the southwestern corner of the province (Carey et al. 2003). With a preference for extensive grasslands, the likelihood of this species utilizing habitats within the Project Area/RAA is low. Recorded occurrences in the local area are limited; one individual was documented by Stantec during bird surveys in the local area in 2007, while most recent data from 2013 indicates that only one ferruginous hawk was recorded at the St. Adolphe Hawk Count migration monitoring site on the Red River (Hawk Count 2013). Factors identified as potentially limiting ferruginous hawk populations include habitat availability, prey availability and nest disturbance by humans (COSEWIC 2008c).

*Least Bittern (Endangered – MESA; Threatened – SARA, COSEWIC)*

Distribution of least bittern within Manitoba is confined to the lower southeastern corner of the province (COSEWIC 2009a). This species breeds strictly in marshes dominated by emergent vegetation, stable water levels and areas of open water (COSEWIC 2009b). It is estimated that only about 1500 pairs of least bittern currently nest in Canada. Among the confirmed nesting sites is the Rat River Swamp located on the edge of the Project Area eastern boundary. Parcels of this swamp have been defined as critical habitat for this species (Environment Canada 2011). Existing bird survey data documented only one observation of least bittern in the Project



Area/RAA (USGS 2013; MB Breeding Bird Atlas 2013; MBCDC 2013). Although the potential range of this species overlaps with the Siting Study Area, existing land cover information for the area suggests that potential to support least bittern habitats is low.

*Horned Grebe (No Status – MESA, SARA; Special Concern – COSEWIC)*

The distribution range of horned grebe encompasses much of the province of Manitoba where it breeds in small- to moderate-sized (1- to 10-ha) bodies of water with beds of emergent vegetation (in Stedman and Stephen 2000). As riparian habitats within the Project Area/RAA are limited in their availability, it is not unexpected that no horned grebe observations have been recorded by the North American Breeding Bird Survey (2013) or the MB Breeding Bird Atlas (2013) in the RAAs.

*Yellow Rail (No Status – MESA; Special Concern – SARA, COSEWIC)*

Yellow rail is a small, secretive waterbird that nests in wet, grassy marshes. Such wetland habitat is highly limited in the Project Area/RAA. Only one occurrence of yellow rail was observed during the North American Breeding Bird Survey data in 2005 (USGS 2013); no additional recordings of yellow rail observations were present in Manitoba Breeding Bird Atlas survey data for the Project Area/RAA or from Stantec field survey data in the Siting Study Area (MB Breeding Bird Atlas 2013; TetrES 2007, Stantec 2013). Threats to the population status of this species include habitat loss, degradation, mortality from agricultural operations and collisions with tall structures such as communication towers (COSEWIC 2009c).

#### **2.3.2.4 Mammals**

American Badger is a federally listed species that has the potential to inhabit the RAA, although none have been recorded. Plains pocket gopher has been identified as occurring within the RAA, however, this species is not currently provincially or federally listed as at risk.

*American Badger (No Status – MESA, SARA; Special Concern – COSEWIC)*

The habitat of the American Badger is fragmented by roads and development, and largely dependent on soil texture. Agricultural practices that keep soil tilled or create compaction further limit habitat availability. As a result, American badgers are largely limited to roadside ditches, pastureland, or undisturbed grassland or forest edges. Trees and shrubs also invade suitable open habitat because of fire suppression. Other factors that threaten the American Badger include control of badgers or their prey (ground squirrels, for example) as nuisance animals, and being killed by traffic.

*Plains Pocket Gopher (No Status – MESA, SARA, COSEWIC, S-Rank 3)*

The plains pocket gopher is a burrowing rodent native to grasslands and agricultural land across the prairie ecozone within Manitoba and is found as far south as Texas.

Plains pocket gophers prefer deep, sandy, loose soil to facilitate their burrowing lifestyle. They feed mainly on plant roots therefore vegetation is less of a limiting factor than soil compaction. As a result, the plains pocket gopher is found in prairie grasslands, agricultural land, and even urban green areas.

## **3.0 FIELD STUDIES METHODS**

### **3.1 VEGETATION**

On August 7, 2013, a field survey was conducted in the Project Area to gather additional information on vegetative communities present in the Project Area. During this site visit, four locations that had previously been assigned a high conservation ranking, or identified as having potential to support tall-grass prairie or other rare plants by Nature Conservancy of Canada (MBCWS 2014), and were also in close vicinity of the proposed transmission line route, were visited to confirm land cover status and current potential to support tall-grass prairie. During the field visit, all sites were confirmed to have been previously cultivated and were currently being used for agricultural cropland purposes. As such, no further vegetation surveys were required at these sites.

### **3.2 WILDLIFE**

#### **3.2.1 Birds**

Road-based breeding bird surveys were conducted by Stantec Consulting Ltd., on June 12, 2013, along roads that transected grassland and deciduous forest habitats in the southeastern corner of the Project Area. Surveys were conducted utilizing standardized roadside breeding-bird survey methods developed by the United States Geological Society (USGS 2013) and Canadian Wildlife Service (CWS 2011).

Breeding-bird surveys conducted consisted of 20 survey points or ‘stops’ situated, at a minimum of 800 m apart (Map 2-2). Surveys began just prior to sunrise (5:02 a.m.) and ended near 9:30 a.m. At each survey stop, two biologists recorded all birds seen and heard within a 3-minute observation period. Early morning weather conditions were generally suitable for the detection of birds during the breeding-bird surveys (i.e., wind  $\leq$ 20 km/hr and no precipitation).

Habitat at most breeding bird survey points was dominated by cultivated cropland. Small wetlands and stream crossings occurred at a small selection of the survey stops. Treed areas were restricted to the occasional deciduous woodlots, shelterbelts and farmyards that occur within the Project Area, as well as along some wetland and creek borders. General habitat descriptions, including dominant land cover types and landform features (i.e. wetlands) were documented at each survey stop (Section 4.2.3).

#### **3.2.2 Mammals**

On October 2 and 3, 2013, a driving survey of the study area was conducted, and riparian areas were visually inspected on foot (Map 3-1). Mammal sightings, as well as mammal sign, including

tracks and scat were recorded, and mapped. Pertinent photographs were logged, and waypoints were recorded for future reference.

## **4.0 RESULTS AND DISCUSSION**

### **4.1 VEGETATION**

The majority of the Project Area falls within the Prairie Ecozone, Lake Manitoba Plain Ecoregion, Winnipeg Ecodistrict and Emerson Ecodistrict (Map 4-1). A very small portion falls within the Boreal Plains Ecozone, Interlake Plain Ecoregion and Steinbach Ecodistrict.

Native vegetation in the Winnipeg Ecodistrict originally consisted of tall-grass prairie and other grassland communities with some wooded areas along streams and stream channels. The Emerson Ecodistrict was historically tall-grass prairie communities with some strips of forested land along waterways. Small wetlands and wet meadows are also present in both ecodistricts. The Steinbach Ecodistrict is dominated by trembling aspen stands and wetlands in the area are generally fens dominated by sedges and reed grasses. Most of the native grasslands in these areas have been lost due to cultivation of row crops, pasture land and development of drainage ditches (Smith *et al.* 1998). Some small remnant patches of native prairie within the area have been conserved by the Government of Manitoba, conservation organizations and private landowners.

Field visits to the four grassland sites previously assigned a high conservation rank by the NCC, and in close vicinity to the proposed Project, were identified as no longer supporting grassland habitat. All sites had been previously cultivated and currently supported agricultural cropland.

Other grassland sites visited during the general reconnaissance field survey in the Project Area were of marginal quality (i.e., not native prairie), and would not likely provide good habitat for plant SOCC. Surveys of native tall grass prairie in the area in the late 1980s (Joyce and Morgan 1989), 1995 (Mansel 1995) and revisits to these sites in 2006-2008 (Koper et al. 2010), revealed that very little of the original native tall-grass prairie remains, while the remaining native prairie continues to be degraded over time. A GIS-based desktop analysis of prairies identified in the 1980s and 1990s determined that none of these prairies would be traversed by either the proposed Project.

### **4.2 WILDLIFE**

#### **4.2.1 Invertebrates**

Invertebrates are animals lacking backbones and comprise 97% of all known animal species. Terrestrial invertebrates include four phyla:

- Nematoda
- Annelida

- Mollusca
- Arthropoda

Within the phylum Arthropoda is the class Insecta, which holds many of the invertebrate species commonly known to the average person. The Project Area (Project Area) lies within the eastern edge of the Prairie Ecozone and includes the southwestern border of the Boreal Plains Ecozone (Map 4-1). Invertebrate communities in this transition between the two Ecozones are similar in that they inhabit areas historically vegetated by grasslands interspersed with stands of woodlands, with ponds and marshes common throughout the landscape.

Due to intensive development of agriculture, reduction in native prairie plant species diversity and widespread application of pesticides, much of the Prairie Ecozone has experienced declines in invertebrate and other wildlife populations. Insofar as the presence of Prairie marshes excludes or deters crop cultivation, these wetlands represent fragments of habitat that can support native plant communities and refugia for associated invertebrates. Thus, the following description of invertebrate presence in the Project Area will focus on species prevalent around wetlands and associated riparian (wooded) areas.

Invertebrate species with an aquatic larval phase (dragonflies, mayflies, midges, etc.), and those with entirely aquatic life cycles (snails, amphipods, worms, aquatic beetles) are important food sources for waterfowl (ducks, geese). Species of neotropical migrant songbirds (red-wing blackbird, sparrows, wren, swallows, etc.) and waterbirds (grebes, rails, shorebirds) that feed in or around wetlands are also dependent upon larval and adult life stages of these invertebrates. Additionally, invertebrates (earthworms, nematodes, isopods and other herbivores) make substantial contributions to ecosystem processes including decomposition of plant and animal material and cycling of decaying organic matter into nutrients available to plants.

There are hundreds of taxonomic families and many hundreds more species of invertebrates associated with the Prairie and Boreal Plains Ecozones (Table 4.2-1).

**Table 4.2-1: Numbers of Invertebrate Taxa Potentially Occurring within the Project Area**

Phyla	Family	Number of Species
Arthropoda (Insecta)	Baetidae	1
	Caenidae	1
	Aeshnidae	5
	Agrionidae	2
	Coenagrionidae	15
	Corduliidae	1

**Table 4.2-1: Numbers of Invertebrate Taxa Potentially Occurring within the Project Area**

<b>Phyla</b>	<b>Family</b>	<b>Number of Species</b>
	Gomphidae	3
	Lestidae	6
	Libellulidae	17
	Dytiscidae	70
	Gyrinidae	2
	Halplidae	6
	Hydrophilidae	11
	Belostomatidae	3
	Corixidae	40
	Gerridae	7
	Hydrometridae	1
	Mesoveliidae	1
	Nepidae	2
	Notonectidae	10
	Pleidae	1
	Saldidae	9
	Veliidae	2
	Sisyridae	1
	Pyralidae	1
	Hydroptilidae	1
	Leptoceridae	2
	Limnephilidae	6
	Molannidae	1
	Phryganeidae	2
	Polycentropodidae	1
	Psychomyiidae	1
	Ceratopogonidae	6
	Chaoboridae	1
	Chironomidae	68
	Culicidae	11

**Table 4.2-1: Numbers of Invertebrate Taxa Potentially Occurring within the Project Area**

<b>Phyla</b>	<b>Family</b>	<b>Number of Species</b>
	Dixidae	1
	Stratiomyidae	1
	Tipulidae	1
	Pteromalidae	1
<b>Total Species</b>		<b>322</b>

Source: Wrubleski and Ross(2011); Alperyn (2004); Euliss et al. (1999); Hann (1999); Scudder et al. (2010).

## **4.2.2 Amphibians and Reptiles**

The Project Area lies mainly in the Prairies Ecozone, with the Boreal Plains Ecozone entering the southern half of the Study Area (Map 4-1). Ten amphibian species have distributions that overlap with the Project Area (CARCNET 2012). Given the presence of suitable habitat, seven of those ten species are considered likely to occur in the Project Area (Table 4.2-2) Thirteen reptiles are known to occur within the Prairie and Boreal Plains Ecozones. Of these thirteen, six have distributions that overlap with, and are likely to occur in, the Project Area (Table 4.2-2).

Reptiles and amphibians (herpetofauna) inhabiting the Project Area will be most plentiful around watercourses including (i.e. rivers and creeks, and drainage ditches) and waterbodies (i.e., ponds, marshes, swamps). Of these, waterbodies and wetlands with riparian vegetation or located adjacent to woodlots, grasslands or pasturelands will have the highest density and diversity of amphibians and reptiles present. Additionally, snapping and painted turtles lay eggs in sandy soils adjacent to a watercourse or waterbody. Many of the reptiles (western painted turtle, snapping turtle, red-sided garter snake and plains garter snake) and all of the frogs (wood frog, boreal chorus frog, leopard frog) expected to be present in the Project Area will occur within 1 km of a watercourse or waterbody suitable for breeding, foraging and/or overwintering.

Snakes of the Prairie and Boreal Plains Ecozones overwinter in underground dens called hibernacula. Suitable den sites are cracks or crevasses in limestone formations, abandoned cisterns and other subterranean sinkholes or caves, with access to depths below the frost line ( $\geq 2$  m) and above the water line. Hibernacula in Manitoba may accommodate only a few to over 10,000 individuals of various species. Individual snakes show high fidelity to den sites, returning each year to the same hibernacula. This high fidelity behaviour and limited availability of alternate suitable limestone crevasses for hibernacula make denning sites a point of vulnerability for snake species in Manitoba.



**Table 4.2-2: Amphibians and Reptiles Potentially Occurring within the Project Area**

Scientific Name	Common Name	Likely To Occur Given Habitat	MESA, COSEWIC or SARA Listed
<b>Amphibians</b>			
<i>Ambystoma mavortium diaboli</i>	Gray Tiger Salamander	✓	
<i>Ambystoma mavortium melanostictum</i>	Blotched Tiger Salamander		
<i>Spea bombifrons</i>	Plains Spadefoot Toad		
<i>Anaxyrus hemiophrys</i>	Canadian Toad	✓	
<i>Anaxyrus cognatus</i>	Great Plains Toad		✓
<i>Hyla chrysoscelis</i>	Cope's (Diploid) Treefrog	✓	
<i>Hyla versicolor</i>	Gray (Tetraploid) Treefrog	✓	
<i>Pseudacris maculata</i>	Boreal Chorus Frog	✓	
<i>Lithobates pipiens</i>	Northern Leopard Frog	✓	✓
<i>Lithobates sylvaticus</i>	Wood Frog	✓	
<b>Reptiles</b>			
<i>Chelydra serpentina serpentina</i>	Eastern Snapping Turtle	✓	✓
<i>Chrysemys picta belli</i>	Western Painted Turtle	✓	
<i>Phrynosoma hernandesi</i>	Greater Short-horned Lizard		
<i>Plestiodon septentrionalis septentrionalis</i>	Northern Prairie Skink		✓
<i>Coluber constrictor flaviventris</i>	Eastern Yellow-bellied Racer		
<i>Opheodrys vernalis</i>	Smooth Greensnake	✓	
<i>Pituophis catenifer sayi</i>	Bullsnake		
<i>Storeria occipitomaculata occipitomaculata</i>	Northern Red-bellied Snake	✓	
<i>Thamnophis elegans vagrans</i>	Wandering Gartersnake		
<i>Thamnophis radix</i>	Plains Gartersnake	✓	
<i>Thamnophis sirtalis parietalis</i>	Red-sided Gartersnake	✓	
<i>Heterodon nasicus</i>	Plains Hog-nosed Snake		
<i>Crotalus viridis</i>	Prairie Rattlesnake		

### 4.2.3 Birds

The proposed Project is situated south of Winnipeg in agriculturally dominated southern Manitoba. The majority of land cover in the Project Area is represented by human-altered landscapes such as cropland, field margins, roads, and developed areas which provide marginal bird habitat (Table 2.1-1). Remaining land cover types provide more productive bird habitat and consist of grassland, pasture land, broadleaf (deciduous) forest, shrub land, and riparian areas. Grassland and pasture habitats are scattered throughout the Project Area, with the largest tract of grassland paralleling the Winnipeg Floodway. Forest and shrub land also occur in small patches in the Project Area with some concentration of these habitats occurring along river and stream banks. Riparian areas are infrequent and generally limited to river or creek crossings. Wooded riparian areas, such as that long the Red River, Rat River and Roseau River are unique features in the Project Area and provide high quality habitat for several bird species. These areas provide mature trees for nesting raptors (e.g. hawks, owls and eagles), dead standing trees for woodpeckers (e.g. red-headed woodpecker), and immature trees, shrubs and grasses for breeding and nesting bird habitat for several songbird species.

The Project Area overlaps with the ranges of over 250 bird species (Carey et al. 2003; Smith et al. 1999; Table 4.2-3). Bird surveys conducted within the Project Area in June 2013 identified a total of 373 birds representing 46 bird species (Tables 4.2-3 and 4.2-4). When all species observed (including flyovers) are included, dominant bird groups observed were passerines (65% of n=373 birds) and waterfowl (21%). Waterbirds and shorebirds constituted 10% of all birds observed while upland game birds, woodpeckers and raptors represented remaining bird groups recorded. Most commonly encountered species included clay-colored sparrow (occurred at 70% of n=20 survey stops), red-winged blackbird (60%), western meadowlark (60%), song sparrow (55%) and Wilson's snipe (55%). All birds observed have been previously recorded in the Project Area/RAA by the North American Breeding Bird Survey Program (USGS 2013), the Manitoba Breeding Bird Atlas (MB Breeding Bird Atlas 2013), and/or previous bird surveys conducted by TetrES (2007). Existing data from these information sources have confirmed observations of over 150 species in the local area.

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
<b>Passerines</b>						
Alder Flycatcher	<i>Empidonax alnorum</i>	B	U-C	-	✓	
American Crow	<i>Corvus brachyrhynchos</i>	B	A	U	✓	
American Goldfinch	<i>Spinus tristis</i>	B	C-A	R	✓	
American Pipit	<i>Anthus rubescens</i>	M	U	-		
American Redstart	<i>Setophaga ruticilla</i>	B	C	-	✓	
American Robin	<i>Turdus migratorius</i>	B	A	R	✓	
American Tree Sparrow	<i>Spizella arborea</i>	M	C	O		
Baltimore Oriole	<i>Icterus galbula</i>	B	U-C	-	✓	
Bank Swallow	<i>Riparia riparia</i>	B	U-C	-	✓	✓
Barn Swallow	<i>Hirundo rustica</i>	B	C-A	-	✓	✓
Bay-breasted Warbler	<i>Setophaga castanea</i>	M	U-C	-		
Black-and-white Warbler	<i>Mniotilta varia</i>	M	U-C	-	✓	
Black-billed Magpie	<i>Pica hudsonia</i>	P	C	C	✓	
Blackburnian Warbler	<i>Setophaga fusca</i>	B	U-C	-		
Black-capped Chickadee	<i>Poecile atricapillus</i>	P	C	C	✓	
Blackpoll Warbler	<i>Setophaga striata</i>	M	U-C	-	✓	
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>		O	-		
Black-throated Green Warbler	<i>Setophaga virens</i>	B	U	-		

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Blue Jay	<i>Cyanocitta cristata</i>	P	C	C	✓	
Blue-headed Vireo	<i>Vireo solitarius</i>	B	U-C	-	✓	
Bobolink	<i>Dolichonyx oryzivorus</i>	B	U-C	-	✓	✓
Bohemian Waxwing	<i>Bombycilla garrulus</i>	W	C	C		
Boreal Chickadee	<i>Poecile hudsonicus</i>	M	R	-	✓	
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	B	C	O	✓	
Brown Creeper	<i>Certhia americana</i>	B	C	R		
Brown Thrasher	<i>Toxostoma rufum</i>	B	U-C	O	✓	
Brown-headed Cowbird	<i>Molothrus ater</i>	B	R-C	-	✓	
Canada Warbler	<i>Cardellina canadensis</i>	B	U	-	✓	✓
Cape May Warbler	<i>Setophaga tigrina</i>	B	U-C	-		
Cedar Waxwing	<i>Bombycilla cedrorum</i>	B	C	U	✓	
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	B	C	-		
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	B	U-C	-	✓	
Chipping Sparrow	<i>Spizella passerina</i>	B	C	-	✓	
Clay-colored Sparrow	<i>Spizella pallida</i>	B	U-C	-	✓	
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	B	U-A	-	✓	
Common Grackle	<i>Quiscalus quiscula</i>	B	C	R	✓	
Common Raven	<i>Corvus corax</i>	P	C	C	✓	
Common Redpoll	<i>Acanthis flammea</i>	W	C	C		

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Common Yellowthroat	<i>Geothlypis trichas</i>	B	C	-	✓	
Connecticut Warbler	<i>Oporornis agilis</i>	B	U	-	✓	
Dark-eyed Junco	<i>Junco hyemalis</i>	W	A-U	U	✓	
Dickcissel	<i>Spiza americana</i>	B	acc-O	-	✓	
Eastern Bluebird	<i>Sialia sialis</i>	B	U	-	✓	
Eastern Kingbird	<i>Tyrannus tyrannus</i>	B	C-A	-	✓	
Eastern Phoebe	<i>Sayornis phoebe</i>	B	U-C	-	✓	
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	B			✓	
Eastern Wood-Pewee	<i>Contopus virens</i>	B	U-C	-	✓	✓
European Starling	<i>Sturnus vulgaris</i>	P	C	C	✓	
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	P	R-C	C	✓	
Fox Sparrow	<i>Passerella iliaca</i>	M	C	O		
Golden-crowned Kinglet	<i>Regulus satrapa</i>	B	R-C	R		
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	B	U	-	✓	✓
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	B	U	-		
Gray Catbird	<i>Dumetella carolinensis</i>	B	C	-	✓	
Gray Jay	<i>Perisoreus canadensis</i>	P	O-R	O		
Gray-cheeked Thrush	<i>Catharus minimus</i>	M	U	-		
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	B	R-C	-	✓	
Harris' Sparrow	<i>Zonotrichia querula</i>	M	acc-C	O		

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Hermit Thrush	<i>Catharus guttatus</i>	M	U-C	-	✓	
Hoary Redpoll	<i>Acanthis hornemanni</i>	W	U	U		
Horned Lark	<i>Eremophila alpestris</i>	B	A	-	✓	
House Finch	<i>Haemorhous mexicanus</i>	P			✓	
House Sparrow	<i>Passer domesticus</i>	P	A	A	✓	
House Wren	<i>Troglodytes aedon</i>	B	C	-	✓	
Indigo Bunting	<i>Passerina cyanea</i>	B	O-C	-	✓	
Lapland Longspur	<i>Calcarius lapponicus</i>	M	acc-A	U		
Lark Bunting	<i>Calamospiza melanocorys</i>	B	U	-	□	
Lark Sparrow	<i>Chondestes grammacus</i>	B	acc-U	-	✓	
Least Flycatcher	<i>Empidonax minimus</i>	B	C-A	-	✓	
LeConte's Sparrow	<i>Ammodramus leconteii</i>	B	U-C	-	✓	
Lincoln's Sparrow	<i>Melospiza lincolnii</i>	M	R-C	-	✓	
Loggerhead Shrike	<i>Lanius ludovicianus</i>	B	R	-	✓	✓
Magnolia Warbler	<i>Setophaga magnolia</i>	B	U-C	-	✓	
Marsh Wren	<i>Cistothorus palustris</i>	B	C	-	✓	
Mountain Bluebird	<i>Sialia currucoides</i>	B	U-C	-	✓	
Mourning Warbler	<i>Geothlypis philadelphia</i>	B	U-C	-	✓	
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	B	U	-	✓	

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Nelson's Sparrow	<i>Ammodramus nelsoni</i>	B			✓	
Northern Cardinal	<i>Cardinalis cardinalis</i>	B	O	-		
Northern Parula	<i>Setophaga americana</i>	B	O	-		
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	B	O-U	-	✓	
Northern Shrike	<i>Lanius excubitor</i>	W	U	U		
Northern Waterthrush	<i>Parkesia noveboracensis</i>	B	U-C	-	✓	
Olive-sided Flycatcher	<i>Contopus cooperi</i>	M	U	-	✓	✓
Orange-crowned Warbler	<i>Oreothlypis celata</i>	B	R-C	-		
Orchard Oriole	<i>Icterus spurius</i>	B	U	-	✓	
Ovenbird	<i>Seiurus aurocapillus</i>	B	C	-	✓	
Palm Warbler	<i>Setophaga palmarum</i>	B	C-R	-		
Philadelphia Vireo	<i>Vireo philadelphicus</i>	B	U	-	✓	
Pine Grosbeak	<i>Pinicola enucleator</i>	W	U-C	C		
Pine Siskin	<i>Spinus pinus</i>	B	U-C	U	✓	
Pine Warbler	<i>Setophaga pinus</i>	B	acc-R	-		
Purple Finch	<i>Haemorhous purpureus</i>	B	U-C	R	✓	
Purple Martin	<i>Progne subis</i>	B	C	-	✓	
Red Crossbill	<i>Loxia curvirostra</i>	P	O	O		
Red-breasted Nuthatch	<i>Sitta canadensis</i>	P	C	U	✓	

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Red-eyed Vireo	<i>Vireo olivaceus</i>	B	C-A	-	✓	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	B	A	R	✓	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	B	U-C	-	✓	
Ruby-crowned Kinglet	<i>Regulus calendula</i>	B	C	-	✓	
Rusty Blackbird	<i>Euphagus carolinus</i>	B	C	R		
Savannah Sparrow	<i>Passerculus sandwichensis</i>	B	A	-	✓	
Say's Phoebe	<i>Sayornis saya</i>	B	U	-		
Scarlet Tanager	<i>Piranga olivacea</i>	B	R-U	-	✓	
Sedge Wren	<i>Cistothorus platensis</i>	B	U-C	-	✓	
Smith's Longspur	<i>Calcarius pictus</i>	M	C	-		
Snow Bunting	<i>Plectrophenax nivalis</i>	W	acc-A	C		
Song Sparrow	<i>Melospiza melodia</i>	B	C	-	✓	
Sprague's Pipit	<i>Anthus spragueii</i>	T	R	-		
Swainson's Thrush	<i>Catharus ustulatus</i>	M	C	-	✓	
Swamp Sparrow	<i>Melospiza georgiana</i>	B	U-C	-	✓	
Tennessee Warbler	<i>Oreothlypis peregrina</i>	B	C-A	-	✓	
Tree Swallow	<i>Tachycineta bicolor</i>	B	U-A	-	✓	
Veery	<i>Catharus fuscescens</i>	B	R-C	-	✓	
Vesper Sparrow	<i>Poocetes gramineus</i>	B	C	-	✓	



**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Warbling Vireo	<i>Vireo gilvus</i>	B	R-A	-	✓	
Western Kingbird	<i>Tyrannus verticalis</i>	B	U-C	-	✓	
Western Meadowlark	<i>Sturnella neglecta</i>	B	A	O	✓	
Western Wood-Pewee	<i>Contopus sordidulus</i>	B	R	-		
White-breasted Nuthatch	<i>Sitta carolinensis</i>	P	C	C	✓	
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	M	C	-		
White-throated Sparrow	<i>Zonotrichia albicollis</i>	B	C	R	✓	
White-winged Crossbill	<i>Loxia leucoptera</i>	P	O	O		
Willow Flycatcher	<i>Empidonax traillii</i>	B	R	-		
Wilson's Warbler	<i>Cardellina pusilla</i>	M	U-C	-		
Winter Wren	<i>Troglodytes hiemalis</i>	B	U	-		
Yellow Warbler	<i>Setophaga petechia</i>	B	U-A	-	✓	
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	M	R-U	-	✓	
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	B	C	O	✓	
Yellow-rumped Warbler	<i>Setophaga coronata</i>	M	U-A	-	✓	
Yellow-throated Vireo	<i>Vireo flavifrons</i>	B	R-U	-	✓	
<b>Waterbirds</b>						
American Avocet	<i>Recurvirostra americana</i>	B	U	-		
American Bittern	<i>Botaurus lentiginosus</i>	B	C	-	✓	

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Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
American Coot	<i>Fulica americana</i>	B	A	-	✓	
American Golden-plover	<i>Pluvialis dominica</i>	M			□	
American White Pelican	<i>Pelecanus erythrorhynchos</i>	B	C	-		
American Woodcock	<i>Scolopax minor</i>	B	R-U	-	✓	
Baird's Sandpiper	<i>Calidris bairdii</i>	M	U-C	-		
Black Tern	<i>Chidonias niger</i>	B	U-C	-	✓	
Black-bellied Plover	<i>Pluvialis squatarola</i>	M	C	-		
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	B	U-C	-	✓	
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	M	C	-		
Buff-breasted Sandpiper	<i>Calidris subruficollis</i>	M	R-U	-		
California Gull	<i>Larus californicus</i>	M	U	-		
Caspian Tern	<i>Hydroprogne caspia</i>	M	C	-		
Cattle Egret	<i>Bubulcus ibis</i>	M				
Common Loon	<i>Gavia immer</i>	M	R-U	-	✓	
Common Tern	<i>Sterna hirundo</i>	B	C	-		
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	B	U-C	-	✓	
Dunlin	<i>Calidris alpina</i>	M	R-U	-		
Eared Grebe	<i>Podiceps nigricollis</i>	B	C	-		
Forster's Tern	<i>Sterna forsteri</i>	B	C	-	✓	
Franklin's Gull	<i>Leucophaeus pipixcan</i>	B	C-A	-	✓	

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Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Glaucous Gull	<i>Larus hyperboreus</i>	T	O	-		
Great Blue Heron	<i>Ardea herodias</i>	B	C	-	✓	
Great Egret	<i>Ardea alba</i>	B	R	-		
Greater Yellowlegs	<i>Tringa melanoleuca</i>	M	C	-		
Green Heron	<i>Butorides virescens</i>	T	O	-	✓	
Herring Gull	<i>Larus argentatus</i>	B	C	-		
Hooded Merganser	<i>Lophodytes cucullatus</i>	B			✓	
Horned Grebe	<i>Podiceps auritus</i>	B	C	-		✓
Hudsonian Godwit	<i>Limosa haemastica</i>	M	R-U	-		
Killdeer	<i>Charadrius vociferus</i>	B	C-A	-	✓	
Least Bittern	<i>Ixobrychus exilis</i>	B	R	-	✓	✓
Least Sandpiper	<i>Calidris minutilla</i>	M	C-A	-		
Lesser Yellowlegs	<i>Tringa flavipes</i>	M	C-A	-		
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	M	U-C	-		
Marbled Godwit	<i>Limosa fedoa</i>	B	U-C	-	✓	
Pectoral Sandpiper	<i>Calidris melanotos</i>	M	C	-		
Pied-billed Grebe	<i>Podilymbus podiceps</i>	B	C	-	✓	
Piping Plover	<i>Charadrius melodus</i>	B	O	-		
Red Knot	<i>Calidris canutus</i>	M	R	-		

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Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Red-necked Grebe	<i>Podiceps grisegena</i>	B	U-C	-	✓	
Red-necked Phalarope	<i>Phalaropus lobatus</i>	M	C	-		
Ring-billed Gull	<i>Larus delawarensis</i>	B	A	-	✓	
Ruddy Turnstone	<i>Arenaria interpres</i>	M	U-C	-		
Sanderling	<i>Calidris alba</i>	M	U-C	-		
Sandhill Crane	<i>Grus canadensis</i>	B	U-C	-	✓	
Semipalmated Plover	<i>Charadrius semipalmatus</i>	M	U	-		
Semipalmated Sandpiper	<i>Calidris pusilla</i>	M	C-A	-		
Short-billed Dowitcher	<i>Limnodromus griseus</i>	M	C	-		
Solitary Sandpiper	<i>Tringa solitaria</i>	B	U	-		
Sora	<i>Prozana carolina</i>	B	C	-	✓	
Spotted Sandpiper	<i>Actitis macularia</i>	B	C	-	✓	
Stilt Sandpiper	<i>Calidris himantopus</i>	M	C	-		
Thayer's Gull	<i>Larus thayeri</i>	M	O	-		
Tundra Swan	<i>Cygnus columbianus</i>	M	R-C	-		
Upland Sandpiper	<i>Bartramia longicauda</i>	B	O-C	-	✓	
Virginia Rail	<i>Rallus limicola</i>	B	C	-	✓	
Western Grebe	<i>Aechmophorus occidentalis</i>	B	C	-	✓	
Whimbrel	<i>Numenius phaeopus</i>	M	O	-		

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			Summer	Winter		
White-rumped Sandpiper	<i>Calidris fuscicollis</i>	M	U-C	-		
Whooping Crane	<i>Grus americana</i>	M	R	-		
Willet	<i>Tringa semipalmatus</i>	B	R-C	-	✓	
Wilson's Phalarope	<i>Phalaropus tricolor</i>	B	U-C	-	✓	
Wilson's Snipe	<i>Gallinago delicata</i>	B	C	-	✓	
Yellow Rail	<i>Coturnicops noveboracensis</i>	B	R-U	-	✓	✓
<b>Waterfowl</b>						
American Black Duck	<i>Anas rubripes</i>	M	R-U	-	✓	
American Wigeon	<i>Anas americana</i>	B	C	-	✓	
Black Scoter	<i>Melanitta americana</i>	T	O	-		
Blue-winged Teal	<i>Anas discors</i>	B	A	-	✓	
Bufflehead	<i>Bucephala albeola</i>	B	U-C	-	✓	
Canada Goose	<i>Branta canadensis</i>	B	C-A	R	✓	
Canvasback	<i>Aythya valisineria</i>	B	C	-	✓	
Common Goldeneye	<i>Bucephala clangula</i>	B	U-C	O	✓	
Common Merganser	<i>Mergus merganser</i>	B	R-U	-		
Gadwall	<i>Anas strepera</i>	B	C	-	✓	
Greater Scaup	<i>Aythya marila</i>	M	R-U	-		
Greater White-fronted Goose	<i>Anser albifrons</i>	M	R-C	-		
Green-winged Teal	<i>Anas crecca</i>	B	C-U	-	✓	

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Hooded Merganser	<i>Lophodytes cucullatus</i>	B	U	-		
Lesser Scaup	<i>Aythya affinis</i>	B	C-A	O	✓	
Mallard	<i>Anas platyrhynchos</i>	B	A	R	✓	
Northern Pintail	<i>Anas acuta</i>	B	C-A	-	✓	
Northern Shoveler	<i>Anas clypeata</i>	B	C-A	-	✓	
Red-breasted Merganser	<i>Mergus serrator</i>	B	U	-		
Redhead	<i>Aythya americana</i>	B	C	-	✓	
Ring-necked Duck	<i>Aythya collaris</i>	B	U-C	-	✓	
Ross's Goose	<i>Chen rossii</i>	M	R-U	-		
Ruddy Duck	<i>Oxyura jamaicensis</i>	B	C	-	✓	
Snow Goose	<i>Chen caerulescens</i>	M	R-A	-	✓	
Surf Scoter	<i>Melanitta perspicillata</i>	T	O	-		
Tundra Swan	<i>Cygnus columbianus</i>	M			✓	
White-winged Scoter	<i>Melanitta fusca</i>	B	R	-		
Wood Duck	<i>Aix sponsa</i>	B	U	-	✓	
<b>Raptors</b>						
American Kestrel	<i>Falco sparverius</i>	B	C	R	✓	
Bald Eagle	<i>Haliaeetus leucocephalus</i>	M	R-C	R	✓	
Barred Owl	<i>Strix varia</i>	P	R	R		
Boreal Owl	<i>Aegolius funereus</i>	P	acc-R	R		

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Broad-winged Hawk	<i>Buteo platypterus</i>	B	C	-	✓	
Burrowing Owl	<i>Athene cunicularia</i>	B	R	-		
Coopers Hawk	<i>Accipiter cooperii</i>	B	U	-	✓	
Eastern Screech Owl	<i>Megascops asio</i>	P	U	U	✓	
Ferruginous Hawk	<i>Buteo regalis</i>	B	R	-	✓	✓
Golden Eagle	<i>Aquila chrysaetos</i>	B	acc-R	R	✓	
Great Gray Owl	<i>Strix nebulosa</i>	P	O-R	U		
Great Horned Owl	<i>Bubo virginianus</i>	P	C	C	✓	
Gyrfalcon	<i>Falco rusticolus</i>	W	R	-		
Long-eared Owl	<i>Asio otus</i>	B	U	-	✓	
Merlin	<i>Falco columbarius</i>	B	U	R	✓	
Northern Goshawk	<i>Accipiter gentilis</i>	B	R-U	U	□	
Northern Harrier	<i>Circus cyaneus</i>	B	C	O	✓	
Northern Hawk Owl	<i>Surnia ulula</i>	P	acc-o	R		
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	P	R-U	O	✓	
Osprey	<i>Pandion haliaetus</i>	B	U	-	✓	
Peregrine Falcon	<i>Falco peregrinus</i>	M	O	-	□	✓
Red-shouldered Hawk	<i>Buteo lineatus</i>	T	O	-	□	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	B	C	O	✓	
Rough-legged Hawk	<i>Buteo lagopus</i>	M	acc-C	U	✓	

**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Sharp-shinned Hawk	<i>Accipiter striatus</i>	B	U-C	-	✓	
Short-eared Owl	<i>Asio flammeus</i>	B	U-C	R	✓	✓
Snowy Owl	<i>Bubo scandiaca</i>	W	acc-C	C		
Swainson's Hawk	<i>Buteo swainsoni</i>	B	C	-	✓	
Turkey Vulture	<i>Cathartes aura</i>	B,N	U	-	✓	
<b>Upland Game Birds</b>						
Gray Partridge	<i>Perdix perdix</i>	P,I	C	C	✓	
Ring-necked Pheasant	<i>Phasianus colchicus</i>	P	R	R	✓	
Ruffed Grouse	<i>Bonasa umbellus</i>	P	C	C	✓	
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	B	C	C	✓	
Wild Turkey	<i>Meleagris gallopavo</i>	B	R	R	✓	
<b>Other Birds</b>						
American Three-toed Woodpecker	<i>Picoides dorsalis</i>	B				
Belted Kingfisher	<i>Megaceryle alcyon</i>	B	U-C	-	✓	
Black-backed Woodpecker	<i>Picoides arcticus</i>	B	U	-		
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	B	R-U	-	✓	
Chimney Swift	<i>Chaetura pelagica</i>	B	C	-	✓	✓
Common Nighthawk	<i>Chordeiles minor</i>	B	C	-	✓	✓
Downy Woodpecker	<i>Picoides pubescens</i>	P	C	C		



**Table 4.2-3: Bird Species with Potential to Occur in the Project Siting Study Area and Regional Assessment Area**

Common Name	Scientific Name	Potential Occurrence in the Project Area <sup>1</sup>	Abundance <sup>2</sup>		Confirmed Presence in Project Area and/or RAA	Species of Conservation Concern*
			Summer	Winter		
Hairy Woodpecker	<i>Picoides villosus</i>	P	C	C		
Mourning Dove	<i>Zenaida macroura</i>	B	A	R	✓	
Northern Flicker	<i>Colaptes auratus</i>	B	C	R		
Pileated Woodpecker	<i>Dryocopus pileatus</i>	P	R-U	U		
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	B	U	-	✓	✓
Rock Pigeon	<i>Columba livia</i>	P	A	A	✓	
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	B	U	-	✓	
Whip-poor-will	<i>Antrostomus vociferus</i>	B	acc-U	-	✓	✓
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	B	U-C	-	✓	

Source: Carey et al. 2003; Peterson 2002

\*MBESA (2002); SARA (1990); COSEWIC (2012)

<sup>1</sup>Note: B = breeding, M = migrant, P = permanent resident, N = northern extent of range, W = winter range, I = introduced, T=Transient

<sup>2</sup>Note: A = abundant, C = common, U = uncommon, R = rare, O = occasional, X = extirpated, acc = accidental



**Table 4.2-4: Breeding Bird Survey Results – St. Vital Transmission Complex – June 12, 2013**

Survey Site Details					Survey Observations*					
Date	Stop #	Easting	Northing	Time	Species	Bird Group	Number of Birds Observed (within 400 m)	Number of Birds Observed as Flyovers	Total Birds	General Habitat Description/ Reconnaissance Observations
6/12/2013	LETBBS01	664407	5456294	5:02	Alder Flycatcher	Passerine	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	American Bittern	Waterbird	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Blackpoll Warbler	Passerine	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Canada Goose	Waterfowl	2		2	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Clay-colored Sparrow	Passerine	1		1	Boreal Chorus Frogs heard to the north
6/12/2013	LETBBS01	664407	5456294	5:02	Le Conte's Sparrow	Passerine	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Least Flycatcher	Passerine	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Mourning Dove	Passerine	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Ruffed Grouse	Upland Gamebird	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Savannah Sparrow	Passerine	2		2	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Sora	Waterbird	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Western Meadowlark	Passerine	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS01	664407	5456294	5:02	Yellow Warbler	Passerine	1		1	pasture with aspen bluffs north and south of rd
6/12/2013	LETBBS02	663565	5456224	5:37	Baltimore Oriole	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Clay-colored Sparrow	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Le Conte's Sparrow	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Least Flycatcher	Passerine	2		2	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Magnolia Warbler	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Red-eyed Vireo	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Red-winged Blackbird	Passerine	2		2	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Savannah Sparrow	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Song Sparrow	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Western Meadowlark	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Wilson's Snipe	Shorebird		1	1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS02	663565	5456224	5:37	Yellow Warbler	Passerine	1		1	pasture, some bluffs north; deciduous to south
6/12/2013	LETBBS03	662610	5456193	5:48	American Bittern	Waterbird	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Baltimore Oriole	Passerine	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Clay-colored Sparrow	Passerine	4		4	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Eastern Phoebe	Passerine	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Mourning Dove	Passerine	2		2	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Ruffed Grouse	Upland Gamebird	1		1	pasture & deciduous bluffs

**Table 4.2-4: Breeding Bird Survey Results – St. Vital Transmission Complex – June 12, 2013**

Survey Site Details					Survey Observations*					
Date	Stop #	Easting	Northing	Time	Species	Bird Group	Number of Birds Observed (within 400 m)	Number of Birds Observed as Flyovers	Total Birds	General Habitat Description/ Reconnaissance Observations
6/12/2013	LETBBS03	662610	5456193	5:48	Savannah Sparrow	Passerine	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Song Sparrow	Passerine	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Veery	Passerine	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Western Meadowlark	Passerine	2		2	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Wilson's Snipe	Shorebird	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Woodpecker sp.	Woodpecker	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS03	662610	5456193	5:48	Yellow Warbler	Passerine	1		1	pasture & deciduous bluffs
6/12/2013	LETBBS04	661810	5456163	6:02	American Robin	Passerine	1		1	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Baltimore Oriole	Passerine	1		1	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Black-and-white Warbler	Passerine	1		1	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Brewer's Blackbird	Passerine	2		2	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Clay-colored Sparrow	Passerine	1		1	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Common Yellowthroat	Passerine	2		2	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Rose-breasted Grosbeak	Passerine	1		1	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Song Sparrow	Passerine	1		1	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Veery	Passerine	1		1	deciduous forest
6/12/2013	LETBBS04	661810	5456163	6:02	Woodpecker sp.	Woodpecker	1		1	deciduous forest
6/12/2013	LETBBS05	660706	5456134	6:15	Clay-colored Sparrow	Passerine	1		1	deciduous on both sides, scrubby willows to north and south
6/12/2013	LETBBS05	660706	5456134	6:15	Common Yellowthroat	Passerine	3		3	Boreal Chorus Frogs heard
6/12/2013	LETBBS05	660706	5456134	6:15	Eastern Kingbird	Passerine	1		1	deciduous on both sides of road, scrubby willows to north and south
6/12/2013	LETBBS05	660706	5456134	6:15	Red-winged Blackbird	Passerine	3		3	deciduous on both sides of road, scrubby willows to north and south
6/12/2013	LETBBS05	660706	5456134	6:15	Ruffed Grouse	Upland Gamebird	1		1	deciduous on both sides of road, scrubby willows to north and south
6/12/2013	LETBBS05	660706	5456134	6:15	Veery	Passerine	1		1	deciduous on both sides of road, scrubby willows to north and south
6/12/2013	LETBBS05	660706	5456134	6:15	Wilson's Snipe	Shorebird	1		1	deciduous on both sides of road, scrubby willows to north and south
6/12/2013	LETBBS05	660706	5456134	6:15	Yellow Warbler	Passerine	2		2	deciduous on both sides of road, scrubby willows to north and south
6/12/2013	LETBBS06	659875	5456105	6:26	Alder Flycatcher	Passerine	1		1	cropland with shelterbelts
6/12/2013	LETBBS06	659875	5456105	6:26	American Crow	Passerine	1		1	cropland with shelterbelts
6/12/2013	LETBBS06	659875	5456105	6:26	Black-and-white Warbler	Passerine	1		1	cropland with shelterbelts
6/12/2013	LETBBS06	659875	5456105	6:26	Bobolink	Passerine	1		1	cropland with shelterbelts
6/12/2013	LETBBS06	659875	5456105	6:26	Clay-colored Sparrow	Passerine	1		1	cropland with shelterbelts

**Table 4.2-4: Breeding Bird Survey Results – St. Vital Transmission Complex – June 12, 2013**

Survey Site Details					Survey Observations*					
Date	Stop #	Easting	Northing	Time	Species	Bird Group	Number of Birds Observed (within 400 m)	Number of Birds Observed as Flyovers	Total Birds	General Habitat Description/ Reconnaissance Observations
6/12/2013	LETBBS06	659875	5456105	6:26	Le Conte's Sparrow	Passerine	1		1	cropland with shelterbelts
6/12/2013	LETBBS06	659875	5456105	6:26	Mourning Dove	Passerine	1		1	cropland with shelterbelts
6/12/2013	LETBBS06	659875	5456105	6:26	Red-winged Blackbird	Passerine	1		1	cropland with shelterbelts
6/12/2013	LETBBS06	659875	5456105	6:26	Savannah Sparrow	Passerine	3		3	cropland with shelterbelts
6/12/2013	LETBBS06	659875	5456105	6:26	Western Meadowlark	Passerine	3		3	Boreal Chorus Frogs heard
6/12/2013	LETBBS07	661529	5455331	6:38	Alder Flycatcher	Passerine	1		1	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	American Robin	Passerine	3		3	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Barn Swallow	Passerine		11	11	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Boreal Chickadee	Passerine	1		1	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Cedar Waxwing	Passerine	3		3	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Clay-colored Sparrow	Passerine	2		2	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Common Yellowthroat	Passerine	1		1	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Eastern Wood-Pewee	Passerine	1		1	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Northern Waterthrush	Passerine	2		2	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Ruffed Grouse	Upland Gamebird	1		1	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS07	661529	5455331	6:38	Veery	Passerine	1		1	treed row-mixedwood; residential yards-both sides; grassy ditches
6/12/2013	LETBBS08	661550	5454534	6:05	Alder Flycatcher	Passerine	1		1	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	American Bittern	Waterbird	1		1	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Baltimore Oriole	Passerine	2		2	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Common Yellowthroat	Passerine	2		2	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Least Flycatcher	Passerine	1		1	Boreal Chorus Frogs heard
6/12/2013	LETBBS08	661550	5454534	6:05	Mourning Dove	Passerine	1		1	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Northern Flicker	Woodpecker	1		1	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Red-winged Blackbird	Passerine	3		3	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Ruffed Grouse	Upland Gamebird	1		1	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Song Sparrow	Passerine	2		2	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Sora	Waterbird	1		1	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Wilson's Snipe	Shorebird		1	1	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS08	661550	5454534	6:05	Yellow Warbler	Passerine	2		2	large wetland to the east; wet deciduous pasture to west
6/12/2013	LETBBS09	661574	5453696	7:01	American Bittern	Waterbird	1		1	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	American Robin	Passerine	1		1	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	Common Yellowthroat	Passerine	2		2	wetland/sedge meadow to east; wooded/deciduous to west

**Table 4.2-4: Breeding Bird Survey Results – St. Vital Transmission Complex – June 12, 2013**

Survey Site Details					Survey Observations*					
Date	Stop #	Easting	Northing	Time	Species	Bird Group	Number of Birds Observed (within 400 m)	Number of Birds Observed as Flyovers	Total Birds	General Habitat Description/ Reconnaissance Observations
6/12/2013	LETBBS09	661574	5453696	7:01	Least Flycatcher	Passerine	1		1	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	Mourning Dove	Passerine	1		1	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	Red-winged Blackbird	Passerine	5		5	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	Ruffed Grouse	Upland Gamebird	1		1	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	Song Sparrow	Passerine	1		1	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	Wilson's Snipe	Shorebird	1		1	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	Woodpecker sp.	Woodpecker	1		1	wetland/sedge meadow to east; wooded/deciduous to west
6/12/2013	LETBBS09	661574	5453696	7:01	Yellow Warbler	Passerine	3		3	Boreal Chorus Frogs heard
6/12/2013	LETBBS10	661609	5452869	7:13	Alder Flycatcher	Passerine	2		2	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS10	661609	5452869	7:13	Clay-colored Sparrow	Passerine	1		1	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS10	661609	5452869	7:13	Common Yellowthroat	Passerine	1		1	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS10	661609	5452869	7:13	Eastern Kingbird	Passerine	1		1	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS10	661609	5452869	7:13	Gray Catbird	Passerine	1		1	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS10	661609	5452869	7:13	Hairy Woodpecker	Woodpecker	1		1	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS10	661609	5452869	7:13	Red-winged Blackbird	Passerine	3		3	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS10	661609	5452869	7:13	Song Sparrow	Passerine	1		1	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS10	661609	5452869	7:13	Wilson's Snipe	Shorebird	1		1	Boreal Chorus Frogs heard
6/12/2013	LETBBS10	661609	5452869	7:13	Yellow Warbler	Passerine	1		1	willow/aspen scrub to west; wetland to east
6/12/2013	LETBBS11	660022	5451157	7:34	Alder Flycatcher	Passerine	1		1	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	American Crow	Passerine	1		1	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	American Goldfinch	Passerine	1		1	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	Clay-colored Sparrow	Passerine	1		1	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	Eastern Kingbird	Passerine	2		2	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	Killdeer	Shorebird	2		2	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	Merlin	Raptor		1	1	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	Red-winged Blackbird	Passerine	1		1	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	Song Sparrow	Passerine	2		2	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	Western Meadowlark	Passerine	2		2	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS11	660022	5451157	7:34	Wilson's Snipe	Shorebird	1		1	pasture/residence(active) to north, deciduous bluffs and cropland to south
6/12/2013	LETBBS12	659223	5451168	7:43	American Robin	Passerine	2		2	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS12	659223	5451168	7:43	Clay-colored Sparrow	Passerine	1		1	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS12	659223	5451168	7:43	Killdeer	Shorebird	3		3	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS12	659223	5451168	7:43	Red-winged Blackbird	Passerine	2		2	pasture with wooded bluffs north and south sides of road

**Table 4.2-4: Breeding Bird Survey Results – St. Vital Transmission Complex – June 12, 2013**

Survey Site Details					Survey Observations*					
Date	Stop #	Easting	Northing	Time	Species	Bird Group	Number of Birds Observed (within 400 m)	Number of Birds Observed as Flyovers	Total Birds	General Habitat Description/ Reconnaissance Observations
6/12/2013	LETBBS12	659223	5451168	7:43	Sandhill Crane	Waterbird	11		11	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS12	659223	5451168	7:43	Savannah Sparrow	Passerine	1		1	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS12	659223	5451168	7:43	Song Sparrow	Passerine	1		1	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS12	659223	5451168	7:43	Tree Swallow	Passerine	20		20	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS12	659223	5451168	7:43	Western Meadowlark	Passerine	1		1	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS12	659223	5451168	7:43	Wilson's Snipe	Shorebird		1	1	pasture with wooded bluffs north and south sides of road
6/12/2013	LETBBS13	657570	5451129	7:57	American Robin	Passerine	1		1	pasture to north, deciduous to south
6/12/2013	LETBBS13	657570	5451129	7:57	Bobolink	Passerine	1		1	pasture to north, deciduous to south
6/12/2013	LETBBS13	657570	5451129	7:57	Clay-colored Sparrow	Passerine	3		3	pasture to north, deciduous to south
6/12/2013	LETBBS13	657570	5451129	7:57	Red-winged Blackbird	Passerine	1		1	pasture to north, deciduous to south
6/12/2013	LETBBS13	657570	5451129	7:57	Savannah Sparrow	Passerine	1		1	pasture to north, deciduous to south
6/12/2013	LETBBS13	657570	5451129	7:57	Song Sparrow	Passerine	2		2	pasture to north, deciduous to south
6/12/2013	LETBBS13	657570	5451129	7:57	Western Meadowlark	Passerine	1		1	pasture to north, deciduous to south
6/12/2013	LETBBS13	657570	5451129	7:57	Wilson's Snipe	Shorebird		1	1	pasture to north, deciduous to south
6/12/2013	LETBBS14	655108	5451007	8:01	Clay-colored Sparrow	Passerine	1		1	dead-end road at river; wooded pasture; residence
6/12/2013	LETBBS14	655108	5451007	8:01	Eastern Wood-Pewee	Passerine	1		1	dead-end road at river; wooded pasture; residence
6/12/2013	LETBBS14	655108	5451007	8:01	Mourning Dove	Passerine	1		1	dead-end road at river; wooded pasture; residence
6/12/2013	LETBBS14	655108	5451007	8:01	Rose-breasted Grosbeak	Passerine	1		1	dead-end road at river; wooded pasture; residence
6/12/2013	LETBBS14	655108	5451007	8:01	Yellow Warbler	Passerine	2		2	dead-end road at river; wooded pasture; residence
6/12/2013	LETBBS15	655082	5451922	8:21	Alder Flycatcher	Passerine	1		1	deciduous on both sides of road
6/12/2013	LETBBS15	655082	5451922	8:21	American Robin	Passerine	1		1	deciduous on both sides of road
6/12/2013	LETBBS15	655082	5451922	8:21	Least Flycatcher	Passerine	1		1	deciduous on both sides of road
6/12/2013	LETBBS15	655082	5451922	8:21	Northern Waterthrush	Passerine	1		1	deciduous on both sides of road
6/12/2013	LETBBS15	655082	5451922	8:21	Red-eyed Vireo	Passerine	2		2	deciduous on both sides of road
6/12/2013	LETBBS15	655082	5451922	8:21	Song Sparrow	Passerine	1		1	deciduous on both sides of road
6/12/2013	LETBBS15	655082	5451922	8:21	Woodpecker sp.	Woodpecker	1		1	deciduous on both sides of road
6/12/2013	LETBBS15	655082	5451922	8:21	Yellow Warbler	Passerine	1		1	deciduous on both sides of road
6/12/2013	LETBBS16	658125	5447878	8:37	American Robin	Passerine	1		1	mixture of pasture and deciduous bluffs
6/12/2013	LETBBS16	658125	5447878	8:37	Black-billed Magpie	Passerine	1		1	mixture of pasture and deciduous bluffs
6/12/2013	LETBBS16	658125	5447878	8:37	Marbled Godwit	Shorebird		1	1	mixture of pasture and deciduous bluffs
6/12/2013	LETBBS16	658125	5447878	8:37	Red-winged Blackbird	Passerine	4		4	mixture of pasture and deciduous bluffs
6/12/2013	LETBBS16	658125	5447878	8:37	Western Meadowlark	Passerine	1		1	mixture of pasture and deciduous bluffs
6/12/2013	LETBBS16	658125	5447878	8:37	Wilson's Snipe	Shorebird		1	1	mixture of pasture and deciduous bluffs

**Table 4.2-4: Breeding Bird Survey Results – St. Vital Transmission Complex – June 12, 2013**

Survey Site Details					Survey Observations*					
Date	Stop #	Easting	Northing	Time	Species	Bird Group	Number of Birds Observed (within 400 m)	Number of Birds Observed as Flyovers	Total Birds	General Habitat Description/ Reconnaissance Observations
6/12/2013	LETBBS16	658125	5447878	8:37	Yellow Warbler	Passerine	1		1	mixture of pasture and deciduous bluffs
6/12/2013	LETBBS17	654848	5447799	8:48	Bobolink	Passerine	1		1	pasture to east & west
6/12/2013	LETBBS17	654848	5447799	8:48	Canada Goose	Waterfowl		75	75	pasture to east & west
6/12/2013	LETBBS17	654848	5447799	8:48	Eastern Kingbird	Passerine	2		2	pasture to east & west
6/12/2013	LETBBS17	654848	5447799	8:48	Red-winged Blackbird	Passerine	5		5	pasture to east & west
6/12/2013	LETBBS17	654848	5447799	8:48	Savannah Sparrow	Passerine	1		1	pasture to east & west
6/12/2013	LETBBS17	654848	5447799	8:48	Snow Goose	Waterfowl		1	1	pasture to east & west
6/12/2013	LETBBS17	654848	5447799	8:48	Western Meadowlark	Passerine	1		1	pasture to east & west
6/12/2013	LETBBS18	656530	5446139	9:05	Barn Swallow	Passerine	1		1	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS18	656530	5446139	9:05	Bobolink	Passerine	1		1	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS18	656530	5446139	9:05	Common Yellowthroat	Passerine	1		1	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS18	656530	5446139	9:05	Marbled Godwit	Shorebird		1	1	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS18	656530	5446139	9:05	Mourning Dove	Passerine		1	1	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS18	656530	5446139	9:05	Savannah Sparrow	Passerine	2		2	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS18	656530	5446139	9:05	Song Sparrow	Passerine	1		1	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS18	656530	5446139	9:05	Western Meadowlark	Passerine	1		1	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS18	656530	5446139	9:05	Wilson's Snipe	Shorebird		1	1	pasture to east & crops west; deciduous to northwest
6/12/2013	LETBBS19	656562	5445166	9:14	Bobolink	Passerine	2		2	pasture to west & cropland to east
6/12/2013	LETBBS19	656562	5445166	9:14	Clay-colored Sparrow	Passerine	1		1	pasture to west & cropland to east
6/12/2013	LETBBS19	656562	5445166	9:14	Marbled Godwit	Shorebird	2		2	pasture to west & cropland to east
6/12/2013	LETBBS19	656562	5445166	9:14	Savannah Sparrow	Passerine	1		1	pasture to west & cropland to east
6/12/2013	LETBBS19	656562	5445166	9:14	Western Meadowlark	Passerine	1		1	pasture to west & cropland to east
6/12/2013	LETBBS20	651827	5439464	9:34	American Crow	Passerine	1		1	pasture to west & cropland to east
6/12/2013	LETBBS20	651827	5439464	9:34	Bobolink	Passerine	1		1	pasture to west & cropland to east
6/12/2013	LETBBS20	651827	5439464	9:34	Clay-colored Sparrow	Passerine	1		1	pasture to west & cropland to east
6/12/2013	LETBBS20	651827	5439464	9:34	Eastern Wood-Pewee	Passerine	2		2	pasture to west & cropland to east
6/12/2013	LETBBS20	651827	5439464	9:34	Northern Flicker	Woodpecker	1		1	pasture to west & cropland to east
6/12/2013	LETBBS20	651827	5439464	9:34	Red-winged Blackbird	Passerine	3		3	pasture to west & cropland to east
6/12/2013	LETBBS20	651827	5439464	9:34	Savannah Sparrow	Passerine	2		2	pasture to west & cropland to east
6/12/2013	LETBBS20	651827	5439464	9:34	Western Meadowlark	Passerine	2		2	pasture to west & cropland to east

\* Weather conditions during surveys – temperatures ranged from 9 to 18°C; winds calm to N/NE @ 15 km/h; 0 precipitation; 0-20% cloud



The Project Area falls within the Mississippi Flyway, a widespread and major migratory route travelled by many birds during migration to and from northern breeding grounds (Lincoln et al. 1998). Many bird species recorded in the Project Area are migratory, some of which only pass through the area during migration, while others utilize local habitats throughout the breeding season (April 15 – July 31). Only a select number of bird species are resident to the area and occupy local habitats year-round.

Eighteen species of conservation concern (SOCC), as listed by the Manitoba Endangered Species Act (MESA), the federal Species at Risk Act (SARA) and/or classified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), have the potential to occur within Project Area and/or RAA (MESA 1990, SARA 2002, COSEWIC 2013; Table 4.2-3). Existing bird survey information available has confirmed the presence of 16 'at risk' species within the Project Area/RAA (Table 4.2-3; North American Breeding Bird Survey Program 2013; Manitoba Breeding Bird Atlas 2013; MBCDC 2013; TetrES 2007). Bobolink was the only species of conservation concern identified in the Project Area during June 2013 surveys (observed at 30% of all survey stops; Table 4.2-4). Characteristics and habitat preferences of these species were further discussed in Section 2.2.3).

No Important Bird Areas (IBA) are present within the Project Area (IBA 2013). The nearest IBA is located within Grant's Lake Wildlife Management Area (WMA), approximately 30 km northeast of the La Verendrye station.

## **4.2.4 Mammals**

Within Prairie and Boreal Plains Ecozones, cultivated farmland provides some habitat for certain species such as rodents, and forage habitat for other species such as bats, deer and other ungulates (Table 4.2-5). However, carnivores and fur-bearers would be limited to more ecologically diverse areas such as woodlots, wetlands and pastureland. Even small woodlots may contain enough species diversity to support several species (Swanson et al. 2005).

A search of the Manitoba Conservation Data Centre database returned no results of at risk mammal species within the study area. No mammal species at risk have been noted in other Environmental Assessments that have been conducted in the Study Area.

### **4.2.4.1 Ungulates**

The most common large herbivore in both ecozones is now the invasive white-tailed deer. White-tailed deer are well adapted to human activity and can be found wherever browse and suitable cover are available. White-tailed deer tracks were found, during field studies, near wetlands and along river banks, and along-side less-travelled roadways.

**Table 4.2-5: Mammals Potentially Occurring Within the Project Area**

Scientific Name	Common Name	Likely To Occur Given Habitat	MESA, COSEWIC or SARA listed
<i>Blarina brevicauda</i>	Short-tail Shrew	✓	
<i>Condylura cristata</i>	Star-nosed Mole	✓	
<i>Microsorex hoyi</i>	Pygmy Shrew	✓	
<i>Sorex palustris</i>	American Water Shrew	✓	
<i>Sorex cinereus</i>	Masked Shrew	✓	
<i>Sorex arcticus</i>	Arctic Shrew	✓	
<i>Myotis lucifugus</i>	Little Brown Myotis	✓	
<i>Myotis septentrionalis</i>	Northern Myotis	✓	
<i>Lasionycteris noctivagans</i>	Silver-haired Bat	✓	
<i>Lasiurus borealis</i>	Eastern Red Bat	✓	
<i>Eptesicus fuscus</i>	Big Brown Bat	✓	
<i>Lasiurus cinereus</i>	Hoary Bat	✓	
<i>Sylvilagus floridanus</i>	Eastern Cottontail	✓	
<i>Lepus townsendi</i>	White-tailed Jackrabbit	✓	
<i>Lepus americanus</i>	Snowshoe Hare		
<i>Castor canadensis</i>	Beaver	✓	
<i>Erethizon dorsatum</i>	Porcupine	✓	
<i>Ondatra zibethicus</i>	Muskrat	✓	
<i>Zapus hudsonius</i>	Meadow Jumping Mouse	✓	
<i>Peromyscus maniculatus</i>	Deer Mouse	✓	
<i>Onychomys leucogaster</i>	Northern Grasshopper Mouse	✓	
<i>Phenacomys intermedius</i>	Heather Vole	✓	
<i>Mus demesticus</i>	House Mouse	✓	
<i>Microtus pennsylvanicus</i>	Meadow Vole	✓	
<i>Microtus ochrogaster</i>	Prairie Vole	✓	
<i>Clethrionomys gapperi</i>	Gapper's Red-backed Vole	✓	
<i>Marmota monax</i>	Woodchuck	✓	

**Table 4.2-5: Mammals Potentially Occurring Within the Project Area**

Scientific Name	Common Name	Likely To Occur Given Habitat	MESA, COSEWIC or SARA listed
<i>Spermophilus tridecemlineatus</i>	Thirteen-lined Ground Squirrel	✓	
<i>Citellus franklini</i>	Franklin Ground Squirrel	✓	
<i>Citellus richardsoni</i>	Richardson's Ground Squirrel	✓	
<i>Tamias striatus</i>	Eastern Chipmunk	✓	
<i>Eutamias minimus</i>	Least Chipmunk	✓	
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	✓	
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	✓	
<i>Glaucomys sabrinus</i>	Northern Flying Squirrel		
<i>Thomomys talpoides</i>	Northern Pocket Gopher	✓	
<i>Geomys bursarius</i>	Plains Pocket Gopher	✓	No, but ranked S3
<i>Ursus americanus</i>	Black Bear		
<i>Procyon lotor</i>	Raccoon	✓	
<i>Martes americana</i>	Marten		
<i>Mustela rixosa</i>	Least Weasel	✓	
<i>Mustela frenata</i>	Long-tail Weasel	✓	
<i>Mustela erminea</i>	Short-tail Weasel	✓	
<i>Mustela vison</i>	Mink		
<i>Martes pennanti</i>	Fisher		
<i>Lutra canadensis</i>	River Otter		
<i>Taxidea taxus taxus</i>	American Badger	✓	✓
<i>Mephitis mephitis</i>	Striped Skunk	✓	
<i>Canis latrans</i>	Coyote	✓	
<i>Canis lupus</i>	Gray Wolf		
<i>Vulpes fulva</i>	Red Fox	✓	
<i>Lynx rufus</i>	Bobcat	✓	
<i>Lynx lynx</i>	Lynx		
<i>Felis concolor</i>	Cougar	✓	
<i>Odocoileus virginianus</i>	White-tailed Deer	✓	

**Table 4.2-5: Mammals Potentially Occurring Within the Project Area**

Scientific Name	Common Name	Likely To Occur Given Habitat	MESA, COSEWIC or SARA listed
<i>Cervus canadensis</i>	Elk		
<i>Antilocapra Americana</i>	Pronghorn Antelope		
<i>Alces alces</i>	Moose		

Source: Banfield 1974; Burt and Grossenheider 1980; COSEWIC 2013

While moose might be expected, during winter months, wherever large patches of deciduous forest occur (MMF 1995), none were observed during any previous environmental assessment surveys and anecdotal evidence suggests no longer exist within the Study Area. As a result, moose would be considered rare in the Project Area.

A herd of elk has been noted south of the community of Vita, MB. Its presence was confirmed during aerial surveys with one herd numbering 24 animals and a smaller herd of 6 animals observed, however they are not expected to occur as far west as the Project Area.

Historically, pronghorn antelope, mule deer and bison were also common in the Prairie and Boreal Plains Ecozones (Smith et al. 1999).

#### **4.2.4.2 Furbearers**

The only large carnivores in the Prairie Ecozone are the black bear, coyote and bobcat, while these species, plus wolf and lynx can be found in the Boreal Plains Ecozone (Smith et al. 1999). Coyote tracks were common throughout the Study Area, and a single coyote was observed near the Roseau River First Nation.

Common smaller carnivores in the Boreal Plains Ecozone include the least weasel, river otter, American badger, striped skunk, red fox, marten, and fisher. Data regarding small mammal use of the study area are generally lacking. While hunting and trapping both occur within the study area, the areas are “open” and thus instances of furbearer and ungulate harvest cannot be linked geographically.

There are many rodents and lagomorphs that are found in both ecozones, such as the northern pocket gopher, muskrat, beaver, woodchuck, Richardson's ground squirrel, thirteen-lined ground squirrel, Franklin's ground squirrel, least chipmunk, porcupine, eastern cottontail, and snowshoe hare. Olive-backed pocket mouse, Ord's kangaroo rat, and white-footed mouse are inhabitants of the Prairie Ecozone (Smith et al. 1999).

Surveys confirmed the supposition that the Regional Study area supports populations of species assemblages that are typically found around human development. White-tailed deer, red fox and coyotes are common residents in agri-Manitoba and appear to adapt well to human activity.

In less developed areas of the Study Area, such as woodlots and pastures along the east side of the Study Area, furbearers are more common as well as predators like coyotes.

Past and present land use practices throughout the prairies have reduced areas of suitable wildlife habitat available for mammal species. Environmental assessment of project effects will need to consider direct and indirect habitat loss and alteration within the context of limited existing availability of wildlife habitat for mammal species and populations that occur within in the Project Area.



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### St. Vital Transmission Complex

#### Project Infrastructure

- Electrical Station
- Final Preferred Route (V95L)
- La Verendrye - St. Vital (Y36V) Transmission Line
- Project Siting Study Area

#### Landbase

- Community
- Trans Canada
- Provincial Highway
- Provincial Road
- Railway
- City / Town
- Rural Municipality
- First Nation
- Provincial Park
- Wildlife Management Area

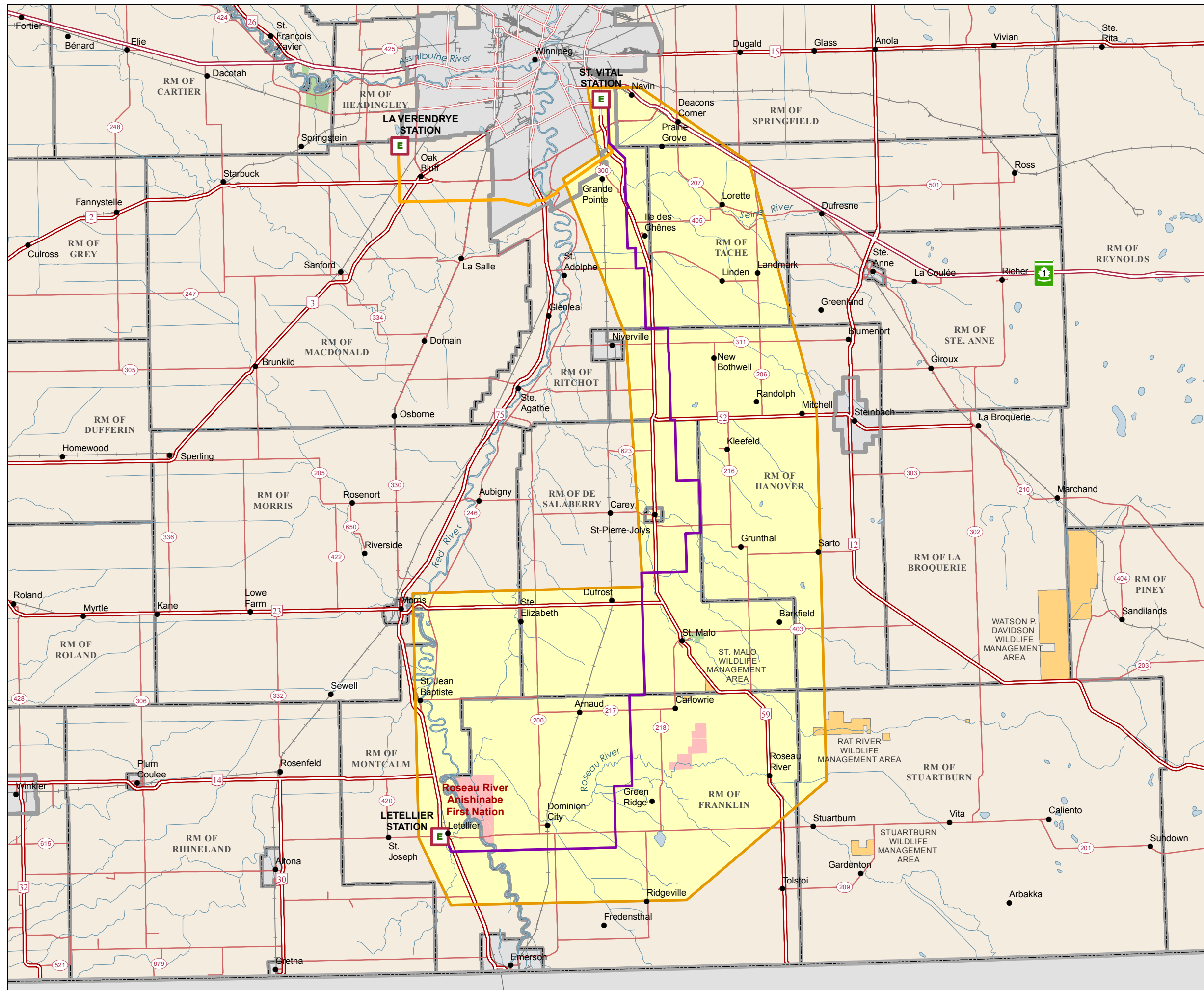
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 Data Source: MBHydro, ProvMB, NRCAN  
 Date Created: May 21, 2014



0 5 10 Kilometres  
 0 2.5 5 Miles

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### Project Siting Study Area





## St. Vital Transmission Complex

### Project Infrastructure

- Electrical Station
- Final Preferred Route (V95L)
- La Verendrye - St. Vital (Y36V) Transmission Line
- Project Siting Study Area

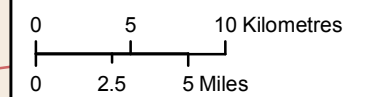
### Land Cover Classification

- |  |                 |  |                                |
|--|-----------------|--|--------------------------------|
|  | Annual Cropland |  | Mixedwood Dense                |
|  | Broadleaf Dense |  | Mixedwood Open                 |
|  | Broadleaf Open  |  | Perennial Cropland and Pasture |
|  | Cloud           |  | Shadow                         |
|  | Developed       |  | Shrub Tall                     |
|  | Exposed Land    |  | Water                          |
|  | Grassland       |  | Wetland - Herb                 |
|  | Herb            |  | Wetland - Treed                |

### Landbase

- Community
- Trans Canada
- Provincial Highway
- Provincial Road
- Railway
- City / Town
- First Nation
- National/Provincial Park
- Wildlife Management Area

Coordinate System: UTM Zone 14N NAD83  
 Data Source: MBHydro, ProvMB, NRCAN  
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## Land Cover Classification





### St. Vital Transmission Complex

#### Project Infrastructure

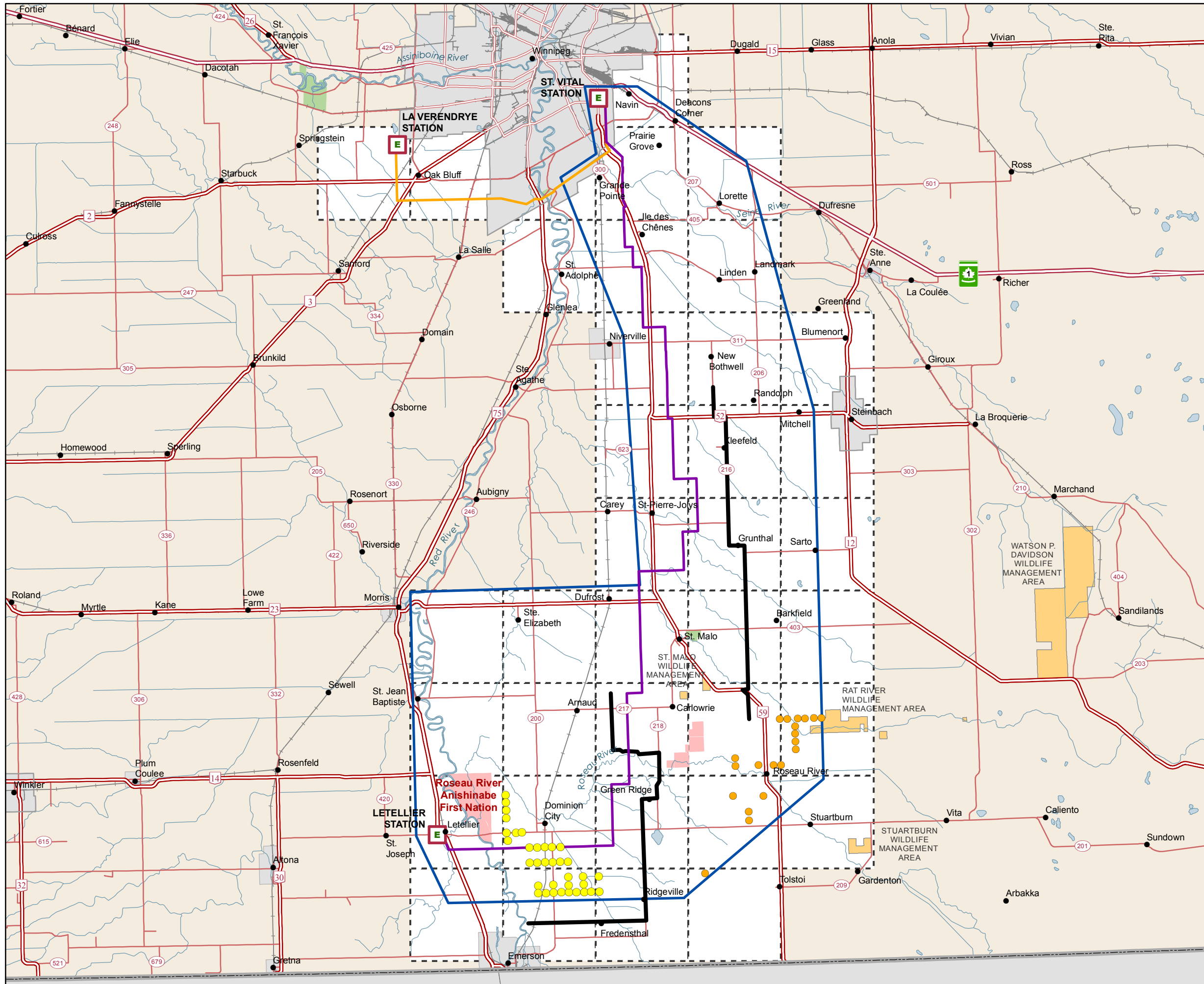
- Final Preferred Route (V95L)
- La Verendrye - St. Vital (Y36V) Transmission Line

#### Bird Survey Locations

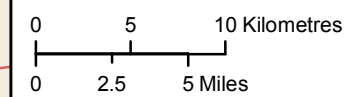
- June 2013 Breeding Bird Surveys
- Stantec 2007 Breeding Bird Surveys
- North American Breeding Bird Survey Routes
- Manitoba Breeding Bird Atlas Survey Squares

#### Landbase

- Community
- + Trans Canada
- 20 Provincial Highway
- Provincial Road
- Railway
- City / Town
- First Nation
- National/Provincial Park
- Wildlife Management Area



Coordinate System: UTM Zone 14N NAD83  
 Data Source: MBHydro, ProvMB, NRCAN  
 Date Created: May 21, 2014



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### Existing Multi-year Bird Survey Locations



## St. Vital Transmission Complex

### Project Infrastructure

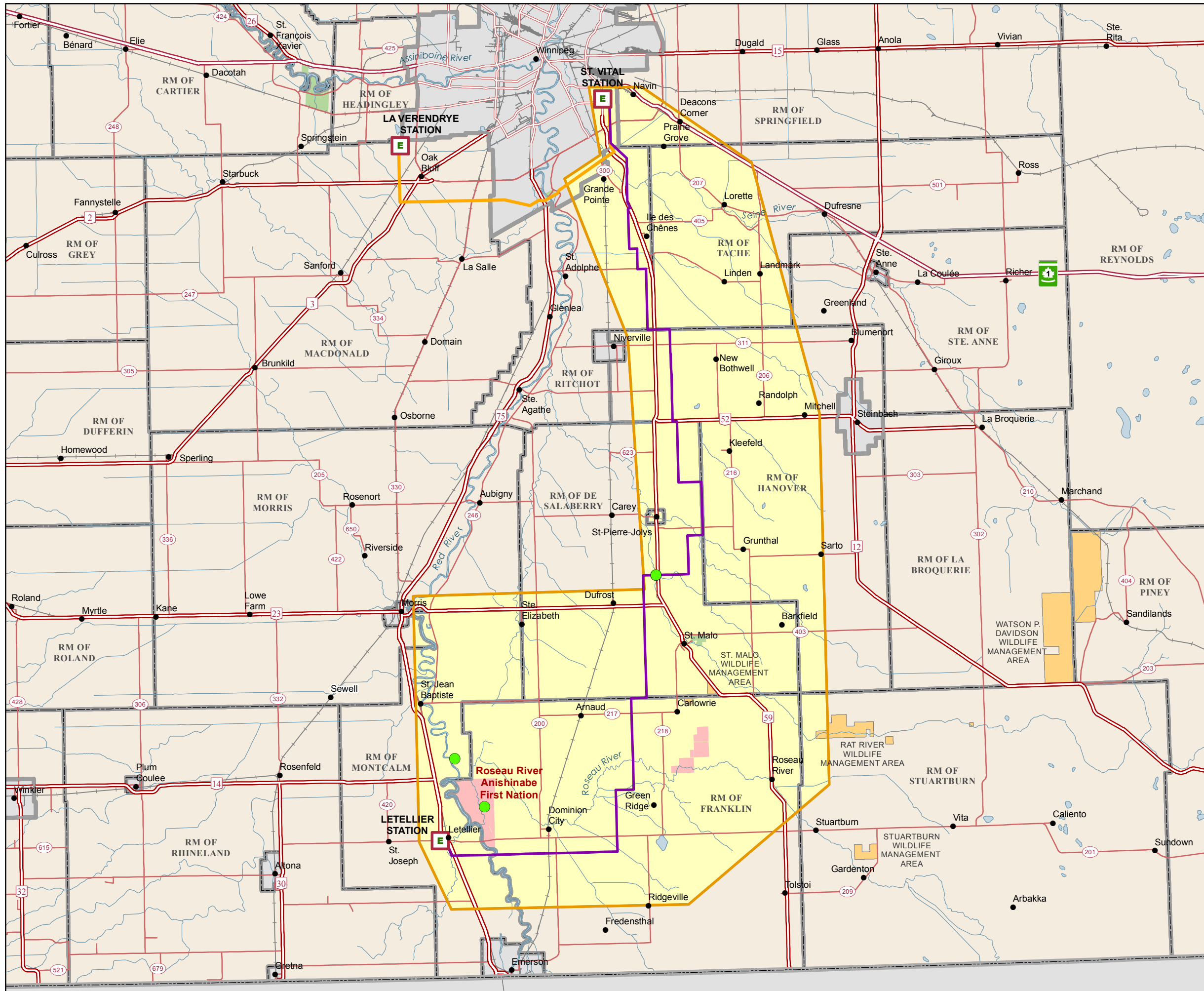
- Electrical Station
- Final Preferred Route (V95L)
- La Verendrye - St. Vital (Y36V) Transmission Line
- Project Siting Study Area

### Mammal Survey Results

- Mammal Observation

### Landbase

- Community
- Trans Canada
- Provincial Highway
- Provincial Road
- Railway
- City / Town
- Rural Municipality
- First Nation
- Provincial Park
- Wildlife Management Area



Coordinate System: UTM Zone 14N NAD83  
 Data Source: MBHydro, ProvMB, NRCAN  
 Date Created: May 28, 2014



0 5 10 Kilometres  
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## Mammal Survey Results



### St. Vital Transmission Complex

#### Project Infrastructure

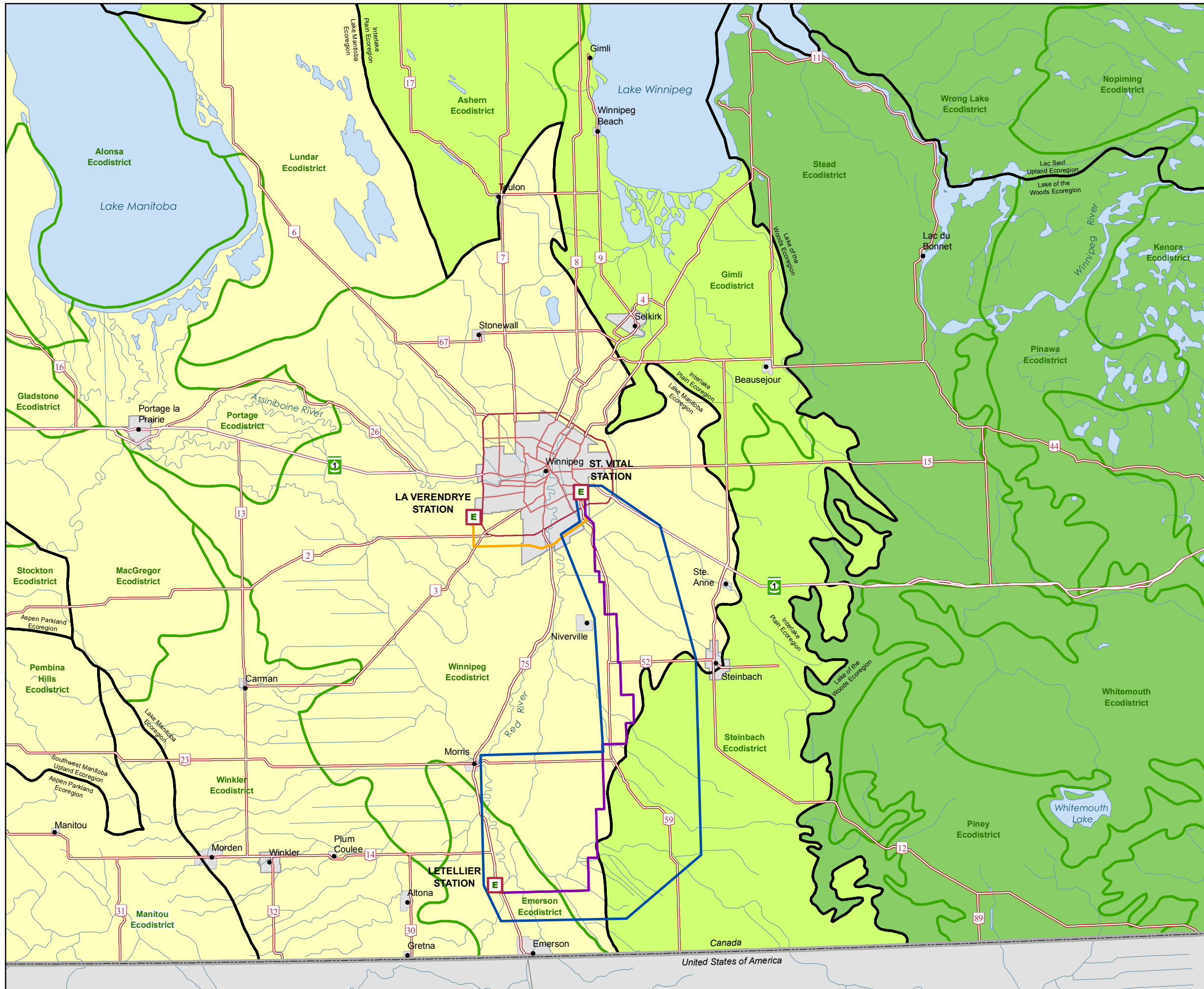
- Electrical Station
- Final Preferred Route (V95L)
- La Verendrye-St. Vital (Y36V) Transmission Line
- Project Siting Study Area

#### Terrestrial Ecozones, Ecozones and Ecodistricts

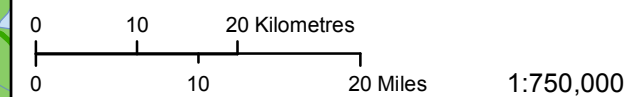
- Boreal Plain Ecozone
- Boreal Shield Ecozone
- Prairie Ecozone
- Ecoregion
- Ecodistrict

#### Landbase

- Trans Canada
- Provincial Highway
- Provincial Road
- City / Town



Coordinate System: UTM Zone 14N NAD83  
 Data Source: MBHydro, ProvMB, NRCAN  
 Date Created: May 21, 2014



### Terrestrial Ecozones, Ecozones and Ecodistricts

