7.0 Existing environment

7.1 Biophysical environment

7.1.1 Physical / meteorological environment

7.1.1.1 Climate

The Project area is located in the Winnipeg Ecodistrict within the Prairies Ecozone in southern Manitoba (Smith et al. 1998). The climate is described as having short, warm summers and long, cold winters. The mean annual temperature is roughly 2.4°C with an average growing season of 183 days and around 1720 growing degree days (Smith et al., 1998). The mean annual precipitation is approximately 515 mm, but is highly variable from year to year with the majority of precipitation occurring from late spring through summer (Smith et al., 1998). Smith et al (1998) classified this ecodistrict as having a cool, subhumid to humid, Boreal to a moderately cold, subhumid, Cryoboreal soil climate.

Climate normals for the period of 1981 to 2010 from the Steinbach Environment Canada (EC) meteorological station (49°55N/97°11W) were obtained from the EC website and presented in Table 7-1.

Table 7-1: Climate Normals Data for the Project Area from the Steinbach Weather Station

Parameter	Climate Normal
Annual Mean Daily Temperature (°C)[1]	2.8
Annual Mean Daily Maximum Temperature (°C)[1]	8.7
Annual Mean Daily Minimum Temperature (°C)[1]	-3.1
Annual Total Rainfall (mm)[1]	473.4
Annual Total Snowfall (mm)[1]	107.1
Total Precipitation (mm)[1]	580.5
Average Date of Last Spring Frost (<0°C)[2]	May 24 to May 29
Average Date of First Fall Frost (<0°C)[2]	September 16 to

Table 7-1: Climate Normals Data for the Project Area from the Steinbach Weather Station

Parameter	Climate Normal
	September 21
Average Length of the Frost-free Period (days)[2]	115 to 125
Average Annual Accumulation of Growing Degree Days above 5°C[2]	1600 to 1650
Average Annual Accumulation of Growing Degree Days above 10°C[2]	950 to 1000

[1] Environment Canada. 2015. Canadian Climate Normals 1981-2010 Station Data. Station: Steinbach CDA. Accessed November 12, 2015. URL: http://climate.weather.gc.ca/climate_normals/index_e.html

[2] Manitoba Agriculture, Food and Rural Development. 2015. Agricultural Climate of Manitoba. Accessed November 12, 2012. URL: https://www.gov.mb.ca/agriculture/weather/agricultural-climate-of-mb.html

7.1.1.2 Physiography and geology

The Winnipeg Ecodistrict extends from the Canada-United States border to approximately 50° 30'N in the Lake Manitoba Plain Ecoregion and lies in the central lowland of the Red River Valley. The Red River Valley is drained by the northward flowing Red River located west of the Project. The Winnipeg Ecodistrict has a mean elevation of 236 meters above sea level (masl) and is characterized by a smooth, level to very gently sloping, clayey glaciocustrine plain. Relief from south to north through the basin is roughly 0.3 m per km, however some stronger relief of about 5 to 10 m occurs along the Red River and its major tributaries (Smith et al., 1998).

Surficial geology in the area consists of laminated glaciolacustrine sediments deposited from suspension in offshore, deep water of glacial Lake Agassiz. The sediments primarily include clay, silt and minor sand with a range from 1 to 20 meters in thickness and are commonly scoured and homogenized by icebergs (Matile and Keller, 2004). Alluvial sediments occur within existing and former river channels including the Rat River and

Joubert Creek. These sediments include gravel, sand, silt, clay and organic detritus (Matile and Keller, 2004).

Bedrock geology in the area consists of gently southwestward dipping Mesozoic sediments from the Jurassic period, which help form the eastern edge of the Western Canada Sedimentary Basin (Betcher et al., 1995). The Mesozoic rocks consist primarily of shales with lesser amounts of sandstones, carbonates and evaporates. The Amarath, Reston and Melita formations cover the area and are composed of anhydrite gypsum, shale dolostone; argillaceous limestone and shale; and varicolored shale, calcarious shale and limestone, respectively (Betcher et al. 1995).

7.1.1.3 Ground water

Carbonate rock aquifer

The main aquifer underlying the Project area is the carbonate rock aquifer (Rutulis, 1974). This aquifer is the largest freshwater aquifer in Manitoba and stretches from north of The Pas, southward through the Interlake region and continuing along the east side of the Red and Rat Rivers into Minnesota (Grasby and Betcher, 2002). The groundwater becomes increasingly saline west of the Project area. The aquifer is overlain by clay and till which act as an aquatard, limiting the movement of water from the surface to the groundwater. Based on intermediate-scale flow systems, direction of fresh groundwater flow in the carbonate aquifer is westwards (Betcher et al., 1995). The carbonate aquifer bears fresh water only in the area east of the Red and Rat rivers (Rutulis, 1984).The fresh water yielded from the carbonate aquifer is adequate to abundant for household and normal farm requirements in the area.

Sand and gravel aquifers

Within the area, the till layer which overlies the carbonate bedrock contains lenses of sand and gravel aquifers which are common in some areas and scarce in others (Betcher et al. 1995). Depth to these aquifers ranges from a few meters to more than 100 m (Rutulis, 1974; Rutulis 1987). Groundwater quality ranges from poor to excellent in the Project area, and the potential for effects on groundwater resources is enhanced where surface or near-surface sand and gravel deposits are found because the deposits may contain aquifers.

Several major flowing well areas have been identified within the watershed (Rutulis, 1987). These areas include the proposed site, north of Kleefeld.

Soils, soil productivity and agriculture

The Winnipeg Ecodistrict lies east of the Manitoba Escarpment in an area of gentle relief. Soils in the Winnipeg Ecodistrict consist of imperfectly drained Gleyed Humic Vertisols and Gleyed Vertic Black Chernozems, and poorly drained Gleysolic Humic Vertisols and Humic Gleysols developed on calcareous, clayey glaciolacustrine sediments (Smith et al., 1998). These sediments range in thickness from more than 60 m near the United States border to less than 1 m locally in the northern part of the basin. Gleyed Rego Black Chernozemic and Gleysolic soils also occur on shallow, extremely calcareous, loamy to silty sediments, some of which occur as intersecting bars and spits that were formed during the latter stages of Lake Agassiz (Smith et al., 1998).

The Canada Land Inventory Soil Capability for Agriculture classifies the general area as Class 3 (having moderately severe limitations) and Class 2 (having moderate limitations) to the production of crops. Soils in these classes may restrict the range of crops, or require special or moderate conservation practices (AAFC, 2013). Agricultural capability is primarily limited by adverse soil structure or low permeability, which is associated with the heavy-textured soils with low hydraulic conductivity, and imperfect and poor drainage (AAFC, 2013).

7.1.1.4 Agricultural land use

The proposed Project falls within Division No. 2 of Census Agricultural Region (CAR) 9. According to the 2016 Census, CAR 9 had 1,713 farms of which 1,153 were in Division No. 2. The total farm areas in Division No. 2 decreased by 8.8% between 2011 and 2016. Annual and perennial cropping and livestock operations are present in the Project area.

The area is largely comprised of land under annual crop production, according to the existing land cover classification (EOSD-NRCAN 2001). The top five crops by acreage from 2013 to 2015 in the RM of De Salaberry and RM of Hanover consist predominately of soybeans, canola, red spring wheat, grain corn and winter wheat (Figure 7-1). Some

perennial crops are also present in the Project area and include alfalfa and grasses (MASC, 2015).

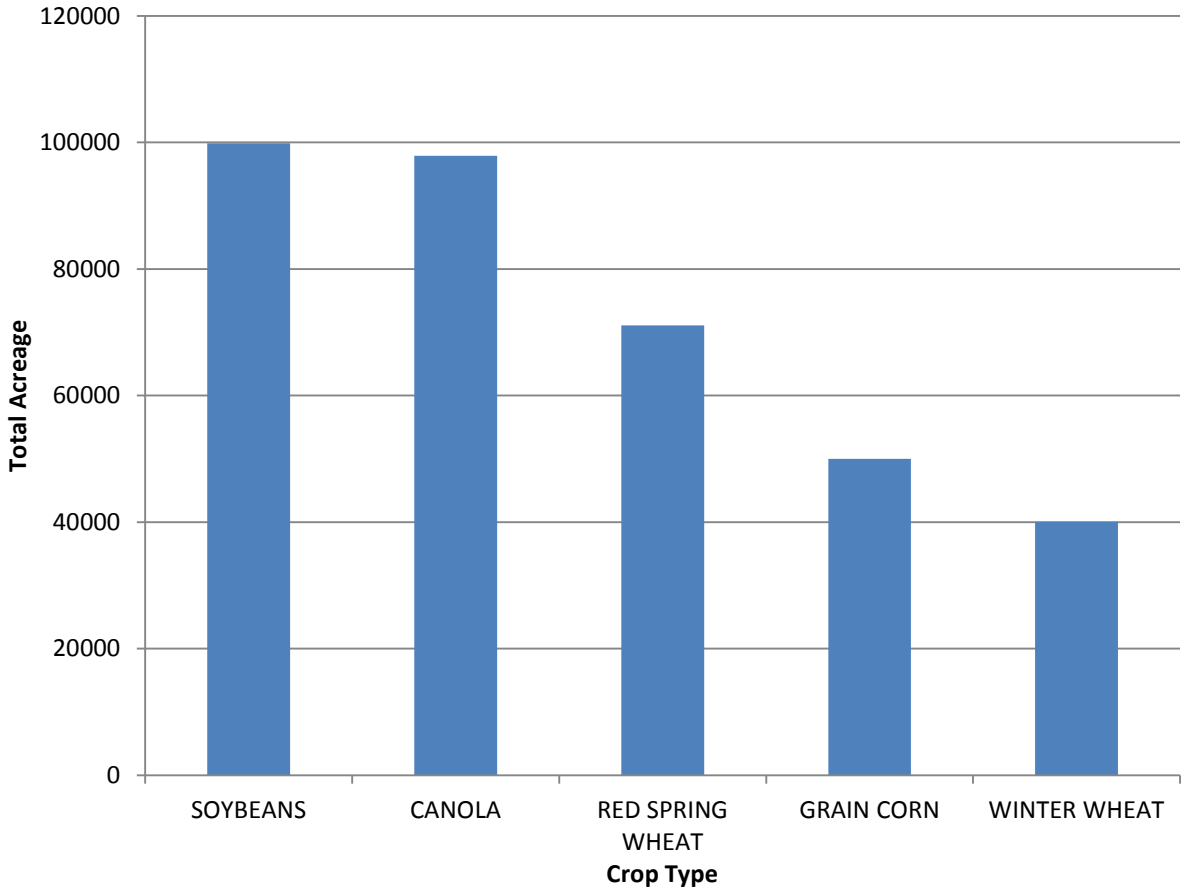

Figure 7-1: Total Reported Acreages for Crops Grown Within the RM of De Salaberry and the RM of Hanover from 2013 to 2015 (MASC, 2015)

Livestock operations

Hog, dairy and broiler chicken and hatching egg operations are located in the area with the highest concentrations in the RM of Hanover. Associated with hog operations is the land application of liquid manure to agricultural fields which in some cases might involve the use of drag lines or permanently installed underground pipes connected to sprinkler risers, center-pivot irrigators or hose attachment points for traveling guns or drag-hose applicators. Other livestock types found near the area might include beef cattle and turkey. There is no publically available information on the locations of operations for these livestock near the Project.

7.1.2 Native vegetation

The area lies within the Aspen-Oak Section of the Forest Regions of Canada (Rowe 1972). The deciduous component of the boreal forest extends into this transition zone forming continuous closed forest in suitable sites or groveland where elements of the prairie are intermixed. Native grasslands areas in the ecodistrict have largely disappeared as a result of cultivation (cereal grains, pulses and oil seeds) and the development of an extensive network of drainage ditches (Smith et al. 1998). Typical vegetation remaining on well drained sites include trembling aspen (*Populus tremuloides*) and bur oak (*Quercus macrocarpa*) trees with an understory of snowberry (*Symphoricarpos spp.*), hazelnut (*Corylus cornuta*) and red-osier dogwood (*Cornus sericea*). Tree species commonly found on the alluvial floodplain deposits and river terraces include white elm (*Ulmus americana*), basswood (*Tilia americana*), cottonwood (*Populus deltoides*), Manitoba maple (*Acer negundo*) and green ash (*Fraxinus pennsylvanica*). Shrubs such as saskatoon (*Amelanchier alnifolia*), high-bush cranberry (*Viburnum trilobum*), nannyberry (*Viburnum lentago*) and willows (*Salix spp.*) are common in these areas.

7.1.3 Fish and fish habitat

The Project is located in the Rat-Marsh River Watershed within the Red River Basin. The watershed includes the Rat River, Marsh River, Joubert Creek and the Tourond and St. Pierre Drains, as well as smaller tributaries. The watershed drains primarily in a west to northwesterly direction through perennial, ephemeral and intermittent natural watercourses and agricultural infrastructures (referred to as “drains”). All waters ultimately empty into Hudson Bay via the Nelson River System (Smith et al., 1998).

7.1.3.1 Water quantity

The Government of Canada Water Office has been operating a hydrometric gauging station (05OE001) on Rat River near Otterburne since 1912. The station, located west of the Project area, measures stream flow and water level data. Figure 7-2 shows the mean monthly discharge on Rat River from 1912 to 2014 (Wateroffice, 2015). Monthly discharge peaks in the spring (April, May, June) with minimal flows in the winter (December, January, February). Maximum and minimum monthly flows are also displayed for the same time period. The monthly flow distribution for the Rat River is similar to other streams on the Canadian prairies, with stream flow highest during the spring and lowest over winter

(Lee, 2011). There is also large inter-annual flow variability on the Rat River. Years with high flow on the Rat River have been recorded to have ten times the discharge volume than low flow years (Lee, 2011).

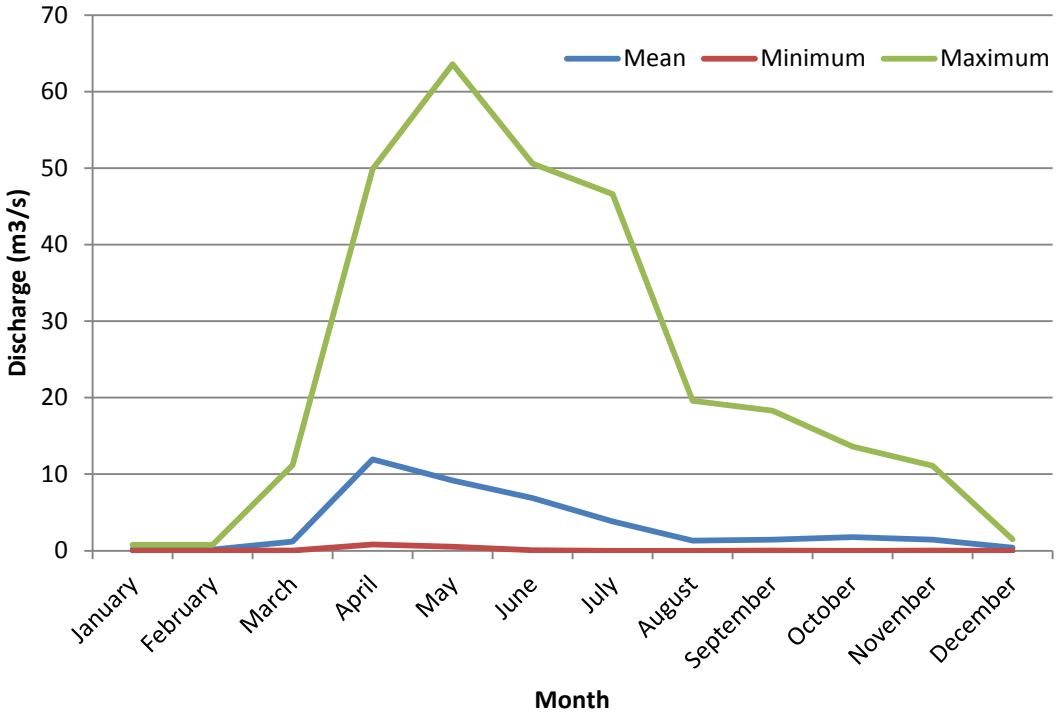

Figure 7-2: Monthly Discharge Data for Rat River near Otterburne

(Government of Canada Wateroffice Hydrometric Station 05OE001, Rat River near Otterburne).

7.1.3.2 Water quality

There is one provincial long term water quality monitoring station (1974-2011) in the watershed on the Rat River at PR 303 near Otterburne. The station is routinely monitored for water quality variables including general chemistry, nutrients, metals, bacteria and pesticides. A water quality report was published in 2011 for the Rat-Marsh Watershed Integrated Watershed Management Plan and used the Canadian Council of Ministers of the Environment (CCME) Water Quality Index (WQI) to summarize the data gathered at this monitoring station (Leclair, 2011). The WQI rankings provide an overall measure of the ability of freshwater bodies to support aquatic life at selected monitoring station. The WQI was typically 'Good' to 'Fair' at the Rat River monitoring station, with water quality

occasionally exceeding the Manitoba Water Quality Standards, Objectives and Guidelines (MWQSOG) (Seine-Rat River Conservation District, 2014). Phosphorus concentrations commonly exceeded the MWQSOG guideline of 0.05 mg/L for rivers and were typically responsible for lowering the WQI. However, this not uncommon for rivers draining through southern Manitoba (Bourne et al., 2002) and may be caused by a combination of factors including naturally rich prairie soils, inputs from land-use practices and human activities. While phosphorus concentrations have been increasing since 1973 on the Rat River, nitrogen concentrations have remained relatively stable during the same time period (Leclair, 2011).

Reported dissolved oxygen concentrations in the watershed are described as being adequate to support healthy aquatic life. Dissolved oxygen concentrations at the monitoring station were typically above the 5.0 mg/L objective set out in the MWQSOG. Concentrations on the Rat River were noted to fall below this objective during mid-summer and mid-winter. This can be attributed oxygen consumption from algal blooms during the summer and the decomposition of plant material during the winter in under ice conditions (Leclair, 2011).

Most pesticide concentrations were typically below the MWQSOG objectives for aquatic life and irrigation since monitoring began at the station in 1973. However, the pesticides Dicamba, Simazine and MCPA were found to occasionally exceed the irrigation objectives of 0.006 µg/L, 0.05 µg/L, and 0.025 µg/L at the monitoring station, respectively (Leclair, 2011). Since 2000, fecal coliform and E. coli densities have also been well below the MWQSOG irrigation objective. Although prior to 2000, there were many years were fecal coliform densities exceeded the CFU/100 mL irrigation objective (Leclair, 2011).

Milani (2013) collected water quality data at 3 locations on Tourond Creek (Table 7-2).

Table 7-2: Water quality data collected on Tourond Creek (Milani 2013)

Site	Air Temp (°C)	Water Temp (°C)	Dissolved Oxygen		Conductivity (µS/cm)	Turbidity (NTU)	pH
			Mg/L	% Saturation			
W-04-256	30	22	5.78	80	660	4.81	7.95
W-04-232	20	21	8.87	110	219	1.05	
W-05-076	18	17	6.14	78	544	7.03	6.50

7.1.3.3 Fish and fish habitat

The Project is located on the south side of Tourond Creek just over 20 km from the confluence with the Red River. Milani (2013) sampled five sites on Tourond Creek collecting four species of fish:

- northern pike – *Esox Lucius;*
- white sucker – *Catostomus commersoni;*
- brook stickleback - *Culaea inconstans;* and
- central mudminnow - *Umbra limi.*

Tourond Creek adjacent to the station is channelized. The riparian area is primarily grasses (Photo 7-1) with no trees or shrubs. There are small areas of cattails along the margins of the creek (Photo 7-2).

Photo 7-1 Looking west along the south side of Tourond Creek

Photo 7-2: Looking north from south side of Tourond Creek

Species at Risk

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) considered the Silver Chub populations a single unit and designated it Special Concern in April 1985 and May 2001 (COSEWIC 2012). In May 2012, the "Great Lakes - Upper St. Lawrence populations" unit was designated Endangered and the "Saskatchewan - Nelson River populations" unit was designated Not at Risk (COSEWIC 2012). Therefore, the Silver Chub population in Manitoba is considered not at risk.

The presence of larval chesnut lamprey has been confirmed in the Rat River (COSEWIC 2010). The Chestnut Lamprey was assessed as Vulnerable (Special Concern) by COSEWIC in April 1991 (COSEWIC 2010) and is currently listed as Special Concern on Schedule 3 of SARA.

Both the Saskatchewan-Nelson River populations and the Great Lakes Upper-St-Laurence populations were presented as two separate units and designated Data Deficient by COSEWIC (2010) in November 2010.

7.1.4 Wildlife and wildlife habitat

7.1.4.1 Amphibians and reptiles

The Project is located on agricultural crop land on the south side of Tourond Creek drain, in the Rat River watershed (Photo 7.1). This watershed supports a variety of amphibians including boreal chorus frog (*Pseudacris maculate*), leopard frog (*Lithobates pipens*), wood frog (*Lithobates sylvaticus*) , spring peeper (*Pseudacris crucifer*), gray tree frog (*Hyla versicolor*) and blue-spotted salamander (*Ambystoma laterale*). Reptiles found in this region include painted turtle (*Chrysemys picta*), snapping turtle (*Chelydra serpentine*), common garter snake (*Thamnophis sirtalis*), plains garter snake (*Thamnophis radix*) and redbelly snake (*Storeria occipitomaculata*).

Amphibians and reptiles are not typically found in agricultural crop land, and generally prefer natural habitats including wetlands, riparian areas, forests, shrubs and grasslands. None of these habitat types occur within the proposed Project site.

A site visit conducted on April 26th, 2016, identified boreal chorus frogs calling from a location north of the Project site near Touround Creek drain. No other amphibians or reptiles were identified within or near the Project site.

7.1.4.2 Mammals

The Project site is located on agricultural crop land south of Tourond creek drain (Photo 7.1). This ecoregion supports a variety of mammal species including jackrabbit (*Lepus townsendii*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), white-tailed deer (*Odocoileus virginianus*), muskrat (*Ondatra zibethicu*), beaver (*Castor canadensis*), and mink (*Neovison vison*).

Most mammal species in this region are not typically found in agricultural cropland, and generally prefer natural habitats including wetlands, riparian areas, forests, shrubs and grasslands. None of these habitat types occur in the area.

A site visit conducted on April 26th, 2016, identified a mink and a muskrat north of the Project site in the Touround creek drain. Evidence of an abandoned red fox den was also found near the drain.

7.1.4.3 Birds

The Manitoba breeding bird atlas states the Red River region supports approximately 199 species breeding birds. Breeding birds identified in a 10 km by 10 km survey square around the Project site include Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), blue winged teal (*Anas discors*), mourning dove (*Zenaida macroura*) , American robin (*Turdus migratorius*), and clay-coloured sparrow (*Spizella pallid*).

Most bird species in this region do not typically breed in agricultural crop land, and generally prefer natural habitats including wetlands, riparian areas, forests, shrubs and grasslands. None of these habitat types occur within the proposed Project site.

A field visit conducted on April 26th, 2016, identified red-winged blackbirds, mallards, wood ducks, grackles, and a nesting pair of Canada geese, north of the Project site adjacent to Touround creek drain. A site visit on July 13th, 2016, identified red-winged blackbird (*Agelaius phoeniceus*), and common grackle (*Quiscalus quiscula*). A single barn swallow *(Hirundo rustica*) was observed north of PTH 52, and appeared to be foraging or otherwise moving through the area.

7.1.4.4 Species of Conservation Concern

The Manitoba Conservation Data Centre was contacted with a request for information about known species of conservation concern at the proposed Project site, including NW-

35-6-4E and NE-35-6-4E (Friesen 2016). No occurrences of species of conservation concern were identified. The Manitoba Herp Atlas also did not identify any occurrences of amphibian or reptiles species of conservation concern at or adjacent to the Project site. The Manitoba Breeding Bird Atlas identified four bird species of conservation concern within a 10km x 10km square around the Project site including barn swallow *(Hirundo rustica*), chimney swift (*Chaetura pelagic*), eastern wood pewee (*Contopus virens*), and bobolink (*Dolichonyx oryzivorus*). They are described in Table 7-3 below. None of these species are known to breed in agricultural crop land.

Table 7-3: Species of conservation concern that may occur near the proposed Project site.

Species	**Federal SARA Species Schedule 1 Status**	**Manitoba *Endangered Species and Ecosystems Act* Status**	**COSEWIC Status**	**Environmental Considerations**
Barn Swallow	Not listed	Not listed	Threatened	Aerial insectivore that nests in agricultural buildings and bridges
Chimney Swift	Not listed	Threatened	Threatened	Aerial insectivore that nests in chimneys and other urban structures
Eastern Pewee	Not listed	Not listed	Special Concern	Aerial insectivore that prefers mature deciduous forests.
Bobolink	Not Listed	Not listed	Threatened	Nests in grassland areas, including pastures often near wetlands.

Site visits conducted on April 26th and July 13th, 2016, did not identify any species of conservation concern at the Project site. A single barn swallow was observed on July 13th near the area, across PTH 52, presumably foraging or otherwise moving through the area.

7.2 Socioeconomic environment

7.2.1 Population and land ownership

The Project is located in the RM of De Salaberry and directly adjacent to the RM of Hanover. Five census subdivisions are located within these two rural municipalities (Table 7-4) and will be used to characterize the communities and population around the Project.

7.2.1.1 Population distribution and demographics

Data from the 2011 and 2016 censuses are presented in Table 7-4 below for the area. In the five year period between 2011 and 2016, the population has increased by 14.8% from 35,639 to 40,922 people respectively (Table 7-4).

Table 7-4: Population Characteristics of Census Subdivisions near the Project

Census Subdivision	Population		
	2011	2016	Percent Change
RM of Hanover	14,026	15,733	12.2
RM of De Salaberry	3,450	3,580	3.8
St. Pierre Jolys	1,099	1,170	6.5
Steinbach	13,524	15,829	17.0
Niverville	3,540	4,610	30.2
Total	**35,639**	**40,922**	**14.8**

Source: Statistics Canada 2011 and 2016 Censuses.

7.2.1.2 Indigenous population

The nearest Indigenous community to the Project is Roseau River Anishinabe First Nation which is located approximately 43 km south-west of the Project location.

According to the 2016 Census, the population of the community is 558 people. Aside from this First Nation, approximately 7.7% (2,765) of the total population in the five census subdivisions identified themselves as Aboriginal in the 2011 Census. This is relatively low compared to the Province of Manitoba, where 17% (195,895) of the total population

identify themselves as Aboriginal. There are no reported Treaty Land Entitlements near the Project.

7.2.1.3 Employment, economy and labour force

Participation, employment and unemployment statistics for each census subdivision in the Project area are found in Table 7-5. The labour force in the Project area is estimated at nearly 25,545 people, with a labour force participation rate of 71%, slightly higher than the provincial average of 67.3%. The unemployment rate in the Project area is 5% and is lower than the provincial rate of 6.2%. A large portion of the labour force in the RM of Hanover is employed in agriculture/forestry/fishing/hunting (16%), construction (11%) and manufacturing (12%). In the RM of De Salaberry, agriculture / forestry / fishing / hunting (16%), construction (13%) and healthcare and social assistance (12%) makes up the top three industries. This varies from the provincial level, where healthcare and social assistance (13%), retail trade (11%) and manufacturing (9%) dominates employment (Statistics Canada 2011 Census).

Table 7-5: Labour Force Status in the Rural Municipalities of De Salaberry and Hanover

Census Subdivision	Labor Force Status							
	Total Population Aged 15 Years and Over by Labour Force Status	In the Labour Force	Employed	Unemployed	Not in the Labour Force	Participation Rate	Employment Rate	Unemployment Rate
Manitoba	946,945	636,835	597,290	39,550	310,105	67.3	63.1	6.2
RM Hanover	9,555	6,845	6,630	215	2,705	71.6	69.4	3.1
RM De Salaberry	2,375	1,775	1,705	70	600	74.7	71.8	3.9
St. Pierre-Jolys	825	550	520	35	270	66.7	63.0	6.4

Table 7-5: Labour Force Status in the Rural Municipalities of De Salaberry and Hanover

Steinbach	10,315	6,960	6,570	385	3,360	67.5	63.7	5.5
Niverville	2,475	1,890	1,810	80	580	76.4	73.1	4.2
Total	25,545	18,020	17,235	785	7,515	71	68	5

7.2.1.4 Land ownership

In southern Manitoba, land is typically divided up using the section-township-range system. The exceptions to this general pattern near the Project are the Oak Island Settlement, located between Otterburne and St-Pierre-Jolys, and around St. Malo, where long lot river land use survey is used. Most of the land near the Project consists of privately-owned parcels, which are predominantly used for various types of agriculture.

Publicly-owned parcels of land are also scattered throughout the area, and are used for a range of purposes including landfills, cemeteries, and municipal infrastructure. Crown and public lands include several publicly owned parcels including the St. Malo Provincial Park and St. Malo Wildlife Management Area. Agriculture Crown leased lands are located in the RM of Hanover and municipal owned lands in the RMs of Hanover and De Salaberry. Other parcels of land are owned by non-governmental agencies or groups and include the Steinbach Community Development Corporation (in Hanover) and the St. Malo and District Wildlife Association Inc. (in De Salaberry).

7.2.2 Protected areas

Manitoba's Protected Area Initiative (PAI) is administered by Manitoba Sustainable Development (MSD). The mandate of PAI is to protect Manitoba's biological diversity through legal means by designating a series of Crown lands as ecological reserves, provincial parks, and wildlife management areas (WMAs). Protection of these areas is provided through legislation including *The Provincial Parks Act* and *The Wildlife Act*.

The St. Malo WMA, located in the southern extent of the RM of De Salaberry, is characterized by flat to gently rolling topography. The WMA has a good cover of aspen-oak forest with remnants of tall-grass prairie. The St. Malo WMA protects habitat for deer,

ruffed grouse and neo-tropical birds. There are two distinct geographical components of the St. Malo WMA. The east unit is adjacent to the west side of PTH 59 while the west unit can be accessed on the Trans Canada Trail, starting from the town or St. Malo or the community of Carlowrie. Most of this unit is forest but there is a large wetland in the northwest corner.

The St. Malo Provincial Park occupies 148.35 hectares of land in the RM of De Salaberry, next to the town of St. Malo (MCWS, 2012). It is classified as a Recreation Park with a primary purpose to provide recreational opportunities to visitors. The park is located on the north shore of a reservoir created after the construction of a dam on the Rat River. The Rat River dam is considered a heritage feature of the park, with interpretive signage located nearby to provide information on the history of the structure. The park is on the eastern edge of Manitoba's Tall Grass Prairie and offers a mix of aspen/oak forest and native remnant tall grass prairie. The western silvery aster, a species listed as Threatened under Canada's *Species at Risk Act* (2002) and Manitoba *Endangered Species and Ecosystems Act,* (1990) is found in the park (MCWS, 2012).

7.2.3 Infrastructure and services

7.2.3.1 Health

Southern Health, the Regional Health Authority, comprising the former South Eastman and Central Regional Health Authorities (RHAs), provides health and social services in the RM of Hanover and the RM of De Salaberry. Health and wellness services can be accessed at medical centers located in Steinbach, St-Pierre-Jolys, Niverville and Grunthal (Southern Health, 2013).

The Bethesda Hospital in Steinbach provides primary and secondary health care to the community and surrounding area. The hospital has 84 beds with almost 400 employees (Southern Health, 2013).

7.2.3.2 Waste disposal

Residences in urban centers near the Project are typically provided with garbage collection and recycling services. The RM of De Salaberry operates a landfill site at 26116 Perreault Road and the recycling program is run by EPIC / SMILE of St-Malo Inc. All residential solid waste in the RM of Hanover is transported to the Steinbach Waste Disposal Ground. The

Steinbach Waste Disposal Ground is a class 1 landfill facility located at 104 Hanover Road E. The facility also accepts commercial wastes, hazardous wastes and yard wastes for compost. Recycling services in the RM of Hanover are provided by Eastman Recycling Services located at 60 Industrial Road in Steinbach. Eastman Recycling services also accepts electronic wastes.

7.2.3.3 Fire

The RM of De Salaberry is served by two volunteer fire departments located in St-Pierre-Jolys and St. Malo. The RM of Hanover has three volunteer fire departments in Grunthal, Kleefeld and New Bothwell. The City of Steinbach and surrounding areas including Mitchell and Blumenort are serviced by the Steinbach Fire Department. The Steinbach Fire Department is served by over 30 trained firefighters/first responders and operates out of a fire hall recently built in 2007. The Niverville Fire Department also provides fire protection and emergency services to the Town of Niverville and surrounding areas. It is served by 6 members on a volunteer basis and is funded by the Town of Niverville and fundraising efforts of the department.

7.2.3.4 RCMP

There are two Royal Canadian Mounted Police (RCMP) detachments located near the Project. The Steinbach RCMP Detachment in the RM of Hanover is served by 11 officers and shares facilities with the Highways and Rural Detachment. The St-Pierre-Jolys detachment in the RM of De Salaberry is the only bilingual detachment in Manitoba and covers an approximate area of 1,500 km^2. In addition to emergency services, both detachments offer additional services including criminal record checks, fingerprints, vulnerable sector check and firearm enquiries (RCMP, 2015).

7.2.3.5 Roads

Key highways and roads surrounding the Project area include:

- PTH 52 – is a two-lane paved Secondary Arterial that runs east-west from the City of Steinbach to PTH 59; and
- PTH 59 – is a two-lane paved Expressway that runs north-south in Manitoba.

The 2014 Average Annual Daily Traffic (AADT) volumes were collected by the Manitoba Highway Traffic Information System (MHTIS), a partnership between Manitoba

Infrastructure and Transportation and the University of Manitoba Transportation Information Group. AADT volumes are defined as the number of vehicles passing a point on an average day of a given year. These volumes for select routes surrounding the Project area are summarized in Table 7-6 below. The traffic count station on PTH 59 is a permanent station and monitored on a continuous year-round basis. The other stations in Table 7-6 are coverage traffic count stations and are typically surveyed on a three year cycle.

Table 7-6: 2014 Average Annual Daily Traffic for Select Routes

Road No.	Station No.	Location	AADT[1]
PTH 59	89	1.9 km north of PTH 52	6,900
PTH 59	168	South of PTH 52	4,830
PTH 52	169	East of PTH 59	4,990

[1]Estimated in 2015.
Source: Manitoba Highway Traffic Information System, 2017.

PTH 52 east of PTH 59 has an AADT of 4990 vehicles (MHTIS 2017). PTH 59 north of the junction with PTH 52 has an AADT of just over 7000 (2016 data) and 4800 just south of the junction. In all cases, peak traffic (up to 10% increase over AADT) occurs in the summer (May through September).

Based on basic design principles from the transportation planning manual (Manitoba Department of Highways and Transportation 1998), these highways are not operating near capacity.

7.2.3.6 Radio

Communication facilities/towers, including microwave and cellular towers, can be found across Southern Manitoba. These facilities are maintained by telephone communication companies, broadcast companies and radio stations and corporations, the Government of Canada, Provincial and municipal governments and utility companies. There are approximately four communication towers and broadcast antenna locations within a 5 km radius of the Project footprint. The radio frequency signals emitted from stations and

transmission lines do not overlap with radio frequencies from radio communication towers and no effect is expected.

7.2.4 Land and resource use

The land use within the RM of De Salaberry and the RM of Hanover is characterized by both agricultural and non-agricultural activities. Recreational and tourism activities occur in some areas of the above two municipalities and includes camping, hunting, fishing, golfing, snowmobiling and other recreational pursuits.

St. Malo Provincial Park is located in the RM of De Salaberry. Classified as a recreational park, it provides opportunities for camping, swimming and boating and is a popular site among residents in the area. Visitors have the opportunity to utilize the St. Malo and Debonair campgrounds, which are located in the vicinity of the park.

Big Game Hunting Areas (GHAs) associated with the Project area include GHA Zones 33 and 35A and is regulated by MSD (MSD, Manitoba Hunting Guide, 2017). Commonly hunted species include white-tailed deer, waterfowl and upland game birds. There are no existing lodges or outfitters in the Project area.

Snowmobiling is a popular recreational pursuit in the area. In conjunction with local clubs, Snowmobilers of Manitoba Inc. (SnoMAN) develop and maintain a network of trails with the goal of promoting safe and environmentally responsible snowmobiling. Numerous trails traverse the RM of Hanover and RM of De Salaberry along with snowmobile shelters associated with the trails. A number of recreational walking trails also occur in the area, the most well-known being the Trans Canada Trail that runs through the RM of De Salaberry. The Trans Canada Trail and SnoMAN trails do not run adjacent to the proposed Project site.

Golf facilities in the Project area include: Maplewood Golf Club (18-hole) located north and west of St. Pierre-Jolys along the Rat River and St. Malo Golf and Cabins (9-hole) off PTH 59 near St. Malo Provincial Park.

7.2.5 Traditional resource use

The Project area is located within Treaty 1, which was negotiated and signed at Lower Fort Garry in August 1871. Both Roseau River Anishinabe First Nation and Peguis First Nation are signatories to Treaty 1. Available information from Indigenous and Northern Affairs Canada and the Treaty Land Entitlement Committee of Manitoba Inc. (www.tlec.ca) indicate

that there are no current outstanding treaty land entitlement claims at the station site for either Roseau River Anishinabe or Peguis First Nation. Indigenous peoples have pursued traditional land uses within the area, including hunting, fishing and trapping.

Based on an agreement made between the Manitoba Metis Federation and the Province of Manitoba in September 2012, the Project area lies within the Metis Natural Resource Harvesting Zone 35A. Historically, Metis have pursued traditional land uses within the Project area. Metis people maintained riverlot farms along the Rat River and augmented farming with hunting and trapping. A number of Metis entrepreneurs were involved in cart freighting on the Crow Wing Trail during the middle to late 1800s (Ledohoski, 2003).

7.2.6 Heritage resources

A screening request to the Historic Resources Branch (HRB) was sent for the proposed Project to determine if there are any potential heritage resources that may be affected. Heritage resource sites in the RM of Hanover and the RM of De Salaberry included archaeological sites (2), cemetery sites (24), centennial farms (19) and municipal designated sites (3). No provincial or federal designated sites are located in the Project area. Table 7-7provides a list of municipally designated historic sites located in the area (Manitoba Historical Society, 2014).

Table 7-7: 2014 Municipally Designated Historic Sites in the RM of De Salaberry and the RM of Hanover (Manitoba Historical Society 2014)

Name	Municipality	Location
Lambert House	De Salaberry	Goulet Road
Chortitz Heritage Church	Hanover	Randolph
Willow Plain School No. 1588	Hanover	Sarto