

# **Project Description**

## **Project 6 - All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation**

**Prepared for:**

**Canadian Environmental Assessment Agency  
Manitoba Sustainable Development**

**Submitted by:**

**Manitoba Infrastructure**

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## List of Acronyms and Abbreviations

Agency	Canadian Environmental Assessment Agency
APEP	Aboriginal and Public Engagement Program
BCR	Band Council Resolution
CEAA, 2012	<i>Canadian Environmental Assessment Act, 2012</i>
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Department of Fisheries and Oceans
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EnvPP	Environmental Protection Plan
ESPI	East Side Planning Initiative
ESRA	Manitoba East Side Road Authority
ESTI	East Side Transportation Initiative
GHA	Game Hunting Area
INAC	Indigenous and Northern Affairs Canada
km	kilometre
km/h	kilometre/hour
kV	kilovolt
m	metres
MBCDC	Manitoba Conservation Data Centre
MEA	<i>The Environment Act</i> of Manitoba
MESEA	<i>The Endangered Species and Ecosystems Act</i> of Manitoba
MI	Manitoba Infrastructure
mm	millimetre
MMF	Manitoba Metis Federation
MSD	Manitoba Sustainable Development
MTA	Manitoba Trappers Association
PAI	Protected Areas Initiative
PR	Provincial Road
Project	Project 6 – All-Season Road linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God’s Lake First Nation
ROW	Right-of-Way
RTL	Registered Trapline
SARA	<i>Species at Risk Act</i>
TALUP	Traditional Area Land Use Planning
TAC	Technical Advisory Committee
TK	Traditional Knowledge
TLE	Treaty Lands Entitlement
VC	Valued Component
WNO	Wabanong Nakaygum Okimawin

# 1 GENERAL INFORMATION AND CONTACTS

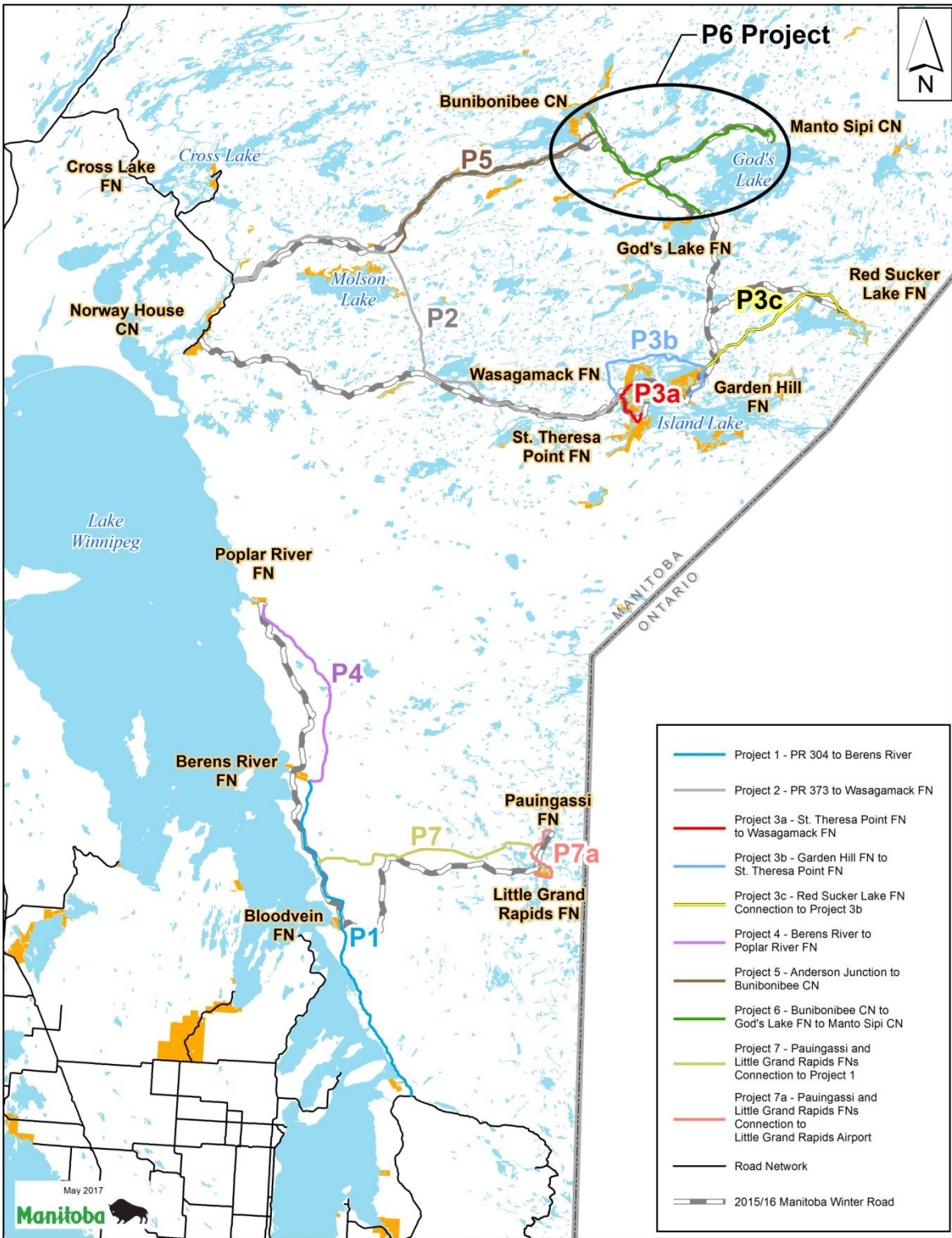
## 1.1 Nature of the Project and Proposed Location

The communities of Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community (Northern Affairs Community), on the east side of Lake Winnipeg, rely primarily on winter road and air travel to transport people and goods. In 2008, the Government of Manitoba announced a strategic initiative to provide improved, safer and more reliable transportation services to connect the remote communities on the east side of Lake Winnipeg with the rest of Manitoba. The Manitoba East Side Road Authority (ESRA) was established as a provincial Crown Agency to manage the East Side Transportation Initiative (ESTI) to increase transportation opportunities for communities on the east side of Lake Winnipeg (Map 1). The project mandate included planning, design and construction of all-season roads to improve the connectivity of First Nations and other northern communities on the east side of Lake Winnipeg to the provincial highway system. ESRA however, has been absorbed into Manitoba Infrastructure (MI), Remote Road Operations which will continue to manage the project.

The first all-season road initiated in this regional transportation network (Project P1) connects Provincial Road (PR) 304 (near Hollow Water First Nation) to Berens River First Nation and Berens River Northern Affairs Community. On August 16, 2010, following an environmental assessment under *The Environment Act* of Manitoba (MEA), Manitoba Sustainable Development (MSD; formerly Manitoba Conservation and Water Stewardship) issued Licence No. 2929 for this road. On July 26, 2011, following a Comprehensive Study conducted under the *Canadian Environmental Assessment Act*, the federal Minister of the Environment concluded that there would likely be no significant adverse environmental effects from the Project, and that the identified mitigation measures and follow-up program were appropriate for the project (Canadian Environmental Assessment Agency, 2011). This road is currently under construction. Two additional sections of all-season road connecting Berens River First Nation to Poplar River First Nation (Project P4) and Pauingassi First Nation and Little Grand Rapids First Nation (Project P7a) are currently in process for approval. Project P4 is being reviewed under the *Canadian Environmental Assessment Act* 2012 (CEAA, 2012) and MEA, while Project P7a is being reviewed under MEA.

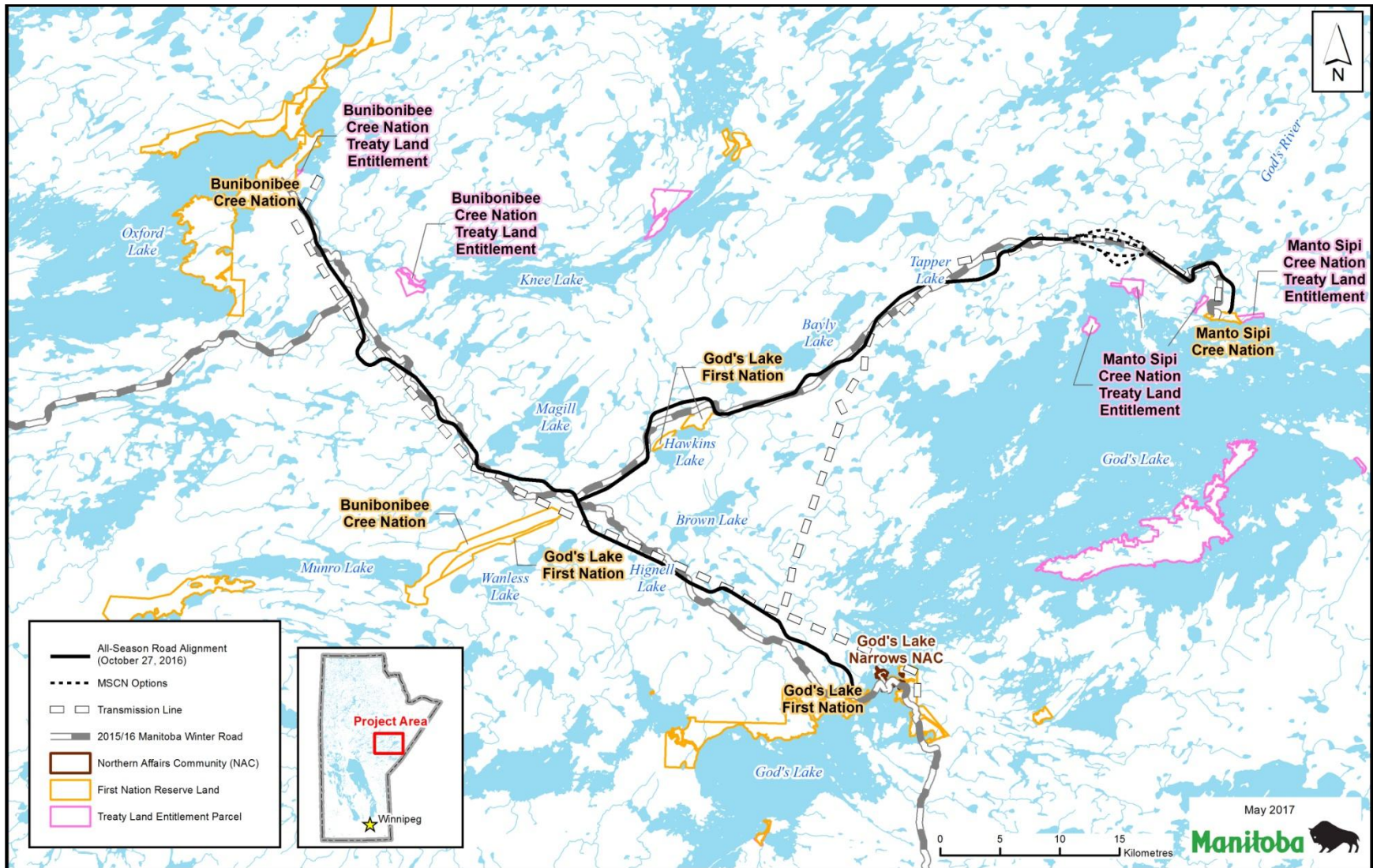
An all-season road linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation is also proposed (Project P6). The proposed alignment consists of approximately 138 kilometres (km) of all-season road on a new right-of-way (ROW) on provincial Crown land (Map 2). There are three road sections that will begin at the Reserve boundaries and generally head west and southwest approximately 72 km from Manto Sipi Cree Nation (Map 3), southeast 36.5 km from Bunibonibee Cree Nation (Map 4) and northwest 29.9 km from God's Lake First Nation (Map 5) where the three sections intersect (Map 6). MI is in discussions with Manto Sipi Cree Nation regarding an 8 km section of the alignment near the community. The community has chosen the alignment in this area to parallel the winter road through a large bog/fen. Sourcing the necessary rock to construct the segment along the winter road would require additional access roads and quarries. MI has proposed three alternative options (Map 7) to reduce project footprint, cost and construction timelines.

An existing on-Reserve access road will connect to the proposed Project 6 all-season road at the Bunibonibee Cree Nation boundary, whereas on-Reserve access roads will need to be constructed separately at Manto Sipi Cree Nation and God's Lake First Nation to connect to the



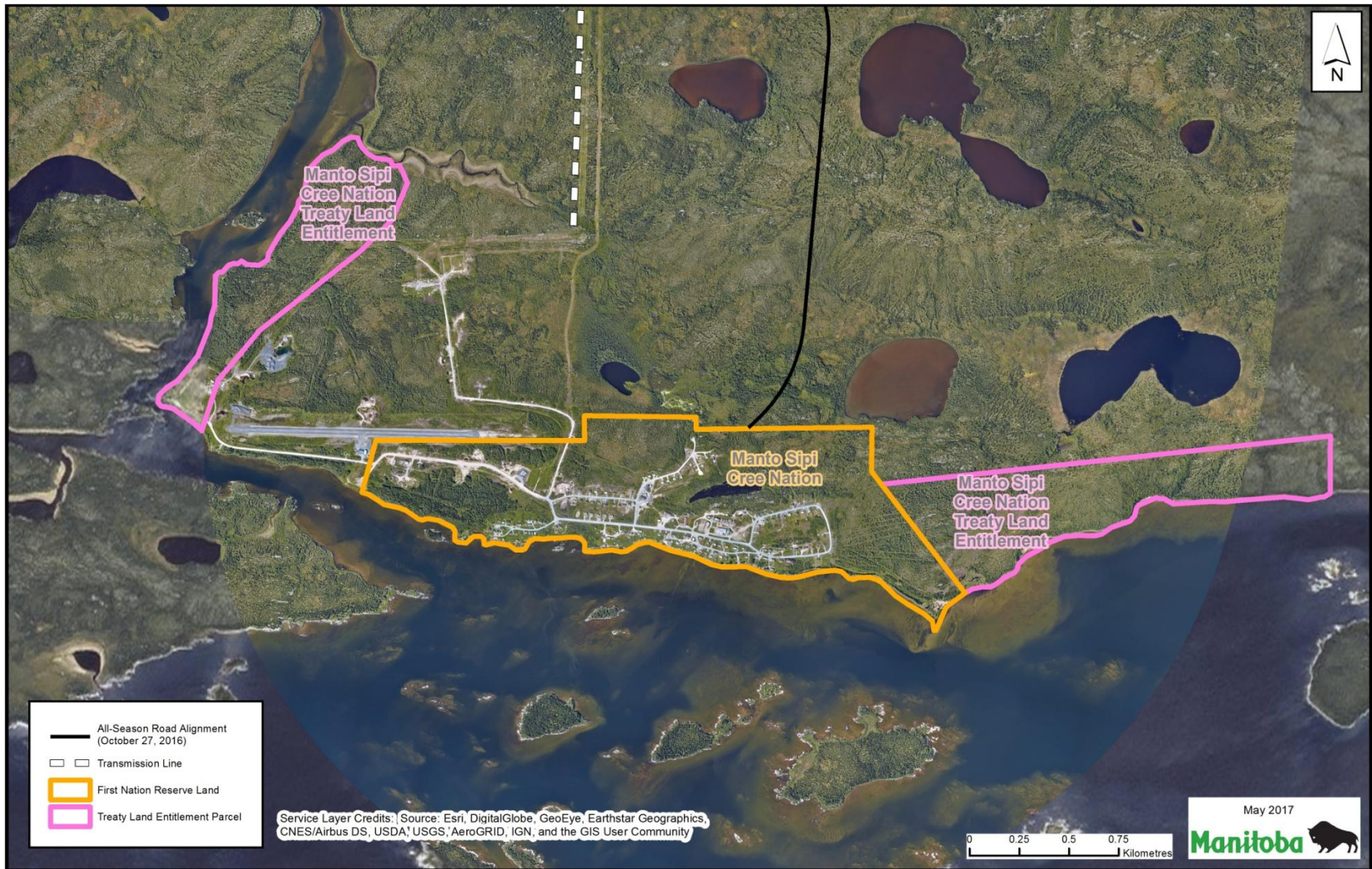
Map 1: All-Season Road project planning areas for East Side Transportation Network





Map 2: Proposed Project P6 - All-Season Road linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation





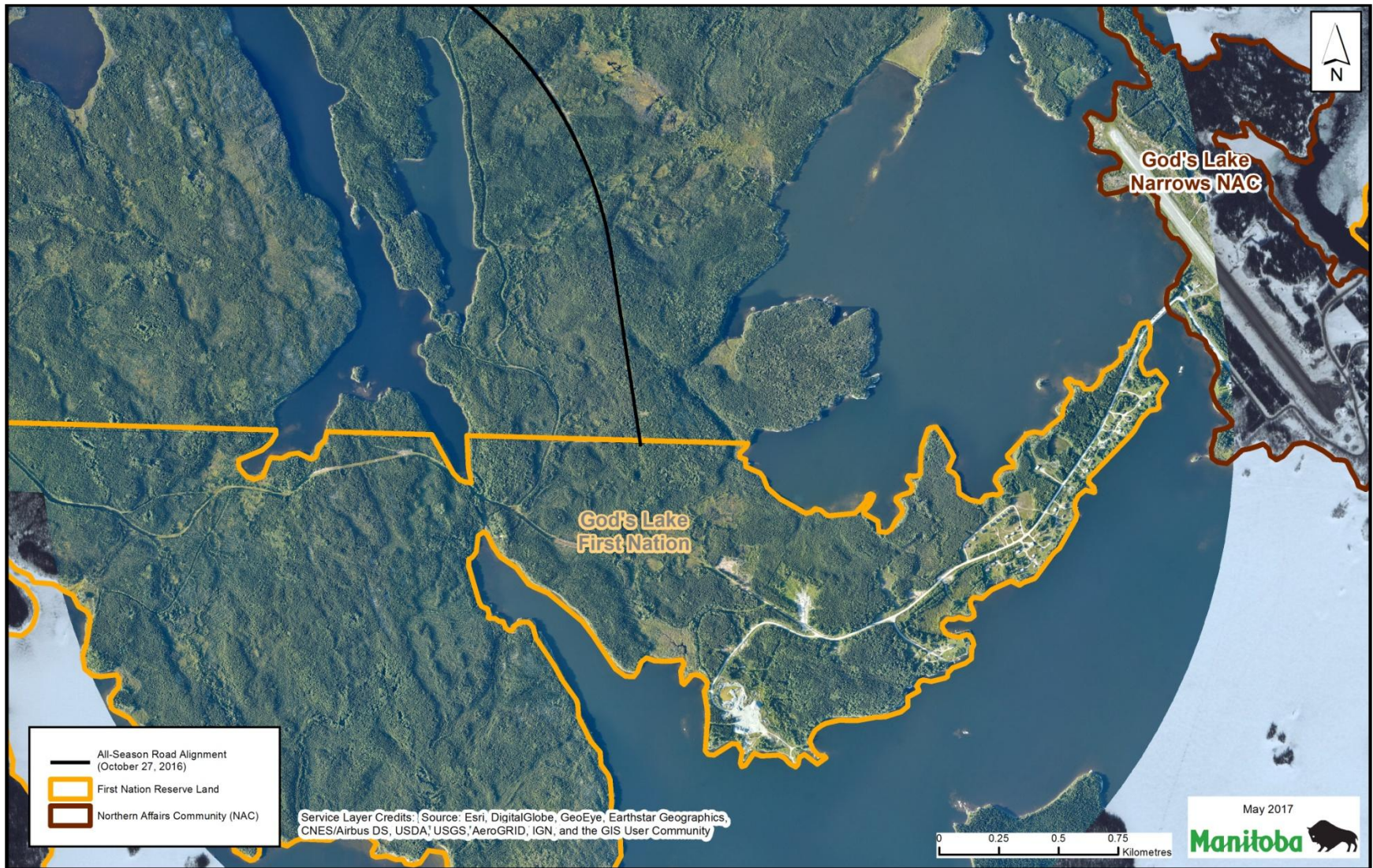
Map 3: Proposed eastern terminus of P6 - All-Season Road alignment near Manto Sipi Cree Nation





Map 4: Proposed northwestern terminus of P6 - All-Season Road alignment near Bunibonibee Cree Nation





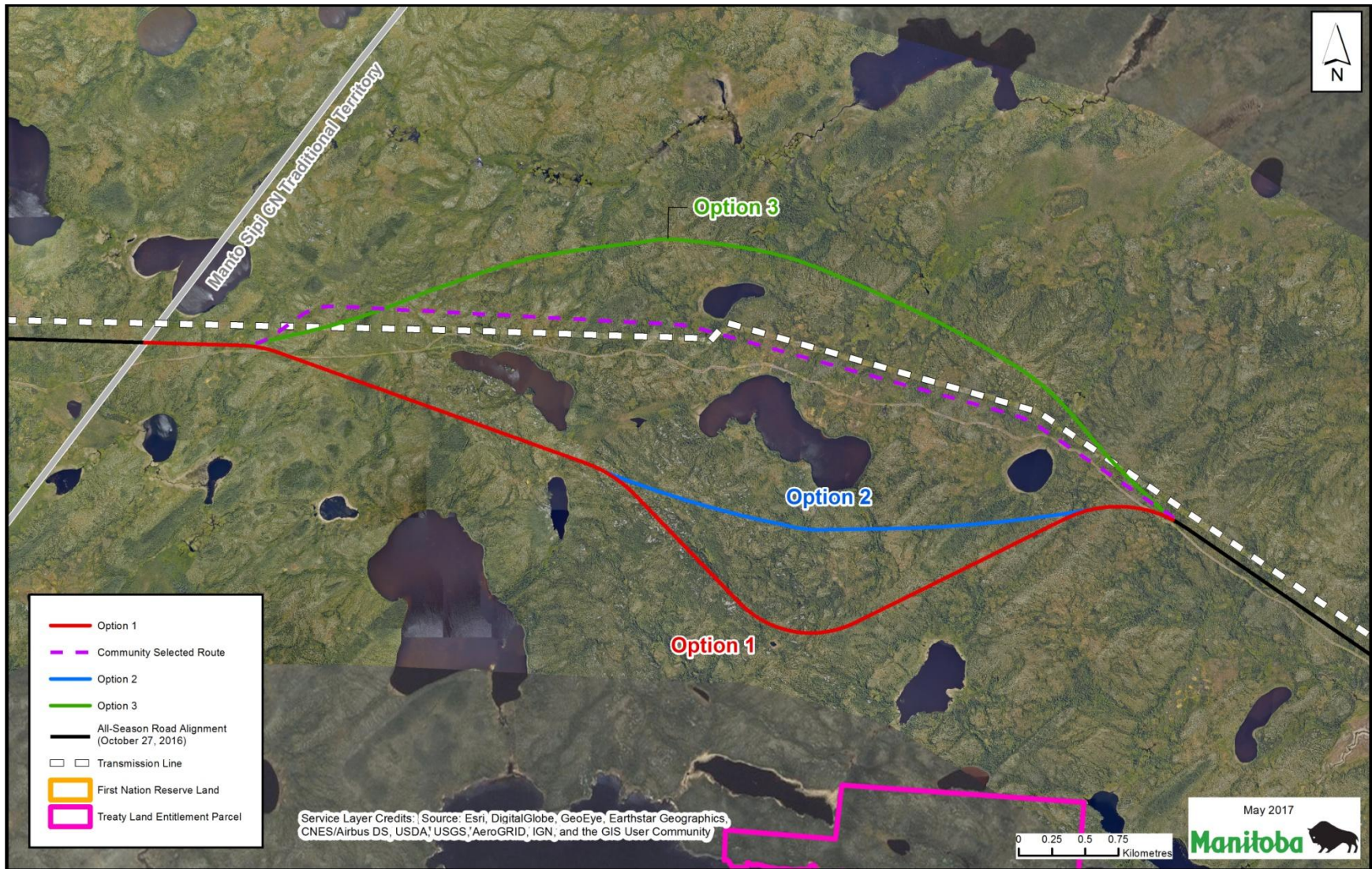
Map 5: Proposed southern terminus of P6 - All-Season Road alignment near God's Lake First Nation





Map 6: Proposed intersection of P6 - All-Season Road alignment between Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation





Map 7: Alignment Options for proposed All-Season Road segment near Manto Sipi Cree Nation

all-season road that will terminate at the Reserve boundaries. The approval for these on-Reserve access roads will be subject to separate approvals by Indigenous and Northern Affairs Canada (INAC). The purpose of the proposed Project is to link the communities.

The all-season road linking the communities will be a gravel-surface public highway, with a design width of 10 metres (m), a design speed of 100 kilometres/hour (km/h), and a posted speed of 90 km/h. The road will generally follow the current winter road alignment, with up to two major water crossings (bridges) over God's River and Magill Creek (Map 8). The proposed alignment crosses undeveloped land in the Boreal Shield Ecozone (Smith et al., 1998), within the Hayes River watershed, via drainage into Hudson Bay.

## **1.2 Proponent Information**

### **1.2.1 Name of the Project**

The project name is "Project 6– All-Season Road linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation" (the Project).

### **1.2.2 Name of the Proponent**

The proponent of the proposed Project is Manitoba Infrastructure, Remote Road Operations. The Province of Manitoba will provide funding for the proposed Project.

### **1.2.3 Address of the Proponent**

The address of the proponent is:

1420 – 215 Garry Street  
Winnipeg, Manitoba  
R3C 3P3

### **1.2.4 Chief Executive Officer**

Manitoba Infrastructure is a government department and therefore does not have a Chief Executive Officer, as such refer to the principal contact person identified in Section 1.2.5.

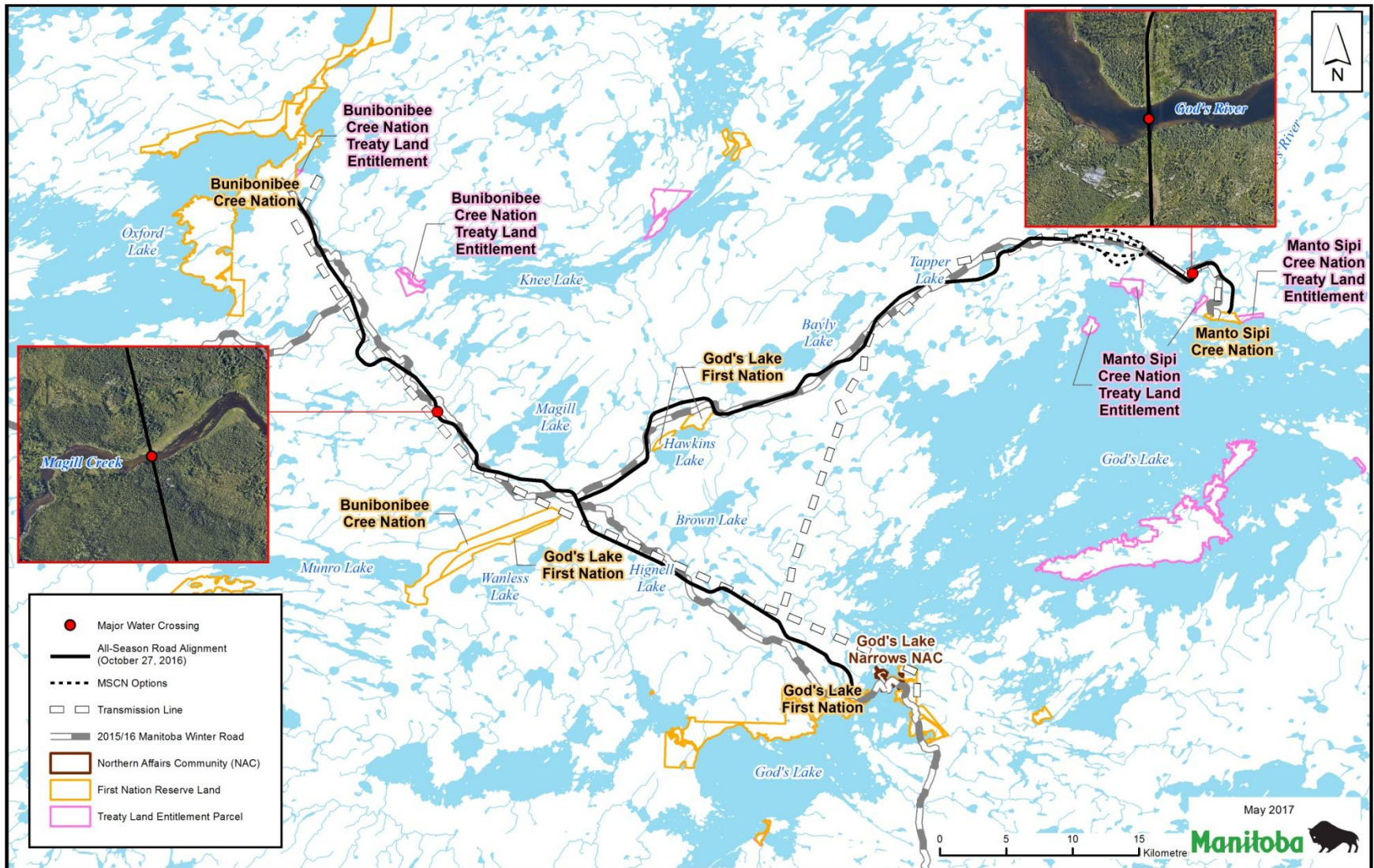
### **1.2.5 Principal Contact Person**

The principal contact person for the project description, and for environmental matters related to the proposed Project, is:

**Mr. Kimber Osiowy**  
Manitoba Infrastructure  
Manager, Environmental Services  
Address:  
1420 – 215 Garry Street  
Winnipeg, Manitoba  
R3C 3P3

Phone: (204) 771-4941  
Fax: (204) 945-0593  
Email: [kimber.osiowy@gov.mb.ca](mailto:kimber.osiowy@gov.mb.ca)





Map 8: Proposed major water crossings along P6 - All-Season Road alignment

### **1.3 Jurisdictions and Other Parties Consulted**

Discussions on an all-weather road network on the east side of Lake Winnipeg have been ongoing since 1999 with other stakeholders, in addition to the local communities. These discussions have included information regarding the proposed Project as part of the larger network. Those engaged in discussion with Remote Road Operations include regulatory bodies, east side communities, Aboriginal leadership organizations, industry and other key stakeholders.

Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community have been engaged throughout project planning and during preparation of the Project Description. These communities are in the vicinity of the all-season road, are adjacent the Local Assessment Area (up to 10 km corridor centred on the all-season road alignment; Map 9), are most likely to be directly affected by the proposed Project, and can provide relevant information to the environmental assessment for the Project. Remote Road Operations has provided a copy of the Project Description to each of these communities.

### **1.4 Environmental Assessment Requirements**

#### **1.4.1 Canadian Environmental Assessment Act, 2012 (Canada)**

The proposed Project is on provincial Crown land (approximately 138 km) and is a designated project under the CEAA, 2012. Therefore, the proposed Project may require an environmental assessment under the CEAA, 2012, subsequent to federal and public review of this Project Description under the provisions of that legislation.

#### **1.4.2 The Environment Act (Manitoba)**

The proposed Project involves construction of a approximately 138 km of all-season road on a new ROW on provincial Crown land and requires an Environment Act Licence under MEA, *Classes of Development Regulation* as a Class 2 development pursuant to that legislation. This Project Description will form part of the Environment Act Proposal submitted to MSD to initiate the provincial environmental assessment process.

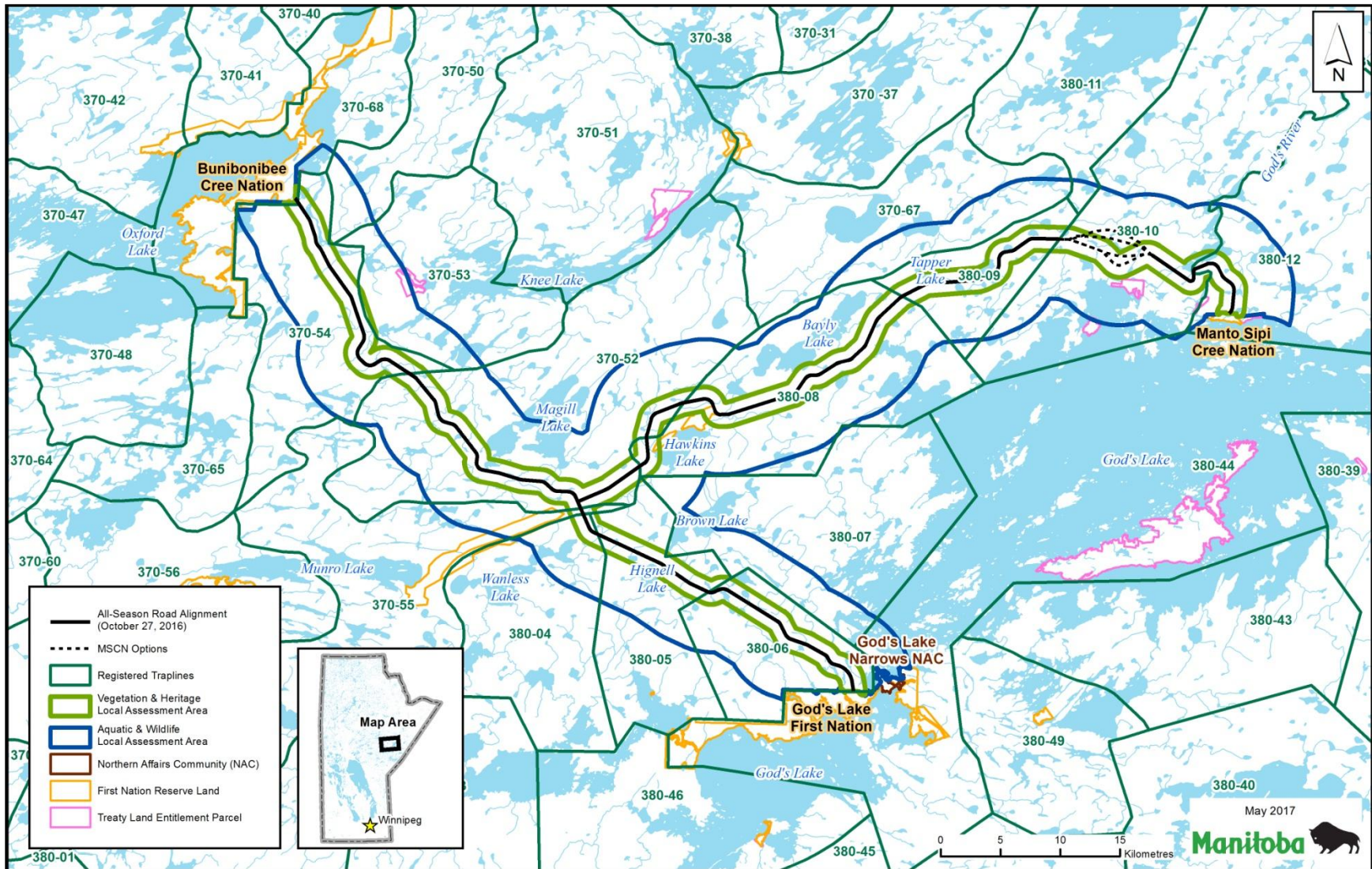
### **1.5 Regulatory Requirements**

In addition to the environmental assessment and licensing requirement under MEA noted above, provincial permits and approvals will be sought, as required, for road construction activities such as vegetation removal, camp development, burning, and quarry development. Applicable provincial legislation includes *The Crown Lands Act*, *The Mines and Minerals Act*, *The Wildfires Act*, *The Dangerous Goods Handling and Transportation Act*, and *The Workplace Safety and Health Act*.

Remote Road Operations will also seek permits and authorizations under other federal legislation, which may include approvals from Transport Canada under the *Navigation Protection Act* and authorization from the Department of Fisheries and Oceans (DFO), under the federal *Fisheries Act*, for the crossing of God's River. If required, licenses under the *Explosives Act* will be sought from Natural Resources Canada for storage of explosives.

Both provincial and federal regulatory requirements are described in more detail in Section 4.3 of this report.





Map 9: Local Assessment Areas for proposed P6 - All-Season Road showing Registered Traps

Although not a requirement under regulation, Remote Road Operations is in the process of obtaining community agreements (Band Council Resolutions [BCRs]) on the proposed alignment from Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation.

## 1.6 Regional Planning Context

The proposed Project will not be taking place in a region that has been subject to an environmental study under s. 74 of CEAA, 2012. The area has, however, been subject to a number of regional planning initiatives that have included environmental considerations. These planning initiatives and their relation to the proposed Project are summarized below.

In 2000, Manitoba launched the East Side Planning Initiative (ESPI) to bring together local communities, First Nations, industry, and environmental organizations to develop a vision for land and resource use on the east side of Lake Winnipeg. It was expected that this process would result in an overall blueprint for the area to address the boreal forest, protected areas, traditional activities, transportation needs and economic development.

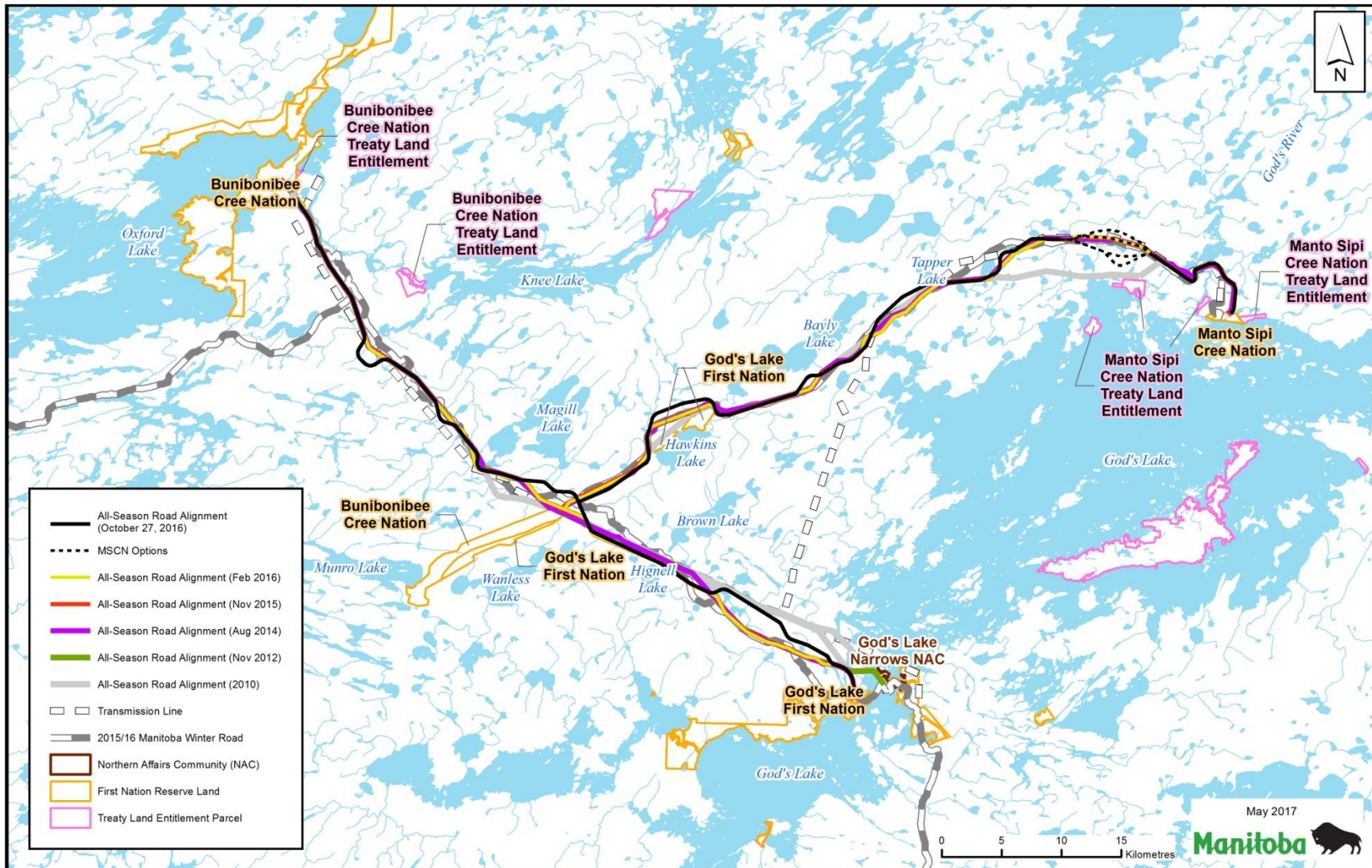
In 2004, a status report entitled *Promises to Keep* was submitted to government and included recommendations for boreal protection and community development (East Side Planning Initiative, 2004). In 2005, the name of ESPI was changed to Wabanong Nakaygum Okimawin (WNO) to reflect First Nations people, who make up about 96% of the population in the area. (The new name is made of Cree and Ojibway words for "East side of the Lake Governance".) Bunibonibee Cree Nation, God's Lake First Nation, Manto Sipi Cree Nation and the Manitoba Metis Federation (MMF) participated in the ESPI/WNO as did 13 additional communities on the east side of Lake Winnipeg.

In 2007, Manitoba signed the *Wabanong Nakaygum Okimawin Council of Chiefs Accord* with WNO First Nations, reinforcing a foundation for comprehensive traditional area land use planning, and ultimately, a broad area plan for the east side of Lake Winnipeg. Under the WNO Accord, individual First Nations are to develop traditional land use plans.

Concurrent with the ESPI and subsequent community-based traditional land use planning initiatives, Manitoba Highways and Government Services (now MI) and later the East Side Road Authority (now part of MI) undertook regional investigations on the east side of Lake Winnipeg related to transportation. In 2000, under Manitoba Highways and Government Services, the *East Side of Lake Winnipeg All Weather Road Justification and Scoping Study* reviewed transportation needs for residents of the east side. The study assessed various transportation modes and identified potential routing networks for all-season roads on the east side of Lake Winnipeg with road based community and stakeholder input.

The East Side Large Area Transportation Network Study, which followed in 2009, identified potential transportation infrastructure improvements that would provide year-round access to the communities on the east side of Lake Winnipeg (SNC-Lavalin, 2011). The final report of that study was completed in 2011 and recommended an all-season road network for the region estimated to be 1,028 km in length and costing approximately \$3 billion (in 2011 dollars). Various route options for an all-season road linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation were considered in that Study (Map 10). The alignment that generally follows the existing winter road alignment was selected as the preferred routing corridor, taking into consideration technical and environmental constraints, and community preferences such as avoiding sensitive areas and water bodies, and following existing transmission lines.





Map 10: History of proposed alignments for P6 - All-Season Road



Subsequent discussions with Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation and God's Lake Narrows Northern Affairs Community along with information from Traditional Knowledge (TK), terrain analysis, and archaeological, wildlife and fisheries investigations have refined the route to the current proposed road alignment.

## **2 PROJECT INFORMATION**

### **2.1 Project Overview**

As part of the ESTI, Remote Road Operations is proposing the construction of Project 6, an approximately 138 km all-season road linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation. The proposed all-season road will eventually connect these communities to PR 373 through proposed future segments of the transportation initiative network; PR 373 to Wasagamack (Project P2) and Anderson Junction to Bunibonibee (Project P5) (Map 1), as the communities are currently serviced only through winter road access or by air.

The proposed Project will consist of approximately 138 km of an all-season road along a new ROW on provincial Crown land (Map 2). Where terrain permits it will follow the current winter road alignment, with up to two major water crossings over God's River and Magill Creek. The alignment is also close to an existing transmission line that crosses through the area. The road will be built to the Manitoba design standard of secondary arterial road, and will be designed as a 2-lane gravel highway, with a 10 m top width, and a design speed of 100 km/hr. The proposed Project will require replacement of the existing bridge at God's River, construction of a new bridge or culvert crossing Magill Creek and will require culverts for smaller watercourse crossings and local drainage. The alignment crosses undeveloped land in the Boreal Shield Ecozone (Smith et al., 1998), and is located within the Hayes River watershed, draining into Hudson Bay via regional streams and rivers.

The purpose of the proposed Project is to link the communities of Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation to improve linkages among communities and opportunities for community members to benefit from construction employment and economic opportunities while working towards meeting objectives of the ESTI.

The key objectives of the ESTI are to:

- Provide alternative transportation to the increasingly unreliable winter road network;
- Reduce transportation costs for goods and services;
- Improve linkages among communities;
- Enhance access to emergency, health and social services;
- Provide construction employment and economic opportunities; and
- Enhance opportunities for local sustainable economic development initiatives.

With the completion of the proposed Project and potential future segments (Project P2 and Project P5), these communities will gain year-round vehicular access to the provincial road network in Manitoba, with anticipated additional future benefits of reducing transportation costs for goods and services, and enhanced access to other services. The timeframe for Project P2 and Project P5 is not within the current 5-year plan and is not determined at this time.

## **2.2 Provisions of Regulations Designating Physical Activities**

The proposed Project is approximately 138 km long, and will be located on a new ROW on provincial Crown land. Therefore, s. 25(c) of the *Regulations Designating Physical Activities* (the *Regulations*) pursuant to the CEEA, 2012 applies:

- s. 25 The construction, operation, decommissioning and abandonment of a new (c) all-season public highway that requires a total of 50 km or more of new right of way;*

No other provisions of the *Regulations* apply.

## **2.3 Project Components and Activities**

### **2.3.1 Physical Works Associated with the Designated Project**

The proposed Project will be built on provincial Crown land and has eight main components including:

1. All-season road (approximately 138 km) on new ROW.
2. Up to two steel girder or concrete bridges at two major water crossings.
3. Culverts for stream crossings or drainage equalization.
4. Temporary construction bridges.
5. Temporary construction access trails.
6. Rock quarries and clay and granular borrow areas.
7. Temporary construction laydown areas.
8. Temporary construction camps.

The dimensions and capacity for these physical works is not available at this time as detailed design has not begun yet. The existing winter road network will support the Project by providing access for some of the construction equipment and materials that will be required for the proposed Project.

### **2.3.2 Anticipated Size and Capacity of the Designated Project**

#### **2.3.2.1 All-Season Road**

An all-season public highway over 50 km in length on new ROW is described in the *Regulations Designating Physical Activities* pursuant to CEEA, 2012 (see Section 2.2). The proposed alignment for the Project is located entirely on new ROW on provincial Crown land. MI is in discussions with Manto Sipi Cree Nation regarding an 8 km section of the alignment near the community. MI has proposed three alternative options to the community selected initial option (Map 7) to reduce the project footprint, cost and construction timelines. The lengths of the three options range from 8.0 km to 8.6 km, with Option 1 being the preferred option and longest at 8.6 km. The length of the Project with Option 1 is 138.3 km in length.

Most of the alignment is located on or within approximately 1 km of the existing winter road corridor, although the route does deviate up to approximately 3 km from the existing winter road in locations to avoid the lower and wetter conditions of that route (Map 2). The all-season road will be centered on a 100 m ROW with a typical clearing width of 60 m and additional clearing as required in horizontal curves to maintain sight distances. Approximately 830 hectares will be cleared on provincial Crown land for the all-season road.

The proposed all-season road will be built to the standard of a secondary arterial road, according to published Manitoba Highway Standards (Manitoba Department of Highways and Transportation, 1998). In keeping with these standards, the roadway will be constructed with a road top width of 10 m. The road will be designed to a speed of 100km/h, or less where natural landscape features inhibit the design standard.

### **2.3.2.2 Quarries Within 1 km and Borrow Pits Within 500 m (Options 1 and 2)**

Sites within or directly adjacent to the ROW will be developed for excavation of borrow materials, gravel and rock, for use in construction of the Project. The objective is to cut and fill from the ROW, with additional material obtained from quarry and borrow sites only as required. The *Regulations Designating Physical Activities* include references to the construction and/or the expansion of quarries with a production capacity of 3,500,000 t/a or more (s.16 and s.17). No single quarry, borrow pit, or gravel pit associated with the proposed Project will have a production capacity of that size. Further information on quarries and pits, and associated environmental effects will be provided in the Environmental Impact Statement (EIS).

The community chosen initial option and Option 3, near Manto Sipi Cree Nation, may require quarries to be located beyond 1 km from the Project alignment.

### **2.3.3 Project Components that are Expansions**

The Project is considered to be a new project within the larger East Side Large Area Transportation Network and is not considered an expansion.

### **2.3.4 Activities Incidental to the Designated Project**

Planned activities are integral, and not incidental, to the completion and operation of the designated project. Subsequent to construction, quarries or gravel pits developed for construction and maintenance of the Project may also be available for other projects that the Manto Sipi Cree Nation, Bunibonibee Cree Nation or God's Lake First Nation may undertake. This would, however, require separate quarry permit or lease permits from Mines Branch (Manitoba Mineral Resources), and/or work permits from MSD.

The proposed Project is specifically structured to provide employment and economic opportunities for local residents during the construction, and operation and maintenance phases. Construction activities will be undertaken under the care and control of Remote Road Operations, either directly through sole source award or through contractors hired through a competitive bidding process, and monitored by Remote Road Operations or its agents. Contract specifications and management will be under the control of Remote Road Operations.

## **2.4 Emissions, Discharges and Wastes**

### **2.4.1 Atmospheric Contaminant Emissions**

During construction, atmospheric emissions, including greenhouse gases, will predominantly be the result of combustion emissions from the construction vehicles, equipment and machinery used in the proposed Project. These will include sulphur dioxide, nitrous oxides, carbon dioxide, and particulate matter. Localized atmospheric emissions may occur, including dust from construction activities such as clearing, and particulate matter as a result of burning brush piles from clearing of the ROW. This will be reduced because the communities of Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation will have access to salvageable wood before burning wood waste. Other localized emissions include blasting residue at quarries or at some work sites.

During operation, localized atmospheric emissions can be expected due to similar combustion emissions from vehicle traffic and road maintenance activities, and generation of airborne dust by traffic. The amount of combustion emissions due to road traffic will increase from the current situation, since there will be year round vehicle traffic instead of only during the winter road season and a shift from air traffic to vehicular travel. Emissions from air traffic, however, are anticipated to decrease by approximately 10% and will cease entirely from annual winter road construction due to the all-season road access.

Based on the above assumptions, during the assumed 8 year construction period for the Project an estimated 138,300 tonnes of Carbon Dioxide equivalency (CO<sub>2</sub>e) will be emitted (17,500 tonnes/year) and during the first 10 years of operation an estimated 23,690 tonnes of CO<sub>2</sub>e will be emitted (2,369 tonnes/year) (Dillon Consulting, 2017). Manitoba's green house gas emissions for 2015 was 20,800,000 tonnes of CO<sub>2</sub>e as identified by Environment Canada in National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada. Emissions will be described in more detail in the EIS for the proposed Project.

#### **2.4.2 Liquid Discharges**

There are no processing streams that would result in liquid discharges, however, accidental releases and unplanned discharges of liquids may occur associated with construction and operation activities such as concrete batch plants, camps, laydown areas and operation of machinery and construction equipment. Septage waste at construction camps or work sites is noted in Section 2.4.3.

#### **2.4.3 Types of Waste and Disposal Plans**

Wood from clearing of the ROW will first be segregated into usable timber. The remaining material will be piled or windrowed for burning on site. Domestic solid waste will be collected in appropriate on-site containment for later transport to the closest landfill within Bunibonibee Cree Nation, Manto Sipi Cree Nation and God's Lake First Nation. If at the time of construction these community landfills do not meet regulatory requirements then the solid waste would be transported by winter road to the nearest licenced disposal grounds located in either Thompson or Chisel Lake Mine. Septage waste at construction camps or sites will be stored in approved containers and will be hauled to the nearest community for disposal and treatment at the existing mechanical SBR (Sequence Batch Reactor) wastewater treatment plants within Bunibonibee Cree Nation, Manto Sipi Cree Nation and God's Lake First Nation. Waste petroleum products (e.g., lubricants, oils, greases) derived from construction vehicles and equipment will be collected and stored in designated areas and containers until they can be removed from site for recycling or disposal through a licensed waste disposal/treatment company.

Solid, liquid and hazardous wastes from the proposed Project will be collected, stored, transported, disposed of and/or treated in accordance with *The Environment Act* (Waste Disposal Regulation), *The Dangerous Goods Handling and Transportation Act* (Dangerous Goods Handling and Transportation Regulation, Environmental Accident Reporting Regulation, and Storage and Handling of Petroleum Products and Allied Products Regulations) and *The Transportation of Dangerous Goods Act*. Impacted soil from hydrocarbon spills will be assessed and any soil determined to be contaminated will be managed on-site or removed to an approved treatment site.

## **2.5 Project Phases and Scheduling**

### **2.5.1 Anticipated Scheduling**

Environmental and engineering studies are currently under way and will support completion of the environmental assessment and planning processes. Pre-construction (detailed design) is anticipated to begin in 2020 (Year 1) and take approximately 3 years to complete. Scheduling of specific Project activities will be determined upon tendering of individual construction contracts following detailed design, however, construction is anticipated to start in Year 4. The proposed Project will provide all-season access between the communities approximately eight years after construction begins (Year 11).

The alignment will be divided into segments to optimize construction scheduling and resource use. Segments will undergo pre-construction and construction stages sequentially such that completion of the construction phase at one segment will initiate the pre-construction of the adjacent segment. It is proposed that construction will commence from Bunibonabee Cree Nation and extend eastwards. Once road construction is initiated, the winter road may be moved to the all-season road alignment to facilitate construction and improve winter road reliability as all-season road segments are completed.

In general, road building construction is not seasonally constrained, but may be scheduled around conditions that provide for better access. Timing constraints are placed on select aspects of the Project to protect environmental or infrastructure components. These will be identified as mitigation measures in the EIS and/or stipulated in associated authorizations or approvals.

### **2.5.2 Main Activities in Each Phase of the Designated Project**

The proposed Project will be carried out in four main stages as follows:

1. Planning and Design.
2. Pre-construction.
3. Construction.
4. Operation and Maintenance.

There are no plans to decommission or abandon the proposed Project as it will provide all-season access between Manto Sipi Cree Nation, Bunibonabee Cree Nation and God's Lake First Nation, and with the completion of Projects P2 and P5 in the future, it will be connected to the provincial road network, for the foreseeable future. Decommissioning of temporary components (temporary access trails, quarries and borrow areas no longer required for maintenance, laydown areas and construction camps) will occur as part of the construction phase of the Project.

Until construction is complete, the existing winter road will be established annually, and closed at the end of each road season, as is the current practice. After Project construction, the sections of the existing winter road not used for the all-season road alignment will be abandoned. Remote Road Operations will block access to these sections of the existing winter road ROW. The natural fen and bog conditions of the low-lying terrain along the winter road alignment will also inhibit ongoing use or access. Remote Road Operations will provide for re-vegetation where required.

### **2.5.3 Planning and Design**

Planning and design for the proposed Project (current stage) involves identifying broad road corridors, possible road alignments within the corridors, selecting the final road alignment and preparing the detailed road design. This process starts with an engineering assessment followed by community input into the selection of the alignment to pursue during preliminary and functional engineering analysis. Baseline environmental studies including soils investigations, along with Aboriginal and public engagement (see Sections 6 and 7) and the environmental assessment are conducted during this stage. Community input is sought through these stages.

### **2.5.4 Pre-Construction**

During the pre-construction stage, detailed design will be completed and Environmental Protection Plans (EnvPPs) finalized. Equipment, machinery, vehicles, construction materials and supplies including fuel, generators, trailers and other provisions will be transported into the project location via the existing winter road network and stockpiled at laydown areas pending road construction. Stream crossing locations, quarry and borrow areas, temporary access trails, construction laydown areas and construction camps will also be located, surveyed and flagged. Detailed geotechnical investigations and testing will be conducted along the all-season road ROW, temporary access trails, quarry sites and borrow areas.

### **2.5.5 Construction**

During the construction stage, equipment marshalling and laydown areas, and construction camps will be prepared, and rock quarries and borrow areas will be cleared and made ready. The proposed all-season road, culvert crossings and bridge upgrades will then be constructed.

#### **2.5.5.1 Vegetation Clearing**

Vegetation clearing will be required for most permanent and temporary components of road construction. Vegetation will be cleared along the ROW to a width of 60 m (potentially wider on the inside of curves for sight visibility where required). Clearing will consist of the removal and disposal of trees, shrubs, fallen timber and surface litter. Vegetation will be cut by local clearing crews using tree fellers, brush cutters and hand tools, and piled or windrowed using dozers. Organic materials stripped from the surface will be stockpiled for use on road shoulders. Salvageable materials (logs or timber) will be stockpiled for community use. Where required, stumps and roots will be grubbed out and separated from the soil. Non-salvageable material such as brush, roots, and limbs will be piled and burned or buried.

#### **2.5.5.2 Temporary Laydown Areas and Construction Camps**

Temporary laydown areas and camps will be established by the road construction contractor at various locations along the proposed ROW to support crews, and to store construction vehicles, equipment and machinery, construction materials and supplies. Information on laydown areas and camps is still being determined at this time, additional information will be provided in the EIS. After clearing, the area will be contoured and levelled, and provided with drainage control and erosion protection. An aggregate base may be established depending on ground conditions. Buildings and other structures will be skidded in or constructed on site. These areas may be fenced and site security will be provided where required. Petroleum products will be stored in double-walled tanks in accordance with the National Fire Code of Canada and *The Dangerous Goods Handling and Transportation Act* (Manitoba), Storage and Handling of Petroleum Products and Allied Products Regulation. Sanitary and solid waste will be collected and transported to licensed or approved waste disposal and treatment facilities.

### **2.5.5.3 Rock Quarries and Borrow Areas**

New rock quarries and borrow areas will be developed to provide crushed rock, clay and granular materials. These materials are required for construction of the all-season road, riprap, stream crossings, temporary access trails and construction camps.

The road design will be based on cut and fill requirements to the extent possible, with additional fill to be provided from quarried sources. Blasting of rock and gravel crushing will typically take place within the quarries. Borrow areas or pits will be established where the soil/earth has been tested and determined suitable for road embankment construction where existing soil materials at the road construction site is unsuitable for this. Where they are no longer required for long-term road maintenance activities, these areas will be decommissioned.

The quarry and borrow sites will be located on provincial Crown land along or in the vicinity of the alignment, estimated within 500 m of the ROW centreline. Where this is not possible, temporary access trails will be established to connect the various Project components as required. No quarries will be built on Reserve land. The total area for rocks quarries and borrow areas will depend on the final number of quarries and borrow areas established, and will be described in the EIS.

### **2.5.5.4 Temporary Access Trails**

During construction, temporary access trails may be required to access the all-season road ROW from the winter road. These trails will be utilized to facilitate emergency access to the site and to provide access for equipment and personnel. Each access trail will typically be less than 1 km long but may be up to 3 km in length.

Access trails will be cleared, but not grubbed, and will be constructed to accommodate the width of construction machinery (approximately 5 m). Efforts will be made to follow existing trails or otherwise locate trails in areas of sparse vegetation. Erosion protection and sediment control measures will be provided and drainage will be managed as required. Access trails will be required for the duration of construction of a road segment, and will be decommissioned when they are no longer needed.

### **2.5.5.5 Road Construction**

The road bed will be prepared to a width of 18 m depending on ground conditions and the final road will be 10 m in width. After clearing and grubbing, road construction activities will begin with contouring, and blasting of rock outcrops. Organic materials will be stripped, stockpiled and used along road shoulders. Materials, including rock fill aggregate and composite material will be loaded, hauled, dumped, spread, graded and compacted, and trimmed and shaped before final gravelling. Other activities may include placement of geotextile fabric (in wet areas to strengthen the integrity of the road), riprap, roadway signs, erosion and sedimentation control and seeding of ditches.

### **2.5.5.6 Stream Crossings and Equalization Culverts**

Culverts will be installed at smaller stream crossing locations and where it is determined that spring melt or storm run-off needs to pass from one side of the road to the other to control flooding and erosion damage. Culverts installed at fish bearing streams will be embedded. Culverts will be installed by excavating a trench to the required elevation through the road embankment. The trench will then be backfilled and compacted to the culvert grade elevation with a granular bedding material. The new culvert may be pre-assembled and lowered into the trench, or in the case of concrete pipe, assembled by connecting short sections of the pipe in

the trench. The pipe will then be backfilled with granular material to support the pipe adequately and reduce settlement in the road embankment. Equalization culverts will also be installed at a number of locations along the road to maintain natural hydraulic equivalency. Culverts will be put in place as construction progresses along the alignment.

#### **2.5.5.7 Bridge Construction**

Bridge construction is a major component of the proposed Project. The existing bridge at God's River may be replaced because it is only a single lane and may be too narrow to support the construction equipment and materials. A bridge or culvert crossing will also be required to cross Magill Creek (Map 8). Materials will be transported to bridge construction sites from the south along the existing winter road network.

Depending on final design, bridge construction activities may include drilling and blasting of bedrock, installing geotextile fabric, installing erosion and sediment control measures (installing riprap, straw, ditch checks, silt fences and silt curtains, and the installation and removal of cofferdams), placing and compacting granular materials, erecting concrete forms, pouring concrete, assembling bridge components and hoisting them into place, and site restoration through seeding and/or planting if natural re-vegetation is not sufficient. A concrete batch plant may be established and located in close proximity to each crossing to produce concrete for bridge abutments and piers where required.

Temporary construction bridges (e.g., snow fills, ice bridges, or engineered structures) may be required to transport equipment and materials across waterways to facilitate permanent bridge construction. These bridges may include temporary in-water works such as piers and cribbing, and may not allow for navigation during installation. Following site preparation, construction activities may consist of flooding winter ice and packing clean snow to create an ice bridge, or installing geotextile fabric, erosion protection and sediment control measures, placing, grading, and compacting granular materials, assembling bridge components (if required), launching the bridge, and installing timber decking and metal guardrails.

#### **2.5.5.8 Demobilization of Temporary Structures and Laydown Areas**

Facilities and work areas including quarry and borrow areas, temporary access trails, laydown areas and construction camps, and temporary construction bridges that will not be needed for future maintenance activities will be demobilized following construction.

Aggregate materials from temporary access trails will be salvaged and used in borrow area reclamation, and the roads levelled and trimmed. Borrow pits will be levelled and trimmed when excavation is complete. Disturbed areas will be restored by spreading stockpiled topsoil and encouraging natural re-vegetation and seeding and/or planting as required.

#### **2.5.6 Operation and Maintenance**

Operation and maintenance activities for the completed all-season road such as routine scheduled grading, topping the road with additional aggregate and management of vegetation and culvert cleanouts will occur over the life of the road. In the winter, snow clearing activities will use ploughs, graders, loaders and dump trucks. Road salt and other ice melting and dust suppression chemicals may be used to control dust and ice on the road surface once re-vegetation growth has been achieved. Only chemicals approved for use on similar roads in Canada will be used, the substance will be applied as specified by the manufacturer, and only if and where necessary and not beyond the road surface. Aggregate materials will be sourced



from borrow areas located on provincial Crown land and will be deposited on the road surface using dump trucks, dozers and graders.

### 3 PROJECT LOCATION

#### 3.1 Location Description

The Project will link Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation. Although the distances vary slightly, the three communities are located approximately 580 km north of the City of Winnipeg by air. The proposed Project alignment consists of approximately 138 km of all-season road on a new ROW on provincial Crown land (Map 2). There are three road sections that will begin at the Reserve boundaries and generally head west and southwest approximately 72 km from Manto Sipi Cree Nation (Map 3), southeast 36.5 km from Bunibonibee Cree Nation (Map 4) and northwest 29.9 km from God's Lake First Nation (Map 5) where the three sections intersect (Map 6). At the Reserve boundaries, the all-season road will connect to existing or future on-Reserve access roads. The Project alignment, at the closest point, is approximately 100 km northwest of the border between Manitoba and Ontario and approximately 575 km north of the border between Canada and the United States.

MI is in discussions with Manto Sipi Cree Nation regarding an 8 km section of the alignment near the community. The community has chosen the alignment in this area to parallel the winter road through a large bog/fen. Sourcing the necessary rock to construct the segment along the winter road would require additional access roads and quarries. MI has proposed three alternative options (Map 7) to reduce project footprint, cost and construction timelines.

#### 3.2 Coordinates

Coordinates for the proposed Project are as follows:

- Manto Sipi Cree Nation:

Eastern terminus (from Manto Sipi Cree Nation Reserve boundary):

Latitude: 54° 50' 24.7" N

Longitude: 94° 02' 53.1" W

- Bunibonibee Cree Nation:

Northwest terminus (from Bunibonibee Cree Nation Reserve boundary):

Latitude: 54° 54' 36.6" N

Longitude: 95° 16' 14.6" W

- God's Lake First Nation:

Southern terminus (from God's Lake First Nation Reserve boundary):

Latitude: 54° 33' 03.5" N

Longitude: 94° 31' 38.5" W

- Intersection of P6 alignment sections from Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation:

Latitude: 54° 40' 56.6" N  
Longitude: 94° 54' 30.0" W

### 3.3 Site Maps/Plans

The proposed route for the Project is shown on Map 2.

#### 3.3.1 Detailed Site Maps

Maps showing the proposed alignment are provided within this document.

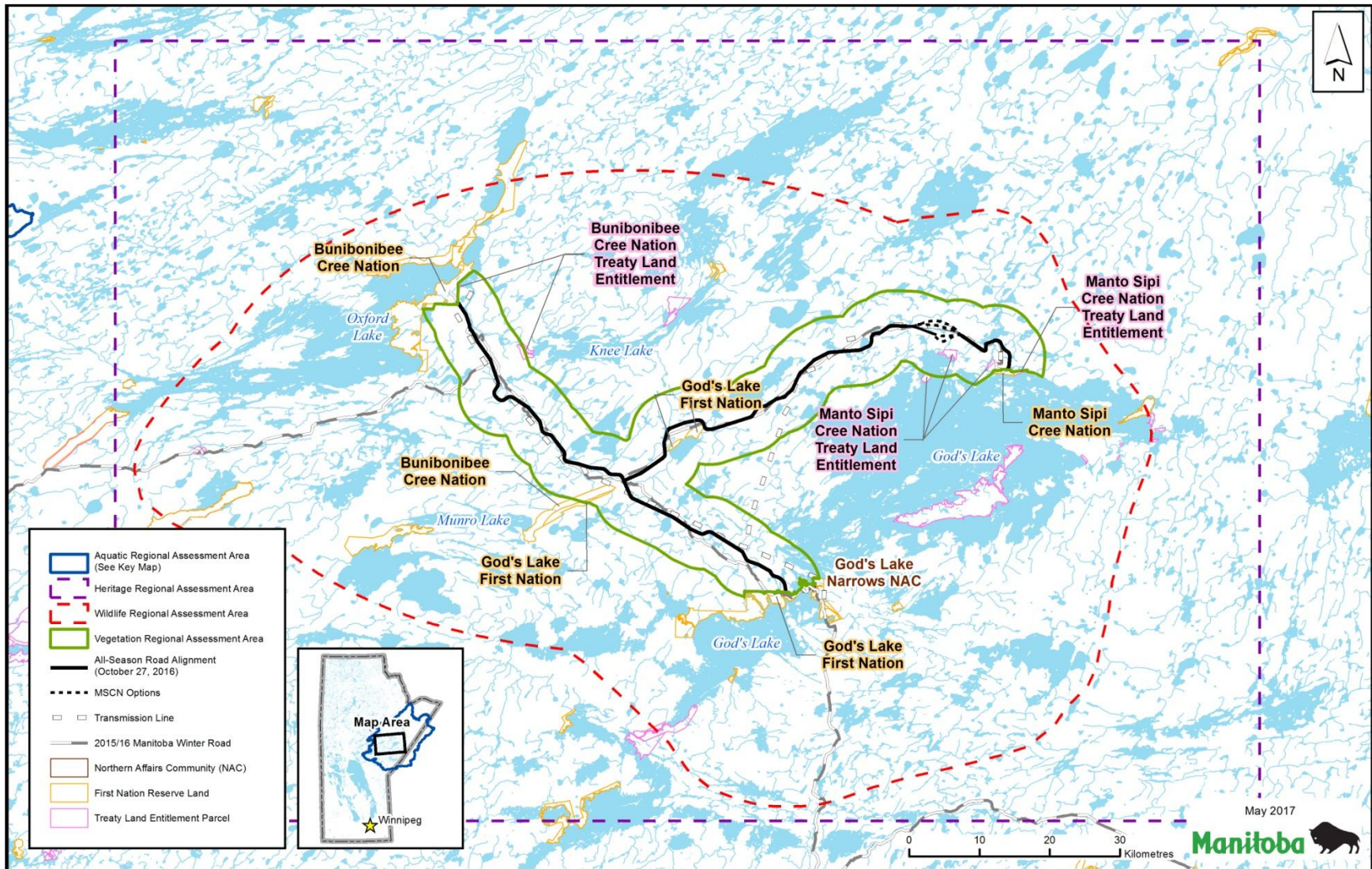
These maps include, where applicable and known:

- Watercourses and waterbodies;
- Existing bridge crossing over God's River and bridge or culvert crossing of Magill Creek;
- Linear and other transportation components (including winter road corridors and transmission lines);
- Federal land, consisting of Reserve lands for Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation (Note: The Project does not cross through First Nation Reserve lands and there are no other federal lands in the Regional Assessment Area. There are no National Historic Sites or National Parks in the area. The Hayes River, which is a designated Canadian Heritage River, does cross through the area but is not crossed by the Project.);
- Treaty Land Entitlement (TLE) selections for Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation in the area;
- God's Lake Narrows Northern Affairs Community; and
- Provincial boundaries.

Because the area is largely undeveloped, there are no commercial development sites or industrial facilities in the area. As noted above, apart from the communities, there are transmission lines and existing winter road corridors in the Regional Assessment Area (area beyond the Local Assessment Area as shown on Map 11 to include First Nation wildlife areas of interest). In addition, there are two Registered Trapline (RTL) Sections (God's Lake Narrows and Oxford House) in the Regional Assessment Area and the proposed all-season road alignment crosses 10 RTLs in the two sections. The locations of isolated trapper cabins for seasonal or temporary use are not fully identified at present, but are not located in the proposed alignment corridor for the Project.

The three First Nations have outstanding TLEs. Under the TLE Framework Agreement, Manto Sipi Cree Nation is entitled to 8,725 acres and, as of March 1, 2015, the First Nation had selected 4,284 acres. Bunibonibee Cree Nation is entitled to 35,433 acres and, as of March 1, 2015 had selected 31,342.34 acres, while God's Lake First Nation is entitled to 42,600 acres and had selected 16,301.77 acres (Government of Canada website, accessed April 12, 2016). As shown on Map 9, Manto Sipi Cree Nation and Bunibonibee Cree Nation both have TLE selections in the Local Assessment Area although none are close to the proposed alignment.

There are numerous recorded heritage sites within the Regional Assessment Area. A total of 78 archaeological/heritage sites were recorded during previous Heritage Resources Impact Assessments. Thirty-three campsites, one hunting/fishing site, eight lithic workshops, seven pictograph sites, seven isolated finds, 14 historic sites, and eight sites listed as un-interpreted are in the Manitoba Historic Resources Branch database. Most of these are in proximity to the numerous lakes and rivers in the region rather than the all-season road alignment.



Map 11: Regional Assessment Areas for proposed P6 - All-Season Road



There are a total of 13 Heritage Resources including the 12 newly recorded sites in the Local Assessment Area. In 2016, a Heritage Resources Impact Assessment was completed in support of the Project. A total of twelve Heritage Resource sites and three traditional use sites were discovered within the Local Assessment Area. These include two historic portages, one isolated find, seven campsites/workshops, and two quartzite quarries. Four of these newly recorded sites are within the 100 m ROW for the all-season road. At this time, not all quarries, borrow areas, and temporary construction access trails, laydown areas, and camps have been identified by the proponent.

### **3.3.2 Project Area Photographs**

Photographs of areas within the Local Assessment Area or representative photos from other projects on the east side of Lake Winnipeg are provided. With the exception of the first photo of the God's River bridge, photos showing constructed road, bridges, or culverts are from the Project 1 area (P1 - All-season road between PR 304 and Berens River First Nation). The photos include:

- Existing God's River bridge crossing that may be replaced (Photo 1);
- Magill Creek crossing that will require construction of a bridge or culvert (Photo 2);
- Small stream crossings and drainages being assessed for fish habitat, requiring culverts (Photo 3 and Photo 4);
- Representative photos of typical water crossing or drainage structures (bridges and culverts) from P1: All-Season Road from PR304 to Berens River (Photo 5, Photo 6 and Photo 7); and
- Exploratory clearing completed along the all-season road alignment (Photo 8).



**Photo 1: Existing single lane bridge crossing God's River to be replaced**





**Photo 2: Magill Creek crossing**



**Photo 3: Small tributary of the Hayes River near Bunibonibee Cree Nation**





**Photo 4: Typical small tributary**



**Photo 5: Stream crossing – bridge with piers over Longbody Creek (*representative from P1*)**

*Photo Credit: Joro Consultants*





**Photo 6: Stream crossing – three culverts (*representative from P1*)**

*Photo Credit: Joro Consultants*



**Photo 7: Small drainage/stream crossing – single culvert (*representative from P1*)**

*Photo Credit: Joro Consultants*





**Photo 8: Exploratory clearing completed along proposed All-Season Road alignment approaching Manto Sipi Cree Nation**

### **3.3.3 Proximities**

#### **3.3.3.1 First Nations Reserves and Residences**

The proposed Project will be built on provincial Crown land and will connect Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation. The all-season road will begin at the Reserve boundaries which are federal land, and generally head west and southwest approximately 72 km from Manto Sipi Cree Nation, southeast 36.5 km from Bunibonibee Cree Nation and northwest 29.9 km from God's Lake First Nation. There are no known residences or cabins in immediate proximity to the proposed all-season road alignment. The nearest residences to the alignment are approximately 250 m in Manto Sipi Cree Nation, 1,450 m in Bunibonibee Cree Nation, 1,450 m in God's Lake First Nation and 2,500 m in God's Lake Narrows Northern Affairs Community.

#### **3.3.3.2 Traditional Use Areas**

The Regional Assessment Area is within the Northern RTL District, specifically the Oxford House and God's Lake RTL Sections. Members of the Manto Sipi Cree Nation use part of the God's Lake RTL Section. The all-season road crosses 10 RTLs in the two RTL Sections. The three First Nations all have outstanding TLE, and both Manto Sipi Cree Nation and Bunibonibee Cree Nation both have TLE selections within the Local Assessment Area of the proposed all-season road alignment. The closest of these is approximately 660 m from the alignment near the terminus at the Manto Sipi Cree Nation and the rest are all over 1 km from the alignment.



### **3.4 Land and Water Use**

Although the all-season road will not cross the Reserve lands for Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation, the road will provide a benefit to the communities in terms of improving linkages among the communities and opportunities for community members to benefit from construction employment and economic opportunities while working towards meeting objectives of the ESTI. As of March 2016, the on-Reserve population for Manto Sipi Cree Nation was 789, while for Bunibonibee Cree Nation, it was 2,547 and it was 1,461 for God's Lake First Nation. The off-Reserve population for Manto Sipi Cree Nation was 129, and it was 485 for Bunibonibee Cree Nation and 1,201 for God's Lake First Nation (Government of Canada website, accessed April 12, 2016).

Land use in the area of the proposed Project consists mainly of traditional activities (i.e., hunting, trapping, fishing, camping, recreation activities, sacred/ceremonial use, and food and medicine gathering) by Aboriginal people from Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community.

The communities are currently serviced by winter roads extending from Provincial Trunk Highway 6 and PR 373. The former provides all-weather access to the cities of Thompson and Winnipeg. The three communities each have regional airports. Power to the communities is provided by transmission and sub-transmission lines. The Kelsey to Oxford House 138 kilovolt (kV) transmission line, which originates outside of the area, provides power to Bunibonibee Cree Nation. A 138 kV transmission line from Oxford House to God's Lake provides power to God's Lake First Nation and God's Lake Narrows Northern Affairs Community. A sub-transmission line from God's Lake to God's River provides power to Manto Sipi Cree Nation. Once completed, the proposed Project will replace the existing winter road segment between the communities. Winter road access will still be needed until the Project is constructed, and until future projects (Project P5 and Project P2) are constructed to connect to PR 373 in the future.

The Project will be constructed on provincial Crown land. It will be owned by the Province of Manitoba, and will be operated as part of the provincial all-season road network. Apart from the winter roads, and transmission and sub-transmission lines, the land is mostly undeveloped.

#### ***3.4.1 Designated Protected Areas and Protected Areas Initiative***

Other than the Reserve lands for the three First Nations in the area, there are no federal lands or National Historic Sites in the area. The proposed all-season road will connect to existing and proposed access roads at the Reserve boundaries and will not cross through Reserve lands. There are no designated protected areas or other lands protected under the Manitoba Protected Areas Initiative (PAI) in the region. The latter would include National Parks, Ecological Reserves, Provincial Forests and Park Reserves, and could include Provincial Parks and Wildlife Management Areas. The Knee Lake Area of Special Interest, which is not yet protected under the PAI, is in the Local Assessment Area and surrounding region. The Hayes River, which crosses through the area, was designated as a Heritage River under the Canadian Heritage Rivers System in 2006. The proposed all-season road does not cross the Hayes River.

A portion of The Middle Track and Hayes River designated canoe route, along the Hayes River, crosses through the area. The proposed all-season road does not cross The Middle Track and Hayes River designated canoe route.

### **3.4.2 Legal Description**

The township and ranges partially traversed by the proposed all-season road alignment are located east of the first principal meridian and are as follows:

- Manto Sipi Cree Nation all-season road section; 66-17, 66-18, 66-19, 67-18, 67-19, 67-20, 67-23, 68-20, 68-21, 68-22 and 68-23;
- Bunibonibee Cree Nation all-season road section; 66-16, 66-17, 67-15, 67-16 and 68-15; and
- God's Lake First Nation all-season road section; 64-19, 64-20, 65-18, 65-19, 66-17 and 66-18.

Due to the length of the proposed all-season road, and the number of sections traversed by the alignment, only township and range are identified above. A digital shapefile with the proposed alignment is provided to regulators along with this Project Description.

### **3.4.3 Resource Use**

There are few important commercial uses of the land along the proposed all-season road alignment or in the traditional land use areas in the vicinity of the alignment. While there are no mineral leases, patent mining claims, potash withdrawals, private quarry permits or quarry and surface leases, there are various mines, mining claims, quarry withdrawals and casual quarry permits (annually-issued) within the Regional Assessment Area. There are 12 mine sites within the Regional Assessment Area with the closest approximately 18.3 km from the all-season road alignment (outside of the Local Assessment Area). There are four and 270 mining claims within the Local Assessment Area and Regional Assessment Area, respectively, with the closest approximately 1 km from the alignment. There are eight quarry withdrawals and eight active casual quarry permits within the Local Assessment Area with a total of 12 of each within the Regional Assessment Area. Four of the quarry withdrawals (two held by MI and two held by Northern Affairs) and five expired casual quarry permits overlap the all-season road alignment. Economic activity includes fishing, trapping, and licensed hunting, the latter including woodland caribou, moose, black bear and game birds. Trapping of furbearers is administered by MSD through the Registered Trapline system. There are two RTL Sections in the Regional Assessment Area – Oxford House and Gods Lake and 10 RTLs that intersect the vicinity of the proposed all-season road alignment.

### **3.4.4 Land and Resources Used for Traditional Purposes**

Currently, local Aboriginal people from Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community use the Local and Regional Assessment Areas for traditional activities including travel routes, fishing, hunting, trapping, camping, harvesting plants and berries, recreation activities, and sacred/ceremonial use.

Engagement on the road alignment and traditional, cultural and spiritually sensitive areas has been an ongoing process between Remote Road Operations, God's Lake First Nation, Bunibonibee Cree Nation, Manto Sipi Cree Nation and God's Lake Narrows Northern Affairs Community members. Information on traditional use areas, as well as environmentally sensitive areas has been provided by community members or community elders and leaders, through TK workshops, interviews and community meetings. In response to information provided on specific use areas, Remote Road Operations has adjusted the alignment in the planning process (see Map 10 and Section 6) and is still in discussions with Manto Sipi Cree Nation regarding an 8 km section of the proposed alignment.

Although the proposed alignment for the Project passes through lands used for traditional purposes by Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation, all three communities have considered the alignment in planning and decision-making. Remote Road Operations is in the process of obtaining BCRs from these communities allowing for ongoing investigations along the proposed alignment in support of the proposed alignment and current planning.

Aboriginal residents of the God's Lake Narrows Northern Affairs Community also use part of the Local and Regional Assessment Areas for traditional purposes. No other current use by Métis persons in the vicinity of the Project alignment has been identified to date. The proposed Project area is not anticipated to be used by members of other First Nations in the region.

## **4 GOVERNMENT INVOLVEMENT**

### **4.1 Financial Support**

The total cost for construction and operation of the proposed Project will be supplied by the Manitoba Government. There is no proposed or anticipated federal financial support for the Project at this time.

### **4.2 Federal Land**

No federal land will be used for the purpose of carrying out the designated Project, including no granting of interest in federal land through easement, ROW, or transfer of ownership. The all-season road will extend west, southeast and northwest on provincial Crown land from the boundaries of Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation, respectively.

### **4.3 Regulatory Requirements**

Potential federal and provincial requirements for environmental assessment were identified in Section 1.4. Other permits or authorizations that may be required to carry out the proposed Project are identified below.

#### **4.3.1 Explosives Act**

If required, licences for storage of explosives at non-quarry worksites will be sought from Natural Resources Canada under the *Explosives Act* (Storage of explosives for quarries is permitted under *The Manitoba Mines and Minerals Act* and requires provincial licensing).

#### **4.3.2 Navigation Protection Act**

On April 1, 2014, the *Navigable Waters Protection Act* was replaced by the *Navigation Protection Act*. Under the "opt-in" provisions of this new Act, Remote Road Operations may apply to Transport Canada for the assessment and potential approval of proposed works on non-scheduled watercourses including the God's River. There are no scheduled watercourses affected by the proposed Project.

#### **4.3.3 Migratory Birds Convention Act, 1994**

Remote Road Operations will adhere to provisions of the *Migratory Birds Convention Act, 1994* as part of the environmental assessment carried out on the proposed Project. Measures

required to mitigate the effects of the proposed Project on migratory birds will be implemented as part of Remote Road Operations's environmental protection measures.

#### **4.3.4 Fisheries Act**

Fish or fish habitat, as defined under the *Fisheries Act*, maybe affected during construction of stream or river crossings. Notifications or authorizations under s. 35(2) may be required. Works over major waterways, such as God's River, may potentially harm fish that are part of an Aboriginal fishery, as well as fish that are part of a commercial and recreational fishery (by virtue of connectivity to God's Lake). Remote Road Operations will provide DFO with Project information for its review and decision on whether Authorizations will be required.

#### **4.3.5 Species at Risk Act**

There are several species protected under the *Species at Risk Act*, which inhabit the Local Assessment Area as described in Section 5.1. These SARA species may be affected during construction activities, in particular clearing the ROW may affect several protected birds and their habitat and therefore a permit may be required under the *Species at Risk Act*.

#### **4.3.6 Indian Act**

No approvals under the *Indian Act* are required for the proposed Project.

#### **4.3.7 The Crown Lands Act (Manitoba)**

Remote Road Operations will seek authorizations for the work to proceed on provincial work permits required under *The Crown Lands Act* for work associated with road construction, including vegetation removal, quarry development and camp development on provincial Crown lands.

#### **4.3.8 The Mines and Minerals Act (Manitoba)**

Casual quarry permits required under Subsection 133(1) of *The Mines and Minerals Act* will be sought prior to any quarry development on provincial Crown land.

#### **4.3.9 Other (Manitoba)**

Burning permits required under Section 19(1) of *The Wildfires Act* will be sought as needed. Contractors will be required to obtain permits for petroleum storage tanks over 5,000 L on Crown land under *The Dangerous Goods Handling and Transportation Act* (Storage and Handling of Petroleum Products and Allied Products Regulation) and *The Environment Act* Licences for batch plants. Licenses for storage of explosives for quarries permitted under *The Mines and Minerals Act* will be sought as required, in accordance with regulations under *The Workplace Safety and Health Act*. Any required permits for environmental research or study such as wildlife investigations will be acquired under *The Wildlife Act* and for archaeological surveys under *The Heritage Resources Act*. As required, other permits and approvals will be acquired under *The Forest Act*.

## **5 ENVIRONMENTAL DESCRIPTION**

### **5.1 Biophysical Setting**

For the purposes of this section, this Project Description will primarily focus the environmental description on the Local Assessment Area (Map 9). The species lists provided in the appendices, however cover a larger Northern all-season road Project Study Area. This Northern all-season road Project Study Area includes the Regional and Local Assessment Areas for the Project and covers the area contained within 5 km south of Poplar River First Nation north to 5 km north of Bunibonibee Cree Nation, east to the Manitoba border and west to the edge of Lake Winnipeg.

The proposed Project is located almost entirely within the God's Lake Ecodistrict (#365), within the Hayes River Upland Ecoregion of the Boreal Shield Ecozone (Smith et al., 1998). A small area at the northern limit of the Local Assessment Area also falls within the Knee Lake Ecodistrict (#360). Given that only a small portion of the Local Assessment Area is within the Knee Lake Ecodistrict, information provided below will focus on describing the God's Lake Ecodistrict as it is assumed to be most representative. Further details about the Knee Lake Ecodistrict will be provided in the EIS for the proposed Project.

#### **5.1.1 Climate and Air Quality**

The nearest active weather station is located at Island Lake (Climate ID 5061376) between approximately 85 and 135 km south of the proposed Project. The region experiences warm summers, with daily average temperatures in July of 18°C, and cold winters, with daily average temperatures in January of -22°C. The average annual precipitation is 555 millimetre (mm), with 186 mm of that in the form snow. The average frost-free period is 122 days (Government of Canada, 2016).

No new air quality data have been collected for this Project. There are no current industrial activities in the region that would be expected to significantly affect air quality in the region of the proposed Project resulting in good air quality. Air quality in the area may be temporarily degraded due to smoke from forest fires.

#### **5.1.2 Physiography and Surficial Geology**

The Hayes River Upland Ecoregion is underlain by crystalline Archean massive rocks which form broad sloping uplands and lowlands. The area was strongly glaciated and is characterized by ridged to hummocky bedrock outcrops covered with discontinuous areas of acidic sandy till to the south and calcareous, sandy to loamy cobbly glacial till to the north. Local areas of ridged fluvio-glacial deposits occur, with slopes ranging from 10 to 30 percent, with relief which can exceed 30 m (Smith et al., 1998).

Within the God's Lake Ecodistrict, physiography consists of undulating to hummocky morainal plain of calcareous, sandy to loamy till deposits. Clayey glaciolacustrine layers are common on lower slopes and in depressions. Peat of variable depth is frequently found above glaciolacustrine sediments. Areas with kettled fluvio-glacial deposits are also present. Slopes range from level in peat-filled areas up to 20 percent along some drumlin and bedrock slopes. Slope lengths range between under 50 m and up to 150 m. Relief consists of rocky hummocky highs and drumlins that can stand up to 20 m above lakes and depressions. Lakes in the area are drained by an irregular network of rivers and secondary streams which generally flow

northward over terrain which drops in elevation at a rate of approximately 0.6 m per km (Smith et al., 1998).

The God's Lake Ecodistrict has well to imperfectly drained mineral soils comprised of eluviated eutric brunisols and grey luvisols which can be found on upland clayey glaciolacustrine deposits. Peat-filled depressions form poorly drained bogs and fens. Soils within bogs consist of deep slightly decomposed sphagnum and feather moss peat (fibrosols), moderately decomposed moss and forest peat (mesisols), and areas of permafrost (organic cryosols). Deeper layers of peat are generally more decomposed than those closer to the surface. Clayey subsoils are found beneath most organic soils (Smith et al., 1998).

### **5.1.3 Vegetation and Forest Cover**

The proposed Project is located within the Northern Coniferous (B22a) Forest Section within the Boreal Forest Region of Canada (Rowe, 1972). This region ranges from western Ontario to western Saskatchewan in an area where climatic conditions allow reasonable tree growth where there is adequate soil depth.

The region is dominated by black spruce (*Picea mariana*) both in the poorly drained lowlands and the thin soils of the uplands. The frequent occurrence of forest fires has contributed to the spread of jack pine (*Pinus banksiana*) particularly in the upland areas, and possibly the widespread occurrence of white birch (*Betula papyrifera*). Tamarack (*Larix laricina*) is also associated with black spruce in the lowland areas. Species present in more favourable soil conditions along river valleys and some lakes include white spruce (*Picea glauca*), balsam fir (*Abies balsamea*), trembling aspen (*Populus tremuloides*) and balsam poplar (*Populus balsamifera*) (Rowe, 1972).

Relief in the area is irregular with parallel rocky ridges separating poorly drained depressions and narrow lakes as a result of glaciation. Drift deposits above Precambrian granites and gneisses are thin to absent on the uplands. Less well-drained areas are filled with peat while deeper rifts of slopes and valleys contain humo-ferric podzol soil development (Rowe, 1972).

Flooded jellyskin (*Leptogium rivulare*) is a species of lichen that could potentially be found in the Regional Assessment Area although its presence has not been noted in the TK studies. While the flooded jellyskin is not listed by Manitoba Conservation Data Centre (MBCDC) or *The Endangered Species and Ecosystems Act of Manitoba* (MESEA), it is listed as a Species of Special Concern under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and classified as Threatened under Schedule 1 of the *Species at Risk Act* (SARA). Flooded jellyskin was not observed nor was critical habitat for this species identified during field studies conducted in 2016 along the proposed alignment.

A listing of potential vegetation species that can be found in the Regional Assessment Area and their conservation classification is provided in Appendix A.

### **5.1.4 Surface Water**

Surface waters in the area drain to the north-east as part of the Hayes River Drainage Basin. Oxford Lake (location of Bunibonibee Cree Nation) is situated on the Hayes River system and flows in a generally north-east direction until it discharges into Hudson Bay. God's Lake (location of Manto Sipi Cree Nation and God's Lake First Nation) outlets to God's River which flows north-east until it discharges into the Hayes River and on to Hudson Bay. Water levels in the region are not regulated.

The proposed all-season road alignment will cross the God's River, Magill and several smaller unnamed creeks and tributaries. Smaller streams in the area are often part of boreal wetlands such as bogs and fens that drain local areas into larger creeks, rivers or lake, and are usually less than 1 m in depth.

Three Water Survey of Canada hydrometric stations are present in the watershed (Government of Canada, 2016b). The lone station near the Local Assessment Area is on Back Lake adjacent to the Bunibonibee Cree Nation (Station #04AA003). Further downstream, stations are located on God's River near Shamatawa (Station #04AD002) and on the Hayes River downstream of the confluence with the God's River (Station # 04AB001). Water levels on Back Lake remain relatively stable with slightly higher levels in late spring/early summer. Both of the river gauge stations show expected seasonal discharge patterns with a spring freshet flow increase beginning in April to May, generally peaking in May, and reducing to a relatively stable level by summer for the remainder of the year.

Water quality data were not found for any rivers in the vicinity of the proposed all-season road alignment. The area is remote and therefore essentially subject only to natural disturbances. However, drinking water advisories are known to occur in Aboriginal communities in the Regional Assessment Area. God's Lake First Nation is under an ongoing "Do Not Consume" advisory (Health Canada, 2016).

### **5.1.5 Groundwater**

The demand for groundwater in the physiographic region is low as surface water is abundant, and consequently, there is little known about the distribution of aquifers, their yield, or water quality. A search of the GW Drill database indicates that there are no known groundwater wells in the area. Supplies of groundwater are available from Precambrian crystalline igneous and metamorphic rocks and from sand and gravel materials in the overlying Quaternary sediments (Betcher et al., 1995). Unfractured crystalline igneous and metamorphic rocks typically have low hydraulic conductivity. Movement of groundwater commonly occurs through secondary permeability features such as faults, sheers or joints. The zone of groundwater circulation is thought to occur in the upper 60 to 150 m of bedrock where some features (joints) are more common. Where records exist in the south-eastern Precambrian Shield, more than 80% of wells indicate yields less than 1.0 litre per second. An estimate of the groundwater recharge rate in granitic bedrock is less than 5 mm per year (Betcher et al., 1995). In bedrock terrain, groundwater generally contains solutions of low dissolved solids, developed from unequal dissolution of aluminosilicate minerals. Dominant dissolved constituents typically include sodium, calcium, magnesium and bicarbonate; chloride and sulphate have lower concentrations (Betcher et al., 1995).

As the development of groundwater in the region is limited as a consequence of low demand, uncertainty, and costs of bedrock drilling, sand and gravel aquifers provide a cost effective alternative where they occur. In addition, groundwater potential in the Precambrian Shield remains largely unexplored, but a good understanding of the distribution of Quaternary sediments exists and can serve as a model for groundwater exploration throughout the region (Betcher et al., 1995). Although surficial aquifers are scattered and local in nature, yields from most wells is small. In these sand and gravel aquifers, recharge is from rain and snow melt, and the water quality tends to be excellent. Total dissolved solid concentrations in deep aquifers may exceed 1000 milligrams per litre (Betcher et al., 1995).

### **5.1.6 Fish and Fish Habitat**

Fish species present in the Local Assessment Area are representative of species typically found in the boreal shield and include walleye, sauger, northern pike, lake whitefish, brook trout, lake trout and lake sturgeon. A number of the species (particularly walleye and lake whitefish) support commercial fisheries on God's Lake and Oxford Lake and subsistence fisheries for Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation and God's Lake Narrows Northern Affairs Community.

Waterbodies in the vicinity of the proposed Project are primarily comprised of small streams, but include medium and large sized rivers. Medium sized streams may provide spawning habitat for larger fish such as suckers and northern pike. The smaller streams may be used as spawning and nursery areas by larger fish species (e.g., northern pike) in spring, while smaller forage species such as minnows and stickleback may utilize the streams through the summer if water volume is adequate.

Due to shallow depths and low winter flows, small streams generally provide little or no over-wintering habitat. For the remainder of the year, these streams may be utilized as a nursery for young fish, as well as providing habitat for various species of minnows, darters, sticklebacks and sculpins. Over-wintering of smaller fish in these types of streams will often occur when deeper pools are available.

The one large river which the proposed all-season road crosses, God's River, provides year-round habitat for large numbers of fish species. Due to perennial flows it supports both spring and fall spawning species.

Small boreal wetlands areas also occur within the local area. These habitats are generally not connected to fish bearing waters and typically become anoxic during winter. A few species of small-bodied fish that are tolerant of low oxygen levels may persist in these wetlands, but most are typically devoid of notable fish populations.

### **5.1.7 Mammals**

Wildlife species typical of this region include marten (*Martes americana*), mink (*Neovison vison*), beaver (*Castor canadensis*), black bear (*Ursus americanus*), boreal woodland caribou (*Rangifer tarandus caribou*), ermine (*Mustela erminea*), fisher (*Mustela pennanti*), gray wolf (*Canis lupus*), least chipmunk (*Neotamias minimus*), lynx (*Lynx canadensis*), moose (*Alces americanus*), otter (*Lutra canadensis*), red squirrel (*Tamiasciurus hudsonicus*), snowshoe hare (*Lepus americanus*), wolverine (*Gulo gulo*), and southern red-backed vole (*Clethrionomys gapperi*) (Joro, 2014).

Black bears are found across most wooded habitats in North America and are relatively common through the northern forests in most of Manitoba (Kolenosky and Strathearn, 1987). Black bear densities are highest in diverse forests at relatively early stages of development and lowest where soils are thinner and plant growth generally poorer (Kolenosky and Strathearn, 1987). Black bears are common and plentiful in the vicinity of the Project and are an integral component of the ecosystem given their role in predator/prey relationships. They are also hunted under provincial licences issued by MSD and held by outfitters for foreign resident bear hunts.

The woodland caribou are listed as Threatened on Schedule 1 of the *Species at Risk Act* (COSEWIC, 2002). Boreal woodland caribou require large, continuous tracts of undisturbed



habitat to avoid high densities that may attract predators during critical calving and rearing periods (Environment Canada, 2012). They generally inhabit mature to old growth boreal coniferous forests with an ample supply of lichen in the winter, muskegs, and peatlands (Environment Canada, 2012). Caribou groups inhabit the Local Assessment Area; however, the caribou found in the vicinity of the Project may be a part of the migratory Penn Island group.

Gray wolves are also plentiful in most of Manitoba and possibly increasing in Game Hunting Area (GHA) 3A. They tend to inhabit forested areas with sufficient prey species such as beaver, boreal woodland caribou, moose, and snowshoe hare (Joro, 2014). Wolves can be hunted under any big game license.

Moose are distributed across much of forested Canada (Banfield, 1974) and are common within the boreal forest within most of Manitoba, and can be found within the Local Assessment Area. Moose are most commonly found in swampy areas with aquatic plants and willows which make up the majority of their diet (Renecker and Schwartz, 1998). They are valued for licensed hunting and rights-based subsistence hunting in GHA 3A and are an integral component of the ecosystem in their predator/prey relationship. Moose population sustainability is a specific concern in several GHAs in eastern Manitoba; however, populations in GHA 3A are not a current conservation concern (Joro, 2014).

White-tailed deer (*Odocoileus virginianus*) range does not currently extend into the area as it is limited by the severity of the winters and food supply (MCWS, 2012). The northern limit of their range is south of the Bloodvein River (<http://www.gov.mb.ca/sd/wildlife/mbsp/fs/wtdeer.html>). The development of linear corridors such as transmission lines and roadways through continuous tracts of boreal forest may create ideal conditions that may result in range expansion of the white-tailed deer into areas they had not previously occupied (Scurrah and Schindler, 2012). As a result, their movement into new areas may potentially increase the risk of transmission of fatal pathogens, such as parasites and disease (Scurrah and Schindler, 2012). The occurrence of higher ungulate populations in an area (increased prey) may result in increased predator populations. The increasing deer occurrence in areas near caribou and moose may therefore result in higher wolf populations in the area and subsequent increases in caribou and moose predation.

Furbearers in the region, such as beaver and muskrat are important for socio-economics, and also food (as are hare and spruce grouse). Ermine, fisher, marten, mink, otters red fox (*Vulpes vulpes*), and red squirrel are furbearers that are known to be trapped for their furs in the Local Assessment Area. Ermine habitat includes coniferous or mixedwood forests, fields, as well as areas of dense vegetation, areas near wetlands and can be found in most of these habitats in Manitoba, including the Local Assessment Area (Reid, 2006). Both fisher and marten can be found in most of Manitoba with marten being limited to the northwest and eastern parts of the province. They generally inhabit mature coniferous or mixedwood forests and will feed on small mammals such as hares, some birds, fruit, nuts, and carrion (Reid, 2006). They feed on rodents, hares, shrews, and insects. Mink also inhabit areas along streams, lakes, and wooded cover. They can be found in all of Manitoba and will primarily feed on small to medium mammals, crayfish, frogs, snakes, and birds (Reid, 2006). Otters can be found in most of Manitoba and within the Local Assessment Area near or in lakes, streams, rivers, or swamps. They feed on fish, frogs, crayfish, and shellfish (Reid, 2006).

A listing of potential mammals that can be found in the Northern all-season road Regional Study Area and their conservation classification is presented in Appendix B.

### **5.1.8 Birds**

Bird species present in the Local Assessment Area include bald eagle (*Haliaeetus leucocephalus*), common nighthawk (*Chordeiles minor*), gray jay (*Perisoreus canadensis*), great horned owl (*Bubo virginianus*), herring gull (*Larus argentatus*), northern hawk owl (*Surnia ulula*), olive-sided flycatcher (*Contopus cooperi*), osprey (*Pandion haliaetus*), raven (*Corvus corax*), red-tailed hawk (*Buteo jamaicensis*), sharp-tailed grouse (*Tympanuchus phasianellus*), short-eared owl (*Asio flammeus*), spruce grouse, willow ptarmigan (*Lagopus lagopus*), among others (Bezener and De Smet, 2000; Peterson and Peterson, 2002; Manitoba Avian Research Committee, 2003; Joro, 2014). Geese, ducks, and other waterfowl are also present in the Local Assessment Area and are seasonally hunted (Joro, 2014).

Bald eagles can be found in most of Manitoba and within the region. They nest in tall shoreline trees along lakes, rivers, and open areas. They primarily feed on waterbirds, small mammals, fish, and often carrion (Bezener and De Smet, 2000). Eagles are currently assessed by COSEWIC as Not at Risk.

The range of the olive-sided flycatcher overlaps with the Local Assessment Area. They inhabit semi-open mixed and coniferous forests near water or in burned areas and boggy sites with standing dead conifers (Bezener and De Smet, 2000). They are currently listed as Threatened under SARA, COSEWIC and MESEA.

The common nighthawk can be found in most of Manitoba except the northern extremity of the province and may be found within the Local Assessment Area. They inhabit open and semi-open habitats such as forest gaps, meadows, and lakeshores. They are listed as Threatened under SARA, COSEWIC and MESEA.

A listing of potential bird species that can be found in the Northern all-season road Project Study Area and their conservation classification is presented in Appendix C.

### **5.1.9 Amphibians and Reptiles**

The red-sided garter snake (*Thamnophis sirtalis parietalis*) has the northernmost distribution of any species of snake in North America and is the only snake species that may be found in the area (Preston, 1982; Cook, 1984; Conant and Collins, 1991). They prefer mesic woodlands usually found at the margins of ponds (Preston, 1982). They hibernate in upland areas where they must find crevices that extend below the frost line.

Frog and toad species within the area include: American toad (*Bufo americanus*), boreal chorus frog (*Pseudacris triseriata maculata*), northern spring peeper (*Hyla crucifer crucifer*), northern leopard frog (*Rana pipiens*), and wood frog (*Rana sylvatica*) (Conant and Collins, 1991). These species generally require shallow ponds and puddles for breeding and moist environments in shrubby and wooded areas for the rest of the year.

A listing of potential amphibians and reptiles that can be found in the Northern all-season road Project Study Area and their conservation classification is presented in Appendix D.

### **5.1.10 Species of Conservation Concern**

Species of Conservation Concern includes species protected under MESEA and SARA, and species listed by COSEWIC and by the MBCDC as very rare (S1) to rare (S2).

The MESEA was enacted to protect and enhance the survival of threatened and endangered species in Manitoba, to enable reintroduction of extirpated species into the province, and to designate species as threatened, endangered, extirpated, or extinct. At the federal level, SARA is intended to protect wildlife species at risk in Canada. Within the Act, COSEWIC was established as an independent body of experts responsible for identifying and assessing wildlife species considered at risk. Wildlife species that have been designated by COSEWIC may then qualify for legal protection and recovery under SARA.

Species are evaluated and ranked by the MBCDC on the basis of their range-wide (global - G) status, and their province-wide (subnational - S) status according to a standardized procedure used by all Conservation Data Centres and Natural Heritage Programs. These ranks are used to determine protection and data collection priorities, and are revised as new information becomes available. For each level of distribution - global and provincial - species are assigned a numeric rank ranging from 1 (very rare) to 5 (demonstrably secure). This reflects the species' relative endangerment and is based primarily on the number of occurrences of that species globally or within the province ([www.gov.mb.ca/conservation/cdc](http://www.gov.mb.ca/conservation/cdc)).

A summary of the species of conservation concern potentially present in the Regional Assessment Area is provided in Appendix E. These include 13 vascular plants, one (1) mammal, and 10 birds as summarized in the following sections.

#### **5.1.10.1 Vegetation**

Thirteen species of conservation concern are listed by MBCDC as potentially present within the Regional Assessment Area; however, none of these species are protected under the MESEA, SARA or COSEWIC (Appendix E).

#### **5.1.10.2 Fish**

No very rare fish species are listed by MBCDC as potentially present within the Regional Assessment Area (Appendix E). Rare aquatic species known to be present upstream in the Lake Winnipeg East drainage area include the mapleleaf mussel (*Quadrula quadrula*) (MESEA-Endangered) and the shortjaw cisco (*Coregonus zenithicus*) (COSEWIC - Threatened). No records indicate that either species have been encountered near the Local Assessment Area (COSEWIC, 2006; Stewart and Watkinson, 2004).

The Southern Hudson Bay - James Bay population of lake sturgeon (*Acipenser fulvescens*), although not protected under SARA, is designated as Special Concern by COSEWIC (COSEWIC, 2006b). Lake sturgeon populations have been greatly affected by human activities and the species is currently under consideration for listing under SARA. Although they are not legally protected, the potential presence of lake sturgeon within the region will be assessed in consideration of potential future listing under SARA. Lake sturgeon inhabits larger lakes and rivers and they are typically benthic and most often found over sand substrates. They spawn in fast moving water, such as rapids or at the base of falls. Lake sturgeon has been reported in the Hayes and God's Rivers. The Southern Hudson Bay-James Bay population is relatively unexploited and appears healthy, although as a result of limited data, the population size is of unknown size (COSEWIC, 2006b).

#### **5.1.10.3 Amphibians and Reptiles**

No amphibian or reptile species of conservation concern are listed by MBCDC as potentially present within the Regional Assessment Area (Appendix E).



Two species of amphibians found in Manitoba are listed as Special Concern under SARA: the northern leopard frog (*Lithobates pipiens*) (Western Boreal / Prairie populations) and the great plains toad (*Anaxyrus boreas*). Only the eastern population of northern leopard frog, which is not a listed species, is found in the boreal forest, north-east of Lake Winnipeg (COSEWIC, 2009).

Two species of reptiles in Manitoba are listed under SARA: the prairie skink (*Plestiodon septentrionalis*) is listed as Endangered and the eastern snapping turtle (*Chelydra serpentina serpentina*) is listed as Special Concern. Neither of these species are found as far north as the Local Assessment Area (COSEWIC 2004, 2008).

#### **5.1.10.4 Mammals**

One (1) mammal species of conservation concern is listed by MBCDC as potentially present within the Regional Assessment Area (Appendix E).

The little brown bat (*Myotis lucifugus*) is listed as Endangered under MESEA, SARA and COSEWIC. The northern extent of its range appears to overlap with the Local Assessment Area (COSEWIC, 2013).

The boreal woodland caribou (*Rangifer tarandus caribou*) is listed as Threatened under MESEA, SARA and COSEWIC. The “Manitoba East” range of woodland caribou (MB11) is south of the Local Assessment Area, with its northern extremity being close. This range is listed as “likely self-sustaining” (Environment Canada, 2012). Remote Road Operations is currently working to identify the movement patterns of caribou through the region to identify potential interactions with activities related to all-season road development.

#### **5.1.10.5 Birds**

Ten bird species of conservation concern are listed by MBCDC as potentially present within the Regional Assessment Area; however, only five (5) of these species are protected under the MESEA or SARA (Appendix E). The Canada warbler (*Cardellina canadensis*), common nighthawk (*Chordeiles minor*) and olive-sided flycatcher (*Contopus cooperi*) are all listed as Threatened under both SARA and MESEA, whereas peregrine falcon (*Falco peregrinus*) and short-eared owl (*Asio flammeus*) are listed as Special Concern under SARA and Endangered and Threatened under MESEA.

While not protected provincially under MESEA or federally under SARA the rusty blackbird (*Euphagus carolinus*) and yellow rail (*Coturnicops noveboracensis*) are both listed as Special Concern under SARA and COSEWIC.

Species listed by COSEWIC, which may occur in the Regional Assessment Area, include the barn swallow (*Hirundo rustica*) and bank swallow (*Riparia riparia*) which are noted as Threatened, and the horned grebe (*Podiceps auritus*) which is noted as Special Concern.

## **5.2 Potential Changes in the Environment**

Potential effects of the proposed Project on the environment will be identified and assessed in the EIS. In addition, the EIS will identify mitigation measures to minimize potential negative effects. The EIS will consider direct and indirect environmental effects, residual environmental effects after the application of mitigation measures, and cumulative environmental effects. Remote Road Operations’s environmental protection specifications and best management

practices will be implemented during construction, and operation and maintenance of the proposed Project.

Changes to fish and fish habitat, and migratory birds are described below.

### **5.2.1 Fish and Fish Habitat**

As defined in the *Fisheries Act* (s. 2), “fish” includes:

- (a) parts of fish,
- (b) shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and
- (c) the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals.

“Fish habitat” means:

spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes;

There is one water crossing along the proposed all-season road where an existing bridge will be replaced with a new bridge (God’s River) and a second crossing where a bridge or culvert will be required (Magill Creek) (Map 8). There are 52 additional stream crossings identified to date that will require culverts. Many of these stream crossings show no defined channel and have no apparent connectivity to downstream waters. Where required, equalization culverts will be installed to maintain local hydraulic flows and protect the road bed from saturation.

Year-round habitat for large-bodied fish species is found in God’s River and likely Magill Creek. Smaller streams may be used as spawning or nursery grounds by larger fish in spring, while forage fish may utilize these streams through summer if sufficient water is present. Due to their low winter flow, small streams generally provide little or no overwintering habitat. At this time it has not been determined if the required bridge(s) will be clear span or will require in-water piers. If in-water piers are required, there is the potential for in water impacts. Culverts will be installed at the remaining water courses which provide habitat for fish. The EIS will document the assessment and evaluation of the watercourses.

Fish may be affected during construction and operation of the all-season road associated with dewatering during bridge or culvert installation. Fish may also be affected by downstream sedimentation during construction and maintenance, or through accidents or malfunctions that could introduce deleterious substances. The proposed Project may marginally increase fishing pressure as a result of increased access to the area.

Fish habitat may be affected by bridge or culvert installation, by removal of riparian vegetation or installation of riprap, downstream sedimentation, alteration of channel morphology and dynamics where piers may be required, and accidents or malfunctions that could introduce deleterious substances.

These changes will be avoided where possible, and mitigated or offset through implementation of Remote Road Operations’s environmental protection specifications and best management practices, or site-specific plans.

### **5.2.2 Marine Plants**

There are no marine plants affected by the proposed Project. The Project is inland and will have no effects on marine areas.

### **5.2.3 Migratory Birds**

As defined in the *Migratory Birds Convention Act, 1994* “migratory bird” means:

a migratory bird referred to in the Convention, and includes the sperm, eggs, embryos, tissue cultures and parts of the bird;

Migratory birds may be affected during construction and operation of the proposed Project through vegetation clearance, dust, noise from equipment, noise due to blasting at quarries and worksites, and vehicle collisions. Destruction of active nests will be avoided as required under the *Migratory Birds Convention Act*. The proposed Project may increase hunting pressure on certain migratory birds as a result of increased access to the area.

Migratory bird habitat may be affected as a result of vegetation removal along the ROW or at other cleared sites (quarries, camps, and access trails) by equipment and vehicle noise during construction and operation. These effects will be avoided where possible, and mitigated through application of Remote Road Operations’s environmental protection specifications and best management practices.

## **5.3 Potential Changes on Federal and Adjacent Lands**

Changes on federal lands may result from project activities if on-Reserve services (waste disposal, water supply, etc.) are used, or if there are changes to air and water quality on Provincial Crown Lands adjacent to federal lands that migrate (i.e. dust blown by wind). However, the proposed Project will be located on provincial Crown Land and is not likely to have any adverse effects to the adjacent Manto Sipi Cree Nation, Bunibonibee Cree Nation, or God’s Lake First Nation communities. An indirect, positive socio-economic effect will be the provision of year round access between the communities. The existing and future on-Reserve access roads connecting to the all-season road are not likely to have any effects on the provincial Crown lands.

The proposed Project is unlikely to have any adverse effects on other federal land in Manitoba (First Nations on the east side of Lake Winnipeg), or in any province other than Manitoba.

## **5.4 Potential Effects on Aboriginal Peoples of Changes to the Environment**

Potential effects to Aboriginal peoples as a result of changes to the environment caused by carrying out the proposed Project will be considered in the environmental assessment; this includes Bunibonibee Cree Nation, Manto Sipi Cree Nation, God’s Lake First Nation and God’s Lake Narrows Northern Affairs Community. TK studies have been conducted with and workshops held with the Bunibonibee Cree Nation, Manto Sipi Cree Nation and God’s Lake First Nation and God’s Lake Northern Affairs communities as described in Section 6.

Potential effects that will be considered could include effects to traditional use of lands and resources for traditional purposes by Aboriginal peoples, such as hunting, fishing, gathering, and forest-harvesting, as a result of changes in land use and increased vehicle access to previously isolated areas, by both local people and non-residents. The proposed Project could also indirectly affect traditional activities as a result of potential changes to the biophysical environment, including effects on fish and fish habitat, vegetation, and wildlife resources, which



could affect harvesting patterns and/or harvesting success. Affected harvested resources could include: berries and traditional medicines, game animals (such as moose) and game birds (such as geese or grouse).

The environmental assessment for the proposed Project will identify and assess potential environmental effects on Aboriginal peoples, identify mitigation measures and outline any follow-up actions that will be addressed in an EnvPP. In addition, the environmental assessment of the proposed Project will include an assessment of cumulative effects.

## 6 ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS

Engagement with Aboriginal groups (First Nation and Métis), as well as local communities and other interested stakeholders, on the development of an all-season road network on the east side of Lake Winnipeg goes back several years (Dillon and Westdal, 2000; East Side Planning Initiative, 2004; UMA, 2005).

Considerable efforts have been made to engage on the identification of a route corridor through the Large Area Transportation Initiative Study (SNC-Lavalin, 2010), and through the federal and provincial environmental assessment process for Project P1 (PR304 to Berens River) (SNC-Lavalin, 2009). A key focus of the Engagement Program has been to engage people who are living in the area, who are most likely to be directly affected by the Projects, and who can provide traditional and local knowledge with respect to the proposed all-season road Projects comprising the Large Area Transportation Initiative. More recently, discussions with Manto Sipi Cree Nation, Bunibonabee Cree Nation, God’s Lake First Nation, and God’s Lake Narrows Northern Affairs Community have occurred related specifically to the proposed Project.

The Aboriginal and Public Engagement Program (APEP) is ongoing and will continue through the construction, and operation and maintenance phases of the proposed Project. The Engagement Program activities to date and anticipated in the future are summarized in Table 1. Meetings with Aboriginal communities potentially directly affected by the proposed Project are discussed in Sections 6.1 and 6.2.

<b>Table 1: Summary of Engagement Program Activities with Aboriginal Communities and Groups</b>	
<b>Activity/Date</b>	<b>Description</b>
<b>Early East Side Engagement</b>	
Community Meetings – 2000	Consultant-led community meeting to introduce all-weather road concept and identify comments and priorities. (ESPI, 2004; Dillon & Westdal, 2000)
<b>Aboriginal Engagement for East Side Large Area Transportation Initiative</b>	
Wabanong Nakaygum Okimawin Chiefs Meeting • April 30, 2009	Meeting with chiefs from WNO to introduce proposed Large Area Transportation Initiative

<b>Table 1: Summary of Engagement Program Activities with Aboriginal Communities and Groups</b>	
<b>Activity/Date</b>	<b>Description</b>
Round One Community Meetings: <ul style="list-style-type: none"> <li>• Manto Sipi Cree Nation – April 16, 2009 and September 22, 2009</li> <li>• God’s Lake First Nation and Northern Affairs Community – April 17, 2009</li> <li>• Bunibonibee Cree Nation– July 13, 2009</li> </ul>	Meeting with community members and local leadership to inform local community members and receive input about the East Side Large Area Transportation Network Study, including the proposed Project.
Round Two Community Meetings: <ul style="list-style-type: none"> <li>• God’s Lake First Nation and God’s Lake Narrows Northern Affairs Community – June 9, 2010</li> <li>• Manto Sipi Cree Nation – June 10, 2010</li> <li>• Bunibonibee Cree Nation – June 11, 2010</li> </ul>	Meeting with community members and local leadership to present findings of the preferred Project alignments based on technical evaluation and to receive input from the first round of meetings.
TK Studies: <ul style="list-style-type: none"> <li>• Manto Sipi Cree Nation: Spring 2009 - Summer 2010</li> <li>• God’s Lake First Nation and God’s Lake Narrows Northern Affairs Community: Spring 2009 – Summer 2010</li> <li>• Bunibonibee Cree Nation: Summer 2009 – Summer 2010</li> </ul>	Studies were undertaken to gather input from local residents on the environmental, social-economic and cultural implications of the proposed Project.
TK Workshops: <ul style="list-style-type: none"> <li>• Manto Sipi Cree Nation – April 16, 2009, September 24, 2015 and April 26, 2016</li> <li>• God’s Lake First Nation and God’s Lake Narrows Northern Affairs Community – April 17, 2009, October 6, 2015 and March 22, 2016</li> <li>• Bunibonibee Cree Nation – July 13, 2009 and February 3, 2016</li> </ul>	Workshops were undertaken to gather input from local residents on the environmental, social-economic and cultural implications of the proposed Project.
TK Interviews: <ul style="list-style-type: none"> <li>• God’s Lake First Nation – November 19-26, 2015</li> <li>• Manto Sipi Cree Nation – January 13-20, 2016</li> <li>• Bunibonibee Cree Nation – March 29-April 4, 2016</li> </ul>	Interviews were undertaken to gather input from local residents on the environmental, social-economic and cultural implications of the proposed Project.

<b>Table 1: Summary of Engagement Program Activities with Aboriginal Communities and Groups</b>	
<b>Activity/Date</b>	<b>Description</b>
Wildlife Workshops: <ul style="list-style-type: none"> <li>• God's Lake First Nation – January 6, 2016</li> <li>• Bunibonibee Cree Nation – February 17, 2016</li> <li>• Manto Sipi Cree Nation – March 24, 2016</li> </ul>	Workshops were undertaken to gather input from local residents on the environmental, social-economic and cultural implications of the proposed Project on wildlife.
MMF Meetings <ul style="list-style-type: none"> <li>• April 18, 2009</li> <li>• August 18, 2009</li> <li>• December 9, 2009</li> </ul>	Meetings with MMF in Winnipeg to introduce all-season road concept and discuss MMF interest.
<b>Agreements with Communities</b>	
Agreement signed: Bunibonibee Cree Nation <ul style="list-style-type: none"> <li>• July 16, 2010</li> </ul>	ESRA and Bunibonibee Cree Nation sign an agreement to provide economic benefits to the First Nation for the Project.
Agreement signed: Manto Sipi Cree Nation <ul style="list-style-type: none"> <li>• May 12, 2011</li> </ul>	ESRA and Manto Sipi Cree Nation sign an agreement to provide economic benefits for the First Nation for the Project.
Agreement signed: God's Lake First Nation <ul style="list-style-type: none"> <li>• May 13, 2011</li> </ul>	ESRA and God's Lake First Nation sign an agreement to provide economic benefits for the First Nation for the Project.
<b>Alignment Verification and Traditional Use and Values: Discussions and Decisions for the Project</b>	
Meetings with Manto Sipi Cree Nation Chief and Council <ul style="list-style-type: none"> <li>• September 22, 2009</li> <li>• October 6, 2011</li> <li>• September 24, 2013</li> <li>• January 31, 2013</li> <li>• October 25, 2016</li> </ul>	Meetings with Manto Sipi Cree Nation. Manto Sipi Cree Nation signed a MOU for community agreements at the September 22 <sup>nd</sup> meeting. The meetings presented and included discussions on the proposed Project alignment, project steps and regulatory processes. This included a description of route alignment changes resulting from ground truthing to avoid wet ground and from environmental baseline studies. An update was provided on the EIA process, outlining timeframes and an overview of the baseline studies.
Meeting with God's Lake First Nation Chief and Council <ul style="list-style-type: none"> <li>• May 10, 2010</li> <li>• July 15, 2014</li> <li>• October 25, 2016</li> </ul>	Meetings with God's Lake First Nation. This included a presentation on the Aboriginal engagement strategy and community agreement. A Project update with a review of steps to build the all-season road and what is required for exploratory clearing was also provided. This included a description of route alignment changes resulting from ground truthing to avoid wet ground and from environmental baseline studies. An update was provided on the EIA process, outlining timeframes and an overview of baseline studies.
Meeting with Bunibonibee Cree Nation Chief and Council <ul style="list-style-type: none"> <li>• May 18, 2010</li> <li>• November 1, 2016</li> </ul>	Meetings with Bunibonibee Cree Nation. This included a presentation on Aboriginal engagement strategy and community agreement. A Project update in relation to possible quarry sites, bridge locations and route alignments was also provided. The meetings also included a description of route alignment changes resulting from ground truthing to avoid wet ground and from environmental baseline studies. An update was provided on the EIA process, outlining timeframes and an overview of baseline studies.
Meeting with Bunibonibee Cree Nation Traditional Area Land Use Planning (TALUP) Board <ul style="list-style-type: none"> <li>• July 13, 2011</li> </ul>	Meeting with Bunibonibee Cree Nation, TALUP Board, and JD Mollard to discuss the Project preferred alignment. A description was provided of the clearing work to be done following road design and EIA.



<b>Table 1: Summary of Engagement Program Activities with Aboriginal Communities and Groups</b>	
<b>Activity/Date</b>	<b>Description</b>
Meetings with the Manto Sipi Cree Nation Community <ul style="list-style-type: none"> <li>• July 4, 2011</li> <li>• October 6, 2011</li> <li>• February 17, 2012</li> </ul>	Meetings with Manto Sipi Cree Nation. This included a Project update and alignment discussion including the God's River bridge crossing location resulting in alignment revisions. The Next Steps discussed indicating that design required for the EIA and outline of the required approvals provided.
Meeting with Bunibonibee Cree Nation Community <ul style="list-style-type: none"> <li>• September 27, 2012</li> </ul>	Meetings with Bunibonibee Cree Nation. This included a project update and discussions on the road alignment and the Environmental Assessment.
Meetings with God's Lake First Nation Community <ul style="list-style-type: none"> <li>• November 4, 2014</li> </ul>	Meeting with God's Lake First Nation. This included a project update and discussions on the road alignment and the Environmental Assessment.
<b>Anticipated APEP Activities during the Environmental Impact Assessment (EIA)</b>	
APEP Round 4 Community Meetings	Provide information on the EIA and obtain input from communities regarding the identification and verification of Valued Components (VCs).
APEP Round 5 Community Meetings	Presentation and obtain feedback on preliminary EIA findings including potential environmental effects, and recommended mitigation and follow-up concepts to community members. APEP Round 4 will be incorporated into the EIS.
APEP Round 6 Community Meetings	Presentation of the EIA results along with a summary of the EIA process to-date and description of the EIA process moving forward to community members.
Notification of Key Documents	Key documents in environmental assessment process will be made available to other Aboriginal groups, with a standing invitation to meet and/or comment.
Public Open Houses – Winnipeg	Information on the proposed Project, including environmental assessment requirements, VCs, potential effects and recommended mitigation and follow-up concepts, and preliminary results of the EIA will be provided to off-Reserve or other non-local Aboriginal people, stakeholders, and the general public.

The topics discussed at the meetings, TK workshops and Public Open Houses that have been held included the following:

- Introduction to the proposed Project and ongoing updates;
- Presentation and discussion of road alignment options;
- Presentation of project activities such as ROW clearing and exploratory clearing;
- Modification and confirmation of route alignment;
- Identification of community comments;
- TK information regarding the proposed Project ;
- Introduction of baseline studies being conducted for the proposed Project and community involvement; and
- Collection of site-specific comments and constraints from community members.

Comments and questions identified by community members and the public throughout the APEP are documented, and will be described and analyzed in the EIS.

## **6.1 Interested and Potentially Affected Aboriginal Communities**

Aboriginal communities that have an interest in and are potentially directly affected by the proposed Project include local First Nations (Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation) and Aboriginal people living in the God's Lake Narrows Northern Affairs Community.

### **6.1.1 First Nations**

First Nations with an interest in and are directly affected by the proposed Project are:

- Bunibonibee Cree Nation, General Delivery, Oxford House, MB. R0B 1C0.
- God's Lake First Nation, P.O. Box 258, God's Lake Narrows, MB. R0B 0M0.
- Manto Sipi Cree Nation, P.O. Box 97, God's River, MB. R0B 0N0.

All are Cree communities and were signatories to the Adhesion of Treaty 5 in 1909 which established rights to hunt and trap throughout the surrendered tract (Treaty Relations Commission of Manitoba, 2016). These communities are located adjacent the Local Assessment Area, and exercise their treaty rights in the region.

### **6.1.2 Other Aboriginal People**

Residents living in God's Lake Narrows Northern Affairs Community have participated in discussions regarding the Large Area Transportation Network on the east side of Lake Winnipeg including the proposed Project. The Northern Affairs Community is immediately adjacent to the God's Lake First Nation and includes Aboriginal people who are members of God's Lake First Nation. Residents may also include non-status people or people of Métis heritage.

- Community of God's Lake Narrows, Post Office, God's Lake Narrows, MB. R0B 0M0.

## **6.2 Engagement Activities with Aboriginal Communities and Groups**

The Province of Manitoba began to engage stakeholders and Aboriginal groups on the justification for an all-season road over a decade ago. In early consultant-led community meetings held as part of a justification and scoping study for an all-season road (Dillon and Westdal, 2000), Bunibonibee Cree Nation, and God's Lake First Nation and Northern Affairs Community identified a positive socio-economic benefit from such a road. The communities anticipated reduced costs for goods and services, and enhanced travel and social connections, as well as increased opportunities for economic development. The communities also stated the importance of local involvement in decisions related to an all-season road (Dillon and Westdal, 2000).

The APEP for the overall East Side Large Area Transportation Network commenced in 2009 with a first round of community meetings, and remains ongoing, with a greater focus on community to community road links. The purpose of the APEP is to provide meaningful opportunities for people to receive information about the all-season road, and to provide comments about the proposed roads. An early focus was the identification of alignment corridors supported by TK studies with the First Nation communities. The overall Engagement Program includes meetings with potentially affected Aboriginal communities and community leadership, potentially affected and interested Aboriginal groups, community resource boards, trappers, outfitters, other stakeholders, the general public and federal and provincial regulatory

authorities. Meetings and Public Open Houses have been held in communities on the east side and in the City of Winnipeg. Information is also available through articles and advertising features in the *Grassroots News* (a province-wide Aboriginal newspaper), and past ESRA/Remote Road Operations newsletters and MI's website.

A summary of Engagement Program activities with Aboriginal communities and groups is presented in Table 1. Key events, comments and the ESRA/Remote Road Operations response are described in the sections below.

### **6.2.1 First Nations**

The First Nation communities and Northern Affairs Communities in the East Side Large Area Network were contacted during the first round of the Engagement Program in 2009 to discuss transportation on the East side of Lake Winnipeg. Subsequent to these meetings, First Nation communities have continued to be engaged by Remote Road Operations with respect to the proposed Projects that will connect their communities to an all-season road network.

Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation are the communities who are most likely to be directly affected by the proposed Project because the Local and Regional Assessment Areas include areas of traditional use for each community. God's Lake Narrows Northern Affairs Community is also affected by the Project because of its location adjacent to God's Lake First Nation. During the first round of the Engagement Program, leadership and community meetings were held in Manto Sipi Cree Nation (April 16, 2009), God's River First Nation/Northern Affairs Community (April 17, 2009) and Bunibonibee Cree Nation (July 13, 2009). A second round of community meetings commenced in 2010, and meetings were held with God's Lake First Nation and Northern Affairs Community (June 9, 2010), Manto Sipi Cree Nation (June 10, 2010) and Bunibonibee Cree Nation (June 11, 2010). The intent of the meetings was to gather community input related to the potential effects of the all-season road on people and the environment, and to outline various preliminary transportation route options. TK studies and workshops were also undertaken with the communities, as outlined in Table 1, following the Round 1 meetings.

Following the Round Two meetings, leadership of the First Nation communities negotiated and signed agreements with ESRA in preparation for exploratory clearing work and future pre-construction and construction of the all-season road. The agreements provide economic benefits to the First Nations via community-led construction companies. Bunibonibee Cree Nation signed an agreement on July 16, 2010, Manto Sipi Cree Nation signed an agreement on May 12, 2011 and God's Lake First Nation signed an agreement on May 13, 2011. The signing of the agreements is consistent with the key objectives of the ESTI, which includes provision for employment opportunities, and enhanced opportunities for sustainable economic development (see Section 2.1). It is also consistent with the early feedback from the First Nation communities and the clear interest from the communities for local involvement in the project (Dillon & Westdal, 2000; ESPI, 2004; UMA, 2005). In 2016, wildlife workshops were held with the three First Nation communities to gather input from local residents on the environmental, socio-economic and cultural implications of the proposed all-season road on wildlife.

As noted in Table 1, meetings were held with Chief and Councils from Manto Sipi Cree Nation, God's Lake First Nation and Bunibonibee Cree Nation to discuss the proposed alignment for the Project. In addition, on July 13, 2011, ESRA and JD Mollard met with Bunibonibee Cree Nation TALUP Board to review proposed routing immediately south of the community in detail. ESRA requested feedback from the Board in terms of confirming ground conditions, identifying any



culturally or environmentally sensitive areas, and any conflicts with current or future land uses. No major issues were identified by the Board. Some minor routing issues were raised.

Meetings were also held with the communities to obtain input on the proposed alignment of the Project (Table 1). For example, on October 6, 2011, ESRA met with Manto Sipi Cree Nation community members following the meeting with the leadership. After an update on the Project, resource users and other attendees at the community meeting were invited to discuss potential and preferred routes out from the community as well as those further along the alignment to the intersection connecting Bunibonibee Cree Nation and God's Lake First Nation. The route alignment options originally chosen by the communities, in combination with engineering considerations, were selected to provide the shortest and straightest segments and allow for less fragmentation and disturbance of the land by paralleling the winter road and transmission lines. Community members provided feedback on these alignment options and provided TK and land use (location of TLE selections, mining and quarries, etc.). Members also reviewed crossing options of the God's River and indicated that the existing bridge crossing was preferred, which is the proposed alignment to cross the river. Subsequent meetings were held with Manto Sipi Cree Nation community members in 2011 and 2012. Meetings with Bunibonibee Cree Nation community members regarding the route alignment were held in September 2012 and with God's Lake First Nation community members in November 2014. Revisions made to the road alignments, based on this further community input, included avoiding TLE and First Nation Reserve parcels and allowing for a 100 m setback from waterbodies and water courses.

BCRs were provided by Bunibonibee Cree Nation in 2012 and God's Lake First Nation in 2014 to support ESRA applications for Timber Sale and Crown Lands Work permits to conduct exploratory clearing and geotechnical and environmental investigations for the Project. Manto Sipi Cree Nation elected to undergo Crown Consultation with Manitoba on this matter. The meeting was held on August 28, 2014 and ESRA was notified by written correspondence dated September 15, 2014 that Manto Sipi Cree Nation had no outstanding comments or items to discuss related to the issuance of Crown Land Work permits and Timber Sale.

In May 2016, an overflight of the proposed Project alignment was conducted and resulted in further alignment adjustments to move segments located in low lying bog/fen areas onto higher ground, adjacent or closer to rock sources. This was discussed with Manto Sipi Cree Nation and God's Lake First Nation communities on October 25, 2016 and Bunibonibee Cree Nation on November 1, 2016. BCRs were received from God's Lake First Nation and Bunibonibee Cree Nation supporting construction of the proposed all-season road and associated works.

Remote Road Operations is currently in discussions with Manto Sipi Cree Nation regarding an 8 km section of the alignment near the community. Three alternative options (Map 7) have been proposed to the community to reduce project footprint, cost and construction timelines as the community chosen alignment travels through a large bog/fen.

### **6.2.2 Métis**

During the Large Area Network Study, Remote Road Operations shared information and met directly with the MMF in Winnipeg (April 18, 2009; August 18, 2009; December 9, 2009). The purpose of these meetings was to introduce the overall project, discuss engagement of the MMF; and to discuss specific input for Project P1 (PR 304 to Berens River).

### **6.2.3 Other Aboriginal Communities**

Early meetings at God's Lake First Nation included meetings with the God's Lake Narrows Northern Affairs Community (April 17, 2009 and June 9, 2010). Aboriginal residents and other local resource users in the God's Lake Narrows Northern Affairs Community had an opportunity to learn of the proposed ESTI, and to identify areas of resource use. Subsequent meetings with the Northern Affairs Community have been held separately from God's Lake First Nation.

### **6.3 Key Comments**

ESRA has responded in concrete ways to key comments expressed by Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation leadership and community members regarding the overall ESTI, and the proposed Project. In particular, ESRA has entered into agreements with each of the three communities to increase the likelihood that the road will result in socio-economic benefits to local residents. As well, ESRA has incorporated community values and TK, as well as other considerations into planning for the project, through refinements to the proposed all-season road alignment, as described above. Remote Road Operations will continue to engage aboriginal communities and groups through the delivery of the APEP and incorporate feedback received to improve the Project.

An overview of comments from the three First Nations includes the following:

- Involve local communities in employment on road construction.
- Involve local communities in providing and collecting information on the environment and land use.
- Protection of the land and the environment is important.
- Protection of treaty rights and traditional use of resources is important.
- The community anticipates benefits from the road, through easier connections with other communities, and for easier and more frequent travel home for students from the community who attend school in larger centres.
- Community members indicated that although there will be adverse effects from the road, most want the road.
- Community members understand that trees, medicinal plants and wild berries will be disturbed by clearing but members also understand that clearing will occur just along the ROW.
- Community members do not want large industries like mining, forestry or hydro to come into their traditional/ancestral territory.
- Community members identified major activities in the area include hunting, trapping and fishing.
- Community members identified wildlife, fish, waterfowl, songbirds and birds of prey that were important to them.
- Community members identified special places of significance to the community (burial grounds, culturally important areas) near the communities.

Comments and questions identified by community members and the public throughout the APEP are being documented and will be described and summarized by community and stakeholder groups in the EIS.

### **6.4 Next Steps in Engagement and Information Gathering**

As part of the ongoing APEP, Remote Road Operations proposes to continue working with Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake Narrows First Nation to plan

and hold community meetings at three key stages of the environmental assessment process for the Project as follows:

- APEP Round 4: Provide information on the EIA and obtain input from communities regarding the identification and verification of VCs.
- APEP Round 5: Presentation and obtain feedback on preliminary EIA findings including potential environmental effects, and recommended mitigation and follow-up concepts to community members.
- APEP Round 6: Presentation of the EIA results along with a summary of the EIA process to-date and description of the EIA process moving forward to community members.

In each round, for each community, Remote Road Operations will provide an opportunity for a meeting with Community Elders and/or Chief and Council in advance of the larger community meeting, if the community wishes. Remote Road Operations will continue to work with local community members to identify effective mitigation measures to minimize potential adverse effects, as well as to enhance positive benefits where possible.

Remote Road Operations will directly inform the MMF of the availability of key documents in the environmental assessment process for the Project, and other projects within the Large Area Transportation Initiative, and invite comments. First Nation communities that are part of the East Side Large Area Network will also have access to updates on the proposed Project as it proceeds.

Remote Road Operations also purchases advertising updates in the *Grassroots News*, an Aboriginal newspaper in Manitoba. It also provides updates through community-based radio stations based in the east-side communities, and previously produced regular newsletters which were sent to each community and circulated to residents.

## 7 CONSULTATION WITH THE PUBLIC AND OTHER PARTIES

The commitment to the involvement of local residents, community leaders and non-governmental organizations in all-season road projects was previously outlined on the ESRA website. The website provided project updates, news releases and information about the overall ESTI, as well as proposed all-season road projects being undertaken under the Initiative. The website provided links to newsletters produced about the projects and a calendar of events for community meetings and Public Open Houses as they were planned and scheduled. The website also provided opportunities for interested and potentially affected parties to provide input to the projects. With the dissolution of ESRA, MI is currently working on how it will continue to provide public updates on active Remote Road Operations projects.

A number of meetings and Public Open Houses have been held to engage and inform the public and other interested stakeholders. These activities are summarized in Table 2.

<b>Table 2: Summary of Engagement Program Activities with the Public and Other Interested Stakeholders</b>	
<b>Activity/Date</b>	<b>Description</b>
WNO Chiefs Meeting • April 30, 2009	Meeting with chiefs from WNO to introduce proposed Large Area Transportation Initiative.
Public Open House (Winnipeg) • June 25, 2009	Public Open House to introduce proposed Project P1 and Large Area Transportation Initiative, including the proposed Project.

<b>Table 2: Summary of Engagement Program Activities with the Public and Other Interested Stakeholders</b>	
<b>Activity/Date</b>	<b>Description</b>
Manitoba Trappers' Association (MTA) meetings (Winnipeg) <ul style="list-style-type: none"> <li>• March 10, 2010</li> <li>• November 7, 2013</li> </ul>	MTA meeting to discuss trapper interests and methods to engage local trappers. Follow-up meeting with MTA executive to update on ESTI.
Wildlife Branch, MSD meetings <ul style="list-style-type: none"> <li>• September 1, 2011</li> <li>• September 14, 2011</li> <li>• June 9, 2014</li> <li>• October 20, 2015</li> </ul>	Wildlife and caribou baseline data collection (collaring plans and timing) and analysis for all-season road route discussed and road route presented.
Presentation to Integrated Resource Management Team, NE Region, MSD <ul style="list-style-type: none"> <li>• October 15, 2012</li> </ul>	Provide an update on the ESTI, and discuss data collection and monitoring.
Workshops - Wildlife Branch, MSD <ul style="list-style-type: none"> <li>• December 20, 2012</li> <li>• December 6, 2013</li> <li>• June 24, 2013</li> </ul>	Update the status, methods, findings, and open forum discussion for input on the Wildlife Monitoring Program.
Manitoba Lodges and Outfitters Association meetings <ul style="list-style-type: none"> <li>• May 10, 2013</li> <li>• June 10, 2014</li> </ul>	Discussed projects in overall ESTI with Association's representative.
Southeast Resource Development Council - meeting of representatives of South East Tribal Council <ul style="list-style-type: none"> <li>• January 28, 2014</li> </ul>	Presentation at an environment workshop which was sponsored by INAC. Overview of the proposed Project, the environmental assessment process and possible mitigation measures.
Presentation to the MSD Environmental Approvals Branch, Agency, and Technical Advisory Committee (TAC)members (Winnipeg) <ul style="list-style-type: none"> <li>• August 26, 2014</li> </ul>	Although the focus of the presentation was the Project P4 route between Poplar River First Nation and Berens River First Nation, an overview of the overall ESTI was provided including the East Side Large Area Transportation Network maps and the Project schedule.
<b>Potential Future Engagement during the EIA</b>	
Public Open Houses	Information on the proposed Project including environmental assessment requirements, VCs, potential effects and recommended mitigation and follow-up concepts, and preliminary results of the EIA will be provided to off-Reserve or other non-local Aboriginal people, interested stakeholders, and the general public.

## 7.1 Overview of Comments from the Public and Other Parties

To date, comments noted through public consultation (other than the engagement with directly affected Aboriginal communities and groups) have been largely received as part of the engagement activities conducted under the larger East Side Planning Initiative, or related to the Project P1- PR304 to Berens River all-season road which is currently under construction, Project P4-all-season road Connecting Berens River to Poplar River First Nation, or Project P7a all-season road Linking Pauingassi First Nation and Little Grand Rapids First Nation to the Little Grand Rapids Airport for which environmental approvals are being sought. Public comments received under those processes have noted the importance of ensuring appropriate assessment



methodologies and considering specific environmental features (specifically moose and Woodland Caribou) (CEAA, 2011).

## **7.2 Proposed Stakeholder Consultation Activities**

With respect to the Project, Remote Road Operations is planning to hold two Public Open Houses for the general public in the City of Winnipeg. Meetings and Public Open Houses will be advertised in local newspapers, and interested stakeholders and members of the public may attend and provide feedback regarding the proposed project. Remote Road Operations is committed to open and transparent discussions with communities and interested stakeholders potentially affected by the ESTI who wish further information or want to provide input into the proposed projects. Although directed toward the public and non-Aboriginal stakeholders, these activities will also provide an opportunity for First Nations and other Aboriginal people who live off-Reserve to provide input to the proposed project.

Dates and locations of meetings or Public Open Houses will be determined during the EIA process. Feedback and comments will be summarized and considered within that process, and will be described in the EIS.

## **7.3 Consultation with Regulatory Authorities**

On August 26, 2014, Remote Road Operations staff met with representatives from MSD, Environmental Approvals Branch; Canadian Environmental Assessment Agency (Agency); and members of the provincial and federal TAC. Provincial TAC members represented branches of MSD with expertise in wildlife (including Woodland Caribou), Protected Areas, and water resource licenses/permits. Federal departments represented on the TAC were Environment Canada, Health Canada, INAC, DFO, and Transport Canada. Although the focus of the meeting was Project P4, the proposed Project was introduced within the context of the larger ESTI. Government representatives were provided information on the timing of the environmental assessment process, policies and likely information requirements.

Several meetings and workshops were also held with the MSD Wildlife Branch regarding wildlife and caribou monitoring in relation to the proposed Project as summarized in Table 2 to obtain input and adjust the Wildlife Monitoring Program. A presentation to the Integrated Resource Management Team, Northeast Region was given on October 12, 2015 to provide an update on the ESTI, and discuss data collection and monitoring (Table 2).

## 8 REFERENCES

- Banfield, A.W.F. 1974. The Mammals of Canada. University of Toronto Press. Toronto, Ontario.
- Betcher, Robert, G. Grove, C. Pupp. 1995. *Groundwater in Manitoba: Hydrogeology, Quality Concerns, and Management*. National Hydrology Research Institute, Contribution No. CS-93017
- Bezener, A and K. De Smet. 2000. Manitoba Birds. Lone Pine Publishing, Edmonton, AB.
- Canadian Environmental Assessment Agency. 2011. Comprehensive Study Report: Lake Winnipeg East Side Road (Provincial Road 304 to Berens River All-Season Road Project).
- Caras, R.A. 1967. North American Mammals- Fur-bearing Animals of the United States and Canada. Meredith Press. University of Minnesota, Minnesota.
- Cody, W.J. 1989. Ferns and fern allies of Canada. Research Branch Agriculture Canada. Publication No. 1829/E.
- Conant, R. and J.T. Collins. 1991. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Houghton Mifflin Co. Boston, MA.
- Cook, F.R. 1984. Introduction to Canadian Amphibians and Reptiles. National Museums of Canada. Ottawa, Ontario.
- COSEWIC 2002. COSEWIC assessment and update status report on the Woodland Caribou *Rangifer tarandus caribou* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Xi + 99 pp.
- COSEWIC 2004. COSEWIC assessment and update status report on the Prairie Skink *Eumeces septentrionalis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 22 pp. ([sararegistry.gc.ca/status\\_e.cfm](http://sararegistry.gc.ca/status_e.cfm))
- COSEWIC 2006. COSEWIC assessment and status report on the Mapleleaf Mussel *Quadrula quadrula* (Saskatchewan-Nelson population and Great Lakes-Western St. Lawrence population) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 58 pp. ([sararegistry.gc.ca/status\\_e.cfm](http://sararegistry.gc.ca/status_e.cfm))
- COSEWIC 2006b. COSEWIC assessment and status report on the Lake Sturgeon *Acipenser fulvescens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 107 pp. ([sararegistry.gc.ca/status\\_e.cfm](http://sararegistry.gc.ca/status_e.cfm))
- COSEWIC 2008. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp. ([sararegistry.gc.ca/status\\_e.cfm](http://sararegistry.gc.ca/status_e.cfm))
- COSEWIC. 2008b. COSEWIC assessment and update status report on the Short-eared Owl *Asio flammeus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 24 pp. ([sararegistry.gc.ca/status/status\\_e.cfm](http://sararegistry.gc.ca/status/status_e.cfm))

- COSEWIC 2009. COSEWIC assessment and update status report on the Northern Leopard Frog *Lithobates pipiens*, Rocky Mountain population, Western Boreal/Prairie populations and Eastern populations, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 69 pp. ([sararegistry.gc.ca/status\\_e.cfm](http://sararegistry.gc.ca/status_e.cfm))
- COSEWIC 2013. COSEWIC assessment and on the Little Brown Myotis *Myotis lucifugus*, Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subflavus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp. ([www.registrelep-sararegistry.gc.ca/default\\_e.cfm](http://www.registrelep-sararegistry.gc.ca/default_e.cfm)).
- Dillon Consulting Limited. 2017. Manitoba Infrastructure Remote Road Operations – Greenhouse Gas Follow-up Assessment, East Side Lake Winnipeg
- Dillon Consulting Limited and H. N. Westdal & Associates. 2000. Report on All- Weather Road- East Side of Lake Winnipeg Justification and Scoping.
- East Side Planning Initiative (ESPI). 2004. “Promises to Keep...” *Towards a Broad Area Plan for the East Side of Lake Winnipeg*. Government of Manitoba.
- Environment Canada. 2012. Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. xi + 138pp.
- Environment Canada. 2015. National Inventory Report. Green House Gas Sources and Sinks in Canada. The Canadian Government’s Submission to the UN Framework Convention on Climate Change. Part 1. Accessed June, 2016. [http://publications.gc.ca/collections/collection\\_2016/eccc/En81-4-2013-1-eng.pdf](http://publications.gc.ca/collections/collection_2016/eccc/En81-4-2013-1-eng.pdf)
- Flora of North America Editorial Committee, eds. 1993+. *Flora of North America North of Mexico*. 19+ vols. New York and Oxford.
- Government of Canada. 2016. Indigenous and Northern Affairs Canada, Aboriginal Peoples and Communities – First Nations; Welcome to the First Nation Profiles Interactive Map. Accessed April 2016. <http://fnpim-cippn.aandc-aadnc.gc.ca/index-eng.html>
- Government of Canada. 2016. Meteorological Service of Canada, Canadian Climate Normals 1981-2010 Station Data: Island Lake A. Accessed April, 2016. [http://climate.weather.gc.ca/climate\\_normals/results\\_1981\\_2010\\_e.html?stnID=3880&autofwd=1](http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?stnID=3880&autofwd=1)
- Government of Canada. 2016b. Water Survey of Canada, Hydrometric Program. <https://www.ec.gc.ca/rhc-wsc/>. Accessed April 11, 2016.
- Health Canada. 2016. Drinking Water Advisories in First Nations Communities. Updated March 16, 2016. <http://www.hc-sc.gc.ca/fniah-spnia/promotion/public-publique/water-dwa-eau-aqep-eng.php>. Accessed April 12, 2016.
- Invasive Species Council of Manitoba. 2016. URL: <http://invasivespeciesmanitoba.com> (Accessed April 2016).
- Joro Consultants, Inc. 2014. Project 6: Initial Identification of Potential Effects. Report prepared for MFESRA.

- Kolenosky, G.B. and S.M. Strathearn. 1987. Black bear; in Novak, M, J.A. Baker, Obbard, M.E. and Malloch, B. Wild furbearer management and conservation in North America. Toronto, ON: Ontario Ministry of Natural Resources.
- Manitoba Avian Research Committee. 2003. The Birds of Manitoba. Manitoba Avian Research Committee. Manitoba Naturalists Society. Friesens Printers. Winnipeg, Manitoba.
- Manitoba Conservation and Water Stewardship (MCWS). 2012. White-tailed Deer Fact Sheet. Winnipeg, MB. Wildlife Branch.
- Manitoba Conservation Data Centre (MBCDC). 2016. URL: [www.gov.mb.ca/conservation/cdc](http://www.gov.mb.ca/conservation/cdc).
- Manitoba Department of Highways and Transportation. 1998. Transportation Planning Manual.
- Manitoba Hydro. 2000a. An Evaluation of Stream Crossings and Riparian Ecosystems Intersected by Hydro Rights-of-Way in North Central Manitoba. Report No.2. Terraform Environmental Consulting and Calyx Consulting. 89pp. [Maps]
- Manitoba Hydro. 2000b. An Assessment of Post-Construction Natural Re-Vegetation on Hydro Rights-of-Way in North Central Manitoba. Report No.3. Terraform Environmental Consulting and Calyx Consulting. 78pp.
- Peterson, R.T. and V.M. Peterson. 2002. A Field Guide to the Birds of Eastern and Central North America. Houghton Mifflin Harcourt. New York, N.Y.
- Preston, W.B. 1982. The Amphibian and Reptiles of Manitoba. Manitoba Museum of Man and Nature. Winnipeg, Manitoba. 128 p.
- Province of Manitoba. Wild Animals of Manitoba. White-tailed Deer Fact Sheet. <http://www.gov.mb.ca/sd/wildlife/mbsp/fs/wtdeer.html>. (accessed April 13, 2017).
- Reid, F.A. 2006. A Field Guide to the Mammals of North America. Houghton Mifflin Harcourt. New York, N.Y.
- Renecher, L.A. and C.C. Schwartz. 1998. Food Habits and Feeding Behaviour in Ecology and Management of the North American Moose. Franzmann and Schwartz (eds.) Smithsonian Institution Press. Washington, U.S.A. p. 403-439.
- Rowe, J. S. 1972. *Forest Regions of Canada*. Ottawa, Ontario: Canadian Forest Service, Dept. of the Environment, Information Canada. Publication No. 1300.
- SARA (Species At Risk Act). 2016. Species At Risk Public Registry. [http://www.sararegistry.gc.ca/default\\_e.cfm](http://www.sararegistry.gc.ca/default_e.cfm)
- Science Team Report. 2002. Manitoba's Ecosystem Based Management Pilot Project. Ecoregion 90: Lac Seul Upland Ecoregion Summary Technical Report. Manitoba Dept. of Natural Resources. 123 pp.
- Scoggan, H.J. 1957. Flora of Manitoba. Bulletin No. 140, Biological Series No. 47. National Museum of Canada Department of Northern Affairs and National Resources. Ottawa. 619pp.



- Scurrah, F.E. and Schindler, D. 2012. Towards a Manitoba Hydro boreal woodland caribou strategy: Outcomes from Manitoba Hydro boreal woodland caribou workshop. Rangifer Special Issue 20: 115-124.
- Smith, R.E., H. Veldhuis, G.F. Mills, R.G. Eilers, W.R. Fraser and G.W. Lelyk. 1998. Terrestrial Ecozones, Ecoregions and Ecodistricts of Manitoba: An Ecological Stratification of Manitoba's Natural Landscapes. Lands Resource Unit, Brandon Research Centre, Research Branch, Agriculture and Agri-Food Canada. Research Branch Technical Bulletin 1998-9E. Winnipeg, MB.
- SNC-Lavalin. 2009. PR 304 to Berens River All-Season Road: Environmental Impact Assessment. Winnipeg, MB.
- SNC-Lavalin. 2010. East Side of Lake Winipeg Large Area Transportation Network Study. Volume 1: Baseline Information & Potential Route Network Options. Winnipeg, MB.  
Volume 2: Initial Stakeholder Engagement. Winnipeg, MB.  
Volume 3: Evaluaton of All-Season Road Network Options. Winnipeg, MB.  
Volume 4: Second Stakeholder Engagement on Preferred Route Networks.
- SNC-Lavalin. 2011. East Side of Lake Winnipeg Large Area Transportation Network Study. Volume 5: Transportation Development Plan for Preferred ASR Network. WInnipeg. MB.
- Stewart, K.W. and D.A. Watkinson. 2004. The Freshwater Fishes of Manitoba. University of Manitoba Press.
- Terraform Environmental Consulting. 1999a. North Central Project Environmental Assessment of Re-Vegetation for the Rights-of-Way. Manitoba Hydro 115pp.
- Terraform Environmental Consulting. 1999b. Bipole 1 and 2 Environmental Assessment of Re-Vegetation for the Rights-of-Way. Manitoba Hydro 52pp.
- Treaty Relations Commission of Manitoba Map of the Numbered Treaties. Retrieved April2016. [www.trcm.ca/treaties/treaties-in-manitoba/view-pdf-interactive-map-of-numbered-treaties-trcm-july-20-entry/](http://www.trcm.ca/treaties/treaties-in-manitoba/view-pdf-interactive-map-of-numbered-treaties-trcm-july-20-entry/)
- The Manitoba Museum. 2016. Herbarium records accessed 2016.
- UMA Engineering Limited (UMA) 2005. Functional Design Report: Rice River Road Upgrading and Extension. Prepared for Manitoba Transportation and Government Services.

# APPENDICES

APPENDIX A: LIST OF POTENTIAL VEGETATION WITHIN THE  
REGIONAL ASSESSMENT AREA

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Alder-leaved Buckthorn	<i>Rhamnus alnifolia</i>			S5	
Alpine Bearberry	<i>Arctous alpina</i>			S3S4	
Alpine Cotton-grass	<i>Trichophorum alpinum</i>			S5	
Alpine Goldenrod	<i>Solidago multiradiata</i>			S4S5	
Alpine Rush	<i>Juncus alpinoarticulatus</i>			S5	
American Dragon-head	<i>Dracocephalum parviflorum</i>			S5	
Arrow-leaved Colt's-foot	<i>Petasites frigidus</i> var. <i>sagittatus</i>			S5	
Arum-leaved Arrowhead	<i>Sagittaria cuneata</i>			S5	
Awned Sedge	<i>Carex atherodes</i>			S5	
Balsam Fir	<i>Abies balsamea</i>			S5	
Balsam Poplar	<i>Populus balsamifera</i>			S5	
Basket Willow	<i>Salix petiolaris</i>			S4S5	
Beaked Sedge	<i>Carex utriculata</i>			S5	
Bebb's or Beaked Willow	<i>Salix bebbiana</i>			S5	
Bebb's Sedge	<i>Carex bebbii</i>			S5	
Beggar's Lice	<i>Hackelia deflexa</i> var. <i>americana</i>			S4S5	
Bent Sedge	<i>Carex deflexa</i>			S4S5	
Bicknell's Geranium	<i>Geranium bicknellii</i>			S5	
Black Bindweed	<i>Fallopia convolvulus</i>			SNA	
Black Spruce	<i>Picea mariana</i>			S5	
Bodin's Milkvetch	<i>Astragalus bodinii</i>			S1	
Bog Candle	<i>Platanthera dilatata</i>			S3S4	
Bog Sedge	<i>Carex magellanica</i>			S5	
Bog Willow	<i>Salix pedicellaris</i>			S5	
Bog Yellowcress	<i>Rorippa palustris</i>			S4S5	
Bogbean	<i>Menyanthes trifoliata</i>			S5	
Bog-laurel	<i>Kalmia polifolia</i>			S5	
Bog-rosemary	<i>Andromeda polifolia</i>			S5	
Boreal Locoweed	<i>Oxytropis borealis</i>			SU	
Boreal Manna Grass	<i>Glyceria borealis</i>			S4S5	
Bristle-stalked Sedge	<i>Carex leptalea</i>			S5	
Bristly Black Currant	<i>Ribes lacustre</i>			S4	
Bristly Crowfoot	<i>Ranunculus pensylvanicus</i>			S5	
Brownish Sedge	<i>Carex brunnescens</i>			S5	
Buckwheat	<i>Fagopyrum esculentum</i>			SNA	
Bulb-bearing Water-hemlock	<i>Cicuta bulbifera</i>			S5	
Bunchberry	<i>Cornus canadensis</i>			S5	
Bush-honeysuckle	<i>Diervilla lonicera</i>			S5	
Calypso	<i>Calypso bulbosa</i>			S4	
Canada Anemone	<i>Anemone canadensis</i>			S5	
Canada Wild Gooseberry	<i>Ribes oxycanthoides</i>			S5	
Canadian Milkvetch	<i>Astragalus canadensis</i>			S5	
Chives	<i>Allium schoenoprasum</i>			S3S4	
Chokecherry	<i>Prunus virginiana</i>			S5	
Clasping-leaved Pondweed	<i>Potamogeton richardsonii</i>			S5	
Cloudberry	<i>Rubus chamaemorus</i>			S5	
Common Bearberry	<i>Arctostaphylos uva-ursi</i>			S5	
Common Burdock	<i>Arctium minus</i>			SNA	
Common Chickweed	<i>Stellaria media</i>			SNA	
Common Dandelion	<i>Taraxacum officinale</i>			SNA	
Common Floating Pondweed	<i>Potamogeton natans</i>			S5	



Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Common Juniper	<i>Juniperus communis</i>			S5	
Common Mare's-tail	<i>Hippuris vulgaris</i>			S5	
Common Oak Fern	<i>Gymnocarpium dryopteris</i>			S4S5	
Common Plantain	<i>Plantago major</i>			SNA	
Common Yarrow	<i>Achillea millefolium</i>			S5	
Creeping Bent Grass	<i>Agrostis stolonifera</i>			SNA	
Creeping Juniper	<i>Juniperus horizontalis</i>			S5	
Creeping Snowberry	<i>Gaultheria hispidula</i>			S4S5	
Creeping Spearwort	<i>Ranunculus flammula</i>			S4S5	
Creeping Spike-rush	<i>Eleocharis palustris</i>			S5	
Cursed Crowfoot	<i>Ranunculus sceleratus</i>			S5	
Cut-leaved Anemone	<i>Anemone multifida</i>			S5	
Daisy-leaf Moonwort	<i>Botrychium matricariifolium</i>			S1	
Dewberry	<i>Rubus pubescens</i>			S5	
Dry-spike Sedge	<i>Carex siccata</i>			S4S5	
Dwarf Bilberry	<i>Vaccinium caespitosum</i>			S3	
Dwarf Birch	<i>Betula pumila</i>			S5	
Dwarf Scouring-rush	<i>Equisetum scirpoides</i>			S4S5	
Early Coralroot	<i>Corallorhiza trifida</i>			S5	
False Uncina Sedge	<i>Carex microglochis</i>			S2?	
Few-flowered Sedge	<i>Carex pauciflora</i>			S3	
Field Cat's-foot	<i>Antennaria neglecta</i>			S5	
Field Horsetail	<i>Equisetum arvense</i>			S5	
Field Sow-thistle	<i>Sonchus arvensis</i>			SNA	
Flat-topped Goldenrod	<i>Euthamia graminifolia</i>			S5	
Flat-topped White Aster	<i>Doellingeria umbellata</i>			S5	
Fleshy Stitchwort	<i>Stellaria crassifolia</i>			S3S4	
Flooded Jellyskin	<i>Leptogium rivulare</i>	THR	SC	S1	
Fowl Bluegrass	<i>Poa palustris</i>			S5	
Fries Pondweed	<i>Potamogeton friesii</i>			S4	
Fringed Brome	<i>Bromus ciliatus</i>			S5	
Glaucous Bluegrass	<i>Poa glauca</i>			S4S5	
Golden Corydalis	<i>Corydalis aurea</i>			S5	
Golden Sedge	<i>Carex aurea</i>			S5	
Graceful Manna Grass	<i>Glyceria pulchella</i>			S2S3	
Grass of Parnassus	<i>Parnassia palustris</i>			S5	
Gray Willow	<i>Salix humilis</i>			S4	
Green Alder	<i>Alnus viridis</i>			S5	
Ground-fir	<i>Diphasiastrum sitchense</i>			S1	
Grove Sandwort	<i>Moehringia lateriflora</i>			S5	
Hairy Goldenrod	<i>Solidago hispida</i>			S5	
Hair-like Sedge	<i>Carex capillaris</i>			S5	
Hoary Sedge	<i>Carex canescens</i>			S5	
Hoary Willow	<i>Salix candida</i>			S5	
Hooded Ladies'-tresses	<i>Spiranthes romanzoffiana</i>			S5	
Hooded Skullcap	<i>Scutellaria galericulata</i>			S5	
Hooker's Orchid	<i>Platanthera hookeri</i>			S2S3	
Horned Bladderwort	<i>Utricularia cornuta</i>			S3S4	
Huron Fringed-orchid	<i>Platanthera huronensis</i>			S4S5	
Hyssop-leaved Fleabane	<i>Erigeron hyssopifolius</i>			S4	
Intermediate Sedge	<i>Carex media</i>			S4S5	
Jack Pine	<i>Pinus banksiana</i>			S5	
Labrador-tea	<i>Rhododendron groenlandicum</i>			S5	

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Ladie's Bedstraw	<i>Galium labradoricum</i>			S4S5	
Leather-leaf	<i>Chamaedaphne calyculata</i>			S5	
Lesser Rattlesnake Plantain	<i>Goodyera repens</i>			S4S5	
Limber or Twining Honeysuckle	<i>Lonicera dioica</i>			S5	
Lindley's Aster	<i>Symphyotrichum ciliolatum</i>			S5	
Linear-leaf Willowherb	<i>Epilobium leptophyllum</i>			S4S5	
Little Yellow Rattle	<i>Rhinanthus minor</i>			S4	
Long-leaved Stitchwort	<i>Stellaria longifolia</i>			S5	
Long-stalked Stitchwort	<i>Stellaria longipes</i>			S5	
Many-flowered Yarrow	<i>Achillea alpina</i>			S4S5	
Marsh Bellflower	<i>Campanula aparinoides</i>			S5	
Marsh Cinquefoil	<i>Comarum palustre</i>			S5	
Marsh Hedge-nettle	<i>Stachys palustris</i>			S5	
Marsh Marigold	<i>Caltha palustris</i>			S5	
Marsh Reed Grass	<i>Calamagrostis canadensis</i>			S5	
Marsh St. John's-Wort	<i>Triadenum fraseri</i>			S3	
Meadow Horsetail	<i>Equisetum pratense</i>			S4S5	
Missouri Goldenrod	<i>Solidago missouriensis</i>			S5	
Mitrewort	<i>Mitella nuda</i>			S5	
Mountain Club-moss	<i>Huperzia selago</i>			S2S3	
Mountain Maple	<i>Acer spicatum</i>			S5	
Mountain-ash	<i>Sorbus decora</i>			S4	
Mountain-fly-honeysuckle	<i>Lonicera villosa</i>			S5	
Mud Sedge	<i>Carex limosa</i>			S5	
Narrowleaf Willow	<i>Salix exigua</i>			S5	
Narrow-leaved Bur-reed	<i>Sparganium angustifolium</i>			S4S5	
Northern Bog Sedge	<i>Carex gynocrates</i>			S5	
Northern Bugleweed	<i>Lycopus uniflorus</i>			S4S5	
Northern Comandra	<i>Geocaulon lividum</i>			S5	
Northern Oak Fern	<i>Gymnocarpium jessoense</i>			S3S4	
Northern Reed Grass	<i>Calamagrostis stricta</i>			S5	
Northern Wild Black Currant	<i>Ribes hudsonianum</i>			S5	
Northern Woodsia	<i>Woodsia alpina</i>			S2	
Oblong-leaved Sundew	<i>Drosera anglica</i>			S3S4	
One-sided Wintergreen	<i>Orthilia secunda</i>			S5	
Pale Smartweed	<i>Persicaria lapathifolia</i>			S5	
Pale Vetchling	<i>Lathyrus ochroleucus</i>			S5	
Palmate-leaved Colt's-foot	<i>Petasites frigidus</i> var. <i>palmatus</i>			S5	
Panicled Aster	<i>Symphyotrichum lanceolatum</i>			S4S5	
Pearly Everlasting	<i>Anaphalis margaritacea</i>			S3S4	
Pin Cherry	<i>Prunus pensylvanica</i>			S5	
Pink and Yellow Corydalis	<i>Capnoides sempervirens</i>			S5	
Pink Pyrola	<i>Pyrola asarifolia</i>			S5	
Pitcher Plant	<i>Sarracenia purpurea</i>			S4S5	
Plane-leaved Willow	<i>Salix planifolia</i>			S5	
Podgrass	<i>Scheuchzeria palustris</i>			S3S4	
Prickly Rose	<i>Rosa acicularis</i>			S5	
Prostrate Sedge	<i>Carex chordorrhiza</i>			S4S5	
Quack-grass	<i>Elymus repens</i>			SNA	
Rattlesnake Fern	<i>Botrypus virginianus</i>			S4	
Red-osier Dogwood	<i>Cornus stolonifera</i>			S5	

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Robin's Pondweed	<i>Potamogeton robbinsii</i>			S2S3	
Rock Spike-moss	<i>Selaginella rupestris</i>			S4	
Rough Cinquefoil	<i>Potentilla norvegica</i>			S5	
Round-leaved Bog Orchid	<i>Platanthera orbiculata</i>			S3S4	
Round-leaved Dogwood	<i>Cornus rugosa</i>			S3	
Round-leaved Sundew	<i>Drosera rotundifolia</i>			S4S5	
Running-pine	<i>Lycopodium lagopus</i>			S3	
Rye-grass Sedge	<i>Carex loliacea</i>			S2?	
Sand Sedge	<i>Carex houghtoniana</i>			S5	
Saskatoon	<i>Amelanchier alnifolia</i>			S5	
Satin Willow	<i>Salix pellita</i>			S3S4	
Seaside Sedge	<i>Carex maritima</i>			S2?	
Sheathed Sedge	<i>Carex vaginata</i>			S5	
Short-awned Foxtail	<i>Alopecurus aequalis</i>			S5	
Skunk Currant	<i>Ribes glandulosum</i>			S5	
Slender Cotton-grass	<i>Eriophorum gracile</i>			S4S5	
Slough Grass	<i>Beckmannia syzigachne</i>			S5	
Small Bedstraw	<i>Galium trifidum</i>			S5	
Small Northern Bog Orchid	<i>Platanthera obtusata</i>			S5	
Small or Round-leaved Orchis	<i>Galearis rotundifolia</i>			S5	
Small Wood Anemone	<i>Anemone parviflora</i>			S4	
Small-flowered Columbine	<i>Aquilegia brevistyla</i>			S4	
Small-flowered Woodrush	<i>Luzula parviflora</i>			S4S5	
Smooth Wild Strawberry	<i>Fragaria virginiana</i>			S5	
Soapberry	<i>Shepherdia canadensis</i>			S5	
Soft-stem Bulrush	<i>Schoenoplectus tabernaemontani</i>			S5	
Speckled Alder	<i>Alnus incana</i> ssp. <i>rugosa</i>			S5	
Spiked Water-milfoil	<i>Myriophyllum sibiricum</i>			S5	
Spinulose Wood Fern	<i>Dryopteris carthusiana</i>			S5	
Spiny-leaved Sow-thistle	<i>Sonchus asper</i>			SNA	
Spotted Water-hemlock	<i>Cicuta maculata</i>			S4S5	
Stemless Raspberry	<i>Rubus arcticus</i> ssp. <i>acaulis</i>			S5	
Stiff Club-moss	<i>Lycopodium annotinum</i>			S5	
Straightleaf Pondweed	<i>Potamogeton strictifolius</i>			S2S3	
Strawberry Blite	<i>Blitum capitatum</i>			S4S5	
Swamp Horsetail	<i>Equisetum fluviatile</i>			S5	
Sweet Gale	<i>Myrica gale</i>			S5	
Tall Lungwort	<i>Mertensia paniculata</i>			S5	
Tall Manna Grass	<i>Glyceria grandis</i>			S5	
Tamarack	<i>Larix laricina</i>			S5	
Thin-leaved Cotton-grass	<i>Eriophorum viridicarinum</i>			S4	
Three-leaved Solomon's-seal	<i>Maianthemum trifolium</i>			S5	
Three-toothed Cinquefoil	<i>Sibbaldiopsis tridentata</i>			S5	
Three-toothed Saxifrage	<i>Saxifraga tricuspidata</i>			S4S5	
Tickle-grass	<i>Agrostis scabra</i>			S5	
Toad Rush	<i>Juncus bufonius</i>			S5	
Trembling Aspen	<i>Populus tremuloides</i>			S5	
Tufted Loosestrife	<i>Lysimachia thyrsiflora</i>			S5	
Turned Sedge	<i>Carex retrorsa</i>			S5	
Tussock Cotton-grass	<i>Eriophorum vaginatum</i>			S5	
Twinflower	<i>Linnaea borealis</i>			S5	
Two-leaved Solomon's-seal	<i>Maianthemum canadense</i>			S5	

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Two-seeded Sedge	<i>Carex disperma</i>			S5	
Two-stamened Sedge	<i>Carex diandra</i>			S4S5	
Umbellate Hawkweed	<i>Hieracium umbellatum</i>			S5	
Various-leaved Pondweed	<i>Potamogeton gramineus</i>			S5	
Velvet-fruited Willow	<i>Salix maccalliana</i>			S4	
Vine-leaved Colt's-foot	<i>Petasites frigidus</i> var. <i>x vitifolius</i>				SNA
Water Sedge	<i>Carex aquatilis</i>			S5	
Water Smartweed	<i>Persicaria amphibia</i>			S5	
Water-arum	<i>Calla palustris</i>			S5	
Water-parsnip	<i>Sium suave</i>			S5	
Western Dock	<i>Rumex occidentalis</i>			S5	
Western Jewelweed	<i>Impatiens noli-tangere</i>			S1	
Western Water-horehound	<i>Lycopus asper</i>			S4	
White Birch	<i>Betula papyrifera</i>			S5	
White Clover	<i>Trifolium repens</i>				SNA
White Spruce	<i>Picea glauca</i>			S5	
White Water Crowfoot	<i>Ranunculus aquatilis</i>			S5	
White-grained Mountain Rice Grass	<i>Oryzopsis asperifolia</i>			S5	
Wild Barley	<i>Hordeum jubatum</i>			S5	
Wild Red Raspberry	<i>Rubus idaeus</i>			S5	
Wild Sarsaparilla	<i>Aralia nudicaulis</i>			S5	
Willow-herb	<i>Epilobium ciliatum</i> ssp. <i>glandulosum</i>			S5	
Willow-herb	<i>Epilobium ciliatum</i> ssp. <i>watsonii</i>				SU
Woodland Horsetail	<i>Equisetum sylvaticum</i>			S5	
Woolly Sedge	<i>Carex pellita</i>			S5	
Wormseed Mustard	<i>Erysimum cheiranthoides</i>				SNA
Wormwood	<i>Artemisia absinthium</i>				SNA
Yellow Avens	<i>Geum aleppicum</i>			S5	
Yellow Pond-lily	<i>Nuphar variegata</i>			S5	
Zeiller's Ground Cedar	<i>Diphasiastrum x zeilleri</i>				SNA

**Note: MBCDC rankings are current as of December 1, 2016.**

**Sources:** Cody, 1989; Flora of North America, 1993+; Invasive Species Council of Manitoba, 2016; Manitoba Hydro, 2000a and 2000b; MBCDC, 2016; SARA, 2016; Scoggan, 1957; Terraform Environmental Consulting, 1999a and 1999b; and The Manitoba Museum Herbaria, 2016.

#### MBCDC Definitions for Status Listing:

- 1** Very rare throughout its range or in the province (5 or fewer occurrences, or very few remaining individuals). May be especially vulnerable to extirpation.
- 2** Rare throughout its range or in the province (6 to 20 occurrences). May be vulnerable to extirpation.
- 3** Uncommon throughout its range or in the province (21 to 100 occurrences).
- 4** 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).
- 5** Demonstrably widespread, abundant, and secure throughout its range or in the province, and essentially impossible to eradicate under present conditions.
- U** Possibly in peril, but status uncertain; more information needed.
- H** Historically known; may be rediscovered.



- X** Believed to be extinct; historical records only, continue search.
- SNR** A species not ranked. A rank has not yet assigned or the species has not been evaluated.
- SNA** A conservation status rank is not applicable to the element.
- S##** Numeric range rank: A range between two of the numeric ranks. Denotes range of uncertainty about the exact rarity of the species.
- ?** Inexact or uncertain; for numeric ranks, denotes inexactness.

**SARA/MESEA Definitions for Status Listing:**

**Not at Risk (NAR)**

**Special Concern (SC):** a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

**Threatened (THR):** a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

**Endangered (END):** A wildlife species facing imminent extirpation or extinction.

APPENDIX B: LIST OF POTENTIAL MAMMALS WITHIN THE NORTHERN  
ALL-SEASON ROAD PROJECT STUDY AREA

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
American beaver	<i>Castor canadensis</i>			S5	
American marten	<i>Martes americana</i>			S5	
Arctic shrew	<i>Sorex arcticus</i>			S5	
Black bear	<i>Ursus americanus</i>			S5	
Caribou <sup>A</sup>	<i>Rangifer tarandus</i>			S4	
Cinereus or masked shrew	<i>Sorex cinereus</i>			S5	
Common muskrat	<i>Ondatra zibethicus</i>			S5	
Common porcupine	<i>Erethizon dorsatum</i>			S5	
Common racoon	<i>Procyon lotor</i>			S5	
Coyote	<i>Canis latrans</i>			S5	
Deer mouse	<i>Peromyscus maniculatus</i>			S5	
Ermine (short-tailed weasel)	<i>Mustela erminea</i>			S5	
Fisher	<i>Pekania pennanti</i>			S5	
Gray wolf	<i>Canis lupus</i>			S5	
Heather vole	<i>Phenacomys ungava</i>			S5	
Hoary bat	<i>Lasiurus cinereus</i>			S3B	
House mouse	<i>Mus musculus</i>			SNA	
Least chipmunk	<i>Neotamias minimus</i>			S5	
Least weasel	<i>Mustela nivalis</i>			S3S4	
Little brown myotis	<i>Myotis lucifugus</i>	END	END	S2N,S5B	END
Lynx	<i>Lynx canadensis</i>			S5	
Meadow jumping mouse	<i>Zapus hudsonius</i>			S5	
Meadow vole	<i>Microtus pennsylvanicus</i>			S5	
Mink	<i>Neovison vison</i>			S5	
Moose	<i>Alces americanus</i>			S5	
Northern bog lemming	<i>Synaptomys borealis</i>			S5	
Northern flying squirrel	<i>Glaucomys sabrinus</i>			S5	
Northern river otter	<i>Lontra canadensis</i>			S5	
Northern short-tailed shrew	<i>Blarina brevicauda</i>			S5	
Pygmy shrew	<i>Sorex hoyi</i>			S5	
Red fox	<i>Vulpes vulpes</i>			S5	
Red squirrel	<i>Tamiasciurus hudsonicus</i>			S5	
Snowshoe hare	<i>Lepus americanus</i>			S5	
Southern red-backed vole	<i>Myodes gapperi</i>			S5	
Star-nosed mole	<i>Condylura cristata</i>			S3	
Striped skunk	<i>Mephitis mephitis</i>			S5	
Water shrew	<i>Sorex palustris</i>			S5	
Wolverine (western pop.)	<i>Gulo gulo</i>	No Status	Non-active	S3S4	Not listed
Woodchuck	<i>Marmota monax</i>			S5	

**Note: MBCDC rankings are current as of December 1, 2016.**

<sup>A</sup>Note that the study area is not within the range of boreal woodland caribou as defined by Manitoba Conservation (2015).

**Sources:** Caras, 1967; Reid, 2006; MBCDC, 2016; SARA, 2016 and The IUCN Red List of Threatened Species (<http://www.iucnredlist.org/>)

### **MBCDC Definitions for Status Listing:**

- 1** Very rare throughout its range or in the province (5 or fewer occurrences, or very few remaining individuals). May be especially vulnerable to extirpation.
- 2** Rare throughout its range or in the province (6 to 20 occurrences). May be vulnerable to extirpation.
- 3** Uncommon throughout its range or in the province (21 to 100 occurrences).
- 4** 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).
- 5** Demonstrably widespread, abundant, and secure throughout its range or in the province, and essentially impossible to eradicate under present conditions.
- U** Possibly in peril, but status uncertain; more information needed.
- H** Historically known; may be rediscovered.
- X** Believed to be extinct; historical records only, continue search.
- SNR** A species not ranked. A rank has not yet assigned or the species has not been evaluated.
- SNA** A conservation status rank is not applicable to the element.
- S#S#** Numeric range rank: A range between two of the numeric ranks. Denotes range of uncertainty about the exact rarity of the species.
- ?**<sup>\*</sup> Inexact or uncertain; for numeric ranks, denotes inexactness.

### **SARA/MESEA Definitions for Status Listing:**

#### **Not at Risk (NAR)**

**Special Concern (SC):** a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

**Threatened (THR):** a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

**Endangered (END):** A wildlife species facing imminent extirpation or extinction.



APPENDIX C: LIST OF POTENTIAL BIRDS WITHIN THE NORTHERN ALL-  
SEASON ROAD PROJECT STUDY AREA

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Alder flycatcher	<i>Empidonax alnorum</i>			S5B	
American bittern	<i>Botaurus lentiginosus</i>			S5B	
American black duck	<i>Anas rubripes</i>			S3B	
American crow	<i>Corvus brachyrhynchos</i>			S5B, SUN	
American golden-plover	<i>Pluvialis dominica</i>			S4B, SUM	
American goldfinch	<i>Spinus tristis</i>			S5B	
American kestrel	<i>Falco sparverius</i>			S4B	
American pipit	<i>Anthus rubescens</i>			S3B	
American redstart	<i>Setophaga ruticilla</i>			S5B	
American robin	<i>Turdus migratorius</i>			S5B	
American tree sparrow	<i>Spizella arborea</i>			S5B, SUM	
American wigeon	<i>Anas americana</i>			S4B	
Baird's sandpiper	<i>Calidris bairdii</i>			SUM	
Bald eagle	<i>Haliaeetus leucocephalus</i>			S5B, SUN	
Bank swallow	<i>Riparia riparia</i>		THR	S5B	Not listed
Barn swallow	<i>Hirundo rustica</i>		THR	S4B	Not listed
Barred owl	<i>Strix varia</i>			S4	
Bay-breasted warbler	<i>Setophaga castanea</i>			S5B	
Belted kingfisher	<i>Megaceryle alcyon</i>			S5B	
Black tern	<i>Chlidonias niger</i>			S4B	
Black-and-white warbler	<i>Mniotilta varia</i>			S5B	
Black-backed woodpecker	<i>Picoides arcticus</i>			S5	
Black-bellied plover	<i>Pluvialis squatarola</i>			SUM	
Black-capped chickadee	<i>Poecile atricapillus</i>			S5	
Blackburnian warbler	<i>Setophaga fusca</i>			S5B	
Blackpoll warbler	<i>Setophaga striata</i>			S5B, SUM	
Black-throated green warbler	<i>Setophaga virens</i>			S4B	
Blue-headed vireo	<i>Vireo solitarius</i>			S5B	
Blue-winged teal	<i>Anas discors</i>			S4B	
Bohemian waxwing	<i>Bombycilla garrulus</i>			S4B, SUN	
Bonaparte's gull	<i>Chroicocephalus philadelphia</i>			S5B	
Boreal chickadee	<i>Poecile hudsonicus</i>			S4	
Boreal owl	<i>Aegolius funereus</i>			S4	
Broad-winged hawk	<i>Buteo platypterus</i>			S5B	
Brown creeper	<i>Certhia americana</i>			S5B	
Bufflehead	<i>Bucephala albeola</i>			S4B	

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Cackling goose	<i>Branta hutchinsii</i>			S2B	
Canada goose	<i>Branta canadensis</i>			S5B	
Canada warbler	<i>Cardellina canadensis</i>	THR	THR	S3B	THR
Cape May warbler	<i>Setophaga tigrina</i>			S5B	
Cedar waxwing	<i>Bombycilla cedrorum</i>			S5B, SUN	
Chipping sparrow	<i>Spizella passerina</i>			S5B	
Clay-colored sparrow	<i>Spizella pallida</i>			S5B	
Cliff swallow	<i>Petrochelidon pyrrhonota</i>			S4B	
Common goldeneye	<i>Bucephala clangula</i>			S5B, SUN	
Common grackle	<i>Quiscalus quiscula</i>			S5B	
Common loon	<i>Gavia immer</i>			S5B	
Common merganser	<i>Mergus merganser</i>			S5B	
Common nighthawk	<i>Chordeiles minor</i>	THR	THR	S3B	THR
Common raven	<i>Corvus corax</i>			S5	
Common redpoll	<i>Acanthis flammea</i>			S4B, S5N	
Common tern	<i>Sterna hirundo</i>			S5B	
Common yellowthroat	<i>Geothlypis trichas</i>			S5B	
Connecticut warbler	<i>Oporornis agilis</i>			S4B	
Dark-eyed junco	<i>Junco hyemalis</i>			S5B, SUN	
Double-crested cormorant	<i>Phalacrocorax auritus</i>			S5B	
Downy woodpecker	<i>Picoides pubescens</i>			S5	
Dunlin	<i>Calidris alpina</i>			S3B, SUM	
Eastern kingbird	<i>Tyrannus tyrannus</i>			S4B	
European starling	<i>Sturnus vulgaris</i>			SNA	
Forster's tern	<i>Sterna forsteri</i>			S4B	
Fox sparrow	<i>Passerella iliaca</i>			S5B, S4M	
Golden eagle	<i>Aquila chrysaetos</i>		NAR	S1B, S4N	
Golden-crowned kinglet	<i>Regulus satrapa</i>			S4B	
Gray jay	<i>Perisoreus canadensis</i>			S5	
Gray-cheeked thrush	<i>Catharus minimus</i>			S5B, S5M	
Great blue heron	<i>Ardea herodias</i>			S5B	
Great Gray owl	<i>Strix nebulosa</i>			S4	
Great horned owl	<i>Bubo virginianus</i>			S4	
Greater scaup	<i>Aythya marila</i>			S5B, SUM	
Greater white-fronted goose	<i>Anser albifrons</i>			SUM	
Greater yellowlegs	<i>Tringa melanoleuca</i>			S5B, SUM	
Green-winged teal	<i>Anas crecca</i>			S4B	

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Gyrfalcon	<i>Falco rusticolus</i>		NAR	SUN	
Hairy woodpecker	<i>Picoides villosus</i>			S5	
Harris' sparrow	<i>Zonotrichia querula</i>			S4B, S5M	
Hermit thrush	<i>Catharus guttatus</i>			S5B	
Herring gull	<i>Larus argentatus</i>			S4B	
Hoary redpoll	<i>Acanthis hornemanni</i>			S3B, S5N	
Hooded merganser	<i>Lophodytes cucullatus</i>			S5B	
Horned grebe	<i>Podiceps auritus</i>	No Status	SC	S4B	Not listed
Horned lark	<i>Eremophila alpestris</i>			S3B, SUM	
House sparrow	<i>Passer domesticus</i>			SNA	
Killdeer	<i>Charadrius vociferus</i>			S5B	
Lapland longspur	<i>Calcarius lapponicus</i>			S4B, SUM, SUN	
Le Conte's sparrow	<i>Ammodramus leconteii</i>			S5B	
Least flycatcher	<i>Empidonax minimus</i>			S5B	
Least sandpiper	<i>Calidris minutilla</i>			S4B SUM	
Lesser scaup	<i>Aythya affinis</i>			S5B	
Lesser yellowlegs	<i>Tringa flavipes</i>			S4B SUM	
Lincoln's sparrow	<i>Melospiza lincolnii</i>			S5B	
Long-eared owl	<i>Asio otus</i>			S4B	
Long-tailed duck	<i>Clangula hyemalis</i>			S4B	
Magnolia warbler	<i>Setophaga magnolia</i>			S5B	
Mallard	<i>Anas platyrhynchos</i>			S5B	
Merlin	<i>Falco columbarius</i>		NAR	S5B SUN	
Nashville warbler	<i>Oreothlypis ruficapilla</i>			S5B	
Northern flicker	<i>Colaptes auratus</i>			S5B	
Northern goshawk	<i>Accipiter gentilis</i>			S4B S5N	
Northern harrier	<i>Circus cyaneus</i>			S5B	
Northern hawk owl	<i>Surnia ulula</i>			S4	
Northern pintail	<i>Anas acuta</i>			S5B	
Northern shoveler	<i>Anas clypeata</i>			S5B	
Northern shrike	<i>Lanius excubitor</i>			S3B S5N SUM	
Northern waterthrush	<i>Parkesia noveboracensis</i>			S5B	
Olive-sided flycatcher	<i>Contopus cooperi</i>	THR	THR	S3B	THR
Orange-crowned warbler	<i>Oreothlypis celata</i>			S5B	
Osprey	<i>Pandion haliaetus</i>			S4B	
Ovenbird	<i>Seiurus aurocapilla</i>			S5B	
Palm warbler	<i>Setophaga palmarum</i>			S5B	

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Pectoral sandpiper	<i>Calidris melanotos</i>			S4M	
Peregrine falcon+	<i>Falco peregrinus</i>	SC	SC	S1B	END
Pied-billed Grebe	<i>Podilymbus podiceps</i>			S5B	
Pileated woodpecker	<i>Dryocopus pileatus</i>			S5	
Pine grosbeak	<i>Pinicola enucleator</i>			S4	
Pine siskin	<i>Spinus pinus</i>			S5	
Purple finch	<i>Haemorhous purpureus</i>			S5B	
Red-breasted merganser	<i>Mergus serrator</i>			S4B	
Red-breasted nuthatch	<i>Sitta canadensis</i>			S5	
Red-eyed vireo	<i>Vireo olivaceus</i>			S5B	
Red-tailed hawk	<i>Buteo jamaicensis</i>			S5B	
Red-throated loon	<i>Gavia stellata</i>			S3B,SUM	
Red-winged blackbird	<i>Agelaius phoeniceus</i>			S5B	
Ring-billed gull	<i>Larus delawarensis</i>			S5B	
Ring-necked duck	<i>Aythya collaris</i>			S5B	
Ross's goose	<i>Chen rossii</i>			S3S4B S4M	
Rough-legged hawk	<i>Buteo lagopus</i>		NAR	S3B SUM	
Ruby-crowned kinglet	<i>Regulus calendula</i>			S5B	
Ruddy duck	<i>Oxyura jamaicensis</i>			S5B	
Ruddy turnstone	<i>Arenaria interpres</i>			SUM	
Ruffed grouse	<i>Bonasa umbellus</i>			S4S5	
Rusty blackbird	<i>Euphagus carolinus</i>	SC	SC	S4B	Not listed
Sanderling	<i>Calidris alba</i>			SUM	
Sandhill crane	<i>Grus canadensis</i>			S5B	
Savannah sparrow	<i>Passerculus sandwichensis</i>			S5B	
Semipalmated plover	<i>Charadrius semipalmatus</i>			S4B SUM	
Semipalmated sandpiper	<i>Calidris pusilla</i>			S3B SUM	
Sharp-shinned hawk	<i>Accipiter striatus</i>			S4B	
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>			S5	
Short-billed dowitcher	<i>Limnodromus griseus</i>			S4B	
Short-eared owl	<i>Asio flammeus</i>	SC	SC	S2S3B	THR
Smith's longspur	<i>Calcarius pictus</i>			S3B SUM	
Snow bunting	<i>Plectrophenax nivalis</i>			S4N SUM	
Snow goose	<i>Chen caerulescens</i>			S5B S5M	
Snowy owl	<i>Bubo scandiacus</i>			S4N	
Solitary sandpiper	<i>Tringa solitaria</i>			S4B SUM	



Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
Song sparrow	<i>Melospiza melodia</i>			S5B	
Sora	<i>Porzana carolina</i>			S5B	
Spotted sandpiper	<i>Actitis macularius</i>			S5B	
Spruce grouse	<i>Falcipennis canadensis</i>			S4	
Stilt sandpiper	<i>Calidris himantopus</i>			S4B SUM	
Swainson's thrush	<i>Catharus ustulatus</i>			S5B	
Swamp sparrow	<i>Melospiza georgiana</i>			S5B	
Tennessee warbler	<i>Oreothlypis peregrina</i>			S5B	
Three-toed woodpecker	<i>Picoides dorsalis</i>			S5	
Tree swallow	<i>Tachycineta bicolor</i>			S4B	
Tundra swan	<i>Cygnus columbianus</i>			S4B SUM	
White-crowned sparrow	<i>Zonotrichia leucophrys</i>			S5B	
White-rumped sandpiper	<i>Calidris fuscicollis</i>			SUM	
White-throated sparrow	<i>Zonotrichia albicollis</i>			S5B	
White-winged crossbill	<i>Loxia leucoptera</i>			S5	
White-winged scoter	<i>Melanitta fusca</i>			S4B	
Willow ptarmigan	<i>Lagopus lagopus</i>			S4B,SUN	
Wilson's snipe	<i>Gallinago delicata</i>			S5B	
Wilson's warbler	<i>Cardellina pusilla</i>			S5B SUM	
Winter wren	<i>Troglodytes hiemalis</i>			S5B	
Yellow rail	<i>Coturnicops noveboracensis</i>	SC	SC	S3B	Not listed
Yellow warbler	<i>Setophaga petechia</i>			S5B	
Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>			S5B	
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>			S5B	
Yellow-rumped warbler	<i>Setophaga coronata</i>			S5B	

+Peregrine falcon is considered a potential visitor in the Regional Assessment Area

**Sources:** Bezener and De Smet, 2000; Peterson and Peterson, 2002; Manitoba Avian Research Committee, 2003; MBCDC, 2016; and SARA, 2016

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- 1 Very rare throughout its range or in the province (5 or fewer occurrences, or very few remaining individuals). May be especially vulnerable to extirpation.
- 2 Rare throughout its range or in the province (6 to 20 occurrences). May be vulnerable to extirpation.
- 3 Uncommon throughout its range or in the province (21 to 100 occurrences).
- 4 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).

- 5** Demonstrably widespread, abundant, and secure throughout its range or in the province, and essentially impossible to eradicate under present conditions.
- U** Possibly in peril, but status uncertain; more information needed.
- H** Historically known; may be rediscovered.
- X** Believed to be extinct; historical records only, continue search.
- SNR** A species not ranked. A rank has not yet assigned or the species has not been evaluated.
- SNA** A conservation status rank is not applicable to the element.
- S#S#** Numeric range rank: A range between two of the numeric ranks. Denotes range of uncertainty about the exact rarity of the species.
- ?** Inexact or uncertain; for numeric ranks, denotes inexactness.

**SARA/MESEA Definitions for Status Listing:**

**Not at Risk (NAR)**

**Special Concern (SC):** a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

**Threatened (THR):** a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

**Endangered (END):** A wildlife species facing imminent extirpation or extinction.

APPENDIX D: LIST OF POTENTIAL AMPHIBIANS AND REPTILES WITHIN  
THE NORTHERN ALL-SEASON ROAD PROJECT STUDY AREA

Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
American toad	<i>Anaxyrus americanus</i>			S4S5	
Boreal chorus frog	<i>Pseudacris maculata</i>			S5	
Northern leopard frog +	<i>Lithobates pipiens</i>		NAR	S4	
Northern spring peeper	<i>Pseudacris crucifer</i>			S5	
Wood frog	<i>Lithobates sylvaticus</i>			S5	
Red-sided garter snake	<i>Thamnophis sirtalis parietalis</i>			S4	

+Only the eastern population is found in the boreal forest north-east of Lake Winnipeg.

**Sources:** Conant and Collins, 1991, Science Team Report, 2002; MBCDC, 2016; and SARA, 2016

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APPENDIX E: SPECIES OF CONSERVATION CONCERN POTENTIALLY IN  
THE REGIONAL ASSESSMENT AREA



Common Name	Scientific Name	Conservation Listing			
		SARA	COSEWIC	MBCDC	MESEA
<b>Vegetation</b>					
Bodin's Milkvetch	<i>Astragalus bodinii</i>			S1	
Daisy-leaf moonwort	<i>Botrychium matricariifolium</i>			S1	
False uncina sedge	<i>Carex microglochin</i>			S2	
Graceful manna grass	<i>Glyceria pulchella</i>			S2S3	
Ground-fir	<i>Diphasiastrum sitchense</i>			S1	
Hooker's orchid	<i>Platanthera hookeri</i>			S2S3	
Mountain club-moss	<i>Huperzia selago</i>			S2S3	
Northern woodsia	<i>Woodsia alpina</i>			S2	
Robbin's pondweed	<i>Potamogeton robbinsii</i>			S2S3	
Rye-grass sedge	<i>Carex loliacea</i>			S2?	
Seaside sedge	<i>Carex maritima</i>			S2?	
Straightleaf Pondweed	<i>Potamogeton strictifolius</i>			S2S3	
Western Jewelweed	<i>Impatiens noli-tangere</i>			S1	
<b>Mammals</b>					
Little brown myotis	<i>Myotis lucifugus</i>	END	END	S2N,S5B	END
<b>Fish</b>					
Lake Sturgeon	<i>Acipenser fulvescens</i>	No status	SC	S2	Not listed
<b>Birds</b>					
Bank swallow	<i>Riparia riparia</i>	No status	THR	S5B	Not listed
Barn swallow	<i>Hirundo rustica</i>	No status	THR	S4B	Not listed
Canada warbler	<i>Cardellina canadensis</i>	THR	THR	S3B	THR
Common nighthawk	<i>Chordeiles minor</i>	THR	THR	S3B	THR
Horned grebe	<i>Podiceps auritus</i>	No status	SC	S4B	Not listed
Olive-sided flycatcher	<i>Contopus cooperi</i>	THR	THR	S3B	THR
Peregrine falcon	<i>Falco peregrinus</i>	SC	SC	S1B	END
Rusty blackbird	<i>Euphagus carolinus</i>	SC	SC	S4B	Not listed
Short-eared owl	<i>Asio flammeus</i>	SC	SC	S2S3B	THR
Yellow rail	<i>Coturnicops noveboracensis</i>	SC	SC	S3B	Not listed

**Note:** There are several species of conservation concern listed in Appendices A to D that have ranges that extend into the Regional Assessment Area. Based on site investigations there was however no evidence of the presence or the appropriate habitat for these species and therefore they are considered not likely to occur. These species include the following; flooded jellyskin, cackling goose and golden eagle.

**Sources:** MBCDC, 2016; and SARA, 2016

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