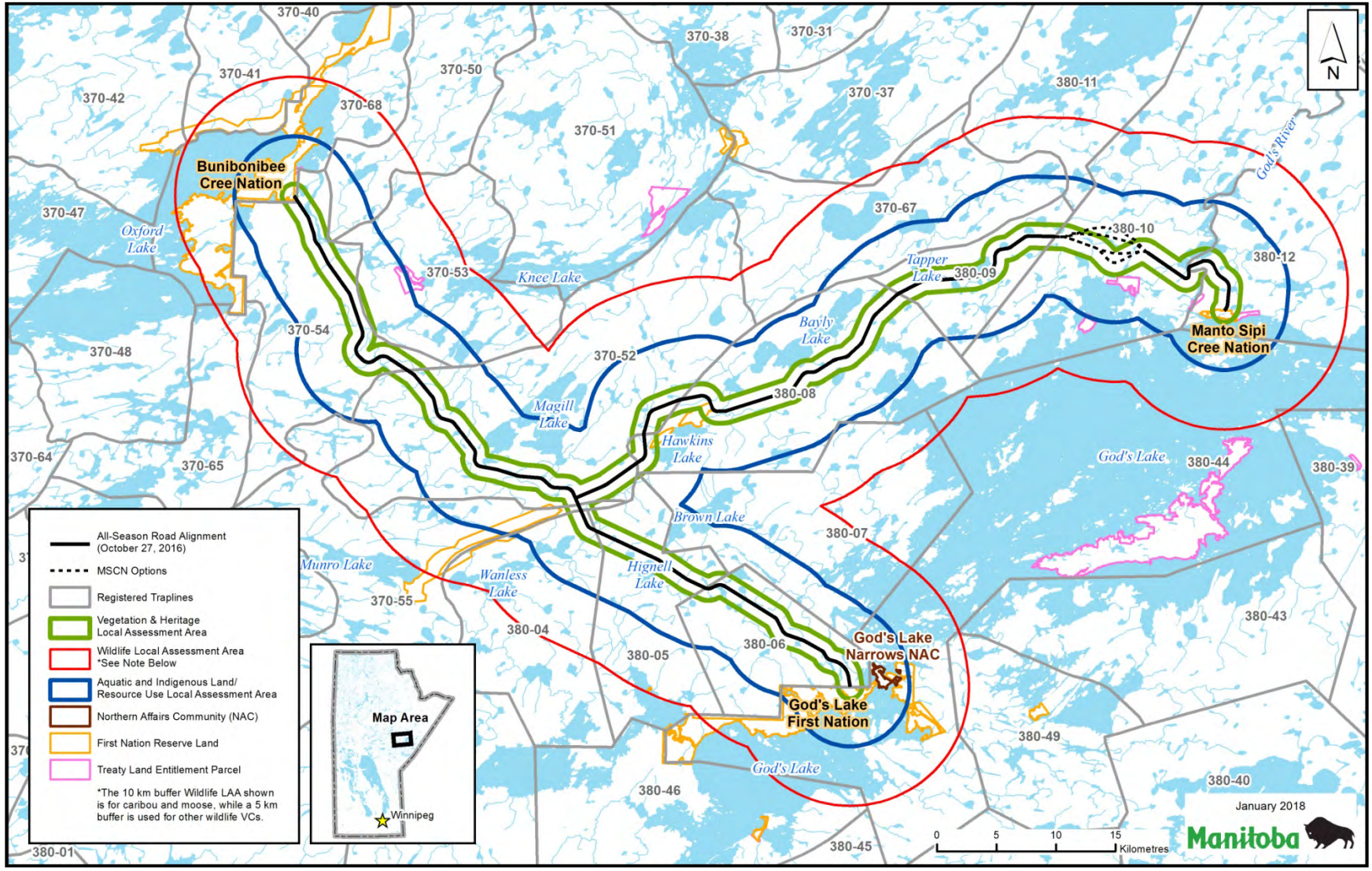

Figure 1-8: Local Assessment Areas for the proposed Project showing Registered Traplines

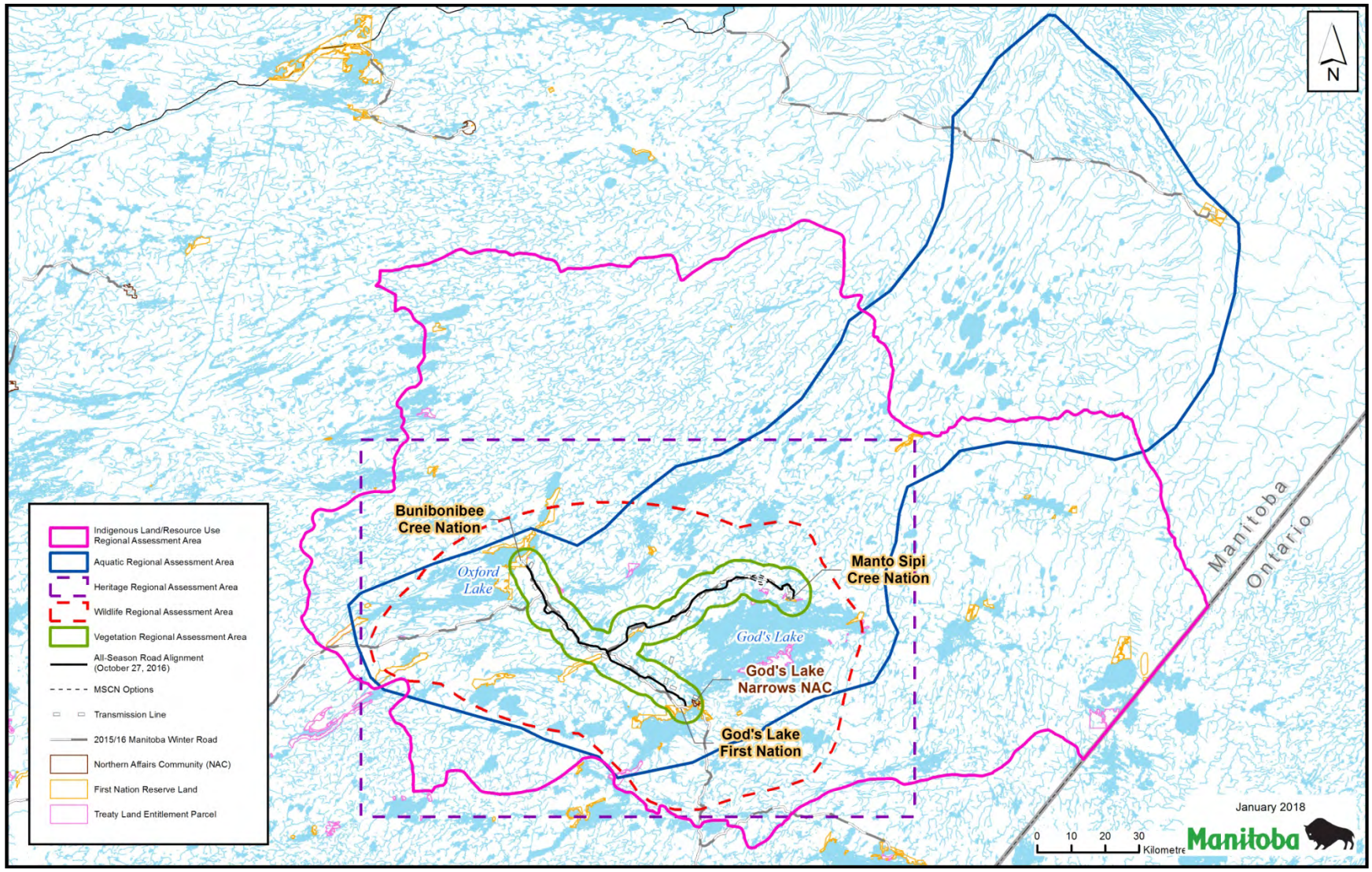

Figure 1-9: Regional Assessment Areas for the proposed Project

In general, road building construction is not seasonally constrained, but may be scheduled around conditions that provide for better access. Timing constraints will be 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.

There are no plans to decommission or abandon the proposed Project, as it will provide all-season access among Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation for the foreseeable future.

1.2.3 The East Side Transportation Initiative

The ESTI is a provincial initiative with a mandate to provide improved, safe and more reliable year-round transportation service for the remote and isolated communities on the east side of Lake Winnipeg. Currently, transportation within the region is severely limited and community members are dependent on air and winter road service. These forms of transportation have high operational costs or are available on a very limited basis, thereby resulting in increased costs for goods and services.

The ESTI evolved from the Government of Manitoba's commitment to support sustainable development through the creation of broad area plans for large areas of the province (Government of Manitoba 1999). In August 2000, broad area planning was initiated on the east side of Lake Winnipeg with supporting studies including an assessment of the scope, justification and planning of an all-season road network (Dillon Consulting Limited and H.N. Westdal & Associates 2000; Dillon Consulting Limited and N.D. Lea 2001). The rationale for moving forward with the all-season road projects on the east side of Lake Winnipeg was provided in the 2011 East Side Lake Winnipeg Large Area Transportation Network Study and is discussed below (SNC-Lavalin *et al*. 2011a) **(Figure 1-10)**.

The intent of Manitoba's East Side Transportation Initiative is to increase transportation opportunities for communities on the east side of Lake Winnipeg.

A key focus of the ESTI is to provide opportunities for east side residents to participate in and receive economic benefits from the construction and operation of the all-season road network. Construction of the proposed Project is expected to generate beneficial economic effects for Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation. Anticipated benefits of the proposed Project include reduction of transportation costs for goods and services, enhanced access to emergency, health and social services, improved linkages among the communities, construction employment and enhanced economic opportunities for the three communities.

Commercial airline and air charter companies, regional hauling companies and local and regional suppliers of construction materials and supplies, goods and services and other provisions are expected to benefit from construction of the proposed Project. During operation of the proposed road, the local economy will benefit from road maintenance facilities and activities for the foreseeable future.

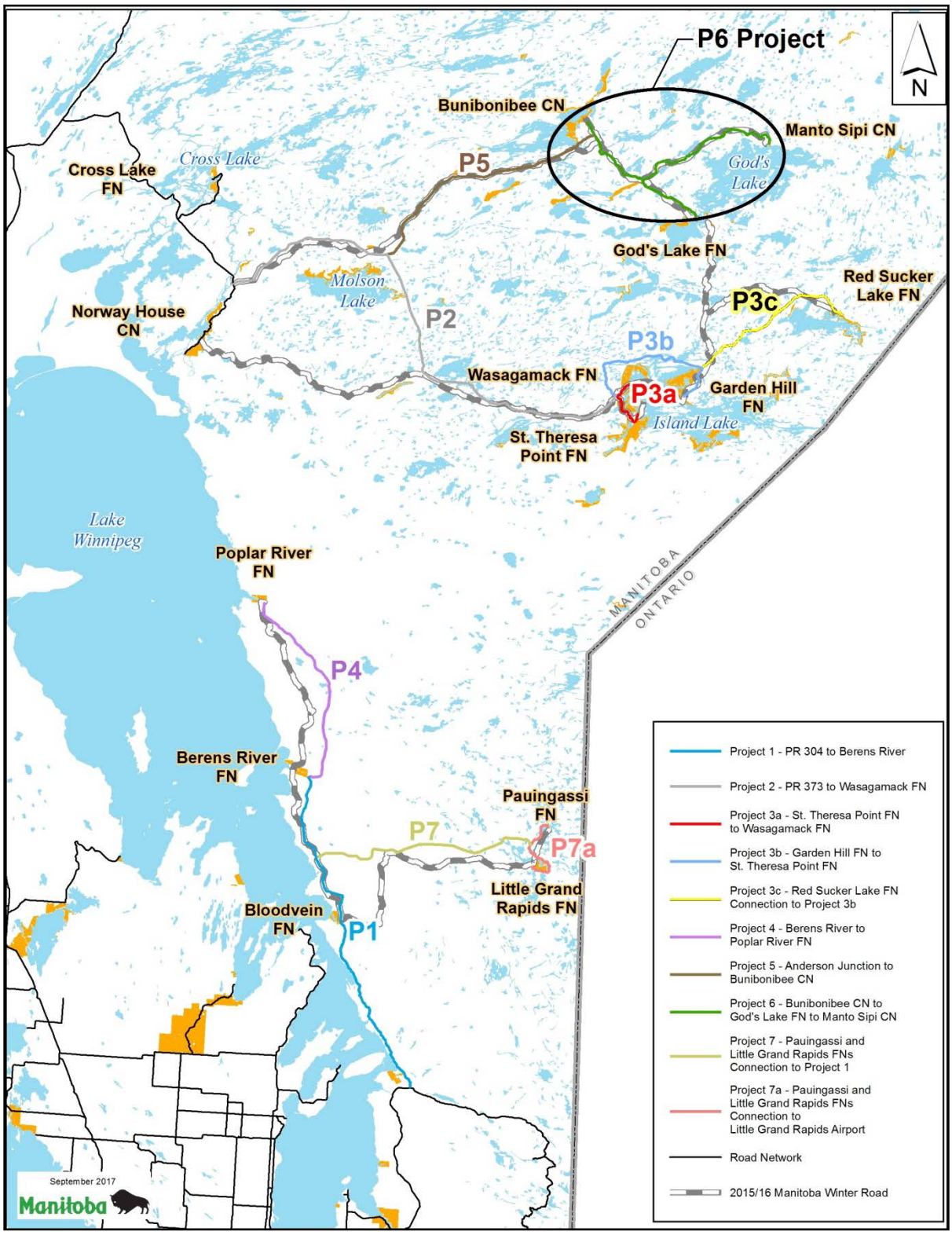

Figure 1-10: Regional transportation network of planned all-season roads on the east side of Lake Winnipeg in the Large Area Transportation Network Study.

Goods and services costs are expected to decrease with the reduction in transportation costs. Other local businesses expected to benefit directly or indirectly from the proposed road include vehicle sales and services, overnight accommodations, restaurants, recreational equipment suppliers and guiding services.

1.3 Project Location

The proposed Project will link Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation, which are located in northeast Manitoba. The three communities are located between 550 and 590 km north of the City of Winnipeg by air. 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.

As indicated in **Section 1.2**, the proposed Project alignment consists of a total 141 km of all-season road on a new ROW on provincial Crown land **(Figure 1-1)**. There are three road sections that will begin at the Reserve boundaries and generally head west and southwest 71.9 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 where the three sections intersect. The proposed all-season road will connect to existing (Bunibonibee Cree nation) or future (Manto Sipi Cree Nation, 210 m; God's Lake First Nation, 685 m) on-Reserve access roads at the reserve boundaries.

The geographic setting in which the proposed Project will take place is described in the following sub-sections, which focus on those aspects of the proposed Project and setting that are important to understand the potential environmental effects.

1.3.1 Coordinates

The coordinates for the proposed Project are as follows:

- Manto Sipi Cree Nation:

  East 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:

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

Latitude: 54° 33' 03.5" N
Longitude: 94° 31' 38.5" W

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

  Latitude: 54° 41' 17.2" N
  Longitude: 94° 53' 27.2" W

1.3.2 Current Land Use

The township and ranges partially traversed by the proposed Project 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
- God's Lake First Nation all-season road section; 64-19, 64-20, 65-18, 65-19, 66-17 and 66-18

The proposed Project is located predominately within the God's Lake Ecodistrict (#365), within the Hayes River Upland Ecoregion of the Boreal Shield Ecozone, although a portion of the alignment to Manto Sipi Cree Nation, east of Tapper Lake, falls within the Knee Lake Ecodistrict (#360; Smith *et al*. 1998) **(Figure 1-11)**.

The God's Lake Ecodistrict has well to imperfectly drained, mineral soils comprising eluviated eutric brunisols and grey luvisols, which can be found on upland clayey glaciolacustrine deposits **(Figure 1-12)**. 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).

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

There are few important industrial or 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 RAA. There are 12 mine sites within the RAA with the closest approximately 18.3 km from the

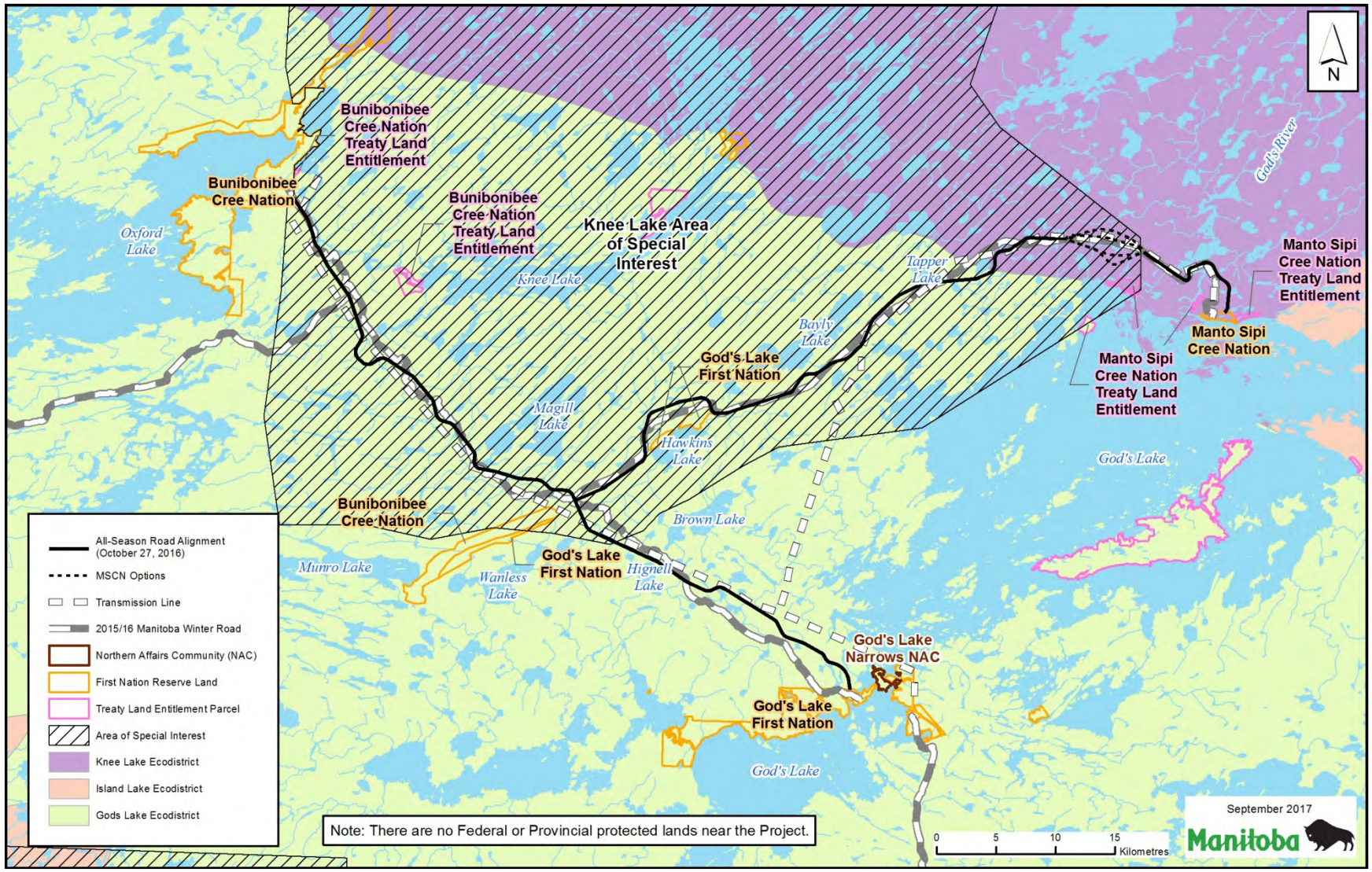

Figure 1-11: Ecodistricts and Areas of Special Interest in the vicinity of the proposed Project

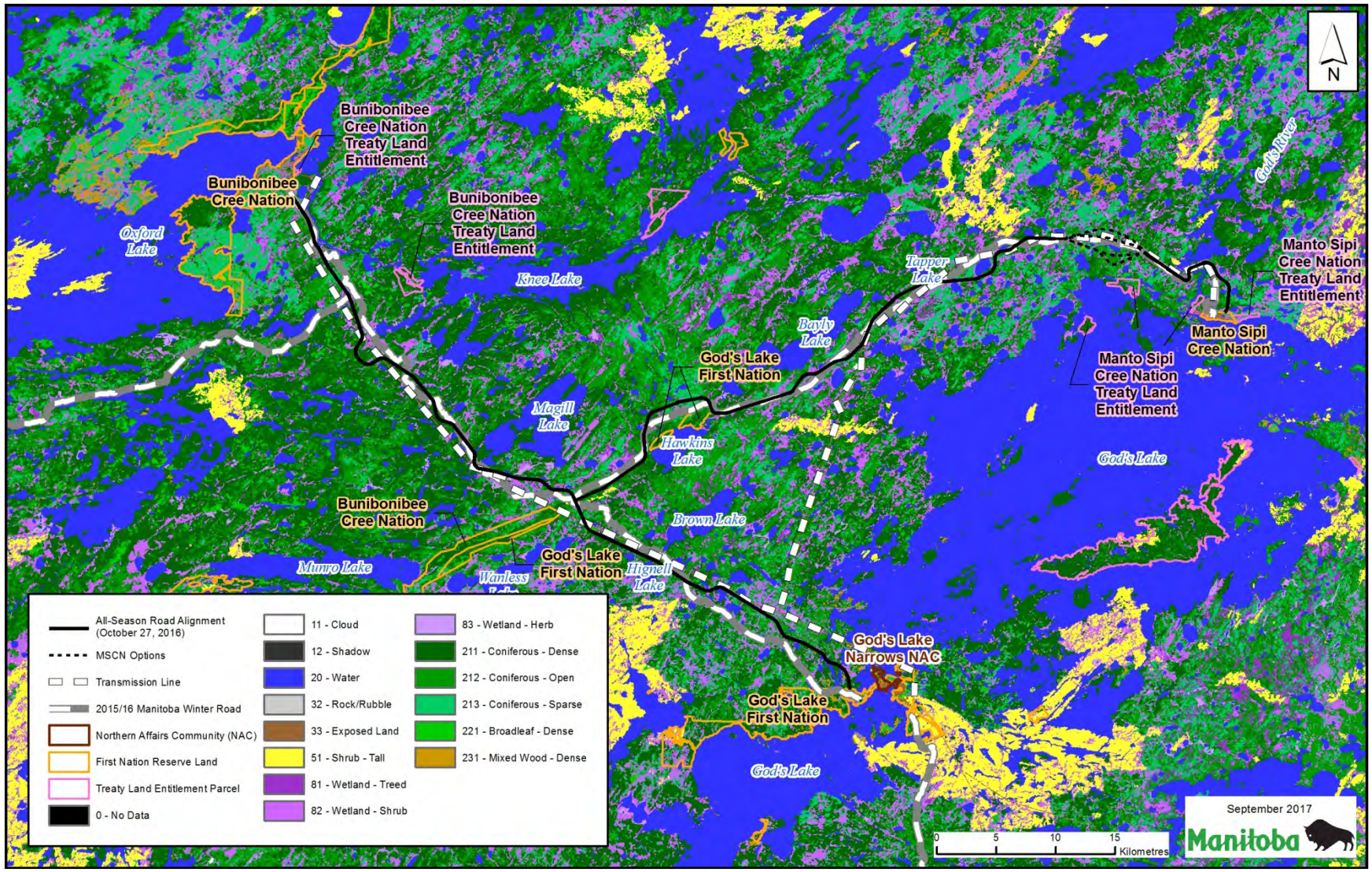

Figure 1-12: Land cover in the vicinity of the proposed Project

all-season road alignment (outside of the LAA). There are also four and 270 mining claims within the LAA and RAA, respectively, with the closest approximately 1 km from the alignment. There are eight quarry withdrawals and eight active casual quarry permits within the LAA with a total of 12 of each within the RAA. 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 caribou, moose, black bear and game birds. Trapping of furbearers is administered by MSD through the Registered Trapline (RTL) system. There are two RTL Sections (Oxford House and Gods Lake) in the LAA and 10 RTLs intersect the proposed all-season road alignment (**Figure 1-8**).

Access to the area is presently restricted to local travel on foot, by boat and snow machine or by air. The communities are currently serviced by winter roads extending from Provincial Trunk Highway 6 and Provincial Road 373, the former which provides all-weather access to the cities of Thompson and Winnipeg. The three First Nation communities each have regional airports. Power to the communities is provided by a 138-kilovolt transmission line. Once completed, the proposed Project will replace the existing winter road segment linking the communities. The winter road will be decommissioned once the proposed Project is completed. Apart from the winter roads and transmission lines, land in the LAA is mostly undeveloped. The God's Lake Gold Mine, which is located on the north shore of Elk Island, operated from 1935 to 1943.

There are no known residences or cabins in immediate proximity to the Project. There are no privately owned lands in proximity to the proposed Project. The nearest residences to the alignment are approximately 250 metres (m) in Manto Sipi Cree Nation, 1.5 km in Bunibonibee Cree Nation and God's Lake First Nation and 3 km in God's Lake Narrows Northern Affairs Community. Based on a mapping exercise done as part of the Traditional Knowledge (TK) studies, the nearest cabin is approximately 400 m from the proposed all-season road alignment (HTFC Planning & Design 2017a). All land is owned by the provincial Crown. **Section 1.4.4** outlines relevant land use and community plans in the region.

1.3.3 Proximity to Federal Lands

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. Other than the Reserve lands for the three First Nations to which the project will abut, there are no federal lands in the Project area **(Figure 1-1)**.

1.3.4 Environmental Significance of the Area

There are no National Historic Sites, National Parks or other federally protected lands in the vicinity of the proposed Project **(Figure 1-11)**. The Hayes River, which crosses through the area, was designated as a Heritage River under the Canadian Heritage Rivers System in 2006. The proposed Project does not cross the Hayes River. There are no designated protected areas or other lands protected under the Manitoba

Protected Areas Initiative (PAI) in the region. The Knee Lake Area of Special Interest (ASI), which is not yet protected under the PAI, is in the LAA and surrounding region.

1.3.5 Proximity to Environmentally Sensitive Areas

As indicated in **Section 1.3.4**, there are no National Historic Sites, National Parks or other federally protected areas in the vicinity of the proposed Project. There are no designated areas of lands protected under the Manitoba PAI in the region. The Knee Lake ASI contains the entire all-season road segment from Bunibonibee Cree Nation, most of the segment from Manto Sipi Cree Nation and a small portion of the segment from God's Lake First Nation (**Figure 1-11**).

Twelve heritage sites were found in the LAA during the Heritage Resource Impact Assessment for the Project. Eight sites are not likely to be affected by the proposed Project. The four remaining sites are within the Project Footprint (the 100 m ROW for the all-season road). Of the four sites, two are crossing historic portages – one connecting God's Lake to Bayly Lake and one a historic portage/trail connecting two segments of God's River in order to bypass God's River Rapids. Two additional sites were identified – one a pre-contact quartz quarry site and the other a pre-contact lithic scatter.

In addition, sensitive sites (ex: spawning areas, medicinal plant harvesting areas, cultural sites) were identified by the communities through TK studies. Selection of the all-season road alignment took into account the presence of identified sensitive sites, where possible. Mitigation measures will be used where sensitive sites identified by the communities cannot be avoided (**Chapter 6, Section 6.4.9**).

The proposed Project will cross 25 streams that were identified as having habitat to support fish. Seven of these were designated as 'important' fish habitat supporting a range of life requisites for both large (ex: northern pike, walleye, sucker and trout) and small-bodied fish species (ex: forage fish). The remaining eighteen sites were assessed as 'marginal' fish habitat consisting of typically small boreal streams with limited flow and depth with soft substrates, habitat suited to small-bodied fish adapted to low oxygen environments (ex: brook stickleback and northern pearl dace) (**Chapter 6, Section 6.1.6**). The Southern Hudson Bay-James Bay population of lake sturgeon is designated as Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (COSEWIC 2006a) and is currently under consideration for protection under the *Species at Risk Act* (SARA). Lake sturgeon has been documented in God's River, God's Lake and Hayes River (North/South Consultants Inc. 2017a) (**Chapter 6, Section 6.1.8.2**).

The proposed Project will also traverse vegetation communities and wildlife habitats (ex: moose). Within these areas, five birds and two mammals federally protected under SARA are known to occur (**Chapter 6, Section 6.1.8**). The bank swallow (*Riparia riparia*), barn swallow (*Hirundo rustica*), Canada warbler (*Cardellina canadensis*), common nighthawk (*Chordeiles minor*) and olive-sided flycatcher (*Contopus cooperi*) may be found within the LAA and are all listed as Threatened under SARA, with the last three also listed as Threatened under *The Endangered Species and Ecosystem Act* (ESEA) of Manitoba. Boreal

woodland caribou are listed as Threatened and wolverine are listed as a Species of Special Concern under SARA. Caribou groups inhabit the LAA; however, MSD has collected data indicating that caribou found in the vicinity of the Project are part of the migratory Penn Island caribou and not the protected woodland caribou (**Chapter 6, Section 6.1.8**).

Protected vascular plant species listed by SARA and ESEA are not expected to occur as the LAA is beyond the geographic range of the listed species. Flooded jellyskin (*Leptogium rivulare*) lichen, listed by SARA and COSEWIC, does not occur in the ecoregion and was not found during the 2016 field studies (**Chapter 6, Section 6.1.4.1**). The local communities use a number of plants in the area. The proposed Project will result in removal of approximately 9.24 km^2 of vegetation (**Chapter 6, Section 6.2.5.1**).

1.3.6 Description of Local Communities

The communities of Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community are situated at the east, north and south terminus of the proposed road alignment, respectively. A description of these communities if provided in **Chapter 6, Section 6.1.9**. The all-season road alignment begins at the Reserve boundaries of each of the three First Nations. No other Indigenous communities are located on or near the proposed alignment. There are no known residences or cabins in immediate proximity to the proposed all-season road. The nearest known residences are approximately 250 m from the all-season road in Manto Sipi Cree Nation and 1.5 km from the all-season road in both Bunibonibee Cree Nation and God's Lake First Nation.

1.3.7 Proximity to Indigenous Territories, Treaty Lands and Reserves

The proposed alignment for the all-season road passes through lands used for traditional purposes by Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation, all of which are Cree communities. The three First Nations were signatories to the Adhesion of Treaty 5 in 1909 which established rights to hunt and trap throughout the surrendered tract. These communities are located adjacent the LAA and exercise their treaty and Indigenous rights in the region. Indigenous residents of the God's Lake Narrows Northern Affairs Community also use the area for traditional purposes. The area in which the proposed Project is located is not anticipated to be used by other First Nations.

Reserve lands of the Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation are situated at the east, north and south terminus of the proposed road alignment, respectively. The three First Nations all have outstanding Treaty Land Entitlement (TLE)[1] and both Manto Sipi Cree Nation and Bunibonibee Cree Nation have TLE selections within the LAA. The closest of these selections, however, is

[1] Treaty Land Entitlement refers to land owed to certain First Nations under the Numbered Treaties in Manitoba signed by the First Nations and the British Crown between 1871 and 1910. Treaties 1 to 10 provided that the Crown would set aside a certain amount of land as reserve land based on the populations of the "Indian bands" at the time of the original surveys for reserve lands. Not all Indian bands received their land entitlement as promised in the Numbered Treaties and this is what is referred to as "Treaty Land Entitlement" (Treaty Land Entitlement Committee of Manitoba Inc. 2017).

approximately 660 m from the all-season road near the terminus at the Manto Sipi Cree Nation, while the rest are all over 1 km from the all-season road alignment (**Figure 1-1**).

Throughout the planning stages of the proposed Project, MI has been proactive in engaging and involving elders, students, elected officials and community members of Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community. Support for the proposed Project by the First Nations has been demonstrated by signed community agreements. MI has also engaged with the Manitoba Metis Federation (MMF) during the Project planning and EA stages.

1.4 Regulatory Framework and the Role of Government

It is expected that this EIS will be jointly reviewed by both the federal and provincial governments.

1.4.1 Federal Regulatory Requirements

1.4.1.1 Canadian Environmental Assessment Act

The construction and operation of an all-season public highway that requires a total of 50 km or more of new ROW is considered a Designated Project pursuant to the *Regulation Designating Physical Activities* SOR/2012-147 under the *Canadian Environmental Assessment Act* (CEAA), 2012 (S.C. 2012, c. 19, s. 52). This Project, which includes the construction and operation of a 141 km long public all-season road along a new ROW is, therefore, considered a Designated Project under the Act.

Pursuant to Section 15(d) of the CEAA, 2012, the Agency is the authority responsible for federal review of this proposed Project. The Agency issued the Guidelines for the Preparation of an EIS for the proposed Project to MI on September 18, 2017.

An existing on-Reserve access road will connect to the proposed all-season road at the Bunibonibee Cree Nation boundary, whereas on-Reserve access roads will need to be constructed separately on Manto Sipi Cree Nation and God's Lake First Nation to connect to the 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 ISC under Section 67 of the CEAA, 2012. MI will also apply for any required construction permits under Section 28(2) of the *Indian Act* (R.S.C., 1985, c. I-5).

1.4.1.2 Other Federal Legislation

In addition to Project approval required under CEAA, 2012, other federal legislation potentially relevant to this proposed Project includes:

Federal Legislation	Rationale/Relevance
Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33)	▪ Emissions from Transportation will generated during construction of the project. ▪ Hazardous Waste will be generated during the construction of the project.

Federal Legislation	Rationale/Relevance
	▪ There is potential for an environmental Emergency to occur during the construction of the project.
Explosives Act (R.S.C., 1985, c. E-17)	▪ Project requires the use and storage of explosives. ▪ Manufacture and storage of explosives are regulated under the *Act* which is administered by Natural Resources Canada (NRCan). ▪ Magazine Storage Licence is required from the Explosives Regulatory Division of NRCan.
Fisheries Act (R.S.C., 1985, c. F-14)	▪ Project crosses waterways which support fish and fish habitat that are a part of a commercial, recreational, or Indigenous fishery. ▪ Crossings will be installed in accordance with the Fisheries and Oceans Canada's 'Measures to Avoid Serious Harm to Fish and Fish Habitat'.
Migratory Birds Convention Act, 1994 (S.C. 1994, c. 22)	▪ Migratory birds frequent the LAA and are protected.
Navigation Protection Act (R.S.C., 1985, c. N-22)	▪ Waterbodies to be crossed (God's Lake and Magill Creek) are "non-scheduled" watercourses. ▪ Under the 'opt-in' provision in Section 4 of the Act, MI may apply for the assessment and potential approval of proposed works.
Species at Risk Act (R.S.C., 1985, c. F-14)	▪ Species at Risk inhabit the LAA and are protected.
Transportation of Dangerous Goods Act (R.S.C., 1992, c 34)	▪ Project requires the transportation of dangerous goods (ex: explosives). ▪ Transportation of dangerous goods are regulated under the *Act*

1.4.1.3 Federal Guidance and Reference Documents Used in the Environmental Assessment

The Agency's Operational Policy Statements, technical guidance and reference documents under CEAA, 2012 also guided the EA for the proposed Project as did procedural guides (ex: Cumulative Effects Practitioners Guide, Determining Whether a Project is Likely to Cause Significant Adverse Effects) and *Species at Risk Act* Policies and Guidelines under the former CEAA. A complete listing is found in **Chapter 4, Section 4.2**.

1.4.2 Provincial Regulatory Requirements

1.4.2.1 The Environment Act

The proposed Project is a 'Class 2' development (ex: a two lane road at a new location with associated facilities and borrow pits) under the *Classes of Development Regulation* (164/88) of Manitoba's *The Environment Act* and therefore requires an *Environment Act* Licence. Under *The Environment Act*, the following regulations may be applicable to the Project:

- *Classes of Development Regulation* (164/88)
- *Licensing Procedures Regulation* (163/88)
- *Litter Regulation* (92/88 R)

- *Pesticides Regulation* (94/88 R)
- *Waste Disposal Grounds Regulation* (150/91)

1.4.2.2 Other Provincial Legislation

The construction and operation and maintenance of the proposed Project including its project components is subject to applicable provincial legislation, guidelines, codes and standards potentially including:

Provincial Legislation	Associated Regulations, Standards
The Contaminated Sites Remediation Act (C.C.S.M. c. C205)	*Contaminated Sites Remediation Regulation* (105/97)
The Crown Lands Act (C.C.S.M. c. C205)	*Crown Lands Fees Regulation* (130/91) *Vehicle Use on Crown Lands Resource Roads Regulation* (145/91)
The Dangerous Goods Handling and Transportation Act (C.C.S.M. c. D12)	*Dangerous Goods Handling and Transportation Regulation* (55/2003) *Environmental Accident Reporting Regulation* (439/87) *Generator Registration and Carrier Licencing Regulation* (175/87) *Storage and Handling of Petroleum Products and Allied Products Regulation* (188/2001)
The Drinking Water Safety Act (C.C.S. M c. D101)	*Drinking Water Quality Standards Regulation (41/07)* *Drinking Water Safety Regulation (40/07)*
The Endangered Species and Ecosystems Act (C.C.S.M. c. E111)	*Threatened, Endangered and Extirpated Species Regulation* (25/98)
The Forest Act (C.C.S.M. c. F150)	*Forest Use and Management Regulation* (227/88 R)
The Heritage Resources Act (C.C.S.M. c. H39.1)	*Heritage Objects Designation Regulation* (160/89) *Heritage Resources Forms Regulation* (99/86) *Heritage Sites Designation Regulation* (122/88 R)
The Highways and Transportation Act (C.C.S.M. c. H40)	*Construction and Surface Maintenance of Access Crossings to Departmental Roads Regulation* (412/88 R) *Declaration of Provincial Roads Regulation* (413/88 R)
The Mines and Minerals Act (C.C.S.M. c. M162)	*Drilling Regulation*, 1992 (63/92) *Quarry Minerals Regulation*, 1992 (65/92)
The Noxious Weeds Act (C.C.S.M. c. N110)	*Noxious Weeds Regulation* (35/96)
The Public Health Act (C.C.S.M. c. P210)	*Collection and Disposal of Wastes Regulation* (321/88 R) *Protection of Water Sources Regulation* (326/88 R) *Water Supplies Regulation* (330/88 R) *Water Works, Sewerage and Sewage Disposal Regulation* (331/88 R)
The Sustainable Development Act (C.C.S.M. c. S270)	*Sustainability Guidelines for Local Governments, School Divisions, Universities, Colleges and Regional Health Authorities Regulation* (35/96)

Provincial Legislation	Associated Regulations, Standards
The Water Protection Act (C.C.S.M. c. W65)	*Manitoba Water Quality Standards, Objectives and Guidelines Regulation* (196/2011) *Aquatic Invasive Species Regulation* (173/2015)
The Water Rights Act (C.C.S.M. c. W80)	*Water Rights Regulation* (126/87)
The Wildfires Act (C.C.S.M. c. W128)	*Burning Permit Areas Regulation* (242/97)
The Wildlife Act (C.C.S.M. c. W130)	*General Hunting Regulation* (351/87) *Hunting Areas and Zones Regulation* (220/86) *Trapping Areas and Zones Regulation* (149/2001) *Wildlife Protection Regulation* (85/2003)
The Workplace Safety and Health Act (C.C.S.M. c. W210)	*Workplace Safety and Health Regulation* (217/2006) *Operation of Mines Reg*ulation (212/2011)

Provincial work permits required under *The Crown Lands Act* for road construction and quarry and camp development on provincial Crown lands will be secured, where required, prior to construction of the proposed Project. Casual quarry permits required under Sub-section 133(1) of *The Mines and Minerals Act* will be acquired prior to quarry development. Burning Permits required under Section 19(1) of *The Wildfires Act* will be secured as needed. Permits for petroleum storage tanks over 5,000 litres (L) on Crown land are required under *The Dangerous Goods Handling and Transportation Act* (*Storage and Handling of Petroleum Products and Allied Products Regulation*) and will also be secured as needed. A water use license under *The Water Rights Act* is not expected to be required as water use (ex: dust control, use at concrete batch plants for bridge construction) is not expected to exceed the 25,000 L per day threshold. Water for use during construction activities will be sourced from appropriate surface water sources adjacent to the ROW and will be withdrawn in accordance with applicable regulatory guidelines and requirements.

The EA also considers the principles and guidelines of sustainable development related to the environment as outlined in Schedules A and B of *The Sustainable Development Act* (Manitoba).

1.4.3 Indigenous Governance

Manto Sipi Cree Nation elects its Chief and Council under the Custom Electoral System which can be either under the *Indian Act* election system, the *First Nations Elections Act*, a custom system or under the provision of a self-governing agreement. Bunibonibee Cree Nation and God's Lake First Nation elects their Chiefs and Council under the *Indian Act* election system[2]. All three communities are members of the Keewatin Tribal Council Inc. and are signatories to the Adhesion to Treaty 5 in 1909.

Wasagamack First Nation, Garden Hill First Nation, St Theresa Point First Nation, and Red Sucker Lake First Nation all elect their Chief and Council under the Custom Electoral System. The four communities are members of the Island Lake Tribal Council Inc. and are signatories to the Adhesion to Treaty 5 in 1909.

[2] ISC website, www.aandc-aandc.gc.ca. Accessed January 19, 2017.

Norway House Cree Nation, and the Cross lake Band of Indians (Pimicikamak Okimanwin) elect their Chief and Council under the Custom Electoral System[3]. They are not affiliated with a tribal council and are signatories to the Adhesion to Treaty 5 in 1908. Norway House Cree Nation and the Cross lake Band of Indians (Pimicikamak Okimanwin) are also signatories on the Northern Flood Agreement (1977) with the Governments of Manitoba and Canada, and Manitoba Hydro, as members of the Northern Flood Committee.

The Manitoba Metis Federation (MMF) is not a signatory of any treaty but has been representing the Metis people of Manitoba since its formation in 1967. The MMF elects it representatives through its own process as per the MMF constitution[4]. The land rights of the Métis people are recognised by section 31 of the Manitoba Act (1870) and in 2012 signed the Métis Harvesting Agreement with the Province of Manitoba.

1.4.4 Land Use and Community Plans and Zoning

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 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. Land use plans have not been developed by any of the three local First Nations. 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.

In 2007, Manitoba signed an 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.

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 *et al.* 2011a). The final report of that study was completed in 2011 and recommended an all-season road network for the region. Various route options for an all-season road linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God’s Lake First Nation were

[3] 3 ISC website, www.aandc-aandc.gc.ca. Accessed October 2. 2018.
[4] MMF website, www.mmf.mb.ca. Accessed October 2. 2018.

considered. The alignment that generally follows the existing winter road alignment was selected as the preferred routing corridor, taking into consideration technical and environmental constraints, community preferences such as avoiding sensitive areas and locating the all-season road on terrain suitable for all-season roads.

1.5 Environmental Assessment Overview

As described above in **Section 1.4**, the proposed Project requires approval under the federal CEAA, 2012 and *The Environment Act* of Manitoba. An illustration of the general approach used to complete the EA for the proposed Project is shown in **Figure 1-13**. The approach follows the general principles and specific guidance of EA, as well as federal and provincial regulators, respectively. The EA was conducted according to the guiding principles of the Agency's Guidelines for the Preparation of an Environmental Impact Statement (September 18, 2017) for the proposed Project. The guiding principles for the Project and the EA are EA is a planning tool, opportunities for meaningful public participation must be provided and communication and cooperation with Indigenous peoples be promoted. In addition, the guiding principles require application of the precautionary approach to avoid significant adverse effects.

The purpose of the EIS is to facilitate the required regulatory approvals to construct and maintain the proposed Project. To satisfy regulatory requirements, the EIS identifies the justification for the proposed Project and alternatives considered, a description of the proposed Project and approach to the EA for the Project. In addition, it summarizes the Indigenous and Public Engagement Program (IPEP) implemented, the project setting (physical, biophysical [including Species at Risk], Indigenous Peoples, human environment). The EIS also identifies, assesses and mitigates potential adverse environmental effects and evaluates the significance of any residual environmental effects. Effects of accidents and malfunctions, effects of the environment on the Project and cumulative environmental effects are provided. The EIS also outlines measures for environmental protection and MI's commitment to Sustainable Development, as well as follow-up programs (including monitoring) which will be implemented for the proposed Project.

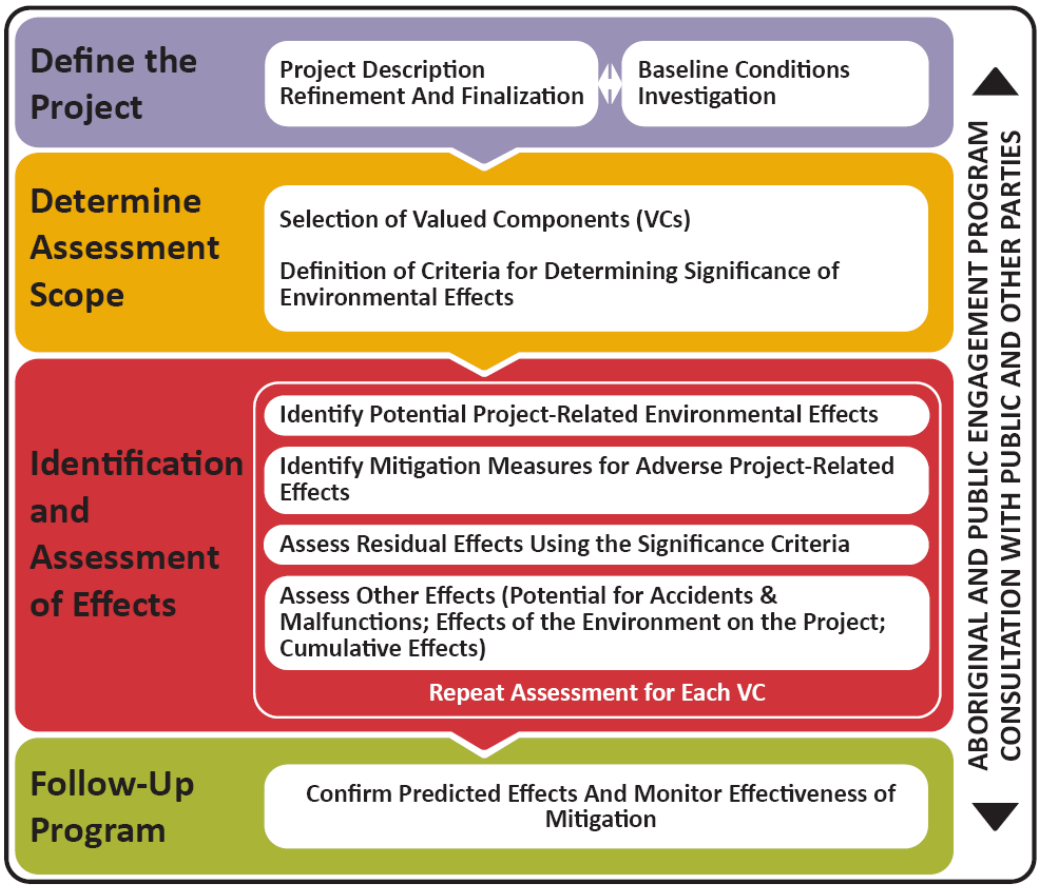

Figure 1-13: Summary of Environmental Assessment Approach

1.6 Report Organization

This document is the EIS for the proposed Project 6 – All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation. The EIS was submitted to federal and provincial authorities in both paper copy and digital formats. The report is organized into sections described as follows.

- **Table of Contents** with a complete listing of chapters, sections of chapters and lists of Figures, Tables, Photographs, Maps and Appendices.
- **Glossary** of terms used in the EIS including lists of acronyms, units and abbreviations.
- **Chapter 1: Introduction and Overview** provides background information about the proponent, an overview of the proposed Project and its location, a description of the regulatory framework under which the Project will be reviewed, an overview of the EIA and the organization of the EIS.
- **Chapter 2: Project Justification and Alternatives Considered** describes the need for and purpose of the proposed Project, as well as alternative means of carrying out the proposed Project.
- **Chapter 3: Project Description** describes the scope of the proposed Project, phases of the Project, Project components and activities, as well as the Project schedule and funding.

- **Chapter 4: Environmental Assessment Approach** presents an overview of the approach, the scope of the EA, sources of information used to identify potential changes to the environment and on identified VCs, applying/identifying mitigation measures to offset adverse environmental effects and determining any residual environmental effects and their significance.
- **Chapter 5: Indigenous and Public Engagement** details community meetings, workshops, open houses and discussions with regulators and other stakeholders. A supplemental document, **Annex A**, is provided in the EIS which presents information distributed as part of the IPEP for the Project.
- **Chapter 6: Effects Assessment** provides a description of the Project setting and baseline conditions of the physical, terrestrial, aquatic, Species at Risk, Indigenous Peoples and human environment. The Chapter describes predicted changes resulting from each phase of the proposed Project, in terms of geographic extent, duration and frequency and reversibility, mitigation measures proposed/to be applied and anticipated potential adverse effects remaining, if any, as well as their significance. Other effects such as the effects of potential accidents and malfunctions, effects of the environment on the Project and the Cumulative Effects Assessment are also provided.
- **Chapter 7: Summary of Environmental Effects Assessment** provides a summary of the EIS and a statement of key conclusions.
- **Chapter 8: Environmental Protection and Sustainable Development** summarizes MI's corporate policies and programs, applicable environmental best practices and appropriate mitigation measures to be implemented during construction, operation and maintenance of the proposed Project, as well as MI's commitment to Sustainable Development.
- **Chapter 9: Follow-up and Monitoring Program** describes the program designed to verify the accuracy of the effects assessment and to determine the effectiveness of recommended measures to mitigate potential adverse effects of the Project.
- **Chapter 10: References** presents literature sources and personal communications cited and contacts made during the development of the EIS.

Chapter 2: Project Justification and Alternatives Considered

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2.0 PROJECT JUSTIFICATION AND ALTERNATIVES CONSIDERED

2.1 Purpose of the Project

The purpose of the proposed Project 6, which is a 141 kilometre (km) all-season road (the Project), is to link the communities of Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community to enable the transfer of people and goods among the communities.

The proposed Project is one in a series of all-season roads being planned to establish a regional transportation network on the east side of Lake Winnipeg. With the construction of future all season road sections, these communities will gain year round access to Provincial Road (PR) 373. This regional transportation network will allow all-season road access for First Nation communities that currently must depend on restricted seasonal winter road access or other modes of travel (ex: airplane) to access their communities and southern goods and services. It is unknown when additional all-season road segments, PR 373 to Wasagamack (Project P2) and Anderson Junction to Bunibonibee (Project P5), will be proposed however; Project 2 and Project 5 are not within MI's current 10-year plan at this point in time.

2.1.1 Background

Since 1999, the Government of Manitoba has investigated the feasibility, justification and scope of the development of an all-season road network on the east side of Lake Winnipeg. Key steps have included the following.

- A 1999 study led by Manitoba Transportation and Government Services (now Manitoba Infrastructure [MI]) assessing the feasibility of an east side all-season road network (Dillon Consulting Limited 1999).
- A follow-up study assessing the justification and scope of two potential all-season road route scenarios (Dillon Consulting Limited and H.N. Westdal & Associates 2000).
- A 2001 initiative culminating in the development of a planning approach and overall work plan to design and service east side of Lake Winnipeg communities with an all-season road network (Dillon Consulting Limited and N.D. Lea 2001).
- The development of a Broad Area Plan entitled "*Promises to Keep…. – Towards a Broad Area Plan for the East Side of Lake Winnipeg*" (East Side Planning Initiative 2004) presenting a number of transportation-related recommendations including engagement of directly affected First Nations and other communities, assessment of environmental effects of transportation alternatives and completion of a Regional Transportation Network Study to consider other means of access (ex: rail and ferries) to communities on the east side of Lake Winnipeg.
- Multi-disciplinary planning and engineering work for the 2008 Large Area Transportation Network Study to identify a preferred all-season transportation network connecting east side communities with Manitoba's existing all-season road network, as well as to assess the feasibility of alternative surface and air transportation modes. The final report of this Study, completed in 2010,

recommended a 1,028 km all-season road network for the region at a cost of approximately $3 billion (2011$) (SNC-Lavalin *et al.* 2010a;b;c;d).

The outcome of more than a decade of comprehensive consideration was that the most feasible, reliable, safe and equitable transportation improvement on the east side of Lake Winnipeg would be the construction of an all-season road network, supplemented during its development with improved winter roads and permanent bridges, where appropriate. To support this outcome, the Government of Manitoba introduced the East Side Transportation Initiative to connect the remote communities on the east side of Lake Winnipeg with the rest of Manitoba and established the Manitoba East Side Road Authority (ESRA) as the provincial Crown agency to manage the initiative through the planning, design and construction of all-season roads and bridges. ESRA however, has since been absorbed into MI, Remote Road Operations, which will continue to manage the regional project.

The first segment of all-season road to initiate construction in this regional transportation network connects PR 304 (near Hollow Water First Nation) to Berens River (Project P1). On August 16, 2010, following an environmental assessment under *The Environment Act* of Manitoba, 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* (CEAA), the federal Minister of the Environment concluded that there would likely be no significant adverse environmental effects from Project P1 and that the identified mitigation measures and follow-up program were appropriate for the project (Canadian Environmental Assessment Agency 2011). This segment of road officially opened in December 2017.

Construction of another segment of this regional transportation network, an all-season road between St. Theresa Point First Nation to Wasagamack First Nation (Project P3a), began in 2016. A Comprehensive Study Report was prepared by Public Works Government Services Canada under the CEAA for a new airport and road between Wasagamack First Nation and St. Theresa Point First Nation in 2001 and Environment Act Licence 2543 was issued for the project on December 20, 2001. The road segment of the project was later included in MI's transportation network plan as Project P3a. The project was originally located on Federal Reserve lands, which were transferred to the Province of Manitoba on December 18, 2015.

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 *The Environment Act* of Manitoba, while Project P7a is being reviewed under *The Environment Act* of Manitoba. No other segments of the transportation network are being advanced at this time.

2.1.2 Project Need

The proposed Project will provide all-season road access among the communities of Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community. Currently, there is no all-season road access among these communities. The nearest all-season road is approximately 160 km west of Bunibonibee Cree Nation, which is PR 374 connecting Cross Lake First Nation to the Provincial highway network at PR 373 north of the Norway House Cree Nation. The existing transportation infrastructure in the vicinity of the Project consists of the following.

- The seasonal winter road network linking these communities to each other and to PR 373, which is operational for approximately 2 months per year.
- An approximate 1,170-metre (m) gravel runway and airport building serving Bunibonibee Cree Nation (Oxford House).
- An approximate 1,075 m gravel runway and airport building serving Manto Sip Cree Nation (God's River).
- An approximate 1,160 m gravel runway and airport building serving the God's Lake First Nation and God's Lake Narrows Northern Affairs Community (God's Lake).

Existing transportation infrastructure constrains movement of goods, services and people. While the existing seasonal winter roads are utilized to transport equipment, fuel and other bulk supplies, perishables and other consumable items are shipped to the area primarily by air. As a result of the nature of transportation options, goods and services in these communities are expensive. For example, the price of fuel is approximately 1.5 to 2 times higher and the price of perishable items such as milk and fresh produce up to 7 times higher than in centres serviced by all-season roads.

Travel by individuals is similarly constrained, with private vehicles and snowmobiles or All-Terrain Vehicles being used while the winter road is operational to visit family and friends in neighbouring communities, access services and purchase household items in larger centres. Travel by air is available for the remainder of the year. The high cost of air travel among the communities ~$370 round trip and to major centers ~$710 round trip to Winnipeg and ~$360 to $570 round trip to Thompson (Perimeter Aviation 2017) limits personal transportation. The bulk of transportation occurs during the winter road season because of the lower transportation costs for individuals and goods. In addition to the transportation limitations and costs, there are safety concerns and potential loss of life related to community members travelling by snowmobile or All-Terrain Vehicle beyond the seasonal winter road period.

2.1.3 Project Objectives

The key objectives of the East Side Transportation Initiative and this project are to:

- provide alternative transportation to the increasingly unreliable winter road network
- improve linkages among communities
- reduce transportation costs for goods and services
- enhance access to emergency, health and social services

- provide construction employment and economic opportunities
- enhance opportunities for local sustainable development initiatives

With the completion of the proposed Project, Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation will benefit from the improved linkage among their communities. In addition, the communities will have an opportunity to benefit from construction employment and economic opportunities for their members.

MI's long-term objective is to complete the regional transportation network and provide communities with year-round vehicular access to the provincial road network in Manitoba that will supply additional benefits of reduced transportation costs for people, goods and services and enhanced access to other services.

2.2 Alternative Means of Carrying Out the Project

2.2.1 Alternative Transportation Options

At the outset of the Large Area Transportation Study a number of alternative transportation modes, in addition to an all-season road system, were considered in detail to service the remote communities on the east side of Lake Winnipeg (SNC-Lavalin *et al.* 2010a;b;c;d). These alternative transportation modes represent "alternative means to carry out the Project". The alternative transportation modes considered were:

- railway
- hovercraft
- ferries
- airships/dirigibles
- improved winter roads

Transportation modes other than an All-Season Road Transportation Network were not deemed appropriate due to cost, unreliability, environmental damage, safety impairment, or lack of freedom to move.

Generally, the alternative modes considered were not deemed appropriate as a permanent solution when assessed against criteria including cost, reliability, environmental effects, safety and movement flexibility (SNC-Lavalin *et al.* 2011a). The alternative modes considered along with some of their key evaluation considerations are summarized in **Table 2.1**.

With regard to the alternative modes of transportation and evaluation considerations listed in **Table 2.1**, the Large Area Transportation Network Study concluded that the most reliable, safe and equitable improvement to the existing east side of Lake Winnipeg transportation system would be the construction of an all-season road system supplemented during its development with improved winter roads and permanent bridges where appropriate (ex: the preferred means for the Project).

Table 2.1: Alternative Surface and Air Transportation Modes

Transportation Mode	Evaluation Considerations
Railway	▪ Construction cost on a per km basis comparable to that of an all-season road. ▪ Lengthy connections needed to connect to existing railhead/rail line at Wabowden (now decommissioned) and Lac du Bonnet, respectively, duplicates approximately 130 km of existing PR 373 and 110 km of existing Highway 11/PR 304 as well as the P1 all-season road currently being constructed. ▪ Flatter gradients required for rail versus road increases cost and may be more difficult to maintain rideable profile over fen and bog complexes. ▪ During construction phase, difficult to offload/reload goods and people at continually advancing rail/winter road interface. ▪ Less freedom to move than with a road system.
Hovercraft	▪ Only suitable over large bodies of open water. ▪ Would likely suffer skirt degradation over fens and bogs. ▪ Damage to the environment over potential multiple routes. ▪ May damage ice surface during freeze up, potentially breaking ice and creating hazards for snowmobilers.
Airships/Dirigibles	▪ Would need to be very large to haul Transportation Association of Canada maximum highway loadings (Boeing SkyHook Heavy Lift Vehicle under development has a maximum payload of 36 tonnes over a distance of 370 km without refuelling). ▪ More sensitive than fixed wing aircraft to inclement weather, potentially a significant factor east of Lake Winnipeg (Boeing SkyHook Heavy Lift Vehicle can only operate in winds up to approximately 45 km/h).
Ferries	▪ May be appropriate for summer transportation across lakes or rivers as an interim lower cost link in an all-season road system. ▪ An ice bridge parallel to the ferry route could be used for winter transportation but has potential to break through ice, with safety and environmental degradation risks and implications.
Improved Winter Roads	▪ Shift existing winter road onto firmer ground along a future all-season road route. ▪ Provide permanent bridges at major water crossings along future all-season road route. ▪ Could be initial phases in development of an all-season road route.

Source: SNC-Lavalin *et al.* 2011a; Manitoba Transportation and Government Services 2005

In comparison with either the existing system or alternative means such as airships, the rationale for the conclusion of an all-season road network as the best transportation mode and preferred means to carry out the project includes the following.

- Greater long-term reliability for safely moving people and goods during all seasons and most weather conditions.
- Greater freedom of movement for people and goods from all east side communities, individuals and businesses.
- More equitable system for travel and trade, on par with the existing all-season road system serving most communities in the province.

In addition to considering other modes of transportation to improve year-round access to communities on the east side of Lake Winnipeg, the Large Area Transportation Network Study identified and assessed all-season road route options to connect east side communities to the existing Manitoba road network (SNC-Lavalin *et al.* 2011a). The following sections describe the Project route selection process and summarize the changes that have been made to the original Project alignment as a result of community input, including the benefits of these changes to the environment, Indigenous peoples and the public.

2.2.2 Road Route Alignment

2.2.2.1 Background

Within the 2010 East Side Large Area Transportation Network Study, an all-season road corridor among the communities of Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community was proposed at a preliminary level using aerial photo analysis and in consideration of terrain conditions, water crossings, available wildlife information (including Woodland Caribou Habitat Suitability Index Model results), Traditional Knowledge (TK) studies, feedback from community and public engagement and designated land constraints (ex: First Nation Reserves, protected areas). Consistent with the evaluation framework used for other east side all-season road route options (SNC-Lavalin *et al.* 2011b), the evaluation criteria for the all-season road corridor among the communities considered the following.

Road route selection criteria included consideration of technical aspects, natural environment, social/cultural environment and capital and

- Technical aspects such as travel distance, terrain conditions, borrow/road construction materials availability and construction constraints/limitations.
- Natural environment such as potential effects on Species at Risk and environmentally sensitive features, habitat fragmentation and potential effects on aquatic habitat.
- Social/cultural environment such as potential effects (positive and negative) on traditional uses of land, culturally sensitive resources, community infrastructure benefits, community well-being and community knowledge and interest.
- Capital and maintenance costs such as estimated capital cost of bridges, culverts and road as well as estimated annual maintenance costs.

Early rounds of public engagement focused on several options to connect the communities to each other and the Provincial Road Network in the Northern Sector of the Study Area. A single route was identified for the proposed Project all-season road alignment (SNC-Lavalin *et al.* 2011a). The route originally identified in 2010 was generally in the vicinity of the current winter road and transmission line alignments (**Figure 2-1**).

In 2012, as a result of engineering studies and community feedback from the Project engagement program (**Chapter 5, Section 5.2**), slight revisions were made. The new alignments out from God's Lake First Nation and Manto Sipi Cree Nation reduces the potential for fragmentation and disturbance of the

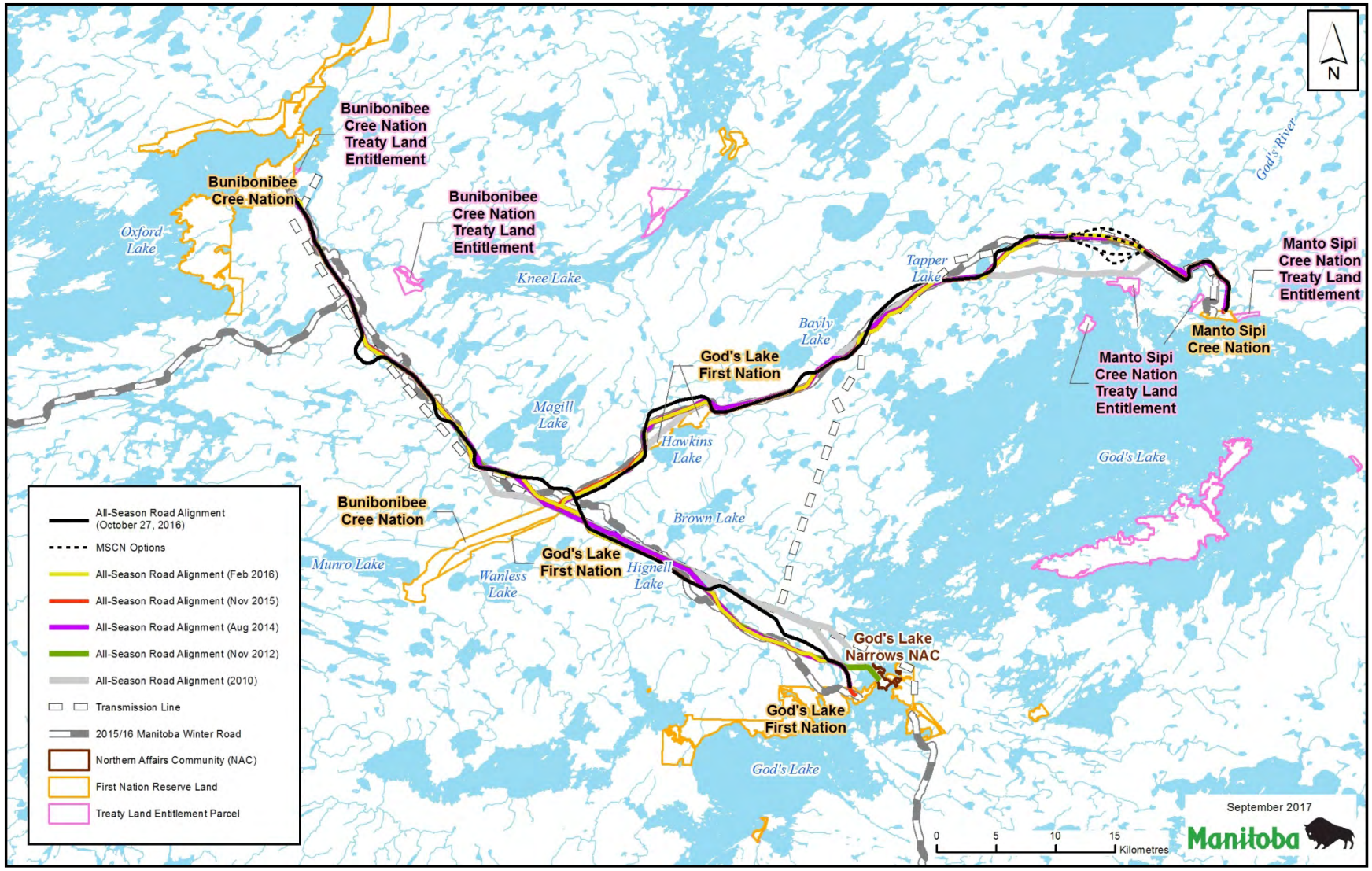

Figure 2-1: History of the proposed Project all-season road alignment alternatives

land as it parallels the winter road and transmission line for a longer portion. The alignment entering Manto Sipi Cree Nation immediately west of the community was discarded because it was too close to the airport, crossed God's River at its widest part and infringed on a Treaty Land Entitlement (TLE) parcel. Likewise, the alignment was adjusted further north around Hawkin's Lake to provide greater separation from the God's Lake First Nation Reserve Lands.

Since 2012, the proposed all-season road corridor among Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community has been refined further through an iterative process using the above-stated evaluation criteria and additional community feedback. An approximately 8 km section of the alignment near Manto Sipi Cree Nation has not been finalized, with four alignment options being considered for this section (**Figure 2-2**). A flyover was conducted on June 5, 2017 with MI, a Manto Sipi Councillor and Manto Sipi's consultant to investigate the four alignment options for this section. As a result of the flyover the two northern most options (Options 1 and 2) were eliminated because of poor terrain and lack of road building materials along or adjacent to the alignment option. The southernmost option (Option 4) has a length of 7.8 km and is located on rugged terrain that would require significant cut and fill volumes to construct. Option 3 has the shortest length (7.3 km), rock for road construction is available along the alignment and there is a relatively smooth horizontal and vertical alignment for easier construction. For these reasons, MI has recommended Option 3 to Manto Sipi Cree Nation to be the selected option for the alignment. This recommendation is being considered by the community.

The history and rationale of the road alignment alternatives, culminating with the proposed Project alignment, is summarized in **Table 2.2** and illustrated in **Figure 2-1.**

2.2.2.2 Preferred Alignment

With the exception of the 8 km section near Manto Sipi Cree Nation that is still being considered, the October 2016 all-season road alignment illustrated in Figure 2-1 is currently the preferred alignment and is the alignment proposed and assessed in the effects assessment (**Chapter 6**) component of this Environmental Impact Statement. The alignment proposed reflects considerable involvement by local communities as described in **Chapter 5**. The proposed alignment avoids locations indicated as important traditional and heritage resource use areas. The proposed route is in close proximity to suitable road construction resources (potential quarry sites) which minimizes the length of access roads and resulting disturbance to the environment. The proposed alignment is also located on suitable terrain/ground conditions that will facilitate road construction logistics, minimize the quantity of materials needed to construct the road and minimize the duration of road construction, further minimizing environmental disturbance.

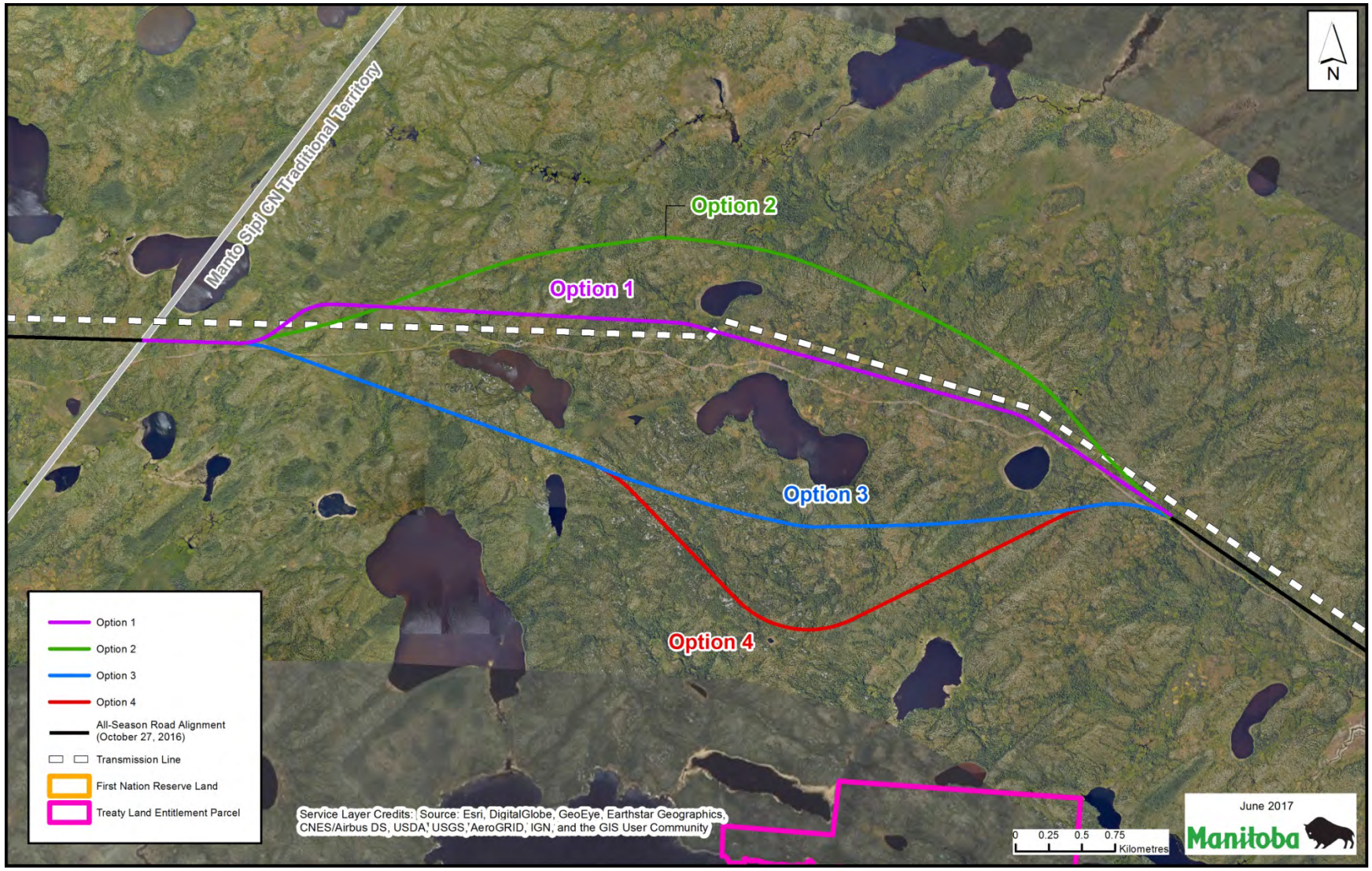

Figure 2-2: Alignment options for proposed all-season road segment near Manto Sipi Cree Nation

Table 2.2: Chronology of Alignment Revisions to the Proposed Project All-Season Road Route Options (Refer to Figure 2-1)

	Comments Provided by Communities	Revisions based on Community Input	Revisions based on Engineering and Environmental Considerations
November 2012			
	▪ Preference expressed to more closely parallel existing winter roads, to move the route further away from Hawkins Lake due to Reserve land and to move away from the west side of Manto Sipi Cree Nation near the TLE parcel.	▪ Alignment from God's Lake First Nation shifted south and from Manto Sipi Cree Nation shifted north to follow portions of winter road. ▪ Alignment adjustment from Manto Sipi Cree Nation to avoid the TLE parcel. Location chosen by Manto Sipi Cree Nation through Section 35 Consultation process with Manitoba.	▪ Alignment west out of Manto Sipi Cree Nation discarded as it is too close to the airport and it crosses God's River at widest point. ▪ Alignment near Magill Lake shifted east for easier stream crossing and to avoid flood plain.
Resulting Benefits	▪ Locating the road to more closely follow the winter road reduces potential for fragmentation and disturbance of the land. Crossing God's River at a narrower point will reduce construction costs.		
August 2014			
	▪ None indicated.	▪ None indicated.	▪ Alignment near God's Lake First Nation adjusted to terminate at north edge of Reserve land rather than further east into the Northern Affairs Community.
Resulting Benefits	▪ This alignment revision eliminates the need for two large span bridges across portions of God's Lake reducing potential effects on aquatic environment and reducing engineering and construction costs.		
November 2015			
	▪ Preference was expressed to move the route further away from the God's Lake First Nation Reserve land near the intersection.	▪ Alignment near intersection shifted northeast away from the noted Reserve land.	▪ Alignment between Bunibonibee Cree Nation and God's Lake First Nation adjusted as Manitoba Hydro did not want the all-season road route so close to their transmission line. ▪ Minor adjustment north of Hawkins Lake to avoid a low area.
Resulting Benefits	▪ Adjusting alignment, as requested, reduces potential to affect Reserve land and a Manitoba Hydro transmission line right-of-way (ROW) and moving away from a low area reduces potential effects on aquatic environment.		
February 2016			
	▪ None indicated.	▪ None indicated.	▪ The alignment at the intersection was adjusted to create a 90-degree intersection. ▪ Other minor adjustments along the alignment to smooth curves (north of Hawkins Lake) and to ensure 100-m setback from waterbodies throughout.
Resulting Benefits	▪ Smoothing curves and creating a 90-degree intersection at the junction to Manto Sipi Cree Nation improves public safety by, while ensuring the 100-m setback reduces potential effects to aquatic environment.		
October 2016			
	▪ In response to viewing Option 4, Manto Sipi Cree Nation indicated they wanted more information to select the preferred option for an 8 km section of alignment near their TLE parcel.	▪ MI proposed two other alignments (Options 2 and 3) located further away from the TLE parcel than Option 4 for consideration by Manto Sipi Cree Nation.	▪ A fly-over in May 2016 with ESRA engineer identified several areas of poor terrain and constructability including Option 1 resulting in alignment changes including the Option 4 as shown
Resulting Benefits	▪ Reduces potential effects to wetland environment and provides better terrain for road construction.		

	Comments Provided by Communities	Revisions based on Community Input	Revisions based on Engineering and Environmental Considerations
June 2017			
	▪ Manto Sipi Cree Nation indicated they wanted to have a community meeting to discuss options after the flyover. MI supplied a summary of the flyover and evaluation of Options.	▪ Final Option to be selected based on outcomes of community meeting.	▪ A 2nd fly-over in June 2017 with MI engineer, project manager, Manto Sipi Councillor and consultant evaluated the four alignment options, confirming two most northerly options had poor terrain and constructability resulting in their abandonment and MI recommending Option 3

2.2.3 Watercourse Crossings

2.2.3.1 Bridges

Up to two (2) permanent steel girder or concrete bridges may required to provide safe access across the major water crossings at God's River and Magill Creek (see **Figure 1-6** in **Chapter 1**). The proposed all-season alignment currently crosses God's River at the existing single lane Acrow bridge. MI may opt to replace or upgrade the existing crossing depending on community needs and funding allocations at the time of construction. The bridge locations were selected based on a series of factors including:

- shore to shore distance
- approach conditions
- riparian characteristics
- watercourse substrates
- hydrology and channel hydraulics
- footprint area
- preservation of navigability
- bridge design standards and specifications
- TK
- Heritage Resource Impact Assessments

Proposed bridge locations were also subject to review by professional aquatic biologists retained to conduct baseline studies and to assess potential effects on the aquatic environment and mitigation measures required. In addition, input from First Nations community members regarding proposed bridge locations obtained at workshops and community meetings was also taken into consideration in the selection of bridge crossing locations. Refinements to the location of both major water crossings were made as a result of this iterative process.

2.2.3.2 Culverts

Culvert locations were identified based upon the proximity of the proposed road alignment to area streams, characteristics of each particular stream, navigability considerations and riparian conditions. Culverts are anticipated to be required at approximately 51 locations to provide safe access across fish-bearing and non-fish bearing streams, provide fish passage in fish bearing streams and to equalize surface

and shallow subsurface hydraulic conditions adjacent to the proposed road. Culvert design alternatives will be considered and appropriate designs will be selected using guidance from the Manitoba stream crossing guidelines (Fisheries and Oceans Canada and Manitoba Natural Resources 1996), Ducks Unlimited Canada Operational Guides and Best Management Practices for wetland road crossings in boreal forests (Louisiana Pacific *et al.* 2014), applicable Department of Fisheries and Oceans Canada guidelines and input from community members of Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community. Proposed stream crossing locations were also subject to review by aquatic biologists retained to conduct baseline studies and to assess potential effects on the aquatic environment and mitigation measures required.

Culverts were selected for these 51 locations based on wetted width for the preliminary design. During detailed design additional factors will be weighed to determine the details of the culvert size and design such as the potential impact on fish habitat, and hydraulic and geotechnical investigations. Crossing type and design may change based on this analysis.

2.2.4 Access Roads

The total length and need for temporary access routes are contingent on the locations of required construction camps, construction staging areas and borrow and quarry areas. The alignment options of temporary access routes will consider the minimization of potential adverse effects to environmental and heritage resources components, soil and terrain conditions and input from community members of Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Narrows Northern Affairs Community.

2.2.5 Borrow Areas, Quarries and Pits

Potential quarry and borrow areas will be selected using a variety of factors including availability and suitability of rock and aggregate materials, degree of road bed preparation required, proximity to the proposed road, proximity to bridge and other construction sites, travel distances for equipment and workers and proximity to known environmentally important or sensitive locations. Quarry and borrow areas will be located within the 100 m of the proposed road ROW where possible and will be subject to provincial permitting requirements. Potential quarry and borrow locations will be discussed with the community members at design workshops and/or community meetings. Evaluation of potential quarry and borrow sites will be carried out including, proximity to water bodies, the potential loss of habitat for furbearers and migratory birds, the potential for acid rock drainage, and the presence of heritage resources.The selection of final quarry and borrow area locations will consider community input and the goal of minimizing potential adverse effects to environmental, traditional and heritage resources components.

Sourcing rock an borrow from immediately adjacent to the right of way was determined to be the most cost effective and have the least environmental impact as established quarries and borrow areas on crown

land are a considerable distance from the majority of the project and will result in significant hauling with associated emissions and expense.

2.2.6 Construction Camps and Staging Areas

Temporary construction camps and staging areas will be selected for construction of the proposed road and crossings based on consideration of several factors such as travel distances for equipment and workers, availability of suitable level sites, extent of site preparation work required, proximity to the road and crossings construction sites and proximity to known environmentally important or sensitive locations. Construction camps and staging locations will also be subject to Heritage Resource Impact Assessment and on-going input from local community members through workshops and/or community meetings. Construction camps and staging locations will be sited within the existing 100-m ROW.

Chapter 3:
Project Description