EA REPORT SECTION 2

PROJECT DESCRIPTION

LAKE ST. MARTIN ACCESS ROAD

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2.0 PROJECT DESCRIPTION

The proposed Project involves upgrading (including possible minor realignment to address road structure and sightline issues) of approximately 19.5 km of winter road to an all-season road (ASR) standard (Photograph 2-1). Key activities associated with construction of the ASR will include: clearing, waste excavation (peat removal), placement of geotextile, construction of the road embankment from crushed rock or composite borrow material, placement of traffic gravel, and culvert installation. The following sections address the requirements for information outlined in Manitoba Sustainable Development's (2018) Guide to Developing an EA Report.

Photograph 2-1. Picture of the Winter Road

The picture of the Forestry Road (Idylwild Road) before and after construction (Photograph 2-2) provides a perspective on how the LSM Access Road will look after construction.

Photograph 2-2. Picture of the Forestry (Idylwild) Road: Prior to Construction in 2016 (left); and after Construction in 2018 (right)

2.1 THE PROPONENT – MANITOBA INFRASTRUCTURE

Manitoba Infrastructure (MI) is the proponent and will manage the Project throughout the planning, construction, operation and maintenance periods.

2.2 FUNDING

The Project will be funded in whole by the Province of Manitoba. Following the receipt of the required regulatory approvals, funding will be used towards developing, managing operating and maintaining the Project.

2.3 ENVIRONMENTAL REGULATORY FRAMEWORK

The proposed All-Season Road Project is a Class 2 development under the Classes of Development Regulation and requires a Manitoba Environment Act Licence for the development and operation a two lane road at a new location.

In addition to the road, the project components include: culverts, quarry and borrow areas, temporary access roads and trails, laydown areas, and the temporary construction— camp are all subject to applicable provincial legislation, guidelines, codes and standards including the following acts and regulations identified in Table 2-1.

Table 2-1. Legislation, Regulations and Policies Applicable to the Project

Act	Regulations/Policy with Potential Project Implications	Regulatory Objectives, Project Linkages and Permits
The Environment Act, C.C.S.M. c. E125	Classes of Development Reg. 164/88	Classifies developments and identifies requirements for provincial licencing and environmental assessment.
	Environment Act Fees Reg.168/96	
	Licensing Procedures Reg. 163/88	Defines information required to apply for licensing under *The Environment Act*.
	Notice and Reporting Reg. 126/2010	Defines requirements regarding the notice of a licensing decision and reporting of releases to the environment.
	Onsite Wastewater Management Systems Reg. 83/2003	Defines proper construction and disposal for onsite water management systems.
The Crown Lands Act, C.C.S.M. c. C340	Crown Lands Fees Regulation 130/91	Identifies requirement for and issuance of leases, permits, easements and rights-of-way for specified works on provincial Crown lands. Work permits will be required.
	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 Fees Reg. 164/2001	Identifies requirements for handling, containment and transportation of substances that could cause damage to personal safety or the environment.
	Dangerous Goods Handling and Transportation Reg. 55/2003	
	Environmental Accident Reporting Reg. 439/87	Outlines reporting requirements in the case of an accidental spill.
	Hazardous Waste Reg. 195/2015	Defines categories of hazardous wastes and registration of generators of hazardous waste
	Licensing Regulation Storage and Handling of Petroleum Products and Allied Products Reg.188/2001	Outlines requirements of storage systems for petroleum products.

Act	Regulations/Policy with Potential Project Implications	Regulatory Objectives, Project Linkages and Permits
The Contaminated Sites Remediation Act C.C.S.M. c. C205	The Contaminated Sites Remediation Act Reg. 105/97	Provides regulatory authority to designate and manage sites that have been exposed to environmental contaminants. They also address issues of liability and remediation of these sites.
The Endangered Species and Ecosystems Act, C.C.S.M. c. E111	Threatened, Endangered and Extirpated Species Reg. 25/98	Regulates the protection of Manitoba's threatened and endangered species. Conserves and protects threatened and endangered ecosystems in Manitoba and promotes their recovery.
The Forest Act (C.C.S.M. c. F150)	Forest Use and Management Regulation (227/88 R)	Defines conditions for harvesting merchantable timber and disposal of brush and debris. Directs conditions for issuance of a timber use permit.
The Fires Prevention and Emergency Response Act C.C.S.M. c. F80	Any activities associated with combustible materials	Provides for control of activities regarding the prevention, detection and extinguishment of fires. Work camp occupancy permit required.
The Groundwater and Water Well Act C.C.S.M. c. G110	Groundwater and Water Well (General Matters) Regulation 214/2015 Well Standards Regulation 215/2015	The purpose of this Act is (a) to provide for the protection and stewardship of Manitoba's aquifers and groundwater; (b) to ensure that the construction, maintenance and sealing of wells and test holes meet standards that protect; (i) the environmental quality of Manitoba's aquifers and groundwater, and (ii) human health and safety; and (c) to provide for the collection and sharing of well, aquifer and groundwater information to better understand, manage, conserve, protect, develop and use Manitoba's aquifers and groundwater.

Act	Regulations/Policy with Potential Project Implications	Regulatory Objectives, Project Linkages and Permits
The Heritage Resources Act, C.C.S.M. c. H39.1	Heritage Resources Forms Regulation 99/86 Heritage Objects Designation Regulation 160/89 Heritage Sites Designation Regulation 122/88R	Designates heritage sites and identifies protections for heritage resources and heritage resource sites, including the requirement to conduct a Heritage Resource Impact Assessment (HRIA). A permit is required for the HRIA.
The Transportation Infrastructure Act, C.C.S.M. c. T147	Transportation Infrastructure (General) Reg. 15/2019	Construction and management/maintenance of transportation infrastructure. Permitting for access roads, signage and infrastructure.
The Highway Traffic Act, SM 1985-86, c. 3	Designated Construction Zones Regulation 145/2014	Provides guidelines and requirements for vehicles and driving on Manitoba highways.
The Mines and Minerals Act, C.C.S.M. c. M162	Quarry Minerals Regulation, 1992, Reg.65/92 Drilling Regulation, 1992, Reg. 63/92	Identifies and outlines requirements for sustainable development of mineral product exploration and production, including quarrying, in Manitoba. Quarry permits will be required.
The Noxious Weeds Act, C.C.S.M. c. N110	Noxious Weeds Reg. 35/96	Identifies noxious weeds that may adversely impact Manitoba's environment or economy, outlines responsibilities to control or destroy such weeds and prohibits their spread during construction works.
The Public Health Act, P210	Relates to the preservation of health including conditions that may contaminate or pollute air, food or water	Food handling permit is required for construction camps if they have kitchen facilities.
The Climate and Green Plan Implementation Act	N/A	Provides a framework through which the government develops a plan to reduce greenhouse gas emissions, address the effects of climate change, promote sustainable development and protect Manitoba's water resources and natural areas.

Act	Regulations/Policy with Potential Project Implications	Regulatory Objectives, Project Linkages and Permits
The Drinking Water Safety Act SM 2002, c. 36	Drinking Water Quality Standards Regulation 41/2007 Drinking Water Safety Regulation 40/2007	Ensures that public water source meet the minimum standards for safety. Permits construction or altering a water system and defines disinfection requirements.
The Water Protection Act, C.C.S.M. c. W65	Aquatic Invasive Species Regulation 173/2015 Nutrient Management Regulation 62/2008	Provides protection and stewardship of Manitoba's water resources and aquatic ecosystems.
The Water Rights Act, C.C.S.M. c. W80	Water Rights Regulation 126/87	Identifies rights and use of water in Manitoba and prohibitions against diversion of water or operation of water works and sets requirements for permitting and protections of aquatic ecosystems. Permits may be required for drainage works.
The Wildlife Act, C.C.S.M. c. W130	General Hunting Regulation, Reg. 351/87 Hunting Areas and Zones Regulation, Reg. 220/86 Trapping Area and Zones Regulation, Reg. 149/2001 Wildlife Protection Regulation, Reg. 85/2003	Designates provincial wildlife lands, regulates licenced harvest of wildlife, and identifies other protections for wildlife in Manitoba.
The Wildfires Act, C.C.S.M. c. W128	Burning Permit Areas Regulation 242/97	Outlines wildfire controls, duties and prohibitions. A permit is required to burn clearing debris.
The Workplace Safety and Health Act, C.C.S.M. c. W210	Workplace Safety and Health Regulation 217/2006 Operation of Mines Regulation 212/2011	Outlines safety related duties in the workplace and identifies measures to ensure that safe work practices are being followed to protect health and safety of workers.

Following are some of the relevant permits that will be required through the Provincial licensing and approval process:

- Provincial work permits required under The Crown Lands Act for construction, and quarry and camp development on provincial Crown lands will be secured prior to construction of the proposed Project.
- Casual quarry permits required under Subsection 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 (e.g., dust control) 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 Project Footprint and will be withdrawn in accordance with applicable regulatory guidelines and requirements.

This EA Report also considers the principles and guidelines of sustainable development related to the environment as outlined in the Climate and Green Plan Implementation Act.

2.3.1 Other Federal/Provincial/Municipal Approvals

The Federal Government of Canada reviewed key information on the proposed Project towards determining whether it needed to be assessed under the Federal review process. In a letter (dated June 24, 2016) to MI from the Canadian Environmental Assessment Agency, the Agency reviewed available information on the proposed road and concluded that the proposed Lake St. Martin Access Road is not an incidental activity to the Lake Manitoba and Lake St. Martin Outlet Channels Project or a designated physical activity under CEAA 2012. This was based in part on the expressed purpose of the road being that it is required for the Lake St. Martin Emergency Outlet Channel. The Agency also indicated that they recognize that the proposed all-season road is less than 50 km in length and therefore does not meet the threshold under Section 25(c) of the Regulations Designating Physical Activities under the Canadian Environmental Assessment Act (2012).

In addition to the Manitoba Environment Act Licence, the Project will require provincial approvals for the development and operation of temporary works such as quarries, access roads and borrow sites. Should these be required, they will be permitted individually.

Critical habitat for Eastern whip-poor-will (*Astrostomus vociferus*), as defined under Canada's Species at Risk Act (SARA), does intersect a portion of the proposed Project. A SARA permit for Project activities in

this area would only be required if construction activities within the critical habitat occur during their breeding period.

No municipal approvals are required for construction of the Project.

2.4 LAND USE AND COMMUNITY PLANNING AND ZONING

2.4.1 Existing Land Use

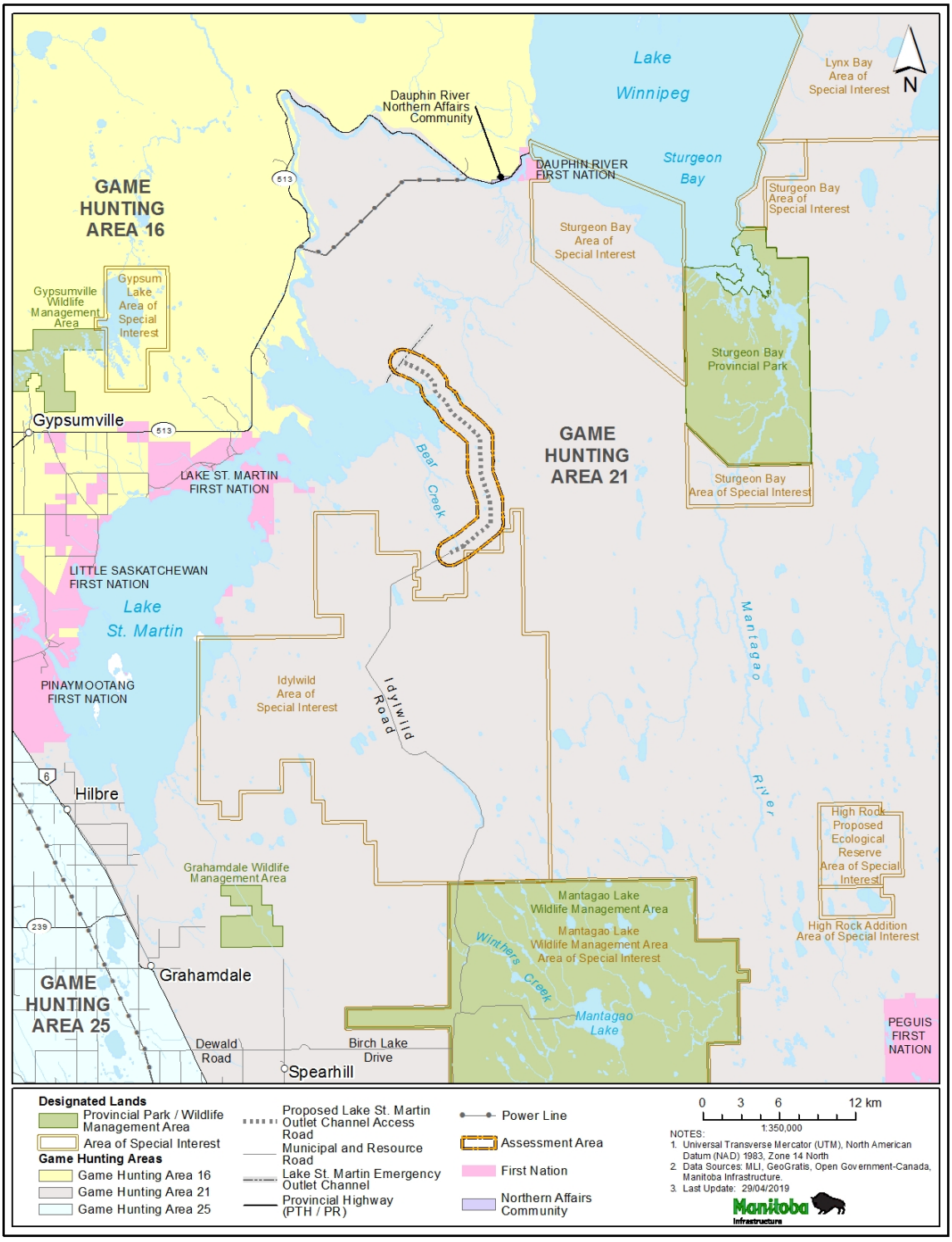
This section provides an overview of existing land use within the Project Assessment Area (PAA) illustrated in Map 1-1; additional detail is provided in Chapter 4 (Section 4.5.3). The Project follows the existing winter road alignment within an otherwise undeveloped area supporting natural vegetation cover. The Project is situated on Crown Land and not subject to by-law zoning or a development plan.

Resource use in the Project area consists mainly of hunting, trapping, fishing, camping, and recreation activities, e.g., snowmobiling. There are at least eight resource tourism operators in the Project region. There are no cottages or developments in the PAA. The Project is situated in Game Hunting Area (GHA) 21, Forest management Units 41 and 45 and located within an open trapping area (Map 2-1).

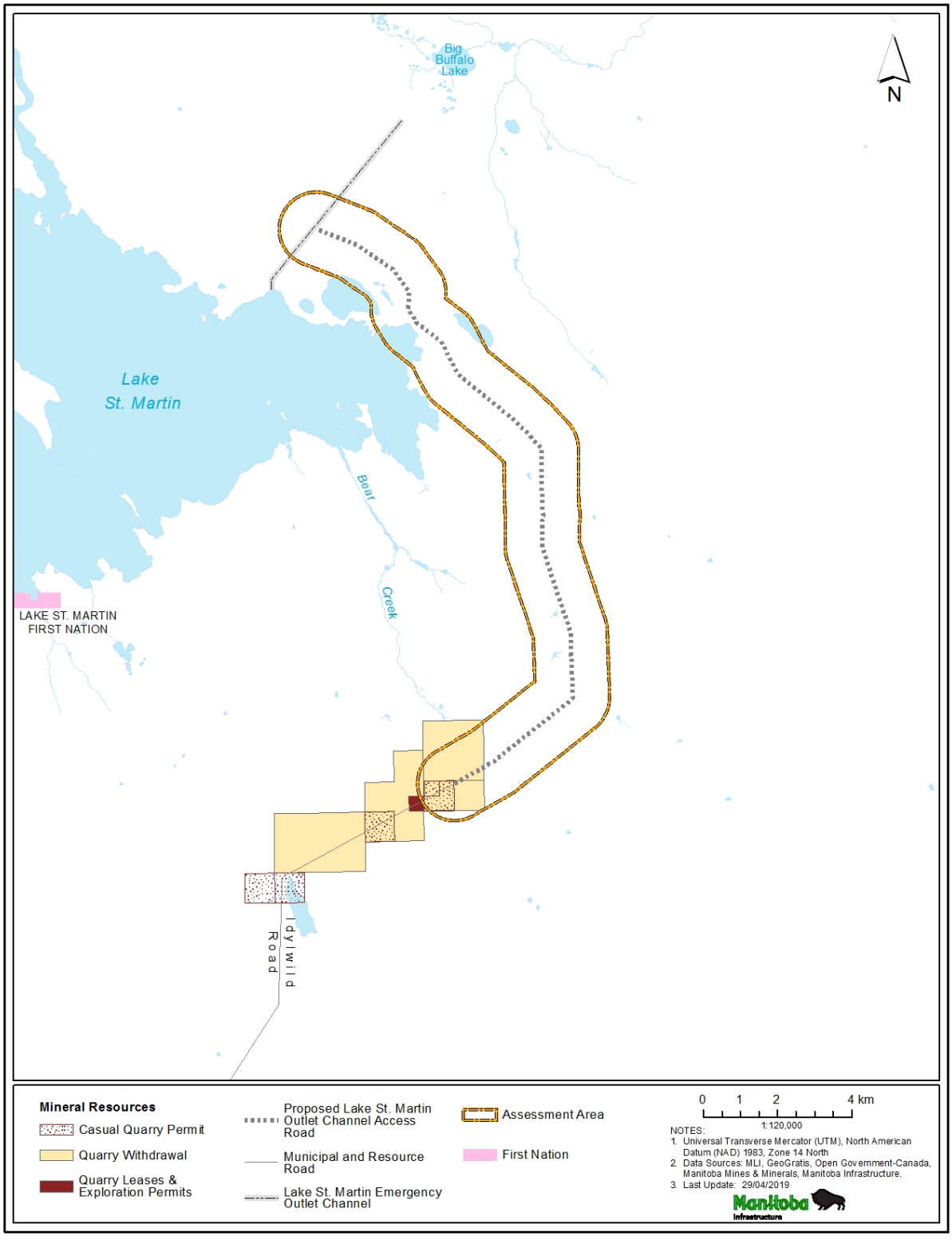
Aside from some recreational trails (possibly used for hunting purposes) identified during field studies conducted in association with this Project, the area is not known to support any other land uses. The PAA lies within the Open Trapping Zone 3 (Manitoba 2018). The only provincially or federally designated Area of Special Interest (ASI) in the PAA is the Idylwild Area of Special Interest (ASI).

Review of available information on mineral dispositions obtained from Manitoba Sustainable Development's Mineral Resources Branch identified three quarry withdrawals and one quarry lease in close proximity to the Project (Map 2-2). The quarry withdrawals were taken out by Manitoba Infrastructure in January 2015 and are noted as pending. The single quarry lease (QL-2987) was established in November 2014 and is also noted as pending. All mineral dispositions identified above are located near the southernmost extent of the Project, at the terminus of Idylwild Road (existing resource road) and the start of the Project.

The LSM Access Road is located entirely on Provincial Crown land that is currently only seasonally accessible. The nearest community is approximately 13.5 km to the west at the Lake St. Martin First Nation reserve boundary and 16 km to the northeast at the Dauphin River First Nation. (Map 1-1). The proposed Project crosses lands used for traditional purposes by Lake St. Martin First Nation, Little Saskatchewan First Nation, Dauphin River First Nation, Pinaymootang First Nation and Peguis First Nation.



Map 2- 1. Game Hunting Areas, Parks, Protected Areas and Areas of Special Interest Located Near the Project



Map 2- 2. Quarry Leases, Permits and Withdrawals in Proximity to the Project

2.4.2 Legal Description

The legal description for the lands traversed by the Project is identified in Table 2-2.

Table 2-2. Legal Description of Project Lands

NE-19-31-05-W	NW-33-31-05-W	NW-16-32-05-W	SE-30-32-05-W	SE-01-33-06-W
SE-30-31-05-W	SW-04-32-05-W	SW-21-32-05-W	NE-30-32-05-W	NE-01-33-06-W
SW-29-31-05-W	NW-04-32-05-W	NW-21-32-05-W	SW-31-32-05-W	NW-01-33-06-W
NW-29-31-05-W	SW-09-32-05-W	NE-20-32-05-W	SE-31-32-05-W	NE-02-33-06-W
NE-29-31-05-W	NW-09-32-05-W	SE-29-32-05-W	NW-31-32-05-W	SW-11-33-06-W
NW-28-31-05-W	SW-16-32-05-W	SW-29-32-05-W	NE-36-32-06-W	SE-11-33-06-W
SW-33-31-05-W				

2.4.3 Project Phases

The Project is comprised of four main phases:

1. Planning and design;
2. Construction;
3. Operation and Maintenance; and
4. Decommissioning.

2.4.3.1 Planning and Design

The Planning and Design Phase began in 2015 and has included the identification and confirmation of the Project alignment, land tenure, ownership and use, design details for the road embankment and culvert installations, and securement of funding. Other notable activities that took place during the planning and development phase are Indigenous and Public Engagement (IPEP) activities (Section 3.0), and environmental baseline studies that were initiated to better understand the existing environment surrounding the proposed Project and to identify and assess potential effects. Baseline environmental studies conducted in 2015 to 2016 with respect to the aquatic and terrestrial (wildlife and vegetation) environments and heritage resources are described in greater detail in Sections 4.4 and 4.5.14.

The Planning and Design Phase also considers the development of the current EA Report, which is required for Provincial regulatory review towards a determination of whether an Environment Act Licence will be issued for construction and operation of the Project. The Planning and Design Phase will be complete when the Project obtains an Environment Act Licence to construct the Project.

2.4.3.2 Construction

The Construction Phase will begin when the Project receives its Environment Act Licence, and will continue for a period of 1.5 years. The Construction Phase will include all activities associated with site preparation, Project construction and site rehabilitation.

2.4.3.3 Operation and Maintenance

The Operation and Maintenance Phase will formally begin when construction of the Project is complete. This phase will include the remainder of the Project's life cycle, and will include all activities related to Project maintenance.

2.4.3.4 Decommissioning

At the end of the Construction Phase, temporary facilities and work areas that will not be needed for future maintenance activities will be decommissioned or demobilized, i.e., quarry and borrow areas, laydown areas and construction camps.

Post-operations decommissioning refers to the process after the Operation Phase whereby there is planned removal of infrastructure, such as the proposed ASR, from further operation. It is currently not anticipated that decommissioning of the Project will be required. If it ever becomes necessary to decommission the Project in the future, a decommissioning plan that adheres to the legislation and permitting at that time will be developed.

2.5 PROJECT COMPONENTS AND ACTIVITIES

This section provides a description of the different Project facilities and how they will be designed, constructed, commissioned, operated and (if required) decommissioned. The components associated with the Construction and Operational phases of the Project are:

- All season road;
- Gate;
- Culverts;
- Temporary access;
- Temporary construction camps and laydown areas; and
- Quarries and borrow areas.

The following sections discuss Table 2-3 regarding the components and the activities associated with their development and, wherever appropriate, their maintenance and decommissioning.

Table 2-3. Project Activities Expected During Construction and Operation and Maintenance Project Phases

Project Component	Project Activities				
	Construction			Operation and Maintenance	
All-Season Road	• Clearing ROW • Salvaging • Windrowing • Burning • Drilling • Blasting • Excavating • Stockpiling • Grading • Contouring	• Filling • Controlling erosion • Producing aggregate • Coffer damming • Excavating • Filling • Contouring • Controlling erosion	• Restoring • Transporting equipment • Operating equipment • Operating machinery • Operating vehicles • Signing • Refueling	• Grading • Operating equipment • Operating vehicles • Maintaining • Producing aggregate	• Stockpiling • Controlling vegetation Controlling dust • Clearing snow • Inspecting
Gate	• Drilling	• Contouring	• Installation	• Maintaining	• Inspecting
Culverts	• Excavating • Filling	• Contouring • Controlling erosion	• Restoring	• Maintaining • Inspecting	• Steaming • Cleaning
Temporary Access Routes	• Clearing • Grubbing (only for quarries and temporary camps)	• Grading Gravelling • Closing	• Restoring • Demobilizing	• Inspecting	•
Temporary Construction Laydown Areas	• Clearing • Stockpiling materials	• Operating equipment • Storing fuels • Dispensing fuels	• Storing explosives • Demobilizing • Restoring	• Testing for contamination	• Inspecting
Temporary Construction Camps	• Clearing • Operating equipment • Operating generator • Housing workers	• Storing foods • Sourcing water • Disposing solid wastes • Disposing liquid wastes	• Demobilizing • Drilling • Testing soil • Restoring	• Testing for contamination	• Inspecting
Quarries and Borrow Areas	• Clearing • Grubbing • Excavating • Stockpiling soils	• Blasting • Crushing rock • Stockpiling rock • Operating equipment	• Transporting materials • Closing • Restoring	• Testing for contamination • Inspecting • For those retained • Operating equipment	• Operating vehicles • Maintaining • Producing aggregate • Stockpiling

2.5.1 Construction

The Project activities that are expected to occur during the Construction, Operation and Maintenance phases of the proposed all season road are described in the following sections and summarized in Table 2-3. Some of the Project components will include the development of temporary works such as access, laydown areas, and a camp. An existing construction camp located near the terminus of the Idylwild Road will be used by the workforce during the construction period.

Prior to the onset of construction, potential development sites were accessed and surveyed. Other activities that have or may occur during the Planning and Design Phase include exploratory drilling, minor clearing and testing of substrates to confirm the suitability of project design.

A description of the key activities associated with development of project components are described in the following sections.

2.5.1.1 Clearing

The proposed Project is located on undeveloped Crown Land and will follow an existing winter road corridor. The cleared width for the Project will vary from a minimum of 24 m (12 m in both directions from the centreline of the road) for areas where there is no design ditch, and up to 30 m for areas with a design ditch or an inside curve of the road to improve sight lines. Clearing activities are expected to be limited and will primarily involve the removal of overgrown trees and shrubs along the edge of the existing winter road corridor in key locations to correct curve geometry, improve sight lines, and address other driver safety issues. The total estimated area that will be cleared is 30 ha.

2.5.1.2 All Season Road Construction

The intent is to construct the road in winter months under frozen conditions. Construction methods in areas with peat depths greater than 0.3 m will utilise woven geotextile placed under the road embankment prior to the placement of crushed rock and composite borrow material. The geotextile will act to stabilize and strengthen the road embankment and will help reduce material loss over the peat material.

Typical cross sections of the road embankment, including culvert installation and construction method (e.g. use of geotextile in peat areas), are included in Appendix A. Road construction activities will be used to construct the road fill, bed and surface. The top-face of the roadbed will typically be 7 m wide to allow for two lanes and composed of traffic gravel (limestone) to a nominal thickness of 150 mm, with composite material used as fill to the road base. The side slopes will be graded to a 3:1 or 4:1 slope, depending on location.

The equipment that will be used in constructing the road and associated infrastructure is outlined in Table 2-4. It is currently estimated that four to six labourers would be needed in addition to equipment operators.

Table 2-4. Construction Equipment and Vehicles for the Project

Equipment / Vehicle	Estimated Number
Mechanical Brushers	2 or 3
Rock Trucks	6 to 10
Hydraulic Excavators	4 to 6
Crawler Tractor w/ Dozer	4 to 6
Compaction equipment	2 or 3
Semi Trucks	4 to 6
Wheel Loaders	2
Rock drill	1

Construction of the proposed Lake St. Martin Outlet Channel Road Project will require various quantities of materials. Table 2-5 provides an estimate of the type of material and estimated quantities required.

Table 2-5. Materials Required to Develop the Project

Material Required	Estimated Quantity	Unit
Composite Excavation	300,000	m^3
Culverts	215	m
Crushed Rock	85,000	tonnes
Traffic Gravel	50,000	tonnes
Geotextile	250,000	m^2

It is anticipated that vehicle usage of the LSM Access Road during construction will be limited to construction equipment and vehicles only. Appropriate signage will be used, where appropriate, during and following construction.

A gate will be installed near the southern terminus of the LSM Access Road after the road is fully constructed. The gate will be located near the wetland north of and closest to the quarry located at the northern terminus of the Idylwild Road. The gate will have a lock and provide MI-permitted access onto the LSM Access Road.

2.5.1.3 Culverts

No fish-bearing streams were identified as to be crossed by the LSM Access Road alignment (Section 4.3). Installation of appropriately sized equalization culverts is expected to maintain the natural drainage patterns at each site and surrounding terrain.

Culverts will be embedded to ensure drainage connectivity on either side of the road embankment. Since no fish habitat is present within the Project Footprint (see Section 4.3), hydraulic sizing to facilitate fish passage is not required. Table 2-6 provides additional detail related to culvert location, sizing, and embedment.

Table 2-6. Project Culvert Locations and Associated Details

Site No.[1]	Station	Northing	Easting	Diameter (mm)	Length (m)	Embedment (mm)
40	627+00	5726231	558619	1050	14.5	200
41	635+70	5726679	559362	900	14	200
42	641+00	5727010	559776	900	15	200
43	647+00	5727384	560245	750	16	200
44	653+20	5727770	560730	2-1050	14	200
45	659+00	5728133	561183	750	16	200
46	668+00	5728927	561413	1050	15	200
47	680+60	5730185	561359	900	17	200
48	696+80	5731721	560845	750	16	200
49	712+40	5733245	560616	900	16	200
50	715+60	5733565	560611	900	17	200
51	718+50	5733855	560605	1050	16	200
52	727+65	5734771	560590	1050	14	200
53	736+13.7	5735482	560208	750	16	200
54	758+53.7	5736908	558488	900	17	200
55	760+53.7	5737079	558354	750	17	200
56	765+13.7	5737466	558144	750	16	200
57	774+03.7	5738275	557615	750	18	200
58	785+93.7	5739286	557191	900	15	200
59	803+33.7	5740373	555883	750	14	200
60	813+13.7	5740675	554971	750	17	200

[1]Site numbers are based on winter road segments

The potential location of these sites are illustrated in Map 2-3. Site photographs of the culvert crossing locations are provided in Appendix B.

Temporary erosion protection and sediment control measures, following installation of culverts, will be adopted where appropriate and be consistent with site requirements (see General Environmental Requirements, or GERs, in Appendix C). This may include the use of geotextile material overlain by riprap at culverts (Appendix A).

The culvert sites will be rehabilitated by natural revegetation and seeding and/or planting with native species, as required. Seeding and/or planting may also be undertaken on a site-specific basis at other locations deemed vulnerable to erosion and sedimentation.

Requirements for seeding will be identified by substantial and total performance inspections that are required to close out individual construction contracts.

2.5.1.4 Temporary Sites and Facilities

Temporary Access

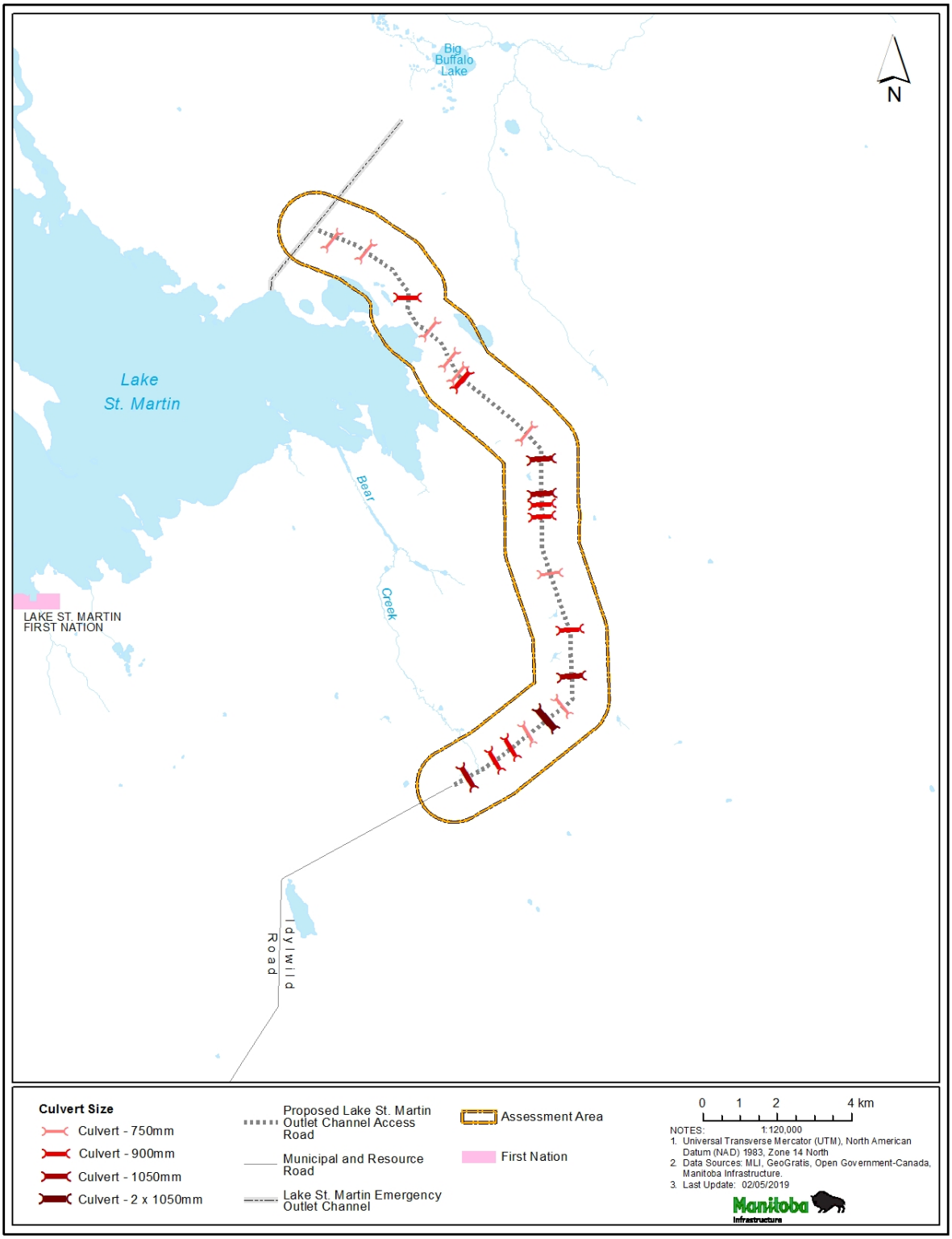
Temporary access will almost exclusively be associated with construction of the proposed LSM Access Road right-of-way (ROW) and associated works such as quarries and borrow areas. There is no anticipated requirement for construction decommissioning as the temporary access routes will be developed fully during the construction period.

Construction Laydown Areas

All works, including laydown areas, are intended to be contained within that ROW and/or on disturbed habitat associated with the existing infrastructure, e.g., the Idylwild Road and borrow areas. Site selection and area development will be consistent with the Environmental Protection measures including associated General Environmental Requirements (Section 2.7, Appendix C). In advance of construction, MI will provide the Contractor(s) with a plan identifying the laydown areas and other development sites; MI will work with Contractor(s) in developing the Construction Environmental Management Plan (CEMP as described in Section 2.7.1, and confirm their compliance with the GERs, and existing site-specific environmental information.

Construction Camp

MI anticipates that an existing construction camp located near the terminus of the Idylwild Road will be used to house the workforce for the duration of construction.



Map 2- 3. Potential Location of Culverts along the All Season Road

Quarries and Borrow Pits

Quarries and borrow pits may be required in order to source suitable construction material for the road embankment. MI will seek to avoid disturbance around the ROW and use existing quarry and borrow pits to their maximum potential. If required, MI will seek quarry or borrow areas adjacent to the proposed road alignment. The proposed road alignment and any adjacent quarry/borrow site will be separated by a 50 m to 100 m vegetated buffer. A temporary access road, with associated clearing, will extend to each quarry/borrow site.

2.5.1.5 Waste Disposal

Solid, liquid and hazardous wastes from the Project will be collected, stored, transported, disposed of and/or treated in accordance with The Environment Act (Waste Disposal Grounds Regulation) and 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 Regulation). If contaminated soil is discovered during the life of the proposed Project, the affected site will be assessed and any soil determined to be contaminated will be removed to an approved treatment site.

The Contractor(s) is responsible for managing wastes associated with their construction and/or maintenance contracts and is required to provide a waste management plan prior to construction. Small quantities of domestic solid waste will be collected in appropriate on-site containment for transport to the closest landfill, e.g., R.M. of Grahamdale – Municipal Waste Disposal Grounds. If, at the time of construction, a community landfill does not meet regulatory requirements, then the solid waste would be transported to the nearest licenced disposal grounds, such as those located in Winnipeg.

Wastewater (sewage and grey water) from work camps and construction sites will be collected in approved holding tanks and will, upon agreement with the community, be hauled to the nearest community for disposal and treatment. If this is not possible, waste will be stored and transported to Winnipeg.

The fuels and hazardous material expected to be produced during Project construction are identified in Table 2-7. Waste petroleum products (e.g., lubricants, oils, greases) from construction vehicles and equipment will be collected and stored in designated areas and containers until they can be removed for recycling or disposal through a licensed waste disposal/treatment company. Fuel handling and storage areas will be located a minimum of 100 m from a waterbody (Appendix C). Fuel storage containers will incorporate secondary containment to minimize the potential for contamination in the event of an unexpected spill or container leak. Materials and equipment for the containment and recovery of accidental hazardous material spills will be available at all construction sites.

Table 2-7. Expected Fuels and Hazardous Materials List

Project Component	Fuel/Materials	Purpose
All-Season Road; Temporary Access; and Quarries and Borrow Areas	Diesel	Construction equipment/vehicle fuel
	Gasoline	Construction equipment/vehicle fuel
	Propane	Construction equipment/vehicle fuel Heating trailers/structures
	Oil	Construction equipment/vehicle motor lube
	Hydraulic fluid	Construction equipment
Culverts and Temporary Waterbody Crossing Structures During Construction	Diesel	Construction equipment/vehicle fuel
	Gasoline	Construction equipment/vehicle fuel
	Propane	Construction equipment/vehicle fuel Heating trailers/structures Heating under hoarding
	Oil	Construction equipment/vehicle motor lube
	Hydraulic fluid	Construction equipment
	Acetylene	Cutting steel
Temporary Construction Laydown Areas and Temporary Construction Camps	Diesel	Construction equipment/vehicle fuel Electrical generator
	Gasoline	Construction equipment/vehicle fuel
	Propane	Construction equipment/vehicle fuel Heating/cooking Heating trailers/structures
	Oil	Construction equipment/vehicle motor lube
	Hydraulic fluid	Construction equipment

2.5.2 Operation and Maintenance

2.5.2.1 Equipment Requirements

During operation and maintenance activities, the type of equipment and vehicles that will typically be required include: excavators, graders, snow plows, sprayer trucks, pick-up trucks, tractors, riding mowers and weed-eaters. If additional equipment is required to be stored in the area, the quarry or construction camp could be retained as a maintenance yard. The specific use of the equipment for the project components is outlined in more detail in the following sections.

2.5.2.2 Water Management

Ditch maintenance will be carried out on an on-going basis to maintain drainage to original design standards and as a means to prevent sub-grade saturation and erosion. This activity will consist of excavating, filling, trimming and shaping to maintain required roadside ditch profiles including ditch slopes, inverts and the functioning of riprap areas. Work will typically occur in summer or fall. Ditch maintenance activities will also include the removal of sediment and debris from culverts inlets and outlets, where conveyance may be impeded. Water management may also involve pumping water around an area if required during ditch maintenance.

MI implements a Nuisance Beaver Management Program (NBMP) as part of the maintenance program as a supplementary measure where standard beaver control structures, such as beaver cones, are ineffective at reducing the risk of road washout. The NBMP includes measures for removal of nuisance beaver as well as for the removal of beaver dams.

2.5.2.3 Snow Clearing

Plowing snow from the road surface will be undertaken on an as required basis with motor graders, truck plows or rotary plows. Transporting and stockpiling of plowed snow is not anticipated.

2.5.2.4 General Road Maintenance

MI currently anticipates that requirements for road maintenance will be sporadic and localized to the road and infrastructure. This is largely due to the infrequent usage of the road during the operational period, when semi-annual inspections will be used to identify maintenance requirements. Grading of the finished LSM Access Road surface will be a sporadic and ongoing maintenance activity to promote a safe and reliable all-season road. MI currently anticipates that additional traffic gravel and grading/re-contouring the road may be required about every 20 to 30 years after flood control works are completed in the Lake St. Martin area. Where necessary, washout repair will be completed in the event that the road sub-grade, surface, shoulders or culverts are damaged by flooding, erosion, or debris. These repairs will be undertaken as soon as possible and as soon as conditions permit safe site access. Traffic controls may be required to provide safe travelling alternatives until repairs can be completed. The stockpile site adjacent to the existing camp site along Idylwild Road is anticipated to be the site that will be used to temporarily store materials, such as traffic gravel or crushed rock, to be used for road maintenance.

Application of water and/or magnesium chloride for dust control will be undertaken, as required, to minimize the amount of dust generated by road traffic to promote a safe and reliable all-season road.

Only chemicals approved for use on similar roads in Canada may be used and applied as specified by the manufacturer and only if and where necessary (e.g., not beyond the road surface). Chemicals such as magnesium chloride used for dust control will not be applied within 100 m of a stream crossing. Water will be drawn from a local waterbody and a provincial water rights licence will be obtained where required.

Mowing of short vegetation (e.g.: grasses) on road shoulders is currently not anticipated to be required. If required, it typically occurs during the summer months to improve visibility for driver safety and control noxious weeds while native vegetation becomes established. Generally, MI conducts mowing within 4.5 to 9 m of road surfaces. Various types of mowing equipment may be used including tractors, riding mowers and weed-eaters.

The removal of brush and small trees growing in the road ROW will be completed by mechanical brushing in late summer/fall to improve or maintain driver sight lines, maintain proper drainage and to reduce the cost of snow removal. The majority of mechanical brushing will take place in areas of abundant tree growth or where conventional mowing equipment cannot access ditch slopes due to rock outcrops or wetland areas.

Native seed mixes will be used where required in the disturbed area of the proposed road ROW to stabilize disturbed soils and minimize erosion. Where tree and/or shrub planting is required to adequately rehabilitate temporarily disturbed sites in sensitive areas, locally-appropriate native species will be used.

The gate will be checked regularly to assure it is functioning as designed and that the lock is working properly.

2.5.2.5 Culvert Maintenance

Seasonal inspections of culverts and bridge crossings will be conducted to assess the potential build-up of debris caught on piers or at the inlets of culverts to prevent upstream flooding, reduce stress on the structure and, although not anticipated to be required, allow for fish passage. Inspections will typically occur in the summer, but may occur in fall or spring as well as following heavy run-off events to confirm their condition and proper function. Beaver cones used on culverts will be checked and cleaned of debris.

Additional management measures, such as enhancing the existing erosion control (e.g., adding riprap) will be implemented wherever necessary. As required, maintenance crew will be dispatched to locations where the accumulation of debris represents a potential risk to the structure or the environment.

Culvert maintenance and erosion control activities will be undertaken in accordance with MI standards that, regardless of there being fish, include following the Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (Fisheries and Oceans Canada and Manitoba Natural Resources 1996).

2.5.2.6 Aggregate Material Handling and Storage

Aggregate material will be required during operation for road maintenance activities such as topping the road and washout repair. Any quarry established during construction will remain open for on-going maintenance of the all-season road. Surplus aggregate materials, processed during construction, will be stockpiled at the quarry areas for usage during maintenance activities. Any additional aggregate materials that may be required in the future would be drilled, blasted, crushed and sorted.

2.5.3 Decommissioning

The proposed Project is being developed as permanent infrastructure. Key components such as the road and culvert crossings will be used to maintain and operate existing and potential future flood prevention infrastructure well into the future. Temporary sites and facilities not required for road operation will be decommissioned after the Construction Phase.

MI has no plans to decommission the Project. If it ever becomes necessary to decommission the Project in the future, a decommissioning plan that adheres to the legislation and permitting at that time will be developed.

2.6 SCHEDULE

Construction of the Project will commence in winter under frozen conditions and is currently scheduled to begin in winter of 2019/2020. Construction is expected to take approximately 1.5 years, with completion of the Project anticipated by August 2021.

2.7 ENVIRONMENTAL PROTECTION

2.7.1 Construction

Environmental protection will be incorporated into the construction phase through the development and implementation of a Construction Environmental Management Plan (CEMP) that addresses site specific requirements of the Contractor(s). MI will work with the Contractor(s) in developing the CEMP in manner consistent with the General Environmental Requirements provided in Appendix C. Construction contract specifications detail the technical design as well as project-specific restrictions in

how the work is to be completed. The GERs will be among the information that will accompany the tender document(s) to be provided to prospective Contractor(s).

The site-specific measures that are likely to be addressed in the CEMP to assure protection of the environment may relate to the following:

- Access and staging;
- Clearing, grubbing and excavating;
- Erosion and sediment control measures and their installation;
- Blasting and explosives management;
- Noise and vibration;
- Dust and particulate control;
- Waste management, including its handling, storage and disposal;
- Working near waterbodies;
- Revegetation;
- Any environmentally sensitive sites (ESS), such as heritage resources or any unique habitat (e.g., mineral lick) or species of concern that may be affected by the Project; and
- Emergency response planning in the event of unanticipated emergency situations.

MI is responsible for incorporating the appropriate environmental protection measures, including best management practices, into the design of project components. Worksite specific environmental contract documents will be prepared and added to MI's standard specifications. MI will also monitor construction contract compliance with environmental specifications and legislated health and safety requirements. MI will also conduct an environmental audit of the construction work being done.

The Contractor will be responsible for implementing the environmental protection measures specified in the contract documents and providing specific plans for approval by MI. The plans will detail how the Contractor will meet the specifications (e.g., sediment management measures). The Contractor is also responsible to develop a plan to construct the all season road that incorporates measures outlined in the CEMP and GERs. This plan will identify where and how they will establish temporary sites, excavation areas, etc.

In cases where the CEMP does not identify specific measures for construction activities, the Contractor will provide that information following the review of the CEMP. In these situations, additional effort and level of detail will be required to provide a thorough plan that identifies and manages environmental risks associated with Project development. MI will be responsible to assure that the proposed steps outlined by the Contractor are appropriate and environmentally responsible. For example, the CEMP will not provide site-specific information on where the stockpile sites or the equipment laydown and staging sites will be located; there will, however, be general guidance in the GERs (Appendix C) to assist the

Contractor in selecting appropriate sites (such as stockpile locations) during the process of formalizing the construction site plan that will be provided to MI for review and approval prior to construction.

Any approvals that MI receives (e.g., Manitoba Environment Act Licence) will be integrated into the CEMP to accompany contract documents. In other cases, MI expects Contractors to obtain relevant permits in order to conduct their work (Crown Lands work permit, quarry permits etc.). It is MI's expectation that the Contractor will review the requirements of all approvals and demonstrate how they will be addressed as part of the work. Environmental permits or approvals obtained by the Contractor and any amendments will be identified and submitted to MI for compliance and record keeping purposes.

MI will frequently meet with the Contractor and require that regular updates be provided regarding progress on the environmental components of the work. Early and ongoing communication between MI and the Contractor is expected. In cases where a Contractor suggests means to achieve a particular goal or objective that differ from their original site plan (i.e. component of the work such as managing erosion and sedimentation), approval must first be obtained through MI before any modification is allowed.

The environmental protection measures also incorporates best practices for compliance monitoring – the step that verifies whether the site plan (including the GERs) are being followed during construction and whether required mitigation measures are being effectively implemented. MI will assure that effective environmental oversight of Project development through implementing MI's compliance monitoring process; MI will provide ongoing oversight of the Project during the Construction Phase and coordinate with the Contractor.

2.7.2 Operation and Maintenance

During the operations and maintenance phase of the Project, standard operating procedures and environmental best management practices will be implemented to promote the protection of environmental values along the all-season road and surrounding areas. Project-specific environmental protection measures may be developed for implementation during the Operations Phase.