

# **LAKE ST. MARTIN ACCESS ROAD ENVIRONMENTAL ASSESSMENT REPORT**

**Prepared for: Environmental Approvals Branch  
Manitoba Sustainable Development**

**Prepared by: Manitoba Infrastructure**

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## EXECUTIVE SUMMARY

The existing Lake St. Martin Emergency Outlet Channel is located in a semi-remote area of Manitoba on the north end of Lake St. Martin. Ground access to the Lake St. Martin Emergency Outlet Channel (EOC) is currently limited to the use of a winter road under frozen conditions, i.e., typically December to March. The existing winter road begins at the northern terminus of the Idylwild Road, a resource (forestry) road that extends north from Birch Lake Drive, a municipal road located east of the communities of Grahamdale and Spearhill (Map 1-1).

Due to seasonal access limitations and associated risks during an emergency flood situation wherein the EOC will need to be operated and/or maintained, Manitoba Infrastructure (MI) is proposing to upgrade the winter road to an all-season road standard. Upgrading the existing winter road to a 19.5 km long all-season road will allow for year-round vehicle, crew and equipment access for maintenance and operation of the Lake St. Martin Emergency Outlet Channel. The proposed Lake St. Martin Access Road (the Project) will also be used in the construction, operation and maintenance of future flood protection works currently being planned between Lake St. Martin and Lake Winnipeg, i.e., the proposed Lake St. Martin Outlet Channel.

Biophysical field studies comprised of onsite investigations of the aquatic and terrestrial environments, i.e., plant and wildlife studies. The geology, soils and groundwater conditions in the Project region is generally consistent with features in the Interlake region of Manitoba; there are no notable features that are unique to the Project Assessment Area (a 1 km buffer on either side of the proposed road alignment).

The Project is located in an area largely comprised of a mixture of open wetlands (i.e. peatlands), upland and lowland forests. The three small creek crossings were deemed to not support fish or fish habitat. There are no plant that are species at risk and no unique plant habitats or ecosystems identified within or near the Project development area. The general area supports a number of mammals, migratory birds, reptiles and amphibians, including protected species. Wildlife field studies identified two protected bird species, trumpeter swan (*Cygnus buccinator*) and the eastern wood peewee (*Contopus virens*) as well as two bat species, the little brown bat (*Myotis lucifugus*) and northern long-eared bat (*Myotis septentrionalis*) in close proximity to the PAA. There was no evidence of any critical habitat for any of the wildlife species at risk that potentially occur in the PAA or surrounding regions.

Most land in the PAA is Crown Land with the remaining areas comprised of a mix of private and municipal ownership. In addition to the few communities in the RM of Grahamdale, there are First Nation communities in the region.

Infrastructure within the PAA is currently limited to a winter access road that interconnects with the Idylwild Road. Regional land use activities consist mainly of agriculture, hunting, fishing, snowmobiling and other recreational activities.

Heritage-related fieldwork was conducted in the vicinity of the Project development areas. No heritage or cultural artifacts or sites were located along or adjacent to the proposed LSM Access Road.

This Environment Act Proposal Report for the proposed EOC Access Road follows the Environment Act Proposal (EAP) Report Guidelines and considers a range of potential physical, biophysical and socio-economic factors (Manitoba Sustainable Development 2018). Potential Project-related effects were evaluated in conjunction with mitigation measures to identify and assess any potential residual effects that may occur.

Overall, the construction and operation of the proposed Lake St. Martin Access Road is not likely to result in any measurable adverse environmental effects. Proposed mitigation measures are expected to effectively address potential effects by preventing, avoiding or minimizing impacts. Nonetheless, some minor adverse residual effects may persist, including:

- Minor overall increases in green house gas and dust emissions associated with vehicle/equipment during construction, operation and maintenance;
- Minor overall increases in noise and vibration attributed to construction and general operation of the Lake St. Martin Access Road over existing conditions;
- Permanent alteration of local terrain associated with the construction of an elevated road embankment and potential development of quarries or borrow pits;
- Permanent vegetation loss and minor changes to local plant community composition along the Lake St. Martin Access Road due to clearing, compaction of soils and possible unintentional introduction of non-native or invasive plant species;
- Minor permanent wildlife habitat loss within the Project Footprint;
- Minor potential for overall increase in wildlife mortality over current conditions associated with vehicle collisions; and,
- Potential minor permanent habitat loss for protected species within the Project Footprint.

The results of the analyses conducted on this Project indicate that there is no reason to not proceed with development of the Project. Manitoba Infrastructure will follow environmental protection measures outlined in the EA Report and will conduct monitoring during the operational period to assure that design measures (e.g., the gate) are working effectively in address long-term access-related issues.

## GLOSSARY OF ACRONYMS, UNITS AND TERMS

### ACRONYMS AND UNITS

Acronym/ Abbreviation	Term
AADT	Annual Average Daily Traffic
AQHI	Air Quality Health Index
ASDT	Average Summer Daily Traffic
ASI	Area of Special Interest
ASR	all-season road
ATV	All Terrain Vehicles
°C	Degrees Celsius
CNR	Canadian National Railway
CO <sub>2</sub>	Carbon dioxide
CO	Carbon Monoxide
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
dB	Decibels
DbA Lex	Decibels over duration (in hours)
EA	Environmental Assessment
EAPF	Environmental Act Proposal Form
ECCC	Environment and Climate Change Canada
EOC	(Lake St. Martin) Emergency Outlet Channel
ESC	Erosion and sediment control
ESEA	Endangered Species and Ecosystems Act
ESS	Environmentally sensitive sites
FLIR	Forward looking infrared
FML	Forest Management License
FMU	Forest Management Units
FN	First Nations
GBHZ	Game Bird Hunting Zone
GERs	General Environmental Requirements
GHA	Game Hunting Area
GHG	Greenhouse gas
HVdc	High Voltage Direct Current
IBA	Important Bird Area
INR	Manitoba Indigenous and Northern Relations
IPEP	Indigenous and Public Engagement

Km/hr or Kph	Kilometres per hour
KPI	Key person interview
LCC	Land Cover Classification
LGD	Local Government District
LSM	Lake St. Martin
MBBA	Manitoba Breeding Bird Atlas
MCDC	Manitoba Conservation Data Centre
Mg/L	Milligrams per litre
MI	Manitoba Infrastructure
MSD	Manitoba Sustainable Development
Mt	Megaton
NO <sub>2</sub>	Nitrogen dioxide
NO <sub>x</sub>	Nitrogen oxides
O <sub>3</sub>	Ground level ozone
PAA	Project Assessment Area
PFN	Peguis First Nation
PSL	Permissible Sound Levels
PM	Particulate Matter
PM <sub>10t</sub>	particulate matter ≤10 microns
PM <sub>2.5s</sub>	particulate matter ≤2.5 microns
ppb	Parts per billion
ppm	Parts per million
PR	Public road
PTH	Public trunk highway
RCMP	Royal Canadian Mounted Police
RHA	Regional Health Authority
ROW	right-of-way
RTL	Registered Trap Line
SARA	Species at Risk Act
SF <sub>6</sub>	Sulphur hexafluoride
SH <sub>6</sub>	
SO <sub>2</sub>	Sulphur dioxide
TDS	Total dissolved solids
TLE	Treaty Land Entitlement
μ	Microns
μg/m <sup>3</sup>	micrograms per cubic meter
WMA	Wildlife Management Area

## GLOSSARY TERMS

**Aggregate** – A mineral used for construction purposes or as a constituent of concrete other than in the manufacture of cement and includes sand, gravel, clay, crushed stone and crushed rock.

**All-season road** – A road that provides year-round vehicular access to the remote and isolated communities in the region.

**Alvars** – Uncommon habitats globally and are communities that are protected under the Manitoba Endangered Species and Ecosystem Act (MESEA Act reference). Alvars are characterized by the presence of a thin or absent layer of soil overlying limestone or dolomite bedrock pavement.

**Amphibian** – Cold-blooded animal of the Class Amphibia that typically lives on land but breeds in water (ex: frogs, toads, salamanders).

**Aquatic** – Relating to water; living in or near water, taking place in water.

**Area of Special Interest** – ASIs are identified through enduring features analysis and aid in prioritizing which areas are most critical for protection. Enduring features are combinations of soils and surficial geology that are used to represent the biodiversity within Manitoba's 18 natural regions. ASIs are further refined into protected areas proposals through a review process led by Manitoba Sustainable Development with participants from Water Stewardship and Industry, Economic Development and Mines.

**Average Annual Daily Traffic** – Measure used primarily in transportation planning and transportation engineering. It is the total volume of vehicle traffic of a highway or road for a year divided by 365 days. AADT is a useful and simple measurement of how busy a road is.

**Bog** – A wetland ecosystem characterized by water table at or just below the surface, an accumulation of peat, acidic conditions and a plant community dominated by Sphagnum moss.

**Borrow area** – A site where the existing soil/earth has been tested and determined suitable for road embankment construction. Located within the road right-of-way, where possible.

**Carbon dioxide** – CO<sub>2</sub> is a colorless gas with a density about 60% higher than that of dry air. It occurs naturally in Earth's atmosphere as a trace gas.

**Carbon monoxide** – CO is a colorless, odorless and tasteless gas that is slightly less dense than air.

**Corridor** – A designated strip of land between two locations used for infrastructure purposes.

**Critical habitat** – Habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified and included in recovery strategies or action plans.

**Crown land** – Land owned by the federal or provincial governments. Authority for control of these public lands rests with the Crown.

**Culvert** – A tunnel carrying a stream or open drain under a road.

**Decommissioning** – The process of removing something (ex: camp, staging area, access route) from service.

**Ecodistrict** – Part of an ecoregion characterized by distinctive assemblages of relief, geology, landforms and soils, vegetation, water, fauna and land use.

**Ecoregion** – Part of an ecozone characterized by distinctive regional ecological factors, including climatic, physiography, vegetation, soil, water, fauna and land use.

**Ecosystem** – A dynamic complex of plants, animals and micro-organisms and their non-living environment interacting as a functional unit. The term ecosystem can describe small scale units (e.g., water droplet) as well as large scale units (e.g., biosphere).

**Endangered** – A species that is seriously at risk of being permanently lost locally (extirpated) or globally (extinct).

**Environment** – Components of the earth including a) land, water and air, including all layers of the atmosphere, b) all organic and inorganic matter and living organisms and c) interacting natural systems that include components referred to in a) and b). Effectively described as air, land, water, plant life, animal life and humans.

**Environment Act Proposal** – An Environment Act Proposal is part of the environmental assessment and licensing process required to receive an Environment Act Licence for construction and operation of projects which are defined as developments under the Classes of Development Regulation (Manitoba Regulation 164/88). The process exists to ensure environmental and human health protection, encourage early consultation, allow for full public participation and ensure economic development occurs in an environmentally responsible manner.

**Environmental Management Plan** – Provides an overall environmental management framework for a project to address environmental risks associated with that project.

**Environmental monitoring** – Periodic or continuous surveillance or testing, according to a predetermined schedule, of one or more environmental parameters. Usually conducted to

determine the level of compliance with stated requirements, or to observe the status and trends of a particular environmental component over time.

**Erosion and Sediment Control** – Erosion and sediment control measures include silt fencing, erosion control blankets, straw wattles and geotextile with the intent to reduce the amount of erosion and control any eroded material from moving into adjacent watercourses.

**Equalization culvert** – Culvert placed to balance water head and elevation on both sides of an embankment and reduce possible water seepage flow.

**Fen** – A type of wetland fed by groundwater and runoff, containing peat below the waterline.

**Follow-up** – Includes activities such as monitoring and reporting and may occur at any stage in the lifespan of the Project. A Follow-up Program is a program for verifying the accuracy of the environmental assessment of a project and determining the effectiveness of any measures taken to mitigate the adverse environmental effects of that project.

**Fragmentation** – The breaking up of contiguous blocks of habitat into increasingly smaller blocks as a result of direct loss and/or sensory disturbance.

**Fugitive dust** – Generated from wind erosion caused by roadway construction activities such as rock quarrying or crushing, blasting, excavation, fill placement and road grading.

**Furbearer** – Furbearers are a diverse group of mammal species traditionally trapped/hunted for their fur, including both carnivores (meat eating predators) and rodents (gnawing animals).

**Game Hunting Area** – GHAs are geographic zones where certain regulations apply with regard to hunting a particular wildlife species or group of species. The basic regulations on hunting certain species, including season when a species can be hunted varies by GHA.

**Geology** – A science that deals with the history of the earth as recorded in rocks.

**Geotextile material** – Porous fabrics manufactured by weaving or bonding fibers made from synthetic materials for use in construction as separators, reinforcement, filtration and drainage and erosion control.

**Greenhouse Gas** – A gas that contributes to the greenhouse effect by absorbing infrared radiation (e.g., carbon dioxide and chlorofluorocarbons).

**Groundwater** – Water beneath the surface of the land.



**Grubbing** – Removing and disposing of all stumps, roots, non-merchantable trees and overburden material from a designated area.

**Habitat** – The place or type of site where an organism or population naturally occurs. Species may require different habitats for different uses throughout their lifecycle.

**Hazardous materials** – Any solid, liquid, or gas product that can harm people, other living organisms, property or the environment.

**Heritage resources** – A land or resource (ex: an artifact, object, place) that is considered as heritage or any structure, site or thing is distinguished from other lands and resource by the value placed on it.

**Hydrocarbons** – Organic compounds that contain only carbon and hydrogen (e.g., gasoline).

**Hydrofluorocarbons** – Any of a class of partly chlorinated and fluorinated hydrocarbons, used as an alternative to chlorofluorocarbons in foam production, refrigeration and other processes.

**Indigenous people** – Indigenous people is a collective name for the original peoples of North America and their descendants. The Constitution of Canada recognizes three groups of Indigenous people: First Nations, Inuit and Métis. These are three distinct peoples with unique histories, languages, cultural practices and spiritual beliefs.

**Indirect effect** – A secondary environmental effect that occurs as a result of a change that a project may cause on the environment. At least one step removed from a project activity in terms of cause-effect linkages.

**Invasive species** – Any species that has been introduced to an environment where it is not native and that has since become a nuisance through rapid spread and increase in numbers, often to the detriment of native species.

**IOA Steering Committee** – A committee comprised of the following groups to oversee the consultation process for the Project:

1. Manitoba Infrastructure
2. Manitoba Indigenous and Northern Relations
3. Manitoba Sustainable Development
4. Manitoba Justice

**Maintenance** – Keeping a structure, fixture or foundation in proper condition in a routine, scheduled or anticipated fashion and preventing its failure or decline.

Manitoba Conservation Data Centre – The MBCDC is a storehouse of information on Manitoba’s biodiversity (its plant and animal species), as well as its natural plant communities. The MBCDC functions under the umbrella of NatureServe and NatureServe Canada, a network of over 80 similar centres throughout Canada, the United States and Latin America.

Manitoba Infrastructure – MI is the proponent and will continue to manage the proposed Project. MI is the department of the provincial government responsible for the development of transportation policy and legislation and for the management of the province’s vast infrastructure network.

Manitoba Metis Federation – The MMF was founded in 1967. It promotes the interests and rights of its members in Manitoba and delivers programs and services for the Métis, including those related to child and family services, justice, housing, youth, education, human resources, economic development and natural resources.

Manitoba Sustainable Development – A department of the Government of Manitoba that oversees environmental stewardship, species at risk, forestry and related matters. The department is overseen by the Minister of Sustainable Development.

Manitoba Water Quality Standards, Objectives and Guidelines – MWQSOG are one of many tools used to protect, maintain and where necessary, rehabilitate water quality. On November 28th, 2011, the MWQSOG were enshrined in a regulation under Part Two of The Water Protection Act. They set out water quality conditions for over 100 materials that, if not exceeded, will protect water quality for various uses including fish and other aquatic life, sources of drinking water, irrigation and livestock watering and recreation.

Methane – CH<sub>4</sub> is a hydrocarbon gas at room temperature (20°C). It is often found as the main part of natural gas. Methane is a greenhouse gas 23 times more effective than carbon dioxide. It slowly oxidates by oxygen to carbon dioxide and water.

Métis – A people of North American Indian and European ancestry who coalesced into a distinct nation in the northwest in the late 18th century. The Métis are one of three distinct Indigenous peoples of Canada, recognized under section 35 in the 1982 Constitution Act.

Migratory bird – As defined by federal legislation, “migratory birds” are game, non-game and insectivorous birds native to Canada which show regular seasonal movement between breeding and wintering grounds.

Mitigation measures – Measures developed and implemented for the elimination, reduction or control of the adverse environmental effects of physical activities associated with a project.

**Nitrogen Oxide** – A family of poisonous, highly reactive gases that play a major role in the atmospheric reactions with volatile organic compounds that produce ozone (smog) on hot summer days.

These gases form when fuel is burned at high temperatures and are typically emitted by automobiles, trucks and various non-road vehicles as well as industrial sources such as power plants, industrial boilers, cement kilns and turbines.

**Nitrous Oxide** – Nitrous oxide, commonly known as laughing gas or nitrous, is a powerful oxidizer with an impact on stratospheric ozone comparable to that of CFCs. It is estimated that 30% of the  $N_2O$  in the atmosphere is the result of human activity, chiefly agriculture.

**Northern Affairs Community** – Indigenous and Northern Relations under The Northern Affairs Act. Northern Affairs Communities are represented by a Mayor and Council or an administrator depending on the size of the community.

**Nuisance Beaver Management Program** – The NBMP includes measures for removal of nuisance beaver as well as for the removal of beaver dams to maintain culvert functionality.

**Operations phase** – Refers to the point at which construction is complete and the all-season road begins providing the intended transportation link.

**Ozone** – Ozone, or trioxygen, is an inorganic molecule formed from dioxygen by the action of ultraviolet light and also atmospheric electrical discharges and is present in very low concentrations throughout the Earth's atmosphere (stratosphere). Its concentration is highest in the ozone layer region of the atmosphere, which absorbs most of the Sun's ultraviolet radiation.

**Physical environment** – Refers to the terrain, geology, hydrogeology, hydrology, air and water of a project area.

**Project** – Unless otherwise stated, the Project refers to the Lake St. Martin (LSM) Access Road Project.

**Project Assessment Area** – The PAA is a 1 km buffer on either side of the proposed all-season road alignment.

**Project Footprint** – The physical space or directly affected area within which Project components and activities are located and the immediately adjacent area, which is the defined limits of the all-season road and right-of-way.

**Provincial Road** – Numbered PRs are the secondary highways in Manitoba.

Provincial Trunk Highway – Numbered PTHs are the primary highways in Manitoba.

Quarry – A mine established or operated by surface excavation for the purpose of removing consolidated quarry mineral.

Residual effect – An environmental effect that remains, or is predicted to remain, even after mitigation measures have been applied.

Respirable Particulate Matter – PM<sub>10</sub> are tiny particles (10 microns in diameter and less) small enough that they can get deep into the lungs and cause a broad range of health effects, in particular, respiratory and cardiovascular illnesses.

Riparian area – The area bordering streams, lakes and wetlands that links water to land. The blend of streambed, water, trees, shrubs and grasses in a riparian area provides fish habitat and directly influences it.

Riprap – A layer of durable quarried or field rock placed at both the inlet and outlet of culverts or around bridge abutments to stabilize fill slopes around the drainage structure and prevent water from eroding soil.

Right-of-way – The area along the road alignment which contains the road bed, ditches, side slopes and back slopes.

Road alignment – The route of a road, defined as a series of horizontal tangents and curves, as defined by planners and surveyors.

Rock fill – A fill, comprised of large, loosely placed rocks.

Runoff – Water flow that occurs when soil is infiltrated to full capacity and excess water from rain, snowmelt or other sources flows over the land.

Sediment – Any particulate matter that can be transported by fluid flow and which is eventually deposited.

Species at Risk – For the purpose of this Environmental Assessment, Species at Risk are defined as federal species listed under the Species at Risk Act or designated by COSEWIC for listing on Schedule 1 of SARA (extirpated, endangered, threatened and special concern); provincial species listed as Endangered or Threatened under the Manitoba ESEA; and species listed as very rare (provincial status of S1) or rare (provincial status of S2) throughout their range as listed by the MCDL.

**Subgrade** – The soil prepared to support a pavement structure or a pavement system. It is the foundation for the pavement structure.

**Substrate** – The composition of a streambed, including either mineral or organic materials.

**Surface water** – Water collecting on the ground or in a stream, river, lake, wetland or ocean; it is related to water collecting as groundwater or atmospheric water.

**Sulfur oxides** – Are compounds of sulfur and oxygen molecules, with sulfur dioxide (SO<sub>2</sub>) being the greatest concern and most dominant form found in the lower atmosphere. The largest source of SO<sub>2</sub> in the atmosphere is the burning of fossil fuels. Short-term exposures to SO<sub>2</sub> can harm the human respiratory system and make breathing difficult.

**Terrain** – Refers to the lay of the land. Usually expressed in terms of the elevation, slope and orientation of terrain features. Terrain affects surface water flow and distribution.

**Threatened** – A species likely to become endangered if limiting factors are not reversed.

**Traditional knowledge** – Knowledge that is held by and unique to, Indigenous people.

**Wetland** – Land dominated by bogs/fens that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation and various kinds of biological activity which are adapted to a wet environment.

**Winter road** – A seasonal road constructed each year and only used after ground is frozen.

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