

LAKE MANITOBA LAKE ST. MARTIN

OUTLET CHANNELS PROJECT

MANITOBA TRANSPORTATION AND
INFRASTRUCTURE

Quarry Management Plan

June 30, 2022

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DISCLAIMER

This document was developed to support the Environmental Management Program (EMP) for the Lake Manitoba and Lake St. Martin Outlet Channels Project (the Project). It has been prepared by Manitoba Transportation and Infrastructure as a way to share information and facilitate discussions with Indigenous rights-holders, stakeholders and the public. It has been prepared using existing environmental and engineering information and professional judgement, as well as information from previous and ongoing public and Indigenous engagement and consultation. The contents of this document are based on conditions and information existing at the time the document was prepared and do not take into account any subsequent changes. The information, data, recommendations, and conclusions in this report are subject to change as the information has been presented as draft. This draft plan should be read as a whole, in consideration of the entire EMP, and sections or parts should not be read out of context.

Revisions to draft plans have been informed by and will be based on information received from the engagement and consultation process, the Environmental Assessment process, Project planning activities, and on conditions of provincial and federal environmental regulatory approvals received for the Project. As these will be living documents, any changes to the plans that occur after Project approvals are received will be shared with regulators, Indigenous rights-holders and stakeholders prior to implementation of the change. Either a revision number or subsequent amendment would be added to the specific environmental management plan to communicate the revision or change.

PREFACE

The Lake Manitoba and Lake St. Martin Permanent Outlet Channels Project (the Project) is proposed as a permanent flood control mitigation for Lake Manitoba and Lake St. Martin to alleviate flooding in the Lake St. Martin region of Manitoba. It will involve the construction and operation of two new diversion channels: the Lake Manitoba Outlet Channel (LMOC) will connect Lake Manitoba to Lake St. Martin and the Lake St. Martin Outlet Channel (LSMOC) will connect Lake St. Martin to Lake Winnipeg. Associated with these outlet channels are the development of bridges, control structures with power connections, a new realignment of Provincial Road (PR) 239, and other ancillary infrastructure.

Manitoba Transportation and Infrastructure is the proponent for the proposed Project. After receipt of the required regulatory approvals, Manitoba Transportation and Infrastructure will develop, manage and operate the Project. This Quarry Management Plan (QMP) is one component of the overall Environmental Management Program (EMP) framework, which describes the environmental management processes that will be followed during the construction and operation phases of the Project. The intent of the EMP is to facilitate the timely and effective implementation of the environmental protection measures committed to in the Environmental Impact Statement (EIS), the requirements and conditions of the provincial licence issued under *The Environment Act*, the federal Decision Statement issued under *The Canadian Environmental Act 2012*, and other approvals received for the Project. This includes the verification that environmental commitments are implemented, monitored, evaluated for effectiveness, and adjustments made if/as required. It includes a commitment that information is reported back in a timely manner for adjustment, if required.

A key component for the success of the EMP is environmental monitoring, such that environmental management measures are inspected and modified for compliance with environmental and regulatory requirements, including those set out in provincial and federal approvals received for the Project. As indicated, monitoring results will be reviewed and used to verify predicted environmental assessment conclusions and effectiveness of mitigation measures. If unanticipated effects occur, or if mitigation measures are inadequate, adaptive management measures and subsequent monitoring will be applied as described further in individual environmental management and monitoring plans.

Monitoring results and application of adaptive management measures will inform follow-up reporting to regulators and any required revisions to environmental management plans. Manitoba Transportation and Infrastructure has initiated discussions with rights-holders and the Rural Municipality (RM) of Grahamdale in the Project area on the establishment of an Environmental Advisory Committee (EAC). The EAC would be a platform for sharing monitoring results and discussing issues of concern. In addition, Manitoba Transportation and Infrastructure anticipates that the EAC will coordinate Indigenous Environmental Monitors and communications during the construction period and will be working with rights-holders and stakeholders on its structure and purpose.

Manitoba Transportation and Infrastructure remains committed to consultation and ongoing engagement with Indigenous rights-holders and stakeholders that are potentially impacted by the Project. Detailed EMP review discussions were incorporated into Indigenous group-specific consultation work plans. Engagement opportunities included virtual open house events, sharing draft environmental management and monitoring

plans, sharing plan-specific questionnaires, and meetings to discuss related questions and recommendations. The intent has been to offer multiple avenues to share information about the Project so that rights-holders and stakeholders would be informed and could provide meaningful input into Project planning. The original draft EMP plans and questionnaires that were posted on the Project website for public review and comment are being replaced by the second draft of each plan as it becomes available. Feedback and recommendations received were used to update the current version of the draft plans, which are posted to the Project website at: <https://www.gov.mb.ca/mit/wms/lmblsmoutlets/environmental/index.html>.

Figure A displays a summary of the EMP process. The EMP provides the overarching framework for the Project Construction Environmental Management Program (CEMP) and the Operation Environmental Management Program (OEMP). These will be updated prior to Project construction and operation, respectively, and will consider applicable conditions of *The Environmental Act* provincial licence, *The Canadian Environmental Assessment Act 2012* federal Decision Statement conditions and other approvals, any other pertinent findings through the design and regulatory review processes, and key relevant outcomes of the ongoing Indigenous consultation and public engagement processes. Until such time, these plans will remain in draft form.

The purpose of the CEMP and OEMP is to guide how environmental issues will be addressed during construction and operation, respectively, and how adverse effects of activities will be mitigated. The CEMP is supported by several specific or targeted management plans that will guide Manitoba Transportation and Infrastructure's development of the Project's contract documents and subsequently, the Contractor(s) activities, in an environmentally responsible manner and to meet regulatory compliance in constructing the Project. The OEMP will include some of the same targeted plans developed to manage issues during construction, but prior to construction completion, they would be revised and adapted to suit the specific needs during the operation phase.

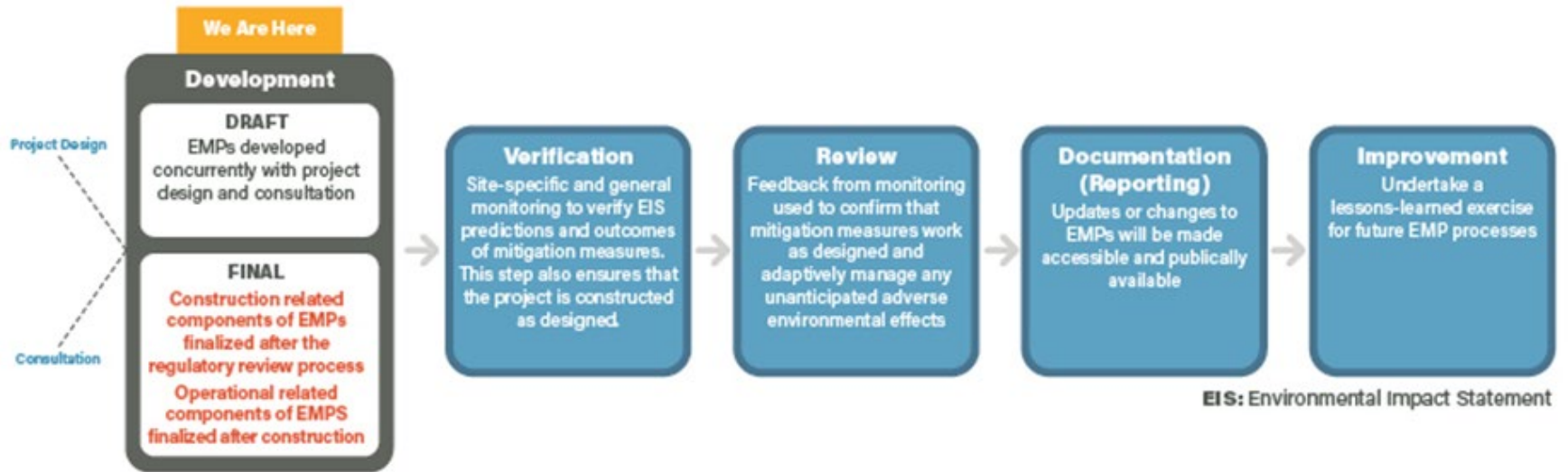


Figure A: EMP Process

LIST OF ACRONYMS AND GLOSSARY OF TERMS

Acronyms

CEMP	Construction Environmental Management Program
CRP	Complaint Resolution Process
EAC	Environmental Advisory Committee
EIS	Environmental Impact Statement
EMP	Environmental Management Program
EPP	Environmental Protection Plan
ESS	Environmentally Sensitive Sites
LMOC	Lake Manitoba Outlet Channel
LSMOC	Lake St. Martin Outlet Channel
m	metre
OEMP	Operation Environmental Management Program
PERs	Project Environmental Requirements
PR	Provincial Road
the Project	The Lake Manitoba and Lake St. Martin Permanent Outlet Channels Project
RM	Rural Municipality
QDP	Quarry Development Plans

Glossary of Terms

Aggregate: A broad category of fine to coarse-grained particulate material used in construction including sand, gravel, crushed stone, slag, recycled concrete and geosynthetic aggregates.

Bedrock: The solid rock that lies beneath the soil and/or other loose material on the Earth's surface.

Casual quarry permit: An annual permit issued for the production of a specified quantity of Crown quarry mineral (Quarry Minerals Regulation 1992).

Contractor: refers to the individuals, entities or groups contracted by Manitoba Transportation and Infrastructure to undertake specific Project construction, operation or maintenance activities, and includes all subcontractors and affiliates

Inspector: refers to the individuals or designated representatives delegated by Manitoba Transportation and Infrastructure to monitor, inspect, document, and enforce compliance with contractual and regulatory requirements associated with the construction and/or maintenance activities and associated works for the Project.

Contract Administrator: Refers to the individuals, entities or groups delegated by Manitoba Transportation and Infrastructure to provide professional Engineering and Consulting Services for the Permanent Outlet Channels Project. This includes oversight of construction and maintenance contracts and operations; review of contractor submittals, plans and proposals for compliance with Project commitments and restrictions and making recommendations for acceptance or rejection of such plans by the Owner; and monitoring, inspecting, documenting and enforcing compliance with contractual and regulatory requirements.

Dewatering: Removal or draining groundwater or surface water from a riverbed, construction site, caisson, or mine shaft, by pumping or evaporation.

Discharge: Rate of outflow; volume of water flowing down a river, from a lake outlet, or built structure.

Environmental Monitor: refers to the individuals, groups or designated representatives engaged by Manitoba Transportation and Infrastructure to monitor, inspect, and document compliance with contractual and regulatory requirements associated with the construction activities and associated works for the Project. The monitor may also be an active member (or representative) of the Project's Environmental Advisory Committee.

Environmentally Sensitive Site: locations, features, areas, activities, or facilities that were identified during the environmental assessment process to be ecologically, socially, economically, culturally, or spiritually important or sensitive to disturbance and require protection during construction of the Project.

Groundwater: Water that occurs beneath the land surface and fills the pore spaces of soil or rock below saturated zone.

Private quarry permit: Refers to a permit for private aggregate or quarry operations in Manitoba.

The Owner: Refers to Manitoba Transportation and Infrastructure or a designated representative delegated by Manitoba Transportation and Infrastructure with overall responsibility for, and oversight of, Project design, construction and operation.

Quarry: An open excavation or pit from which sand, gravel, clay, shale, gypsum, peat, salt, rock, or stone, is obtained by digging, cutting or blasting.

Quarry lease: Refers to a 10-year lease granted by the Crown with exclusive rights to excavate quarry minerals (e.g., sand, gravel, clay, shale, gypsum, peat, salt, rock or stone.)

Rights-holders: include First Nations, Metis Communities and other Indigenous communities who hold Aboriginal or Treaty rights that are protected under Section 35 of *The Constitution Act 1982*. Commonly, these include hunting, trapping, fishing or gathering rights.

Riprap: A stone covering used to protect soil or surface bedrock from erosion by water or other elements.

Runoff: Surface water that flows overland and into streams, wetlands or waterbodies, or into drainage systems.

Shale: A clastic sedimentary rock that is made up of clay-size weathering debris. It typically breaks into thin flat pieces.

1.0 INTRODUCTION

This Quarry Management Plan (QMP) is one component of the overall Environmental Management Program (EMP) for the Lake Manitoba and Lake St. Martin Permanent Outlet Channels Project (the “Project”). The purpose of this plan is to outline criteria for site selection and development of quarries with the objective to avoid (to the extent possible), and mitigate potential adverse environmental effects associated with quarry development and aggregate production activities. The QMP provides the overall guidance for addressing this Project activity. Each specific quarry will require its own development plan and decommissioning plan, as described in this document.

Various construction materials are required for the Project including rockfill riprap, road building aggregates, concrete aggregates, and other granular or fine-grained materials. Estimated quantities, volumes, and identification of potential sources of construction materials are under development as the Project design progresses. Several potential bedrock and granular (i.e., sand and gravel) quarry sources exist in the general Project region, which may be used by Project Contractors. These include some existing permitted and licensed sources, which will be preferentially used, with new sites established only if required.

In addition to the requirements described within this plan, all Project activities, including quarry site selection, development, and management, will adhere to Project Environmental Requirements ([PER]; Table 1], as well as applicable components of the Construction Environmental Management Program (CEMP), the Operation Environmental Management Program (OEMP), and commitments made in the Project’s Environmental Impact Statement (EIS) throughout the life of the Project.

1.1 Applicable Legislation and Reference Documents

The selection, development and operation of quarries shall comply with all applicable legislation, licenses, authorizations and permits. Key legislation and supporting documents associated with the QMP are outlined in Table 1.

Table 1: Key Legislation and Documents Associated with the QMP

Federal Legislation	
<i>Species At Risk Act</i> (S.C. 2002, c. 29)	<i>Explosives Act</i> (R.S.C., 1985, c. E-17)
<i>Migratory Birds Convention Act</i> (S.C. 1994, c. 2)	
Provincial Legislation	
<i>Endangered Species and Ecosystems Act</i> (C.C.S.M. c. E111)	<i>The Dangerous Goods Handling and Transportation Act</i> (C.C.S.M. c. D12)

Provincial Legislation (cont'd)	
<i>Workplace Safety and Health Act</i> (C.C.S.M. c. W210)	<i>The Fires Prevention and Emergency Response Act</i> (C.C.S.M. c. F80)
<i>Mines and Minerals Act</i> (C.C.S.M. c. M162)	Quarry Minerals Regulation, 1992 (Regulation 65/92)
<i>Forest Act</i> (C.C.S.M. c. F150)	<i>The Wildfires Act</i> (C.C.S.M. c. W128)
<i>Crown Lands Act</i> (C.C.S.M. c.C340)	
Other	
Manitoba Transportation and Infrastructure Contracts and Associated Documents	Project Licences and Authorizations
Applicable Manitoba Mines and Minerals Casual Quarry Permits or Quarry Leases	Applicable Manitoba Conservation and Climate Work Permits
Environmental Protection Guidelines	
Relevant Project Environmental Requirements	
2.1 Designated Areas and Access	2.2 Clearing and Grubbing
2.3 Erosion and Sediment Control	2.6 Machinery, Fuel Storage, Materials Handling and Storage, Spill Response and Remediation
2.7 Dust Suppression	2.9 Noise and Emissions
2.11 Wildlife and Species of Conservation Concern	2.12 Wildfires
2.13 Heritage Resources	2.14 Quarries and Borrow
2.15 Site Decommissioning	2.16 Revegetation and Vegetation Maintenance
2.17 Planned and Unplanned Shutdowns	

2.0 COMMUNICATION

Effective public education and communication about the Project is important to achieve success of the Project. The education and communication strategy for the construction and operation phases of the Project is intended to promote safety for all and to maintain an understanding among all identified rights-holders and stakeholders, and the public-at-large regarding all aspects of the Project, including quarry site selection, development, and operation.

Ongoing communications pertinent to quarry management will include information such as:

- Changes to access control points, timing of certain Project items, changes to exclusion areas due to blasting, etc.
- Specific to new quarries that may be developed for the Project, Manitoba Transportation and Infrastructure commits to working with stakeholders, the public and rights-holders to mitigate disruptions in areas for specific land and resource use and providing timely communication about Project activities, site selection for temporary works (camps and quarries), and about restrictions to activities that will be applied. Regular construction and construction activity updates will be provided to the EAC at regular frequency.

Locations of potential quarries have been identified on Figure 9.2A-15 in the Project EIS; a copy has been included in Appendix 1. This figure will be updated, as required, as design and construction progresses, and new information becomes available. Potential blasting areas will be included on the construction maps; however, more detailed blasting exclusion zones will be shown on a separate map, which will be distributed closer to the start of the construction period, should blasting be required. During the pre-construction period Manitoba Transportation and Infrastructure will maintain communication with rights-holders and local residents.

Information will be distributed through established public communication platforms, including but not limited to, Manitoba Transportation and Infrastructure's Project Website, monthly newsletters and other media used to enable effective and timely delivery to affected parties. Additionally, Manitoba Transportation and Infrastructure has developed a draft Complaint Resolution Process (CRP) intended to collect, respond to, and resolve any Project-related complaints. Specific inquiries and concerns about quarry operation and management also can be sought from Contact Persons identified the following section.

2.1 Contact Persons

Manitoba Transportation and Infrastructure, as the Project Owner, is responsible for managing the implementation, monitoring and amendments to the environmental aspects of the Project. The overall Project organization structure is outlined in Section 2.0 of both the CEMP and OEMP. The Owner will coordinate with the Contract Administrator, Inspector and Environmental Monitors, or designated alternates, who will monitor daily construction activities. These individuals will be supported by advice from a Manitoba Transportation and Infrastructure technical support team comprised of off-site environmental and design

personnel. The Owner will coordinate information sharing among on-site activities and off-site support teams.

Throughout the construction phase, Manitoba Transportation and Infrastructure, as the Project Owner, will be the main contact for communications between the Contractor and rights-holders and local residents. It will be responsible for maintaining regular communications. It will facilitate communication among the construction site staff and the local communities, including keeping leadership apprised of Project activities.

The Contractor is responsible for regular communication with the Manitoba Transportation and Infrastructure Inspector on construction activities, including overall construction schedule, identification of proposed quarries, and submission of Quarry Development Plans (QDP) and Quarry Decommissioning Plans. Prior to quarry development, and as required, Manitoba Transportation and Infrastructure, as the Project Owner, will provide rights-holders and members of the local communities with information about any Project activities and restrictions that will be put in place. Manitoba Transportation and Infrastructure, as the Owner, will work collaboratively on measures to address community concerns.

3.0 CONSTRUCTION

3.1 Quarry Identification and Selection Criteria

3.1.1 General

As indicated, efforts will be made to use existing permitted and licensed sources for materials, but the Contractor will comply with all applicable legislation, licenses, authorizations and permits with respect to aggregate exploration, quarry development and operations, should a new site need to be developed (Table 1). Quarry site selection, development and operation procedures outlined in this plan are to be read in conjunction with the PER (Table 1), as well as the CEMP, OEMP, and the Project EIS.

3.1.2 Site Selection

As indicated, aggregate for use in Project construction or maintenance shall, to the greatest extent possible, be sourced from existing sites, or from within the Project development area (PDA) and not be acquired from below the groundwater level. Existing sites that have been inactive and become active during the migratory bird breeding season (April 1- August 31) will be investigated for the presence of migratory bird nests (e.g., swallow colonies, common nighthawk nests) prior to quarry reactivation. Should existing aggregate sources be of insufficient quantities or inadequate material quality, development of additional sites shall, to the greatest extent possible, be limited to sites identified in the Project EIS and shown on Figure 9.2A-15 (Appendix 1).

Proposed quarries that are not currently active or identified in the Project EIS are subject to a site selection analysis to be approved by Manitoba Transportation and Infrastructure. The analysis will include a review of the Environmental Protection Plan (EPP) mapbooks and/or a separate biophysical review so that proposed quarry sites will not interfere with sensitive features such as:

- heritage resources and known cultural sites
- sensitive vegetation and wildlife habitat including for species at risk (e.g., red-headed woodpecker, eastern whip-poor-will)
- surface water, fish or fish habitat
- groundwater
- other sensitive sites (e.g., large stick nests, large mammal dens, mineral licks or other materials placed in the field that may attract wildlife)

Environmentally Sensitive Sites (ESSs), including those listed above, will be identified to the extent practicable prior to quarry development. If any additional ESSs are identified during the construction period they will be brought to the attention of the Monitor, Inspector, or Contract Administrator, to take appropriate mitigative action.

With respect to site selection, the following requirements shall apply:

1. No operator of a quarry may establish or mine a quarry closer than 400 metres (m) from a residence, unless the operator has established a vegetated berm or tree screen sufficient to shield the quarry from view from the residence.
2. Mining operations shall not encroach within 15 m of any property boundary adjoining private, municipal or crown-leased land.
3. With the exception of quarries that are contiguous with the road right-of-way, all quarry operations shall maintain a 50 m buffer from the proposed or actual road right-of-way. If no vegetated buffer or screen exists this distance shall be at least 150 m.
4. No quarry shall be established closer than 150 m from a Provincial Trunk Highway or Provincial Road unless the operator has established a vegetated berm or tree screen sufficient to shield the quarry from view from the road.
5. Habitat occupied by protected species shall be avoided as required, recognizing different species require different mitigative actions.
6. Quarry site selection shall consider the proximity of sensitive sites including, but not limited to, waterbodies, wildlife, heritage resources and culturally important sites. While setbacks vary depending on site conditions, selected quarry development sites are to be a minimum of:
 - a. 100 m from a water course or water body
 - b. 100 m from any large stick nest, eagle nest, heron rookery, or any other sensitive wildlife area
 - c. 30 m from heritage resources or identified cultural sites
 - d. other setbacks as required
7. Prior to development of a quarry site, it shall be assessed for the potential of acid rock generation. Sites found to contain acid generating rock shall not be developed.

3.2 Quarry Development Plan

Once a proposed quarry location has been approved for use or development, a QDP shall be produced by the selected Contractor. The QDP shall be submitted by the Contractor to the Contract Administrator for review and approval. The QDP may form part of the relevant permit or lease applications. The QDP shall describe the mobilization and demobilization of equipment, tools, materials, facilities and all things necessary for the work, including but not limited to site access, site work roads, site drainage, snow removal, clearing and grubbing, blasting, crushing and stockpiling of aggregate, environmental protection and mitigation measures, explosives storage and handling (including explosives residuals management plan), and general site cleanup and restoration.

The QDP shall include drawings diagrams or maps showing proposed site use or development limits, including the location of the initial extraction area, the progression of the extraction area, the location of sheds, offices, toilets and other temporary structures (including the explosives storage magazine), surface drainage areas and surface drainage control, stockpile areas, equipment maintenance areas, and other designated sites. The relationship between the planned quarry development, and site surface water and groundwater conditions shall also be addressed in the QDP, including items such as:

- Plans for the control of surface water inflow and runoff from the quarry site.
- The relationship between the planned quarry excavation geometry and the groundwater conditions at the site (i.e., the relationship between the invert of the quarry excavation and the groundwater conditions at the site).
- Surface water and groundwater management plans for unwatering/dewatering and associated discharge (if necessary).

The QDP is subject to approval by Manitoba Transportation and Infrastructure and may require revision(s) to meet relevant licenses, permit or lease conditions, specifications, or site-specific requirements.

3.3 Quarry Operation

Quarries shall be operated in accordance with all applicable licenses, approvals, permits and/or leases, the PER, and as per approved QDPs. The Contractor will not be permitted to commence any site work including mobilization, drilling activities or material extraction until the QDP is approved and the required permits are issued including but not limited to the following (as applicable):

- casual quarry permit or quarry lease (Manitoba Mines Branch)
- work permit (Manitoba Agriculture and Resource Development (MARD))

The Contractor will be responsible to acquire and maintain all relevant utility clearances prior to excavating in the proposed quarry development area.

The Contractor is to provide the Contract Administrator and the Owner at least eleven (11) working days (or as otherwise directed) advance notice of the location of the quarry operation. The notice is to include the QDP, and associated drawings of the working area including the location of the initial extraction area, the progression of the extraction area and the location of sheds, offices, toilets and other temporary structures, drainage and stockpile areas, equipment maintenance areas, and other designated sites. The suitability of the working area and commencement of works is to be subject to approval of the Owner.

The Contractor is to provide the Contract Administrator with at least six (6) working days (or as otherwise directed) advance notice of the intention to commence production of aggregates. The notice shall include: a preliminary schedule for work activities including establishment of access, clearing, relocation of equipment, establishment of water and wastewater services, appropriate systems to prevent accidental release of environmentally sensitive materials (e.g., fuels, oils, etc.), provisions for disposal of wastes, explosives management plan (including explosives residuals management plan), blasting plan(s), and commencement of crushing operation.

Where blasting is required, the Contractor is required to submit a blast plan (or series of blasting plans) to the Contract Administrator prior to preparatory work for each blast including such information as:

- The location, depth and area of the sinking cut.
- The blast sequencing, including location, depth, and area of each blast.
- Diameter, depth, pattern and inclination of blast holes for each blast.
- The type, strength, amount, column load, and distribution of explosives to be used per hole, per delay and per blast.
- The sequence and pattern of delays for each blast and the description and purposes of any special methods to be adopted.

Storage, transportation, and on-site handling of explosives (where required) will be in accordance with the *Explosives Act*. Storage of explosives (including magazine design and location) must be in a dry location away from flammable substances and sources of ignition and in a secure location to ensure that restricted access is limited to authorized personnel. During transport, explosives shall be appropriately labelled, packaged and an appropriate vehicle shall be used. Additional precautions pertaining to the transport, handling, and storage of explosives are detailed in the *Explosives Act*.

The quarry areas shall be maintained and left in a clean and orderly condition satisfactory to the Mines Inspector and/or Environment Officer. The explosives residuals management plan developed by the Contractor shall be adhered to throughout quarry development and operations.

The Contractor will amend the QDP to account for unexpected conditions or re-positioning of material and equipment, if required, but must do so with approval from the Contract Administrator and Owner.

3.4 Record Keeping and Reporting

In accordance with Section 25 of the *Manitoba Provincial Quarry Minerals Regulation, 1992 (65/92)* under *The Mine and Minerals Act (C.C.S.M. c.M162)*, the holder of a quarry shall provide the Mining Recorder with the following (as applicable):

- An annual statement of the total quantity of quarry mineral produced from the quarry.
- A royalty payment.
- A rehabilitation levy payment.
- The annual rent, no later than the 30th day following the anniversary date of the lease.

Only quarry minerals that are produced and removed from the quarry shall be included within the annual statement. Quarry mineral removed by the Contractor for a public purpose is exempt from payment of royalties where the public agency certifies in an exemption certificate prepared on a form furnished by the recorder that the quarry mineral has been used for a public purpose.

Pursuant to Schedule C of the Quarry Minerals Regulations, 1992 of *The Mines and Minerals Act*, a rehabilitation levy of 12¢ per tonne is required for production of aggregate quarry mineral (Note: Every operator of an aggregate quarry shall remit to the recorder a rehabilitation levy equal to the product of the number of tonnes of aggregate quarry mineral produced multiplied by 0.12). This only applies to quarry

minerals that are produced and removed from the quarry (the holder does not pay this fee as long as the quarry mineral remains stockpiled on the quarry).

Prior to the commencement of mining, a work permit shall be obtained from the local Natural Resource Officer and notice of the commencement date shall be given to the Mines Inspector. The Contractor shall maintain an accurate daily record of the quantity of material removed from the site and shall make this information available to the Owner, Contract Administrator, Inspector or designated alternate, and/or the Mines Inspector upon request. If the permit was applied for on the basis of a contract for Manitoba Transportation and Infrastructure, material can only be used for the purposes of that Project.

3.5 Quarry Decommissioning Plan

Quarries that are exhausted of material or are no longer required, as determined by Manitoba Transportation and Infrastructure, shall be decommissioned and remediated of any contamination, as required, and in accordance with applicable regulations prior to Contractor demobilization. The Contractor shall develop and submit a Quarry Decommissioning Plan to Manitoba Transportation and Infrastructure no less than 90 days prior to demobilization (or as otherwise directed).

The Quarry Decommissioning Plan shall adhere to applicable regulations and incorporate measures listed in the PERs, the CEMP, the OEMP, and commitments made in the Project EIS. The Quarry Decommissioning Plan shall at minimum describe all remedial measures to address:

- **Access removal** – Access roads, approaches, and temporary culverts will be removed or appropriately blocked as part of site restoration. If the public will be affected during the decommissioning of any temporary construction roads the Contractor will establish signage or flag persons to ensure the health and safety of workers and residents in the area. Any existing or constructed roads that are required as part of the Project that will be used during the operation and maintenance phases are not required to be decommissioned.
- **Sloping considerations** – Quarry sites are to be regraded, as necessary, to establish safe side slopes and restore natural drainage to the area.
- **Re-vegetation including spreading of organic material** - Closure of temporary construction work areas, including quarry areas, will typically consist of redistributing topsoil and other organic materials to encourage natural vegetation and regeneration. Re-seeding will occur, as required, following the Revegetation Management Plan developed for the Project. Should re-seeding be required, and when conditions permit, re-seeding should be completed following grading, capping and trimming operations. If conditions do not permit re-seeding immediately, the Contractor is responsible to re-seed the next growing season. Seeding operations should not be carried out during high wind events, snow cover, ice conditions or in standing water.
- **Remediation of contamination** - Areas with fuel storage or refueling, hazardous substance and/or explosives handling, or vehicle and/or heavy equipment parking will require environmental soil testing. Should soil concentrations result in exceedances above applicable criteria the area will be remediated in accordance with applicable regulations (i.e., below Canadian Council of Ministers of the Environment guidelines) prior to Contractor demobilization.

- **Excess material** – Surplus material may be left in stockpiles that are re-graded to establish safe slope angles. Alternatively, surplus material may be moved to alternate site locations for future use during operation and maintenance phases or spread evenly over disturbed areas prior to closure. Excess material shall be left in a manner that does not impede drainage.
- **Waste** – Waste management shall be conducted in accordance with requirements set out in the CEMP and OEMP. For example, non-hazardous debris, construction waste and solid waste is to be removed and disposed of at existing permitted waste disposal sites. Hazardous materials will be removed and handled by licensed contractors and in accordance with specific legislation.
- **Removal of temporary structures and equipment** - Buildings, outbuildings, above-ground storage tanks and associated infrastructure will be removed. Dismantling of buildings will include disconnecting services such as potable water, septic holding tanks, and removal of associated infrastructure. Dismantling electrical and telephone services including removal of overhead lines, poles and transformers.
- **Safety requirements** – Access restrictions to the quarry cut edge are to be included as required. Decommissioning activities will be in compliance with applicable safety and health regulations. Signage and flag persons at the site will be required as part of the decommissioning and reclamation activities if the activities pose a risk to the safety of local residents.
- Other requirements as listed in relevant legislation, regulations, licences, authorization, approvals permits and/or leases.

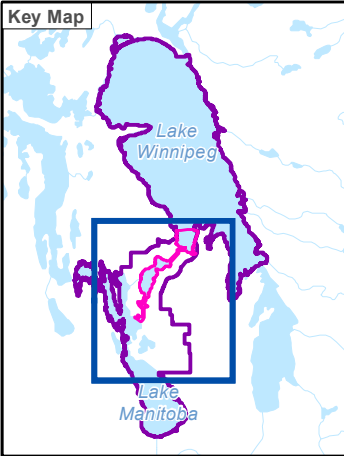
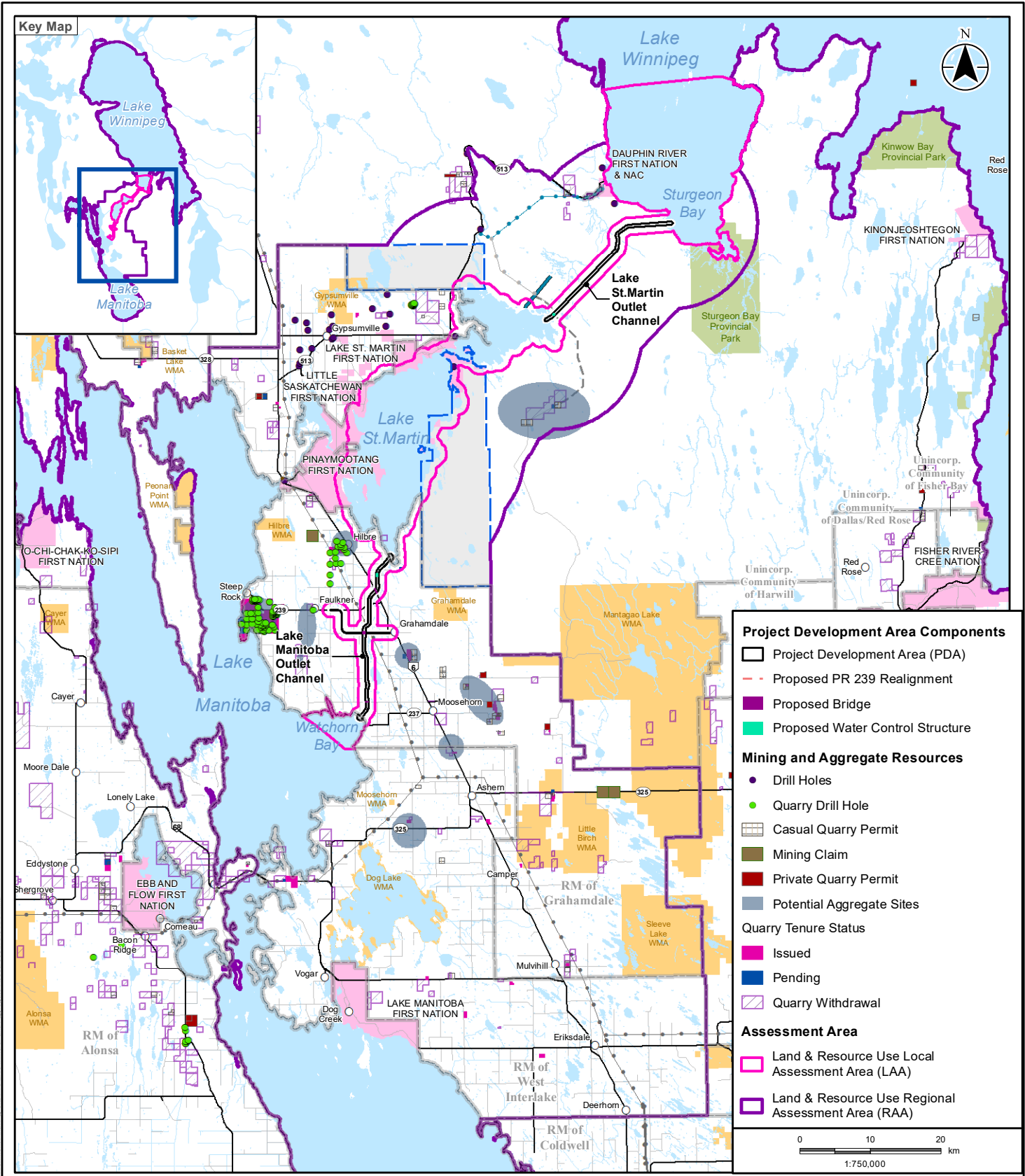
Rehabilitation of any quarry used during the operation phase of the Project will be required during or prior to decommissioning. Affected communities would be advised, and all applicable regulatory requirements would be met. The specific methodology would include and, where possible, build on the decommissioning procedures for temporary construction sites.

4.0 OPERATION

Some of the quarry areas developed during the construction phase (if any) may be retained by Manitoba Transportation and Infrastructure to support ongoing operation and maintenance of the Project. These quarries will be managed following the procedures outlined in Section 3.0. Likewise, if any new quarry sites are required in the future for any major maintenance or repair, these similarly would be sited, developed and managed in accordance with measures in Section 3.0.

APPENDIX 1

Project EIS Figure 9.2A-15 (March 2020)



Project Development Area Components

- Project Development Area (PDA)
- Proposed PR 239 Realignment
- Proposed Bridge
- Proposed Water Control Structure

Mining and Aggregate Resources

- Drill Holes
- Quarry Drill Hole
- Casual Quarry Permit
- Mining Claim
- Private Quarry Permit
- Potential Aggregate Sites

Quarry Tenure Status

- Issued
- Pending
- Quarry Withdrawal

Assessment Area

- Land & Resource Use Local Assessment Area (LAA)
- Land & Resource Use Regional Assessment Area (RAA)

0 10 20 km
1:750,000

Legend

- Fairford Water Control Structure
- Existing Distribution Line
- Rural Municipality
- Lake St. Martin Emergency Outlet Channel (Reach 1)
- Planned Distribution Line
- Northern Affairs Community (NAC)
- Lake St. Martin Access Road
- Provincial Highway (PTH/PR)
- First Nation
- Existing Transmission Line
- Municipal Road
- Wildlife Management Area
- Lake St. Martin Area Unorganized Territory
- Provincial Park

Notes

- Coordinate System: NAD 1983 UTM Zone 14N
- Data Sources: Governments of Manitoba and Canada, Manitoba Infrastructure
- Last Update: 8/23/2019 3:51:15 PM



MANITOBA TRANSPORTATION AND INFRASTRUCTURE
Lake Manitoba & Lake St. Martin Outlet Channels Project
Environmental Impact Statement

Mineral and Aggregate Resources in the RAA

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