Chapter 8:
Environmental Protection and Sustainable Development

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8.0 ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT

This chapter outlines the environmental protection measures that will be integrated during development of the Project 6 – All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation (the Project). The chapter describes mitigation plans and specifications that will be implemented throughout project design, construction planning, construction and operations and maintenance phases. Environmental protection measures are derived from Manitoba Infrastructure's (MI) corporate policies and environmental and industry standards and best practices and include such measures as design mitigation measures; environmental protection procedures; detailed construction and operational phase environmental management plans; contract specifications; health and safety protocols; and contractor plans. Collectively, these measures are incorporated into the Project's Environmental Management Plan (EMP) along with MI's commitment to sustainable development.

MI's Environmental Protection Procedures and Specifications, health and safety protocols, design mitigation measures and the contractor's emergency response plans are examples of the environmental protection tools and guidance that will be implemented for this Project.

Specific mitigation measures that will be applied to avoid or minimize potential adverse effects on environmental components, including measures to mitigate the effects of the environment on the Project and measures to mitigate accidents and malfunctions, are provided in **Chapter 6**. MI's commitments to environmental monitoring and follow-up are provided in **Chapter 9**.

8.1 MI's Environmental Commitment

MI's commitment to environmental protection reflects the corporate policies conveyed through the Vision, Mission, Values and Priorities statements (**Chapter 1**) and is outlined in the EMP. The EMP will address all phases of the project including:

- Project planning
- construction planning
- construction
- operations and maintenance (**Figure 8-1**)

8.2 Environmental Protection – Project Planning

The Project Environmental Management Plan Framework (EMP Framework, **Appendix 8-1**) describes the environmental protection processes and procedures that will be followed during construction and operation of the Project. The goal of the EMP Framework is to ensure that environmental protection

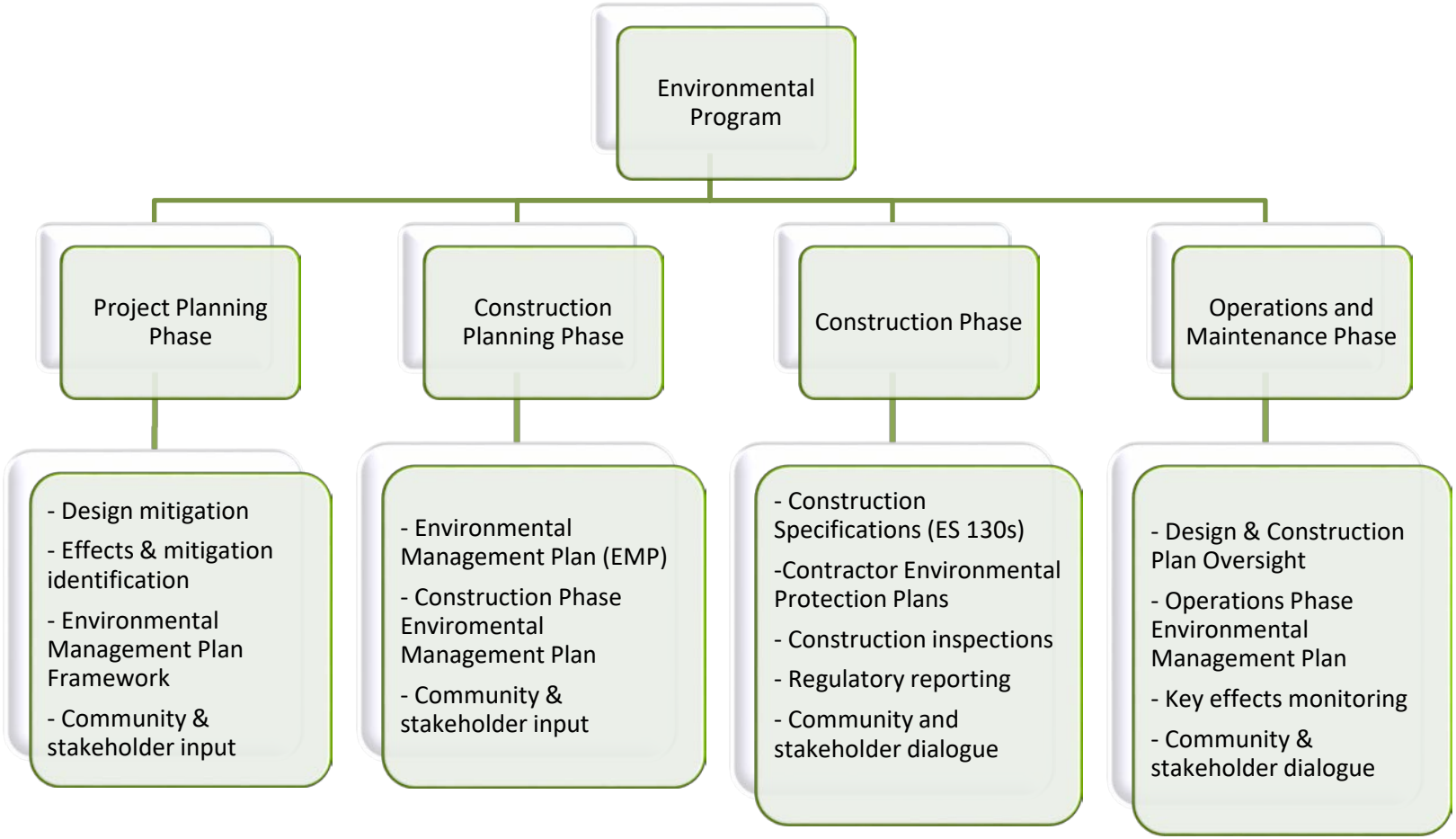

Figure 8-1: MI's environmental program across Project stages

measures are undertaken in a timely and effective manner. A hierarchy of environmental plans will be undertaken to achieve the Project's legislative requirements and environmental objectives.

- Subject-specific Environmental Protection Procedures (EPs) describe environmental protection measures for key environmental areas (**Appendix 8-2**). These are supplemented with Environmental Protection Specifications (ES 130s) that will be included in each construction contract (**Appendix 8-3**).
- Ongoing monitoring plans will assess the effects of construction on specific components of the environment. A strategic plan for wildlife monitoring and an Aquatic Environment Monitoring Plan will be developed in association with local liaison committees and appropriate federal and provincial departments to meet regulatory obligations.
- A Construction Phase Environmental Management Plan (CPEMP) will detail the environmental management measures described in the overall EMP that pertain to specific construction components (ex: a specific bridge or section of road). The CPEMP will be updated if measures change substantially. Construction contracts will include special provisions that reflect EPs, which will address individual construction works once design and construction plans are near completion.
- The Operations Phase Environmental Management Plan (OPEMP) will address operational and maintenance activities needed for the commissioned or operational portions of the all-season road. The OPEMP will be updated as new portions of the road are commissioned or otherwise made operational. This plan will include decommissioning activities such as winter road closure and reclamation. Maintenance contracts will include special provisions that reflect EPs and address individual maintenance areas.
- Inspection, Monitoring, Follow-up and Reporting plans will also be put into effect during construction, operation and maintenance phases.

Alternative plans and design will be continually evaluated as more information about the physical and environmental conditions pertaining to detailed design are gathered. During the detailed design phase environmental effects will be weighed with community input and engineering constraints.

8.2.1 Stakeholder Involvement and Design Mitigation

MI, as the overall project manager and owner, is responsible for implementing, monitoring and amending the environmental protection measures for the Project. MI engages local communities and the general public through its website and publications in print media such as Grassroots News. MI will engage the local communities to discuss various aspects of the Project through the Indigenous and Public Engagement Program (IPEP, **Chapter 5**). The program is able to be adapted to meet the needs and interests of each local community and includes engagement through:

- newsletters and local radio
- meetings with Chief and Council, other local representatives, land use coordinators and a local liaison committee, if requested by the community

- periodic community meetings

MI will participate in and/or initiate other committees as required, including local liaison committees. Technical committees will be established, as needed, to plan for and respond to the environmental management requirements of the Project.

Reporting will be conducted in order to provide regulatory authorities, Indigenous communities, stakeholders and general public with information as the project progresses. This will also afford opportunities for comments, suggestions and opinions on the Project to be provided in relation to the environment protection measures and monitoring programs. This will allow interested parties to provide feedback about the ongoing implementation of environmental protection measures and monitoring in order to continuously improve the environmental protection through adaptive management. The environmental management and communication structure for the Project is shown in **Figure 8-2**.

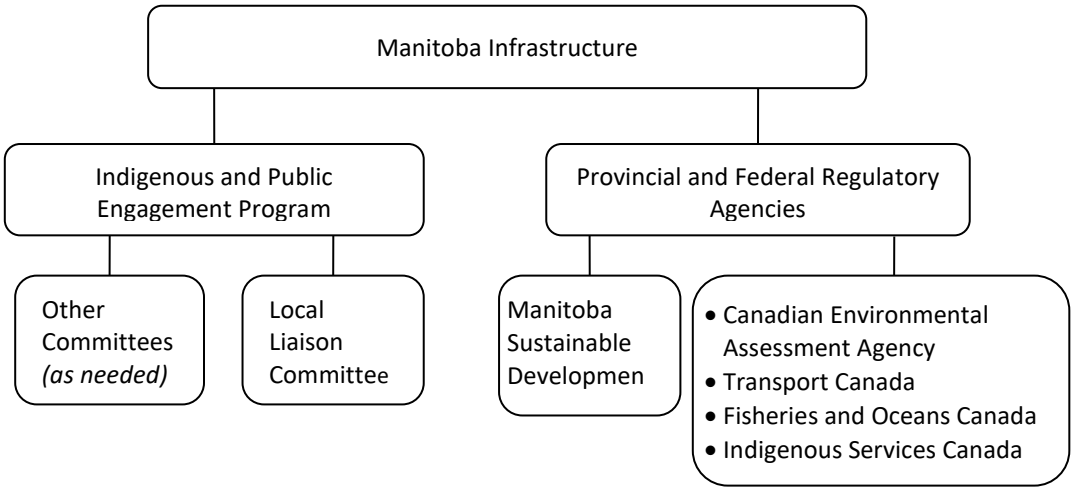

Figure 8-2: Environmental management and communication structure

Design mitigation involves modifying the design of a proposed project, before or during the environmental impact assessment stage, to mitigate potential adverse environmental effects prior to completion of the final project design and commencement of construction. At this current Planning Phase for the Project, design mitigation has been accomplished by various means including complying with legislation, adopting national and international design standards and codes, adhering to established design guidelines and best management practices and implementing mitigation measures identified from the Environmental Assessment (EA) process including:

- information from baseline studies
- input from the IPEP (**Chapter 5**)
- environmental effects identification, assessment and mitigation

A particularly important influence on the Project design mitigation has been Project-specific input received from elders, elected officials and members of local First Nations, as well as other indigenous communities and stakeholders during the Large Area Transportation Network Study (SNC-Lavalin *et al.* 2010a,b,c; 2011a,b). Receipt of local and traditional knowledge of environmentally and culturally sensitive areas allowed for the mitigation of potential adverse effects through a series of modifications to the proposed road corridor culminating in the selection of the preferred road alignment as proposed and assessed in this Environmental Impact Statement (EIS). The history of project route alternatives and mitigation incorporated into revised alignments is provided in **Chapter 2**. A summary of some of the design modifications that were incorporated into the current proposed alignment to mitigate potential adverse environmental and socio-economic effects identified through the IPEP is provided in **Table 8.1**. Additional design mitigation measures identified through the effects assessment (**Chapter 6**) will be incorporated into design requirements for the design engineer. MI will maintain responsibility for design oversight to monitor that these measures are implemented as planned.

Table 8.1: Design Mitigation Resulting from Community Feedback

Identified through Engagement	Design Mitigation	Resulting Benefit
Preference was expressed to more closely parallel existing winter roads.	Alignment from God's Lake First Nation shifted south and from Manto Sipi Cree Nation shifted north to follow portions of winter road.	Locating the road to more closely follow the winter road reduces potential for fragmentation and disturbance of the land.
Preference was expressed by God's Lake First Nation to move the route further away from Reserve land near the intersection and Hawkins Lake.	Alignment near intersection shifted northeast and near Hawkins Lake shifted to north away from the noted Reserve lands.	Adjusting alignment reduces potential to affect Reserve land and also a Manitoba Hydro transmission line right-of-way.
Manto Sipi Cree Nation indicated they wanted more information to select a preferred option for an 8 km section of alignment near their TLE parcel.	MI conducted a fly over of the four options with a Councillor to help select the best route with appropriate construction materials.	MI's preferred option reduces potential effects on the wetland environment and provides better terrain for road construction.
An Elder noted a portion of the proposed alignment crosses through his trapline. He was interested in how it may affect	MI has discussed the request with Chief and Council and is awaiting their approval to proceed with the alignment revision.	Adjusting the alignment will reduce the potential effect to an Elder's trapline.

A particularly important influence on the Project design mitigation has been input received from the local First Nations communities, other indigenous communities and stakeholders.

Identified through Engagement	Design Mitigation	Resulting Benefit
the trapline and whether the alignment could be revised.		
Potential effects on archaeological materials and low areas in proximity to God's Lake First Nation.	Realignments were made based on community input and because of archaeological and engineering concerns.	Realignments minimize potential adverse effects to archaeological resources; moving away from wet areas reduces potential effects on aquatic environment.
Consideration of safe crossing locations for trails and portages.	Approaches will be constructed to accommodate recreation vehicles crossing the alignment at intersections with key community use trails and enhance visibility.	Approaches will facilitate travel along established snowmobile/travel routes, which will preclude the need to cut additional/alternative trails.
Consideration of watercourse navigation and fish passage requirements.	Bridges will be designed with appropriate vertical clearance and will be clear-span, where possible, to avoid in-water piers. Culverts will be appropriately sized to allow for fish passage.	Appropriate bridge design will minimize potential for obstructing navigation and fish passage as well as reduced potential of adverse effects to instream fish habitat.
Desire to maintain access for traplines that the road passes through.	Traditional Knowledge studies were conducted to help avoid areas of concern such as hunting and trapping areas. MI will work with trappers so that their traps are not damaged by construction. If active traps are discovered, work will stop and the trapper will be notified. Access will be maintained to traplines and trails during construction and trail crossings will be designed to maintain trapper access and trails.	Traplines will be respected during clearing and construction. Trappers will likely have greater access to their traplines with the road in place.

MI is committed to considering community input relating to the EMP and will continue to involve the communities and stakeholders by meeting with local liaison committees for God's Lake First Nation, God's Lake Northern Affairs Community, Bunibonibee Cree Nation and Manto Sipi Cree Nation. The liaison committees will facilitate dialogue among the communities and MI to discuss project updates and solicit community feedback and collaboration on project related items.

8.3 Environmental Protection - Construction Planning

8.3.1 Environmental Management Plan

The EMP describes the management system that will be implemented to ensure compliance with federal and provincial requirements using an adaptive management approach to enable continuous improvement for monitoring, evaluation and adjustment, as required. The EMP reflects MI's Vision, Mission, Values and

Priorities statements (**Chapter 1**) and is modeled after the ISO 14001 Environmental Management System (**Figure 8-3**). The EMP provides the framework for the management of environmental components relative to the construction, maintenance and operation of the Project and requires development of the following plans and procedures:

- Environmental Protection Procedures
- Construction Phase Environmental Management Plans
- Environmental Inspection Plans
- Monitoring and Follow-up Plans

Figure 8-3: ISO 14001 environmental management system structure

8.3.2 Environmental Protection Procedures

MI has reviewed best management practices and standard procedures and approved the use of the EPs, previously developed for all-season road projects on the East Side of Lake Winnipeg that document the suite of possible environmental protection and mitigation measures. These procedures will be reviewed periodically and updated as required. MI will share updates to the EPs with the local liaison committees, Manitoba Sustainable Development (MSD) and the Canadian Environmental Assessment Agency (Agency), as required. The EPs are provided in **Appendix 8-2** and address the following environmental subjects:

- clearing and grubbing
- petroleum handling and storage
- spill response
- noise control
- materials handling and storage
- working within or near fish bearing waters
- stream crossings
- temporary stream diversions
- fish passage
- fish salvage
- culvert maintenance and replacement
- blasting near a watercourse
- heritage resources
- wildlife
- wildfires
- erosion and sediment control
- concrete washout management practices
- dust suppression procedures
- borrow pit decommissioning
- quarry site selection and requirements
- winter road closure and reclamation plan
- temporary site decommissioning
- mussel salvage
- water quality monitoring
- prevention of the transfer of invasive species

The EPs and monitoring requirements are further reflected in the ES 130s that will be included in the Project's construction contract tender packages. These will be supplemented with additional conditions specific to each construction contract.

8.4 Environmental Protection - Construction

Environmental protection will be incorporated into the construction phase through the CPEMP and a variety of contract specifications, special provisions and contractor submittals. The CPEMP will highlight specific protection measures to be applied during construction and updated by MI, as needed. The plan will be created in consultation with government departments that have jurisdiction over aspects of the Project and the local liaison committees. Once finalized, the plan will be forwarded to the MSD Environmental Approvals Branch and the Agency, if required. If major changes or additions to the CPEMP are required, they will be forwarded to MSD Environmental Approvals Branch and the Agency. The CPEMP will document items as follows.

- Commitments made to environmental protection and sustainable development by the parties responsible to implement the plans.
- Roles and responsibilities of each party in fulfilling that commitment.
- Planned construction activity and the potential environmental effects.

- Environmental protection measures that will be taken.
- Protocols regarding inspection and reactions to inspection findings.
- Emergency plans including training and awareness.
- Monitoring and follow-up to be undertaken.
- Documentation and reporting procedures.
- Auditing, management review, evaluation and adjustment procedures.

The responsibilities of various parties relating to environmental protection are noted below.

- Detailed design engineers (either MI staff or consultants under the direction of MI) are responsible for incorporating the appropriate environmental protection measures into the design of project components. Worksite specific environmental contract documents will be prepared by the detailed design engineers and added to MI's standard specifications.
- MI environmental coordinators will review best management practices and standard procedures available and provide input into environmental specifications developed by the detailed design engineers to meet environmental requirements.
- 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 (ex: in-water work plan).
- The MI project manager/site inspector will monitor construction contract and maintenance contract compliance with environmental specifications and legislated health and safety requirements.
- MI's environmental services staff will conduct a scheduled audit of the construction work being done.

8.4.1 Contract Specifications

Construction contract specifications detail the technical design as well as project-specific restrictions in how the work is to be completed. For the proposed Project, multiple contracts will be tendered for specific Project components (ex: road segment, bridge). Contract specifications will be tailored to the component-specific conditions. Each contract will include site-specific requirements for environmental protection. For example, bridge and stream crossing designs incorporate erosion and sediment controls to provide permanent protection for local watercourses.

The ES 130s that are included in MI construction contracts provide general environmental protection direction and requirements for environmental topics encountered for most road construction projects. ES 130s will be periodically updated to reflect evolving best practices and regulatory requirements. ES 130s relevant to the Project are provided in **Appendix 8-3** and include:

- record keeping
- inspections
- designated areas and access
- materials handling, storage and disposal
- spills, remediation and emergency response
- dust and particulate control
- noise and noise limitations
- planned and unplanned shutdowns
- staff training and awareness
- working within or near water
- erosion and sediment control
- clearing and grubbing
- heritage resources
- wildlife
- wildfires
- cement batch plant and concrete wash-out area

In addition to the implementation of the ES 130s in their construction activities, the contractor will be required to develop and implement a series of detailed environmental submittals specific to the contract (ex: Safety Data Sheets, copies of required approvals, clearances, permits, licences, certificates). Contractors will be required to develop operational safety policies, procedures and plans to prevent loss or injury to any person or property on or travelling through the worksite. Contractors and sub-contractors must be familiar with the terms of *The Workplace Safety and Health Act* and Regulations to ensure a complete understanding respecting their responsibilities. An example of a Safe Work Plan is included in **Appendix 8-4**. To assist the contractor with their environmental submittals outlined in the ES 130s, guidance materials will be provided upon contract award.

8.4.2 Contractor-Required Plans

MI's ES 130s outline the specific environmental protection plans that each construction contractor is responsible for providing. For consistency, MI will provide contractors with an environmental pre-construction guidance document and associated contractor reporting forms. Prior to construction, the contactor will be required to submit plans in accordance with the ES 130s for acceptance by the Contract Administrator. Some of the plans to be provided by the contractors are described in the following sub-sections.

8.4.2.1 Waste Management Plan

The contractor will be responsible for managing wastes associated with the construction contract. The plan describes the management of waste products and how they are collected, stored, transported and disposed of in accordance with provincial and federal legislation and guidelines. Wastes include solid non-hazardous waste, kitchen waste, liquid wastes (sewage and grey water) and hazardous wastes including contaminated soil. The Waste Management Plan will include procedures to check that the collection, storage, transportation and disposal of all wastes generated will be conducted in a safe, environmentally responsible and compliant manner. The plan will define roles and responsibilities to be undertaken by the various site contractors and project personnel and establish guidelines for storing and processing the wastes. The intent is to provide a high degree of control over the management of wastes thereby minimizing adverse environmental effects. The Waste Management Plan will also make appropriate

references to other environmental component management plans with regard to health and safety, hazardous materials management and emergency response.

8.4.2.2 Dust Control Plan

Fugitive dust will be generated during construction activities from operation of construction equipment and vehicles, blasting, rock quarrying and crushing, concrete batching, excavating, placing fill and grading. A Dust Control Plan may be required to establish procedures for the control of dust during Project construction.

8.4.2.3 Explosives and Blasting Management Plan

An Explosives and Blasting Management Plan for the Project will be prepared and submitted by applicable contractors after contract award for each segment of road tendered for construction and prior to initiation of blasting activities. The plan will outline best practices and regulatory requirements for the safe transportation, handling, storage and use of explosives. Storage facilities for explosives at quarry sites will meet the federal standards and licensing requirements as specified in the *Explosives Regulation* of the *Explosives Act* as well as provincial standards and licensing requirements as specified in the *Operation of Mines Regulation* of *The Workplace Safety and Health Act* of Manitoba. Blasting restriction "windows" for the protection of aquatic and terrestrial species described in **Chapter 6** will also be addressed in the plan.

8.4.2.4 Emergency Response Plan

An Emergency Response Plan will be developed by the contractor to provide procedures to be followed in the event of unanticipated emergency situations that may occur during construction of the Project. The Emergency Response Plan will adhere to regulatory requirements including provincial Workplace Safety and Health regulations.

The objective of the Emergency Response Plan is to provide procedures for the safety and protection of life, environment and property, identifying a predetermined course of actions and responsible personnel for emergency situations arising from incidents, release of hazardous/toxic substances, or other emergency situations during the construction phase of the Project. The Emergency Response Plan will be structured to provide clear and easily-accessible information and will define:

- roles and responsibilities of response personnel and organizations
- internal and external communication structure
- mandatory response actions and procedures to be executed
- reporting protocols to be followed
- follow-up actions to be taken

The Emergency Response Plan will cover various emergency response situations that are most likely to occur such as personal injury, fire, explosions and hazardous substance spills. The Emergency Response

Plan will be refined and finalized in preparation for construction and in consultation with communities and relevant regulatory authorities. The procedures in the plan may be revised during construction, as required.

8.5 Environmental Protection - Operations 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. Ongoing communications with local communities and all-season road users will advise them of routine and unscheduled maintenance activities or changes in operations. An OPEMP will be drafted to describe how long-term environmental protection will be maintained during operation of the Project. The OPEMP will address both maintenance and operational topics including the practices and procedures of the environmental mitigation programs. The OPEMP will document:

- commitments made to environmental protection and sustainable development
- roles and responsibilities of any party identified to fulfill that commitment
- environmental measures and mitigation programs
- monitoring and follow-up plans
- reporting
- auditing, management review, evaluation and adjustment procedures

8.6 Management Structure, Compliance and Reporting

MI is the owner of the Project and therefore may undertake all or part of contract administration responsibilities and, in doing so, may enlist the services of outside contract administrators, as needed. If outside contract administrators are required, the responsibilities of MI and others will be identified in the Contract Administrator Agreements and described in the CPEMP and OPEMP. The organizational structure for Manitoba Infrastructure is shown in **Figure 8-4**.

The work on the Project will be managed as follows:

- MI's Engineering & Operations Division (Region 1) - Road and equalization culvert works.
  - MI engineers typically complete road design, although work is sometimes tendered via competitive bidding process for large, complex works and to manage staff workloads.
  - MI tenders construction and maintenance work via competitive bidding process.
- MI's Water Management & Structures Division - Bridge and culverts crossing waterways.
  - MI engineers typically review bridge designs prepared by external consultants awarded contracts through an open, competitive bid tendering process.
  - MI tenders construction and maintenance work via competitive bidding process.

- MI Project Manager and inspectors will monitor the Project. The objectives of monitoring programs are to ensure compliance with construction contracts, environmental commitments, approvals and legislation and health and safety legislation. MI Environmental Services & Water Management & Structures environmental staff will serve as a quality control (service/product oriented) and assurance (process oriented) through audit function for environmental aspects. The MI health and safety group is responsible for the health and safety aspects.

Construction tenders for the Project will be issued using standard MI tendering practices. Competitive bids will be sought and tenders will be posted on MERX. Contracts will include a condition that a minimum percentage (typically a minimum 10%, based on local community capacity) of total contract bid price is to be delivered through Indigenous involvement and resources that includes:

- hiring equipment from companies in the Government of Canada's Aboriginal Business Directory
- labour from local communities
- purchasing of supplies sold or produced by firms in the Government of Canada's Aboriginal Business Directory

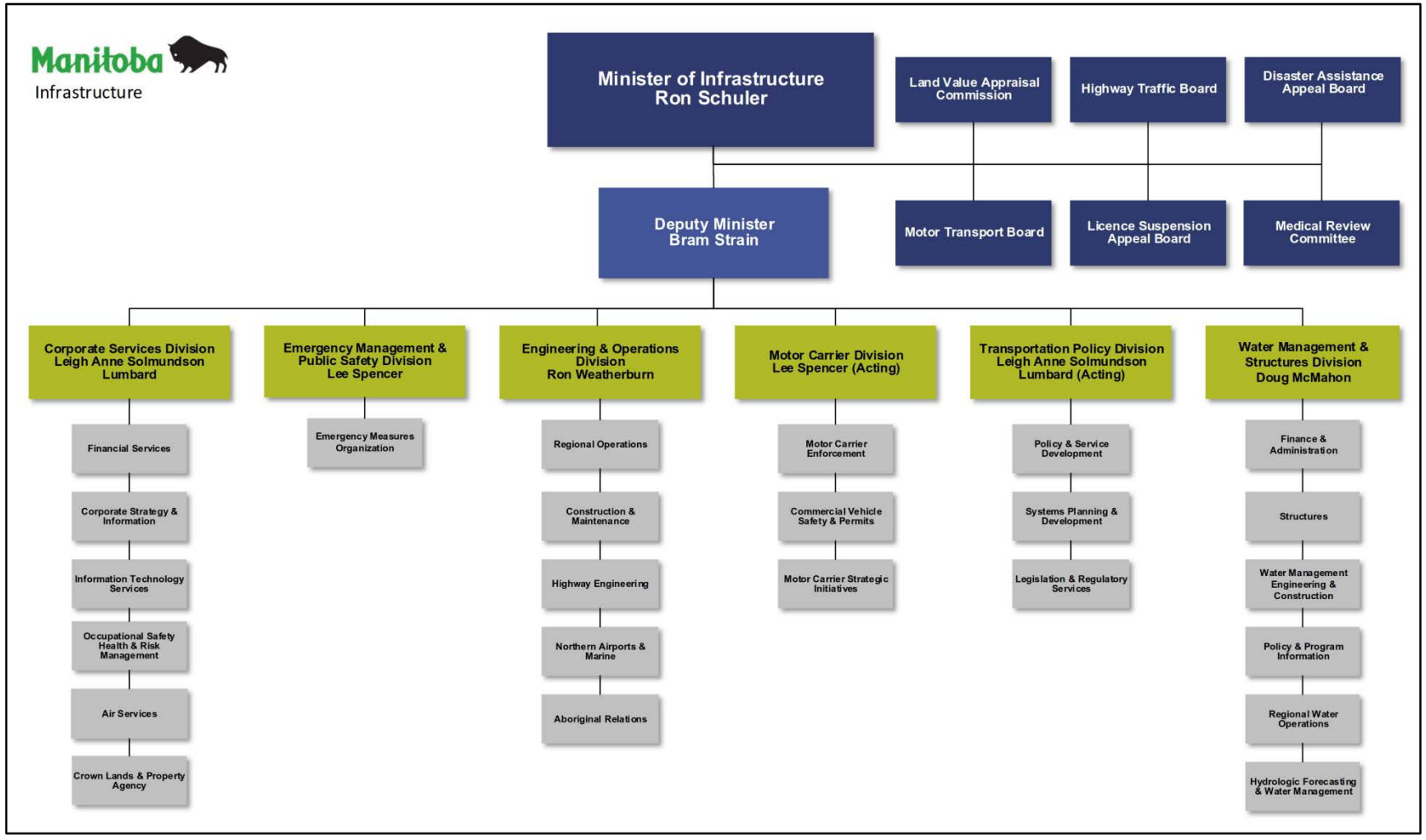

Figure 8-4: Manitoba Infrastructure organizational chart

8.6.1 Monitoring and Compliance

MI is committed to implementing the broad suite of project mitigation measures and monitoring activities as identified in this EIS. The environment component monitoring programs that have been or will be developed and associated plans, protection procedures and protection specifications are identified in **Table 8.2**.

Table 8.2: Environmental Components and Associated Protections

Component	Monitoring Plan and Environmental Protection Procedures and Specifications
Wildlife	▪ EP14 - Wildlife ▪ ES 130.19 - Wildlife ▪ Wildlife Monitoring Plan (to be developed prior to construction), may include moose, caribou, migratory bird and furbearers.
Aquatic Environment	▪ EP6 - Working Within or Near Fish Bearing Waters ▪ EP7 - Stream Crossings ▪ EP8 - Temporary Stream Diversions ▪ EP9 - Fish Passage ▪ EP10 - Fish Salvage ▪ EP11 - Culvert Maintenance and Replacement ▪ EP12 - Blasting Near a Watercourse ▪ EP16 - Erosion and Sediment Control ▪ EP23 - Mussel Salvage ▪ EP24 - Water Quality Monitoring ▪ EP25 - Prevention of the Transfer of Invasive Species ▪ ES 130.15 - Working within or Near Water ▪ Aquatic Environment Monitoring Plan (to be developed prior to construction), may include water quality, fish passage, fish habitat offsetting, bank stabilization.
Erosion and Sediment Control	▪ EP16 - Erosion and Sediment Control ▪ ES 130.16 - Erosion and Sediment Control
Dust Control	▪ EP18 - Dust Suppression Procedures ▪ ES 130.11 - Dust and Particulate Control
Waste Management	▪ EP5 - Material Handling and Storage ▪ EP17 - Concrete Washout Management Practices ▪ ES 130.7 - Inspections ▪ ES 130.9 - Materials Handling, Storage and Disposal
Hazardous Materials Management	▪ EP2 - Petroleum Handling and Storage ▪ EP3 - Spill Response ▪ EP5 - Material Handling and Storage ▪ ES 130.7 - Inspections ▪ ES 130.9 - Materials Handling, Storage and Disposal
Decommissioning of Temporary Construction Facilities and Borrow Pits	▪ EP22 - Temporary Site Decommissioning ▪ EP19 - Borrow Pit Decommissioning ▪ ES 130.7 - Inspections ▪ ES 130.8 - Designated Areas and Access ▪ Decommissioning Plans (to be provided in OPEMP).

Component	Monitoring Plan and Environmental Protection Procedures and Specifications
Emergency Response for Accidents and Spills	▪ EP3 - Spill Response ▪ ES 130.10 - Spills, Remediation and Emergency Response ▪ Emergency Response Plan for environmental accidents and spill (to be developed by Contractor).
Vegetation Restoration	▪ EP 21 - Winter Road Closure and Reclamation Plan ▪ EP 22 - Temporary Site Decommissioning ▪ ES 130.7 - Inspections ▪ Winter Road Closure and Reclamation Plan to be incorporated into OPEMP measures.

Site-specific monitoring will be conducted in conjunction with the overall monitoring programs where appropriate.

8.6.2 Schedule and Activity Tracking

Schedule and activity tracking will be conducted to ensure that planning, approvals, construction, studies, environmental submittal requirements and project commitments are anticipated and undertaken in a timely, efficient and effective manner. In view of the complexity and the number of individual actions required for successful completion of the Project, project management practices and support software will be utilized. Included in the program schedule will be critical environmental management events such as authorization submissions and reporting requirements.

MI, the detailed design engineers (either MI staff or consultants) and construction contractors will develop the schedule and determine tracking priorities. Scheduling will address submittals for permits, approvals and authorizations and reporting requirements. MI management and project managers will receive and review progress reports prepared by MI's project managers, construction inspectors, environmental unit staff and/or other consultants. Progress will be shared and discussed with local communities. The project management program will schedule and track administrative and environmental functions within the following guidelines.

- Standard project management tools such as the Critical Path Method will be used as the basis of developing the network logic for the project schedule.
- Engineers will develop pertinent schedule details of the engineering design and construction phases of the Project.
- MI's Indigenous liaison staff, environmental coordinators and project managers will develop the portion of the overall project schedule that contain third party input and approvals obtained by MI. This includes environmental submittals and authorizations, regulatory compliance reporting and submittals, land acquisition (if required), utility relocations, community and public engagement and consultation with Indigenous groups.

- Engagement, approvals, design and construction schedules will be interlinked referencing milestones for critical path items such as submission dates, permits, approvals and authorizations, monitoring and reporting and other constraints important to environmental management.
- Project managers will be kept aware of external constraints such as in-water work windows and requirements to conduct ceremonies prior to construction, to critical aspects such as tender and construction start dates that others may be responsible for, the delivery of which can have significant effects on the Project.

The project management program will be developed during final design and updated throughout the Project as construction timelines are dependent on annual funding allocations. Additional information regarding environmental monitoring and the management structure and reporting during all phases of project development is provided in **Chapter 9**.

8.6.3 Project Construction and Contractor Requirements

MI's inspectors and Contract Administrators oversee the construction activities of the tendered contracts and monitor for compliance with the construction specifications and regulatory requirements. The contractor is required to adhere to the ES 130s and site specific environmental protection measures covered under the special provisions found in their contract. Contractors will be responsible for the preparation and implementation of environmental protection plans, health and safety plans, emergency response plan, erosion and sediment control plans, hazardous materials management plans and the completion of and reporting on applicable monitoring programs. Post-construction monitoring will continue for the appropriate duration of the condition being monitored. The contractor will be required to submit monthly environmental report and incident reports.

The prime contractor will have several key personnel on their construction team who will have responsibilities for environmental protection and safety. These individuals will be responsible for:

- facilitating implementation of the environmental policy
- implementing required environmental protection plans and specifications
- planning for environmental protection during construction
- conducting environmental inspections during site construction activities
- implementing the emergency response and health and safety plans
- checking that environmental issues are resolved in a timely and sensitive manner

8.6.4 Reporting

MI will ensure reporting and communication activities are conducted in accordance with requirements in the Environment Act Licence, *Canadian Environmental Assessment Act* (CEAA), 2012 Decision Statement and other permits, authorizations and approvals. Regular contact will be made with the local Conservation Officer in Thompson and with MSD's North-Eastern Region Integrated Resource Management Team to keep them informed of MI activities relating to the Project. The established communication channels

formed as a part of the delivery of the IPEP will be used to exchange information and provide opportunities for interested parties to voice their opinions, comments and suggestions. Information will include:

- progress of the Project
- up-coming construction activities in local areas
- opportunities for community involvement and dates of community information meetings
- environmental monitoring plans
- wildlife monitoring activities
- measures to protect heritage resources
- records of actions taken to address environmental incidents such as accidents, spills, leaks and releases and the reporting and clean-up procedures used
- other items of special interest

8.6.4.1 Indigenous and Public Engagement Program

Indigenous and public engagement for all of the all-season road projects and activities on the east side of Lake Winnipeg is a fundamental component of the project planning process and is intended to engage multiple parties in all phases of project development. The former East Side Road Authority developed the IPEP to provide opportunities for ongoing involvement of and dialogue with Indigenous communities and local governments on the Project that MI will continue to manage. The IPEP consists of the following principal elements.

- **Meetings with Chiefs and Councils and Mayor and Councils** – MI will continue to meet with Chiefs and Councils from the east side First Nation communities and Northern Affairs Communities to update them on the status of the all-season road project.
- **East Side Community Meetings** – MI will continue to host community meetings, in collaboration with local Chiefs and Councils, to update local residents in all east side communities on the progress of the all-season road project.
- **Local Liaison Committees** – MI is committed to communicating with Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation and God's Lake Northern Affairs Community on the progress of the Project.
- **Meeting with Resource Users and Elders and other Stakeholders** – MI is committed to working with community members and other stakeholders, as requested or required, concerning issues of cultural and socio-economic significance.
- **Ongoing Communications** – MI will continue to maintain and update Manitoba Infrastructure's website (http://www.gov.mb.ca/mit/hpd/environment/index.html) to ensure that local residents and others have access to information on the all-season road projects. MI will also utilize community radio, newspapers, presentations and other media to communicate with residents on the east side of Lake Winnipeg. MI also maintains a telephone line (204-945-3660) for public inquiries related to the Project environmental licensing.

8.7 Commitment to Sustainable Development

Producing and improving strategies towards sustainable development is an important component of an EA. One of the nine purposes of CEAA 2012 is to encourage federal authorities to take actions that promote sustainable development in order to achieve or maintain a healthy environment and a healthy economy. Development of the Project is in itself essentially a move toward sustainable development for the region as it will provide economic benefits. Some offsetting of the overall greenhouse gas emissions associated with the project will occur as a result of long-term use of the road rather than alternate modes of transportation (planes/helicopters).

The East Side Transportation Initiative was developed to increase transportation opportunities for communities on the east side of Lake Winnipeg while recognizing the uniqueness of the region, the importance and abundance of natural resources in the area and the need for sustainable planning. The East Side Transportation Initiative evolved from the Government of Manitoba's commitment to support sustainable development through the creation of broad area plans for large areas of the province. Broad area planning is defined as integrated and coordinated planning based on the sustainability of the ecosystem. This type of planning process considers the environmental, social, health, cultural and economic needs of the public, local communities, First Nations and various stakeholders and interest groups in future land, resource and development decisions.

The Government of Manitoba made a commitment to support sustainable development in Manitoba in July 2000 when it accepted the Report of the Consultation on Sustainable Development Implementation (COSDI) (Government of Manitoba 1999). COSDI was a multi-stakeholder, consensus-based process commissioned in 1997 by the government of Manitoba to "*consider and make recommendations… on how Manitoba can best implement sustainable development principles and guidelines into decision-making, including environmental management, licensing, land-use planning, and regulatory processes*." A draft status report titled "Promises to Keep" was issued in 2004 that outlined the stakeholder engagement, particularly residents of the east side of Lake Winnipeg and the recommendations towards sustainable development in the region. *The Sustainable Development Act* defines the principles and guidelines of sustainable development. These principles and guidelines form the basis of a sustainability evaluation framework that can be used to describe and assess the sustainability of the Project. Actions taken by MI in relation to the principles and guidelines of sustainable development are provided in **Appendix 8-5**.

Examples of specific initiatives that will be undertaken to promote sustainable development as part of the proposed Project include the following.

- **Local Procurement** – provide opportunities for residents on the east side of Lake Winnipeg to benefit from the Project through a minimum 10% of a construction tender to be supplied from local content (ex: equipment, services, employment).

- **Project Engagement** – provide engagement opportunities for residents on the east side of Lake Winnipeg and other indigenous peoples to address environmental interests in the Project including the mitigation of potential effects on the environment.
- **Traditional Knowledge Studies** – Provide opportunities to learn about traditional ways and land and resource use in order to reduce effects on trappers, resource users and to protect cultural and heritage resource sites.
- **Re-vegetation Program** – Seed is purchased from commercial sources using MI's recommended native seed mixture.
- **Wildlife Monitoring – Trapper Program** – Involve east side trappers in data collection from their traplines to mitigate effects on wildlife, MI has undertaken a multi-year wildlife monitoring study that is providing valuable information on caribou, wolves, moose, furbearers, small animals and bird species.

CHAPTER 8 APPENDICES

Appendix 8-1:

Project 6 - All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation Environmental Management Plan Framework

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

Environmental Management Plan Framework

January 2018

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1 Introduction

The following introduction provides context for this Environmental Management Plan. As noted in the Table of Contents, the appendices will be developed once the proposed Project is approved and hence are not appended to this document. The exception is the Appendix C, Environmental Protection Procedures and Environmental Protection Specifications which are provided in Chapter 8.

1.1 Background

The Manitoba East Side Road Authority (ESRA) was formed by the *Manitoba East Side Road Authority Act* with a mandate to construct and maintain the east side road. In carrying out this mandate, ESRA was responsible for obtaining all necessary environmental approvals and for coordinating and supervising the construction of all-season road projects on the east side of Lake Winnipeg, including the proposed All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation (the Project). In 2017, *Manitoba East Side Road Authority Act* was repealed, ESRA projects were assumed by the government of Manitoba and ESRA's mandate was repatriated to Manitoba Infrastructure (MI). The Province of Manitoba is currently providing the sole source of funding for the Project.

An Environmental Assessment (EA) was prepared to meet the requirements of the *Manitoba Environment Act,* and the *Canadian Environmental Assessment Act, 2012.* The Project is a "Development" that requires a Licence pursuant to *The Environment Act* and is also a "Designated Project" that requires the Minister of Environment and Climate Change's approval (via Decision Statement) pursuant to the *Canadian Environmental Assessment Act, 2012.* The EA compares and describes the pre-development baseline conditions in relation to predicted conditions and identified environmental protection measures to minimize negative project effects.

This Environmental Management Plan describes the environmental management processes that will be followed during the construction and operation of the Project. The goal of the Environmental Management Plan is to ensure that the environmental protection measures committed to in the EA and the requirements of the Environment Act Licence and Decision Statement Conditions are undertaken in a timely and effective manner. The Environmental Management Plan describes the roles and responsibilities of the parties involved in implementing the Project. An adaptive management approach to enable continuous improvement is an integral principle of this Environmental Management Plan.

1.2 Project Overview – Project 6 All Season Road

The work to be completed consists of the construction and operation of an all-season road (ASR) linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation (Project 6).

Key activities include:

- clearing and grubbing of the all-season road Right of Way (ROW)
- construction of a new two lane all-season gravel road
- installation of erosion and sediment control measures
- construction of new crossings and bridges and installation of equalization culverts
- revegetation of disturbed areas
- decommissioning sections of the winter road made obsolete by the all-season road

- maintenance of the road, bridges and culverts

To the extent possible, the road layout and design will attempt to balance "cut and fill" quantities; however, additional fill and aggregate is known to be required from local quarries and borrow areas for Project construction. Additional auxiliary components of the project will include work camps, laydown areas, access roads and temporary crossings.

EA commitments and legislative requirements for the Project will be met and environmental objectives will be achieved through a hierarchy of environmental plans.

- The Project Environmental Management Plan provides an overall management framework to address potential environmental risks associated with the Project. The Environmental Management Plan describes the management system in terms of the why, what, how, who, and when of these plans.
- Subject-specific Environmental Protection Procedures (EPs) describe the suite of environmental protection measures for key individual environmental areas (Appendix C-Part A). These are supplemented with standard specifications, Environmental Protection Specifications (Appendix C-Part B), included in each construction contract.
- Monitoring plans assess the effects of construction on specific components of the environment (ex: wildlife and aquatic environment). A strategic plan for wildlife monitoring and an Aquatic Environment Monitoring Plan will be developed in concert with local liaison committees and appropriate federal and provincial departments to meet regulatory obligations.
- Construction Phase Environmental Management Plan (CPEMP) will detail individual environmental protection measures to be implemented during construction. The plan will reference the EPs and will be developed prior to the start of construction.
- Operation Phase Environmental Management Plan (OPEMP) will describe the long-term operation and maintenance procedures and environmental protection measures to be implemented after construction is completed and the road is fully operational for all-season use. The plan will reference the Environmental Protection Procedures and will be developed at a later date.

1.3 Environmental Oversight

The environmental management reporting and structure for the Project is shown below in **Figure 1**. MI, as the overall project manager and owner, is responsible for implementing, monitoring and amending the environmental aspects of the Project. MI will engage the local communities to discuss various aspects of the Project through the Indigenous and Public Engagement Program (IPEP). The program adapts to the needs and interests of each local community and includes regular engagement through:

- newsletters and local radio
- meetings with Chief and Council, and other local representatives, land use coordinators and local liaison committee where requested by the community
- periodic community meetings

In addition, MI engages the communities as well as the general public through its website, and publications in print media, such as Grassroots News.

MI will also participate on, and or initiate other committees as required, including local liaison committees. Technical committees will be established as needed to plan for and respond to various environmental management aspects of the Project.

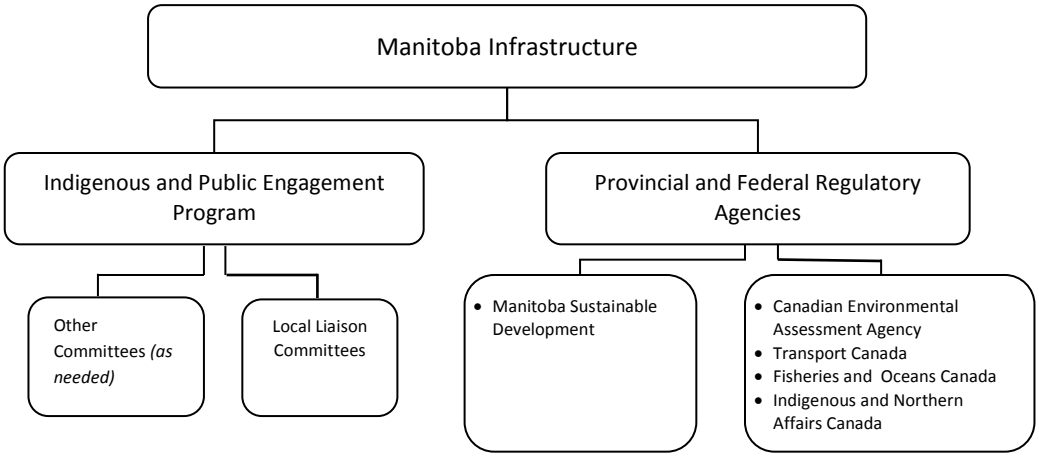

Figure 1: Environmental Management Reporting and Communication Structure for Project 6

1.4 Purpose and Structure of the Environmental Management Plan

1.4.1 Purpose

The purpose of the Environmental Management Plan is:

To describe the management system that will be implemented to ensure compliance with the federal and provincial requirements including the verification that environmental commitments are executed, monitored, evaluated for effectiveness, and that information is reported back to the project management for adjustment if required.

1.4.2 Structure and Elements of the Environmental Management Plan

The Environmental Management Plan is designed after the 5-step model for an environmental management system produced by the International Organization for Standardization (ISO) Standard 14001. These steps are outlined in **Figure 2**.

Figure 2. The 5 steps of ISO 14001

Environmental Policy

MI has recently developed new Vision, Mission, Values and Priorities statements (Appendix C). An Environmental Policy that is with consistent MI's strategic direction is currently being developed.

Planning and Implementation

Step 2 of the ISO 14001 model is to plan the subsequent steps, which are the implementation and monitoring activities. Section 2 of this Environmental Management Plan describes the activities that MI will undertake to comply with the environmental requirements for the Project. The Environmental Management Plan is a tool with which to confirm that these activities have occurred. The key elements of the Environmental Management Plan include:

- schedule and activity tracking
- Environmental Protection Procedures
- Environmental Inspection Plan
- Construction Phase Environmental Management Plan

- Operation Phase Environmental Management Plan
- monitoring and follow-up plans
- reporting
- any other conditions of the Licence and environmental approvals as appropriate

These elements form the main sections of this Environmental Management Plan. This Environmental Management Plan consists of a coordinated set of key points for each element of the Environmental Management Plan as follows:

- objective of the element
- how the objective will be achieved
- who has the roles and responsibilities for the element
- what action will be taken
- when key milestones will be reached

Management Review

The final step in the ISO14001 model is Management Review. The Environmental Management Plan embodies an adaptive management approach and allows for adjustments to the environmental protection activities as necessary, and for continuous improvement of the Project. MI acknowledges the need to monitor the residual effects of the Project and to evaluate the effectiveness of the environmental protection measures implemented. MI also acknowledges the possibility that adjustments to the mitigation measures may be indicated by the data collected respecting the predictions made or the success of the environmental protection measures implemented. Monitoring, reporting and management decision making are integral to the various levels and elements of environmental management planning. Section 2.8 describes the Management Review process.

1.5 Community and Stakeholder Involvement

The Environmental Management Plan is based on the public comments, concerns and issues that were expressed during community meetings, open houses, traditional knowledge (TK) studies and stakeholder meetings as documented in the Environmental Impact Statement (EIS). This Environmental Management Plan is also based on on-going involvement with the communities since the completion of the report.

MI will continue to involve the communities, stakeholders and the public by meeting with local liaison committees will be identified for Manto Sipi Cree Nation, Bunibonibee Cree Nation, God's Lake First Nation and God's Lake Northern Affairs Community to facilitate dialogue between the communities and MI to discuss Project updates and solicit community feedback and collaboration on Project related items. MI is committed to considering community input provided in regards to the Environmental Management Plan and its implementation.

2 Environmental Management Plan Elements

2.1 Schedule and Activity Tracking

2.1.1 Objective

To ensure that planning, approval, construction, studies, environmental submittal requirements and Project commitments are anticipated and undertaken in a timely, efficient and effective manner.

2.1.2 How

In view of the complexity and the number of individual actions required for successful completion of the Project, project management practices and support software will be utilized. Included in the program schedule will be critical environmental management events such as authorization submissions and reporting requirements.

2.1.3 Who

MI, the detailed design engineers (either MI staff or consultants) and construction contractors will develop the scheduling and tracking for projects. Included in this scheduling will be submittals for permits, approvals, and authorizations and reporting requirements. MI management and project managers will receive and review the Project progress reports prepared by MI's project managers, construction inspectors, environmental unit staff and/or other consultants. Progress will be shared and discussed with local communities.

2.1.4 What

The project management program will schedule and track administrative and environmental functions within the following guidelines:

- Standard project management tools such as the Critical Path Method (CPM) will be used as the basis of developing the network logic for the Project schedule.
- Engineers will develop pertinent schedule details of the engineering design and construction phases of the Project.
- MI's Indigenous Relations Officer, environmental coordinators and project managers will develop the portion of the overall project schedule that contain third party input and approvals that are obtained by MI, including environmental submittals and authorizations, regulatory compliance reporting and submittals, land acquisition, utility relocations, community and public engagement and consultation with Indigenous groups.
- Engagement, approvals, design and design and construction schedules will be interlinked referencing milestones for critical path items such as submission dates, permits, approvals and authorizations, monitoring and reporting and other constraints important to environmental management.
- Project managers will be kept aware of external constraints such as in-water work windows and requirements to conduct ceremonies prior to construction, to critical aspects such as tender and construction start dates that others may be responsible for, the delivery of which can have significant effects on the Project.

2.1.5 When

The project management system for the Project will be developed during final design and updated throughout the Project as construction timelines are dependent on annual funding allocations.

2.2 Environmental Protection Procedures (EPs)

2.2.1 Objective

To identify the suite of best management practices for the various activities of all project phases.

2.2.2 How

The EPs attached as Appendix C – Part A were developed through a review of best management practices and regulatory requirements. The EPs document the environmental measures to address key environmental issues. These procedures will be reviewed periodically and updated as required.

2.2.3 Who

MI has reviewed best management practices and standard procedures available and approved the use of the EPs, previously developed by ESRA in consultation with engineering design team and environmental consultants, for submission with this Environmental Management Plan. MI share updates with the local liaison committees, Manitoba Sustainable Development (MSD) and the Canadian Environmental Assessment Agency (Agency) as required.

2.2.4 What

EPs (Appendix C – Part A) were developed for all-season road projects on the East Side of Lake Winnipeg that document the suite of possible environmental protection and mitigation measures considered appropriate to address each of the following environmental subjects:

1. Clearing and grubbing
2. Petroleum handling and storage
3. Spill response
4. Noise control
5. Materials handling and storage
6. Working within or near fish bearing waters
7. Stream crossings
8. Temporary stream diversions
9. Fish passage
10. Fish salvage
11. Culvert maintenance and replacement
12. Blasting near a watercourse
13. Heritage resources
14. Wildlife
15. Wildfires
16. Erosion and sediment control
17. Concrete washout area management practices

18. Dust suppression practices
19. Borrow pit decommissioning
20. Quarry site selection and requirements
21. Winter road closure and reclamation plan
22. Temporary site decommissioning
23. Mussel salvage
24. Water quality monitoring
25. Prevention of the transfer of invasive species

EPs and monitoring are further documented in the Environmental Protection Specifications (Appendix C – Part B) that will be included in all construction contract tender packages. These are supplemented with additional special conditions specifications to each construction contract.

2.2.5 When

The EPs are reviewed and revised annually. Major changes or additions will be forwarded to local communities, MSD and the Agency once finalized.

2.3 Construction Phase Environmental Management Plan (CPEMP)

2.3.1 Objective

To describe how environmental protection will be maintained during the construction of each element and component of the Project.

2.3.2 How

The CPEMP will detail the environmental management measures described in the overall Environmental Management Plan that pertain to specific construction components (ex: a specific bridge or section of road). The CPEMP will be updated if measures change significantly. Construction contracts will include special provisions that reflect EPs, which will address individual construction works once design and construction plans are near finalization.

2.3.3 Who

MI will prepare, maintain and submit CPEMP documents and updates to the local liaison committees for review and feedback prior to finalization, and once finalized, the documents will be submitted to MSD Approvals Branch, the Agency and local communities as required. When necessary, detailed design engineers or environmental consultants will be consulted on the CPEMP.

- Detailed design engineers (either MI staff or consultants under the direction of MI) are responsible for incorporating the appropriate environmental protection measures into the design of Project components. Work site specific environmental contract documents will be prepared by the detailed design engineers and added to MI's standard specifications.
- MI environmental coordinators will review the best management practices and standard procedures available as presented in the environmental specifications developed by the detailed design engineers.

- The contractor will be responsible for implementing the environmental protection measures specified in the contract documents and providing specific plans to MI for MI's approval detailing how the contractor will meet specifications (ex: in-water work plan).

2.3.4 What

The CPEMP will document:

- Commitments made to environmental protection and sustainable development by the parties responsible to implement the plans.
- Roles and responsibilities of each party in fulfilling that commitment.
- Planned construction activity and the potential environmental effects.
- Environmental protection measures that will be taken.
- Protocols regarding inspection and reactions to inspections findings.
- Emergency plans including training and awareness.
- Monitoring and follow-up to be undertaken.
- Documentation and reporting procedures.
- Auditing, management review, evaluation and adjustment procedures.

2.3.5 When

The CPEMP will be produced to highlight specific protection measures that will be applied during construction and updated by MI as needed, in consultation with other government departments that have jurisdiction over aspects of the Project and the local liaison committees. Once finalized, the draft will be forwarded to MSD Approvals Branch and the Agency if required. Major changes or additions to the CPEMP will be forwarded to MSD Approvals Branch and the Agency once finalized, if required.

2.4 Operation Phase Environmental Management Plan (OPEMP)

2.4.1 Objective

To describe how environmental protection will be maintained during the on-going active operation of the Project.

2.4.2 How

The OPEMP is the long-term action plan that will address maintenance and other operational activities needed for the commissioned or operational portions of the all-season road. The OPEMP will be updated as new portions of the road are commissioned or otherwise made operational. This plan will include decommissioning activities such as winter road closure and reclamation. Maintenance contracts will include special provisions that reflect EPs and address individual maintenance areas.

2.4.3 Who

MI is responsible for the operation of the all-season road after construction of the Project has been completed. The OPEMP will be produced and updated by MI as needed, in consultation with other government departments that have jurisdiction over aspects of the Project. The draft plan and updates

will be circulated to the local liaison committees for review and feedback prior to finalization and once finalized, it will be forwarded to MSD and the Agency if required.

2.4.4 What

The OPEMP will involve both maintenance and operational aspects including the practices and procedures of the environmental mitigation programs. The OPEMP will document the:

- Commitments made to environmental protection and sustainable development.
- Roles and responsibilities of any party identified to fulfill that commitment.
- Environmental measures and mitigation programs that will be taken.
- Monitoring and follow-up plans.
- Reporting.
- Auditing, management review, evaluation, and adjustment procedures.

2.4.5 When:

The OPEMP will be submitted and/or updated at the time of commissioning of various components of the project.

2.5 Environmental Inspection Program

2.5.1 Objective

To describe how MI will ensure appropriate field inspection during construction activities of the Project. The purpose of inspection activities is to ensure environmental performance is met in terms of contract requirements and environmental permit, licence, and approval requirements.

2.5.2 How

MI is the owner of the Project and therefore may undertake all or part of contract administration responsibilities and in doing so may contract outside contract administrators as needed to provide technical expertise or to better manage MI staff workloads. If outside contract administrators are required, MI and the contract administrators' inspection responsibilities will be identified in the Contract Administrator Agreements and described in the CPEMP.

Regular inspections of construction, operation and maintenance components and activities will be documented in the contractor's monthly environmental reports and MI Inspection Reports. Results from the inspection program will be reported to MI senior leadership, local liaison committees, Indigenous communities, other stakeholders and federal and provincial authorities as appropriate.

2.5.3 Who

Environmental inspection and reporting will be undertaken by staff from MI, a contract administrator external to MI, if employed, and contractors as further described below.

2.5.3.1 Manitoba Infrastructure

MI staff will assume general contract administration duties if an external contract administrator is not employed.

The environmental inspections team will consist of environmental coordinators and or site inspectors with environmental inspection experience, led by a senior environment coordinator with experience in managing an environmental field inspection unit and administering contract documents. The senior environmental coordinator will report to the manager of the Environmental Services Section of MI's Highway Planning and Design group. The composition of the MI environmental inspection team will be reviewed and evaluated at least annually. Additional staff or staff with a specific expertise will be engaged as determined necessary.

A member of the environmental inspections team will be on-site to conduct inspections regularly and during higher risk activities, and will communicate the results of their inspections to MI's project manager. MI's project manager will be on the work site regularly and a construction inspector will be on site continually while work is being undertaken. MI environmental coordinators will maintain regular contact with the site inspectors and project manager in order to evaluate environmental conditions on site.

2.5.3.2 Contract Administrator

The contract administrator, if employed, will have a site engineer or inspector on the work site at all times work is being undertaken and will administer the construction contract. The administrator's environmental inspector will be on site on a regular basis but not at all times.

2.5.3.3 Contractor

The contractor shall have staff, trained and certified in the handling of dangerous goods, present on-site whenever said dangerous goods are being utilized for the performance of the work.

2.5.4 What

The environmental inspection program activities are summarized in sub-sections below.

2.5.4.1 Manitoba Infrastructure

MI inspectors will examine the site to ensure that the site is managed in accordance with the environmental protection requirements outlined in the contract documents. These requirements will be referenced in the CPEMP. The inspectors will ensure that the construction and installation of environmental protection measures, such as silt fences and materials handling facilities, are in accordance with the contract document, which reference environmental approvals.

The inspectors will focus on the maintenance of environmental protection measures employed and on the adequacy of the measures to achieve the required level of environmental protection. A standardized inspection form will be used to maintain a documented record of the site conditions. A copy of the environmental inspection form template is included in Appendix D. MI inspectors will bring environmental concerns to the attention of MI's project manager or contract administrator. The Project Manager or Contract Administrator will have the authority to issue a stop work order and/or to

order additional environmental protection measures deemed necessary to ensure environmental protection.

2.5.4.2 Contract Administrator

If a contract administrator is employed, a Contract Administration Agreement will be created to identify the contract administrator's inspection responsibilities. The contract administrator will ensure that the environmental protection measures are constructed, implemented and maintained (ex: silt fences and sediment barriers are maintained and cleaned) in accordance with the contract documents. The contract administrator will have the authority to issue a stop work order and to order additional environmental protection measures deemed necessary to ensure environmental protection.

2.5.4.3 Contractor

The contractor's inspection responsibilities are prescribed by the contract documents (Environmental Protection Specifications, EPs) and outlined in the CPEMP and OPEMP. Inspections will include fuel storage containers, tank vehicles, dangerous goods and hazardous waste storage facilities / sites for releases of fuel, dangerous goods or hazardous waste, sediment and erosion controls, clearing and grubbing debris, clean-up and litter controls. The contractor will be required to submit monthly environmental report and incident reports. Copies of the contractor's monthly environmental form template and incident form template are included in Appendix D.

2.5.5 When

Construction inspections will commence with the start of construction and be conducted as described in the CPEMP. Post-construction monitoring will continue for various durations appropriate to the condition being monitored.

2.6 Monitoring and Follow-up Plans

2.6.1 Objectives

Monitoring activities are designed to:

- Verify environmental effects predictions made during the engineering design and environmental assessment of the Project.
- Provide data with which to evaluate the effectiveness of mitigation measures undertaken.
- Provide data with which to implement adaptive management measures for improving future environmental protection activities.
- Document additional measures of adaptive measures to improve future environmental protection activities.
- Document compliance with required conditions as stipulated in regulator permits, authorization and MI guidance documents.

2.6.2 How

Monitoring components are included in MI contracts through Environmental Protection Specifications (Appendix C – Part B) and the Environmental Protection Procedures (EPs) (Appendix C – Part A).

Contractors will be responsible for the preparation and implementation of environmental protection plans, health and safety plans, emergency response plan, erosion and sediment control plans, hazardous materials management plans and the completion of and reporting on applicable monitoring programs.

MI will engage in-house environmental staff and specialized environmental consultants to draft specific environmental monitoring plans (ex: aquatic environment, wildlife) and conduct monitoring of specific components of the environment as required with assistance from local indigenous people. These plans will be developed to meet regulatory obligations and shared with community liaison committees and appropriate federal and provincial authorities for their review and comment. Additional monitoring or adjustments to the plans will be made in consideration of the responses received.

Results from the monitoring and follow-up programs will be provided as appropriate to community liaison and advisory committees, stakeholders, Indigenous communities, and federal and provincial authorities. MI and its consultants will consider the results from the monitoring and follow-up programs and input received from community liaison committees, regulators and others in its review of the status of the environmental protection activities on an on-going basis, and amend programs as necessary. If the monitoring programs identify any unforeseen environmental effects or the environmental protection measures are not performing as intended, the Manager of Environmental Services will bring such occurrences to the attention of the MI senior leadership and recommend amendments. As the proponent/owner of the Project, MI will make final decisions on adjustments to environmental activities.

The adaptive management approach will be followed whereby lessons learned and improvements identified during the inspection, monitoring and follow-up programs will be applied to continually improve subsequent environmental protection activities. MI will also monitor the application of action plans and emergency response procedures for environmental protection and human health and safety.

2.6.3 Who

Contractors will be responsible for completion and reporting of applicable construction contract related monitoring programs.

MI staff will administer specific environmental monitoring plan activities including arranging and managing contracts with specialized environmental consultants. MI will also manage the IPEP through which interested parties will be provided the information and opportunities to comment on the data. As the Project proponent, MI will be responsible for implementing and reporting on this program throughout the construction and operation and maintenance phases of the Project and MI will make final decisions on adjustments to environmental activities. Monitoring reports will be submitted to appropriate federal and provincial departments to meet regulatory obligations.

The specialized environmental consultants will undertake monitoring and follow-up programs in their respective fields of expertise.

On a selective basis, MI will solicit input and feedback from local liaison committees, stakeholders and regulators on its environmental protection measures and monitoring programs.

2.6.4 What

MI is committed to implementing a broad suite of project mitigation measures and monitoring activities as identified in the EIS. The broad project component or environment component monitoring programs that have been or will be developed and associated plans, protection procedures and general contract requirements are identified in **Table 1**.

Table 2: Environmental Components for Project 6

Component	Monitoring Plan, Environmental Protection Procedures and General Contract Requirements
Wildlife	Appendix C (Part A and B): • *EP 14 - Wildlife* • *Environmental Protection Specification 130.19* Appendix E: Wildlife Monitoring Plan *May include moose, caribou, migratory bird and furbearers*
Aquatic Environment	Appendix C (Part A and B): • *EP 6 - Working Within or Near Fish Bearing Waters* • *EP 7 - Stream Crossings* • *EP 8 - Temporary Stream Diversions* • *EP 9 - Fish Passage* • *EP 10 - Fish Salvage* • *EP 11 - Culvert Maintenance and Replacement* • *EP 12 - Blasting Near a Watercourse* • *EP 16 - Erosion and Sediment Control* • *EP 23 - Mussel Salvage* • *EP 24 - Water Quality Monitoring* • *EP 25 - Prevention of the Transfer of Invasive Species* • *Environmental Protection Specification 130.15* Appendix E: Aquatic Environment Monitoring Plan *May include water quality, fish passage, fish habitat compensation, bank stabilization*
Erosion and Sediment Control	Appendix C (Part A and B): • *EP 16 - Erosion and Sediment Control* *Environmental Specification 130.16*
Dust Control	Appendix C (Part A and B): • *EP 18 - Dust Suppression Procedures* *Environmental Protection Specification* 130.11
Waste Management	Appendix C (Part A and B): • *EP 5 - Material Handling and Storage* *Environmental Protection Specification* 130.9
Hazardous Materials Management	Appendix C (Part A and B): • *EP 2 – Petroleum Handling and Storage* • *EP 3 - Spill Response* • *EP 5 - Material Handling and Storage* *Environmental Protection Specification* 130.9
Decommissioning of Temporary Construction Facilities and Borrow Pits	Appendix C (Part A and B): • *EP 17 – Temporary Site Decommissioning* • *EP 19 - Borrow Pit Decommissioning* • *Environmental Protection Specification 130.8* Decommissioning Plans to be provided in OPEMP

Emergency Response for Accidents and Spills	Appendix C (Part A and B): • *EP 3 - Spill Response* • *Environmental Protection Specification 130.10* Emergency Response Plan for environmental accidents and spill to be developed by Contractor
Vegetation Restoration	Appendix C (Part A) • *EP22 – Temporary Site Decommissioning* Winter Road Reclamation Plans to be incorporated into OPEMP measures

Site-specific monitoring will be done in conjunction with the overall monitoring programs where appropriate. Procedures for identifying and tracking issues are discussed in Section 2.1 of this Environmental Management Plan. MI is the project proponent and is responsible for managing the Project.

2.6.5 When

Baseline monitoring began during the EA phase of the Project. Construction monitoring will be conducted routinely to determine the success of the mitigation measures implemented and to identify any unpredictable effects. Post-construction monitoring will continue for various durations appropriate to the condition being monitored.

2.7 Reporting

2.7.1 Objective

The objective is to provide regulatory authorities, local Indigenous communities, stakeholders and the general public with timely and accurate information.

The objective is also to provide regulatory authorities, local Indigenous communities, stakeholders, and general public with opportunities to provide comments, suggestions, and opinions on the Project, the environment protection measures and the monitoring programs.

2.7.2 How

A component is to report to the interested parties and to consider feedback in the on-going implementation of the environmental protection measures including the monitoring and adaptive management to continuously improve the environmental protection provided.

2.7.2.1 Indigenous and Public Engagement Program

ESRA developed an IPEP to provide opportunities for on-going involvement of and dialogue with Indigenous communities and local governments on the Project that MI will continue to manage. The IPEP consists of the following principal elements:

- **Meetings with Chiefs and Councils and Mayor and Councils** – MI will continue to meet with Chiefs and Councils from the east side First Nation communities and Northern Affairs Communities to update them on the status of the all-season road project;
- **East Side Community Meetings** – MI will continue to host community meetings, in collaboration with local Chiefs and Councils, to update local residents in all east side communities on the progress of the all-season road project;

- **Local Liaison Committees** – MI is committed to communicating with Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation and God's Lake Northern Affairs Community on the progress of the Project;
- **Meeting with Resource Users and Elders and other Stakeholders**– MI is committed to working with community members and other stakeholders as requested or required concerning issues of cultural and socio-economic significance; and
- **On-going Communications –** MI will continue to maintain and update Manitoba Infrastructure's website (http://www.gov.mb.ca/mit/hpd/environment/index.html) to ensure that local residents and others have access to information on the all-season road projects. MI will also utilize community radio, newspapers, public presentations and other media to communicate with residents on the east side of Lake Winnipeg. MI also maintains a telephone line (204-945-3660) for public inquiries related to Project 6 environmental licencing.

2.7.2.2 Regulatory Involvement

Regulatory involvement will occur through reporting requirements of the Environment Act Licence and CEAA 2012 Decision Statement Conditions that are received for the Project as well as those identified in other permits, authorizations, approvals. Regular contact will be made with the local Conservation Officer in Thompson and with the MSD's North-Eastern Region Integrated Resource Management Team to keep them informed of MI activities as it pertains to the Project.

2.7.3 Who

MI will ensure reporting and communication activities are conducted in accordance with requirements in the Licence, Decision Statement, other permits, authorizations and approvals, and through the established communication channels formed as a part of the delivery of the IPEP.

2.7.4 What

The major elements of the IPEP are to exchange information and provide opportunities for interested parties to voice their opinions, comments and suggestions. Information will include:

- progress of the Project
- up-coming construction activities in local areas
- opportunities for community involvement and dates of community information meetings
- environmental monitoring plans
- wildlife monitoring activities
- measures to protect heritage and archaeological resources
- records of actions taken to address environmental incidents such as accidents, spills, leaks, and releases, the reporting and clean-up procedures used
- other items of interest

2.7.5 When

The requirements for reporting to the communities and public will vary with the program and regulatory requirements.

Reporting to regulatory authorities will occur as required by permit, authorization or approvals or as otherwise requested.

2.8 Management Review

2.8.1 Objective

To maintain continuous improvement by reviewing the adequacy, suitability and effectiveness of the environmental management practices associated with the Project.

2.8.2 How

As described above, the monitoring and follow-up programs will report results to the MI's project managers, senior environmental coordinator and environmental services manager who can implement corrective action as necessary be shared with local liaison committees for review and comments and reported to the regulators as appropriate.

MI management will also periodically review the environmental management system at a strategic level to ensure its continuing suitability, adequacy and effectiveness. The review includes assessment of opportunities for improvement and the need for changes, including to overall environmental policy and objectives.

2.8.3 Who

MI management review will occur on two levels. On an on-going basis, the division managers, project managers, and the senior environmental coordinator will have the detailed information with which to make recommendations as the Project proceeds. The senior environmental coordinator and project managers, with input from division managers, will action measures to enact environment protection as outlined in this plan.

On a strategic level, the MI management has the authority to make decisions about the environmental protection practices and to take action, including through allocation of resources.

2.8.4 What

The senior environmental coordinator will review detailed reported results of the monitoring and follow-up activities. The review will include consideration of effectiveness of mitigation measures and accuracy of prediction of environmental effects as the construction activities proceed, with a view to adapting mitigation to further minimize adverse effects, or to improving prediction of effects, as the all-season road network on the east side proceeds. Results will be shared with MI management, division managers and staff.

Management review will consider needs for changes to policy, objectives and other elements of the Environmental Management Plan, in the light of reported results and recommendations arising from the monitoring and follow-up activities, and considering any changing circumstances and opportunities for continual improvement. Management will review the various elements of the Environmental Management Plan, the strategic approaches and resource allocations, and the environmental practices undertaken. Changes to elements of the Environmental Management Plan will be communicated to MSD and the Agency as an amendment to this document or its appendices.

2.8.5 When

MI management meets regularly to monitor on-going progress as the Project proceeds. Systems are in place to record decisions.

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Appendix 8-2:
Environmental Protection Procedures

Environmental Protection Procedures

Table of Contents

ENVIRONMENTAL PROTECTION PROCEDURES 1

CLEARING AND GRUBBING

March 2018 Revision

1.0 Description

.1 The clearing and grubbing of vegetation shall be undertaken as instructed by the Manitoba Infrastructure – Remote Road Operations to accommodate for various activities, including geotechnical investigation, construction camp preparation and quarry site development. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that clearing and grubbing operations are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Applicable Provincial Licences and Permits
- The Manitoba Conservation Brush Disposal Guidebook – March 2005
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Environmental Protection Procedures – Appendix 8-2: of P6 – All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Fisheries Act (R.S., 1985, c. F-14)
- The Manitoba Sustainable Development Forest Practices Guidebook: Forest Management Guidelines for Terrestrial Buffers – 2010-2022

4.0 Procedures

.1 Clearing and grubbing shall be limited to the site and associated access routes.

.2 Clearing and grubbing shall only be undertaken between September, 1 of any year and April, 1 of the following year.

.3 Within the limits as directed and staked out by the Contract Administrator, all brush and trees, except those designated by the Contract Administrator to be saved, is to be cut level with the ground, and all surface debris, excluding merchantable timber but including fallen timber, slash limbs, brush, grass and weeds, is to be disposed as directed or permitted by the Contract Administrator. Disposal may involve:

- Burning
- Spreading and compacting
- Limbing/chipping

.4 All clearing and grubbing operations shall be clearly marked and completed to the approval of the Contract Administrator. The Contract Administrator will take into account required buffers, and sensitive areas.

.5 Where possible, grubbing shall not occur within 2 m (2.5 yards) of standing timber in order to prevent damage to root systems of adjacent standing trees and reduce the occurrence of blow down.

.6 Clearing activities shall be limited to removing vegetation to ground level without disturbing root mass. Height of stumps shall not exceed 15 centimetres.

.7 Trees shall be felled towards the centre of the area to be cleared. Any brush falling outside the area to be cleared shall be moved back to the work area and disposed as directed by the Contract Administrator. The Contractor shall take all precautions against the damage to other trees, traffic structures, pole lines or property in the felling of trees. The Contractor is liable for any damages occurring in the performance of this work.

.8 Timber from which forest products can be manufactured (merchantable) shall be cleared of limbs and stockpiled on the worksite in consolidated piles more than 1 metre from standing timber or as directed or permitted by the Contract Administrator. Merchatable timber shall be made available for community use free of charge upon request from community member or organizations. Removal and or disposal of any unused merchantable timber remains the responsibility of the contractor.

.9 There shall be no bulldozing of woody debris into standing timber.

.10 Existing trails, trap lines, portages and other travelways shall not be altered so as to interfere with other users.

.11 No clearing shall be permitted from April 1 to September 1 to avoid disturbance to nesting birds and other wildlife species.

.12 Clearing within 30 metres of a watercourse shall be by hand.

.13 Cleared trees and vegetation shall not obstruct waterways during any season, and shall be stored above the ordinary high water mark (1 in2 year high water mark). Stockpiles of any material are to be stored a minimum of 100 m from any water body or watercourse.

4.1 Brush Disposal

.1 Disposal of cleared trees and brush must be done as directed or approved by the Contract Administrator. Disposal may involve burning, compacting, piling, burying, windrowing and compacting, limbing and chipping.

.2 All cleared vegetation, grubbed material, and debris that is to be left in place shall be piled and compacted in windrows. Windrows shall be compacted to lie as close to the ground as possible (maximum height of 0.6 of a metre) and shall be no closer than 1 metre to the bush line. Windrows are required to have a 15 metre break every 100m in length.

.3 Cleared and grubbed material that is to be burned shall be piled for burning. Burn piles shall be located a minimum of 15 metres from other wood and brush piles and standing timber.

.4 Merchantable timber that is identified by the Contract Administrator shall be stockpiled within existing clearings and at least 1 metre from standing timber. Stockpile sites shall not be located within 100 metres of a waterbody. Unless otherwise specified, all stockpiled material shall be removed from Crown land by April 30 following the date of issuance.

.5 The burning of debris piles shall not permitted in the spring or early summer to avoid disturbing small wildlife species which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the fall or winter.

.6 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 metres away from standing timber and the high water mark of any waterbody.

.7 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.

.8 The Contractor shall obtain a burning permit for open fires between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising

officer shall be advised prior to any burning. All fires shall be completely extinguished by March 31.

.9 Ensure safety precautions are taken to keep the fire under control. Burn piles shall be monitored, to ensure that subsequent fire hazards are not present. Upon completion of the burn, burn piles shall be completely extinguished.

.10 All occurrences of fire spreading beyond the debris piles shall be reported to the Contract Administrator and the Natural Resources District Supervisor

ENVIRONMENTAL PROTECTION PROCEDURES 2

PETROLEUM STORAGE

March 2018 Revision

1.0 Description

.1 The storage and handling of petroleum and allied products shall be undertaken in accordance with contract specifications, environmental legislation, permits and authorizations as approved by the Manitoba Infrastructure – Remote Road Operations.

.2 Fuel spills, leaks and releases present a hazard to human health and safety, and can be a threat to wildlife habitats, vegetation, soil, surface water and wetlands, groundwater and aquifers, and structures such as wells, drains and ditches. Besides the potential impacts on health and the environment, there may be significant costs associated with wasted fuel, treatment of oily wastewater, and remediation of fuel-impacted sites. The Contractor is responsible for complying with all contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that all petroleum storage is carried out in accordance with applicable legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Manitoba Environment Act - C.C.S.M. c. E125
- The Workplace Safety and Health Act - C.C.S.M. c. W210
- Applicable Provincial Licences and Permits
- The Dangerous Goods Handling and Transportation Act, C.C.S.M. c. D12
- Storage and Handling of Petroleum Products and Allied Products Regulation – 188/2001
- Technical Bulletin PSF-004, March 2015: Impact Protection Requirements for Above Ground Storage Tanks Systems
- National Fire Code of Canada. Canadian Commission on Building and Fire Codes, National Research Council of Canada, 2005
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact

Statement – April 2018

- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

4.1 Petroleum Storage and Handling

.1 All petroleum handling and storage shall comply with Manitoba *Regulation 188/2001* respecting *"Storage and Handling of Petroleum Products and Allied Products".*

.2 Petroleum products shall be transported in accordance with the Manitoba Provincial "*Dangerous Goods Handling and Transportation Act"*.

.3 All reasonable precautions shall be taken to ensure that refuelling only takes place within a Designated Area used for fuel storage or handling.

.4 In the event that a piece of equipment must be refuelled outside a Designated Area, the fuel shall be transported in Approved containers.

.5 Absorbent pads, or other precautions, such as a high density polyethylene (HDPE) groundsheet, shall be used to contain the fuel and prevent fuel from being spilled onto the ground surface.

.6 Equipment shall not be refueled from a watercraft.

.7 All reasonable precautions shall be taken to ensure that cleaning, washing, and servicing of equipment only takes place within a Designated Area.

.8 All mobile equipment that is not in use shall be parked within a Designated Area.

.9 All Designated Areas used for petroleum product storage shall be a minimum distance of 100 metres from any water body and shall have the top soil stripped and be underlain with at least 30 cm of impermeable soil or approved alternate and dyked in such a manner as to contain any leakage or spillage. The dykes shall be designed, constructed and maintained to retain not less than 100% of the capacity of the total number containers or 110% of the largest container, whichever is greatest. The top soil shall be stored and used in the restoration of the site.

.10 Tank vehicles used to deliver fuel to the worksite and/or used to move fuel around the worksite shall meet the requirements for highway tanks

for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the "Transportation of Dangerous Goods"*.

.11 All Designated Areas used for petroleum storage shall be a minimum distance of 3 metres from a property line or building and 15 metres horizontally from hydroelectric poles and lines.

.12 Construction, installation and removal of petroleum storage tank systems shall occur under the supervision of a registered licenced petroleum technician.

.13 Petroleum storage tanks shall be grounded and the dispensing tank shall be attached with a bonding cable to an appropriate location on the receiving tank prior to commencing fueling.

.14 Petroleum products shall be labeled as to their contents and stored and handled within designated areas.

.15 Dedicated petroleum storage areas shall provide spill containment and facilitate clean up through measures such as:

- Maximum separation from environmentally sensitive features;
- Clear identification of the materials present;
- Access restricted to authorized vehicles and employees;
- Impervious bermed storage areas; and
- Dedicated spill response equipment.

.16 Storage sites for petroleum products shall be secured and signs including hazard warnings, who to contact in case of a spill, access restrictions and under whose authority the access is restricted shall be posted.

.17 All employees involved in the handling and storage of fuels shall have WHMIS and spill response training.

.18 All combustible engines shall be shutdown during fueling.

.19 There shall be no smoking and no open flames at the petroleum storage area at any time.

.20 Only above ground storage tanks shall be used for the storage of bulk petroleum products. The tanks shall be equipped with overfill protection and spill containment consisting of perimeter dykes or secondary containment in the tank design. If dykes are used, the containment areas shall be dewatered after a rainfall event and the containment water disposed of as approved by the Contract Administrator. Product inventory shall be taken weekly by the owner/operator of all aboveground storage tanks with a capacity of 5000 litres or greater and retained for inspection upon request.

.21 All petroleum storage tanks with a capacity of 5000 litres or greater shall be registered with Manitoba Sustainable Development. New tanks shall be registered before installation. Tanks shall be designed, installed, and operated in accordance with the Manitoba Provincial *"Dangerous Goods Handling and Transportation Act"* and the Federal *"Transportation of Dangerous Goods Act"*. Smaller stationary tanks shall adhere to requirements of the Manitoba Fire Code. A copy of the petroleum license shall be posted at the fuelling site.

.22 Fueling from unregistered tanks shall not be permitted.

.23 Concrete barriers shall be installed around all petroleum storage tanks to prevent collisions (as per Technical Bulletin PSF-004, March 2015: Impact Protection Requirements for Above Ground Storage Tanks Systems).

.24 Bulk waste oil shall be stored in aboveground oil tanks, which shall have secondary containment and a weatherproof cover. Waste oil shall be recycled by a reputable recycling agency. Waste oil shall never be used as a dust suppressant.

.25 All petroleum storage containers and tank vehicles shall be inspected daily for leaks and spillage. Damaged or leaking fuel storage containers shall be promptly removed from site.

.26 All petroleum handling and storage areas shall be kept clear of snow and materials so as to allow clear access and routine inspection and leak detection.

.27 In the event that there is a spill onto the ground surface from any piece of equipment, such as a broken hydraulic hose, the entire affected area shall be cleaned up and all contaminated soil shall be appropriately disposed of at a licenced soil recycling facility. If contaminated soil is to be stored on site for any time a designated storage area is to be identified and prepared to prevent secondary contamination. Contaminated soil is segregated.

.28 As petroleum storage and equipment servicing areas are taken out of service any remediation shall be conducted, including the appropriate disposal of the contaminated material to the satisfaction of the Contract Administrator.

.29 The Contractor shall designate on-site Emergency Spill Response Coordinators.

.30 The Contractor shall prevent fuel, lubricants or compounds from being released. All empty containers from equipment refueling and servicing shall be removed to a licenced disposal site. The Contractor shall be

thoroughly familiar with provincial/federal spill response compliance procedures.

.31 Materials required for spill containment and clean up shall be available at all sites where construction related activities occur. All vehicles hauling fuel shall carry materials and equipment for emergency spill containment.

.32 At locations where stationary filled oil equipment is used, oil containment measures such as secondary containment shall be incorporated (i.e., berms).

.33 Contaminated soils resulting from releases shall be remediated or disposed of in a manner approved by the Contract Administrator.

.34 Fuel barrels shall be securely fastened to the vehicle during transport and if possible during refueling operations.

.35 All petroleum product storage sites and mobile transportation units shall, at all times, be equipped with appropriate categories of equipment and volumes of fire suppression products.

.36 Fueling procedures shall be posted where fueling occurs.

4.2 Fueling Procedures

.1 Fueling equipment from a fixed fuel tank of sliptank

- Ensure the slip tank is clear of snow and debris
- Ensure the pump is turned off
- Connect the pump to the battery
- Use a piece of rag or absorbent pad to cover the tip of the nozzle
- Place the nozzle in equipment tank– be careful of splash back
- Turn on the pump
- Fill the tank – ensure you do not overfill the tank
- Turn off the pump
- After fuelling – catch all drips on an absorbent pad, use a rag or absorbent pad to wipe off the nozzle.
- Once the nozzle has stopped dripping, use the rag to cover the end of nozzle and return the nozzle to the slip tank
- Disconnect the pump from the battery
- Accidental spills must be cleaned up immediately using the Spill Response Procedures
- Used absorbent pads must be discarded in a designated Spill Disposal Container

.2 Fuelling equipment using a jerry can

- Ensure the slip tank is clear of snow and debris
- Place jerry can on an absorbent pad in a spill tray
- Ensure the pump is turned off
- Connect the pump to the battery
- Use a piece of rag of absorbent pad to cover the tip of the nozzle
- Place the nozzle in the jerry can – be careful of splash back
- Turn on the pump
- Fill the can to the fill line
- Turn off the pump
- After fuelling – catch all drips on the absorbent pad, and use a rag or absorbent pad to wipe off the nozzle.
- Once the nozzle has stopped dripping, use the rag to cover the end of nozzle and return the nozzle to the slip tank
- Disconnect the pump from the battery
- Fuel the chainsaw/ATV/snowmobile using the jerry can – be careful of splash back
- All fuel transfers must occur with an absorbent pad and/or oil catcher placed underneath to catch spills
- Wipe down the jerry can with a rag before removing from the absorbent pad
- Accidental spills must be cleaned up immediately using the Spill Response Procedures
- Used absorbent pads must be discarded in a designated Spill Disposal Container

4.3 Emergency Response Plan For Spills

.1 It is the responsibility of the Contractor to conduct appropriate soil testing on Designated Area(s) and contract work sites prior to the mobilization of equipment to the site to establish baseline conditions. The Contractor will be held responsible for any contamination unless evidence to the contrary can be provided by the contractor.

.2 The contractor will maintain an emergency response plan in accordance with EP3, the Environmental Protection Specifications and applicable legislations

ENVIRONMENTAL PROTECTION PROCEDURES 3

SPILL RESPONSE

March 2018 Revision

1.0 Description

.1 The Contractor shall develop and submit to the Manitoba Infrastructure – Remote Road Operations a spill response plan in accordance with all applicable contract specifications, environmental legislation, permits and authorizations.

.2 Fuel spills, leaks and releases present a hazard to human health and safety, and can be a threat to wildlife habitats, vegetation, soil, surface water and wetlands, groundwater and aquifers, and structures such as wells, drains and ditches. Besides the potential impacts on health and the environment, there may be significant costs associated with wasted fuel, treatment of oily wastewater, and remediation of fuel-impacted sites. The Contractor is responsible for complying with all contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that all necessary precautions are taken to prevent spills, leaks or releases, in accordance with applicable legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Manitoba Environment Act - C.C.S.M. c. E125
- The Workplace Safety and Health Act - C.C.S.M. c. W210
- Applicable Provincial Licences and Permits Permits
- The Dangerous Goods Handling and Transportation Act, C.C.S.M. c. D12 - 2010
- Storage and Handling of Petroleum Products and Allied Products Regulation – 188/2001
- National Fire Code of Canada. Canadian Commission on Building and Fire Codes, National Research Council of Canada, 2005
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
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All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

4.1 General

.1 All petroleum handling and storage shall comply with Manitoba Regulation 188/2001 respecting *"Storage and Handling of Petroleum Products and Allied Products".*

.2 Petroleum products shall be transported in accordance with the Manitoba Provincial *"Dangerous Goods Handling and Transportation Act"* and the federal "*Transportation of Dangerous Goods Act"*.

.3 Tank vehicles used to deliver fuel to the worksite and/or used to move fuel around the worksite must meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the "Transportation of Dangerous Goods"*.

.4 Dedicated petroleum storage areas shall provide spill containment and facilitate clean up through measures such as:

- Maximum separation from environmentally sensitive features,
- Clear identification of the materials present,
- Access restricted to authorized vehicles and employees,
- Impervious bermed storage areas, and
- Dedicated spill response equipment.

.5 All employees involved in the handling and storage of fuels and hazardous materials shall have WHMIS training.

.6 The Contractor shall designate on-site Emergency Spill Response Coordinators.

.7 It is the responsibility of the Contractor to conduct appropriate soil testing on Designated Area(s) and contract work sites prior to the mobilization of equipment to the site to establish baseline conditions. The Contractor will be held responsible for any contamination unless evidence to the contrary can be provided by the contractor.

4.2 Emergency Response Plan For Spills

.1 The Contractor shall ensure that due care and caution is taken to prevent spills, at all times.

.2 An updated list of key contacts and telephone numbers for reporting spills, problems, etc., shall be kept on-site at all times.

.3 A Workplace Hazardous Materials Information System (WHMIS) file shall be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work, Material Safety Data Sheets (MSDS) shall be submitted to Manitoba Infrastructure – Remote Road Operations for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.

.4 All major spills of petroleum products or other hazardous substances with significant impact on the environment and threat to human health and safety (as defined in Table 1) shall be reported to Manitoba Sustainable Development, immediately after occurrence of the environmental accident, by calling the 24-hour emergency number (204) 945-4888 (Toll Free: 1-855-944-4888). The contractor will follow any instructions given by Manitoba sustainable development regarding spill response.

.5 All spills shall be reported to Manitoba Infrastructure – Remote Road Operations within 24 hours whether it was necessary to report the spill to Manitoba Sustainable Development or not. The spill report shall include the following:

- Personnel responding to the spill,
- Material spilled,
- Cause of spill,
- Estimated amount of material spilled,
- Estimated area and volume of soil affected by the spill,
- Cleanup action undertaken, and
- Means used to contain, transport and dispose of the materials involved.

.6 The Contractor shall designate a qualified supervisor(s) as the on-site emergency response coordinator(s). The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill.

.7 An updated on-site spill response and containment plan for each dangerous good/hazardous waste shall be maintained in the work area at all times.

.8 The designated emergency response coordinator shall periodically review and if necessary revise the on-site response plan.

.9 Appropriate materials for containment and cleanup of any spill of dangerous goods or hazardous wastes shall be available on-site when such materials are present in the work area. Also designated personnel and first responders shall be familiar with the storage

location and proper application of such containment and cleanup materials.

.10 All spills of quantities less than those set out in Table 1 and without a potential impact to the environment shall be contained and cleaned up immediately by on-site personnel in accordance with the on-site emergency response and containment plan.

.11 All personnel responsible for the handling of dangerous goods and hazardous wastes shall be familiar with the on-site response and containment plan.

.12 The following actions shall be taken by the person in charge of the spilled material or by first person(s) arriving at the scene of a hazardous material accident or by the on-site emergency-response coordinator:

.1 **Notification and Spill Assessment**

.1 Notify the emergency-response coordinator,

.2 Identify exact location and time of accident,

.3 Request assistance as required by magnitude of accident from Manitoba Sustainable Development (24-hour Spill Response Line (204) 945-4888), Police, Fire Department, or Ambulance and Company backup, and

.4 Notify the Manager of Environmental Services for Manitoba Infrastructure.

.2 **Attend to Public Safety**

.1 Secure the area from public access,

.2 Eliminate ignition sources, and

.3 Initiate evacuation of immediate area, if necessary.

.3 **Gather and Assess Information on Status of Situation, noting:**

.1 Personnel on-site,

.2 Cause and effect of spill,

.3 Estimated extent of damage,

.4 Amount and type of material involved, and

.5 Proximity to waterways.

.4 **If safe to do so, and in Accordance with the On-Site Response and Containment Plan Try to Stop the Dispersion or Flow of Spill Material by:**

.1 Approach from upwind,

.2 Stop or reduce leak if safe to do so,

.3 Dyke spilled material with dry, inert sorbet material or dry clay, and

.4 Prevent spill material from entering waterways, utilities or other openings by dyking proximity to waterways.

Table 1

Spills that must be reported to Manitoba Sustainable Development as Environmental Accidents

Column I **Classification**	Column II **Hazard**	Column III **Reportable Quantity Or Level**
1	Explosives	All
2.1	Compressed Gas (Flammable)	100 L*
2.2	Compressed Gas	100 L*
2.3	Compressed Gas (Toxic)	All
2.4	Compressed Gas (corrosive)	All
3	Flammable liquids	100 L
4	Flammable Solids	1 Kg
5.1 PG** I & II	Oxidizer	1 Kb or 1 L
PG III	Oxidizer	50 Kg or 50 L
5.2	Organic Peroxide	1 Kg or 1 L
6.1 PG I	Acute Toxic	1 Kg or 1L
PG II & III	Acute Toxic	5 Kg or 5 L
6.2	Infectious	All
7	Radioactive	Any discharge or radiation level exceeding 10 m Sv/h at the package surface and 200 uSv/h at 1m from the package
8	Corrosive	5 Kg or 5 L
9.1	Miscellaneous (Except PCB mixtures)	50 Kg 0
9.1	PCB mixtures	500 grams
9.2	Aquatic Toxic	1 Kg or 1 L
9.3	Wastes (Chronic Toxic)	5 Kg or 5 L

ENVIRONMENTAL PROTECTION PROCEDURES 4

NOISE CONTROL

March 2018 Revision

Procedure name: Noise Control

Reference number EP4

1.0 Description

.1 All construction activities shall be undertaken by means that do not result in violation of the noise by-laws of adjacent municipal authorities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that the Contractor complies with noise by-laws of the adjacent municipal authorities.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 All plant and equipment supplied by the Contractor for use on the Project shall be effectively "sound-reduced" by means of proper silencers, mufflers, acoustic linings, acoustic shields or acoustic sheds.

.2 The Contractor shall comply with the noise By-laws of the adjacent First Nations, communities and municipal authorities and any noise related clauses incorporated in the project's Environment Act License.

.3 Any operation of plant or equipment outside the hours as regulated by the adjacent First Nations, communities or municipal authorities shall require an exemption in writing. The Contractor shall provide a copy of such an exemption to the Contract Administrator.

ENVIRONMENTAL PROTECTION PROCEDURES 5

MATERIALS HANDLING AND STORAGE

March 2018 Revision

1.0 Description

.1 This procedure specifies materials handling and storage requirements during all phases of construction.

2.0 Purpose

.1 The purpose of this procedure is to ensure that construction sites are kept clean and orderly at all times in accordance with applicable contract specifications, legislation, permits and authorizations.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Dangerous Goods Handling and Transportation Act, CCSM c D12
- Workplace Safety and Health Act, CCSM c W210
- The Environment Act, CCSM c E125
- Waste Management Facilities Regulation, CCSM c E125
- Onsite Wastewater Management Systems Regulation No. 83/2003
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

4.1 General

.1 All construction areas shall be kept clean and orderly at all times during and at completion of construction.

.2 Waste material shall be recycled to a degree that is economically and practically feasible.

.3 There shall be no indiscriminate dumping of waste and litter on or off the construction site.

.4 Different waste streams shall not be mixed.

.5 All waste materials shall be collected and contained in a designated waste storage area and in containers appropriate to the waste classification until removed from the site for recycling or disposal at an approved facility.

.6 Waste storage sites shall be designated for each worksite and camp as approved by the Contract Administrator.

.7 Waste material (i.e. food and food containers) that is likely to attract nuisance wildlife shall be stored in wildlife proof storage bins and hauled off site at regular intervals for disposal at an approved disposal facility.

.8 Contaminated runoff or water shall be contained and prevented from entering any watercourse. The collected contaminated runoff or water shall be hauled off site for disposal at an approved disposal facility.

4.2 Domestic Solid Wastes, Demolition and Construction Waste

.1 At no time during construction shall domestic solid, demolition, or construction waste be permitted to accumulate at any location on the work site, other than at a dedicated waste storage site, unless approved by the Contract Administrator.

.2 All domestic solid waste containers shall be clearly marked to identify the nature and type of material to be deposited (e.g. containers for recyclable material and containers for disposal).

.3 No on-site burning of waste or any other material is allowed unless approved by the Contract Administrator. The Contractor shall be responsible for obtaining a burning permit from Manitoba Sustainable Development for burning between April 1 and November 15.

.4 All domestic solid waste storage shall be confined to Designated Areas.

.5 Waste concrete from concrete pumps and concrete trucks, cleanout materials from concrete trucks, concrete pumps and other equipment shall be deposited only in the concrete washout Designated Area. All of this material shall be hauled off site, for disposal at an approved landfill or to a recycling facility, not later than at the closure of the Designated Area.

4.3 Domestic Sewage

.1 All sewage shall be collected through the provision of an outside toilet facility in compliance with the *Onsite Wastewater Management Systems Regulation No. 83/2003.*

.2 All collected sewage shall be removed from the site at least once every seven (7) days by a registered sewage hauler, as defined in section 21(1) of the *Onsite Wastewater Management Systems Regulation No. 83/2003* and disposed of at a wastewater treatment facility licenced under The Environment Act or otherwise federally regulated.

4.4 Dangerous Goods/Hazardous Waste Handling and Disposal

.1 Dangerous goods/hazardous wastes shall be identified and shall be handled in accordance with The Dangerous Goods Handling and Transportation Act and Regulations and Health Canada's Workplace Hazardous Materials Information System (WHMIS).

.2 The Contractor shall have staff, trained and certified in the handling of dangerous goods, present on-site whenever said dangerous goods are being utilized for the performance of the work.

.3 All dangerous goods/hazardous waste shall be confined to Designated Areas and stored in a secure manner to prevent access by non-designated employees.

.4 Designated dangerous goods/hazardous waste storage areas shall have the top soil stripped and be lined with at least 30 cm of impermeable material or approved equal and dyked in such a manner as to contain any leakage or spillage. The dykes shall be designed, constructed and maintained to retain not less than 100% of the capacity of the total number of containers or 110% of the largest container, whichever is greatest. The top soil shall be stored and used in the restoration of the site.

.5 Disposal of hazardous waste shall only be at hazardous waste facilities licensed under The Dangerous Goods Handling and Transportation Act.

.6 All waste stored at designated hazardous waste storage areas shall be removed from the site at least once every seven (7) days.

.7 Hydrocarbons shall not be stored or disposed of in earthen pits on-site.

.8 All used oils shall be stored in appropriate drums or tanks until removed to a registered waste oil recycling centre or hazardous waste disposal facility.

.9 Used oil filters shall be drained, placed into suitable storage containers and disposed of at approved facilities. The oil drained out of the used filters shall be collected and handled in the same manner as used oil.

.10 A pesticide use permit shall be obtained prior to the application of pesticides. The Contractor shall ensure that all pesticides are applied by a licenced commercial applicator and adhere to all conditions specified in this permit. These conditions include submitting a properly completed post seasonal form to the Contract Administrator at the completion of the Contract or at the end of each calendar year confirming that any terms and conditions of the permit have been satisfied. The Contractor shall supply the following information to the Contract Administrator:

.1 The name of each pesticide used,

.2 The Pest Control Product number of each pesticide,

.3 Quantity in litres of each pesticide used,

.4 Total area treated in hectares,

.5 A map of the treated areas,

.6 Legal description of the land where practical, and

.7 Color coded map to indicate where each type of pesticide was used.

.11 All pesticides shall be handled and applied by or under the direct supervision of a licensed commercial applicator, as defined in section 4.1 of the *Pesticides Regulation 94/88*, and further all pesticides shall be used in accordance with any terms and conditions of the permit.

.12 As dangerous goods/hazardous waste storage areas are taken out of service any remediation shall be conducted, including the appropriate disposal of the contaminated material to the satisfaction of the Contract Administrator.

ENVIRONMENTAL PROTECTION PROCEDURES 6

WORKING WITHIN OR NEAR FISH BEARING WATERS

March 2018 Revision

Procedure name:
Working Within or Near Fish Bearing Waters

Reference number
EP6

1.0 Description

.1 This procedure specifies requirements for working within or near fish bearing waters during all phases of construction.

2.0 Purpose

.1 To ensure that any works occurring within a watercourse is conducted according to applicable guidelines and permit requirements.

.2 To ensure the implementation of appropriate mitigation measures and Best Management Practices to protect aquatic habitats.

.3 To ensure that water quality standards are met throughout the course of instream construction activities.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Applicable Provincial Licences and Permits
- Applicable Fisheries and Oceans Canada (DFO) Authorizations
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 The Contractor shall schedule and plan the Work so that the amount of in-water work is kept to a minimum. Construction activities shall not occur within 100 metres of a watercourse with the exception of construction of a watercourse crossing.

.2 In-water work shall be restricted to low flow periods where possible. Whenever possible, in-water works shall be scheduled during a period when the watercourse is seasonally dry or frozen to the bottom.

.3 The Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 15 and July 15 of any year, or during periods of high stream flow or identified spawning periods. In watercourses determined to contain fall spawning fish species, the contractor shall not undertake “in water” construction activities before July 15 or after September 15.

.4 Material, cleared vegetation, stockpiles and/or waste shall not be deposited or stored within 100 metres of a watercourse, unless approved by the Contract Administrator. No borrow shall be removed from within 100 metres of water body.

.5 The disturbance to the stream bed and banks shall be minimized. Use existing trails, roads or cut lines to access the site where possible to avoid disturbance to riparian vegetation.

.6 All construction activities shall be suspended during adverse weather conditions (i.e., heavy rains).

.7 As a general rule, keep roads a minimum of 100 metres away from a watercourse except when crossing the watercourse. This often forces the alignment onto drier sites. If a 100 metre distance is not possible, allow a buffer zone of undisturbed vegetation between the road and the waterway, using a buffer zone width of approximately 10 m plus 1.5 times the slope gradient or 30 m, whichever is greater.

.8 Backfill (i.e. rip rap and other rock materials) installed adjacent to a fish bearing water body shall be clean and well graded granular material that is free of fines.

.9 Where possible, in-water work shall be staged to occur as a single event and machinery access shall be limited to a single point on the shoreline.

.10 The distance between the machinery access point and the worksite shall be minimized.

.11 The Contractor shall use an in-stream pad built of washed gravel where in-water equipment activity would generate excess sediment.

.12 If work is being conducted under a Fisheries and Oceans Canada (DFO) Authorization, adhere to all conditions outlined within the Authorization.

.13 Equipment shall arrive on site in a clean, washed condition, and free of fluid leaks.

.14 Equipment shall be kept in good repair to prevent leakage of fuel oil etc. Avoid fuelling, changing oil, repairing or washing any equipment within 100 metres of the normal high water mark. Ensure runoff and water used for equipment cleaning does not enter any water body.

.15 Spill containment and cleanup supplies shall be stored and accessible on site at all times.

.16 Vehicles and other equipment shall be kept away from and out of the water unless instructed otherwise by the Contract Administrator.

.17 If there is no existing crossing and the watercourse must be crossed, a temporary crossing shall be constructed to keep all vehicles and equipment out of the watercourse.

.18 Concrete works shall be conducted in a manner that does not allow direct or indirect entry of concrete, concrete fines or concrete wastewater into the watercourse.

.19 Natural debris removal shall be limited to that which is necessary to protect bridge piers or abutments or to that which is blocking culverts.

.20 Debris and other objects shall be lifted out of the water whenever possible. Items shall not be dragged across the stream bed/lake bottom and banks/shoreline.

.21 All banks/shoreline areas that are disturbed shall be restored to their original conditions as soon as practicable, including re-vegetation if necessary. Erosion and sediment control measures shall be implemented, inspected and maintained until vegetation is established.

.22 Work plans for beaver dam removal shall be provided to the Contract Administrator 5 business days prior to the start of dam removal.

ENVIRONMENTAL PROTECTION PROCEDURES 7

STREAM CROSSINGS

March 2018 Revision

Procedure name:
Stream Crossings

Reference number:
EP7

1.0 Description

.1 The installation of stream crossings will be required to facilitate various activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that stream crossings are installed in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Applicable Provincial Licences and Permits
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat –May 1996 (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 All stream crossings shall be constructed in accordance with *The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996*.

.2 A minimum vegetated buffer strip of 30 metres shall be maintained between the worksite and watercourse except at the actual crossing location.

.3 Where possible, existing stream crossings shall be utilized to traverse watercourses.

.4 Temporary stream crossings shall be located at straight stream sections, perpendicular to the bank. In particular, meandering bends, braided streams, alluvial fans and other unstable areas shall be avoided.

.5 Temporary stream crossings shall be designed for their intended construction loading and to accommodate anticipated water flows.

.6 The number of temporary stream crossings constructed shall be minimized.

.7 When feasible, the construction of stream crossings shall be scheduled for the period of lowest stream flow and should be a single event.

.8 Streams shall be crossed at right angles to minimize shoreline disturbance to the extent possible.

.9 The natural alignment of the stream shall be maintained.

.10 Where possible, there shall be no dredging, infilling, grading or excavating of the channel bed or banks.

.11 Temporary stream crossings shall be removed as soon as possible following completion of the work or when it is no longer required.

.12 Following the removal of a temporary stream crossing, the site shall be restored to its original state. The restoration shall include appropriate erosion and sediment control measures and re-vegetation of disturbed areas as required.

ENVIRONMENTAL PROTECTION PROCEDURES 8

TEMPORARY STREAM DIVERSIONS

March 2018 Revision

Procedure name: Temporary Stream Diversions

Reference number: EP8

1.0 Description

.1 Worksite isolation shall be undertaken as instructed by the Manitoba Infrastructure – Remote Road Operations to accommodate any in water works that must be conducted "in the dry" within fish bearing waters to minimize erosion and sedimentation and maintain downstream flows. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

.2 Suspended sediment presents a hazard to fish and fish habitat as it can clog and abrade gills, smother eggs, change habitat structure and cover food supply. Maintaining downstream flows is critical to the survival of many aquatic species.

2.0 Purpose

.1 The purpose of this procedure is to ensure that temporary stream diversions are installed in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Environment Act - C.C.S.M. c. E125
- The Workplace Safety and Health Act - C.C.S.M. c. W210
- Applicable Provincial Licences and Permits
- Department of Fisheries and Oceans' *"Freshwater Intake End-of-Pipe Fish Screen Guideline" (1995).*
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Fisheries Act – RSC, 1985, c. F-14
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

4.1 General

.1 Temporary stream diversions shall be constructed under low flow conditions and shall be designed to accommodate flows that may occur during storm events.

.2 Instream diversion structures (i.e., sheet piling, sandbags, etc.) shall be constructed using erosion resistant materials.

.3 Temporary stream diversions shall be designed to provide fish passage, even during low flow conditions. If elevated pipes are used, remove diversion during fish migration periods.

.4 Stream diversion channels shall be constructed in the dry, excavating from downstream to upstream. Diversion channels shall have gentle curves and similar gradient to the natural watercourse.

.5 To help prevent potential erosion, the diversion channel shall be lined with erosion resistant materials (i.e., plastic, rock) where practicable.

.6 While the worksite is isolated, flow shall be maintained downstream at all times.

.7 A fish salvage operation shall be conducted by a qualified biologist with a "live fish handling permit" prior to dewatering of the isolated work area.

.8 The site shall be restored as soon as possible following completion of the Work. The restoration work shall include re-vegetation of disturbed areas (i.e. channel banks), infilling any temporary channels, removing all construction materials and debris and installation and maintenance of required erosion and sediment control measures.

4.2 Temporary Diversion Channels

.1 Temporary diversion channels shall be designed to accommodate expected watercourse flow from storm events.

.2 Temporary diversion channels shall be constructed "in the dry" by not excavating upstream and downstream ends of the diversion channel.

.3 Existing watercourses shall not be disturbed until temporary diversion channels have been constructed.

.4 Diversion channels shall be opened from the downstream end first. Stabilize the connection of the diversion channel to the main watercourse. Pump flows around work site, if possible during construction of the channel connection.

.5 The upstream connection to the main watercourse shall be constructed and stabilized while pumping flows, if possible, around the work area.

.6 Gradient controls shall be used to ensure that diversion channel slopes correspond to the existing channel gradients.

.7 Erosion control measures shall be installed to protect any unstable channel beds and banks.

.8 The diversion channel shall be inspected following a severe rainstorm or at the end of the spring freshet to identify areas of incipient erosion. Eroded areas shall be repaired promptly.

4.3 Pumped Diversions

.1 Pumped diversions shall be used wherever a channel must be completely blocked to allow work 'in the dry'.

.2 Intakes shall be sized and screened to prevent debris blockage and fish mortality in accordance with DFO's *Freshwater Intake End-of-Pipe Fish Screen Guideline.*

.3 The Pumping system shall be sized to accommodate expected watercourse flow from storm events (generally 1 in 5 year event, although the 1 in 2 year event may be used for non-critical situations).

.4 Pumps shall be discharged onto geofabric, gravel, straw bales or an alternate approved by the Contract Administrator to dissipate the energy of discharge and mitigate scouring of channel banks and/or streambed.

ENVIRONMENTAL PROTECTION PROCEDURES 9

FISH PASSAGE

March 2018 Revision

Procedure name:
Fish Passage

Reference number:
EP9

1.0 Description

.1 Providing fish passage shall be undertaken as instructed by the Manitoba Infrastructure – Remote Road Operations (MI-RRO) to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that fish passage is maintained in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Environment Act - C.C.S.M. c. E125
- Applicable Provincial Licences and Permits
- Fisheries Act – RSC, 1985, c. F-14
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 Flow shall not be constricted by more than two thirds (66.6%) of the original stream width.

.2 Flow shall be maintained at all times to permit the safe and unimpeded passage of fish.

.3 A temporary diversion channel to direct flows around the work site shall be constructed if flows are to be constricted by more than two thirds of the original stream width in fish bearing waters.

.4 In non fish bearing waters a pumped diversion may be used instead to maintain flows downstream.

.5 Cleared trees, vegetation or construction materials shall not obstruct waterways during any season, and shall be stored above the ordinary high water mark (1 in 2 year high water mark).

ENVIRONMENTAL PROTECTION PROCEDURES 10

FISH SALVAGE

March 2018 Revision

Procedure name: Fish Salvage

Reference number: EP10

1.0 Description

.1 Fish salvage operations shall be undertaken as instructed by the Manitoba Infrastructure – Remote Road Operations to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 To ensure that fish salvages are conducted in accordance with applicable environmental permits, guidelines and legislation.

.2 To ensure that best management practices and guidelines are implemented for the protection of aquatic species.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Applicable Provincial Licences and Permits
- Applicable Fisheries and Oceans Canada Authorizations
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 A fish salvage operation shall be conducted where site isolation and/or dewatering is required.

.2 Fish salvages shall be conducted by qualified Professional Biologist possessing the necessary Manitoba Sustainable Development Permits for fish handling.

.3 Fish salvages shall be conducted following the isolation of the worksite and prior to the completion of dewatering and/or commencement of construction works.

.4 Partial dewatering is permissible to decrease wetted area and increase efficiency of capture, provided that pump intakes are adequately screened (See DFO *Freshwater Intake End-of-Pipe Fish Screen Guideline*). However, the fish salvage shall be completed prior to dewatering the entire area.

.5 If necessary, captured fish shall be placed in a holding tank with adequate water until released.

.6 Captured fish shall be cataloged by species. The length and weight of a representative proportion of captured fish species shall be recorded.

.7 The following information shall be collected and recorded:

.1 Date,

.2 Location (watercourse name and geographic coordinates),

.3 Description of project/construction works,

.4 Physical habitat parameters – channel width, wetted width, size (area) and depth of salvage area, water temperature,

.5 Fish capture method (e.g. Seine net, dip net, gill net, backpack electrofishing) ,

.6 Effort (e.g. two passes with a seine net; two people dip netting for 0.5 hours; backpack electrofishing for 350 seconds),

.7 Number of fish collected, by species, and

.8 Length and weight of a representative proportion of captured fish species.

.8 All captured fish shall be released downstream of the worksite.

ENVIRONMENTAL PROTECTION PROCEDURES 11

CULVERT MAINTENANCE AND REPLACEMENT

March 2018 Revision

Procedure name:
Culvert Maintenance and Replacement

Reference number:
EP11

1.0 Description

.1 Culvert maintenance and replacement shall be undertaken as instructed by the Manitoba Infrastructure – Remote Road Operations to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 To ensure that culvert maintenance and replacement is conducted in accordance with applicable environmental permits, guidelines and legislation.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Applicable Provincial Licences and Permits
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
- Applicable Fisheries and Oceans Canada (DFO) Authorizations or Letters of Advice
- Fisheries Act, RSC.,1985, c-F14
- The Environment Act - C.C.S.M. c. E125
- The Workplace Safety and Health Act - CCSM. c. W210
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
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4.0 Procedures

.1 Material and debris removal shall be timed to prevent disruption to sensitive fish life stages by adhering to DFO's restricted activity timing windows unless accumulated material is preventing the passage of water and/or fish through the structure. The Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 15 and July 15 of any year, or during periods of high stream flow.

.2 Emergency debris removal using hand tools or machinery (e.g. backhoe) may be carried out at any time of year. Emergencies include situations where carrying out the project immediately is in the interest of preventing damage to property or the environment, or is in the interest of public health or safety. DFO is to be notified immediately.

.3 Effective erosion and sediment control measures shall be installed prior to starting work. These measures shall be inspected regularly during the course of construction. The contractor shall make all necessary repairs if any damage occurs.

.4 The contractor shall limit the removal of accumulated material (i.e., branches, stumps, other woody materials, garbage, etc.) to the area within the culvert, immediately upstream of the culvert and to that which is necessary to maintain culvert function and fish passage.

.5 Accumulated material and debris shall be removed slowly to allow clean water to pass, to prevent downstream flooding and reduce the amount of sediment-laden water going downstream.

.6 When removing beaver dams and associated debris for culvert maintenance, the Contractor shall:

- .1 Time work to avoid harm to spawning fish, eggs, and larval fish.
- .2 Install effective sediment and erosion control measures before starting work. Erosion and sediment control is to be inspected regularly to ensure proper function and repaired immediately if found damaged.
- .3 Operate machinery from outside from outside the water that minimizes the disturbance to the banks and bed of the watercourse.
- .4 Remove dam gradually to allow water to release slowly and prevent sediment at the bottom of the pond from being released downstream.
- .5 Not create a breach in the dam exceeding the width of the original stream.
- .6 Not use explosives without MI and DFO approval.

.7 Safely return any stranded fish to the main channel.
.8 Stabilize any waste material above the ordinary high water mark. Spoil piles shall be removed or contained within appropriate erosion and sediment control measures.
.9 Minimize removal of riparian vegetation.
.10 Re-vegetate any disturbed area.
.11 Maintain erosion and sediment control until such time as the as re-vegetation is complete.

.7 Machinery shall arrive at site in a clean condition and shall be operated on land (from outside of the water) and in a manner that minimizes disturbance to the bed and banks of the watercourse.

.8 The bed and banks of the watercourse shall be restored to preexisting conditions following a disturbance.

.9 To ensure that fish passage is maintained, culverts in fish bearing waters shall adhere to the following design criteria:

.1 For culverts less than 25 m long the flow velocity through the crossing shall not exceed 1 m/s
.2 For culverts greater than 25 m long the flow velocity through the crossing shall not exceed 0.8 m/s
.3 The crossing shall not be impassable to fish for longer than 3 consecutive days once in 10 years or 7 consecutive days once in 50 years
.4 The culvert shall be designed such that fish passage is possible even in low flows

.10 If more than one culvert is to be installed, a minimum of 2 m between adjacent culverts is recommended. There shall be no more than three culverts at one crossing.

.11 If works are being conducted under a DFO Authorization, all conditions outlined within the Authorization shall be adhered to.

.12 A site visit shall be conducted prior to the commencement of in-water construction activities to determine the site-specific environmental protection measures that may be required (i.e., worksite isolation methods, site restoration considerations, erosion and sediment control materials required, etc.).

.13 Cofferdams or other structures (diversions) shall be installed to separate the dewatered worksite from flowing water. Materials that are used to build these dams shall not be taken from below the high water mark (1 in 2 year high water level). Cofferdams shall be designed to accommodate any expected high flows during the construction period.

.14 Downstream flows shall be maintained at all times. If isolated sites are required, flows shall be detoured around the sites, and original flows through the site shall be restored as soon as work is completed.

.15 A fish salvage operation shall be conducted prior to dewatering of isolated sites.

.16 The contractor shall maintain a culvert gradient as close to the natural stream grade as possible.

.17 The contractor shall install culverts a minimum of 30 cm or 10% of culvert diameter (whichever is greater) below the normal stream bed.

.18 The contractor shall avoid using frozen backfill. Backfill shall be compacted to avoid settling, hydrostatic uplifting or side movements of the culvert that may lead to blockage of fish passage or washouts.

.19 Slopes shall be contoured to an appropriate steepness to minimize erosion; erosion controls shall be installed as soon as possible.

.20 Soils shall be graded in the direction away from the watercourse and never into the stream itself.

ENVIRONMENTAL PROTECTION PROCEDURES 12

BLASTING NEAR A WATERCOURSE

March 2018 Revision

Procedure name:
Blasting Near A Watercourse

Reference number:
EP12

1.0 Description

.1 Blasting within or near a watercourse shall be undertaken as approved by the Manitoba Infrastructure – Remote Road Operations. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 To ensure that blasting near water bodies is conducted according to applicable guidelines and permit requirements.

.2 To ensure the protection of aquatic environments by implementing appropriate Best Management Practices during blasting activities.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Dangerous Goods Handling and Transportation Act, CCSM c. D12
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Applicable Provincial Licences and Permits
- Applicable Fisheries and Oceans Canada (DFO) Authorizations or Letters of Advice
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (1998) (www.dfo-mpo.gc.ca/oceans-habitat/habitat/water-eau/explosives-explosifs/page03_e.asp)
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 Blasting plans developed by the contractor shall comply with blasting regulations and reflect the appropriate timing of life cycle events as they relate to critical life functions of fish and wildlife species (i.e. migration, calving, nesting and spawning). Therefore, to reduce impacts to birds and other wildlife, blasting activities shall be restricted to outside the most sensitive breeding and brood rearing months (i.e. May to late-July) as much as possible. Blasting in watercourses classified as fish habitat is prohibited between April 15 and July 15 of any year, or during periods of high stream flow or identified spawning periods.

.2 Where applicable, blasting shall be undertaken during winter months to minimize permafrost degradation.

.3 Reference shall be made to DFO's document "*Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters" 1998*. Blasting plans shall be submitted to and approved by DFO prior to commencement of blasting in areas that could affect fish habitat. See tables 1 and 2 below.

.4 The blasting contractor shall possess all required permits/certificates. Notification shall be given to affected parties including site employees and the local general public prior to each blasting event.

Table 1. Setback distance (m) from centre of detonation of a confined explosive to fish habitat to achieve 100 kPa guideline criteria for various substrates.

	Weight of Explosive Charge (kg)							
Substrate Type	0.5	1	2	5	10	25	50	100
Rock	3.6	5	7.1	11	15.9	25	35.6	50.3
Frozen Soil	3.3	4.7	6.5	10.4	14.7	23.2	32.9	46.5
Ice	3	4.2	5.9	9.3	3.2	20.9	29.5	41.8
Saturated Soil	3	4.2	5.9	9.3	13.2	20.9	29.5	41.8
Unsaturated Soil	2	2.9	4.1	6.5	9.2	14.5	20.5	29

Table 2. Setback distance (m) from centre of detonation of a confined explosive to spawning habitat to achieve 13 mm•sec-1 guideline criteria for all types of substrate.

	Weight of Explosive Charge (kg)						
	0.5	1	5	10	25	50	100
Setback distance (m)	10.7	15.1	33.7	47.8	75.5	106.7	150.9

ENVIRONMENTAL PROTECTION PROCEDURES 13

HERITAGE RESOURCES

March 2018 Revision

1.0 Description

.1 Heritage resources are an important component of Manitoba's historical legacy which may be uncovered during a wide range of construction activities. Heritage resources may include human remains, a heritage site, a heritage object, and any work or assembly of works of nature or human endeavor that is of value for its archeological, paleontological, pre-historic, historic, cultural, natural, scientific, or aesthetic features, and may be in the form of sites or objects or a combination thereof.

2.0 Purpose

.1 To ensure that due consideration has been given throughout the design and construction phases of the project in order to minimize the potential disturbances to heritage resources.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Heritage Resources Act CCSM. c. H39.1
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 Specific areas where heritage or cultural resources of interest are suspected of being present such as along major waterways at crossings shall be inspected prior to the start of construction to confirm potential presence and extent.

.2 Where archeological or historic artifacts are encountered during construction activities, work at that location shall immediately cease

and the discovery shall be reported to the Field Supervisor and Contract Administrator. The Contract Administrator shall inform the Province of Manitoba's Historic Resources Branch and any affected communities.

.3 A specialist historic resource consultant shall be utilized to assess archeological or historic artifacts that are encountered and recommend mitigation measures. Manitoba Infrastructure – Remote Road Operations will engage interested communities and Manitoba's Historic Resources Branch to present and discuss mitigative options.

ENVIRONMENTAL PROTECTION PROCEDURES 14

WILDLIFE

March 2018 Revision

Procedure name: Wildlife

Reference number: EP14

1.0 Description

.1 Wildlife includes a broad range of species that may be affected by various activities. This procedure is intended to compliment other targeted procedures, regulatory requirements and monitoring plans. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 To ensure that appropriate environmental measures are implemented to avoid, minimize and/or mitigate potential effects on Wildlife.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Wildlife Act CCSM. c. W130
- The Endangered and Ecosystems Species Act CCSM. c. E111
- Species at Risk Act S.C 2002, c. 29)
- The Manitoba Sustainable Development Forest Practices Guidebook: Forest Management Guidelines for Terrestrial Buffers – 2010-2022
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 Employees, workers and other staff shall not hunt or trap wildlife.

.2 The Contractor shall not remove, destroy or disturb species pursuant to *Manitoba Regulation 25/98*, or any future amendment thereof, respecting *Threatened, Endangered and Extirpated Species*, or species listed in the federal Species at Risk Act.

.3 Wildlife habitat shall not be destroyed or damaged, except pursuant to a licence, permit or other authorization issued for the Project.

.4 No person shall take or be in possession of or willfully destroy the nest or eggs of birds.

.5 No person shall remove, disturb, spring or in any way interfere with any trap set out lawfully by any other person for the purpose of taking furbearing animals.

.6 No blasting shall be permitted within close proximity to sensitive wildlife habitat during critical lifecycle periods.

.7 Construction camps and worksites shall be kept clean and tidy. All food and garbage waste shall be stored in an appropriate manner and be disposed of at an area which has been designated as an appropriate waste disposal site.

.8 Employees, workers and other staff shall not feed or harass wildlife that they may encounter.

.9 Nuisance wildlife shall be immediately reported to the Natural Resources officer and onsite supervisor.

.10 Trees containing large nests of sticks and areas where active dens or burrows occur shall be identified, left undisturbed and reported to the Natural Resources Officer.

.11 A 100m buffer is required to be left around eagle nests, and heron rookeries. Additional buffers may apply – see table 1 of Forest Management Guidelines for Terrestrial Buffers (2017).

.12 Whenever it is necessary to remove existing beaver dams reference shall be made to EP11 Section 4.6

.13 To reduce the possibility of vehicle collisions with wildlife, vehicle speed shall not exceed posted speed limits and wildlife warning signs shall be installed where appropriate.

.14 No temporary roadbed borrow operations shall occur within 2 kilometres of known caribou calving areas along access roads from May 7 to July 1 of any given year.

.15 Prior to reinstating a quarry or borrow site, the area shall be surveyed to determine presence or absence of bank swallows and or common nighthawk nests. If nests are discovered, work shall be suspended and the MI Environmental coordinator will be contacted for further advice.

.16 Prior to removing temporary structures, an inspection shall be conducted to determine the presence or absence of barn swallow nests. If nests are discovered, work shall be suspended and the MI Environmental coordinator will be contacted for further advice.

ENVIRONMENTAL PROTECTION PROCEDURES 15

WILDFIRES

March 2018 Revision

Procedure name:
Wildfires

Reference number:
EP15

1.0 Description

.1 Wildfires can be a threat to people and activities taking place in wilderness areas particularly when under dry conditions. Advance planning and the implementation of safety measures is needed effectively respond to wildfires when they do occur.

2.0 Purpose

.1 The purpose of this procedure is to ensure that appropriate measures are in place to prevent and/or minimize effects caused by wildfires during construction and operation activities.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Fires Prevention and Emergency Response Act CCSM. c. F80
- The Forest Act CCSM. c. F150
- The Wildfires Act CCSM. c. W128
- The Workplace Safety and Health Act - CCSM. c. W210
- The Dangerous Goods Handling and Transportation Act C.C.S.M. c. D12
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Wildfires in Manitoba: How to Prepare *[Brochure]*

4.0 Procedures

.1 An evacuation and emergency preparedness plan addressing wildfires shall be implemented and submitted to the Contract Administrator prior to commencing construction.

.2 No fires shall be started without first taking sufficient precautions to ensure that the fire can be kept under control.

.3 To the extent possible, burning shall be avoided during the dry season. In Manitoba the dry season is typically defined as occurring between April 1st and November 15th of a given year. In the event that burning is required, an application for a burning permit shall be submitted for approval to Manitoba Sustainable Development. All conditions imposed by the burning permit shall be adhered to.

.4 In the event that burning is required, any active fires shall be monitored by staff for the duration of the burning activities. No fires shall be left unattended.

.5 No activity shall be conducted which may cause a fire to spread. Similarly, burning or smoldering matter shall not be placed where it may cause a fire to spread.

.6 A primary zone shall be established around camp sites and other longer term temporary structures associated with construction and maintenance activities. Flammable materials such as leaves, brush, dead limbs, and fallen trees shall be cleared from the area regularly.

.7 Combustible materials such as fuel and/or other hazardous substances shall be stored in a safe manner.

.8 The locations of construction camps, offices, and related structures shall be chosen in such a fashion as to minimize the risk of exposure to wildfires.

.9 In the event that a wildfire occurs, it shall be immediately reported to the Contract Administrator and to Manitoba Sustainable Development at 1-800-782-0076.

.10 All reasonable steps shall be taken in order to prevent a fire from burning out of control or spreading from land owned or occupied for construction purposes.

.11 In the event that a wildfire is identified where construction activities are taking place, all reasonable attempts shall be made in order to extinguish the wildfire. All available equipment, services and labor shall be made available at the disposal of an officer for the purposes of wildfire protection operations.

.12 All construction and related activities taking place in the vicinity of a wildfire shall cease until advised by the Contract Administrator that it is safe to resume operations.

ENVIRONMENTAL PROTECTION PROCEDURES 16

EROSION AND SEDIMENT CONTROL

March 2018 Revision

Procedure name: Erosion and Sediment Control

Reference number: EP16

1.0 Description

.1 Erosion and sediment control shall be implemented as required to prevent, minimize and/or mitigate environmental effects. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that erosion and sediment control measures are installed to prevent, minimize and/or mitigate environmental effects in accordance with contract specifications, applicable legislation and associated regulations and guidelines.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Fires Prevention and Emergency Response Act CCSM. c. F80
- The Forest Act CCSM. c. F150
- The Wildfires Act CCSM. c. W128
- The Workplace Safety and Health Act - CCSM. c. W210
- The Dangerous Goods Handling and Transportation Act CCSM. c. D12
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 The installation of erosion and sediment control measures shall be completed in accordance with the Contract Documents as approved by the Contract Administrator.

.2 Prior to construction, all vegetated areas that are to be preserved or untouched shall be well marked out and noted.

.3 Vegetation cover shall be preserved for as long as possible; operations shall be halted during heavy rainstorms.

.4 Effective erosion and sediment control measures shall be installed before starting work within or near fish habitat.

.5 Erosion and sediment control measures shall be inspected by the contractor regularly and after every major rain or spring melt event; necessary repairs shall be made immediately after damage has been discovered. Inspections will be confirmed by the project manager and Manitoba infrastructure environmental staff.

.6 A turbidity curtain shall be installed downstream of all in-water works within fish bearing waterways.

.7 Hand clearing shall be utilized within 30 metres of a watercourse instead of mechanical clearing where possible to prevent disturbance of the organic soil layer.

.8 Slash and debris that is collected during clearing operations shall be retained and used to temporarily protect erosion-prone slopes.

.9 Sediment shall be prevented from entering streams by placing overburden or topsoil stockpiles a minimum of 100 metres above the high water mark.

.10 Stream banks and bed shall be protected with erosion-resistant materials such as riprap at culvert openings.

ENVIRONMENTAL PROTECTION PROCEDURES 17

CONCRETE WASHOUT AREA MANAGEMENT PRACTICES

March 2018 Revision

Procedure name: Concrete Washout Management

Reference number: EP17

1.0 Description

.1 This procedure specifies best management practices for the implementation and use of concrete washout areas during all phases of construction.

2.0 Purpose

.1 The purpose of this procedure is to ensure that concrete, concrete fines or washout produced is disposed of in accordance with applicable contract specifications, legislations, permits, and authorizations.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Fisheries Act (RSC., 1985, c. F-14)
- Environment Act
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 Concrete wash out areas should be designated at the pre-construction site meeting and approved by Manitoba Infrastructure – Remote Road Operations.

.2 Concrete washout areas should be located a minimum of 100 metres away from the normal high water mark of a waterbody or watercourse and in a non porous soil location.

.3 Concrete works shall be conducted in a manner that does not allow direct or indirect entry of concrete, concrete fines or concrete washout into the watercourse.

.4 Concrete truck wash out areas shall be at a dedicated site 100m away from nearby watercourses and waterbodies and shall be cleaned up at the end of the construction activities to the satisfaction of the Contract Administrator.

.5 Where water for concrete washout activities is taken from a watercourse or waterbody, the Department of Fisheries and Oceans Freshwater Intake End-of-Pipe Fish Screen Guidelines, the Water Rights Act and other appropriate legislative and mitigative measures must be followed.

.6 The contractor shall comply with all requirements as laid out in the Water Rights Act, including but not limited to:

.1 The contractor must not release any excess cement and/or wastewater to surface waters, including wetlands,
.2 Any containment area must not be connected to or drain to any surface waters, including wetlands, and
.3 Any wastewater generated on site must be contained within the construction site.

.7 The contractor shall comply with all requirements as laid out in the Environment Act Licence regarding utilization, cleanup and disposal of water, waste and hazardous materials at the washout site.

.8 All Concrete obtained and utilized for Manitoba Infrastructure – Remote Road Operations' projects must be sourced from a concrete batch plant licensed in accordance with the Manitoba Environment Act.

.9 The contractor shall comply with all requirements laid out in the Concrete Batch Plant licence.

.10 With regard to reclamation and site cleanup, the contractor will:

.1 Begin reclamation and site cleanup as soon as construction has completed, and
.2 Re-contour, stabilize, and re-vegetate disturbed areas to suit original conditions.

ENVIRONMENTAL PROTECTION PROCEDURES 18

DUST SUPPRESSION PRACTICES

March 2018 Revision

1.0 Description

1. This procedure specifies best management practices for the implementation and use of dust suppression on roadways during all phases of construction.

2.0 Purpose

1. The purpose of this procedure is to ensure that any chemical or material used on roads for suppression dust is done so in accordance with applicable contract specifications, legislations, permits and authorizations.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Fisheries Act (R.S., 1985, c. F-14)
- The Environmental Act, CCSM c E125
- Canadian Environmental Protection Act, 1999, SC 1999, c 33
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 Follow the manufacturer's specifications or other tested and approved procedures.

.2 The application shall be limited to the roadway, driveway or parking lot.

.3 Carefully monitor the application rate to ensure adequate coverage without pooling or runoff of products.

.4 The amount of dust suppressant applied should not exceed the minimum amount required to effectively suppress dust.

.5 There should be no evidence of excess product on the roadway.

.6 The material must not migrate or run off the traveled portion of the roadway.

.7 Dust suppressants must conform with the manufacturer's specifications and must not contain concentrations of contaminants that would not normally be found in the suppressant.

.8 Ensure that dust suppressants do not enter and contaminate water bodies, including surface and groundwater. Do not allow the product to leave the roadway.

.9 Do not apply products to areas of roads that are subject to flooding.

.10 Do not apply products if precipitation is occurring, or forecast to occur before the product sets or cures.

.11 Wherever feasible water is to be used in preference over chemical dust suppressants

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5.0 Working Near Water

.1 Observe a 100-metre setback from any watercourse.

.2 Apply as per the manufacturer’s guidelines.

.3 Avoid over-application or application beyond the road shoulder.

6.0 Approved Products

.1 Water (Preferred)

.2 38%, 35%, 34%, or 30% Calcium Magnesium Chloride

.3 77% Flake Calcium/Magnesium Chloride

.4 32.6%, 30.3%, or 28% Magnesium Chloride,

.5 Lignosulfonate

7.0 Dust and the Public

.1 In the event that construction, maintenance, or operation produces a large quantity of dust

.1 Inform the public to wash any country foods or medicinal plants gathered from the area where the dust settled.

.2 Inform the public to travel with the windows of their vehicles closed when dust on the roadway is visible in the air.

ENVIRONMENTAL PROTECTION PROCEDURES 19

BORROW PIT DECOMMISSIONING

March 2018 Revision

1.0 Description

.1 The excavation of a borrow pit shall be undertaken in areas outlined by the Contractor, Contract Administrator or by Manitoba Infrastructure – Remote Road Operations, and consist of the excavating of material, other than solid rock.

.2 The decommissioning of borrow pits shall include the removal or disposal of all site debris, appropriate sloping of borrow pit sides, removal of site access, and reseeding of the area. The Contractor is responsible for ensuring compliance with all contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that borrow pit decommissioning operations are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Fisheries Act (R.S., 1985, c. F-14)
- The Manitoba Sustainable Development Forest Practices Guidebook: Forest Management Guidelines for Terrestrial Buffers – 2010-2022
- Manitoba Infrastructure and Transportation Standard Construction Specifications for Grading – January 2008
- The Manitoba Conservation Brush Disposal Guidebook – March 2005
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact

Statement – April 2018

4.0 Procedures

4.1 Clearing and Grubbing

.1 Where clearing and grubbing is required, it shall be completed prior to excavation of the borrow pit.

.2 Clearing and grubbing shall be limited to the site and associated access routes.

.3 Clearing and grubbing shall only be undertaken between September, 1 of any year and April, 1 of the following year.

.4 All clearing and grubbing operations shall occur in accordance with the Clearing and Grubbing Environmental Protection Procedure (EP1).

4.2 Brush Disposal

.1 Disposal of cleared trees and brush must be done as directed or approved by the Contract Administrator. Disposal may involve burning, compacting, piling, burying, windrowing and compacting, limbing and chipping.

.2 All cleared vegetation, grubbed material, and debris that is to be left in place shall be piled and compacted in windrows. Windrows shall be compacted to lie as close to the ground as possible (maximum height of 0.6 metres) and shall be no closer than 1 metre to the bush line. Windrows are required to have a 15 metre break every 100 metres in length.

.3 Cleared and grubbed material that is to be burned shall be piled for burning. Burn piles shall be located a minimum of 15 metres from other wood and brush piles and standing timber.

.4 Merchantable wood that is identified by the Contract Administrator shall be stockpiled within existing clearings and at least 1 metre from standing timber. Stockpile sites shall not be located within 100 metres of a waterbody. Unless otherwise specified, all stockpiled material shall be removed from Crown land by April 30 following the date of issuance.

.5 The burning of debris piles shall not permitted in the spring or early summer to avoid disturbing small wildlife species which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the fall or winter.

.6 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 metres away from standing timber and the high water mark of any waterbody.

.7 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.

.8 The Contractor shall obtain a burning permit for open fires between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising officer shall be advised prior to any burning. All fires shall be completely extinguished by March 31.

.9 Ensure safety precautions are taken to keep the fire under control. Burn piles shall be monitored, to ensure that subsequent fire hazards are not present. Upon completion of the burn, burn piles shall be completely extinguished.

.10 All occurrences of fire spreading beyond the debris piles shall be reported to the Contract Administrator and the Natural Resources District Supervisor.

.11 All brush disposal operations shall occur in accordance with the Clearing and Grubbing Environmental Protection Procedure (EP1).

4.3 Borrow Pit Sloping

.1 The borrow pit excavation shall be conducted as uniformly as possible to the depths and within the limits outlined by contract specifications, environmental legislation, permits and authorizations.

.2 Upon excavation completion, stockpiled stripped soil shall be placed uniformly over the slopes and bottom of the borrow pit.

.3 Side slopes shall maintain a slope of 4:1, unless otherwise permitted or directed.

.4 Upon completion of the borrow pit excavation, the Contactor shall cap, level and trim the borrow pit prior to decommissioning the area. If burying woody debris, the area shall be capped with ½ metre of clay. Stockpiled topsoil shall be spread, and the area re-vegetated.

4.4 Access Road Removal

.1 The temporary access road to the borrow pit, and any equipment brought onto site, shall be removed as soon as possible following completion of the work or when it is no longer required.

.2 Following the removal of the temporary access road, the site shall be restored; and disturbed areas re-vegetated to suit original conditions.

4.5 Re-Vegetation

.1 Borrow pits will be left in a manner which promotes natural re-vegetation of the site.

.2 In cases where seeding is required, and when conditions permit, seeding shall commence immediately upon completion of capping and trimming operations.

.1 Seeding operations shall not be carried out under adverse conditions of high winds, frozen ground, or ground covered with snow, ice, or standing water.

.2 When conditions do not permit immediate seeding, Manitoba Infrastructure – Remote Road Operations will endeavor to ensure seeding is completed within the next growing season.

ENVIRONMENTAL

PROTECTION

PROCEDURES

20

Quarry Site Selection and Development Requirements

March 2018 Revision

1.0 Description

1. This procedure specifies best management practices for the selection of quarry sites and quarry development. These best management practices are to be applied to quarries established adjacent to the road alignment and to areas within the right of way where blasting and quarrying activities are required for engineering purposes.
2. The Contractor is to comply with all legislation, licences, authorizations and permits respecting the Project.
3. All proposed quarries are subject to a site selection analysis by Manitoba Infrastructure – Remote Road Operations to confirm that the proposed quarry site will not interfere with sensitive features including heritage resources and known cultural sites; sensitive wildlife habitat including species at risk and migratory birds; surface water, fish or fish habitat; or other sensitive sites

2.0 Purpose

1. The purpose of this procedure is to outline criteria for site selection of quarries and their development.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operation (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Mines and Mineral Act C.C.S.M. c. M162
- Quarry Minerals Regulations 1992 M162 — R.M. 65/92
- The Fires Prevention and Emergency Response ACT CCSM. c. F80
- The Forest Act CCSM. c. F150
- The Wildfires Act CCSM c. W128
- The Workplace Safety and Health Act – CCSM. c. W210
- The Dangerous Goods Handling and Transportation Act CCSM. c. D12
- Explosives Act R.S.C., 1985, c. E-17The Manitoba Sustainable Development Forest Practices Guidebook: Forest Management Guidelines for Terrestrial Buffers – 2010-2022
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

- Environmental Protection Specifications – Appendix 8-3: of P6 – All-Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Site Selection

.1 No operator of a quarry is to establish or mine a quarry closer than 400 metres 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 With the exception of quarries that are contiguous with the road right-of-way, all quarry operations shall maintain a 100 metres buffer from the proposed road right-of-way. If no vegetated buffer or screen exists this distance shall be at least 150 metres.

.3 Habitat occupied by endangered species shall be avoided.

.4 Quarry site selection shall consider the proximity of sensitive sites including waterbodies, wildlife, heritage resources and culturally important sites. Setbacks will vary depending on circumstances however selected areas are to be a minimum of:

.1 100 m from a water course or water body,
.2 100 m buffer from any large stick nest, eagle nest, heron rookery, or any other sensitive wildlife area,
.3 30 m from heritage resources or identified cultural sites,
.4 400 m from any residence,
.5 15 m from the property line, and
.6 Other setbacks as required.

.5 Prior to development quarry sites, the potential for acid rock generation will be assessed with the intent of not developing such sites.

5.0 Quarry Development

.1 General

.1 The Contractor shall comply with all legislation, licences, authorizations and permits respecting the Project.

.2 All operations are subject to the appropriate Acts and Regulations,

.3 The Contractor shall not commence any mobilization or drilling activities until a Casual Quarry permit or Quarry Lease have been issued by the Province of Manitoba.

.4 The Contractor's Site Supervisor shall attend a pre-construction meeting with the Contract Administrator, at a mutually agreed upon date, to discuss the development of the quarry and establishment of the crushing operation. The meeting shall be initiated by the Contractor and be held in advance of commencing the field quarry establishment operations. Topics to be discussed shall include the type and quantity of equipment to be used, sequence of work, traffic control, environmental requirements and other pertinent topics.

.5 The Contractor is responsible for maintaining the site and promoting surface water runoff to minimize ponding after rainfall events. In the event that ponding does occur, it shall be discharged or removed using effective erosion and sediment control devices and pumps (if required), as accepted by the Contract Administrator.

.2 Scope of Work

.1 The development of the quarry shall be in accordance with the site plan submitted to Manitoba Infrastructure - Remote Road Operations prior to the beginning of construction and the immediate quarry area plan provided to Manitoba Sustainable Development as part of the work permit application where applicable.

.2 The major components of the Work are as follows:

.1 Access Road Construction,
.2 Clearing and Grubbing,
.3 Blasting, and
.4 Gravel Crushing and Stockpiling of Aggregate.

.3 Site work roads shall be confined to the Quarry Lease with the exception of the quarry access road.

.4 A buffer zone shall be maintained between the excavation area and the registered quarry site boundary.

.3 Fuel Handling and Spill Response

.1 All dangerous goods shall be handled in accordance with The Dangerous Goods Handling and Transportation Act.

.2 The Contractor shall ensure that due care and caution is taken to prevent spills, at all times.

.3 Tank vehicles used to deliver fuel to the work site and/or used to move fuel around the work site must meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods*

.4 An updated list of key contacts and telephone numbers for reporting spills, problems, etc., shall be kept on-site by the Contractor at all times.

.5 A Workplace Hazardous Materials Information System (WHMIS) file shall be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work, Safety Data Sheets (SDS) shall be submitted to the Contract Administrator for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.

.6 All spills shall be reported to the Contract Administrator within 24 hours. The spill report shall include the following:

.1 Personnel responding to the spill,
.2 Material spilled,
.3 Cause of spill,
.4 Estimated amount of material spilled,
.5 Estimated area and volume of soil affected by the spill,
.6 Cleanup action undertaken, and
.7 Means used to contain, transport and dispose of the materials involved.

.7 The Contractor shall designate a qualified supervisor(s) as the on-site emergency response coordinator(s). The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill.

.8 Appropriate materials for containment and cleanup of any spill of dangerous goods or hazardous wastes shall be available on-site when such materials are present in the work area. Also, designated personnel and first responders shall be familiar with the storage location and proper application of such containment and cleanup materials.

.9 All spills shall be contained and cleaned up immediately by on-site personnel in accordance with the on-site emergency response and containment plan.

.4 Quarry Site Development and Mobilization

.1 Description

.1 Site development and mobilization covers 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, general site cleanup and restoration.

.2 Equipment/Materials

.1 Equipment, implements, tools, materials, and facilities shall be of a size and type as required to complete the Work in the required time. The equipment to be used for the Work shall include bulldozers,

front-end loaders, rock trucks, graders, backhoes, and other equipment as needed.

.2 All equipment, implements, tools, plants, materials, and facilities shall be kept in good working order. The Contractor shall have sufficient standby equipment available at all times, as required.

.3 Submittals and Advanced Notice

.1 The Contractor shall submit to Manitoba Infrastructure – Remote Road Operations a site plan showing the location of the proposed crushing operation.

.2 The Contractor shall provide Manitoba Infrastructure – Remote Road Operations at least eleven working days advance notice of the location of the crushing operation. The notice to Manitoba Infrastructure – Remote Road Operations shall include a drawing 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. The suitability of the working area shall be subject to approval of Manitoba Infrastructure – Remote Road Operations.

.3 The Contractor shall provide the Contract Administrator with at least six working days advance notice of the intention to commence production of aggregates. The notice shall include a preliminary schedule for the clearing, establishment of access, relocation of equipment, establishment of water and wastewater services, blasting and commencement of crushing operation.

.4 Prior to preparatory work for each blast, the Contractor shall submit a blast plan to the Contract Administrator including such information as:

.1 The location, depth and area of each blast;
.2 Diameter, depth, pattern and inclination of blast holes;
.3 The type, strength, amount, column load and distribution of explosives to be used per hole, per delay and per blast; and
.4 The sequence and pattern of delays and the description and purposes of any special methods to be adopted.

.5 Clearing and Grubbing

.1 Description

.1 Clearing and grubbing consists of the removal and disposal of all tree stumps, roots, logs, shrubs, grass, weeds, fallen timber and other surface litter wherever they occur within the crushing operation and stockpile sites.

.2 Clearing shall only occur between September 1 and April 1 of the following year. Felled timber and debris will be disposed of in a manner consistent with EP1 Section 4.1. Merchantable timber is shall be removed from the site by April 30 following the clearing activity.

.3 All persons involved in clearing and grubbing activities shall follow safe work practices and procedures regarding chain saw operation, fueling, personal protective equipment, safety features, and transportation and storage.

.4 All persons involved in tree felling shall posses a training certificate for chainsaw and tree felling operations.

.2 Construction Methods

.1 Prior to the production of aggregates, the source of supply shall be cleared, grubbed and stripped of overburden to only the extent and manner necessary as approved by Manitoba Infrastructure – Remote Road Operations.

.2 Brush disposal shall occur in accordance with the *Manitoba Conservation Brush Disposal Guidebook – March 2005.*

.3 Within the limits as directed and staked out by Manitoba Infrastructure – Remote Road Operations, all brush and trees, except those designated by Manitoba Infrastructure – Remote Road Operations to be saved, shall be cut level with the ground, and all surface debris, excluding merchantable timber but including fallen timber, slash limbs, brush, grass and weeds, shall be disposed as directed or permitted by Manitoba Infrastructure – Remote Road Operations.

.4 All stumps and roots shall be grubbed out within areas where excavation will occur and where the embankment grade is less than one metre above the original ground level.

.5 Trees shall be felled towards the centre of the area to be cleared. Any brush falling outside the area to be cleared shall be moved back to the work area and disposed of as directed by Manitoba Infrastructure – Remote Road Operations. The Contractor shall take all precautions against the damage to other trees, traffic structures, pole lines or property in the felling of trees. The Contractor shall be liable for any damages occurring in the performance of this work.

.6 Timber from which forest products can be manufactured (merchantable) shall be cleared of limbs and stockpiled on the worksite in consolidated piles more than 1 metre from standing timber or as directed or permitted by the Contract Administrator. Merchantable timber shall be made available for community use free

of charge upon request from community member or organizations. Removal and or disposal of any unused merchantable timber remains the responsibility of the contractor.

.7 Quarry operations shall not encroach within 15 metres of any property boundary adjoining, private, municipal, or crown leased land.

.8 No operator of a quarry shall establish or mine a quarry closer than 150 metres 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 or residence. A quarry shall not be established within 400 metres of a residence

.9 The burning of debris piles shall not permitted in the spring or early summer to avoid disturbing small wildlife species, which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the late summer or fall.

.10 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 metres away from standing timber and the high water mark of any waterbody.

.11 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.

.12 A burning permit is required for open fires between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising officer must be advised prior to any burning. All fires must be completely extinguished by March 31.

.13 Ensure safety precautions are taken to keep the fire under control. Burn piles must be monitored, to ensure that subsequent fire hazards are not present. Upon completion of the burn, burn piles must be completely extinguished.

.14 All occurrences of fire spreading beyond the debris piles shall be reported to the District Supervisor.

6.0 Quarrying and Crushing Operations

.1 Description

.1 Quarrying and Crushing Operations consist of those activities associated with the day to day operation of the quarry site, including but not limited to blasting, crushing and stockpiling of materials.

.2 Materials

.1 The produced aggregate and supplementary granular material shall consist of sound durable particles of crushed rock, gravel, stone, sand and fines free from sod, roots and organic material.

.2 The aggregate shall be well graded and shall not vary from the maximum to minimum of the specification ranges for consecutive tests.

.3 Traffic gravel shall be subject to testing at the time the material is being produced in accordance with Manitoba Infrastructure – Remote Road Operations instruction. The Contractor shall place the processed aggregate in a separate stockpile until satisfactory production tests have been completed. Rejected material shall be immediately moved either to the vicinity of the feed end of the crusher for reprocessing or to an area completely removed from any approved material.

.4 The addition of supplementary granular material to a quarried material shall not be permitted.

.5 Crushers shall, unless otherwise approved by Manitoba Infrastructure – Remote Road Operations, be equipped with an approved mechanical sampling device for obtaining samples off the main delivery belt.

.3 Submittals

.1 In accordance with Section 25 of the Manitoba Provincial *Quarry Minerals Regulation – M162* the holder of a quarry permit or lease shall provide the Mining Recorder with:

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

.2 Only quarry minerals that are **produced and removed** from the quarry shall be included within the annual statement.

.3 Quarry mineral removed by a 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.

.4 A rehabilitation levy shall be paid by the lease holder for production of aggregate quarry mineral. This only applies to quarry minerals that are **produced and removed** from the quarry lease; no fee is required to be paid as long as the quarry mineral remains stockpiled on the quarry lease. (The current levy is 12¢ per tonne, as of 2018, and subject to change.)

.5 The contractor will inform local communities prior to the commencement of quarry operations and prior to blasting. Communication will include

actions to take if collecting country foods downwind of blasting in areas where dust is likely to settle (thoroughly wash foods prior to consuming)

.4 Construction Methods

.1 Quarry operations shall not be permitted within 150 metres of a Provincial Trunk Highway or Provincial Road or within 400 m of a residence.

.2 The Contractor shall ensure all fuel storage and equipment servicing areas are located a minimum of 100 metres from any waterbody.

.3 If authorized to work in or near a waterbody, the Contractor shall ensure that any work is done in accordance with the *Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, May 1996.*

.4 The Contractor may be subject to operational restrictions if in close proximity to sensitive environmental receptors (such as fish, birds, and wildlife, during critical life stages or periods of traditional land use) as required by Manitoba Infrastructure – Remote Road Operations and/or applicable permits. The frequency of blasts are at the discretion of the contractor based on construction timelines, aggregate requirements, physical conditions of the geography, and availability of supplies, provided the blasts comply with these restrictions.

.5 The local Natural Resource Officer shall be notified no less than one week prior to completion of operations to allow for final inspection of the operation.

.6 All operations must be completed to the approval of the local Natural Resource Officer.

.7 Immediately following blasting, and at any time during the quarry operation, all excavated faces which, in the opinion of the Contract Administrator and/or the Contractor, are unsafe or appear to endanger persons, work, or property, shall be scaled and the loose rock shall be removed from the excavation.

.8 The active excavation face shall be maintained at stable slopes, to the satisfaction of the Contract Administrator.

.9 The Contractor shall ensure work adheres to the maximum peak particle velocity and minimum set back distances as recommended in the *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters, 1998*.

.10 The Contractor shall minimize disturbance to vegetation and install erosion and sediment control measures as directed by the Contract Administrator.

.11 The Contractor shall maintain the quarry site in a tidy condition and free

from the accumulation of debris.

.12 The suitability and location of stockpile sites, as well as access to the sites, including sites at the crushing operation or elsewhere shall be subject to the approval of Manitoba Infrastructure – Remote Road Operations.

.13 The Contractor shall provide stockpile sites, which are level, well drained and have adequate bearing capacity to support the weight of the material that is to be placed thereon.

.14 Stockpiles shall be constructed at locations and by methods that will neither interfere with nor damage utility lines or other utility infrastructure.

.15 Access to stockpiles shall be readily available at all times

.16 The Contractor shall clear the stockpile sites of all debris, vegetation, rocks, snow and other objectionable material prior to placing any aggregate on the stockpile sites.

.17 The pile of material at the end of the discharge belt shall not be allowed to build up to a height greater than 3 metres.

.18 Stockpiling shall be performed using loaders, trucks or stacking conveyors.

.19 When trucks or loaders are used, loads shall be spot dumped uniformly over the entire stockpile area. The aggregate shall be placed in layers not exceeding 1.25 metres in depth. Each layer shall be completed and levelled prior to placing the succeeding layer.

.20 If more than one material is to be stockpiled at the same site, each stockpile shall be separated by a sufficient distance to allow equipment access to all sides of the stockpile.

.21 Aggregates which become mixed with others of different kind, class, source or gradation or which become contaminated by foreign material shall be rejected and promptly removed from the site of work.

.22 The completed stockpiles shall be neat, regular in form and constructed to occupy the smallest feasible area.

7.0 Decommissioning Phase

.1 A Decommissioning Plan shall be developed in consultation with Manitoba Infrastructure – Remote Road Operations and in accordance with all applicable Legislation and Regulations.

ENVIRONMENTAL PROTECTION PROCEDURES 21

WINTER ROAD CLOSURE AND RECLAMATION PLAN

March 2018 Revision

1.0 Description

.1 With construction of all-season roads, existing winter roads shall be closed in segments or in whole and left to regenerate naturally.

.2 Decommissioning of the winter road shall include the removal of site access, removal of culverts, installation of erosion and sediment control (if required) and the promotion of natural re-establishment of vegetation. The Contractor is responsible for ensuring compliance with all contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that the decommissioning and reclamation of the winter road is conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operations (MI-RRO) Contracts and Associated Documents, specifically 130.15/EP6 – Working In or Within Water, and EP11 – Culvert Maintenance and Replacement
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Fisheries Act (R.S., 1985, c. F-14)
- The Manitoba Sustainable Development Forest Practices Guidebook: Forest Management Guidelines for Terrestrial Buffers – 2010-2022
- The Manitoba Conservation Brush Disposal Guidebook – March 2005
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

- Joro Consultants. (2015). Various Wildlife Photographs Provided by Joro Consultants from Research and Field Studies. Prepared for Manitoba Floodway and East Side Road Authority.

4.0 Procedures

4.1 Access Removal

.1 As winter roads are decommissioned, access shall be obstructed and blocked using, rocks, gates, timbers or other barriers to impede access.

.2 Temporary access roads intersecting winter roads shall be decommissioned or blocked as soon as possible following completion of the work or when no longer required.

.3 Effective erosion and sediment control measures shall be installed where required.

4.2 Culvert Removal

.1 Material and debris removal shall be timed to prevent disruption to sensitive fish life stages through adherence to DFO's Restricted Activity Timing Windows to prevent disruption of fish and wildlife habitat. The contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 15 and July 15 of any year, or during periods of high stream flow. In watercourses determined to contain fall spawning fish species, the contractor shall not undertake "in water" construction activities before July 15 or after September 15.

.2 Machinery shall arrive at site in a clean condition and shall be operated on land (from outside of the water) and in a manner that minimizes disturbance to the bed and banks of the watercourse.

.3 Machinery shall be operated from the top of bank, if required.

.4 The work area shall be isolated from all flowing water in a manner that does not cut off flow to downstream portions of the stream at the time during removal.

.5 If dewatering of the site is required, a qualified Fisheries Biologist with appropriate fish handling permits shall be on hand to make the final decision regarding the need for a water quality monitoring and fish salvage program. If fish salvage is necessary, recovered fish shall be relocated to a safe area outside of the influence of the worksite and transport containers must not be overloaded with fish.

.6 Any old structures shall be removed to a suitable upland disposal site, away from the riparian area and floodplain to avoid waste material from re-entering the watercourse.

.7 The bed and banks of the watercourse shall be restored to preexisting conditions following a disturbance.

.8 A site visit shall be conducted prior to the commencement of in-water construction activities to determine the site-specific environmental protection measures that may be required (i.e., worksite isolation methods, site restoration considerations, erosion and sediment control materials required, etc.).

.9 Cofferdams and other structures (diversions) shall be installed to separate the dewatered worksite from flowing water. Materials that are used to build these dams shall not be taken from below the high water mark (1 in 2 year high water level). Cofferdams shall be designed to accommodate any expected high flows during the construction period.

.10 Downstream flows shall be maintained at all times. If isolated sites are required, flows shall be detoured around the sites, and original flows through the site shall be restored as soon as work is completed.

.11 A fish salvage operation shall be conducted prior to dewatering of isolated sites.

.12 Culvert removal techniques shall be utilized that result in the least amount of impacts to the watercourse and riparian area.

.13 The contractor shall avoid using frozen backfill.

.14 Culvert removal shall be avoided during wet and rainy periods

.15 Slopes shall be contoured to an appropriate steepness to minimize erosion; erosion controls shall be installed as soon as possible, and maintained until complete re-vegetation of the disturbed area(s) is achieved.

.16 Soils shall be graded in the direction away from the watercourse and never into the stream itself.

.17 All brush disposal operations shall occur in accordance with the Clearing and Grubbing Environmental Protection Procedure (EP1).

4.3 Re-Vegetation

.1 Winter roads shall be left in a manner which promotes natural re-vegetation of the site. Vegetation recovery for vascular plants is expected within 5 years, followed by longer periods of success for tree species.

ENVIRONMENTAL PROTECTION PROCEDURES 22

TEMPORARY SITE DECOMMISSIONING

March 2018 Revision

Procedure name: Temporary Site Decommissioning

Reference number: EP22

1.0 Description

.1 Upon the completion of work, all temporary sites shall be decommissioned. The decommissioning shall include the removal or disposal of all site debris, appropriate sloping and regrading of the area, removal of site access, and the promotion of natural re-establishment of vegetation.

.2 The Contractor shall ensure compliance with all contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that temporary site decommissioning operations are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operations (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Fisheries Act (R.S., 1985, c. F-14)
- The Manitoba Sustainable Development Forest Practices Guidebook: Forest Management Guidelines for Terrestrial Buffers – 2010-2022
- The Manitoba Conservation Brush Disposal Guidebook – March 2005
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Manitoba Infrastructure and Transportation Standard Construction Specifications for Grading – February 2017

4.0 Procedures

4.1 Site Decommissioning

.1 All temporary structures and equipment shall be removed from the temporary site.

.2 All granular material shall be stripped and removed from the temporary site.

.3 The area shall be leveled to natural or pre-existing grade and slope prior to decommissioning the area. Stockpiled topsoil and other organic matter that had been removed from the site shall be spread to promote natural re-establishment of vegetation.

4.2 Access Road Removal

.1 Access roads and any equipment brought onto site shall be removed or blocked as soon as possible following completion of the work, or when no longer required.

.2 Access roads shall be obstructed and blocked using, rocks, gates, timbers or other barriers to impede access.

4.3 Re-Vegetation

.1 Temporary site locations shall be left in a manner which promotes natural re-vegetation of the site.

.1 In cases where seeding is required, and when conditions permit, it shall commence immediately upon completion of grading, capping and trimming operations. When conditions do not permit immediate seeding, Manitoba Infrastructure – Remote Road Operations shall endeavor to ensure seeding is completed within the next growing season.

.2 Seeding operations shall not be carried out under adverse conditions of high winds, or ground covered with snow, ice, or standing water.

ENVIRONMENTAL PROTECTION PROCEDURES 23

Mussel Salvage

March 2018 Revision

1.0 Description

.1 Mussel survey and if necessary salvage and relocation shall be undertaken as instructed by the Manitoba Infrastructure – Remote Road Operations in advance of various activities, including bridge construction, temporary water crossing structures, spawning shoals or spurs, and/or culvert installation in fish bearing waterways. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that mussel survey, salvage and relocation are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- Manitoba Infrastructure – Remote Road Operations (MI-RRO) Contracts and Associated Documents
- Previous East Side Road Authority (ESRA) Contracts and Associated Documents
- Species at Risk Act, S.C. 2002 c.29
- Fisheries Act R.S.C., 1985, c. F-14
- Applicable Fisheries and Oceans Canada (DFO) Authorizations
- Species at Risk (SAR) Permit
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Protocols for Detection and Relocation of Freshwater Mussel Species at Risk In Ontario Great Lakes Area (OGLA) (Mackie et al. 2008) (http://www.dfo-mpo.gc.ca/Library/332071.pdf)
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

1. Permits
    1. Mussel Salvages shall be conducted to remove mussels from in-water footprints of project components.
    2. Necessary permits shall be obtained prior to conducting any in-water mussel work.
        i. Mussel salvage and relocation work shall be conducted under and in accordance with a live fish handling permit obtained from Manitoba Sustainable Development.
        ii. Where a species at risk (SAR), as listed under Schedule 1 of the Species at Risk Act is known to occur, or is found in the waterbed, work shall also be conducted under and in accordance with a species at risk (SAR) permit obtained from Department of Fisheries and Oceans (DFO). SAR permit application can be found online at: http://www.dfo-mpo.gc.ca/species-especes/permits-permis/pdf/SARA_permit_application-eng.pdf .
    3. Mussel survey and salvage operations shall be conducted by a qualified biologist:
        i. Mussels captured during the survey shall be identified and transported while submerged to a designated location with similar habitat an appropriate distance upstream from the construction work site. (minimum 250 m)
    4. Fish and mussel handling best practices shall be followed to reduce harm to mussels or mussel habitat.
    5. If a SAR is found in a new area, work shall be stopped, DFO informed DFO, and SAR permit obtained prior to continuing work.
    6. Riparian habitats shall be restored to original pre-work condition.
    7. Applicable measure in *Protocol for detection and relocation of freshwater mussel species at risk in Ontario Great Lakes Area (OGLA)* (Mackie et al. 2008) shall be used including:
        i. Preserve SAR listed mussels killed or mortally injured during survey or relocation in 95% ethanol and supply to DFO as per permit requirement.
    8. Mussel surveys, salvage and relocation activities and results shall be documented in a report generated by the fish biologist and submitted to Manitoba Infrastructure – Remote Road Operations for

review and approval. The report shall contain detailed descriptions, photos, and drawings of site conditions including:

i. Location, habitat profile, description of methodology (including names of collectors) contact information, organization, and schedule of activities.
ii. Results including photos of collected species and sites, depths, locations, and substrate in which each animal was found, numbers and the types of species found.
iii. Fish and mussel data collection table, where work is conducted under SAR permit. MI will supply the DFO template to the fish biologist conducting the work.

9. Any death of a listed SAR mussel during the salvage operation or associated construction shall be reported immediately to MI and the DFO Species at Risk Biologist.
10. Any circumstance during the mussel salvage or associated construction which has lead to the serious harm to fish (including any mussel) or a part of a commercial, recreational, or aboriginal fishery or deposit of deleterious substance in waters with potential fish presence the fish biologist/contractor shall report information to Manitoba Infrastructure – Remote Road Operations for submission to DFO under section 38(4) and 38(5) *Duty to Notify*.
11. Where required, Manitoba Infrastructure – Remote Road Operations shall submit reports to DFO and Manitoba Sustainable Development.

ENVIRONMENTAL PROTECTION PROCEDURES 24

Water Quality Monitoring

March 2018 Revision

1.0 Description

.1 Water quality monitoring shall be undertaken to demonstrate that deleterious substances are not entering fish bearing waters or exceeding MWQSOGs.

.2 Monitoring shall be undertaken as instructed by Manitoba Infrastructure (MI) prior to, during, and after in-water construction activities in fish-bearing watercourses, and may be required when working near fish-bearing watercourses or tributaries to fish bearing watercourses. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that water quality monitoring activities are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- MI Contracts and Associated Documents
- Species at Risk Act, S.C. 2002 c.29
- Fisheries Act R.S.C., 1985, c. F-14
- Applicable Fisheries and Oceans Canada (DFO) Authorizations
- Manitoba Water Quality Standards, Objectives and Guidelines (MWQSOGs)
- Canadian Council of Ministers of the Environment – Protocols Manual for Water Quality Sampling in Canada 2011
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All - Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 Water quality monitoring shall occur:

.1 When working in-water in fish-bearing watercourses, or near fish-bearing watercourses when below the normal high-water mark (Q2, or 1:2 year flood levels)

.2 When working in water upstream of and within 5km of a water treatment plant intake.

.3 As directed by MI when working near fish-bearing watercourses of tributaries to fish bearing watercourses.

.2 Water quality monitoring shall consist of:

.1 Total Suspended Solids (TSS) and turbidity monitoring during stream crossing construction and shall be based on an upstream-downstream approach, with sufficient coverage of the study area to define effects in the initial zone of dilution, as well as effects downstream (spatial extent and magnitude of any increases).

.1 A TSS/turbidity relationship for each in-water work shall be developed; turbidity shall be used as a surrogate for rapid on-site monitoring.

.2 Regular in-situ turbidity monitoring shall be conducted and laboratory Total Suspended Solid samples shall be collected and analyzed as required to validate in-situ monitoring where required by permit licence or authorization for the work.

.3 Further sampling shall be conducted as required by permit, licence or authorization for the work.

.2 Benzene Toluene, Ethylbenzene and Xylene (BTEX), and petroleum hydrocarbon fractions F1 to F4 shall be monitored where equipment is working in water or where there has been an accidental release on land that has the potential to or has resulted in the release entering a waterbody.

.3 Data collected at downstream sites shall be compared to data collected at upstream reference sites (background conditions) and compared to the *Manitoba Water Quality Standards, Objectives and Guidelines* (MWQSOGs) for the protection of aquatic life. Further monitoring and corrective action may be required if data falls beyond applicable standards or guidelines.

.3 Water quality monitoring activities shall be conducted or overseen by a qualified Fish Biologist pre-approved by MI. Works requiring water quality monitoring shall not be undertaken without the presence of a qualified Fish Biologist, or a person trained by a qualified Fish Biologist as authorized by MI.

.4 Where monitoring results demonstrate changes above *Manitoba Water Quality Standards, Objectives and Guidelines* (MWQSOGs), the activity shall cease until effective mitigation measures are taken and shown to be effective.

.1 Where an isolated work area is being dewatered and discharge exceeds guidelines, mitigation measures shall be employed and may include diverting waters to splash pads or small settling ponds before the impacted water re-enters a watercourse, or diverting water to the top of a bank where the water will not run back into the watercourse.

.5 The spatial extent and intensity of water quality monitoring during in-water works shall depend upon the presence and velocity of stream flow at the time of construction, or other permit, licence or authorization requirements.

.6 The Contractor shall be responsible for:

.1 Preparing a Fish and Water Quality Protection Plan for work requiring, or that may require water quality monitoring and submitting the Plan to MI prior to the start of the contract. The Plan shall include a description of the works and measures proposed to mitigate adverse changes to water quality.

.2 Contracting with a qualified fish biologist to conduct water quality monitoring activities unless otherwise directed by MI in writing.

.3 Conducting water quality monitoring prior to, during, and after construction activities.

.4 Reporting exceedances immediately to MI.

.5 Ceasing work if exceedances occur and employing corrective actions to mitigate exceedances prior to restarting work.

.6 Notifying MI immediately when the water quality monitoring plan is not being adhered to.

.7 Submitting water quality monitoring reports prepared by a qualified fisheries biologist to MI.

.7 Water Quality Monitoring Reports shall include:

.1 Coordinates of sampling locations,

.2 Description of the construction activity(ies),

.3 Description of the Total Suspended Solids (TSS)-Turbidity relationship,
.4 Measurements and timing of measurements of TSS and Turbidity,
.5 All other sampling data and analysis, and
.6 Exceedances based on rapid on-site monitoring results and corrective actions employed to mitigate exceedances.

.8 Water quality analysis shall be conducted at an Canadian Association for Laboratory Accreditation certified laboratory. Field equipment shall be calibrated in accordance with manufacturer's specifications prior to the start of monitoring work.

ENVIRONMENTAL PROTECTION PROCEDURES 25

Prevention of the Transfer of Invasive Species

March 2018 Revision

1.0 Description

.1 Procedures to prevent the transfer of invasive species shall be undertaken as instructed by Manitoba Infrastructure (MI) prior to, during, and after construction activities, including in-water work and work in sensitive or wilderness areas. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that the transfer of aquatic and terrestrial invasive species are not transferred from one worksite to the next in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- MI Contracts and Associated Documents
- Fisheries Act R.S.C., 1985, c. F-14
- Aquatic Invasive Species Regulations SOR/2015-121
- The Water Protection Act C.C.S.M C. W65
- Applicable Fisheries and Oceans Canada (DFO) Authorizations
- Manitoba Water Quality Standards, Objectives and Guidelines (MWQSOGs)
- Applicable Provincial Licences and Permits
- Environmental Protection Procedures – Appendix 8-2: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018
- Environmental Protection Specifications – Appendix 8-3: of P6 – All- Season Road Linking Manto Sipi Cree Nation, Bunibonibee Cree Nation, and God's Lake First Nation Environmental Impact Statement – April 2018

4.0 Procedures

.1 Aquatic Environment

.1 The Contractor shall ensure that equipment which has previously been in contact with an aquatic ecosystem, including but not limited to rivers,

lakes, and marshes is properly cleaned so as to prevent the spread of aquatic invasive species.

.1 Equipment of particular concern includes, water tanks, tank trucks, pumps, hoses, intake screens, boats and motors, and fish and water monitoring equipment.

.2 Equipment coming in contact with aquatic ecosystems shall be cleaned drained completely, dried, and inspected before and after contact. Cleaning is defined as the removal of all aquatic plants, animals, and sediments.

.3 Equipment that has or will come in contact with listed control zones (see attached Map) shall be decontaminated using one of the methods described in table 1. (See Manitoba Sustainable Development's website for the most up to date list of Control zones: http://www.gov.mb.ca/waterstewardship/stopais/)

Table 1: Decontamination methods for water related equipment as described by Manitoba Sustainable Development. Source: http://www.gov.mb.ca/waterstewardship/stopais/help/methods.html [2017-03-09]

Product	Dilution	Method	Duration	Next steps
Bleach 5.25% (household sodium hypochloride)	100 ml bleach to 1 L of water	Completely submerge and ensure the item is in direct contact with solution.	30 minutes	Rinse thoroughly with potable water and wipe down with a cloth.
Vinegar (white) (5% acetic acid)	No dilution required	Completely submerge and ensure the item is in direct contact with solution.	60 minutes	Rinse thoroughly with potable water and wipe down with a cloth
7% hydrogen peroxide	64 ml to 1 L of water	Completely submerge and ensure the item is in direct contact with solution.	60 minutes	Rinse thoroughly with potable water and wipe down with a cloth.
Table salt (NaCl)	10 ml of salt to 1 L of water	Completely submerge and ensure the item is in direct contact with solution.	24 hours	Rinse thoroughly with potable water and wipe down with a cloth.
Hot water (>60 C)	N/A	Completely submerge and ensure the item is in direct contact with water at all times.	10 seconds	Wipe down with a cloth.
Hot water (>60 C)	N/A	Clean with hot water (minimum 60 C) that is discharged at a pressure between 40 to 60 psi. The water must be sprayed no more than 10 cm from the surface being cleaned.	All surfaces being cleaned must receive a minimum of 20 seconds of exposure to the hot water.	Wipe down with a cloth.
Temperatures below -10 C	N/A	Expose item to required minimum temperature.	three consecutive days	None

.4 Equipment that has come into contact with aquatic ecosystems in another province, territory, or country must be decontaminated as described in Table 1.

.2 In the event that aquatic invasive species are discovered during inspection the contractor shall inform the MI project manager and environmental coordinator as well as Manitoba Sustainable Development using the web-form linked below:
(http://www.gov.mb.ca/waterstewardship/stopais/ais_reporting.html

.2 Terrestrial Environment

.1 To prevent the transfer of terrestrial invasive species, all equipment shall be cleaned to remove all earthen material and plant debris and inspected before being brought to sight and before it is removed from sight. Cleaning shall be carried out with a pressure washer or scrub brush. If soap is used it shall be phosphate free.

.2 In the event terrestrial invasive species are discovered the contractor shall inform the MI project Manger and environmental coordinator and the Invasive Species Council of Manitoba using the web-form at:
http://invasivespeciesmanitoba.com/site/index.php?page=report-a-sighting

.3 Documentation

.1 Documentation of measures to ensure the prevention of the spread of aquatic and terrestrial species invasive species shall be incorporated into the respective Water Quality and Fish Protection Plan and Monthly Environmental reports including:

.1 History of equipment work locations and potential sources of contamination.

.2 Detailed Cleaning and Decontamination Plan and procedures (methods) to be employed.

.3 Documentation of cleaning and decontamination (date, personnel, confirmation of methods used).

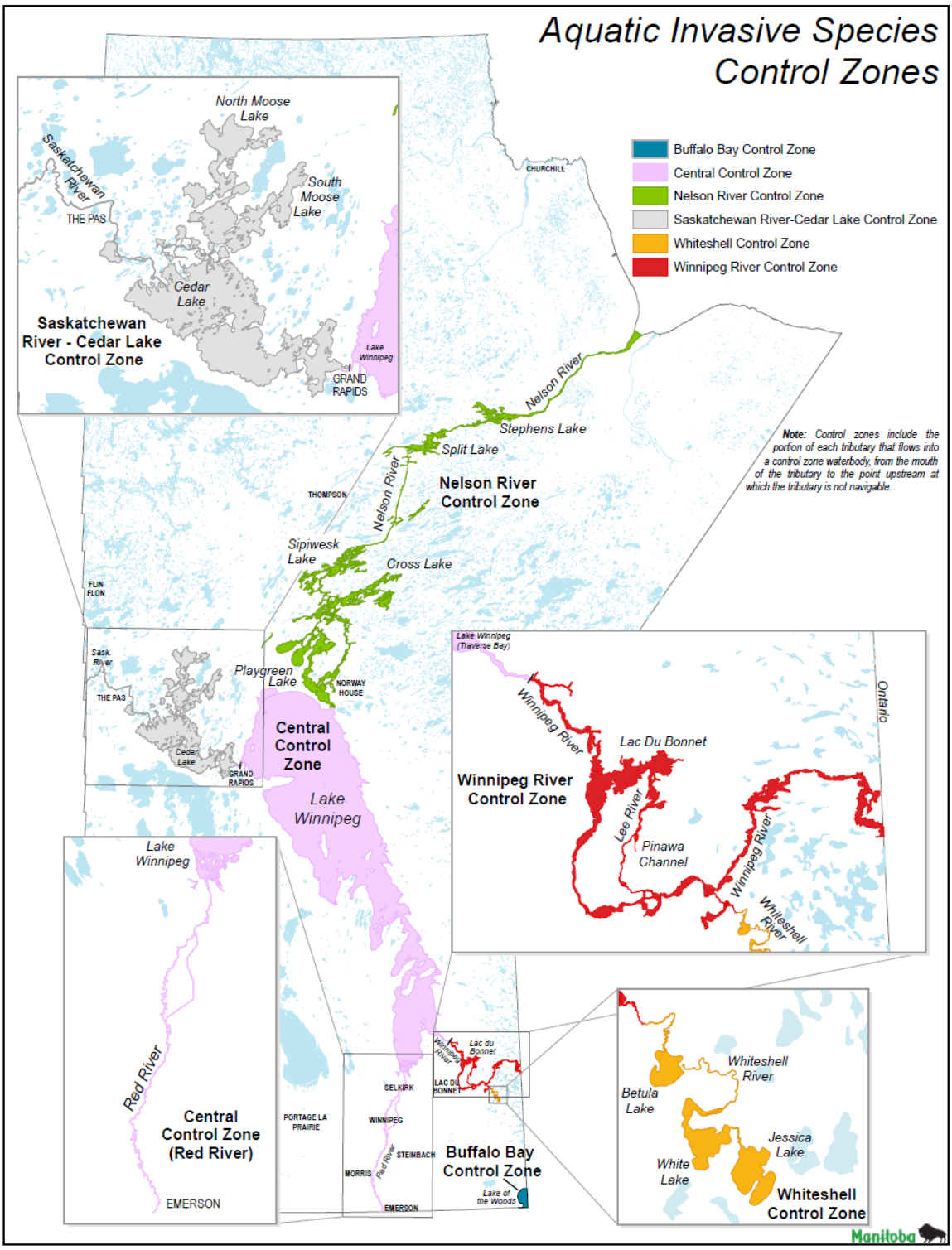

Figure 1: Manitoba Aquatic Invasive control Zone Map. Source: http://www.gov.mb.ca/waterstewardship/stopais/help/control_zone.pdf

Prepared by: G Chamberlain	Revision Number 25.2	Date Issued: March 2017
Approved by: J. Smith		Date of Revision: 2018-03-12
Updated Sec 3.0 and 4.0		

Appendix 8-3:
Environmental Protection Specifications

ENVIRONMENTAL PROTECTION SPECIFICATIONS - 130

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130.1 DESCRIPTION

.1 This Specification covers general requirements for the protection of the Environment.

130.2 ENVIRONMENTAL PROTECTION PLAN

.1 The Contractor shall plan and implement the Work of this Contract in accordance with the Specifications and Drawings.

130.3 SUBMITTALS

.1 The Contractor shall submit details of the proposed Designated Areas for review and acceptance by the Contract Administrator in accordance with the General Conditions. Submittals shall include marked up Drawings, and coordinates of the proposed Designated Areas including access, and shall provide sufficient detail to demonstrate full compliance with these specifications. Designated Areas requiring submittals are:

.1 laydown and staging area(s);
.2 waste storage area(s);
.3 fuel storage and refuelling area(s);
.4 equipment servicing area(s);
.5 work camp(s);
.6 parking area(s);
.7 cement batch plant(s);
.8 cement washout area(s); and
.9 others as required by the Contract Administrator.

.2 The Contractor shall submit for review and acceptance by the Contract Administrator 10 business days in advance of the start of work:

.1 Environmental Emergency Plan for Spill Response and Remediation;
.2 Material Safety Data Sheets;
.3 A Water Quality and Fish Protection Plan including but not limited to:

- Construction Phase Erosion and Sediment Control measures;
- In-water works;
- Water quality monitoring;
- Isolation plan;
- Fish salvage and;
- Mussel salvage.

.4 monthly reports providing the records as specified in 130.5 of this Specification;
.5 Waste Management Plan;
.6 Material Management Plan in the event of an Unplanned Shutdown;
.7 Problem Wildlife Management Plan;
.8 Cement Washout Plan;
.9 Petroleum Storage and Equipment Fuelling and Servicing Plan;
.10 Evacuation and Emergency Preparedness Plan in the Event of a Wildfire;
.11 Copies of all required approvals, clearances, permits, licences, and certificates issued to the contractor, or their sub-contractors, including but not limited to:

- Batch Plant Environment Act Licence;
- Fish collection permits;
- Septic permits;
- Crown Lands Well permit.

.12 Other submittals as required.

130.4 ENVIRONMENTAL APPROVALS AND AUTHORIZATIONS

.1 No work is to begin without having the proper permits or authorizations on hand for said work.

.2 The Contractor shall adhere to conditions specified in any and all permits, authorizations, licences, approvals and letters of advice or directive issued for the Work.

.3 Where MI applies for permits, authorizations, licences, approvals and letters of advice or directive to any regulatory body to facilitate the Contractor's work plan, there shall be no award for damages, delay claims or other costs by the Contractor on MI as a result of delays in issuance or rejections of applications.

130.5 RECORD KEEPING

.1 The Contractor shall maintain a record file at the Site in which all relevant information relating to materials handling, spills, leaks, releases, and the implementation and adjustment of the environmental protection measures shall be documented. The Contractor shall maintain a copy of these records for a minimum of 5 years. Relevant information and/or significant events to be documented and provided to the Contract Administrator in a timely fashion may include, but are not limited to:

.1 all accidents, spills, leaks, and releases and the reporting and clean-up procedures used;
.2 any reviews, improvements and adjustments to the environmental protection measures;
.3 details of all environmental training sessions, including the schedule of these sessions and the names of participants;
.4 a full inventory of dangerous goods brought onto the site;
.5 a full inventory of all hazardous wastes encountered on the site;
.6 records of all waste hauled from the site for disposal, including the location, name and description of the disposal facility and waybills/manifests;
.7 records of all material hauled from the site for recycling, including the location, name and description of the person or facility the material was delivered to;
.8 records of all fuel transported and stored at the site;
.9 records of equipment inspections and maintenance;
.10 records of all public complaints;
.11 records of actions taken to remove deleterious substances and debris from watercourses;
.12 records of annual use of pesticides; and
.13 wildlife encounters and/or management measures employed.

130.6 GENERAL

.1 All construction traffic shall be restricted to the Site, existing roads, or approved access routes.

.2 The Contractor shall employ all reasonable precautions to prevent the general public from entering the Site.

.3 The Contractor shall maintain equipment and vehicles in good working order and shall restrict the servicing of equipment to Designated Areas. Where equipment and vehicles cannot be moved to the Designated Area, spill containment is required.

.4 The design of temporary works shall be provided to the Contract Administrator and shall be approved in advance of construction. There may be cases where community concerns and/or

changing regulatory schemes may require the Contractor to design temporary works beyond what is outlined in regulation or in these General Requirements. If costs associated with these additional temporary works are not identified prior to the Submission Deadline, GC7.00 will apply.

.5 In the design of temporary works, the Contractor shall assume, unless otherwise advised in writing by the Contract Administrator, that all watercourses are navigable and shall design temporary works in accordance with this premise. Where navigability cannot be provided, the Contractor shall provide a plan that outlines warning signage and markers and alternate means of passage for approval by the Contract Administrator.

130.7 INSPECTIONS

.1 Periodic inspections of the site will be conducted to ensure that the Site is managed in accordance with the specifications. The Contractor shall address inadequate environmental protection measures, remediate contamination and restore site conditions to the satisfaction of the Contract Administrator.

.2 As sites are decommissioned the CA will retain a third party independent environmental consultant to assess these sites. The contractor shall remediate, including appropriate disposal of contaminated material to the satisfaction of the CA.

130.8 DESIGNATED AREAS AND ACCESS

.1 The Contractor shall construct and maintain Designated Areas for their intended purpose and in a manner which provides for inspection including the regular clearance of snow.

.2 The Designated Areas shall be contained within the Site unless otherwise authorized by the Contract Administrator.

.3 The topsoil in Designated Areas shall be stripped and stockpiled for later reuse in site restoration. Granular material shall be placed to ensure all weather accessibility.

.4 Locations within Designated Areas where equipment, hazardous material and/or wastes will be stored or maintained shall be underlain with at least 30 cm of impermeable soil or approved equal and lined with an impermeable groundsheet to contain spills and minimize cleanup costs. Hazardous materials must also comply with the additional requirements outlined in 130.9.2.4.4.

.5 Designated Areas shall be located a minimum of 100 metres from any waterbody.

.6 Access to Designated Areas from a public roadway shall be such that it is not a safety hazard to the employees or the general public.

.7 The Contractor shall restore the Designated Areas and access roads not required for on-going maintenance to their original condition.

.8 The Contractor shall ensure access to Designated Areas is restricted to prevent access of unauthorized personnel.

130.9 MATERIALS HANDLING, STORAGE AND DISPOSAL

130.9.1 General

.1 All construction areas shall be kept clean and orderly at all times during and at completion of construction.

.2 The Contractor shall take all reasonable measures to prevent compounds harmful to human health or the environment from being released.

.3 All unused, partially used and waste material shall be removed and properly disposed of prior to the end of the Contract.

.4 Materials required for spill containment and clean up shall be available at all locations where construction related activities occur.

130.9.2 Handling and Storage of Wastes

130.9.2.1 Domestic Solid, Demolition and Construction Waste

.1 Waste material shall be recycled to the degree that is economically and practically feasible.

.2 There shall be no dumping of waste on or off the construction site.

.3 Different waste streams shall not be mixed.

.4 Waste shall be stored in Designated Areas for each worksite and camp as approved by the Contract Administrator. At no time during construction shall domestic solid, demolition, or construction waste be permitted to accumulate at any other location on the work site.

.5 All waste materials shall be collected and contained in marked containers appropriate to the waste classification until removed from the site for recycling or disposal as approved by the Contract Administrator.

.6 All solid waste generated at the camp must be disposed of at a registered waste disposal ground or recycling facility. On-site burning or burial is not permitted.

130.9.2.3 Domestic Sewage and Grey Water

.1 All sewage and grey water shall be collected through the provision of a wastewater management system in compliance with the Manitoba Regulation No. 83/2003 respecting Onsite Wastewater Management Systems or any future amendments thereof.

.2 All collected sewage shall be removed from the site at least once every seven (7) days, where transportation permits, by a registered sewage hauler and disposed of at a Designated licensed wastewater treatment facility.

130.9.2.4 Dangerous Goods/Hazardous Waste Handling and Disposal

.1 Dangerous goods/hazardous wastes shall be identified and shall be handled in accordance with The Dangerous Goods Handling and Transportation Act and Regulations, WHMIS and any other applicable regulation.

.2 All dangerous goods/hazardous waste storage areas shall have the top soil stripped and lined with at least 30 cm of impermeable material and an impermeable ground sheet in a manner as to minimize the spread of any leak or spill. Top soil shall be stored and used in the restoration of the area.

.3 All dangerous goods/hazardous wastes shall be stored with a storage vessel or constructed dyking system designed to contain 110% of the total volume. Where dyke shall be used it shall be designed and maintained in such a manner so as to capture spills. Accumulated fluid in the dyke is to be disposed of as hazardous waste unless test results from an approved accredited lab demonstrate otherwise.

.4 A WHMIS file shall be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work Material Safety Data Sheets (MSDS) shall be submitted to the Contract Administrator for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.

.5 The Contractor shall have staff trained and certified in the handling of dangerous goods present on-site whenever dangerous goods are being transported, stored or utilized for the performance of the work. All staff responsible for the handling of dangerous goods and hazardous wastes must also be trained in emergency spill response and containment.

.6 All dangerous goods/hazardous waste shall be confined to Designated Areas and stored in a secure manner to prevent access by unauthorized personnel.

.7 Disposal of hazardous waste shall only be at hazardous waste facilities licensed under The Dangerous Goods Handling and Transportation Act.

.8 All hazardous waste stored at Designated Areas shall be removed from the site at least once every seven (7) days or as approved by the Contract Administrator. Should access to the site pose an issue, all hazardous waste shall be stored in an approved storage vessel until transportation of waste can be accomplished.

.9 All used oil shall be stored in leak-proof drums with tight fitting lids or tanks until removed to a registered waste oil facility or hazardous waste disposal facility. Outdoor storage of used oil in drums must be stored in such a manner so as to provide for secondary containment, prevent corrosion and damage from collision and prevent a spill to the environment.

.10 Used oil filters shall be drained, placed into suitable storage containers and disposed of at approved facilities. The oil drained out of the used filters shall be collected and handled in the same manner as used oil.

.11 A pesticide use permit shall be obtained prior to the application of pesticides. The Contractor shall ensure that all pesticides are applied by a licensed commercial applicator and adhere to all conditions specified in Manitoba Regulation 94/88 respecting Pesticides or future amendments thereof and associated permits. The Contractor is to submit a completed post seasonal form to the Contract Administrator at Substantial Performance and at the end of each calendar year, confirming that the terms and conditions of the permit have been satisfied.

130.9.2.5 Petroleum Handling and Storage

.1 Fuel tanks are not to be used without a proper authorization and documentation of such (Permit, etc.)

.2 All petroleum handling, and storage shall comply with Manitoba Regulation 188/2001 respecting Storage and Handling of Petroleum Products and Allied Products or future amendments thereof, the Manitoba Fire Code and all other applicable requirements.

.3 Petroleum products shall be transported in accordance with the Manitoba Provincial Dangerous Goods Handling and Transportation Act.

.4 Fuelling of storage tanks and mobile equipment is to take place within Designated Area(s) for fuel storage and fuelling.

.5 In the event that a piece of equipment must be fuelled or maintained outside a Designated Area, the fuel shall be transported in approved containers.

.6 All fueling activities shall use spill trays and/or polyethylene (HDPE) groundsheets to contain the fuel and prevent fuel from being spilled onto the ground surface. Fuelling areas should be kept clean and free of snow and other materials so as to allow clear access and routine inspection and leak detection.

.7 Tank vehicles used to deliver fuel to the worksite and/or to refuel around the worksite shall meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods or any future amendment thereof.

.8 Equipment shall not be refueled from fuel dispensed from a watercraft.

.9 Petroleum storage shall be a minimum of 3 metres from property lines or buildings, 15 metres horizontally from hydroelectric poles and lines, 1 metre from other storage tanks and 100 metres from any watercourse.

.10 Petroleum storage tanks shall be grounded and the dispensing tank shall be attached with a bonding cable to an appropriate location on the receiving tank prior to commencement of fueling.

.11 Petroleum products shall be labeled as to their contents and stored and handled within Designated Areas which clearly identify the materials present.

.12 Access to the Designated Area(s) for petroleum storage areas shall be restricted to authorized personnel.

.13 Storage tanks shall be secured.

.14 Signs shall be posted in Designated Area(s) for fuel storage and refueling including:

.1 Materials identification and hazard placards;
.2 Storage tank permit(s);
.3 Spill response procedures including contact list in the event of a spill;
.4 Clean up procedures;
.5 Fuelling procedures; and
.6 Access restrictions.

.15 Personnel involved in the handling and storage of fuels shall have WHMIS and spill response training.

.16 Combustible engines shall be shutdown during fueling.

.17 No smoking and no open flames are permitted at storage tanks or the Designated Area for fuel storage and refueling at any time.

.18 Only above ground storage tanks shall be used for the storage of bulk petroleum products. All storage tanks over 230 litres must be double-walled tanks meeting the standard defined under the Canadian Council of Ministers of the Environment Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products. All storage tanks over 5000 litres require a permit and must meet the requirements under the Manitoba Regulation 188/2001 respecting Storage and Handling of Petroleum Products and Allied Products or any future amendments thereof,

.19 Storage tanks shall be equipped with overfill protection and spill containment at the transfer area(s) in the system design approved by the Contract Administrator.

.20 Product inventory shall be taken weekly by the owner/operator of all above-ground storage tanks greater than 5000 litres and retained for inspection upon request.

.21 Barriers shall be installed to encircle petroleum storage tanks to prevent collisions with vehicles and heavy equipment. The mass, height and setback of the barricades are to be determined by the size of equipment on site and shall be operable under conditions of snow accumulation.

.22 All petroleum storage containers and tank vehicles shall be inspected daily for leaks and spillage. Damaged or leaking fuel storage containers shall be promptly removed from the Site.

.23 Secondary containment shall be incorporated at locations where stationary equipment is used.

.24 Fuel barrels shall be transported in accordance with the Dangerous Goods Handling and Transportation Act and be securely fastened to vehicles during transport.

.25 Fuel transfers must be monitored.

.26 All vehicles hauling fuel shall carry materials and equipment for emergency spill response.

.27 All petroleum product storage sites and mobile transportation units shall, at all times, be equipped with appropriate categories of equipment and volumes of fire suppression products.

130.10 SPILLS, REMEDIATION AND EMERGENCY RESPONSE

.1 All spills or accidental releases of petroleum products or other hazardous substances to a watercourse, to federal lands, and/or as specified by the Manitoba Regulation 439/87 respecting Environmental Accident Reporting or future amendments thereof shall be immediately reported to Manitoba Sustainable Development and the Contract Administrator.

It is the responsibility of the Contractor to conduct appropriate soil testing on Designated Area(s) and contract work sites prior to the mobilization of equipment to site to establish baseline conditions. The Contractor will be held responsible for any contamination unless evidence to the contrary can be provided by the Contractor.

.2 All environmental emergencies shall be reported to the Contract Administrator within 24 hours whether it was necessary to report the spill to Manitoba Sustainable Development or not. The report shall include the following:

.1 Location of spill or release (GPS coordinates);
.2 Personnel responding;
.3 Materials spilled;
.4 Cause of spill;
.5 Estimated quantity of released material;
.6 Estimated area and volume of soil affected;
.7 Cleanup action undertaken; and
.8 Means used to contain, transport and dispose of the materials involved.

.3 The Contractor shall designate a qualified on-site emergency response coordinator(s) who shall be on site at all times that work is being undertaken. The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill, release or other environmental emergency.

.4 All spills or releases of petroleum and other products shall be contained, treated and disposed of in accordance with the Manitoba Regulation 188/2001 respecting the Storage and Handling of Petroleum Products and Allied Products Regulation or any future amendment thereof and any other applicable requirement.

.5 An updated environmental emergency plan for each dangerous good/hazardous waste shall be maintained in the work area at all times. The environmental emergency plan must include:

.1 The identification of any environmental emergency that can reasonably be expected to occur and that would likely cause harm to the environment or constitute a danger to human life or health and identification of the harm or danger;
.2 a description of the measures to be used to prevent, prepare for, respond to and recover from any environmental emergency identified above;
.3 a list of individuals who are to carry into effect the plan in the event of an environmental emergency and a description of their roles and responsibilities;
.4 the identification of the training received for each of these individuals;
.5 a list of the emergency response equipment and the equipment's location; and
.6 the measures to be taken to notify members of the public who may be adversely affected by an environmental emergency.

.6 The Contractor is responsible for restoring site, including soil and water remediation resulting from the activities of the Contractor, any Subcontractors and agents of the Contractor.

.7 As the Designated Areas are scheduled for decommissioning, the Contract Administrator will coordinate an environmental site assessment(s) of the Designated Areas by MI or its Agent. The Contractor will provide notice to the Contract Administrator at least 30 days prior to completion of work and/or Designated Area(s) decommissioning.

.8 Where spill events occur, the Contract Administrator will coordinate an environmental site assessment(s) by MI or its Agent.

.9 The Contract Administrator and the MI will coordinate the submission of a Remedial Action Plan (RAP) to Manitoba Sustainable Development for approval, if necessary. The Contractor shall remediate contaminated sites as per the criteria identified in the approved RAP and to the satisfaction of the Contract Administrator.

.10 The Contractor may, at their expense, engage a member of the Association of Professional Engineers and Geoscientists of the Province of Manitoba to draft and submit a RAP to Manitoba Sustainable Development for approval. The Contractor must provide copies of the RAP draft(s) and approval(s) to MI prior to the start of remediation.

.11 Where multiple Contractors are using a Designated Area the Contract Administrator shall ensure an agreement is reached between Contractors to deal with overlap of responsibility for site restoration and remediation.

.12 The Contractor shall provide a work plan and schedule to the Contract Administrator regarding remediation activities within 10 business days following receipt of approved RAP and at minimum 5 business days prior to the anticipated start of remedial works. Remedial works shall only begin in the presence of MI or their designated agent.

.13 The Contractor shall provide the equipment and personnel required to conduct the remediation in a timely manner and shall work cooperatively with MI and their designated agent to address site contamination.

.14 The Contractor shall dispose of all contaminated materials at a licensed treatment facility unless otherwise provided for in the RAP. Contaminated runoff or water shall be collected and contained. The collected runoff shall be disposed of as identified in the RAP.

.15 Waybills for disposal shall be provided by the Contractor to the Contract Administrator in all instances. The Contract Administrator may, prior to issuing Substantial Performance to the Contractor, require a hold-back, which will be released to the Contractor following submission of all waybills.

130.11 DUST AND PARTICULATE CONTROL

.1 All work shall be conducted by methods that minimize the raising of dust from construction operations.

.2 Water or approved dust suppressants only shall be used for dust control when necessary. The use of waste petroleum or petroleum by-products is not allowed.

.3 All vehicles used to haul materials to or from the work site shall have the load covered with a tarpaulin during transport.

.4 All stock piles or spoil piles shall be maintained as to minimize wind erosion.

130.12 NOISE AND NOISE LIMITATIONS

.1 All equipment supplied by the Contractor shall be effectively sound-reduced by means of silencers, mufflers, acoustic linings, acoustic shields or acoustic sheds.

.2 The Contractor shall comply with the noise By-laws of the adjacent First Nations and/or municipal authorities.

.3 Any operation of equipment outside the hours as regulated by the adjacent First Nations and/or municipal authorities shall require an exemption in writing. The Contractor shall provide a copy of such an exemption to the Contract Administrator.

.4 The Contract Administrator may impose requirements on the Contractor to minimize noise nuisance at their discretion.

130.13 PLANNED AND UNPLANNED SHUTDOWNS

.1 The Contractor shall ensure all equipment, supplies, and any other items used during construction are relocated to Designated Areas for laydown and staging or taken off site prior to any shutdown period.

.2 All dangerous goods/hazardous waste shall be removed from the Site, including from the Designated Areas for waste and/or fuel storage, for any shutdown period where transportation permits and/or at the discretion of the Contract Administrator. In all instances dangerous goods/hazardous waste shall be securely stored and inspected regularly during the shutdown.

.3 Waste products shall be removed from the construction site during a shutdown period, including from the Designated Areas where transportation permits and/or at the discretion of the Contract Administrator. The demolition and construction waste products, such as gravel and waste concrete, may be left on-site as long as they are stored in a secure Designated Area for waste.

.4 The Contractor shall submit a plan to the Contract Administrator for removal and/or securing of equipment, supplies and waste materials in the event of an unplanned shutdown.

130.14 STAFF TRAINING AND AWARENESS

.1 The Contractor shall provide mandatory training and awareness sessions prior to the start of construction and to new personnel to ensure all personnel working on the Contract are aware of and understand the environmental provisions of the Contract documents including relevant drawings, specifications and Contractor submittals and updates. Such orientation and participants shall be documented.

.2 The Contractor shall submit the planned frequency and records of these meetings. The Contractor shall maintain access to all environmental provisions of the Contract documents including relevant drawings, specifications and Contractor submittals and updates, in a location and manner accessible to all employees, subcontractors, and agents,

130.15 WORKING WITHIN OR NEAR WATER

130.15.1 General

.1 Material, cleared vegetation, stockpiles and/or waste shall not be deposited or stored within 100 metres of a watercourse, unless approved by the Contract Administrator, No borrow shall be removed from within 100 meters of a water body.

.2 Construction activities shall not occur within 100 meters of a watercourse with the exception of construction of a watercourse crossing.

.3 Where a 100 meter distance is not possible, a buffer zone of undisturbed vegetation between the construction activities and the watercourse shall be established. The buffer zone width shall be established according to the following formula: Width = 10 meter + 1.5(slope gradient) or 30 meters whichever is greater.

.4 Backfill installed adjacent to a fish bearing water body shall consist of clean and well graded granular material that is free of fines. Rip-Rap and other rock or granular materials to be used in or adjacent to a fish bearing water body shall be free of fines.

.5 Vehicles and other equipment shall be kept away from and out of the water unless otherwise approved by the Contract Administrator. Equipment shall not be washed within 100 meters of a watercourse. Where the Contractor will be using equipment or supplies in water, and where there is risk of importing invasive species, the Contractor shall clean the equipment and

supplies in accordance with Manitoba Sustainable Development's Protocol for Cleaning Equipment.

.6 Whenever it is necessary to remove existing beaver dams, the Contractor shall adhere to the 130.15.10. Work plans for beaver dam removal shall be provided to the Contract Administrator 10 business days prior to the start of dam removal for application of a beaver dam removal permit from Manitoba Sustainable Development.

.7 Effective erosion and sediment control measures shall be implemented where and when necessary to prevent sediment from entering any watercourse and in accordance with 130.16.

.8 The Contract Administrator and/or an MI Environment Officer shall inspect the site prior to the commencement of in-water construction activities.

.9 Deleterious substances shall be prevented from entering any watercourse or any of their contributory channels.

.10 A silt curtain should be placed downstream of in water work.

130.15.2 Timing of Work

.1 The Contractor shall schedule, plan, and carry out works such that in-water work is kept to a minimum. When practical, in-water work shall be staged to occur as a single event.

.2 In-water work shall be restricted to low flow periods and shall be scheduled during a period when the watercourse is seasonally dry or frozen to the bottom whenever possible.

.3 The Contractor shall not undertake construction activities in watercourses during periods of high stream flow.

.4 South of Leaf River, the Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 1 and June 30, during periods of high stream flow or identified spawning periods. In waters that have fall spawning fish, the Contractor shall not undertake construction activities between September 15 to April 30, unless otherwise authorized by the Fisheries and Oceans Canada and Manitoba Sustainable Development.

.5 North of Leaf River, the Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 15 and July 15, during periods of high stream flow or identified spawning periods. In-waters that have fall spawning fish, the Contractor shall not undertake construction activities between September 1 to May 15, unless otherwise authorized by the Fisheries and Oceans Canada and Manitoba Sustainable Development.

130.15.3 Disturbance to Stream Bed and Stream Banks

.1 Machinery access for in-water work shall be limited to a single point on the shoreline. The distance between the machinery access point and the worksite shall be minimized. The machinery shall arrive on site in a clean, washed condition, and be free of fluid leaks prior to any in-water work.

.2 The Contractor shall use an in-water pad built of washed gravel where in-water equipment activity may generate excess sediment.

.3 The Contractor shall minimize the disturbance to stream bed and banks. The bed and banks of the watercourse shall be restored to preexisting conditions following a disturbance.

.4 The Contractor shall use existing trails, roads or cut lines to access the site where possible to avoid disturbance to riparian vegetation.

.5 Debris and other objects shall be lifted out of the water whenever possible. Items shall not be dragged across the stream bed/lake bottom and banks/shoreline.

130.15.4 Authorizations and Approvals

.1 Construction within 30 meters of a waterway requires authorization by Manitoba Sustainable Development except construction of watercourse crossing approaches.

.2 Fisheries and Oceans Canada Authorization(s) may be required prior to the commencement of any in-water or near water work. MI shall obtain these permits as required. The Contractor is required to provide MI with all project specific information required for these submissions a minimum 90 calendar days prior to the undertaking of in-water and/or near water works, with the understanding that Fisheries and Oceans Canada may request additional information. MI shall

not be responsible for delays associated with Fisheries and Oceans Canada Authorization(s). All conditions specified in Fisheries and Oceans Canada Authorizations, Letters of Advice and/or other Fisheries and Oceans Canada directives apply to the work.

.3 Transport Canada (TC) Navigation Protection Approval(s) may be required for the construction of permanent, temporary or other watercourse crossings and/or in water structures. MI shall obtain these permits as required. The Contractor is required to provide MI with all project specific information required for these submissions a minimum 90 calendar days prior to the need to undertake the works with the understanding that TC may request additional information. MI shall not be responsible for delays associated with TC Navigation Protection Approval(s). All conditions specified in TC Navigation Protection Approval(s) and other directives apply to the work.

.4 For all temporary work and construction activities required for in-water works MI will apply for required authorizations, permits, and approvals. Contractors must supply detailed schedules and work plans to facilitate these applications and cooperate with additional information requests from regulatory bodies. It may take up to 90 or more business days to process applicable authorizations, permits required. The contractor is bound by all conditions specified in regulatory directives applicable to the work. MI shall not be held responsible for any delays related to approvals.

130.15.5 Stream Crossings

.1 Where possible existing stream crossings shall be utilized to traverse watercourses. The number of temporary stream crossings shall be minimized.

.2 All stream crossings shall be constructed in accordance with The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996.They must be designed for their intended construction loading and to accommodate intended water flows.

.3 Streams shall be crossed at right angles at a narrow channel section where the width is no greater than five meters, measured from high water mark to high water mark. Meander bends, braided streams, alluvial fans and other unstable areas shall be avoided.

.4 The natural alignment of the stream shall be maintained.

.5 Dredging, infilling, grading or excavating of the channel bed or banks of fish bearing waterways will require DFO authorizations.

.6 If there is no existing crossing and the watercourse must be crossed, the contractor must either:

.1 Construct a temporary crossing or ice bridge. Ice bridges constructed solely of clean water do not require Fisheries and Oceans Canada Authorization provided they do not obstruct fish passage during timing windows. Ice bridges constructed otherwise require Fisheries and Oceans Canada Authorization; or

.2 Ford the watercourse. For one-time crossing (over and back) of watercourses where the width is no greater than five meters, measured from high water mark to high water mark. For larger watercourses or crossings that require multiple fordings, Fisheries and Oceans Canada Authorization shall be obtained.

.7 Fording activities may require water quality monitoring as per 130.15.8.

.8 Temporary stream crossings shall be removed as soon as possible following completion of the construction activities or when it is no longer required, whichever is sooner.

GR130.15.6 Base Flow, Diversions and Fish Passage

.1 The Contractor is responsible for maintaining base flows for the duration of construction activities in watercourses requiring in-water and near water work, including those works which may require the installation of cofferdams and related structures, unless otherwise approved.

.2 Temporary stream diversions may be used wherever a watercourse must be completely blocked to allow work in the dry.

.3 Temporary stream diversions shall be constructed under low flow conditions. The Contractor must ensure the diversion structure design accommodates any expected high flows during the construction period. Materials used shall not be taken from below the high water mark.

.4 Diversion channels shall be constructed in the dry by excavating from downstream to upstream and removing the ends of the channel last. Diversion channels shall have gentle curves and similar gradient to the natural watercourse.

.5 In-water diversion structure channels shall be constructed using erosion resistant materials.

.6 Existing watercourses shall not be disturbed until temporary diversion channels have been constructed.

.7 Gradient controls shall be used to ensure that diversion channel slopes correspond to the existing channel gradients.

.8 Erosion control measures shall be installed to protect any unstable channel beds and banks in accordance with 130.16 of this specification.

.9 The diversion channel shall be routinely inspected to identify areas of incipient erosion. Eroded areas shall be repaired immediately.

.10 A pumped diversion may be used to maintain flows downstream in non-fish bearing watercourses.

.11 For pumped diversions of fish bearing watercourses all water intakes shall be sized and screened to prevent blockage and/or fish mortality in accordance with Fisheries and Oceans Canada's Freshwater Intake End-of-Pipe Fish Screen Guideline.

.1 The pumping system shall be sized to accommodate expected watercourse flow from storm events.

.2 Pumps shall be discharged onto geofabric, gravel, straw bales or an alternate approved by the Contract Administrator to dissipate the energy of discharge.

.12 Temporary stream diversions shall be designed to provide fish passage, even during low flow conditions. The diversion shall be removed during fish migration periods where elevated pipes are used.

.13 At least one-third of the width of any fish bearing watercourse shall be left open to permit the safe and unimpeded passage of fish. If width is to be constricted by more than two thirds Fisheries and Oceans Canada Authorization is required. Authorizations shall be sought in accordance with 130.15.4

.14 The original flows through the site shall be restored as soon as work is completed.

130.15.7 Fish Salvage

.1 The Contractor cannot initiate any work where fish salvage may be required without a live fish handling permit and the direct oversight of a qualified Fish Biologist.

.2 Fish salvage shall be conducted prior to the commencement of in-water construction activities and/or prior to dewatering of an isolated work area.

.3 Where fish salvage is being coordinated by others, the Contractor must cooperate and coordinate with the Contract Administrator, MI and its agents.

.4 The Fish and Water Quality Protection Plan shall be developed by the Contractor so as to minimize the onsite requirement for a fish biologist to the greatest extent practical. Any alterations to the submitted Fish and Water Quality Protection Plan shall be submitted 15 days in advance of the start of work.

.5 The Contractor must advise the Contract Administrator 15 business days in advance of in-water works where fish salvage is required. The Contractor shall reconfirm the schedule 5 business days and 48 hours in advance of the start of work. Any alteration to the schedule after the 5 business days which results in direct or indirect costs to the Contractor Administrator, MI or its agent shall be at the Contractor's expense.

.6 Fish salvage shall be conducted immediately after an area within a watercourse has been isolated. Partial dewatering is permissible to decrease wetted area and increase efficiency of capture, however, the fish salvage shall be completed prior to dewatering the entire area.

.7 The Contractor must provide access and facilitate fish salvage activities including removal of ice within the isolated area and any other works as necessary at no additional cost.

.8 Isolation structures shall be monitored by the Contractor once the fish salvage is completed to ensure that they remain barriers to fish passage and do not allow fish to enter the isolated area. In the event that the isolation is breached or expanded in a manner that may allow fish to enter the isolated area, fish salvage by MI or its agent will be required. The salvage shall be conducted at the Contractor's expense.

130.15.8 Water Quality Monitoring

.1 Water quality monitoring shall be required for in-water work in fish-bearing watercourses and may be required when working near fish-bearing watercourses or tributaries to fish bearing watercourses to demonstrate that deleterious substances are not entering into the watercourse. Water quality monitoring shall also occur when working upstream and within 5km of a water treatment plant intake.

.2 A Fish and Water Quality Protection Plan shall prepared by the Contractor in advance of construction works and any amendments must be submitted 15 days in advance of the start of work requiring or may requiring water quality monitoring. The Plan shall include a description of the works and measures proposed to mitigate adverse changes to water quality.

.3 Where water quality monitoring is being coordinated by others, the Contractor must cooperate and coordinate with Contract Administrator, MI and its agents. All water quality monitoring activities must be conducted or overseen by a qualified Fish Biologist. No works requiring monitoring shall be undertaken without a qualified Fish Biologist representative.

.4 The Contractor must advise the Contract Administrator 15 business days of work where water quality monitoring is or may be required. The monitoring shall be conducted prior, during and after construction activities. The Contractor shall reconfirm the schedule 5 business days and 48 hours in advance of the start of work. Any alteration to the schedule which results in direct or indirect costs to the Contract Administrator, MI or its agent shall be at the Contractor's expense.

.5 Where monitoring results demonstrate changes above Manitoba Water Quality Standards, Objectives and Guidelines (MWQSOGs), the activity shall cease until effective mitigative measures are taken. Where an isolated work area is being dewatered and discharge exceeds guidelines, mitigation measures may include diverting waters to splash pads or settling ponds prior water re-entering a watercourse or diverting to the top of bank where the water will not run back into the watercourse.

130.15.9 Culvert Maintenance and Replacement

.1 Construction and maintenance activities, including material and debris removal, shall be timed to prevent disruption to sensitive fish life stages on fish bearing waterways by adhering to the timing windows outlined in 130.15.2 where accumulated material is preventing the passage of water and/or fish through the structure.

.2 Emergency debris removal(s) may be carried out at any time of year.

.3 The Contractor shall limit the removal of accumulated material to the area within the culvert, immediately upstream of the culvert and to that which is necessary to maintain culvert function and fish passage.

.4 Erosion controls shall be installed as soon as possible in accordance with 130.16 of this specification.

.5 Accumulated material and debris shall be removed slowly to allow clean water to pass, to prevent downstream flooding and reduce the amount of sediment-laden water going downstream.

.6 Installation or replacement of culverts shall occur in isolated and dewatered worksites. Diversion structures shall be installed in accordance with 130.15.6 of this specification.

.7 Culverts in fish bearing waters shall adhere to the following design criteria to ensure that fish passage is maintained:

.1 For culverts less than 25 meters long the flow velocity through the crossing shall not exceed 1 metre/second;
.2 For culverts greater than 25 meters long the flow velocity through the crossing shall not exceed 0.8 metre/second;
.3 The crossing shall not be impassable to fish for longer than 3 consecutive days once in 10 years or 7 consecutive days once in 50 years; and

.4 The culvert shall be designed such that fish passage is possible even in low flows.

.8 A minimum spacing of 2 meters between adjacent culverts is required if more than one culvert is to be installed at a crossing location. There shall be no more than three culverts at one crossing.

.9 The Contractor shall maintain a culvert gradient as close to the natural stream grade as possible.

.10 The Contractor shall install culverts a minimum of 30 centimeters or 10% of culvert diameter (whichever is greater) below the normal stream bed.

.11 The Contractor shall avoid using frozen backfill. Backfill shall be compacted to avoid settling, hydrostatic uplifting or side movements of the culvert that may lead to blockage of fish passage or washouts.

.12 Slopes shall be contoured to an appropriate steepness to minimize erosion.

.13 Soils shall be graded in the direction away from the watercourse and never into the stream.

.14 Metal culverts are not to remain on site and should be disposed at an appropriate disposal or recycling facility.

130.15.10 Beaver Dam Removal

.1 Beaver Dams to be removed shall be identified in consultation with and as approved by the Contract Administrator. Beaver dams may not be removed without first obtaining authorization from Manitoba Sustainable Development.

.2 Removal of the dam shall not adversely affect a fishery, or recreational property uses that depend on the dam's existence, both upstream and downstream.

.3 Removal activities shall be restricted to removal or breaching of the dam itself and shall not involve channel or shoreline modification downstream of the dam.

.4 Beaver dam removal is not to be conducted in the winter as this may result in loss of fish habitat.

.5 Whenever possible remove beaver dams by hand.

.6 Remove the dam gradually to allow a slow release of water to prevent sediment release and potential flooding downstream.

.7 if explosives are to be used in dam removal, individual detonations shall not exceed one kilogram of explosives, diesel fuel and fertilizer are not to be used as explosives.

.8 Removals are not to be completed on beaver dams directly connected to a culvert or bridge.

130.15.11 Blasting Near a Watercourse

.1 The Contractor may be requested by the Contract Administrator to modify the timing of blasts to respect key life cycle events to critical life functions of fish and wildlife.

.2 Blasting near watercourses classified as fish habitat shall adhere to set back and weight of explosive charge guidelines as referenced in Fisheries and Oceans Canada document Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters 1998. Where these guidelines cannot be met, blasting plans shall be submitted to the Contract Administrator for MI's application to Fisheries and Oceans Canada to obtain necessary approvals prior to commencement of blasting in areas that could affect fish habitat.

130.16 EROSION AND SEDIMENT CONTROL

.1 Erosion and sediment control measures shall be installed in accordance with the Contract specifications and as directed by the Contract Administrator.

.2 Erosion and sediment control for work near water must be installed prior to any disturbance and maintained throughout the contract.

.3 Erosion and sediment control for road works must be installed and maintained progressively as directed by the Contract Administrator.

.4 Prior to construction, all vegetated areas that are to be preserved or untouched shall be well marked. Vegetation cover shall be maintained to the greatest extent possible adjacent to watercourses.

.5 Vegetation cover shall be preserved for as long as possible by staging construction. Vegetation within 30 m of a watercourse shall be cleared by hand.

.6 Operations shall be halted during heavy rain events.

.7 Erosion and sediment control measures shall be installed before starting work within 100m of a waterway. Erosion and sediment control measures are to be inspected weekly and after every major rain or melt event for proper functioning; necessary repairs shall be made immediately.

.8 Turbidity curtains shall encircle in-water works and be installed in such a manner so as to prevent sediment from escaping the isolated area.

.9 Slash and debris from clearing operations shall be retained and used to temporarily protect erosion-prone slopes.

.10 Stream banks and bed at culvert openings shall be protected with erosion-resistant materials such as riprap.

.11 The Contractor shall ensure that the point of discharge from seepage, runoff water or pumped water from any excavation is a minimum of 30 meters from any watercourse.

.12 All disturbed areas including shorelines shall be restored to their original condition as soon as practicable following completion of construction activities. The restoration may include but is not limited to, infilling of any temporary diversion channels; removal of construction materials and debris; installation, maintenance, and removal of sediment and erosion control measures and re-vegetation of disturbed areas.

.13 When re-vegetation by seeding, the Contractor shall use an approved seed mix in accordance with the Contract. Where there is sufficient time in the growing season seeding will commence immediately upon completion of trimming operations. Seed mixtures will be selected based on specific soil conditions and location.

.14 Pesticides shall be applied by hand within 30 m of all waterbodies.

.15 Sediment and erosion control measures shall remain in place and be maintained until the vegetation has become established.

130.17 CLEARING AND GRUBBING

130.17.1 General

.1 Clearing and grubbing shall be limited to the Site and associated access routes.

.2 Clearing and grubbing shall not occur between April 1 and September 1 of any year to minimize disturbances to wildlife and habitat.

.3 Prior to clearing or grubbing work areas shall be clearly marked and approved by the Contract Administrator.

.4 A vegetation buffer shall be maintained between the ROW and any development including, but not limited to, borrow areas, quarries, laydown areas, personal property, utility poles and camps as outlined in the Forest Management Guidelines for Terrestrial Buffers.

.5 A vegetation buffer shall be maintained between the ROW and sensitive features including, but not limited to, sticknests, mineral licks, dens, heritage sites as outlined in the Forest Management Guidelines for Terrestrial Buffers.

130.17.2 Clearing

.1 Clearing in known permafrost areas will be minimized where possible. Where clearing cannot be avoided the Contractor shall retain the top layer of organic soil, ground vegetation and an insulating cover.

.2 Areas for selective clearing (i.e. sensitive) must be accurately flagged as approved by Contract Administrator prior to clearing. Appropriate mitigation measures must be identified and applied. Any new sensitive areas found during clearing must be reported to the Contract Administrator and are not to be cleared.

.3 Trees shall be felled towards the centre of the ROW and woody debris shall not fall or be pushed into standing timber. Any debris or trees that fall outside of the ROW shall be moved back into the ROW.

.4 Clearing activities shall be limited to removing vegetation to ground level without disturbing root mass. Height of stumps shall not exceed 30 centimetres.

.5 Clearing within 30m of a watercourse shall be by hand.

130.17.3 Grubbing

.1 Grubbing activities shall end 2 meters from any standing timber to avoid disturbing the root systems of nearby standing trees and reduce blow down.

.2 The Contractor will take steps to avoid damage to property when grubbing. The Contractor is responsible for any damages and will be required to fix any damage to property to its original condition.

.3 Grubbing will not change access to the existing trails, trap lines, portages and other travel corridors.

130.17.4 Disposal and Storage

.1 Merchantable wood identified by the Contract Administrator shall be stockpiled outside and immediately adjacent to the clearing limits. Stockpile sites shall be located within existing clearings or areas of non-merchantable timber. Unless otherwise specified, all stockpiled material shall be removed from Crown Land by April 30 of any given year.

.2 Disposal of cleared trees and brush must be done as directed or approved by the Contract Administrator. Disposal may involve burning, compacting, piling, burying, windrowing and compacting, limbing and chipping.

.1 Windrows have to be compacted as close to the ground as possible with a maximum height of 0.6 metre.

.2 If burying is selected as a means of disposing woody debris, the area shall be capped with ½ metre of clay, followed by the stockpiled topsoil, and revegetated.

.3 Wood and brush piled for burning must be located at least 15 meters from other wood and brush piles and standing timber prior to burning. If piles are windrowed for burning a 15 meter break should occur for every 100 meters in length. Trees and brush shall be piled in a way that allows for clean and complete burning of all material. Avoid mixing soil into the slash. See 130.20 for additional burning restrictions.

.4 For exploratory clearing burning must occur in the centre of the right of way or push outs, whichever is furthest from standing timber.

130.18 HERITAGE RESOURCES

.1 Areas where heritage or cultural resources of interest are suspected of being present shall be inspected prior to the start of construction.

.2 Work shall immediately cease where archaeological or historic artifacts are encountered during construction activities. The discovery shall be reported to the Contract Administrator and MI.

.3 Work at the location will be suspended until a Historic Resource Consultant can assess archeological or historic artifacts that are encountered and mitigation measures are confirmed with the Manitoba Historic Resources Branch.

130.19 WILDLIFE

.1 During the term of the Contract, the Contractor, its employees and agents shall not hunt, trap or harass wildlife at or in the vicinity of the Site.

.2 The Contractor shall not remove, destroy or disturb endangered species or their habitat as defined under the Manitoba Endangered Species Act and/or Species at Risk Act.

.3 Wildlife habitat shall not be destroyed or damaged, except pursuant to a license, permit or other authorization issued for the Project.

.4 No person shall take, or have possession of, or willfully disturb, destroy the nest or eggs of birds pursuant to the Migratory Birds Convention Act and/of the Manitoba Wildlife Act.

.5 No person shall remove, disturb, spring or in any way interfere with any trap set out lawfully by any other person for the purpose of taking furbearing animals.

.6 The Contract Administrator may restrict construction activities, including blasting, within close proximity to sensitive wildlife or wildlife habitat during critical lifecycle periods.

.7 Construction camps and worksites shall be kept clean and tidy and free of wildlife attractants. All food and garbage waste shall be stored in bear proof containers away from sleeping quarters and be disposed of at an area which has been designated as an appropriate waste disposal site. Disposal shall occur at regular intervals.

.8 Employees, workers and other staff shall not feed or harass wildlife that they may encounter. Nuisance wildlife shall be immediately reported to the Natural Resources Officer, Contract Administrator and onsite supervisor.

.9 Trees containing large nests of sticks and areas where active dens or burrows occur shall be identified, left undisturbed and reported to the Contract Administrator. No construction is to occur within 100m of an eagle's nest, heron rookery or other sensitive wildlife area without prior approval from the Contract Administrator and MI.

130.20 WILDFIRES

.1 An evacuation and emergency preparedness plan addressing wildfires shall be prepared and submitted to the Contract Administrator prior to the commencement of work.

.2 No fires shall be started without first taking sufficient precautions to ensure that the fire can be kept under control. The Contract Administrator must be notified prior to any burning.

.3 Burning will normally occur between November 16th and March 31st. To the extent possible, burning shall be avoided between April 1st and November 15th of any given year. In the event that burning is required, an application for a burning permit shall be submitted by MI for approval to Manitoba Sustainable Development.

.4 All fires shall be monitored by the Contractor for the duration the burning activities. No fire shall be left unattended.

.5 No activity shall be conducted which may cause a fire to spread. Similarly, burning or smoldering matter shall not be placed where it may cause a fire.

.6 A primary zone shall be established around camp sites and other longer term temporary structures associated with construction and maintenance activities. Flammable materials such as leaves, brush, dead limbs, and fallen trees shall be cleared from the area regularly.

.7 Combustible materials shall be stored in a safe manner.

.8 The locations of construction camps, offices, and related structures shall be chosen in such a fashion as to minimize the risk of exposure to wildfires.

.9 No burning shall occur on deep organic soils like peat. If a fire occurs in peat soils it must be immediately extinguished.

.10 Burning near communities or roadways shall occur only when weather conditions allow the safe dispersal of smoke.

.11 Any wildfire or any fire outside the intended burn area, shall be immediately reported to the Contract Administrator and to Manitoba Sustainable Development at 1-800-782-0076.

.12 All reasonable attempts shall be made to extinguish wildfires. All available equipment, services and labor shall be made available for the purposes of wildfire protection operations.

.13 All construction and related activity taking place in the vicinity of a wildfire shall cease until advised by the Contract Administrator that it is safe to resume operations.

130.21 CEMENT BATCH PLANT AND CONCRETE WASH OUT AREA

.1 It is the Contractor's responsibility to ensure that on-site concrete batch plants have a current Environment Act Licence and Crown Lands Work Permit prior to commencing on-site operation.

.2 The Contractor shall apply for the Crown Lands Work Permit unless otherwise advised by the Contract Administrator, and shall provide to the Contact Administrator prior to the start of work.

.3 Where MI applies for the Crown Lands Work Permit for the batch plant, the Contractor shall provide MI a copy of all necessary documentation a minimum 45 days prior to operation to support the work permit application including but not limited to the Environment Act Proposal, environmental protection/management plans and Licence.

.4 The Contactor must obtain all applicable permits for ground or surface water withdrawals and provide to the Contract Administrator prior to the start of operations. Permits are required under the Water Rights Act where water removal from a surface water course exceeds 25,000L/day.

.5 Concrete wash out areas shall be located so as to avoid the removal of standing timber. Concrete wash out areas shall be a minimum 100 m from a water course or other sensitive feature and shall not drain to any water course.

.6 Decommissioned concrete wash out areas shall be left in such as manner so as to not impede future construction activities or pose a hazard to people or the environment.

130.22 MEASUREMENT AND PAYMENT

.1 The requirements set out in 130 are considered incidental to the Work and will not be measured for payment unless indicated otherwise in the Specifications.

Appendix 8-4:
Safe Work Plan (Sample)

SAFE WORK PLAN

Contract For:	Enter COMPANY name		
Contract Number:	Enter Contract Number, an example P4-BR-B4 (P4 is the project area, BR is the First Nation, B4 is brush clearing contract 4)		
Location:	Enter location of Work		
Project Owner:	East Side Road Authority	**Dates of Work:**	Enter dates of work based on Work Plan or Contract schedule
Contract Administrator	**Name:** **Phone:**	Enter name of CA and phone #'s	

1. Description of Work

Prime Contractor Contact Information	**Project Manager:**	**Tel:**
	Site Supervisor:	**Tel:**
	Safety Officer:	**Tel:**
	Environment Officer:	**Tel:**
	Worker Safety Representative:	**Tel:**
	As the PRIME CONTRACTOR, Enter the name and phone number of the designated project manager, site supervisor, safety officer, environment officer, and worker safety representative.	
Scope of Work / Major Tasks **If applicable refer to Supplemental Conditions 2.00 AND Add Additional Tasks**	Enter the scope of work. Scope of work may be found in the Contract (see Supplemental Conditions 2.00) or Work Plan. Write/type as is provided in the Contract or Work Plan, or provide a brief description. Be sure to include all primary tasks.	
Sub-Contractor Contact Information	**Project Manager:**	**Tel:**
	Site Supervisor:	**Tel:**
	Safety Officer:	**Tel:**
	Environment Officer:	**Tel:**
	Worker Safety Representative:	**Tel:**
	As the SUB- CONTRACTOR, Enter the name and phone number of the designated project manager, site supervisor, safety officer, environment officer, and worker safety representative.	
Subcontractor Scope of Work / Major Tasks	Enter the scope of work of the sub-contractor. Scope of work may be found in the Contract or Work Plan. Write/type as is provided in the Contract or Work Plan, or provide a brief description. Be sure to include all primary tasks.	

SAFE WORK PLAN

2. Equipment Involved

Equipment	Number	Owner

Enter each piece of equipment individually involved with this contract. Include the unit number and the owner of the equipment. If there are two dozers, use one line for each dozer to identify unit number.

3. Training Requirements and Qualifications

All Personnel	Enter the training requirements and qualifications for all personnel. Example: WHMIS, first aid, company orientation, safe work plan, task specific certifications, etc.
Subcontractors	Enter the training requirements and qualifications for all subcontractors. Example: WHMIS, First Aid, task related certifications, company orientations, safe work plans, etc.
Other (i.e Task/Area Specific Requirements)	Enter the training requirements and qualifications related to specialized work activities for all personnel and subcontractors. Example: Fall Protection Training, Excavation, Flagging Coordinator/ Person, etc.

Training Records Available: YES ☐ NO ☐

4. Personal Protective Equipment

All On-Site Personnel	Enter the personal protective equipment (ppe) to be worn on-site and the class / type of PPE.
Area / Task Specific Requirements	Enter the personal protective equipment (ppe) that is to be for specific tasks, include class / type and /or the CSA standard.
Other Requirements	Enter any additional personal protective equipment (ppe) to be worn for specific tasks, include class / type and /or the CSA standard.

SAFE WORK PLAN

Hazard Rating System	
Severity 1) Fatality or Disability 2) Loss Time Injury 3) Reportable Injury - No loss Time 4) Minor Medical Treatment	**Probability** a) Immediate b) Probable c) Possible d) Remote

5. Scope of work: Please supply all relevant Safe Work Procedures

Work Activity	Hazards (Ranked by Severity and probability)	Controls	Safe Work Procedures Available
Enter the work activity. Enter one work activity per line, using the scope of work activities. Examples of work activities would be Installing Culvert OR Mechanical Brush Clearing.	Enter all the hazards associated with the work activity listed. ← Once all hazards are identified for the identified work activity, use the Hazard Rating System above to identify the severity and probability for each identified hazard.	For each hazard, provide or plan for a control measure, such as: Eliminate (including substitute) – e.i. remove the hazard or substitute (replace) hazardous material or machines Engineering – e.i. designs, modifications, processes Administrative Control – e.i. alter the way work is done, policies, rules, including safe work practices and operating procedures Personal Protection Equipment – e.i. reduce exposure such as contact with chemicals and noise.	☐ Yes ☐ No Check Yes or No for each activity identified.
			☐ Yes ☐ No

SAFE WORK PLAN

6. Control Measures to Protect Other Workers/Public: This section details how you will protect other workers and members of the public sharing the worksite, or working in areas adjacent to the worksite from any physical or chemical hazards that the work may generate. In the case of occupied office space chemical hazards include dust and odours.

Hazard	Control Measure
Identify the hazard(s) that may affect workers or the public.	For each hazard identified, provide a control measure to eliminate the hazard.

7. Emergency Contacts

Local Fire Department:	Provide the phone number for the local fire department. If none, make inquiries on the next possible resources. A source must be identified.
Ambulance Service: (If Available)	Provide a number. If not, provide reference on how the procedure.
RCMP/Band Constable:	Provide local police detachment phone number(s).
Nearest Hospital / Nursing Station:	Name: Phone Number: Provide phone number to nearest hospital or nursing station.
Driving Directions to Nearest Hospital / Nursing Station:	Provide written instructions to hospital / nursing station or attach the written driving instructions.
Map Attached:	**Yes** ☐ **No** ☐ Attach map to nursing station.
Manitoba Conservation:	**Information: (204) 945-6784** **Environmental Accident Reporting: (204) 945-4888 or 1-800-214-6497**
Workplace Safety and Health Branch i.e. Serious Incidents Reporting	**(204) 957-7233 or 1-855-957-7233**

SAFE WORK PLAN

8. On Site Emergency Responders and Equipment	
On-Site Emergency Coordinator	Identify the on-site Emergency Coordinator.
Back-up On-Site Emergency Coordinator	Identify the BACK-UP on-site Emergency Coordinator.
Emergency Communication Device(s) **a) Summoning Assistance** **b) Site Evacuation**	List the devices used to communicate (CALL) for emergency assistance and to evacuate. If protocol has been attached, please identify in this area.
Standby Emergency Transportation Vehicle(s)	Identify the mode of emergency transportation available on-site.
List of all 1st Aiders on site	Identify level of first aiders and post.
Location of First Aid Kits	Identify location of all first aid kits.
Location of Fire Extinguishers	Identify location of all fire extinguishers.
Location of Spill Kits	Identify location of all spill kits.
Location of Portable Eye Wash Station	Identify location of potable eye wash station OR protocol.
Location of Material Safety Data Sheet(s)	Identify location of Material Safety Data Sheets.
Location of Muster Point	Identify MUSTER POINTS.

SAFE WORK PLAN

	Name	Title	Date
Person drafting this Safe Work Plan:	John Doe	Safety Officer	January 1, 2000
	John Doe, Safety Officer, January 1, 2000		
Project Manager Approval:	Susie Doe	General Manager	January 1, 2000
	Susie Doe, General Manager, January 1, 2000		
Contractor's Safety Person :	John Doe	Safety Officer	January 1, 2000
	John Doe, Safety Officer, January 1, 2000		
Worker Safety Representative(s):	Willy Doe	Safety Worker Rep. /Equipment Operator	January 1, 2000
	Willy Doe, Safety Worker Representative / Equipment Operator, January 1, 2000		

This Safe Work Plan does not in any way replace the Contractor's responsibilities under the Workplace Safety & Health Act and Regulations to ensure Workplace Safety and Health Programs are in place to protect workers and members of the public from potential hazardous conditions on the job.

This Safe Work Plan shall be posted at the project site and made available to Manitoba Infrastructure Safety and Environment Officers, and Construction Inspectors. The Safe Work Plan will be used to monitor safe practices on site as required by the Workplace Safety and Health Act.

Appendix 8-5:
Sustainability Assessment of the Proposed Project

Appendix 8-5

Sustainability Assessment of the Proposed Project

Appendix 8-5: Sustainability Assessment of the Proposed Project

Principles and Guidelines of Sustainable Development	Actions Undertaken and Commitments by MI
Integration of Environmental and Economic Decisions	▪ The proposed Project to construct an all-season road linking Manto Sipi Cree Nation, Bunibonibee Cree Nation and God's Lake First Nation is part of the provincial commitment to provide all-season road access to and between remote, isolated communities on the east side of Lake Winnipeg. ▪ The purpose of the proposed Project is to provide safe and more reliable road transportation between the communities as well as economic and social benefits. ▪ The scope of the environmental impact assessment of this Project considers biophysical, socio-economic and Indigenous environmental components. ▪ The conclusion of the environmental impact assessment is that the social economic and health benefits outweigh any potential adverse environmental effects.
Economic decisions should adequately reflect environmental, human health and social effects.	
Environmental and health initiatives should adequately take into account economic, human health and social consequences.	
Stewardship	▪ MI is committed to being a positive and creative force for the protection and enhancement of the environment; having respect for the public that could be affected by our decisions and actions; and being responsible stewards of the environmental resources in our care. ▪ The proposed Project is consistent with the recommendations in 'Promises to Keep …Towards a Broad Area Plan for the East Side of Lake Winnipeg' (East Side Planning Initiative 2004) which concluded that there was support for a regional all-season road network north of the Bloodvein First Nation community and concluded that action today will provide benefit for many generations into the future. ▪ The proposed Project is part of a regional transportation network that will eventually connect the remote communities on the east side of Lake Winnipeg with the provincial road network. This will benefit the health, social well-being and economy of those communities for future generations. ▪ The proposed Project, and future road projects, will provide employment training and experience opportunities for Indigenous communities in the region.
The economy, the environment, human health and social well-being should be managed for the equal benefit of present and future generations.	
Manitobans are caretakers of the economy, the environment, human health and social well-being for the benefit of present and future generations.	
Today's decisions are to be balanced with tomorrow's effects.	
Shared Responsibility and Understanding	▪ MI has undertaken an extensive Indigenous and Public Engagement Program (IPEP) consisting of community meetings, traditional knowledge studies and open houses (**Chapter 5**) aimed at providing information about the proposed Project and obtaining information for use in the project design and environmental assessment. ▪ Information obtained from the IPEP has been incorporated into the final design of the proposed Project and has been used in the development of specific mitigation measures in the environmental assessment report.
Manitobans should acknowledge responsibility for sustaining the economy, the environment, human health and social well-being, with each being accountable for decisions and actions in a spirit of partnership and open cooperation.	
Manitobans share a common economic, physical and social environment.	

Principles and Guidelines of Sustainable Development	Actions Undertaken and Commitments by MI
Shared Responsibility and Understanding	▪ The project design has considered the various issues and concerns of Manitobans living on the east side of Lake Winnipeg including regional transportation, economic development and employment opportunities, cost of goods and services and indigenous and community development.
Manitobans should understand and respect differing economic and social views, values, traditions and aspirations.	
Manitobans should consider the aspirations, needs and views of the people of the various geographical regions and ethnic groups in Manitoba, including Indigenous peoples, to facilitate equitable management of Manitoba's common resources.	
Prevention	▪ MI is committed to understanding the potential environmental effects of the Project and has adopted measures aimed at protecting and preserving our environment and promoting sustainable development. ▪ The proposed Project was subject to a broad-scoped environmental assessment (this document) that identified, assessed and mitigated potentially adverse environmental effects and identified environmental protection measures to check that mitigation measures are implemented and effective. ▪ Environmental protection plans, specific component plans and monitoring plans will be implemented to prevent potentially adverse environmental effects and to implement actions to correct mitigation measures that are not fully effective. ▪ The proposed Project was designed to use previously disturbed areas, wherever feasible.
Manitobans should anticipate, and prevent or mitigate, significant adverse economic, environmental, human health and social effects of decisions and actions, having particular careful regard to decisions whose effects are not entirely certain but which, on reasonable and well-informed grounds, appear to pose serious threats to the economy, the environment, human health and social well-being.	
Conservation and Enhancement	▪ The proposed Project was subject to a broad-scoped environmental impact assessment that identified, assessed and mitigated potentially adverse effects on ecological processes, biological diversity and life-support systems. ▪ Specific baseline studies were carried out on vegetation, aquatic and wildlife resources to provide relevant, recent and representative ecological information for consideration in the environmental assessment. ▪ Indigenous values were considered in decision-making processes through the inclusion of traditional and local knowledge in the design of the proposed Project and in the environmental assessment. ▪ Mitigation measures for the proposed Project include provisions to limit access by hunters and fishers to the region by blocking and re-vegetating temporary access roads.
Manitobans should:	
(a) maintain the ecological processes, biological diversity and life-support systems of the environment	
(b) harvest renewable resources on a sustainable yield basis	
(c) make wise and efficient use of renewable and non-renewable resources	
(d) enhance the long-term productive capability, quality and capacity of natural ecosystems	

Principles and Guidelines of Sustainable Development	Actions Undertaken and Commitments by MI
Rehabilitation and Reclamation	▪ Any contaminated sites resulting from construction activities or encountered along the road right-of-way will be assessed and remediated in accordance with provincial standards. ▪ Construction sites for the proposed Project, including quarry sites, borrow areas, staging areas, construction camps and temporary access roads will be re-vegetated once these temporary areas are no longer required using natural processes augmented with native and naturalized plants and seeds.
Manitobans should:	
(a) endeavour to repair damage to or degradation of the environment	
(b) consider the need for rehabilitation and reclamation in future decisions and actions	
Global Responsibility	▪ While the focus of the proposed Project is a relatively small area on the east side of Lake Winnipeg, MI's scope extends throughout the east side of Lake Winnipeg region to areas in northern Manitoba. Environmental issues within the scope of this region include transportation, boreal woodland caribou protection, protected areas and tourism and recreation that have global implications. ▪ The proposed Project has a relatively small regional project footprint area and a correspondingly small ecological footprint, while the socio-economic footprint is comparatively larger due do employment and economic development opportunities.
Manitobans should think globally when acting locally, recognizing that there is economic, ecological and social interdependence among provinces and nations, and working cooperatively, within Canada and internationally, to integrate economic, environmental, human health and social factors in decision-making while developing comprehensive and equitable solutions to problems.	
Guidelines for Sustainable Development	
Efficient Use of Resources - which means:	▪ While the proposed Project does not involve the commercial use of natural resources, the environmental assessment considered the protection of existing resources and the potential for future resource harvesting and use in the future due to improved road access over time. ▪ The potential for future resource harvesting and use was considered in the cumulative environmental assessment for the proposed Project.
(a) encouraging and facilitating development and application of systems for proper resource pricing, demand management and resource allocation together with incentives to encourage efficient use of resources	
(b) employing full-cost accounting to provide better information for decision makers	
Public Participation - which means:	▪ MI has built on the history of public participation carried out for east side of Lake Winnipeg initiatives including the East Side Planning Initiative and the Large Area Transportation Network. ▪ The IPEP for the proposed Project (**Chapter 5**) consisted of leadership and community meetings, Traditional Knowledge Studies and open houses aimed at providing information about the proposed Project and obtaining information for use in the project design and environmental assessment. ▪ Notification for the engagement program included newspaper announcements, posters placed
(a) establishing forums which encourage and provide opportunity for consultation and meaningful participation in decision making processes by Manitobans	
(b) endeavouring to provide due process, prior notification and appropriate and timely redress for those adversely affected by decisions and actions	

Principles and Guidelines of Sustainable Development	Actions Undertaken and Commitments by MI
(c) striving to achieve consensus amongst citizens with regard to decisions affecting them	in public locations, letters to individuals and organizations and phone calls to community leadership and coordinators. ▪ The engagement program will continue through construction and the operation and maintenance phases of the proposed Project.
Access to Information - which means:	▪ The IPEP provided information on the proposed Project to First Nation and other potentially affected communities, and facilitated input to the project design and environmental assessment. ▪ Information obtained from Indigenous communities during baseline studies and the IPEP for the environmental assessment was provided to the communities. This included meeting notes, minutes, maps, photographs and other forms of information. ▪ This environmental assessment report and supporting documentation will be placed on the public registry of the Environmental Assessment and Licencing Branch of Manitoba Sustainable Development.
(a) encouraging and facilitating the improvement and refinement of economic, environmental, human health and social information	
(b) promoting the opportunity for equal and timely access to information by all Manitobans	
Integrated Decision Making and Planning - which means: encouraging and facilitating decision making and planning processes that are efficient, timely, accountable and cross-sectoral, and which incorporate an inter-generational perspective of future needs and consequences.	▪ Broad Area Planning for the east side of Lake Winnipeg (East Side Planning Initiative 2004) was born out of the 'Report of the Consultation on Sustainable Development Implementation (COSDI)' (Government of Manitoba 1999) and continued through the Large Area Network Study (SNC Lavalin *et al.* 2011a). ▪ These initiatives have served as models for implementing the principles and guidelines of sustainable development through integrated decision making and planning.
Waste Minimization and Substitution - which means:	▪ The proposed Project is located in a remote area of Manitoba that is only accessible by air and winter road. This provides both a challenge and an opportunity to MI to employ locally available materials, supplies and labour to the extent feasible. ▪ The right-of-way for the proposed Project will be selected for constructability to minimize the extent of disturbance beyond the project footprint to the extent feasible. ▪ Locally available materials will be used in the construction and operation of the proposed Project to the extent feasible, including rock and aggregate materials for road building and organic soils for reclamation. ▪ The extent of cleared areas, including number of trees cut, will be minimized; salvageable trees will be made available to local communities for use as firewood.
(a) encouraging and promoting the development and use of substitutes for scarce resources where such substitutes are both environmentally sound and economically viable	
(b) reducing, reusing, recycling and recovering the products of society	
Research and Innovation - which means: encouraging and assisting the researching, development, application and sharing of knowledge and technologies, which further our economic, environmental, human health and social well-being.	▪ Baseline studies, wildlife research and mapping for the environmental assessment of the proposed Project have incorporated recent research findings and technologies. ▪ Traditional and local knowledge has been used to augment and support scientific knowledge and technologies whenever possible.