

Appendix 5-2

Framework for ESRA's Environmental Management Plan

All-Season Road Project
Environmental Management Plan Framework
October 2015

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1 Introduction

The following introduction provides context for this Environmental Management Plan.

1.1 Background

The Manitoba East Side Road Authority (ESRA) was formed by the *Manitoba East Side Road Authority Act* with a mandate that included the construction of an All-Season Road (the Project). In carrying out this mandate, ESRA is responsible for obtaining all necessary environmental approvals and for coordinating and supervising the construction of the Project. The *Manitoba East Side Road Authority Act* establishes a Board of Directors charged with the responsibility to direct the business and affairs of the ESRA. The Project is being funded by the Province of Manitoba.

The EIA compares and describes the pre-development baseline conditions in relation to predicted conditions. The EIA was prepared to meet the requirements of the *Manitoba Environment Act*, the *Canadian Environmental Assessment Act*. The Project is a “Development” that requires a Licence pursuant to *The Environment Act*.

This EMP describes the environmental management processes that the ESRA will follow during the construction and operation of the Project. The goal of the EMP is to ensure that the environmental protection measures committed to by ESRA and the requirements of the Licence are undertaken in a timely and effective manner. The EMP describes the roles and responsibilities of the parties involved in implementing the Project. An adaptive management approach to enable continuous project and mitigation improvement is an integral principle of this EMP.

1.2 Project Overview - All Season Road Project

ESRA will meet its commitments and thereby achieve its environmental objectives through a hierarchy of the environmental plans:

- The Project Environmental Management Plan (EMP) providing an overall management framework to address potential environmental risks associated with the Project. The EMP describes the management system in terms of the why, what, how, who, and when of these plans. The EMP is consistent with the ESRA Environmental Policy (Appendix C).
- Subject-specific Environmental Protection Procedures that describe the suite of environmental protection measures for key individual environmental areas (Appendix D-Part A). These are supplemented with standard specifications included in each construction contract, General Requirements on Environment (Appendix D-Part B).
- Quarry Requirements Plan (Appendix E) that describe the environmental protection requirements related to quarrying activities that are contracted to local First Nation communities through Community Benefits Agreements.
- Monitoring Plans assess the effects of construction on specific components of the environment (i.e. wildlife monitoring, aquatic environment). A strategic plan for Wildlife Monitoring and an Aquatic Environment Monitoring Plan are provided in Appendix G.

- Construction Phase Environmental Management Plans (CPEMPs) for each phase of work to detail individual environmental protection actions during construction at the individual work sites. These plans will reference the Environmental Protection Procedures and will be developed at a later date.
- 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 a section of the road is operational for all-season use. This 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**. ESRA, as the overall project manager, is responsible for implementing, monitoring and amending the environmental aspects of the Project. ESRA will engage the local communities to discuss various aspects of the Project through the Community and Public Involvement Program. 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 such as Fur Councils, land use coordinators, and Local Liaison Committee where requested by the community;
- Periodic community meetings.

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

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

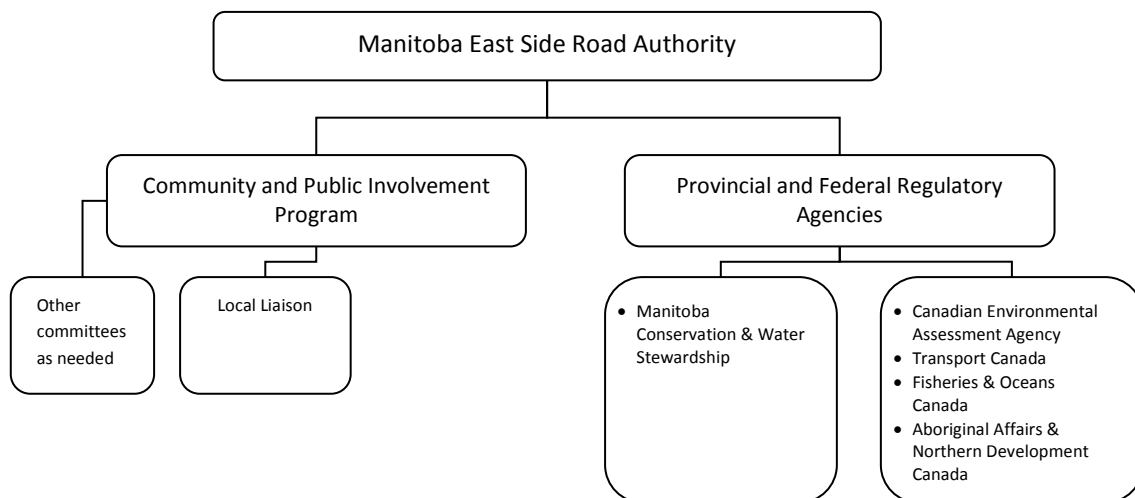


Figure 1. East Side Road Environmental Management Reporting and Communication Structure

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 all 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 EMP

The EMP 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**.

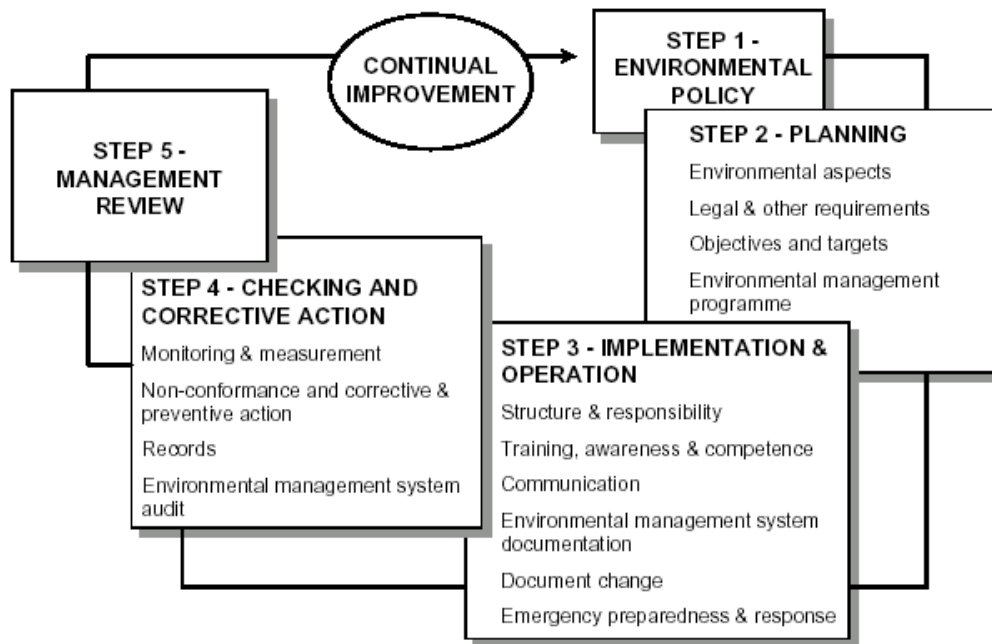


Figure 2. The 5 steps of ISO 14001

Environmental Policy

ESRA has a clear Environmental Protection Policy Statement, outlining fundamental principles aimed to protect and preserve the environment where resources could be affected by its activities. All parties to construction contracts are expected to conduct their Project-related activities in accordance with this policy. ESRA, Contract Administrators and Contractors are required to sign the Policy to demonstrate acceptance of this commitment. The ESRA Environmental Policy is attached as Appendix C.

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 EMP describes the activities that ESRA will undertake to comply with the environmental requirements for the Project. The EMP is a tool with which to confirm that these activities have occurred. The key elements of the EMP include:

- Schedule and Activity Tracking;
- Environmental Protection Procedures;
- Environmental Inspection Plan;
- Construction Phase Environmental Management Plans;
- Operation Phase Environmental Management Plans;
- Monitoring and Follow-up Plans;
- Reporting; and
- Any other conditions of the Licence and environmental approvals as appropriate.

These elements form the main sections of this EMP. This EMP consists of a coordinated set of key points for each element of the EMP 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; and
- When key milestones will be reached.

Management Review

The final step in the ISO14001 model is Management Review. The EMP embodies an adaptive management approach and allows for adjustments to the environmental protection activities as necessary, and for continuous improvement of the Project. ESRA acknowledges the need to monitor the residual effects of the Project and to evaluate the effectiveness of the environmental protection measures implemented. ESRA 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 EMP is based on the public comments, concerns, and issues that were expressed during community meetings, open houses, traditional knowledge studies, and stakeholder meetings as documented in the EA Report and the Comprehensive Study Report. This EMP is also based on on-going involvement with the communities since the completion of those reports, most recently in the gathering of traditional knowledge.

ESRA will continue to involve the communities, stakeholders and the public by meeting with community leadership annually at minimum. A Local Liaison Committee will be identified for on-going updates and input between the community and ESRA. ESRA is committed to considering community input provided in regards to the EMP and its implementation.

2 EMP 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, ESRA will utilize project management practices and support software. Included in the program schedule will be critical environmental management events such as authorization submissions and reporting requirements.

2.1.3 Who

ESRA, the detailed design engineers and Contract Administrators will develop the scheduling and tracking for projects. Included in this scheduling will be submittals for permits, approvals, and authorizations and reporting requirements. ESRA management and Project Managers will receive and review the Project progress reports.

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.
- Consulting engineers will develop pertinent schedule details of the engineering design and construction phases of the Project.
- ESRA will develop the portion of the overall project schedule that contains all third.
- Party input and approvals, including environmental submittals and authorizations, regulatory compliance reporting and submittals, land acquisition, utility relocations, community and public involvement and consultation.
- The ESRA portion of the schedule will be interlinked with the engineering consultants' design schedules and with the construction schedules 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 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 is in development.

2.2 Environmental Protection Procedures

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 Environmental Protection Procedures attached as Appendix D were developed through a review of best management practices and regulatory requirements. The Environmental Protection Procedures document the environmental measures to address key environmental issues. These procedures will be reviewed periodically and updated as required.

2.2.3 Who

The ESRA has reviewed best management practices and standard procedures available and prepared standard Environmental Protection Procedures for submission with this EMP. Engineering design team and environmental consultants have been consulted.

2.2.4 What

Environmental Protection Procedures (Appendix D – Part A) have been developed that document the suite of possible environmental protection and mitigation measures considered appropriate to address each of the following environmental subjects:

- Clearing and grubbing
- Petroleum handling and storage
- Spill Response
- Noise control
- Materials handling and storage
- Working within or near water
- 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
- Cement batch plant and concrete wash out area

Environmental Protection Procedures and monitoring are further documented in the Environmental General Requirements (Appendix D–Part B) included in all contract specification packages. These are supplemented with additional special conditions specifications to each Contract.

2.2.5 When

The Environmental Protection Procedures are reviewed and revised annually.

2.3 Construction Phase Environmental Management Plans (CPEMP's)

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

CPEMP's will be submitted for the various components during the construction phases of the Project to address individual construction works once design and construction plans are near finalization. The CPEMP will detail the environmental management measures described in the overall EMP that pertain to specific construction components (i.e. a specific bridge or section of road).

2.3.3 Who

ESRA will prepare and submit the CPEMP documents to the Approvals Branch. When necessary the detailed design engineers or environmental consultants will be consulted on the CPEMP.

- Under the direction of ESRA, the detailed design engineers are responsible to incorporate 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 to be added to the standard specifications prepared by ESRA.
- ESRA 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.

2.3.4 What

The CPEMP's will document the:

- 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;
- Activity description 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; and
- Auditing, management review, evaluation and adjustment procedures.

2.3.5 When

The CPEMP's will be prepared and submitted to the Approvals Branch at the time of tendering each construction component of the Project.

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 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.

2.4.3 Who

ESRA is responsible for the operation of the all-season road after construction of the Project has been completed. The OPEMP will be produced by ESRA in consultation with other government departments that have jurisdiction over aspects of the Project.

2.4.4 What

The overall 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; and
- Auditing, management review, evaluation, and adjustment procedures.

2.4.5 When:

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

2.5 Environmental Inspection Plan

2.5.1 Objective

To describe how ESRA will ensure appropriate field inspection during construction activities of the Project.

2.5.2 How

ESRA will undertake certain Contract Administration responsibilities and will engage outside Contract Administrators' for other Contract Administration responsibilities. ESRA's and the Contract Administrators' inspection responsibilities will be identified in the Contract Administrator Agreements and described in the CPEMP's. The results from the inspection programs will be reported to ESRA Executive, stakeholders, Aboriginal communities, and federal and provincial authorities as appropriate.

2.5.3 Who

The environmental inspection plan will involve staff from the ESRA, the Contract Administrator, and the Contractors as follows:

2.5.3.1 Manitoba East Side Road Authority

The ESRA environmental inspection team will consist of environmental specialists with environmental inspection experience. The team will be led by a senior environment officer with experience in managing an environmental field inspection unit and administering contract documents. A copy of the environmental inspection form template is included in Appendix F.

The composition of the ESRA 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.

2.5.3.2 Contract Administrator

The Contract Administrator will have a site engineer or inspector on the work site at all times work is being undertaken. The 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 inspection activities are summarized as follows:

2.5.4.1 Manitoba East Side Road Authority

ESRA inspectors will inspect the site to ensure that the site is managed in accordance with the environmental protection requirements outlined in the contract documents. These requirements are 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 documents.

The inspectors will focus on the maintenance of the environmental protection measures and on the adequacy of the measures to achieve the level of environmental protection. A standardized inspection form will be used to maintain a documented record of the site conditions. ESRA inspectors will bring environmental concerns to the attention of the Contract Administrator.

2.5.4.2 Contract Administrator

A Contract Administration Agreement will identify the Contract Administrator's inspection responsibilities. The Contract Administrator will ensure that the environmental protection measures are constructed, implemented and maintained (i.e. such as silt fences and sediment barriers are maintained and cleaned) in accordance with the contract documents. The Contract Administrator has 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 and reported as outlined in the CPEMP's. The Contractor's major focus is to inspect the fuel storage containers, tank vehicles, dangerous goods and hazardous wastes storage facilities, sites for releases of fuel, erosion & sedimentation (water quality). The Contractor must maintain records such as the dates that inspections

took place, the name of the inspector, the results of inspections, releases of debris or deleterious substances are discovered and the corrective actions taken.

2.5.5 When

Construction inspections will commence with the start of construction and be conducted as described in the CPEMP's. 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

- To verify environmental effects predictions made during the engineering design and environmental assessment of the Project.
- To provide data with which to evaluate the effectiveness of mitigation measures undertaken.
- To provide data with which to implement adaptive management measures for improving future environmental protection activities.

2.6.2 How

The adaptive management approach will be followed whereby lessons learned during the monitoring and follow-up programs will be applied to continually improve subsequent environmental protection activities.

ESRA will engage in-house environmental staff and specialized environmental consultants to conduct monitoring of specific components of the environment. The environmental monitoring plans that have been developed to date are provided in Appendix G. Environmental procedures including monitoring components are also provided in Appendix D Environmental Protection Procedures and Construction Contract General Requirements. Results from the monitoring and follow-up programs will be provided as appropriate to the advisory committees, stakeholders, Aboriginal communities, and federal and provincial authorities.

Additional monitoring or adjustments to the monitoring programs will be made in consideration of the responses from the advisory committees, stakeholders, Aboriginal communities, and federal and provincial authorities.

The ESRA with its consultants will consider the results from the monitoring and follow-up programs to review the status of the environmental protection activities on an on-going basis. 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 ESRA Executive Management and recommend amendments.

2.6.3 Who

ESRA will arrange and manage the contracts with the specialized environmental consultants. ESRA will also manage the community and public involvement programs through which the interested parties will be provided the information and opportunities to comment on the data. As presented in the Introduction of this EMP, ESRA is the proponent/owner of the Project. In this role, ESRA will make final decisions on adjustments to environmental activities.

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

On a selective basis ESRA will solicit input and feedback from committees on its environmental protection measures and monitoring programs.

2.6.4 What

Broad project component or environment component monitoring programs will or have been developed, as described in **Table 1**. Monitoring components are included in ESRA contracts through General Requirements (GR) (Appendix D – Part A) and the Environmental Protection Procedures (EMP) (Appendix D – Part B).

- Environmental Management Procedures (Appendix D)
- Wildlife Monitoring Plan (Appendix G-Part B)
- Aquatic Environment Monitoring Plan (includes water quality, fish passage, fish habitat offsetting, bank stabilization) (Appendix G-Part A)
- Decommissioning Plan related to closure and reclamation of temporary construction facilities and borrow pits (to be provided with OPEMP)
- Winter Road Closure and Reclamation Plan (to be provided with OPEMP)
- Emergency Response Plan for environmental accidents and spills (Appendix D - Part A and Part B)

The site-specific monitoring will be done in conjunction with the overall monitoring programs where appropriate. Procedures for identifying and tracking issues and resolving conflicts or differing opinions are discussed elsewhere in this EMP. As presented in the Introduction of this EMP, ESRA is responsible for managing the Project.

2.6.5 When

Baseline monitoring began during the environmental assessment 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

To provide regulatory authorities, Aboriginal communities, stakeholders, and the general public with timely and accurate information.

To provide the regulatory authorities, Aboriginal 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 *Community and Public Involvement Plan*

ESRA has developed a Community and Public Involvement Plan (CPIP) to provide opportunities for on-going involvement of and dialogue with Aboriginal communities and local governments on the Project. The CPIP consists of the following principal elements as follows:

- **Meetings with Chief and Councils and Mayor and Councils** – ESRA will continue to meet with Chief and Council 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** – ESRA 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;
- **Community Resource Boards** – ESRA is committed to communicating with the local resource management boards and will continue to provide status updates and regular meetings and to provide presentations concerning special topics;
- **Meeting with resource users and elders** – ESRA is committed to working with community members as requested or required concerning issues of cultural and socio-economic significance; and
- **On-going Communications** - ESRA will continue to issue annual newsletters updating local east side residents about the all-season road project and will continue to maintain and update the Manitoba East Side Road Authority website (www.eastsideroadauthority.mb.ca) to ensure that local residents have access to information on the all-season road Project. ESRA will also utilize community radio, newspapers, public presentations and other media to communicate with residents on the east side of Lake Winnipeg. ESRA also maintains a toll-free telephone line (1-866-356-6355) and a general e-mail address (eastside@gov.mb.ca) for public inquiries.

2.7.2.2 Regulatory Involvement

Regulatory involvement will occur through the Environment Act Licence reporting requirements as well as those identified in other permits, authorizations, approvals.

2.7.3 Who

ESRA will ensure reporting and communication activities are conducted in accordance with requirements in the Licence and other permits, authorizations and approvals, and through the established communication channels in the Community and Public Involvement Plan.

2.7.4 What

The major elements of the Community and Public Involvement Plan 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 resources;
- Records of actions taken to address environmental incidents such as accidents, spills, leaks, and releases, the reporting and clean-up procedures used; and
- Other items of special 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 Project Managers and the Manager of Special Projects and Environmental Services (Environmental Manager) who can take corrective action as necessary based on on-going measurement of key characteristics of the operations and activities. The results will also be reported to the regulators.

Executive Management of ESRA 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

ESRA's management review will occur on two levels. On an on-going basis, the Division Managers, Project Managers, and the Environmental Manager will have the detailed information with which to make recommendations as the Project proceeds. The Environmental Manager 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 ESRA executive committee and Board of Directors have the authority to make decisions about the environmental protection practices and to take action, including through allocation of resources.

2.8.4 What

The Environmental Manager 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 ESRA management and with Project Managers.

Strategic Executive Management review will consider needs for changes to policy, objectives, and other elements of the EMP, 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. Executive Management will review the various elements of the EMP, the strategic approaches and resource allocations, and the environmental practices undertaken.

2.8.5 When

The ESRA executive committee meets at least bi-monthly to monitor on-going progress as the Project proceeds. The ESRA Board of Directors meets at least quarterly. Systems are in place to record decisions.

3 REFERENCES

- AASHTO Centre for Environmental Excellence. 2003. *Ensuring an Environmental Management System to Meet Transportation Challenges and Opportunities An Implementation Guide*. AASHTO Centre for Environmental Excellence.
- Canada. Department of Environment. 2014. *Species at Risk Public Registry*. Web.
- Canada and Manitoba. *Canada-Manitoba Agreement on Environmental Assessment Cooperation*. May 2000.
- Canada and Manitoba. *Canada-Manitoba Agreement on Environmental Assessment Cooperation (2007)*. March 2007.
- Commission for Environmental Cooperation. 2000. *Guidance Document Improving Environmental Performance and Compliance: 10 Elements of Effective Environmental Management Systems*.
- East Side Planning Initiative. 2004. *Promises to Keep: Towards a Broad Area Plan for the East Side of Lake Winnipeg*. Report prepared by the East Side Planning Initiative for Manitoba Conservation. Winnipeg.
- Global Environmental Management Initiative. 2000. *ISO 14001 Environmental Management System Self-Assessment Checklist*.
- International Organization for Standardization. 1996. *ISO 14001 Environmental Management Systems - Specifications with Guidance for Use*. International Organization for Standardization.
- International Organization for Standardization. 2008. *ISO 14001:2004 Environmental Management Systems – Requirements with guidance for use*.
- International Organization for Standardization. 1996. *ISO 14004 Environmental Management Systems – General Guidelines on Principles, Systems and Supporting Techniques*. International Organization for Standardization.
- International Organization for Standardization. 2008. *ISO 14004:2004 Environmental Management Systems – General Guidelines on principles, systems and support Techniques*.
- Manitoba. Department of Conservation. 2001. Environment Act Licence No. 2534.
- Manitoba. Department of Conservation. 2008. *Forest Management Guidelines For Riparian Management Areas*.
- Manitoba. Department of Conservation and Water Stewardship. 2010. *Forest Practices Guidebook, Forest Management Guidelines for Terrestrial Buffers*.
- Manitoba. Department of Conservation and Water Stewardship. 2013. *2013-2014 Trapping Guide*.
- Manitoba. Department of Conservation and Water Stewardship. 2014a. *Wabanong Nakaygum Okimawin (WNO)*. Web.

- Manitoba. Department of Conservation and Water Stewardship. 2014b. *Species at Risk*. Wildlife Branch. Web.
- NCS International. 2006. *ISO 14001:2004 Self Assessment Checklist* EMS- E008, Issue 2.
- Queensland Government, Environmental Protection Agency. 2003. Preparing an Environmental Management Plan (EM Plan) for a Non-standard Exploration Permit or Mineral Development Licence. Available at <http://www.epa.qld.gov.au>.
- Stapleton, P. J., Glover, M. A., and Davis, S. P.. 2001. Environmental Management Systems: An Implementation Guide for Small Medium-sized Organizations 2nd Edition. NSF International.
- Starkey, R. et al. 1998. Environmental Management Tools for SMEs: A Handbook. Available at <http://www.eea.eu.int>
- Sturm, A., Upasena, S. 1998. ISO 14001 Implementing an Environmental Management System. Available at <http://www.ellipson.com>.
- University of Vermont. ND. Environmental Management Plan Overview. Available at <http://esf.uvm.edu/uvmemp>.
- Wright, D.G. and G.E. Hopky. 1998. Guidelines for the use of explosives in or near Canadian fisheries waters. Canadian Technical Report of Fisheries and Aquatic Sciences. 2107: iv + 34 p.