

APPENDIX C

OVERVIEW OF ENVIRONMENTAL PROTECTION PROGRAM

INTRODUCTION

Environmental protection is a fundamental component of planning, construction and operation of a project. This section describes the Environmental Protection Program (the Program) that the Keeyask Hydropower Limited Partnership Inc. will implement. The General Partner of the Keeyask Hydropower Limited Partnership will retain Manitoba Hydro to manage the Keeyask Infrastructure Project (the Project), including the adverse environmental effects of the Project during construction.

C.1 MANITOBA HYDRO'S COMMITMENT TO ENVIRONMENTAL PROTECTION

Manitoba Hydro is committed to protect and preserve natural environments and heritage resources affected by its projects and facilities. This commitment and a commitment to continually improve environmental performance is demonstrated through the company's Environmental Management System, which is ISO 14001 certified.

Environmental protection can only be achieved with the full engagement of Manitoba Hydro employees, consultants and contractors at all stages of projects from planning and design through construction and operational phases.

As stated in the Corporate Environmental Management Policy:

“Manitoba Hydro is committed to protecting the environment. In full recognition of the fact that corporate facilities and activities affect the environment, Manitoba Hydro integrates environmentally responsible practices into its businesses, thereby:

- *preventing or minimizing any adverse effects, including pollution, on the environment, and enhancing positive effects;*
- *continually improving our Environmental Management System;*
- *meeting or surpassing regulatory requirements and other commitments;*
- *considering the interests and utilizing the knowledge of our customers, employees, communities, and stakeholders who may be affected by our actions;*
- *reviewing our environment objectives and targets annually to ensure improvement in our environmental performance; and*
- *documenting and reporting our activities and environmental performance.”*

Manitoba Hydro's environmental management policy has been used to guide the development of the environmental protection program for the proposed Project. Implementation of the program is practical application of the policy and will demonstrate Manitoba Hydro's dedication to environmental stewardship.

C.2 KEYYASK CREE NATIONS PRINCIPLES

Principles that guide the **Keeyask Cree Nations'** objectives regarding respect for the land include the following:

- (a) adopting measures that increase, to the extent ecologically reasonable, the abundance of species and/or growing conditions for species that have special social or economic importance for the **Keeyask Cree Nations**;
- (b) employing strategies that “go with” rather than “go against” nature, as they have a much higher probability of success;
- (c) planting species and promoting site conditions that are widespread in the sub-region in which the **Keeyask Project** is located, rather than planting species and promoting site conditions that may be popular in more southern areas; and
- (d) being respectful of the **Keeyask Cree Nations'** traditional relationships with the land.

Measures that may be considered to comply with the above principles include:

- (a) altering existing soil, topography and hydrology as little as possible;
- (b) anticipating ecosystem dynamics and fitting in with how the habitat would develop over time; and
- (c) attempting to create conditions that promote selected species (for example, narrow-leaved Labrador tea).

C.3 PURPOSE AND SCOPE

The primary purpose of the environmental protection program is to ensure that construction of the proposed Project will be consistent with Manitoba Hydro's corporate environmental policy, KCN's principles, and to ensure compliance with all regulatory requirements. The purpose of the program is to clearly outline what measures will be put in place to mitigate adverse environmental effects and what will be monitored to verify predictions made in this EA report. If unexpected effects are detected during monitoring, the protection program defines the process for what measures will be taken to mitigate them.

The program for the proposed Infrastructure Project will consist of the following:

- An implementation strategy for the program which includes contractual arrangements, training, compliance inspection and communication of results;
- A Preliminary Environmental Protection Plan (EnvPP) (for all work included in the proposed Project);

- Erosion and sediment control measures (which are part of tender documents and included in the EnvPP); and
- Monitoring and Management Plans which include an Infrastructure monitoring plan for terrestrial, aquatic and heritage resources, a Socio-economic Monitoring Plan and Preliminary Access Management Plan (AMP).

C.4 PROGRAM DEVELOPMENT

The environmental protection program includes the ‘who, what, where and how’ aspects of protecting and monitoring the environment within the Project Area during the development of the proposed Project. The Program is being developed based on the issues identified in the EA report, construction activities required to complete the work, regulatory requirements and with traditional knowledge from Keeyask partners. The Program will be subject to review and amendment based on the outcome of the licensing process. If any additional mitigation measures and/or monitoring requirements arise, they will be incorporated into EnvPP and monitoring plans for the proposed Project.

Analysis of environmental issues leads to resolutions that are implemented during different phases of a project. Some issues can be mitigated at the design stage by making modifications to physical works, i.e. deciding on road alignment for this Project. The environmental effects that cannot be mitigated during the design stage are managed at the construction stage through the measures that are identified in the EA report and outlined in the EnvPP, and project-specific erosion and sediment control measures.

The effects that cannot be mitigated must be monitored - a monitoring plan is used to study the effectiveness of mitigation measures used while assessing residual expected or unforeseen effects. A monitoring plan also outlines monitoring that will confirm or negate predictions of no adverse effect.

Some effects that are not a direct result of construction activities, but are linked to the Project due to new access can be managed. An AMP is a tool to control access to the construction site and serves both a safety and wildlife protection role.

The implementation strategy defines the ‘who’ part of the Program by outlining the roles and responsibilities for the delivery of the plans. An implementation strategy is not a stand-alone document, but it is outlined below and the parts are included as applicable in the various plans.

C.5 ENVIRONMENTAL PROTECTION IMPLEMENTATION

In order to put the plans developed for the Program into practice, a number of activities need to occur prior to and during construction of the Project. The following items constitute the Program’s implementation strategy.

C.5.1 TENDERS/CONTRACTS

Environmental requirements including the EnvPP and erosion and sediment control measures are included as part of the documents that make up the tender package for the work. Inclusion of environmental protection measures in the tender requires potential bidders to budget and base their work on meeting the environmental requirements and conducting activity in an environmentally acceptable manner. Fulfillment of the plans then becomes a contractual arrangement for the selected contractor.

C.5.2 TRAINING AND ORIENTATION

Prior to construction the Environmental Inspector will receive training on the duties required to fulfill the job expectations effectively. A training program will be developed on the specific issues related to the proposed Project and on how to use the EnvPP, perform inspection, incident reporting and emergency response. The Environmental Inspector will also learn what resources are available to assist in the event an environmental issue arises.

It is intended that all contractor staff and Manitoba Hydro project personnel will be familiar with the components of the environmental protection program and particularly the EnvPP as it has direct implications on day to day work. The EnvPP will be thoroughly reviewed with Contractors at pre-job meetings and copies of the EnvPP will be distributed by the Environmental Inspector for relevant members of the contractor's staff.

C.5.3 WORKING WITH CONTRACTORS

Meetings will be held with the Project Manager, Environmental Inspector and the contractors to outline environmental requirements, establish roles and responsibilities, review emergency and contingency plans, and to ensure a mutual understanding of environmental protection measures and procedures. Regular meetings will be held with the contractor to discuss Project-related issues including environmental compliance.

C.5.4 ROLES AND RESPONSIBILITIES

Identifying the roles of responsibilities of project staff and supporting groups is necessary to ensure that all elements of the environmental protection program are implemented. The following roles must be filled and the responsibilities of each role clearly understood.

- The Project Manager has ultimate authority and responsibility for all aspects of construction, including environmental protection, and erosion and sediment control implementation, implementation of the Access Management Plan and regulatory compliance.
- An Environmental Inspector will monitor compliance with the EnvPP, conduct daily construction site inspections, coordinate emergency response with the contractor, and report on any incidents to the Project Manager.
- Contractors perform work in accordance with the EnvPP, licences and permits, and applicable regulations and guidelines.

- Manitoba Hydro's Environmental Licensing and Protection Department is responsible for implementing the monitoring plan for biophysical and heritage components, fulfilling reporting requirements to meet licence conditions and providing environmental support to project staff.
- Manitoba Hydro's Aboriginal Relations Division and Economic Analysis Department are responsible for implementing the Socio-economic Monitoring Plan
- A Partners' Regulatory and Licensing Committee (PRLC) will provide an advisory role for monitoring activities and will serve to communicate monitoring activities and results.

C.5.5 INSPECTION AND COMPLIANCE

Environmental inspection is an essential and key function in environmental protection and implementation of mitigation measures. The Environmental Inspector will be responsible for undertaking compliance monitoring of the work site to ensure that activities do not contravene legislation, regulation and guidelines, and the EnvPP. The inspector will visit active work sites daily and record all inspection activities. Any incidents of concern or non-compliance will be recorded on incident report forms and provided to the Project Manager who will then ensure appropriate actions to rectify the problem is conducted.

Following completion of road and camp construction and cleanup activities, a post-construction inspection will occur and a post-construction inspection report prepared.

The inspection will be carried out by the Project Manager or their delegate with a Manitoba Conservation Environment Officer and Regional NRO, to ensure compliance with the Environment Act Licence and associated work permits. If problem areas and/or deficiencies are identified, site-specific follow-up actions will be developed and agreed on to meet compliance. These areas will again be monitored to ensure deficiencies have been satisfactorily addressed.

C.5.6 Work Stoppage

Stopping construction activities will occur when situations or circumstances are encountered where unexpected effects are occurring to the environment or heritage resources that had not been previously assessed and mitigated. Individuals discovering unknown heritage resources or a circumstance related to a natural resource or human health and safety are to immediately inform their supervisor. In turn, the supervisor is required to report to the Project Manager or their delegate. Work or activity will not resume until the situation has been assessed and resolved.

The Project Manager, Construction Supervisor and Environmental Inspectors will all have authority to issue stop work orders. The contractor can also voluntarily stop work where circumstances indicate that some environmental or heritage damage could result from continuation of a particular activity.

C.5.7 Working with Regulators

Licences and regulatory approvals for the proposed Project require environmental and compliance monitoring and production of monitoring reports. Regulatory authorities will be notified by the Project Manager or their delegate of situations where the environment is effected that was not

previously predicted. Full cooperation will be given to representatives of environmental regulators conducting inspections and a project staff member will be available to escort the regulator during the visit around the construction site and answer questions and discuss concerns as required.

C.5.8 Environmental Protection Program Reports

Manitoba Hydro will prepare a report on compliance monitoring on behalf of the Partnership in connection with the EnvPP and erosion and sediment control provisions for submission to Manitoba Conservation.

Technical reports will also be generated on the activities and results of the monitoring plans and will be submitted as required by the Environment Act Licence.

A monitoring document will be generated annually summarizing the environmental monitoring and EnvPP compliance activities. These reports will be designed for a general readership and allow opportunity for interested parties to provide feedback on the Project as it is being developed.

C.6 Environmental Protection Plans

EnvPPs are tools, for project management to implement, that provide environmental protection measures that supplement project design, construction and operating specifications to prevent or minimize potential adverse environmental effects arising from the construction and operation of a project. They are designed for use as reference documents by field construction and operating personnel. EnvPPs prescribe practical measures to meet regulatory requirements for environmental protection specific to the project. The EnvPP is organized by construction component to assist project personnel in implementing appropriate measures specific to the work activity

The Keeyask Hydropower Limited Partnership has developed an EnvPP for the construction of the proposed Project. The EnvPP will be subject to review and amendment based on the outcome of the EA process.

The EnvPP is generated using information from a variety of sources to create a document that is project-specific. The following diagram (Figure C.6-1) illustrates the inputs used in the development of the EnvPP.

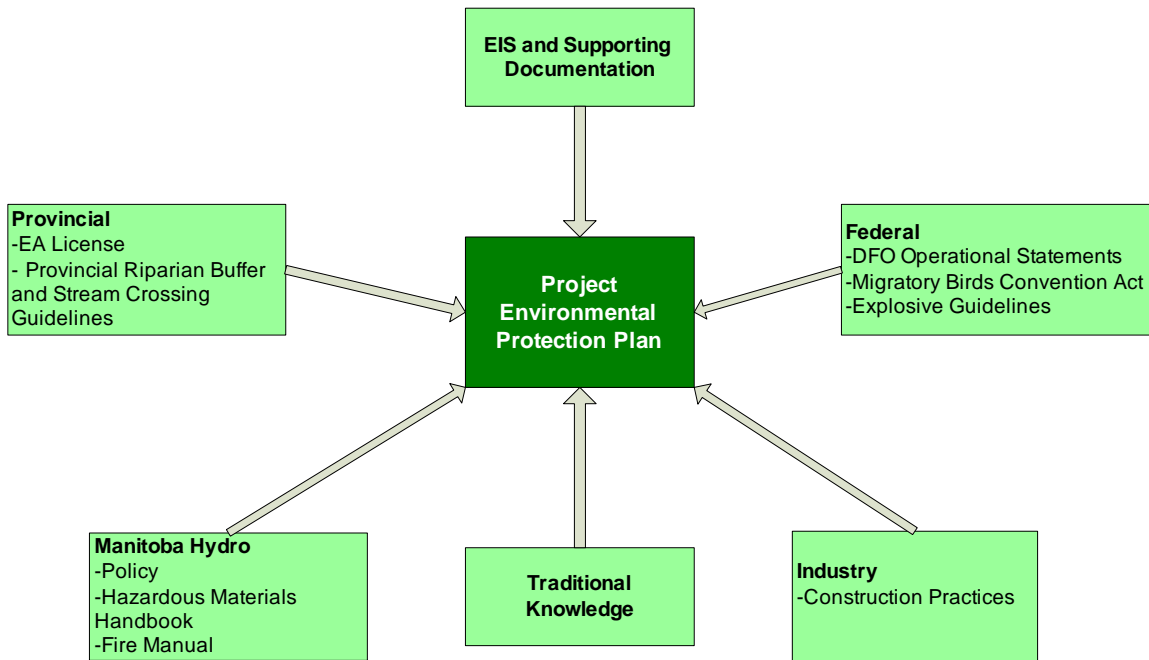


Figure C.6-1: Inputs to an Environmental Protection Plan

C.6.1 Components of the Preliminary Environmental Protection Plan

C.6.1.1 Environmental Protection Measures

Mitigation measures are reviewed for potential use and application in protection of a particular environmental component. Selection of appropriate mitigation measures is integral to the development of the EnvPP and involves input and review from engineering and environmental specialists as well as Project partners.

C.6.1.2 Timing Restrictions

Restriction on construction activities at certain times of the year are outlined in the EnvPP. These periods are normally in relation to critical periods for wildlife nesting, calving and spawning.

C.6.1.3 Maps

Environmental sensitivity maps have been created which show areas where specific sensitivities occur and where the mitigation measures are to be applied. The maps are a visual tool to help contractors apply the required protection measures in defined areas of concern. They show the road ROW and the sensitive areas in relation to the ROW. The maps also show **chainage** and GPS coordinates to ensure an accurate knowledge of location while using the maps.

C.6.1.4 Heritage Resource Protection

Heritage resource protection is the responsibility of all individual at the work site. The EnvPP explains what must be done if a heritage resource is discovered during construction activities.

C.6.1.5 Environmental Construction Monitoring

Environmental construction monitoring will be conducted by the onsite Manitoba Hydro Environmental Inspector. The Environmental Inspector will monitor Project activities for compliance with the EnvPP, erosion and sediment control measures, licenses, approvals, permits and guidelines. Inspection sheets are included in the EnvPP to guide the Environmental Inspector and inform the contractor of inspection activities. The process for reporting non-compliance issues is also explained.

C.6.1.6 Contractor Developed Plans

The EnvPP states that contractors must develop an emergency response plan and waste management plan for their work areas and activities. The EnvPP outlines what must be included in the plans. The plans will be submitted to and reviewed by the Project Manager.

C.6.1.7 Regulatory Guidance Documents

The EnvPP includes the pertinent provincial and federal procedures and guidelines for the work that is being undertaken.

C.7 Erosion and Sediment Control Measures

Specific Erosion and Sediment Control measures are addressed in the Tender Technical Specifications for the proposed Project. The erosion and sediment control measures include site specific requirements for erosion protection and sediment control and include engineering drawings and specifications for materials and methods to be used at each location where erosion and sedimentation have been identified as a concern.

C.8 Monitoring and Management Plans

Project-specific environmental monitoring plans are developed to follow-up on effect predictions made in the EA report. They are designed to verify predictions or identify unanticipated effects. Management plans are designed to mitigate possible indirect effects of the Project.

The following monitoring and management plans will be developed for the proposed Project:

C.8.1 Terrestrial, Aquatic and Heritage Resource Monitoring

A terrestrial, aquatic and heritage resource monitoring plan for the proposed Project will be developed primarily to study effects on the terrestrial environment as this is largely a terrestrial-based Project. However, aquatic monitoring to cover the work at Looking Back Creek and the

requirements for managing a heritage resource find will be included. Information in the EA report and the outcome of the licensing process will be incorporated into the plan to ensure that appropriate biophysical components are studied during construction and into operation of the proposed Project.

The monitoring plan will include both western science studies and Aboriginal Traditional Knowledge to gain a holistic understanding of changes to the environment as a result of the proposed Project. The methods used to study the environmental components and the frequency in which monitoring activities will occur is also outlined. As results become available they will be analysed to determine if adaptive management is required to mitigate unforeseen effects if they occur.

C.8.2 Socio-Economic Monitoring Plan

The Socio-economic Monitoring Plan will be developed to study the effects of the proposed Project on the partner communities. It will include tracking employment statistics and the economic activity that the proposed Project is generating.

C.8.3 Access Management Plan

The Preliminary Access Management Plan (Appendix E) is to provide safe, coordinated access to the Keeyask Infrastructure Project for authorized users. It supports sustainable use through the protection of the area's natural resources and provides worker orientation regarding respect for surrounding area, fisheries and wildlife resources, heritage resources and local communities.