

## 9.0 Environmental Protection Program

### 9.1.1 Overview

Manitoba Hydro's Environmental Protection Program (EPP) provides the framework for the delivery, management and monitoring of environmental and socio-economic protection measures that satisfy corporate policies and commitments, regulatory requirements, environmental protection guidelines and beneficial practices, and input during the Public Engagement Process (PEP) and First Nation and Metis Engagement Process (IEP).

The EPP:

- Describes how Manitoba Hydro is organized;
- Functions to deliver timely, effective, comprehensive solutions and mitigation measures to address potential environmental effects
- Defines roles and responsibilities for Manitoba Hydro employees and contractors; and
- Outlines management, communication and reporting structures.

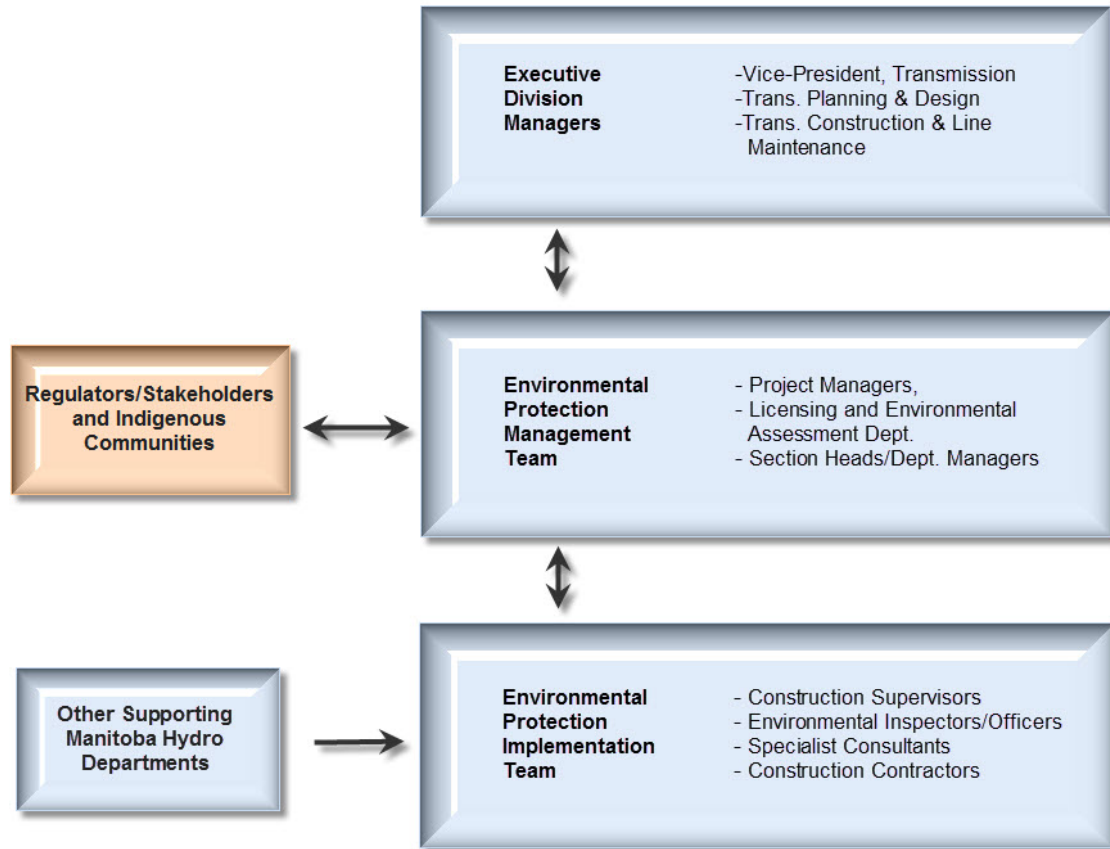
The Environmental Protection Program includes the “what, where and how” aspects of protecting the environment during the pre-construction, construction, operation and decommissioning of the Project.

### 9.1.2 Organization

The organizational structure of the Environmental Protection Program includes senior Manitoba Hydro management, Project management and implementation teams that work together to provide timely and effective implementation of environmental protection measures identified in environmental protection plans (Figure 9-1). Manitoba Hydro senior management is responsible for the overall Environmental Protection Program, including resourcing, management and performance, and is accountable for regulatory compliance, policy adherence and stakeholder satisfaction.

The Environmental Protection Management Team is composed of senior Manitoba Hydro staff and is responsible for the management of environmental protection plans, including compliance with regulatory and other requirements, quality assurance and control, consultation with regulators, and related PEP and IEP activities. Environmental consultants and advisors support the management team.

The Environmental Protection Implementation Team is composed of Manitoba Hydro operational field and office staff, and is responsible for the day-to-day implementation of environmental protection plans, including monitoring, inspecting and reporting. The implementation team works closely with other Manitoba Hydro staff as required.



**Figure 9-1 Environmental protection organizational structure**

### 9.1.3 Resources

Manitoba Hydro commits resources early in the planning cycle to provide effective environmental assessment, mitigation and monitoring. Teams of engineers and environmental professionals develop preventative or avoidance mitigation measures that include design and routing alternatives. In addition, there are resource allocations for the delivery and implementation of specific environmental protection measures to meet corporate policy and government regulatory requirements.

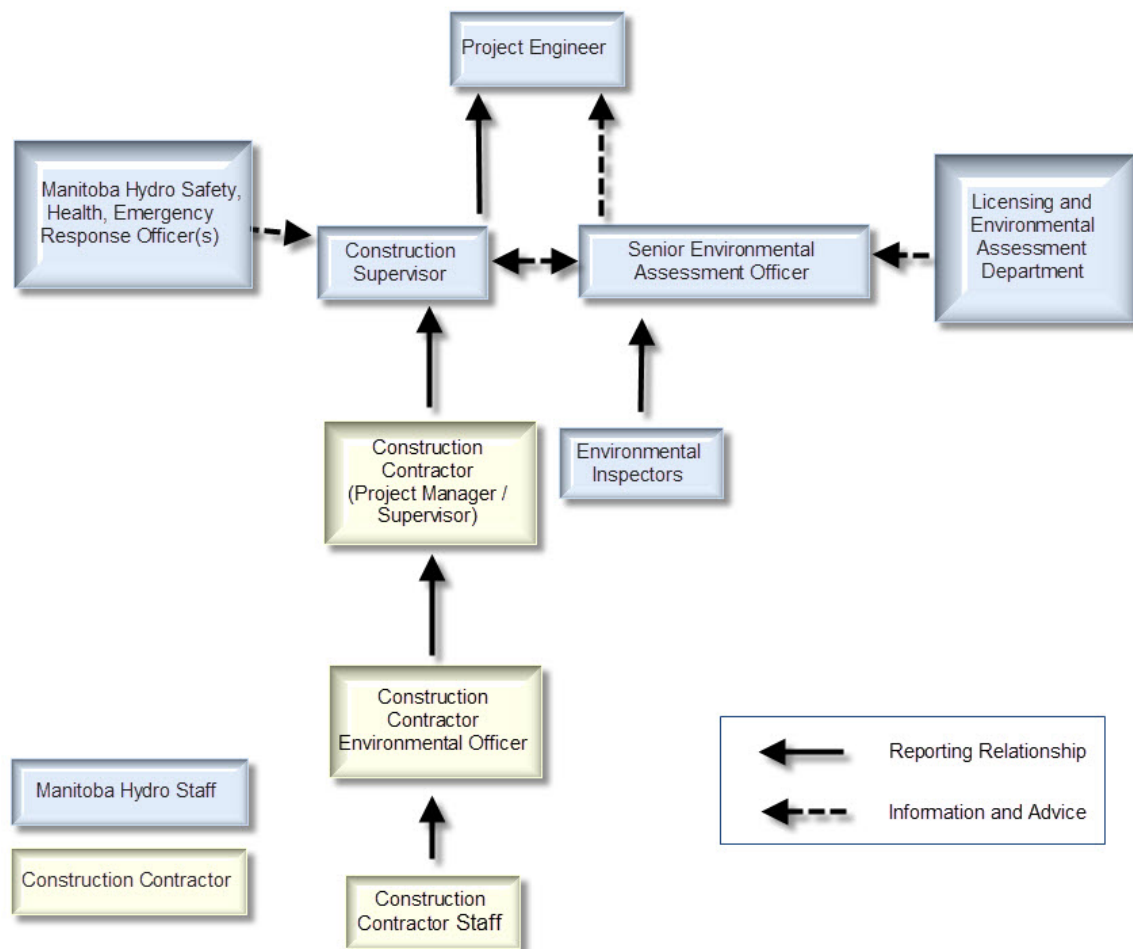
Manitoba Hydro is committed to staffing the Environmental Protection Program with sufficient Environmental Inspectors and providing required support, including training, financial resources and equipment.

#### 9.1.3.1 Roles and Responsibilities

Figure 9-2 illustrates the typical organizational lines of reporting and communications. The roles and responsibilities for delivery of the Project and implementation of environmental protection measures are as follows:

- The Construction Supervisor has overall responsibility for the implementation of the environmental protection plans and reports to a Section Head or Department Manager.
- The Licensing and Environmental Assessment Department oversees the development of environmental protection documents and associated inspection programs, including ongoing PEP and IEP activities.
- The construction contractor is responsible for ensuring work adheres to the environmental protection plans and reports to the Construction Supervisor.
- Environmental Inspectors have the primary responsibility to confirm that environmental protection measures and specifications are implemented as per the environmental protection plans as well as provide information and advice to the Construction Supervisor.
- Manitoba Hydro Field Safety, Health and Emergency Response Officers are responsible for the development and execution of the safety program and Occupational Health and Safety practices at the various construction sites.

Other Manitoba Hydro employees, including engineers and technicians, provide information and advice to the Construction Supervisor.



**Figure 9-2 Typical organizational lines of reporting and communications**

#### 9.1.4 Communication and reporting

The Construction Supervisor and Environmental Inspectors will maintain ongoing communications with the contractor and contract staff through daily tailboard meetings and weekly or otherwise scheduled construction meetings at the worksite. Inspection reports as well as incident, monitoring and other reports will be prepared and available on site for the regulators, contractors and Manitoba Hydro staff.

Manitoba Hydro will provide First Nations, the MMF and the public with ongoing opportunities to review and comment on the Project through a dedicated Project website. The Environmental Protection Management Team will record and review formal enquiries or complaints for response or action.

## 9.1.5 Environmental Protection Plans

Environmental protection plans document environmental protection measures to provide for compliance with regulatory and other requirements, and to achieve environmental protection goals consistent with corporate environmental policies. Manitoba Hydro designed the environmental protection plans as “user-friendly” reference documents that provide project managers, construction supervisors and contractors with detailed lists of environmental protection measures and other requirements implemented in the design, construction and operation phases of a project.

Manitoba Hydro organized the environmental protection measures by construction component and activity, and environmental component and issue to assist project personnel in implementing measures for specific work sites and activities.

Manitoba Hydro will develop the environmental protection plans described in the following sections.

### 9.1.5.1 Construction

The Construction Environmental Protection Plan (CEnvPP) (Appendix E) is a key element in implementing effective environmental protection and limiting the potential adverse environmental effects identified in the Environmental Assessment Report. It also outlines actions to identify unforeseen environmental effects and implement adaptive management strategies to address them. An important component of an environmental protection plan is review and updating. This allows environmental protection measures to remain current, continually improving environmental performance.

A CEnvPP is composed of general and specific environmental protection measures that cover all aspects of the work and the environment. General environmental protection measures for the Project include mitigation measures and follow-up actions identified in the EA Report, including design mitigation, provincial and federal regulatory requirements, beneficial practice guidelines, Manitoba Hydro environmental policies and commitments, and input during the PEP and IEP.

The CEnvPP lists the general environmental protection measures for major components and activities associated with the Project.

Specific environmental protection measures are provided for environmentally sensitive sites (ESS) identified during PEP, IEP and assessment activities. Environmentally sensitive sites are locations, features, areas, activities or facilities along or immediately adjacent to the transmission line corridor and other Project components that are ecologically, socially, economically or culturally important and sensitive to disturbance by the Project and, as a result, require site-specific mitigation measures.

The CEnvPP will contain ortho-photo map sheets that provide Manitoba Hydro Project managers, construction supervisors and employees, and contractors and contract employees with detailed site-specific environmental protection information that can be implemented, managed, evaluated and reported on in the field.

#### 9.1.5.2 Operation and Maintenance

The Operations and Maintenance Environmental Protection Plan will contain much of the same mitigation measures as the CEnvPP, but will be adapted to address the nature of maintenance activities. It will apply to Project components from in-service to the end of operational life.

#### 9.1.5.3 Decommissioning

A Decommissioning Environmental Protection Plan will be prepared at the end of the Project's operational life and will contain decommissioning methods, waste and recycling management, and mitigation measures to address environmental effects and legislation that is in effect at that time.

#### 9.1.5.4 Cultural and Heritage Resources

The fact that cultural and heritage resources have intrinsic value to Manitobans is understood by Manitoba Hydro and addressed through a separate protection plan. The Culture and Heritage Resource Protection Plan (Appendix F) outlines protection measures in the event of the discovery of previously unrecorded cultural and heritage resources during construction and describes the ongoing monitoring of known cultural and heritage resources for disturbance.

Through the IEP Manitoba Hydro understands and acknowledges the importance of cultural and heritage resources to First Nations and Metis. Manitoba Hydro has developed mechanisms such as notification of discovery, involvement in site investigations and sharing of reports, which are further explained in the Culture and Heritage Resource Protection Plan.

### 9.1.6 Management plans

Management involves the organization of activities and resources to resolve or respond to environmental problems, issues or concerns. Management plans provide reasoned courses of action to achieve pre-defined goals or objectives. Management plans will be prepared to address important management issues, regulatory requirements and corporate commitments identified in the environmental assessment report. The management plans will describe the management actions, roles and responsibilities, evaluation mechanisms, updating requirements and reporting schedules. The following management plans will be prepared for the Project:

- Blasting;
- Erosion Protection and Sediment Control;
- Emergency Preparedness and Response; and
- Waste and Recycling.

Environmental inspectors will conduct regular inspections during construction to ensure adherence to the plans. The following sections describe each plan.

#### 9.1.6.1 Blasting Plans

The contractor will prepare blasting plans to manage the storage and use of explosives at construction sites in accordance with environmental protection measures, provincial and federal legislation and guidelines, and corporate policies for explosives.

#### 9.1.6.2 Emergency Preparedness and Response Plans

Each contractor will prepare an emergency preparedness and response plan to prepare for and respond to emergencies at construction sites in accordance with provincial legislation and guidelines, and corporate policies and procedures for the protection of human health and the environment.

The plan will address:

- Spills or releases of hazardous substances, including petroleum products;
- Accidents involving hazardous substances;
- Medical emergencies; and
- Explosions and fire.

It will also include measures prescribed for the provision of emergency response planning, responsibilities, training, exercises, procedures, containment, and clean-up equipment and materials. Manitoba Hydro will adjust the plan based on annual reviews to provide continued effectiveness.

#### 9.1.6.3 Erosion Protection and Sediment Control Plans

The contractor will develop an erosion protection and sediment control plan based on Manitoba Hydro's Erosion Protection and Sediment Control Framework (Appendix I of CEnvPP) to limit adverse environmental effects of sediment releases on the aquatic environment in accordance with provincial and federal legislation and guidelines, and corporate environment policies and guidelines.

The plan will prescribe environmental protection measures including:

- Winter construction;
- Establishment of buffer zones;
- Avoidance of sensitive areas and;
- Use of bioengineering techniques.

Manitoba Hydro will adjust the plan based on annual reviews to provide continued effectiveness.

#### 9.1.6.4 Waste and Recycling Management Plans

The Contractor will develop a waste a recycling plan based upon Manitoba Hydro's Waste and Recycling Management Framework (Appendix x of CEnvPP) to manage wastes at work locations in accordance with provincial legislation and guidelines, and corporate policies and procedures for the protection of human health and the environment.

The plan will include measures for:

- Waste reduction;
- Recycling and reusing initiatives;
- Recycling and disposal of construction wastes and;
- Disposal of wastes at licensed facilities.

### 9.1.7 Inspection program

Inspection is the organized examination or evaluation involving observations, measurements and sometimes tests for a construction project or activity. The results of an inspection are compared to specified requirements, drawings and standards for determining whether the item or activity is in conformance with these requirements. Environmental inspection is an essential and key function in environmental protection and implementation of mitigation measures.

Manitoba Hydro has established a comprehensive integrated environmental inspection program to comply with regulatory approvals and meet corporate environmental objectives. The program includes Environmental Inspectors to be onsite during construction activities. Manitoba Hydro's approach to environmental inspection includes:

- Compliance with regulatory approvals;
- Adherence to environmental protection plans;
- Onsite environmental inspectors;
- Training and education;
- Regular monitoring and inspection during construction;
- Interaction with contractors (e.g., pre-construction meeting, daily discussion);
- Regular review of inspection and monitoring information;
- Quick response to incidents or changing conditions;
- Monthly summary reports;
- Regular reporting to regulators; and
- Notification of regulators of emergency or contingency situations.

Environmental Inspectors will:

- Visit active work sites to inspect for compliance with licence, permit or other approval terms and conditions, and adherence to environmental protection plan general and specific mitigation measures;
- Report all instances of non-compliance to the Construction Supervisor, contractor and applicable regulatory authority (*i.e.*, Manitoba Conservation and Water Stewardship, National Energy Board);
- Report incidents such as accidents, malfunctions, spills, fires, explosions and environmental damage to the Construction Supervisor and applicable regulatory authority;
- Record all inspection activities in a daily journal and complete daily inspection forms;  
and



- Provide daily and monthly inspection reports electronically to the Environmental Protection Information Management System for review and viewing by applicable Project staff.

### 9.1.8 Environmental Protection Information Management System

An Environmental Protection Information Management System (EPIMS) is the internal central repository of environmental protection information, including:

- Environmental protection documents;
- Reference information such as regulations and guidelines;
- Inspection reports; and
- Monitoring field data and reports.

The environmental inspection program will employ modern electronic recording, reporting and communication systems using field computers, geographic positioning systems and digital cameras. Field computers will have Project and other reference information needed for effective implementation of environmental protection measures, including regulations, guidelines, licences, permits, engineering drawings, specifications, maps, reports and data.

EPIMS is a tool that helps Manitoba Hydro monitor and report on environmental protection implementation, regulatory compliance and incident reporting. EPIMS will be the mechanism to provide reporting and tracking of environmental protection performance, and the foundation of an auditable EPP.

## 9.2 Pre-construction activities

Manitoba Hydro will undertake a number of activities prior to commencing construction of the Project to set the direction for environmental protection and compliance with legislated requirements.

Manitoba Hydro will obtain licenses, permits, authorizations and other approvals, including property agreements, ROW easements and releases, prior to commencement of construction of each Project component. Additional terms and conditions of these approvals will be incorporated into the Construction Environmental Protection Plan. Additional approval requirements to be obtained by the contractors will be identified and communicated to the successful bidders.

Meetings will be held with the contractors to review the environmental protection requirements, establish roles and responsibilities, management, monitoring and other plans, inspection and reporting requirements, and other submittals. Prior to the start of construction, contractor employees will be trained and/or oriented on environmental protection requirements.

## 9.3 Work stoppage

The duty to stop work rests with everyone encountering situations where the environment, including biophysical, socio-economic and heritage resources, are threatened by an activity or occurrence that has not been previously identified, assessed and mitigated. Work stoppage is also to occur in the event of an environmental accident, extreme weather event or exposed human remains. Individuals discovering such situations are to inform their supervisor who will report the matter to the Construction Supervisor immediately who will issue a stop work order. The contractor is also required to stop work voluntarily where construction activities are adversely affecting the environment or where mitigation measures are not effective in controlling environmental effects. Remedial action plans or other environmental protection measures will be developed and implemented immediately after discussion and prior to resumption of work if previously halted. Work is not to resume until the situation has been assessed and responded to and the Construction Supervisor approves the resumption of work. Stop work orders will be documented, reported to regulatory authorities (if applicable) and reviewed at construction meetings.

## 9.4 Reviewing and updating

### 9.4.1 CEnvPP Reviews

The Construction Environmental Protection Plan may be reviewed annually by Manitoba Hydro and may involve consultation with contractors, regulators and stakeholders. The results of each review will be summarized in a report that documents the issues addressed and provides recommended updates to the CEnvPP.

### 9.4.2 Incident reviews

CEnvPPs will be subject to review in the event of an incident, including environmental accidents, fires and explosions, reportable releases of hazardous substances and non-compliance situations.

### 9.4.3 Auditing

Auditing is a systematic approach to defining environmental risk and/or determining the conformance of an operation with respect to prescribed criteria. An environmental audit typically involves a methodical examination of evidence that may include interviews, site visits, sampling, testing, analysis, and verification of practices and procedures. Environmental protection plans for the Project may be subject to internal and external audits through Manitoba Hydro's ISO 140001 Registration process. The audit results will help to evaluate the effectiveness of environmental protection measures, to learn from inspection and monitoring programs, and to improve Project planning and environmental assessment performance.

#### 9.4.4 List of revisions

A list of revisions will be maintained at the beginning of each environmental protection plan that identifies the nature of the revision, section revised and dates.

### 9.5 Summary

This chapter outlined the Environmental Protection Program under which environmental protection commitments, mitigation measures and follow-up actions identified in the Project EIS will be implemented, managed, reported and evaluated. The purpose, organization, responsibilities, management, communication and other aspects of the Environmental Protection Program were described. Environmental protection plans are described as they relate to the construction, operation and decommissioning stages in the Project planning cycle and environmental assessment and licensing process. Implementation of follow-up actions, including inspection, management and auditing are discussed. Specific environmental management and monitoring plans are also identified.