12.0 Environmental Protection Plans

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12.0 ENVIRONMENTAL PROTECTION PLANS

This section summarizes the approach the Manitoba Floodway Authority (MFA) proposes to take to develop an Environmental Protection Plan for the construction phase of the Project. The term *Environmental Protection Plan* is non specific and is used to refer to various levels of planning from national initiatives to site specific activities. The mitigation schemes described in the Project Environmental Impact Statement form a commitment on behalf of MFA to a broad level of environmental planning. The following TWO aspects of environmental planning are presented.

1. the overall framework on the preparation of a Construction Phase Environmental Protection (CPEP) Plan.
2. the framework on the preparation of Monitoring and Follow-up Plans.

12.1 CONSTRUCTION PHASE ENVIRONMENTAL PROTECTION PLAN

12.1.1 Introduction

MFA recognizes that a CPEP Plan is an integral part of the overall environmental protection measures required. The purpose of such an Environmental Protection Plan is to provide and maintain environmental protection during the construction phase of the project. The plan will address all aspects of construction including the Floodway Channel, Channel Outlet, West Dyke, and Bridges as well as upgrades to the Inlet Control Structure and relocation of utility crossings and ancillary works. The CPEP Plan will not address on-going or environmental impact data collection or monitoring that may be required under an Environment Act License or other authorization.

MFA committed to providing the Environmental Approvals Branch with a conceptual level plan for review during the environment assessment phase of the Project and that a draft plan would be submitted for approval once the design Consultants and Contractors have been engaged and consulted. The draft plan will be submitted prior to start of construction.

Accordingly the following is a conceptual framework of the CPEP Plan to demonstrate the process that will be followed to develop and the areas to be addressed by the final CPEP Plan. The final Plan may include additional information or specifications or deletion of items listed that are not relevant or practical for the Project under review.

Two CPEP Plans will be developed: (1) Bridges and Transportation and (2) Floodway Channel, Channel Outlet, Inlet, and West Dyke. The CPEP Plan will describe each Project activity complete with a schedule and location of each activity supported as required with maps, legal surveys, contour plans, drawings and photos, where applicable, and written procedures that address the environmental protection issues relevant to the specific activity being performed. The contents of such a plan will rely on the details of final design, guidance from the final design engineers, experience of the Contactors involved and site specific considerations.

The CPEP Plan will:

- Describe potential environmental impacts;
- Provide environmental protection measures to control pollution and environmental degradation that might develop during normal construction practice; and
- Plan and provide environmental protective measures required to correct conditions that develop during the construction phase of the project.

12.1.2 Benefits of a CPEP Plan

There are many benefits in establishing and implementing a CPEP Plan. The Plan will provide:

- Contractors with better planning and awareness of the tasks and costs associated with environmental management.
- Staff and personnel working on the project components with practical information on environmental protection measures.
- Consistency among the Contractors involved in the various work sites.
- A tool that can be used for training staff. Staff may demonstrate a heightened environmental awareness on other projects, to clients and at home.
- Environmental policies for the Contractors.
- Demonstration to the stakeholders and public of the environmental commitment by all parties involved both in writing and in action.
- The Contractor with the ability to modify the CPEP Plan to reflect changes in construction methods and timing.

12.1.3 Consistency

The CPEP Plan will be primarily implemented by the contractors. To achieve consistency in preparation of CPEP Plans for the Project, the framework and direction from MFA and the consultants will be provided when developing or evaluating the final CPEP Plan. The Contractor will be encouraged to exceed the minimum submission requirements where it will enhance environmental protection. Within the framework, the Contractor will have the ability to adjust the CPEP Plan based on specific site conditions and their experience.

It is critical that all parties be in agreement on the procedures, signing configurations, and environmental control devices to be used for the protection of the environment. Once work has commenced, changes can be made as conditions dictate, while maintaining the minimum submission requirements. The reasons or circumstances necessitating changes made to the CPEP Plan must be documented in writing and approved in advance by the Consultant, MFA, and Manitoba Conservation.

12.1.4 Primary Responsibilities

In order to maximize environmental protection during construction, it is critical that all parties to MFA's contracts, agreements, permits and authorizations, be aware of their respective responsibilities

concerning environmental protection. The primary responsibilities of MFA, Consultant, and the Contractor are as follows:

12.1.4.1 Manitoba Floodway Authority

MFA will perform the following functions:

- Work in concert with the Consultant concerning the Contractors' proposed CPEP Plan.
- Submit the proposed CPEP Plan to Manitoba Conservation for approval.
- Periodically visit the work site. During such visits, advise the Consultant of any deficiencies noted in the environmental protection measures.
- Order the Contractor to suspend work in cases of recognized noncompliance with the CPEP Plan or where the Contractor fails to take appropriate and timely measures to protect the environment. Typically, MFA would only take on this responsibility during a periodic visit where the Consultant cannot be contacted to issue the order to suspend work or the nature of the noncompliance is critical to the protection of the environment.
- Ensure that environmental protection is given a high priority by MFA internal staff. Environmental protection must be encouraged on all work sites.

12.1.4.2 Consultant

The following are the primary responsibilities of the Consultant concerning environmental protection during the administration of a MFA contracts:

- Identify in the special provisions of a contract, any anticipated unique situations that will require special environmental protection measures, and requirements of the Environment Licence. Ensure the Contractor addresses these situations in the CPEP Plan.
- Review the Contractor's draft CPEP Plan prior to commencement of the work to determine if it is appropriate for the site conditions anticipated.
- Liaise with the Contractor to address any concerns with the proposed draft CPEP Plan.
- Liaise with MFA to address any concerns or questions with the proposed draft CPEP Plan.
- Provide the draft CPEP Plan to MFA for submission to Manitoba Conservation for approval prior to work commencing.
- Monitor the work site to ensure the Contractor implements and maintains the CPEP Plan.
- Monitor the work site as deemed necessary and, as the work progresses, to determine if the CPEP Plan is suitable for each phase of the work and throughout the duration of the project.
- Initiate any meetings required with the Contractor to address any concerns regarding the performance of the CPEP Plan.
- Advise the Contractor of any deficiencies in the environmental protection measures taken and ensure that the Contractor takes appropriate and timely corrective action.
- Order the Contractor to suspend work in cases of recognized noncompliance with the CPEP Plan or where the Contractor fails to undertake appropriate and timely measures to protect the environment or fails to correct recurring deficiencies. Immediately notify MFA in cases where such orders are issued.

- Immediately notify MFA of any environmental incidents as reported to the Consultant by the Contractor.

12.1.4.3 Contractor

The required CPEP Plan prepared by the Contractor shall be submitted to the Consultant. The following are the primary responsibilities of the Contractor, concerning environmental protection on MFA contracts:

- Develop a draft CPEP Plan in accordance with the direction and advice of the Consultant and submit it to the Consultant for evaluation. (Work on the contact shall not commence until approval is provided.)
- Implement environmental protection measures in accordance with the approved CPEP Plan.
- Monitor the work site to ensure that the CPEP Plan is effective for all conditions, including inclement weather conditions and during periods of construction and shut down.
- Maintain all environmental control and protection devices.
- Take appropriate and timely action to correct any deficiencies.
- Take action (i.e. shut down work) where it is recognized that an impact to the environmental will occur.
- Ensure that staff and Subcontractors are trained and empowered to identify, address and report potential environmental problems.
- Report all environmental incidents to the proper authorities immediately and provide a copy of the incident report to the Consultant in accordance with the approved CPEP Plan.
- Attend any meetings initiated by the Consultant to address any concerns regarding the performance of the CPEP Plan.
- Ensure that all Subcontractors comply with the CPEP Plan.
- Provide a knowledgeable individual at the work site to maintain the environmental control devices and address any environmental protection issues that arise. (The Contractor must identify this individual to the Consultant at the pre-construction meeting.)
- Identify knowledgeable individuals at the work site to act as the on-site emergency response coordinator who shall have the authority to redirect manpower in order to respond in the event of a spill or environmental emergency. (The Contractor must identify this individual to the Consultant at the pre-construction meeting.)
- All requests for a change in authorizations initiated by the Contractor shall be forwarded to the Consultant for submission to MFA.
- The Contractor is responsible ensuring that the CPEP Plan is audited.

12.1.5 CPEP Plan Development and Review Process

The Contractor should submit the CPEP Plan as soon as possible but must allow sufficient time the Plan to be reviewed prior to the pre-construction meeting. The Consultant will then review the CPEP Plan and consult with MFA on any concerns with the proposed plan. The Consultant will address any outstanding concerns with the Contractor prior to the pre-construction meeting.

12.1.5.1 Process Review

a) The Consultant will develop the basic requirements of the CPEP Plan with MFA and provide it to the Contractor for acceptance or revision.

b) Upon receipt of the draft CPEP Plan from the Contractor, the Consultant will review and:
   i) If it is to the mutual satisfaction of the Contractor and the Consultant, the Consultant will advise the Contractor and send a copy to MFA.
   ii) If MFA identifies any deficiencies or has any questions related to the draft CPEP Plan, they will advise the Consultant accordingly.

c) If either the Consultant or MFA is not satisfied with the CPEP Plan, the Contractor will be advised accordingly by the Consultant and will be requested to address any questions or deficiencies.

d) The Contractor will discuss the areas that are not satisfactory with the Consultant and make appropriate changes to the CPEP Plan, and will re-submit it to the Consultant. Once there is mutual agreement to the CPEP Plan, the Consultant will forward a revised copy to MFA.

e) The MFA will forward a copy of the CPEP Plan to Manitoba Conservation for approval.

f) If, during the course of construction, it is determined that the CPEP Plan is not adequate, it will be modified and accepted to the mutual satisfaction of all parties. All changes to the CPEP Plan must be documented and copies of the change to the CPEP Plan forwarded to the Consultant, MFA, and to Manitoba Conservation.

12.1.6 CPEP Plan Framework

The purpose of the CPEP Plan Framework is to provide assistance and direction to Contractors in developing a consistent and acceptable CPEP Plan for the duration of the project. The duration of the Project is defined as the start of the Project through to the issuance of a construction completion certificate. It is the Contractor's responsibility to prepare and determine the measures included in a CPEP Plan as acceptable to the Consultant, MFA, and Manitoba Conservation. This document is to be used with the Contract Specifications and Special Provisions and other guidelines that are available to assist the Contractor with specific environmental protection procedures and measures.

The Framework describes the components that are to be included in a CPEP Plan and the steps that will typically be followed to develop and implement a CPEP Plan.

A CPEP Plan details the Contractor's plan for satisfying the environmental requirements specific to a construction contract. A Plan shall:

- Provide a statement of the Contractor's commitment for protection of the environment, compliance with environmental legislation and satisfying MFA's contractual and policy requirements.

- Identify and address construction procedures, the environmental requirements and potential impacts associated with various construction activities.
- Provide emergency response procedures to minimize potential impacts of emergency situations on the environment.
- Describe how monitoring and reporting will be conducted to satisfy contractual and regulatory requirements.
- Describe how the CPEP Plan will be implemented by establishing a plan for training, communication, documentation, auditing, management review and CPEP Plan adjustments.

The Contractor is required to submit one CPEP Plan for the Project that includes Sub-Contractor activities. The CPEP Plan may be broken into phases corresponding to the Sub-Contractor activities. The CPEP Plan provided by the Contractor shall apply equally to any Sub-Contractors for their activities associated with the Project.

12.1.6.1 Preparing a CPEP Plan

To prepare a CPEP Plan, the Contractor would conduct the following steps:

Step 1 Agree to a corporate environmental protection policy statement appropriate to the project (Section 12.6.2).

Step 2 Acknowledge the environmental aspects and potential impacts of the project. The Contractor shall review the following:

a. Environmental impacts of site activities.
b. The Contract documents;
c. Regulatory permits, licenses and approvals (supplied by Consultant); Environmental Legislation; and Guidelines (Appendix A).

Step 3 Describe procedures to address the environmental aspects and potential impacts relating to:

a. Site activities for specific project stages
b. Construction site management
c. Construction materials management
d. Waste management

Step 4 Describe emergency response procedures for all potential environmental site emergencies.

Step 5 Describe procedures for monitoring and reporting information to satisfy environmental legislation and contractual requirements (Section 4.8).

Step 6 Describe how the CPEP Plan will be implemented, reviewed and adjusted as appropriate.

a. Define roles and responsibilities.
b. Provide a plan for staff training and communication of the CPEP Plan.
c. Indicate what documentation is to be kept.
d. Provide audits to demonstrate implementation.

e. Review CPEP Plan performance regularly and after incidents.
f. Adjust CPEP Plan as appropriate for environmental protection condition changes and continual improvement.

Step 7 Consider, as appropriate, the CPEP Plans developed by other Contractors on the Floodway Expansion Project.

12.1.6.2 Policy Statement

An environmental protection policy statement confirms the Contractor's corporate commitment to the protection of the environment. The Contractor's policy statement must:

- Be appropriate to the nature and scale of the particular environmental impacts of the project;
- Include a commitment to the protection of the environment;
- Include a commitment to waste minimization and recycling practices as much as economically feasible;
- State that the Contractor will comply with all relevant federal, provincial and municipal environmental legislation, regulations and by-laws (Appendix A); and
- Follow Best Management Practices (BMP).

12.1.6.3 Fisheries and Aquatic Ecosystems

Activities that may have an impact on fisheries, fish habitat, water quality, and stream flow characteristics are to be considered in the CPEP Plan. The construction activities that may impact watercourses include:

- Bridge construction and demolition including
  - Cofferdams
  - Site dewatering
- Culvert installation and rehabilitation including:
  - Culverts
  - Low water crossings
  - Liners
  - Bridge culverts
  - Ford Crossings
- Stream Realignment and Channelization.
- Channel Work include work on
  - Drop structure/out falls/inlets
  - Weir modifications
  - Utility relocations
- Shore protection such as:
  - Stone riprap
  - Gabions
  - Bio-engineering

The CPEP Plan must identify the potential environmental impacts associated with watercourse crossings and describe construction procedures that are designed to address the potential environmental impacts and environmental regulatory requirements. Typical environmental impacts associated with watercourse crossings include:

- Water quality degradation
- Loss of riparian habitat
- Fisheries
  - Fish loss
  - Capture and release of fish from coffer dams and berms
- Fish habitat alteration disruption or destruction (HADD)
  - Food
  - Cover
  - Spawning
  - Migration
- Wildlife habitat and endangered species
- Changes to channel characteristics and stream velocities

The CPEP Plan must describe the construction procedures for conducting in-stream activities including measures to satisfy contract and regulatory conditions. If the Contractor is unable to satisfy all of the conditions, the Contractor will identify the situation, propose alternate solutions and formally request a change to the condition, statement or procedure through the Consultant. The Contractor will create an adaptive CPEP Plan that reflects the site specific situation and includes:

- Regulatory conditions - Describe the integration of the License and regulatory requirements into the Contractor's construction activity schedule relating to:
  - Sequence
  - Timing windows
    - Start date
    - End date
  - Channel restriction
  - Berm material quality and type
  - Water release quality
  - Other regulatory requirements
- Describe procedures for bank erosion and instream sediment control accordance with the erosion and sediment control plan for the floodway channel and other instream works.

12.1.6.4 Surface Water

The CPEP Plan shall describe the surface water conveyance and management measures that will be implemented during the Project, integrating both temporary and permanent measures representing the best available technologies that are economically achievable.

12.1.6.5 Ground Water

It is recognized that groundwater protection needs to be fully considered and developed. The CPEP Plan prepared after the detailed design will present construction methods to prevent groundwater effects such as seepage, construction site dewatering, blowouts, aquifer interconnection and surface water intrusion situations, monitoring plans, and contingency plans.

The plan will address all aspects of the construction including bridges, floodway channel and utility crossings.

The CPEP Plan shall describe:

- Procedures for drilling and installation of boreholes, test holes, dewatering and water wells to protect groundwater resources from contamination and prevention of cross aquifer cross section.
- Decommissioning of all boreholes, test holes and dewatering wells that are no longer in use.
- Maintenance or alternative supply of potable water supply to adjacent lands.
- Procedures to prevent blowouts during excavation.
- Provide groundwater source protection in terms of both quality and quantity and recognize vulnerable or sensitive aquifer zones and wellhead protection zones.
- Decommissioning of bridge piles and piers.

12.1.6.6 Wildlife

The CPEP plan shall describe how they will:

- Avoid Migratory Bird Sanctuaries and shall consider the conservation of wildlife on federal public lands that are administered by the Federal Minster of the Environment.
- Prevent the destruction of migratory birds or their nests and minimize the release of oil, oil wastes or any other substances harmful to migratory birds to any waters or any area frequented by migratory birds.
- Avoid habitat for species designated by regulation under Federal or Provincial legislation. If avoidance is not possible, minimizes encroachment on significant portions of the habitat of threatened and endangered species in accordance with directions from Manitoba Conservation.
- Recognize the need to protect other wildlife species.

12.1.6.7 Vegetation

The CPEP Plan shall include a description of steps that will be taken to:

- Avoid impact on land that provides critical habitat for listed species.
- Maintain the diversity of native vegetation in natural areas and natural connections between them.
- Protect, where practical, the features and functions of retained vegetation areas.

12.1.6.8 Designated Areas

A Designated Area is defined by resource agencies, municipalities, the government or the public through legislation, policies or approved management plans, to have special or unique value. Such areas may have a variety of ecological, recreations, and or aesthetic features and functions that are highly valued. The CPEP Plan shall:

- Identify these areas and comply with the relevant policy requirements.
- Outline the measures taken to minimize the extent of intrusion on these areas.

12.1.6.9 Heritage Resources

The CPEP Plan will ensure that:

- Archaeological resources that may be disturbed are identified and measures to conserve the resources are undertaken in accordance with directions of the Historic Resources Branch.
- A thorough assessment of the deposits is made, recommendations for impact mitigation are made, and reports which clearly document the methods, results and recommendations of the assessment to produce in a timely manner as directed by the Historic Resources Branch.

12.1.6.10 Noise

An assessment and plan to address noise impacts on neighboring land users will be described in the CPEP Plan. The Project activities shall be undertaken in a manner to minimize noise levels and identify a process for dealing with public complaints during construction. The following items will be included:

- Equipment maintenance and muffling systems.
- Hours of operation.
- Work on statutory holidays and weekends.

12.1.6.11 Dust Control

The CPEP shall outline the dust control practices that will be implemented by the Contractor during construction. The following items will be included:

- Cleaning of roadways.
- Methods that minimize dust from construction operations.
- Hauling of excavated material and backfill.
- Soil stockpiles or spoil piles.
- Asphalt or concrete plants or recycling equipment.
- Demolition of existing structures

12.1.6.12 Construction Traffic

The CPEP Plan will include provisions to worker and public safety such as:

- Limiting workforce parking to areas designated for such so as not to interfere with or impede traffic flow.

- Ensure that all construction traffic is restricted to the right –of-way, existing roads, and approved access paths.
- Measures to control egress and access to public roadways.
- Measures to prevent the general public from entering the construction right-of-way, roadways, or bridges while under construction.

12.1.6.13 Materials Management

For the duration of the Project, various materials will be utilized for construction and maintenance of equipment. The CPEP Plan will identify those materials. In order to meet contract requirements, WHMIS and Transportation and Dangerous Goods responsibilities, the CPEP Plan will provide procedures to address the proper transportation, storage, containment and handling of materials. Materials may be construction materials used for construction, preparation, or other purposes or materials needed for the maintenance of equipment. The following materials could be present on site:

- Construction Materials
  - Asphalt cement and tack oils
  - Portland cement
  - Curing compounds / form oil
  - Paint, thinners and solvents
  - Sterilants
  - Epoxies
  - Fertilizers
  - Pesticides
  - Other
- Equipment Maintenance
  - Fuel
  - Lubricants and hydraulic oils
  - Antifreeze
  - Batteries
  - Refrigerant
  - Other

The CPEP Plan will identify:

- Areas for the storage of construction materials located outside the floodway channel or the banks or shorelines of the Red River, Seine River, or channels draining into the River or Seine River.
- Designated equipment refueling areas. In the event that a piece of equipment must be refueled outside the designated refueling area, precautions to prevent fuel being spilled on the ground surface will be identified.

Construction materials and debris shall be prevented from entering the Floodway Channel, Red River or Seine River and in the event that that materials or debris should inadvertently enter the Floodway

Channel, Red River, Seine River or other designated waterways, the contractor will be required to remove the material and restore the waterways to the original condition.

12.1.6.14 Waste Management

For the duration of the project, various wastes will be generated on-site that have potential to impact the environment. The CPEP Plan will describe procedures for the proper handling, containment, storage, transportation, and disposal of waste materials. The CPEP Plan will:

- Identify and quantify all waste materials that will be generated during the project and evaluate the potential impact of the waste materials on the environment.
- Classify wastes as domestic solid, sewage, construction and demolition, or hazardous wastes.
- As appropriate to the waste generated, provide handling procedures (containment and transportation) and details on site preparation.
- Show on the CPEP Plan Drawings designated waste storage areas and measures taken to prepare the area (i.e. berms, liners, ponds, containers).

Where possible, the Contractor will ensure that recycling of waste products is maximized to the degree economically and practically feasible. When establishing handling and disposal procedures, the Contractor will consider if the waste materials can be recycled and if it is hazardous or non-hazardous waste. Dangerous goods and hazardous waste will be identified by and will be handled in accordance with *The Dangerous Goods Handling and Transportation Act* and Regulations there under.

Any waste or dangerous materials storage site shall be decommissioned and the areas left in a neat, finished, and re-vegetated appearance and appropriate free from any residual contamination consistent with Canadian Council of Environment Ministers or Provincial guidelines for the future use of the area. As appropriate, procedures must comply with applicable regulatory handing, transportation and disposal requirements. (Appendix A). Possible waste materials generated on site includes, but is not limited to the following waste materials:

- Construction Wastes
  - Woody debris
  - Concrete, metal and rebar
  - Asphalt and recycled asphalt pavement
  - Soil cement
  - Unsuitable materials (i.e. saturated berm material)
  - Garbage (plastic, boxes etc.)
  - Containers, drums and barrels
  - Sand blasting and blast material
  - Hazardous waste
- Waste Oils and Fluids
  - Oil and filters
  - Lubricants
  - Antifreeze

  - Hydraulic oils
- Waste Chemicals
  - Paints / solvents
  - Batteries / acid
  - Sterilants
  - Other
- Pond and sediment trap clean out
  - Liquid
  - Solids
- Spill cleanup materials
- Bridge wash debris (not allowed to enter a fish bearing water)
- Sewage
- Garbage such as office and lunch room wastes

12.1.6.15 Emergency Response Procedures

The contractor will take due care and caution to prevent spills of dangerous goods or hazardous wastes. The CPEP Plan will identify potential incidents that, through natural causes, accidents, human error or improper work practices, are likely to impact the environment. The contractor will designate a qualified supervisor as the on-site emergency response coordinator for the work area. The emergency response coordinator shall have the authority to redirect manpower in order to respond in the event of a spill. The CPEP Plan will describe the emergency procedures that will be implemented to address the potential incidents. Potential incidents may include:

- Contaminant spills and releases (land, water and air)
  - Fuels
  - Oils and lubricants
  - Chemicals
- Flood events

12.1.7 Monitoring and Reporting

The CPEP Plan will describe the monitoring and reporting procedures that will be followed throughout the duration of the construction phase of the project to satisfy the Environment Act License, regulatory authorizations, regulatory and contractual requirements. Monitoring requirements are typically set out in the contract terms and conditions of the environmental approvals. It will be the Contractor's responsibility to understand and comply with the reporting requirements. Monitoring and reporting requirements may include but not be limited to:

- Water quality
  - Turbidity
  - Suspended solids
  - Nutrients and pesticides
- Channel erosion
- Fish passage

- Fish captured and released
- Soil erosion
- Effectiveness of erosion and sediment control
- Reclamation
- Re-vegetation success
- Environmental incidents
- Material storage, re-fueling, and waste storage areas
- Groundwater conditions and response to construction.

12.1.8 CPEP Plan Implementation

Implementation is critical to the success of the CPEP Plan. It is important to have corporate support and for the staff to have ownership of the CPEP Plan. The Contractor will be responsible for implementation of the CPEP Plan for the duration of the project. This section of the CPEP Plan will describe the Contractor's plan for the implementation, monitoring, auditing, reviewing and adjusting the CPEP Plan through the duration of the project.

12.1.8.1 Training and Awareness

Procedures to ensure that managers, superintendents, staff and subcontractors are aware of the CPEP Plan and are trained, updated and responsible for the procedures contained in the CPEP Plan and any changes to the CPEP Plan will be described. Employees should be encouraged to submit ideas and suggestions. A training and awareness plan may include:

- Training and awareness sessions
- Tailgate meetings
- A description of meeting frequency
- A log of trained and updated staff
- A bulletin board and memorandum circulation

12.1.8.2 Documentation

The CPEP Plan will describe the information that will be kept to document the significant events relating to the implementation and adjustment of the CPEP Plan. A binder or file with all relevant information will be retained at the construction site. The following are some of the events that should be documented:

- Accidents, spills and releases and the procedures followed in those events
- Reviews, improvements and adjustments to the CPEP Plan
- Training
- Materials inventory
- Waste Inventory
- Equipment inspections and maintenance
- Monitoring and maintenance of erosion and sediment controls

12.1.8.3 Communication

The CPEP Plan will describe the communication that will be conducted through the duration of the project relating to the CPEP Plan. Although each component of the Project may differ, communication with managers, superintendents, staff, other Contractors and Subcontractors, the Consultant, MFA and regulatory agencies may include:

- Daily, weekly or monthly meetings.
- Daily, weekly or monthly reports.

12.1.8.4 Auditing

Implementation of the CPEP Plan will be audited. The internal or external auditor must be trained and experienced in conducting audits. The role of the auditor will be to:

- Understand both the specific terms and conditions and the intent of the CPEP Plan.
- Develop an audit protocol reflecting the CPEP Plan.
- Conduct scheduled and random audits.
- Report any non-compliance to the Contractor corporate support.
- Make available upon request to the Consultant and MFA, audit reports addressing the implementation of the CPEP Plan.
- Provide a summary audit report at the end of the project.

12.1.8.5 Management Review

Management should conduct an internal review the progress of the CPEP Plan implementation and, as appropriate, adjust policy or practices to ensure the success and continual improvement of the CPEP Plan. The level and frequency of the management review of the CPEP Plan will be described.

12.1.8.6 CPEP Plan Adjustments

The CPEP Plan is a document that is designed to change based on site conditions. The goal is for continual improvement of the CPEP Plan by adjusting the plan as experience is gained. The procedures to ensure that the CPEP Plan is reviewed and adjusted with a goal of continual improvement of the CPEP Plan though the duration of the project will be included. A contingency plan will be included that outlines possible actions to be taken should the environmental protection actions be less successful than anticipated.

12.1.9 Erosion and Sediment Control Plan

The final erosion and sediment control plans will be developed by a qualified professional as a component of the CPEP Plan. Where re-vegetation is a component of erosion control, the success of the re-vegetation effort will be monitored. The Plan will follow the guidance document dated November 21, 2003, prepared by Manitoba Conservation and will include the following:

- Maps showing the areas on the site to be protected, and the direction of surface water flows;

- Identification of areas requiring special protection, such as surface water bodies or areas susceptible to groundwater pollution;
- A description of temporary and permanent erosion control measures and sedimentation containment measures. This includes a description of materials to be used and installation procedures;
- Standard detail plans for erosion control measures and sedimentation containment measures;
- A discussion of maintenance measures;
- A description of the re-vegetation plan including nutrient and pesticide application;
- A description of emergency plans - responsibilities for identifying emergency situations, contacts for notification, materials available on site, and equipment available on site; and
- Identification of responsibility for plan implementation - an onsite person responsible for all aspects of the installation, maintenance and removal of erosion and sediment control works.

12.2 MONITORING AND FOLLOW-UP

12.2.1 Introduction

MFA recognizes that monitoring and follow-up is an integral part of the overall environmental protection measures required. The purpose of such a Monitoring and Follow-up (M&F) Plan is to:

- Gather additional information
- Comply with any monitoring requirements of the Environment Act Licence
- Verify the accuracy of assessment predictions,
- Verify the effectiveness of mitigation,
- Determine the occurrence of unexpected effects,
- Respond to unexpected adverse environmental effects are detected or mitigation measures are not effective during the post-construction phase of the project.

The plans will address all components of the Red River Floodway including the Floodway Channel, Channel Outlet, West Dyke, Bridges, Inlet Control Structure, and ancillary works. The M&F Plans will not address monitoring, inspecting, reporting, auditing or responding to activities underway during the construction phase of the Project. Those Aspects are discussed above.

MFA committed to providing the Environmental Approvals Branch with a conceptual level plan for review during the environment assessment phase of the Project and that a draft plan would be submitted for approval after the Environment Act Licence is issued.

Accordingly the following is a conceptual framework of the M&F Plans demonstrating the areas to be addressed by the Plan. The final Plan may include additional information or specifications or deletion of items listed that are not relevant or practical for the Project under review.

12.2.2 M&F Plan Framework

Separate M&F Plans are anticipated for each of the major components of the environment identified in the February 5, 2004, *Guidelines of the Preparation of an Environmental Impact Statement for the Red River Floodway Expansion Project*.

12.2.2.1 Physical Environment

The assessment of the physical environment involves evaluation of the effects of the Project on the Water Regime, Groundwater, Erosion and Sedimentation, Drainage, Ice Processes, Climate, and Physiography, Geology and Soils.

Water Regime

Monitoring and follow-up of the water regime would involve determining the extent of flooding during an event or other physical information about a flood as requested by the Manitoba Water Commission or other similar agency. Manitoba Water Stewardship would be the most likely agency to be responsible for this monitoring. Compensation is address in Section 12.2.2.4.4 of the socio-economic environment.

Groundwater

Post-construction groundwater water levels monitoring would focus on areas where mitigation actions, such as cut-off walls, were installed and areas where existing groundwater discharge into the floodway is taking place. Monitoring of groundwater quality would focus on the western side of the Floodway to verify the movement and any effect of surface water intrusion. Follow-up would be taken depending on the nature and extent of the need.

Erosion and Sedimentation

The effects of erosion would be mitigated through implementation of the erosion protection plan. This would involve the improved protection and revegetation plans. Monitoring would be done to evaluate the effectiveness of the works. Monitoring would be a combination of visual inspections and possibly water quality sampling during flood events. However, safety may be an issue during flood events. Follow-up would be taken depending on the nature and extent of need.

Drainage

MFA or Manitoba Water Stewardship would be responsible to address drainage infrastructure as designated in the operation and maintenance plans.

Ice Processes

Ice jamming has been determined to be independent of the Project with no effects of the Project on ice jamming downstream and no effects of ice jamming on the Project.

Climate, Air Quality and Noise

Manitoba Water Stewardship is expected to continue to monitor the frequency and timing of flood events. The operation of the Floodway may have to be altered in the future.

Physiography, Geology and Soils

No monitoring or follow-up has been identified in the EIS. The operation and maintenance plan might include a component in the inspection program to observe any indications of slumping. A river bank investigation is proposed as part of the study to investigate possible effects of altering the operating rules. These studies are discussed in Section 8 of this supplemental filing.

Aquatic Environment

Aquatic environment monitoring and follow-up programs are being developed in consultation with the Department of Fisheries and Oceans. The studies would likely focus on verifying the success of HADD mitigation and compensation plans and investigation and monitoring of fish movement. Further information can be found in Section 8 of this supplementary filing.

12.2.2.2 Terrestrial Environment

Terrestrial Vegetation

Vegetation monitoring would be undertaken mainly under the revegetation plan or the operation and maintenance plan. An area of possible post-construction monitoring and follow-up could involve habitat enhancement programs for rare and endangered species or plants of special interest.

Wildlife, Wildlife Habitat and Communities

As a part of the adaptive management approach to considering summer operation of the floodway would involve a wildlife component. Additional spring surveys of migratory birds and their habitat is planned for 2005.

Socio-Economic Environment

Monitoring and follow-up envisioned respecting the socio-economic environment is that the Province of Manitoba will engage the Manitoba Water Commission or another similar agency to independently study effects of a flood and action taken during the flood. The agency is expected to have a mandate to determine the extent of unnatural upstream and downstream flooding, to determine whether the Project had any significant effect on water levels, and recommend appropriate compensation for incremental damage due to this effect.

APPENDIX A

LIST OF RELEVANT ENVIRONMENTAL LEGISLATION

FEDERAL

- Canadian Environmental Protection Act (CEPA)
- Canadian Environmental Assessment Act (CEAA)
- Canada Wildlife Act
- Fisheries Act
- Hazardous Products Act
- Migratory Birds Conventions Act
- Navigable Waters Protection Act (NWPA)
- Transportation of Dangerous Goods Act
- International Rivers Improvement Act (IRIA)

PROVINCIAL

- The Environment Act
- The Dangerous Goods Handling and Transportation Act
- Endangered Species Act
- Environment Act
- Fire Protection Act
- Manitoba Heritage Resources Act
- Manitoba Noxious Weeds Act
- Manitoba Nuisance Act
- Public Health Act
- Workplace Safety and Health Act
- Water Resources Administration Act
- Heritage Resources Act
- Current applicable associated regulations