

St. Vital Transmission Project (Y36V)

St. Vital to Laverendrye Transmission Line

Erosion and Sediment Control Plan

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Prepared by:

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**Transmission & Distribution Environment and Engagement
Department**

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Preface

This document presents the Erosion and Sediment Control Plan (ESCP; the Plan) for the construction of the St. Vital Transmission Project (the Project). It is intended to provide information and instruction to Contractors and Manitoba Hydro employees as well as information to regulators and members of the public. The Plan provides general considerations and guidance pertinent to erosion and sediment control during the development of the Project. More importantly it presents a Project-specific implementation plan and actions required to prevent and mitigate erosion and sedimentation as a result of construction of the Project. Inspection and compliance along with monitoring programs are described to confirm adherence to required actions including documentation and record-keeping. Environmental Management Practices guidance sheets are provided for the installation and maintenance of erosion and sedimentation control measures in the Appendices.

Manitoba Hydro employees and contractors are encouraged to contact the onsite Manitoba Hydro Environmental Inspector/Officer if they require information, clarification or support. Regulators and the Public are to direct any inquiries about this Plan to:

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Definitions

Erosion - occurs when energy (wind or water) is applied to a soil surface causing the detachment, suspension and transfer of soil particles from a stable mass.

Sedimentation – The process whereby the energy of wind or water carrying soil particles is reduced down to the point that those suspended particles are allowed to settle out and be deposited, creating a build-up of sediment at that location.

Deleterious – The federal *Fisheries Act* defines it as “Any substance that, if added to water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use of by man of fish that frequent that water” (Canadian *Fisheries Act*).

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1.0 Introduction

Consistent with its corporate Environmental Management Policy, Manitoba Hydro has committed within the St. Vital Transmission Project (the Project) Environmental Assessment to developing an Erosion and Sediment Control Plan (ESCP) as part of a larger suite of mitigation measures to minimize potential negative environmental and socio-economic effects. This document outlines the procedures to be employed by contractors to mitigate the potential for erosion and sediment transport during the activities related to transmission project construction. With an advance review of the project locations and topography, the Contractor can identify areas at risk of erosion during the different construction activities.

This document identifies some of the common erosion and sediment control (ESC) materials and environmental management practices. This document also includes detailed design drawings that indicate correct installation methods for ESC materials to help ensure effectiveness and reduce maintenance.

Note that the methods presented here are not exhaustive and alternative methods may be proposed by the Contractor but would require approval from a Manitoba Hydro Environmental Officer prior to implementation.

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 best practices, and input during the Public Engagement Process (PEP) and First Nation and Metis Engagement Process (FNMEP). The Program describes how Manitoba Hydro is organized and functions to deliver timely, effective, and comprehensive solutions and mitigation measures to address potential environmental effects. This ESCP is a component of the EPP as illustrated in Figure 1.

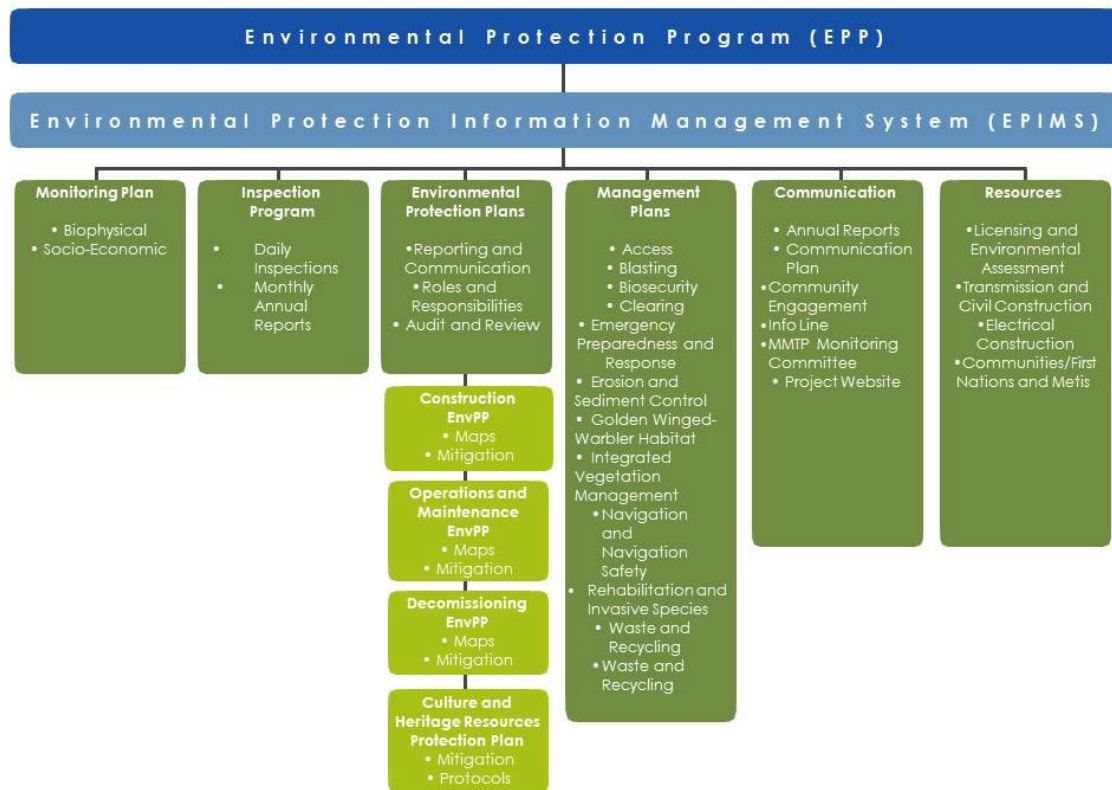


Figure 1: Transmission Environmental Protection Program

1.1 Commitment to environmental protection

Manitoba Hydro integrates environmentally responsible practices in all aspects of our business. Environmental protection can only be achieved with the involvement of Manitoba Hydro employees, consultants, contractors, Indigenous communities and organizations and the public at all stages of the Project from planning and design through construction and operational phases.

The use of an ESCP is a practical and direct implementation of Manitoba Hydro's environmental policy and its commitment to responsible environmental and social stewardship. It is a proactive approach to manage potential effects of access related to the construction of a new transmission line.

Manitoba Hydro is committed to implementing this ESCP and requiring Contractors to follow the terms of this and other applicable plans within the Environmental Protection Program.

1.2 Purpose and objectives

This Erosion and Sediment Control Plan is intended to be used as a reference document in the field, during construction activities to address sediment transport and erosion concerns while ensuring compliance with Manitoba Hydro's Construction Environmental Protection Plan requirements, industry best practices, and Provincial/Federal regulations and legislation. In order to effectively mitigate the potential effects of erosion and sedimentation due to construction activities, a variety of ESC measures are available for implementation. The appendix outlines standard erosion and sediment control techniques along with a description of the situations where each technique may be employed and directions for correct implementation. Should a contractor wish to deviate from the control techniques or implementation described in this document they must first obtain approval from a Manitoba Hydro Environmental Officer.

The objectives of this erosion and sediment control plan are as follows:

- To establish a process prior to the start of construction that can be used to identify erosion prone sites and where necessary, implement, monitor and maintain erosion and sediment controls. This process will meet regulatory requirements, industry standards and best practices with regards to ESC during construction activities.
- To provide guidance on the correct implementation and installation of erosion and sediment control measures.

1.3 Background

Construction activities associated with the Project will involve vegetation removal as well as disturbed soil/ground which may alter and increase water runoff in some areas. Excessive runoff has the potential to cause flooding as well as a rapid increase in natural erosion and sedimentation rates that, if left uncontrolled, can irreparably harm the environment and aquatic habitats.

Wind is not considered to be a major contributing factor to erosion on transmission construction projects due to the limited instances of exposed soil and the short term duration in which they are exposed. For this reason management practices controlling

water erosion are the primary focus of this manual. While several of the water erosion control methods are also effective at reducing wind erosion, specific mitigations are addressed in the Erosion and Sediment Control Management Practices in Section 3.0.

1.4 Potential effects of erosion and sedimentation

The importance of erosion and sedimentation control is primarily to reduce the potential impact that erosion has on watercourses such as creeks, streams, rivers and lakes etc. Soil consists of many components, the majority of which are organic material, sand, silt and clay. It is the silt and clay that are the most damaging to watercourses as they are comprised of small particles that can be carried for long distances while suspended in water. Small silt and clay particles can cloud the water making it difficult for fish to find food, and also block sunlight reaching aquatic plants. When small silt and clay particles settle on the bottom they can smother fish and amphibian eggs. There is an added risk that eroded soil may carry hard metals, traces of petroleum product or other pollutants from land into a watercourse.

The effects of sedimentation in watercourses can be profound enough to be considered deleterious (harmful or damaging) to fish. Failure to prevent erosion and sedimentation of watercourses is considered a reportable offence under section 35 of the *Fisheries Act*.

1.5 Roles and responsibilities

This section outlines the major roles and responsibilities of those involved in the implementation of the Plan.

A summary of key roles and responsibilities is found in Table 1.

Table 1: Key roles and responsibilities

Role	Key responsibilities
Manitoba Hydro	<ul style="list-style-type: none"> • Approves ESC planning, design, implementation, inspection, monitoring, maintenance, operation, and decommissioning. • May delegate this responsibility to other design and construction professionals to construct/implement, maintain and inspect/monitor for the duration of the undertaking. • Signs agreements, approvals, permits and Authorizations to which compliance is legally binding.

Table 1: Key roles and responsibilities

Role	Key responsibilities
	<ul style="list-style-type: none"> • Ensures ESC measures are installed, maintained or restored by the contractor. • Appoints an Environmental Inspector/Officer or delegate to confirm that regulatory criteria are being met by the ESCP. • The Manitoba Hydro Environmental Inspector/Officer or delegate will inspect erosion and sediment control measures to confirm effectiveness.
Construction Contractor	<ul style="list-style-type: none"> • Will communicate erosion and sediment control information/training to all project staff and will ensure a copy of the Erosion and Sediment Control Plan is available at the project site. • Responsible for installation, maintenance and decommissioning of erosion and sediment control installations to ensure continued effectiveness. • Confirm with an MH Environmental Inspector\Officer that regulatory criteria are being met by the ESCP. • Respond and act promptly to resolve if any activities are identified as not in compliance with the ESCP or any regulatory requirements. • Responsible for sourcing ESC materials and maintaining a sufficient readily available stockpile onsite. • Responsible for modifying and maintaining erosion and sediment control installations to ensure continued effectiveness through regular monitoring performed by their Environmental Representative. • Responsible to monitor and report to MH on ESC implementation effectiveness including any need for repair and maintenance. • Stabilize and re-vegetate disturbed areas as soon as practicable or where deemed necessary by Manitoba Hydro , rehabilitation is not to be deferred until construction is complete

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2.0 Regulatory context

Federal and Provincial Acts and regulations govern activities that have the potential to cause harm to the environment. This erosion and sediment control plan will provide the contractor with a required process to mitigate erosion and sedimentation to be in compliance with Provincial/Federal regulations and legislation. One of the most pertinent Acts involving construction activities and erosion and sedimentation is the federal *Fisheries Act*.

The *Fisheries Act* prohibits serious harm to fish which is defined in the Act as “the death of fish or any permanent alteration to, or destruction of, fish habitat.”

The purpose of the *Fisheries Act* is to protect the productivity of commercial, recreational and Aboriginal fisheries and it prohibits activities that deposit deleterious substances (damaging substances) of any type into water or that create conditions that allow deleterious substances to be deposited into water frequented by fish. Sediments are considered to have a deleterious effect on aquatic habitats.

Construction activities are required to take every precaution to prevent deposition of sediments into aquatic habitats and there is a duty to notify and take corrective action on any incidences of incidental deposition.

Manitoba Hydro staff and contractors must comply with all regulatory requirements relating to the construction of a project. Specific regulatory requirements for the Project may also be listed in regulatory work permits and/or Department of Fisheries and Oceans letters of advice/authorizations.

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3.0 Implementation

The intent of this section is to provide implementation instructions to the Contractor. The key steps to implementing the plan are outlined below:

- 1) Erosion risk identification
- 2) Planning
- 3) General mitigation measures for susceptible construction activities
- 4) Specific erosion control measures
- 5) Specific sediment control measures

The implementation of the Plan utilizes a step-wise process; however, these steps will be undertaken at various times throughout the pre-construction and construction phases of the Project. The plan is founded on a principle of adaptive management meaning if aspects of the plan are found to require modifications for improved effectiveness or if new information becomes available (e.g., more effective control actions, pest outbreaks in the Project area) the Plan and actions will be updated.

3.1 Erosion risk identification

There are a number of different methods to be conducted by the Contractor including desktop evaluation, pre-construction surveys, and onsite evaluations that will be used to identify areas that are at risk of erosion. Contractors are required to plan ahead and have an understanding of what mitigations will be necessary.

3.1.1 Desktop evaluation

A desktop evaluation of aerial/satellite imagery as well available Geographical Information System (GIS) data will provide Contractors information on site conditions in the project right of way. Elevation or contour data of an area will help to identify the slope of elevation changes and drainage to determine where erosion risk may be higher. Soil information is also available to help understand where fine textured soil types are as they are at a higher risk from erosion.

3.1.2 On-site evaluation

The initial stage of construction involves clearing vegetation along a centerline down the middle of the transmission right of way. That initial clearing of the centerline allows access

to areas prior to the remainder of clearing and construction activities. Ground surveys will be completed by the Contractor when access is available that could identify areas that are at a higher risk of erosion or ground disruption.

There are numerous distinct construction activities for the development of a transmission project some of which have a higher susceptibility to cause erosion and sedimentation.

These include:

- Vegetation clearing
- Earthworks and stock piles
- Draining and Dewatering
- Watercourse crossing

3.1.3 Weather

The effects of wet weather during construction activities can have a significant impact on ground conditions and can change otherwise stable soils into soils that are affected by erosion and sedimentation. The effects of wet weather during construction activities can have a significant impact on ground conditions and can change otherwise stable soils into soils that are affected by erosion and sedimentation. Freeze thaw cycles during the spring can also expose stable soils to an unstable condition overnight and throughout the day.

3.2 Erosion and sediment control management strategy

The Contractor will implement an erosion and sediment control management strategy that will focus on pre-planning, scheduling and preventing erosion as a result of its construction activities. If erosion is not preventable, mitigation measures that prevent sedimentation will be implemented.

3.2.1 Pre-construction planning

In many cases the need for erosion and sediment control can be avoided by considering erosion mitigation during the planning stages of a project or prior to construction activities. For instance, access routes should be planned to avoid steep grades, unstable soils and avoid close proximity to a watercourse or topography that could direct run-off to a watercourse. The Contractor must continuously review their planned construction activities and evaluate the need for ESC measures, while considering weather, soil conditions, identified environmentally sensitive sites within CEnvPP, and any newly disturbed areas for risk of erosion.

3.2.2 Scheduling

The contractor, when developing schedules for construction activities that have the potential to cause erosion and sedimentation, must consider seasonal climate, identified environmentally sensitive sites within CEnvPP, and any newly disturbed areas.

Including erosion and sedimentation as a consideration in the scheduling of activities, is the first step in preventing effects to the environment. Through the use of scheduling, construction activities that are required in erosion prone areas such as adjacent to watercourses can be mitigated by timing those activities during frozen or dry soil conditions. Where possible, work should be scheduled so that construction activities that remove vegetation or disrupt the soil surface happen in short duration before erosion control measures can be installed so that the amount of time soil surface is exposed is minimized.

3.3 General mitigation measures

General mitigation measures that are particular to preventing erosion and sedimentation during construction activities are found in the Construction Environmental Protection Plan, General mitigation tables:

- EI-3 Erosion protection and sediment control
- PC-1 Access roads and trails
- PC-2 Borrow pits and quarries
- PA-5 Draining
- PA-8 Grubbing
- PA-10 Stripping

3.4 Specific erosion control mitigation measures

Chosen erosion and sediment control measures should not be permanent in nature but designed with long term protection in mind (until re-vegetation takes place). Temporary ESC's are those that are in place during the construction phase, or a portion thereof, when exposed soils are vulnerable to erosion with nearby water courses at risk of sedimentation. Permanent solutions would only be considered under extraordinary circumstances and would require MH and regulatory approval.

Control of erosion and sedimentation is most efficient and cost effective when it can be recognized and prevented early. A basic understanding of the erosion and sedimentation

processes will help with this early detection and application of mitigation measures and controls. Due to the varying conditions of the work site, the Contractor will be responsible for determining which protection measures should be installed in each work area in consultation with Manitoba Hydro. Table 2 below show examples of frequently employed erosion controls that are currently approved by MH for use by the Contractor(s).

Table 2: Erosion Controls

EROSION CONTROLS					
Method	Application		Location	Description	BMP
Vegetation retention and replacement	Flat Ground	Y	Any location with potential for exposed soil	Natural regeneration, seeding, planting, sodding	ID-EC_01
	Sloping Ground	Y			
	Stockpiles	Y			
	Ditches	Y			
Surface Cover	Flat Ground	Y	Any location of exposed soil, seeded or not	Organic- Weed free straw, mulch, natural fiber erosion control blankets. Inorganic- geotextile, sheeting, rock	ID-EC_02
	Sloping Ground	Y			
	Stockpiles	Y			
	Ditches	N			
Erosion Control Blankets	Flat Ground	Y	Exposed soil on flat or sloping ground, stockpiles and ditches	Variety of products manufactured into "blankets" placed tight to the ground in a matrix to cover soil and reduce surface erosion	ID-EC_03
	Sloping Ground	Y			
	Stockpiles	Y			
	Ditches	Y			
Impermeable Sheeting	Flat Ground	Y	Large areas of exposed soil, steep terrain, stockpiles	Impermeable sheeting (Polyethylene plastic, or tarps) prevents impact and saturation of soil from rainfall	ID-EC_04
	Sloping Ground	Y			
	Stockpiles	Y			
	Ditches	Y			
Organic Fiber Rolls (Wattles)	Flat Ground	N	Steep slopes, stepped terraces	Rolls of organic material (usually straw) that reduce erosion by reducing slope and the energy of overland flow	ID-EC_05
	Sloping Ground	Y			
	Stockpiles	N			
	Ditches	N			
Ditch Check Dams	Flat Ground	N	For use on drainage ditches or large diversions but not natural watercourses	Decreases the grade and water flow velocities	ID-EC_06
	Sloping Ground	N			
	Stockpiles	N			
	Ditches	Y			
Water Diversion	Flat Ground	N	Areas with large amount of exposed soil, worksite or stock pile	Diversion ditching or berms to direct overland flow around a worksite	ID-EC_07
	Sloping Ground	Y			
	Stockpiles	Y			
	Ditches	Y			
Matting	Flat Ground	Y	Flat ground at risk of erosion or	Diversion ditching or berms to direct overland flow around a worksite	ID-EC_08
	Sloping Ground	N			
	Stockpiles	N			
	Ditches	N			
Wind Erosion	Flat Ground	Y	Any location with exposed soil	Watering the surface, using impermeable sheeting (Polyethylene plastic, or tarps) or any surface cover	ID-EC_09
	Sloping Ground	Y			
	Stockpiles	Y			
	Ditches	Y			

3.5 Specific sediment control mitigation measures

It is important to understand that sedimentation controls themselves are only employed as a second line of defence. Sedimentation controls are designed to provide a place for water to slow down and allow the particles to be deposited that the primary erosion controls were unable to prevent. Sediment fencing does not "filter" the water but rather

are meant to slow down the water and allow fine soil particles or other potentially deleterious materials to settle behind it. Even perfectly constructed sediment controls will not be sufficient if a construction site lacks adequate erosion controls. Sediment controls are most effective under low input flow conditions. Listed in Table 3 below are examples of frequently employed sediment controls that are currently approved by MH for use by the Contractor(s).

Table 3: Sediment Controls

SEDIMENT CONTROLS					
Method			Application	Description	BMP
Sediment fencing	Flat Ground	Y	Anywhere low flow runoff is a concern and retention of sediment	Geotextile fabric, buried at the bottom and suspended vertically by wooden stakes	ID-SC_01
	Sloping Ground	Y			
	Stockpiles	Y			
	Ditches	Y			
Sediment Retention Berm	Flat Ground	Y	Anywhere low flow runoff is a concern and retention of sediment	Constructed of rock, wood chips, compost, soil and topsoil or similar materials	ID-SC_02
	Sloping Ground	Y			
	Stockpiles	Y			
	Ditches	Y			

3.6 Education and training

Education and training form a critical component of the implementation plan. Manitoba Hydro and the contractor(s) each have responsibility to ensure personnel are appropriately trained to carry out their role in the prevention of erosion and sedimentation, and that proper documentation is being conducted throughout the Project. Manitoba Hydro has prepared Erosion and Sediment Control Environmental Practices found in appendices which guides the implementation of controls, for use by Project field staff.

Manitoba Hydro will hold a Contractor Environmental Pre-Construction Orientation meeting to review Project specifics and key environmental requirements with all of its Contractors at a supervisory level. A summary of this Plan, implementation requirements, roles and responsibilities, and Manitoba Hydro's expectations will be presented at that time.

Manitoba Hydro will also hold a separate pre-construction environmental meeting to provide the opportunity for Manitoba Hydro and Contractor environmental representatives to discuss Project specifics and environmental requirements in more depth.

It is a mandatory requirement that all contractor(s) provide Project-specific erosion and sedimentation control orientation training to all personnel involved in construction

activities susceptible to erosion and sedimentation or involved in supervision of those personnel (i.e., project manager, supervisors) prior to starting work. This training will present the objectives of the plan, roles and responsibilities, erosion and sedimentation issues and prevention actions, and documentation requirements. A training attendance record must be maintained by the contractor(s) and submitted to Manitoba Hydro Environmental Inspector/Officer or delegate, for upload to the Environmental Protection Information Management System.

3.7 Monitoring and maintenance

Monitoring, inspection and adaptive management are necessary to ensure the effectiveness of the plan. It provides confirmation of proper implementation and effectiveness of erosion and sediment control measures. Monitoring will take place until the concern of erosion and sedimentation no longer exists. It is the duty of the Contractor to ensure that the erosion and sediment control measures are properly installed, well maintained and functioning as intended.

The effectiveness of the ESCP depends directly on the frequency of monitoring and what actions are taken to address any failures that may occur. A tracking document will be maintained by the Contractor's Environmental Representative indicating location, timing of construction activities and reason for implementation. This document will be submitted to Environmental Protection Information Management System (EPIMS) to ensure that all installed ESCP measures can be tracked for continued maintenance, monitoring and decommissioning/removal.

Components of monitoring, maintenance and decommissioning to be conducted by the Contractor will include:

- A monitoring schedule will be drawn up to include times, areas and individual(s) responsible for monitoring. (Will be included in the Contractor's environmental inspection reports submitted to MH).
- Inspect and assess effectiveness of ESC control structures regularly and after storms, and repair, replace or upgrade, as required. If shortcomings are identified, the contractor must take immediate action to restore their proper function.
- All employees are required to report any ineffective erosion and sedimentation control measures or those in need of repair.

- Sediment control measures may require accumulated sediment to be removed to function properly or to not overload the structure. It is important to remove sediment from the area completely and take it to landfill or relocated where it is no longer at risk of being washed into a watercourse.
- Any maintenance of ESC should be recorded and reported to MH to help identify failure prone sites or areas requiring reinforced measures.
- Weather forecasts should be monitored as weather events have the potential to play a part in erosion sedimentation risk during construction activities.
- During inactive construction periods, where the site is left alone for 30 days or longer monthly monitoring should be conducted.

3.7.1 ESCP removal

The Contractor will stabilize sites as soon as feasible after construction activities causing surface disruptions are complete. The site will then be assessed and re-vegetated in accordance with the Rehabilitation and Invasive Species Management Plan. Temporary erosion and sediment control measures will remain intact and maintained until:

- The MH Environmental Inspector/Officer determine that there are no longer erosion and sedimentation concerns in an area, or
- Either natural vegetation is established and stable or permanent measures are established.

Although work may be conducted in the winter months, care must be taken to ensure that materials are not left to degrade the surrounding waterways when the spring thaw arrives. When sediment control systems are removed by the Contractor, accumulated sediment must be removed and taken to landfill or relocated where it is no longer at risk of being washed into a watercourse.

3.7.2 Environmental shutdown/ contingency measures

The contractor has a responsibility to recognize and prevent working in adverse weather conditions that would increase erosion potential and overwhelm designed erosion and sediment control systems. Construction activities in areas with high erosion risk should be scheduled to take place during favourable weather conditions. Activities should be stopped in these areas when they have encountered periods of significant melt or prolonged precipitation and surface runoff cannot be sufficiently managed. Conditions

that cannot be mitigated through contingency measures in areas of high erosion risk will require a shutdown of activities until conditions improve or there is modification of work practices.

Suitable work conditions will be established and agreed upon between the Contractor and Manitoba Hydro. Work modification or weather shut down to mitigate erosion and sedimentation may be considered if:

- During extended periods of adverse conditions (for rain is considered greater than 5 mm of rain in a 24 hour period)
- more than 50 mm of rain/5 cm of wet snow in the preceding 5 days; or
- the forecast calls for more than 50% certainty of 5 mm of rain/or 5 cm of wet snow in the next 24 hours
- If extreme wet weather conditions result if erosion is resulting in sedimentation of adjacent waterbodies due to compromised erosion control measures.

3.7.3 Environmental shutdown

Should a weather shutdown be deemed necessary it will be communicated to the Contractor in writing through the MH Construction Supervisor. Once the shutdown is in place, the Contractor may propose Work Modifications to Manitoba Hydro that prevent further damage or employ mitigation measures. Once conditions improve or changes are approved by Manitoba Hydro the weather shut-down will be released by Manitoba Hydro. Some of the possible work modifications include: placement of matting, geotextile installation or change of work hours (working in the morning with frozen ground conditions).

3.7.4 Contingency measures

Should an extreme weather event result in a breach of existing erosion and sediment controls and sediment laden water is able to flow and reach a watercourse the following contingency measures may be employed by the Contractor to mitigate the breach:

- Install additional sediment fencing, or construct a containment berm to create a containment area for runoff and prevent it flowing to watercourses and wetlands.
- Excavate a cross ditch or diversion berm to divert water away from watercourses and wetlands and into a vegetated area, sump or containment area.
- Place sandbags to raise the height of banks, preventing flooding of nearby areas or of run-off into watercourses.

4.0 Environmental management practices

Below is a list of environmental management practices used for sediment and erosion control. An appendix is provided for each that provides the description, application, implementation and installation of each.

4.1 Erosion controls

- EC_01 Vegetation Retention and Replacement
- EC_02 Surface Cover
- EC_03 Erosion Control Blankets
- EC_04 Impermeable Sheeting
- EC_05 Organic Fibre Rolls (Wattles)
- EC_06 Ditch Check Dams
- EC_07 Water Diversion
- EC_08 Timber Matting
- EC_09 Wind Erosion Control

4.2 Sediment controls

- SC_01 Sediment Fencing
- SC_02 Sediment Retention Berm

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5.0 References

Manitoba Stream Crossing Guidelines For The Protection of Fish and Fish Habitat (DFO and MNR 1996). Available at:

<https://www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf>.

Minister of Justice. 1985. *Fisheries Act*. Available at: <http://laws-lois.justice.gc.ca/PDF/F-14.pdf>.

Appendix A: EC_01 Vegetation Retention and Replacement

Appendix B: EC_02 Surface Cover

Appendix C: EC_03 Erosion Control Blankets

Appendix D: EC_04 Impermeable Sheeting

Appendix E: EC_05 Organic Fibre Rolls (Wattles)

Appendix F: EC_06 Ditch Check Dams

Appendix G: EC_07 Water Diversion

Appendix H: EC_08 Timber Matting

Appendix I: EC_09 Wind Erosion Control

Appendix J: SC_01 Sediment Fencing

Appendix K: SC_02 Sediment Retention Berm

