19/08/2019

# Manitoba-Minnesota Transmission Project

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## Rehabilitation and Invasive Species Management Plan

## August 2019


**Prepared by:**

**Licensing and Environmental Assessment Department**

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Manitoba Hydro

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# Preface

Manitoba Hydro would like to acknowledge that this Project will be located in Treaty One Territory, the traditional territories of the Anishinabe, Cree, and Dakota people and the homeland of the Metis Nation.

This document presents the Rehabilitation and Invasive Species Management Plan (the Plan) for the construction of the Manitoba-Minnesota Transmission Project (the Project). It is intended to provide information and instruction to Manitoba Hydro employees as well as contractors, regulators and members of the public. The Plan provides regulatory context as well as general considerations and guidance pertinent to the post construction rehabilitation of project sites and management of invasive species within the Project footprint.

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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Version – Final 1.01

List of Revisions

| Number | Nature of revision | Section(s) | Revised by | Date |
|---|---|---|---|---|
| Draft | Added to contractor responsibilities "Rehabilitate disturbed areas as soon as practicable or where deemed necessary by Manitoba Hydro , rehabilitation is not to be deferred until construction is complete" | Page 4 | Manitoba Hydro | 20181114 |
| Draft | Added a sentence regarding site rehabilitation "A combination of promoting natural re-vegetation… " | Page 20 | Manitoba Hydro | 20181114 |
| Draft | Updated to include information presented in response to NEB-IR5-5.15 | Section 4 | Manitoba Hydro | 20180522 |
| Draft | Added "Pesticide Application Requirements For Manitoba Hydro Employees And Contractors" | Appendix H | Manitoba Hydro | 20181121 |
| Draft | Added acknowledgement to Preface | Preface | Manitoba Hydro | 20190211 |
| Draft | Added Engagement Activities | Section 1.1 | Manitoba Hydro | 20190211 |
| Draft | Add Appendix I – Summary of Consultation | Appendix I | Manitoba Hydro | 20190211 |
| 1.01 | Updated chemical treatment decision making framework | Section 4.5 | Manitoba Hydro | 20190729 |

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# 1.0 Introduction

Consistent with its corporate Environmental Management Policy, Manitoba Hydro has committed within the Manitoba - Minnesota Transmission Project (the Project) Environmental Impact Statement (EIS) to developing a Rehabilitation and Invasive Species Management Plan (RISMP) as part of a larger suite of mitigation measures to minimize potential negative environmental and socio-economic effects.

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 RISMP is a component of the EPP as illustrated in Figure 1.

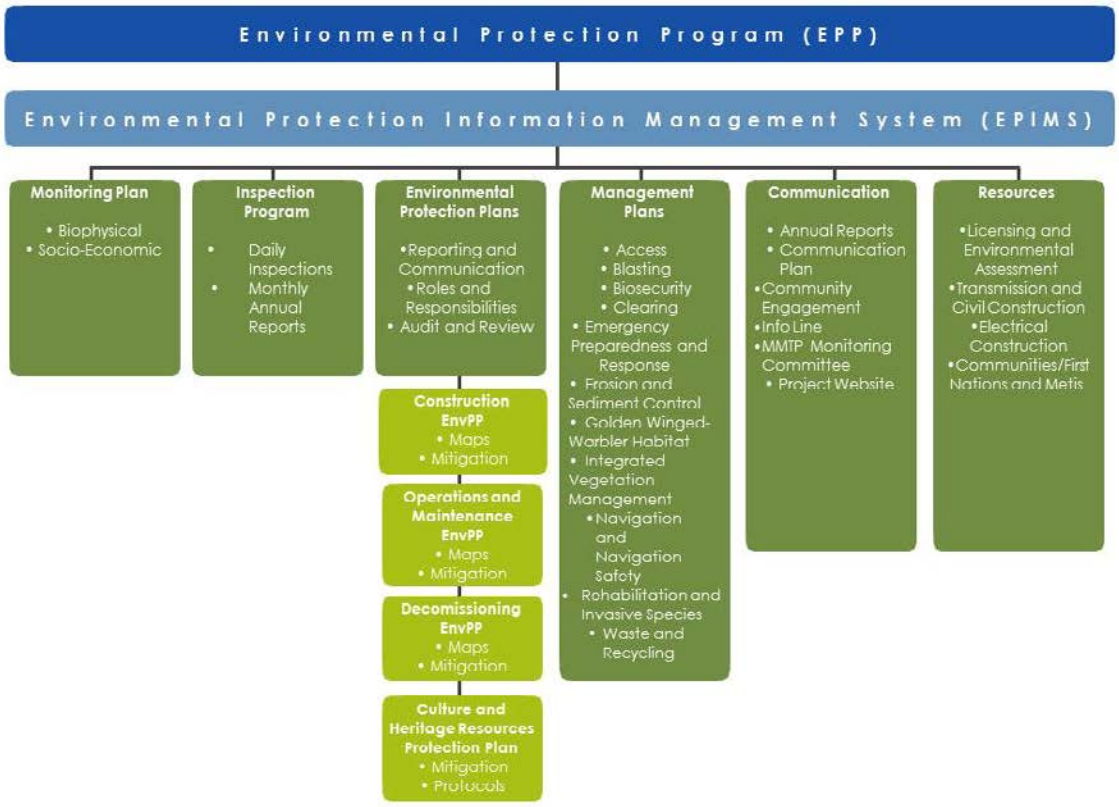


Figure 1: Transmission Environmental Protection Program

## 1.1 Commitment to environmental protection and indigenous engagement

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 RISMP 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 disturbance of access related to the construction of a new transmission line.

Manitoba Hydro is committed to seeking input on this draft plan from Indigenous communities and organizations through the MMTP Monitoring Committee and the project First Nations and Metis Engagement Process.

Below is a summary and evidence of Manitoba Hydro's consultation with potentially affected persons, organizations, Indigenous communities, and federal and provincial authorities regarding the Rehabilitation and Invasive Species Management Plan. Any feedback or concerns that were raised, steps that Manitoba Hydro has taken or will take to address those concerns can be found in Appendix I.

Draft environmental protection and management plans, including Rehabilitation and Invasive Species Management Plan, were uploaded to the Project website and a web page was created in October 2018, including a fillable comment form to provide feedback (Appendix I).

Indigenous communities and organizations, landowners, interested parties and the public were notified, in October 2018, that Manitoba Hydro was seeking feedback on these plans. This was done through the Project website, MMTP Monitoring Committee website, e-campaign, emails, and letters to landowners (Appendix I).

The construction environmental protection plan and associated management plans, including the Rehabilitation and Invasive Species Management Plan have been discussed at two MMTP Monitoring Committee meetings and posted to the MMTP Monitoring Committee website. Paper copies of all draft plans were provided to community members at both meetings. The management plan website was shared with communities via email and the plan was also posted on the MMTP Monitoring Committee website (Appendix I).

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

## 1.2 Purpose and objectives

The purpose of this Rehabilitation and Invasive Species Management Plan (RISMP) is to provide information that will guide contractors and Manitoba Hydro staff through project construction, maintenance, and decommissioning in a manner that meets Manitoba Hydro's Environmental Management Policy and project commitments.

Rehabilitation is the process of returning the land in a project area to a condition compatible to its former state after development has disturbed the land. As there has

already been a large amount of habitat degradation and increasing pressures on the surrounding areas, Manitoba Hydro seeks to enhance habitat and biodiversity on the ROW through the implementation of rehabilitation measures that consider traditional resource use along with wildlife habitat. Manitoba Hydro has participated in endeavours with researchers to measure and enhance the biodiversity of its ROW's. Manitoba Hydro continues to be open to discussing opportunities for research and collaboration with researchers from universities and Indigenous communities and organizations.

Invasive species management is the process of managing the invasive species growing in the project area through a variety of methods. Invasive species are plants, animals or other organisms that are growing outside of their country or region of origin and are out-competing or even replacing native organisms. They have a distinct advantage over our native species whose populations are kept in check by native predators, competitors, or disease.

Reasons for rehabilitation and invasive species management may include:

- reducing the risk of erosion
- controlling the spread of invasive plants
- reducing access
- reclaiming land
- improving aesthetics
- restoring ecosystem function

## 1.3 Roles and responsibilities

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

A summary of roles and key responsibilities is found in Table 1. Communication and reporting on environmental issues, monitoring and compliance will be as outlined in Figure 2.

Table 1: Key Roles and responsibilities

| Role | Responsibilities |
|---|---|
| Manitoba Hydro | • Identifying Invasive species locations in Biosecurity Management Plan Mapbook<br>• Monitoring rehabilitation measure success<br>• Review Contractor developed site-specific rehabilitation measures<br>• Implement Invasive Species Management Treatment Options where |

Table 1: Key Roles and responsibilities

| Role | Responsibilities |
|---|---|
| | required |
| Contractor | • Shall adhere to Rehabilitation and Invasive Species Management Plan including employee training, implement rehabilitation measures prescribed actions, signage and submit all required assessment documentation.<br>• Respond and act promptly to resolve if any activities are identified as not in compliance with the RISMP or any regulatory requirements.<br>• Conducting assessment of Project sites for rehabilitation<br>• Develop and propose site specific rehabilitation measures as per guidelines<br>• Implement site specific Rehabilitation Measures<br>• Prevent the spread of Invasive plant species<br>• Rehabilitate disturbed areas as soon as practicable or where deemed necessary by Manitoba Hydro , rehabilitation is not to be deferred until construction is complete |

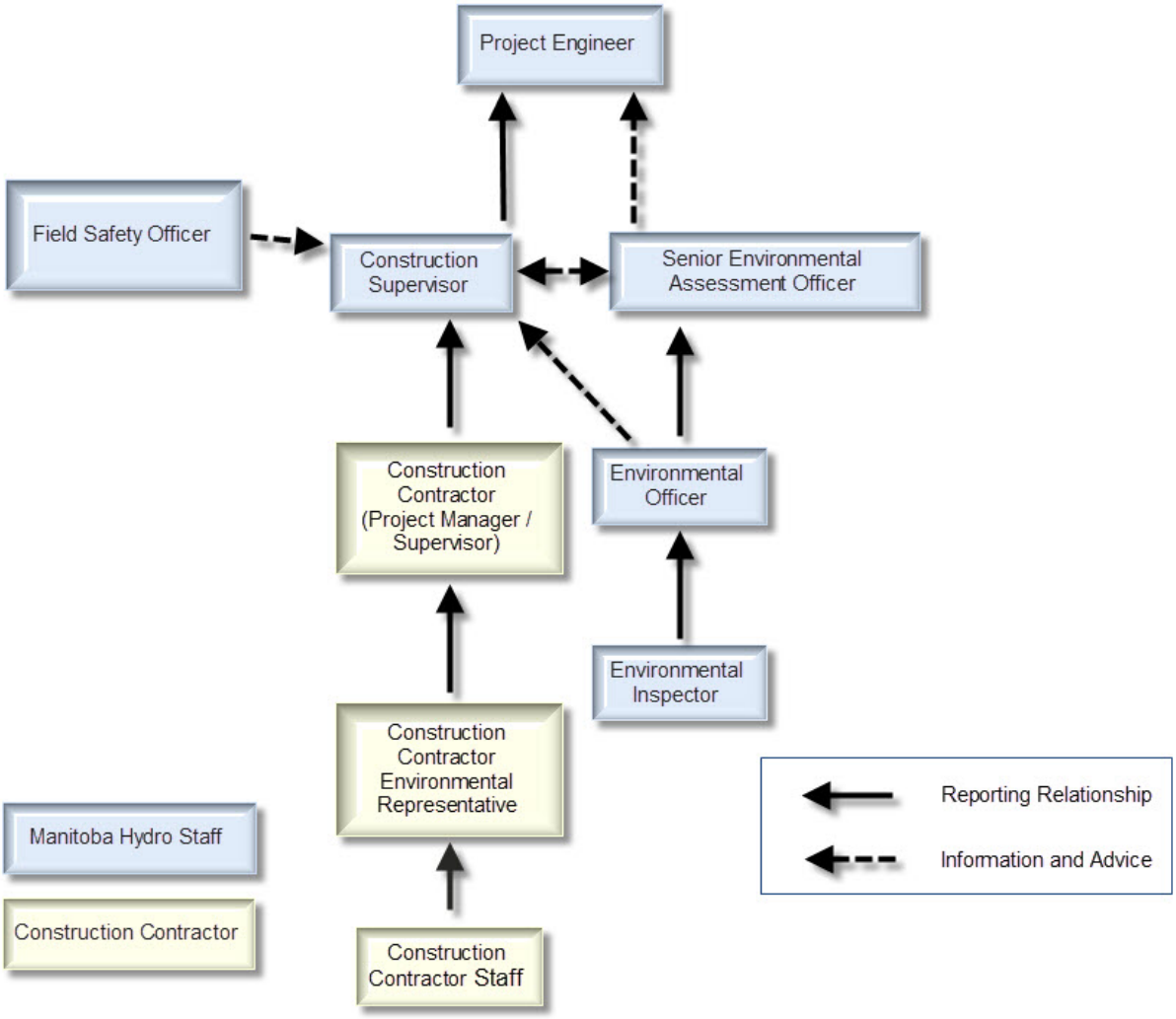


Figure 2: Environmental communication reporting structure

# 2.0 Regulatory Context

In Manitoba, the control of noxious weeds is regulated by The Noxious Weeds Act, C.C.S.M. c. N110 (including amendments from The Noxious Weeds Amendment Act, S.M. 2015, c. 38) and the Noxious Weeds Regulation (42/2017). Through recent amendments to the Act, the list of regulated noxious weeds has been updated and noxious weeds have been designated as tier 1, tier 2 or tier 3 noxious weeds based on prevalence, distribution and invasiveness.

The list of weeds designated as tier 1, tier 2 and tier 3 noxious weeds under the Noxious Weeds Regulation (42/2017) is found in Appendix G.

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# 3.0 Implementation

The intent of this section is to provide for implementation instructions to Manitoba Hydro and Contractor Project staff. The main project components that may require rehabilitation and invasive species management include the following:

- right-of-way (RoW)
- access routes and by-pass trails
- borrow pits and quarries
- marshalling yards (material and/or equipment storage, fly yards)
- construction camps
- station sites

## 3.1 Assessment

The Contractor shall conduct a rehabilitation assessment as described in the Guidelines of Rehabilitation by Land Cover below. The assessment will be documented though the use of the Rehabilitation Assessment Checklist (Appendix A).

## 3.2 Timing

The timing of when rehabilitation activities occur is key to preventing erosion, invasive species establishment, and preventing damage to rehabilitation measures. The Contractor is required to implement rehabilitation measures as soon practicable or as required by MH Environmental Inspector/Officer, rehabilitation is not to be deferred until construction is complete.

## 3.3 Guidelines for rehabilitation by land cover

### 3.3.1 Wetlands and riparian areas

Trigger(s) for the Assessment for rehabilitation by Contractor:

- Any construction activity that affects surface water drainage directly into a water body (watercourse and/or wetland) without sufficient erosion and sediment control measure in place
- When the depth of rutting exceeds 10cm for more than 15m in length;

- Admixing (mixing of topsoil and subsoils)
- Any excessive soil disturbance within wetland outside of tower footprint and stringing corridor
- Removal of riparian buffer shrub and understorey vegetation
- Debris from clearing or stream crossing below high water mark

Criteria to be assessed by Contractor (Manitoba Hydro may conduct its own assessment):

- proximity to weed seed source
- current ground and aquatic conditions
- existing erosion and sediment control measures
- accessibility to Project site(s)
- safety
- adjacent land use
- timing of rehabilitation activities

Rehabilitation measures may include (site-specific rehabilitation measures will be developed by the Contractor and proposed to Manitoba Hydro for review):

- Flag or place barriers to mitigate further disturbance
- Implementation of erosion and sediment control measures where required
- Allow for passive revegetation
- Implement active revegetation through planting or seeding of native/traditional species
- Flag or place barriers after rehabilitation measures implemented to mitigate further disturbance
- Debris removal
- Other rehabilitation measures as approved by Manitoba Hydro

### 3.3.2 Cultivated lands

Trigger(s) for the Assessment for rehabilitation by Contractor:

- Sites that exceed threshold for work modification(s) as described in the Saturated / Thawed Soils Operating Guidelines
- Any excess construction materials (granular, clay, waste)

- Any travel off designated access routes
- Disturbance to existing in-field drainage
- Installation of tower or poles

Criteria to be assessed by Contractor (Manitoba Hydro may conduct its own assessment):

- proximity to weed seed source
- current ground conditions
- current crop and farming practices
- existing erosion and sediment control measures
- accessibility to Project site(s)
- safety
- adjacent land use
- timing of rehabilitation activities

Rehabilitation measures may include (site-specific rehabilitation measures will be developed by the Contractor and proposed to Manitoba Hydro for review with landowner):

- Flag or place barriers to mitigate further disturbance
- Implementation of erosion and sediment control measures where required
- Cultivation to remove ruts and compaction
- Restore drainage to pre-existing condition
- Implement active revegetation through seeding of native/crop species acceptable to landowner within tower footprint
- Addition, spreading or removal of topsoil
- Flag or place barriers after rehabilitation measures implemented to mitigate further disturbance
- Construction material removal
- Other rehabilitation measures as approved by Manitoba Hydro

### 3.3.3 Access routes and trails

Trigger(s) for the Assessment for rehabilitation by Contractor:

- Any evidence of access route/trail structure damage occurring, such as admixing, or the creation of ruts that impedes local vehicle traffic
- Any excess construction materials (granular, clay, waste) within route/trail or ditches including rider pole installations

- Removal of snow fill approaches within access route/trail right of way prior to spring thaw

Criteria to be assessed by Contractor (Manitoba Hydro may conduct its own assessment):

- proximity to weed seed source
- current ground conditions
- Current access route/trail use
- existing erosion and sediment control measures
- accessibility to Project site(s)
- safety
- adjacent land use
- timing of rehabilitation activities

Rehabilitation measures may include (site-specific rehabilitation measures will be developed by the Contractor and proposed to Manitoba Hydro for review):

- Flag/sign or place barriers to mitigate further disturbance
- Implementation of erosion and sediment control measures where required
- Allow for passive revegetation
- Implement active revegetation through planting or seeding of native/traditional species
- Back blading or grading to remove ruts/level surface
- Construction material and debris removal
- Adding or replacing gravel surface material
- Contouring or re-sloping
- Flag/sign or place barriers after rehabilitation measures implemented to mitigate further disturbance
- Excess construction material removal
- Other rehabilitation measures as approved by Manitoba Hydro

### 3.3.4 Forest, tame pasture and grasslands

Trigger(s) for the Assessment for rehabilitation by Contractor:

- When rutting depth exceeds 30 cm for more than 15 m in length
- Any travel off existing designated access routes

Criteria to be assessed by Contractor (Manitoba Hydro may conduct its own assessment):

- proximity to weed seed source
- current ground conditions
- Current farming practices
- existing erosion and sediment control measures
- accessibility to Project site(s)
- safety
- adjacent land use
- timing of rehabilitation activities

Rehabilitation measures may include (site-specific work modifications will be developed by the Contractor and proposed to Manitoba Hydro for review):

- Flag/sign or place barriers to mitigate further disturbance
- Implementation of erosion and sediment control measures where required
- Allow for passive revegetation
- Implement active revegetation through planting or seeding of native/traditional species
- Back blading or grading to remove ruts
- Construction material and debris removal
- Flag/sign or place barriers after rehabilitation measures implemented to mitigate further disturbance
- Addition, spreading or removal of topsoil
- Other rehabilitation measures as approved by Manitoba Hydro

### 3.3.5 Borrow pits and quarries

Trigger(s) for the Assessment for rehabilitation by Contractor:

- When borrow pits or quarries are no longer required for foundation installation

Criteria to be assessed by Contractor (Manitoba Hydro may conduct its own assessment):

- proximity to weed seed source
- current ground conditions
- existing erosion and sediment control measures
- safety
- adjacent land use
- timing of rehabilitation activities

Rehabilitation measures may include (site-specific work modifications will be developed by the Contractor and proposed to Manitoba Hydro for review):

- Contouring or re-sloping
- Implementation of erosion and sediment control measures where required
- Allow for passive revegetation
- Implement active revegetation through planting or seeding of native/traditional species
- Back blading or grading to remove ruts
- Construction material and debris removal
- Flag/sign or place barriers after rehabilitation measures implemented to mitigate further disturbance
- Addition of topsoil
- Other rehabilitation measures as approved by Manitoba Hydro

## 3.4 Erosion and sediment control

Project activities may result in the disturbance or removal of topsoil and modification of the landscape. Where possible, removal of ground plant cover and soil disturbance should be minimized during project activities. Vegetation provides a protective cover for underlying soil and reduces surface runoff. Removal of vegetation cover exposes soil and can result in soil losses from wind and water erosion. In locations of rapid run-off, rills may develop. Soil erosion near watercourses can reduce water quality by causing sedimentation, resulting in a reduction of aquatic ecosystem health.

Erosion control of disturbance sites may be necessary prior to re-establishment of vegetation. Erosion control prescriptions will vary considerably based on the conditions found at the site. Refer to the Erosion and Sediment Control Plan for any measures that may need to be put in place prior to rehabilitation.

## 3.5 Site preparation

Site preparation for rehabilitation may vary with site conditions. Site preparation methods will depend largely on the degree of disturbance, soil conditions, and existing vegetation remaining and regenerating in sites.

Site preparation options include the following:

- Contouring – Site preparation may involve contouring of an area where a disturbance has occurred (e.g., borrow pits) prior to implementing other efforts.
- Addition or removal of topsoil – Where topsoil has been removed for project activities, site preparation should involve the replacement of topsoil. The salvage of topsoil is a priority that should be considered in the planning stages of a project. Topsoil is the uppermost layer of soil that is important for nutrient cycling and is a source for native plants. The amount of topsoil required for replacement should ideally match the depth of topsoil as to what was there before, or a minimum depth of 30 cm. Effective topsoil management is an essential component of rehabilitation success. Note: that should the addition of topsoil be required onsite, refer to the Biosecurity Management Plan to minimize biosecurity risk.
- Grading of ground material – Site preparation may involve grading of soils where a disturbance has occurred (e.g., rutting). On terrain with slopes, it is recommended that grading occur across a slope to reduce erosion, and grading of materials should not result in slopes steeper than a 5:1 ratio.
- Soil de-compaction – Equipment continually driving over an area may result in compaction. Soil compaction is the squeezing together of soil particles, reducing the space available for air and water which could reduce the capacity of the soil to support desired vegetation. Site preparation may involve treatment for soil compaction prior to re-establishment of vegetation by light discing or tilling to avoid loss of soil moisture and soil structure.
- Seedbed Preparation – Site preparation may also include preparing the seedbed prior to revegetation to enhance germination success. Seeding options discussed below.

## 3.6 Revegetation

Revegetation is the process of plants growing again on land previously disturbed. This may be a passive process by plant colonization and succession or an active accelerated process (e.g., seeding, planting) designed to repair a disturbance to the landscape.

### 3.6.1 Passive

Passive revegetation is a viable means of rehabilitation by natural seeding, sprouting, suckering or layering of vegetation. Where conditions are ideal regarding seedbank, propagules, topography, slope, moisture, time of year, and condition of surrounding vegetation, natural regeneration will occur.

### 3.6.2 Active

Where conditions are not ideal for passive revegetation such as lack of seedbank or propagules, rehabilitation should involve active revegetation by planting or seeding.

#### 3.6.2.1 Planting options

Options for rehabilitation by planting include the following:

- Tree seedlings – Tree seedlings may be obtained as either bare root or containerized stock. Bare root stock need to be handled carefully while in storage and during planting, and exposed roots can dry out quickly. Containerized stock provides root protection and increased flexibility as to timing of planting. Spacing for seedlings can be variable. Seedlings are recommended for large-scale plantings. Common seedlings for rehabilitation may include jack pine and red pine, white and black spruce.
- Transplanting – Transplanting is a form of artificial regeneration where plants are removed from one location and planted in another. Transplanting is a useful means of re-establishing native species quickly. Preferably, transplanting should occur from similar habitats and nearby sources to increase growing success. Vegetation transplanted in disturbed sites may increase the rate of natural regeneration by capturing seeds and organic material from surrounding plant cover. Transplanting is a recommended method for vegetation rehabilitation near watercourse crossings. Species such as hybrid poplar and willow cuttings are commonly planted because of their good rooting ability and fast growth rate.

- Sprigging – Plant sections cut from rhizomes or stolons that include the vegetation crowns and roots. Sprigging can be an effective method for disturbed and erodible stream crossing sites.

#### 3.6.2.2 Seeding options

Options for rehabilitation by seeding include the following:

- Drill Seeding – Drill seeding involves a tractor-pulled seed drill. In larger areas, equipment can furrow soil, plant seed and pack soil over seed in one pass. Native seed drills are most efficient and accurate at placing seed. Drill seeding should be done into well-cultivated soil, free of lumps and debris, and firmly roller packed.
- Broadcast seeding – Broadcast seeding is accomplished by dispersing seed by machine or hand. Broadcasting is effective where the access of large machinery is not possible or recommended, although requires the use of more seed. An attempt should be made to incorporate the seeds into the soil as an additional step after broadcasting.
- Hydroseeding – Hydroseeding is a method that uses a slurry of seed, mulch, water and tackifier which is transported by a water tank that may be mounted on a truck or trailer and sprayed over prepared ground. Hydroseeding is an alternative to traditional broadcasting or drilling seeding.

## 3.7 Other important considerations and options

### 3.7.1 Ecological context

Rehabilitation prescription needs to be appropriate for the site under consideration. Manitoba is comprised of six ecozones representing large generalized ecological units characterized by interactive and adjusting abiotic and biotic factors. Selecting vegetation for rehabilitation needs to be suitable to the site. Appendix C identifies characteristic vegetation of Manitoba's ecozones.

### 3.7.2 Using native/traditional use species

Native species are plants occurring within their historic range bounded by the dispersal potential of the plant. These native/traditional use species are favoured for rehabilitation for several reasons, including resource use, ecological compatibility, palatability, and adaptation to local soils and climate. Native/traditional plant material will be used for rehabilitation of a disturbance area where the goal is to re-establish a native/traditional

plant community. Appendix B is a selection of commercially available traditional plant species.

### 3.7.3 Seed mix recommendations

This section identifies native seed mixes for disturbances in Manitoba. Establishing long-term plant communities requires forethought as to appropriate species to use. Actual amounts of species present in a seed mix may vary depending upon seed availability. The best adapted species will result from seed collections in the region. If seed availability is an issue, it would be preferable to use the correct species, rather than the prescribed seed rates. Species listed in Appendix D can be chosen as a baseline mix and are generally commercially available. Both upland and lowland mixes are provided for northern, west central, and southern Manitoba. Species listed in Appendix E are commercially available in Manitoba and may be added for diversity.

### 3.7.4 Commercial seed and plant providers

Purchasing native seed from commercial providers is a practical option for large rehabilitation sites. Where seed will be purchased, the following information should be considered:

- Species selection for seeding should be undertaken in conjunction with recommended seed mixes, generally with a dominance of native graminoids and subdominant native broadleaf herbs.
- Seed acquisition should be determined through consultation with a vegetation specialist, using ready available native local seed, wherever possible.
- Forage grasses should not be seeded as they are developed for maximum forage production, and may destroy habitat by taking over native plant communities.
- The genetic origin of the seeds should be from Manitoba or nearby provinces, from a region with similar ecological conditions.
- Commercial seed providers should produce certificates of analysis from an accredited laboratory that provides seed purity and germination values.

### 3.7.5 Seeding dates

There are two timing windows for seeding. The preferred time to seed occurs during the spring as soon as the ground has reached a desirable temperature (5°C) and the danger of

a killing frost has past. The second and less successful time is dormant seeding in the fall once the ground temperature has lowered to 5°C, where seeds will germinate the following growing season. For sites with a high risk of erosion, seeding could occur at anytime.

### 3.7.6 Rates for seeding

Seeding rates can vary depending on method of seeding and applicator. Seeding rates may need to be adjusted for wind loss, animal consumption, slope, seed weight, germination rate, annual survivorship, and intended density of mature plants. General seeding rates include the following:

- drill seeding <15 kg/ha
- broadcast seeding 30 to 85 kg/ha
    - broadcast seeding involves scattering of seed manually by hand (or hand-held seeder) or mechanically.
- hydroseeding 75 to 100 kg/ha
- cover crops 2.2 to 5.5 kg/ha (seeded lightly to reduce competition with native species)

The seeding rate calculation for a species that occupies 10% of a seed mix (e.g. 84 kg/ha) includes the following: 84 kg/ha x 0.10 = 8.4 kg/ha.

### 3.7.7 Rates for planting tree seedlings

Spacing of tree seedlings can be variable within disturbance areas. In general, spacing to achieve about 2,500 seedlings per hectare requires spacing of 2.1 m between rows and 1.8 m between seedlings.

Transplanting cuttings such as poplar or willow species can be used. Cuttings should be a minimum length of 30 cm and buried in the ground at least half its length. Cuttings are most successfully transplanted in the spring and fall. Both poplar and willow species have good propagation success because of their rooting ability and are desirable for erosion control.

### 3.7.8 Fertilizers

Fertilizers can be added to the soil to supply one or more plant nutrients essential to the growth of plants that may be lacking in the soil at the site prescribed for rehabilitation.

Fertilization may improve productivity of a rehabilitation effort during early growth stages. Applying excessive amounts of fertilizer can have negative environmental effects (e.g. seed damage, run-off, encourage invasive species, etc.). The storage, handling, and application of fertilizers are legislated in Manitoba (*The Water Protection Act*, *The Pesticides and Fertilizers Control Act*). This legislation is intended to protect Manitoba's water quality. It is important to consult this legislation prior to applying nutrients to rehabilitation sites.

# 4.0 Invasive species management

Many Invasive species in Manitoba are so common now that they are often mistakenly considered native, these species have become widely naturalized through intentional and accidental introductions. Invasive species reduce biological diversity and threaten native ecosystems. Examples of invasive species in Manitoba include purple loosestrife, ox-eye daisy and leafy spurge. Plants listed by the Invasive Species Council of Manitoba are provided in Appendix F.

Once invasive species become established control measures can be costly to implement. Therefore, a successful invasive species management should involve taking preventative measures, early detection, and rapid management response.

The management of invasive species must consider the ownership of the land. The responsibilities for management on different ownership types are described below:

- ROW on private/municipal lands: As Manitoba Hydro has only an easement the responsibility of invasive species management lies with the landowner. If invasive weeds are introduced to the right-of-way as a direct result of Manitoba Hydro activities it will work with the landowner to implement control options.
- ROW on railway, road allowance or highway lands: As Manitoba Hydro does not have an easement the responsibility of invasive species management lies with the landowner. If invasive weeds are introduced to the right-of-way as a direct result of Manitoba Hydro activities it will work with the landowner to implement control options.
- ROW on Manitoba Hydro-owned lands: Manitoba Hydro is responsible for invasive species management to be in compliance with the *Manitoba Noxious Weeds Act*.
- ROW on Crown lands (including lands with third-party interests): As Manitoba Hydro has only an easement the responsibility of invasive species management lies with the Crown (landowner) or the third party interest. If invasive weeds are introduced to the right-of-way as a direct result of Manitoba Hydro activities Manitoba Hydro would consult with local Weed Supervisors and Manitoba Agriculture and/or Sustainable Development departments to implement control options.

## 4.1 Prevention

An initial step in controlling invasive plant species is preventing their establishment. Prevention is relatively cost-effective when compared to invasive species control and management efforts. Detailed biosecurity measures are outlined in the Biosecurity Management plan for the Project. Preventative measures may include the following:

- Education on how to identify invasive species and infestations.
- Avoid driving or walking through areas of invasive species.
- Clean and wash equipment and boots before entering and leaving a site to prevent transport of seeds.
- Design seed mixes with species that have differing growth forms to occupy the variety of niches available, and seed native species that are known to be competitive.
- Record early detection of invasive species problem areas on adjacent lands.
- A combination of promoting natural re-vegetation and re-establishment of vegetation cover, where required, using species suited to the post-construction land use to provide competition for germinating weeds.

## 4.2 STEP 1: Weed management thresholds and priority levels

Weed management conducted prior to and during construction will focus on managing weeds identified during pre-construction surveys, as necessary, as well as occurrences identified during construction.

The management thresholds for weed species for the Project are as follows:

- Invasive weed species (Appendix G of Reference i) must be maintained or reduced to a density and distribution level equivalent to or less than levels observed on adjacent lands with equivalent or similar land use and land management. The comparison should be made to the invasive weed conditions found during pre-construction surveys and as compared to adjacent lands during/after construction.
- Weeds must be treated and managed in compliance with the Manitoba Noxious Weeds Act and Regulation. Under the regulation, a person must:

- destroy all tier 1 noxious weeds as listed in the Regulation that are on land that the person owns or occupies
- destroy all tier 2 noxious weeds as listed in the Regulation that are on land that the person owns or occupies if the area colonized by the weeds is less than five acres
- control all tier 2 noxious weeds as listed in the Regulation that are on land that the person owns or occupies if the area colonized by the weeds is five acres or more
- control a tier 3 noxious weed as listed in the Regulation that is on land that the person owns or occupies if the weed's uncontrolled growth or spread is likely to negatively affect an aspect of Manitoba's economy or environment in the area of the land or the well-being of residents in proximity to the land

The priority for managing sites where the threshold as described above has been reached will be determined by the level of risk of increasing the density and distribution of weed species. Criteria for the site priority levels are outlined in Table 2.

**Table 2: Priority levels for weed management**

| Priority level | Purpose or intent |
|---|---|
| High | To destroy Tier 1 and Tier 2 noxious weeds (<5 acres) currently threatening non-infested or highly susceptible sites within Project footprint. |
| Moderate | To control Tier 2 noxious weeds ( >5 acres) and invasive species on sites in less susceptible areas of the Project footprint. This includes areas adjacent to lands such as treed pasture lands that have a well-established vegetation cover and, therefore, are less susceptible to weed species introduction. |
| Low | To control a tier 3 noxious weed on within the Project footprint if the weed's uncontrolled growth or spread is likely to negatively affect an aspect of Manitoba's economy or environment in the area of the land or the well-being of residents in proximity to the land |

## 4.3 STEP 2: Determine whether management threshold has been reached

Compare the density and distribution of each weed species observed on the construction right-of-way to the density and distribution of the same species off-site or as outlined in the pre-construction weed survey report, to determine whether the management threshold has been reached.

## 4.4 STEP 3: Review treatment criteria

Choose an appropriate management option (i.e., mechanical, biological, or chemical) or a combination of treatments that will provide effective weed management, based on the data collected at weed occurrence sites. Should chemical control be chosen please refer to the "Pesticide Application Requirements For Manitoba Hydro Employees And Contractors" found in Appendix H for guidance and direction to staff and contractors using pesticides.The criteria used to select a treatment method that balances the potential environmental impacts while providing adequate and cost efficient weed management are:

- Effectiveness of previous treatments;
- Biology of target weed species, area and density;
- Existing land use;
- Land ownership;
- Proximity of organic farms, water sources, bodies of water and environmentally sensitive sites;
- The possibility of adverse impacts to wildlife, fish, surrounding land, workers and adjacent residents;
- Economic impacts of weeds on surround land use;
- Timing of treatment
- Existing soil type;
- Site accessibility
- Cost and availability of treatment options; and
- The consequences of no treatment.

## 4.5 STEP 4: Select weed management treatment method

### Manual/Mechanical Treatment Option

Manual/Mechanical treatments are preferred for weeds located adjacent to cultivated or agricultural lands, organic farm lands and near waterbodies (e.g., drainages, wetlands). Manual/Mechanical options include:

- Mowing: mowing of weeds before weeds go to seed. Mowing may be combined with a pre-mowing herbicide treatment, ensuring that the herbicide has had sufficient time to absorb into the plants.
- Burning: targeted burning of weeds with torches or prescribed controlled burns
- String trimmers: to cut weeds at the ground surface to remove herbaceous vegetation at locations where access limits the use of larger equipment.
- Hand pulling: pulling of weeds in riparian and environmentally sensitive locations for annual and certain perennial weeds where all roots can be easily removed and weed density is sufficiently low enough to make hand pulling effective.
- When selecting a treatment, consideration should be made for the cultural, medicinal or commercial value of a plant to local communities.

Manual/Mechanical treatment options may be considered for use within 30 m of a watercourse, wetland or MH's ESSs.

### Biological/Cultural/Native Treatment Option

Biological/Cultural/Native treatments are an alternative option near watercourses, within pastures, public recreation areas; where chemical application is not approved; or where manual/mechanical methods may not be effective. Options include:

- Biological insects and fungi: Canadian Food Inspection Agency approved insects and fungi might be considered to manage weed infestations where other methods have not proven successful.
- Grazing: High intensity livestock grazing has also proven an effective method for limiting weed infestations in select applications.
- Revegetation and erosion control: The use of erosion control measures such as blankets or the establishment of competitive vegetative cover on disturbances to stabilize soils and provide competition to weeds.

Biological/Cultural/Native treatment options may be considered for use within 30 m of a watercourse, wetland or MH's ESSs.

### Chemical Treatment Option

Manitoba Hydro will implement a the following decision making framework for chemical treatments for weed control on Crown land, herbicides may be used as a treatment method for an area if the answer is "yes" to any of the questions below:

- Is the area outside of a 30 m "no herbicide buffer" to those Environmentally Sensitive Sites (ESS) that are sensitive to herbicide application, including riparian areas near watercourses or wetlands and areas designated for the protection of plant species of concern and traditional use plant species?
- There are no organic farms within the treatment area?
- Does the weed reproduce by root fragments or root fragments and seed?
- Are mature weed plants that have produced seed present?
- Has weed density and distribution reached levels that other management options are not viable to control the weed infestation?
- Is weed management in an area where mechanical and biological methods are not feasible or practical?
- Is the area accessible in summer for foliar application?
- Has chemical management been directed by a Weed Supervisor as designated under the Manitoba Noxious Weeds Act regulations?
- Have notifications been made through the First Nations and Metis Engagement process, Pesticide Use Permit Notification process?
- Have modifications to the treatment program (herbicide, location, timing, method) been considered to address concerns received from notification process?

Manitoba Hydro will apply a 30m "no herbicide buffer" to those ESS that are sensitive to herbicide application (such as ESS identifying riparian areas near watercourses or wetlands, ESS identifying areas designated for the protection of Plant Species of Concern and Traditional Use Plant Species) unless directed otherwise by a Weed Supervisor as designated under the Manitoba Noxious Weeds Act regulations or the Landowner.

No Control Management Option

In some instances the implementation of a "no control" option and ongoing monitoring is the most practical and environmentally responsible course of action. In instances where "no control" is being considered as the treatment option, discussions with landowner and government regulators will occur. The No Control option may be considered for use within 30 m of a watercourse, wetland or MH's ESSs.

## 4.6 Treatment options for common species

The following identifies an overview of treatment options for some common invasive species.

Leafy Spurge

- Manual control (hand-pulling) is effective for small infestations.
- Mechanical control (mowing) will reduce the plants ability to seed but has little long-term effect on the plant.
- Chemical control is effective in spring and fall.
- Biological control is considered a long-term management strategy.
- A combination of control measures in an integrated approach is recommended for this species.

Common Tansy

- Manual control (hand-pulling) is effective for small infestations.
- Mechanical control (mowing) will reduce seed production but requires repeat treatment.
- Chemical control is effective.
- Biological control is anticipated to be an effective measure for this species in the future.
- Native species competition has been effective for small infestations.

Scentless Chamomile

- Manual control (hand-pulling) is effective for small infestations.
- Mechanical control (mowing) is effective but requires repeat treatment.
- Chemical control is effective. Earlier applications have greater success.
- Biological control has had some success.
- Native species competition has been effective.

- A combination of control measures in an integrated approach is recommended for this species.

Purple Loosestrife

- Manual control (hand-pulling) is effective for small infestations.
- Chemical control is effective in uplands. No herbicides are currently approved in Canada for treatment near or in water.
- Biological control is the most effective measure for large infestations near water.

Ox-eye Daisy

- Manual control (hand-pulling) is effective for small infestations, if the roots are removed.
- Mechanical control (mowing) stimulates shoot growth and requires repeat treatment.
- Chemical control is effective.

Sweet clover

- Manual control (hand-pulling) is effective for small infestations, if the roots are removed.
- Mechanical control (mowing) should occur before seed production.
- Chemical control is effective.
- Native species competition has been effective as part of a management strategy including native seeding, burning and mowing.

Canada Thistle

- Manual control (hand-pulling) is effective for small infestations, if the roots are removed.
- Mechanical control (mowing) is effective but requires repeat treatment.
- Chemical control is effective.

## 4.7 Training and documentation

Training, documentation and communication form a critical component of the implementation of this plan. Manitoba Hydro and the contractor(s) each have responsibility to ensure that their respective personnel are appropriately trained to carry

out their role in rehabilitation, and that proper documentation and communication is being conducted throughout the Project.

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.

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# 5.0 Monitoring and Follow-up

Monitoring and follow-up is an important component for rehabilitation and invasive species management. Monitoring will verify the implementation and effectiveness of rehabilitation measures and invasive species management. Successful rehabilitation of disturbed areas will be defined by the establishment of native species, no evidence of erosion, and resilience to the disturbance. The following should be completed during monitoring of disturbance areas:

- Disturbance areas should be inspected frequently in the first year and monitored annually thereafter until vegetation re-established.
- Monitoring may include an assessment of erosion control.
- Monitoring will include an assessment of vegetation to measure plant growth.
- Monitoring will be conducted by Manitoba Hydro Environmental Officer and/or vegetation specialists.

Environmental monitoring will determine if follow-up maintenance activities are required. Maintenance activities may include additional erosion control, re-seeding or further plantings, protection from browsing, and invasive species control.

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# Appendix A

# Rehabilitation checklist

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Appendix A: Rehabilitation checklist

| | |
|---|---|
| Date (yyyy mm dd) | |
| Name of recorder | Company (*if different from Manitoba Hydro*) |
| Location GPS Coordinates *(UTM 14N)* | |
| Closest Structure Number if applicable # | |
| Description of disturbance (*type, size, sensitivity i.e. riparian area*) | |
| Proximity to weed sources *(closest invasive weed ESS)* | |
| Severity of disturbance *(e.g., erosion is occurring, disturbance is stable)* | |
| Slope of site (level 0-0.5%, nearly level 0.5-2.5%, very gentle to gentle 2-9%, moderate 10-15%, strong 16-30%, very strong to steep 31-100%) | |
| Current Ground conditions (*dry, moist, wet*) | |
| Timing of rehabilitation activities *( Immediate/once surface disturbance activities are complete and ground conditions allow)* | |
| Post disturbance vegetation conditions (*e.g. vegetation is removed or little is remaining*) | |
| Surrounding vegetation (*e.g. grassland, forest, riparian, wetland*) and predominant species if known | |
| Adjacent land uses (*e.g. agriculture/forest/residence*) | |
| Safety *(Are there any safety concerns?)* | |
| Accessibility *(Is the site accessible year round/winter/summer, is there alternate access to avoid site)* | |
| Existing Sediment and Erosion Control Measures *(silt fence, blanket)* | |

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# Appendix B

# Selection of traditional plant species commercially available for rehabilitation

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## Appendix B: Selection of traditional plant species commercially available for rehabilitation

*Note: A list of suppliers is available upon request*

| Provincial Scientific Name | Traditional Use Plant Name | Provincial Rank | Commercial Availability | Rehabilitation Potential | Location of Use |
|---|---|---|---|---|---|
| *Abies balsamea* | balsam fir | S5 | yes | yes | forest |
| *Achillea millefolium* | yarrow | S5 | yes | low | forest, grassland |
| *Acorus americanus* | weke | S5 | yes | yes | wetland |
| *Actaea racemosa* | black snakeroot | not listed by MBCDC | plant unknown | unknown | unknown |
| *Actaea rubra* | baneberry | S5 | potential to transplant | low | forest |
| *Agastache foeniculum* | giant hyssop | S5 | yes | low | moist meadow, forest |
| *Alnus incana* | speckled alder | S5 | yes | yes | riverbank, moist forest |
| *Amelanchier alnifolia* | saskatoon berry | S5 | yes | yes | forest |
| *Apocynum androsaemifolium* | dogbane | S5 | potential to transplant | low | forest |
| *Aquilegia* sp. | columbine | – | yes | low | forest |
| *Aralia nudicaulis* | wild sarsaparilla | S5 | yes | low | forest |
| *Arctostaphylos uva-ursi* | common bearberry | S5 | yes | yes | forest |
| *Artemisia* sp. | sage | – | yes | low | grassland |
| *Asarum canadense* | wild ginger | S3S4 | yes | low | moist forest |
| *Asclepias incarnata* | swamp milkweed | S4 | yes | low | wetland |
| *Asclepias syriaca* | common milkweed | S4 | potential to transplant | low | riverbank, grassland |
| *Betula papyrifera* | paper birch | S5 | yes | yes | forest |
| *Caltha palustris* | marsh marigold | S5 | yes | low | wetland |
| *Campanula* sp. | harebell | – | yes | low | grassland, forest |
| *Cannabis sativa* | hemp | SNA | potential to transplant | low | forest |
| *Chamerion angustifolium* | fireweed | S5 | yes | yes | forest |
| *Conyza canadensis* | Canada fleabane | S5 | potential to transplant | low | grassland |
| *Cornus canadensis* | bunchberry | S5 | yes | low | forest |
| *Cornus sericea* | red osier dogwood | S5 | yes | yes | forest |

## Appendix B: Selection of traditional plant species commercially available for rehabilitation

*Note: A list of suppliers is available upon request*

| Provincial Scientific Name | Traditional Use Plant Name | Provincial Rank | Commercial Availability | Rehabilitation Potential | Location of Use |
|---|---|---|---|---|---|
| *Corylus americana* | American hazelnut | S4 | yes | yes | forest |
| *Corylus cornuta* | beaked hazelnut | S5 | yes | yes | forest |
| *Corylus* sp. | hazelnut | – | yes | yes | forest |
| *Cratagus* sp. | hawthorn | – | yes | yes | forest |
| *Dasiphora fruticosa* | shrubby cinquefoil | S5 | yes | yes | forest |
| *Fragaria virginiana* | wild strawberry | S5 | yes | low | forest |
| *Geranium bicknellii* | Bicknell's geranium | S5 | potential to transplant | low | forest |
| *Geum aleppicum* | yellow avens | S5 | potential to transplant | low | moist meadow, forest |
| *Heuchera richardsonii* | alumroot | S5 | yes | low | grassland, forest |
| *Hierochloe odorata* | sweet grass | S5 | yes | yes | grassland, forest |
| *Hypericum perforatum* | St. John's wort | SNA | yes | low | moist meadow, forest |
| *Larix laricina* | tamarack | S5 | yes | yes | forest, wetland |
| *Rhododendron groenlandicum* | Labrador tea | S5 | potential to transplant | low | forest |
| *Lilium philadelphicum* | wood lily | S4 | yes | low | grassland, forest |
| *Lycopus uniflorus* | northern bugle-weed | S5 | potential to transplant | low | wetland |
| *Maianthemum canadense* | Canada mayflower | S5 | potential to transplant | low | forest |
| *Mentha* sp. | wild mint | – | yes | low | moist meadow |
| *Oenothera flava* | yellow evening primrose | SNA | potential to transplant | low | grassland, riverbank |
| *Polygala senega* | Seneca | S4 | potential to transplant | low | grassland, forest |
| *Populus balsamifera* | balsam poplar | S5 | potential to transplant | yes | forest |
| *Potentilla arguta* | tall cinquefoil | S5 | potential to transplant | low | grassland |
| *Prenanthes* sp. | rattlesnake root | – | potential to transplant | low | forest |
| *Prunella vulgaris* | self-heal | S4 | potential to transplant | low | grassland, forest |

Appendix B: Selection of traditional plant species commercially available for rehabilitation

*Note: A list of suppliers is available upon request*

| Provincial Scientific Name | Traditional Use Plant Name | Provincial Rank | Commercial Availability | Rehabilitation Potential | Location of Use |
|---|---|---|---|---|---|
| *Prunus nigra* | Canada wild plum | S4 | yes | yes | forest |
| *Prunus pensylvanica* | pin cherry | S5 | yes | yes | forest |
| *Prunus pumila* | sand cherry | S4 | yes | yes | grassland, forest |
| *Prunus* sp. | plum | – | yes | yes | grassland, forest |
| *Prunus virginiana* | choke cherry | S5 | potential to transplant | yes | forest |
| *Pyrola* sp. | wintergreen | – | potential to transplant | low | forest |
| *Quercus macrocarpa* | bur oak | S5 | yes | yes | forest |
| *Ribes americanum* | wild black currant | S5 | yes | yes | forest |
| *Ribes oxyacanthoides* ssp. *oxyacanthoides* | northern gooseberry | S5 | potential to transplant | yes | forest |
| *Rosa arkansana* | prairie rose | S4 | potential to transplant | yes | grassland |
| *Rosa* sp. | wild rose | – | yes | yes | grassland, forest |
| *Rubus pubescens* | dewberry | S5 | potential to transplant | low | forest |
| *Rubus* sp. | blackberry | not listed by MBCDC | potential to transplant | low | forest |
| *Rubus idaeus* | raspberry | – | yes | yes | forest |
| *Rubus* sp. | wild raspberry | – | yes | yes | forest |
| *Sibbaldiopsis tridentata* | three-toothed cinquefoil | S5 | potential to transplant | low | forest |
| *Solidago canadensis* | Canada goldenrod | S5 | yes | low | grassland |
| *Solidago gigantea* | smooth goldenrod | S5 | potential to transplant | low | grassland, forest |
| *Spiraea alba* | meadowsweet | S5 | yes | yes | forest |
| *Stachys palustris* | marsh hedge-nettle | S5 | potential to transplant | low | moist meadow |
| *Symphoricarpos albus* | snowberry | S5 | yes | yes | forest, grassland |
| *Thuja occidentalis* | cedar | S4 | yes | yes | forest |

## Appendix B: Selection of traditional plant species commercially available for rehabilitation

*Note: A list of suppliers is available upon request*

| Provincial Scientific Name | Traditional Use Plant Name | Provincial Rank | Commercial Availability | Rehabilitation Potential | Location of Use |
|---|---|---|---|---|---|
| *Trifolium pratense* | red clover | SNA | yes | yes | forest, grassland |
| *Vaccinium* sp. | blueberry | – | yes | low | forest |
| *Viburnum opulus* | highbush cranberry | S5 | yes | yes | forest |
| *Viburnum rafinesquianum* | downy arrow-wood | S4 | yes | yes | forest |
| *Vitis riparia* | wild grapes | S3S4 | yes | low | forest |
| *Zizania palustris* | wild rice | S4 | yes | low | wetland |

NOTE:
1 Traditional use plant names taken from the *Aboriginal Traditional Knowledge Study Community Report* submitted by Black River First Nation, Long Plain First Nation, and Swan Lake First Nation (May 2015).

# Appendix C

# Characteristic vegetation of Manitoba's ecozones

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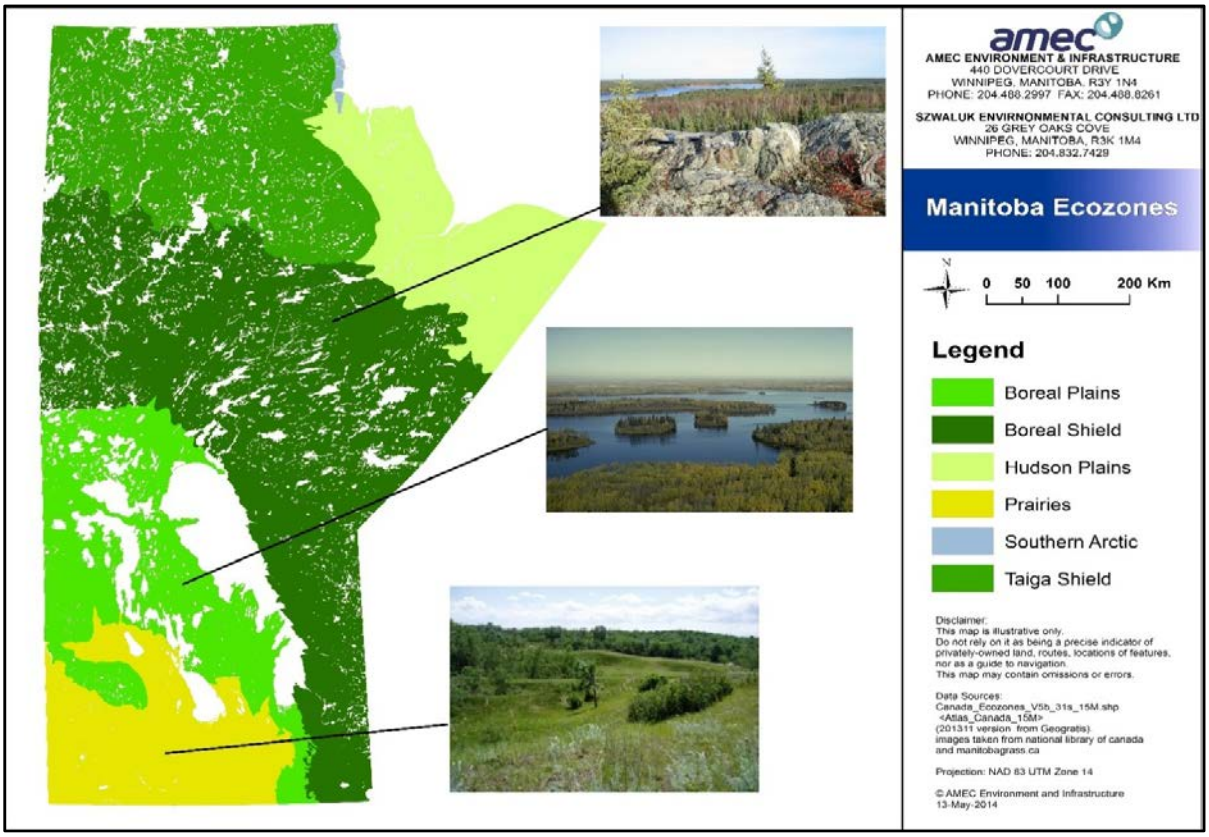
## Appendix C: Characteristic vegetation of Manitoba's ecozones

| Manitoba ecozone | Characteristic vegetation |
|---|---|
| Southern Arctic | Occasional forest stands, dwarf birch, willows, ericaceous species, various herbs, mosses and lichens. |
| Hudson Plains | Black spruce, white spruce, tamarack, ericaceous shrubs, sedges, mosses and lichens. Closer to the coast there are marine marshes, shallow fens, and extensive mud flats with little vegetation. |
| Taiga Shield | Black spruce, white spruce, tamarack, and ground cover of dwarf birch, willows, northern Labrador tea, cotton grass, mosses, and lichens. Paper birch, balsam poplar and trembling aspen may be found. Bog and fen complexes are present. |
| Boreal Shield | Single-species forest stands, or mixed stands of white and black spruce, balsam fir, tamarack and jack pine. White birch, trembling aspen, and balsam poplar can be found. Understory is dominated by shrubs, forbs and lichen cover over bedrock outcrops. |
| Boreal Plains | White spruce, black spruce, jack pine and tamarack are the main coniferous species, while deciduous trees include white birch, trembling aspen and balsam poplar |
| Prairies | Predominantly agricultural crops and rangeland. Stands of trembling aspen, balsam poplar and bur oak occur. |

Source: Smith et al. (1998)



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# Appendix D

# Recommended baseline native seed mixes

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| Appendix D: Recommended baseline native seed mixes | | |
|---|---|---|
| Common name | Scientific name | Percent in mix (total 100%) |
| Northern Manitoba – upland mesic to dry soils | | |
| Short-leaved Fescue | *Festuca brachyphylla* | 10 |
| Canada Wild Rye | *Elymus cananadensis* | 20 |
| Tickle-grass | *Agrostis scabra* | 10 |
| Hairy Wild Rye | *Leymus innovatus* | 20 |
| June Grass | *Koeleria macrantha* | 10 |
| Rocky Mountain Fescue | *Festuca saximontana* | 10 |
| Richadson Needle Grass | *Achnatherum richardsonii* | 15 |
| Common Vetch | *Vicia americana* | 5 |
| Northern Manitoba – lowland wet meadow soils | | |
| Fowl Blue Grass | *Poa palustis* | 30 |
| Marsh or Northern Reed Grass | *Calamagrostis canadensis or C. stricta* | 10 |
| Slough Grass | *Beckmannia syzigachne* | 50 |
| Tufted Hairgrass | *Deschampsia caespitosa* | 10 |
| West Central Manitoba – upland mesic to dry soils | | |
| Tickle-grass | *Agrostis scabra* | 10 |
| Big Bluestem | *Andropogon gerardii* | 20 |
| Purple Prairie Clover | *Dalea purpurea var. purpurea* | 5 |
| Canada Wild Rye | *Elymus canadensis* | 30 |
| Hairy Wild Rye | *Leymus innovatus* | 10 |
| Rocky Mountain Fescue | *Festuca saximontana* | 5 |
| Awned Wheatgrass | *Elymus trachycaulus spp. subsecundus* | 10 |
| June Grass | *Koeleria macrantha* | 5 |
| Common Vetch | *Vicia americana* | 5 |
| West Central Manitoba – lowland wet meadow soils | | |
| Slough Grass | *Beckmannia syzigachne* | 50 |
| Marsh or Northern Reed Grass | *Calamagrostis canadensis or C. stricta* | 5 |
| Tufted Hairgrass | *Deschampsia caespitosa* | 30 |
| Baltic Rush | *Juncus arcticus var. balticus* | 5 |
| Fowl Blue Grass | *Poa palustis* | 10 |
| Southern Manitoba – upland mesic to dry soils | | |
| Awned Wheatgrass | *Elymus trachycaulus spp. subsecundus* | 10 |
| Big Bluestem | *Andropogon gerardii* | 30 |

| Appendix D: Recommended baseline native seed mixes | | |
|---|---|---|
| Common name | Scientific name | Percent in mix (total 100%) |
| White Prairie-clover | *Dalea candida* | 5 |
| Purple Prairie Clover | *Dalea purpurea var. purpurea* | 5 |
| Canada Wild Rye | *Elymus canadensis* | 20 |
| June Grass | *Koeleria macrantha* | 5 |
| Little Bluestem | *Schizachyrium scoparium* | 10 |
| Indian Grass | *Sorghastrum nutans* | 10 |
| Common Vetch | *Vicia americana* | 5 |
| Southern Manitoba – lowland wet meadow soils | | |
| Slough Grass | *Beckmannia syzigachne* | 50 |
| Marsh or Northern Reed Grass | *Calamagrostis canadensis or C. stricta* | 10 |
| Tufted Hairgrass | *Deschampsia caespitosa* | 10 |
| Fowl Blue Grass | *Poa palustis* | 10 |
| Prairie Cord Grass | *Spartina pectinata* | 20 |

# Appendix E

# Selection of plant species commercially available for rehabilitation

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Appendix E: Selection of plant species commercially available for rehabilitation

***Note: A list of suppliers is available upon request***

| Scientific name | Common name | Seed | Seedling |
|---|---|---|---|
| *Abies balsamea* | Balsam Fir | | X |
| *Achnatherum hymenoides* | Indian Rice Grass | X | |
| *Achnatherum richardsonii* | Richardson Needle Grass | X | |
| *Agrostis scabra* | Tickle-grass | X | |
| *Andropogon gerardii* | Big Bluestem | X | |
| *Arctagrostis latifolia* | Polar Grass | X | |
| *Astragalus canadensis* | Canada Milkvetch | X | |
| *Beckmannia syzigachne* | Slough Grass | X | |
| *Bouteloua curtipendula* | Side-oats Grama | X | |
| *Bouteloua gracilis* | Blue Grama | X | |
| *Bromus anomalus* | Nodding Brome | X | |
| *Bromus ciliatus* | Fringed Brome | X | |
| *Buchloe dactyloides* | Buffalo Grass | X | |
| *Calamagrostis canadensis* | Marsh Reed Grass | X | |
| *Calamagrostis stricta ssp. inexpansa* | Northern Reed Grass | X | |
| *Calamolvilfa longifolia* | Sand Grass | X | |
| *Carex bebbii* | Bebb's Sedge | X | |
| *Dalea candida* | White Prairie-clover | X | |
| *Dalea purpurea var. purpurea* | Purple Prairie Clover | X | |
| *Deschampsia caespitosa* | Tufted Hairgrass | X | |
| *Distichlis spicata* | Alkali Grass | X | |
| *Elymus alaskanus ssp. latiglumus* | Alaska Wild Rye | X | |
| *Elymus canadensis* | Canada Wild Rye | X | |
| *Elymus glaucus* | Smooth Wild Rye | X | |
| *Elymus lanceolatus ssp. lanceolatus* | Thickspike Wheatgrass | X | |
| *Elymus lanceolatus ssp. psammophilus* | Sand-dune Wheatgrass | X | |
| *Elymus trachycaulus* | Slender Wheat Grass | X | |
| *Elymus trachycaulus spp. subsecundus* | Awned Wheatgrass | X | |
| *Elymus virginicus* | Virginia Wild Rye | X | |

Appendix E: Selection of plant species commercially available for rehabilitation

***Note: A list of suppliers is available upon request***

| Scientific name | Common name | Seed | Seedling |
|---|---|---|---|
| *Festuca brachyphylla* | Short-leaved Fescue | X | |
| *Festuca halii* | Plains Rough Fescue | X | |
| *Festuca saximontana* | Rocky Mountain Fescue | X | |
| *Glyceria grandis* | Tall Manna Grass | X | |
| *Helianthus maximiliani* | Narrow-leaved Sunflower | X | |
| *Hesperostipa comata ssp. comata* | Spear Grass | X | |
| *Hesperostipa curtiseta* | Western Porcupine Grass | X | |
| *Juncus arcticus var. balticus* | Baltic Rush | X | |
| *Koeleria macrantha* | June Grass | X | |
| *Leymus innovatus* | Hairy Wild Rye | X | |
| *Nassella viridula* | Green Needle Grass | X | |
| *Panicum virgatum* | Switch Grass | X | |
| *Pascopyrum smithii* | Western Wheat Grass | X | |
| *Picea glauca* | White Spruce | | X |
| *Picea mariana* | Black Spruce | | X |
| *Pinus banksia* | Jack Pine | | X |
| *Pinus resinosa* | Red Pine | | X |
| *Pinus strobus* | Eastern White Pine | | X |
| *Poa alpina* | Alpine Blue Grass | X | |
| *Poa glauca* | Glaucous Spear-grass | X | |
| *Poa palustris* | Fowl Blue Grass | X | |
| *Poa secunda ssp. secunda* | Curly Bluegrass | X | |
| *Populus spp.* | Hydbrid Poplar | | X |
| *Pseudoroegneria spicata ssp. spicata* | Bluebunch Wheat Grass | X | |
| *Quercus macrocarpa* | Bur Oak | | X |
| *Salix spp.* | Hybrid Willow | | X |
| *Schizachyrium scoparium* | Little Bluestem | X | |
| *Scolochloa festucacea* | Sprangletop | X | |
| *Sorgastrum nutans* | Indian Grass | X | |

Appendix E: Selection of plant species commercially available for rehabilitation

***Note: A list of suppliers is available upon request***

| Scientific name | Common name | Seed | Seedling |
|---|---|---|---|
| *Spartina gracilis* | Alkali Cord Grass | X | |
| *Spartina pectinata* | Prairie Cord Grass | X | |
| *Sporobolus cryptandrus* | Sand Dropseed | X | |
| *Thuja occidentalis* | Eastern White Cedar | | X |
| *Trisetum spicatum* | Spike Trisetum | X | |
| *Vicia americana* | Common Vetch | X | |

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# Appendix F

# Invasive species listed by the Invasive Species Council of Manitoba

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| Appendix F:Invasive species listed by the Invasive Species Council of Manitoba<br>Refer to Invasive Species Council of Manitoba Field Guide (2013) and website for identification | |
|---|---|
| Scientific name | Common name |
| *Alliaria petiolata* | Garlic Mustard |
| *Arctium minus* | Common Burdock |
| *Berteroa incana* | Hoary Alyssum |
| *Bromus japonicus* | Japanese Brome |
| *Bromus tectorum* | Downy Brome |
| *Butomus umbellatus* | Flowering Rush |
| *Campanula rapunculoides* | Creeping Bellflower |
| *Carduus nutans* | Nodding Thistle |
| *Cirsium arvense* | Canada Thistle |
| *Cirsium vulgare* | Bull Thistle |
| *Convolvulus arvensis* | Field Bindweed |
| *Cynoglossum officinale* | Hound's Tounge |
| *Echium vulgar* | Blue Weed |
| *Eichhornia crassipes* | Water Hyacinth |
| *Euphorbia esula* | Leafy Spurge |
| *Fallopia japonica* | Japanese Knotweed |
| *Gypsophila paniculata* | Baby's Breath |
| *Heracleum mantegazzianam* | Giant Hogweed |
| *Hesperis matronalis* | Dame's Rocket |
| *Hieracium aurantiacum* | Orange Hawkweed |
| *Hypericum perforatum* | St. John's Wort |
| *Impatiens glandulifera* | Himalayan Balsam |
| *Jacobaea vulgaris* | Tansy Ragwort |
| *Knautia arvensis* | Field Scabious |
| *Leucanthemum vulgare* | Ox-eye Daisy |
| *Linaria dalmatica* | Dalmatian Toadflax |
| *Linaria vulgaris* | Yellow Toadflax |
| *Lychnis alba* | White Cockle |
| *Lythrum salicaria* | Purple Loosestrife |
| *Matricaria perforata* | Scentless Chamomile |
| *Odontites serotina* | Red Bartsia |
| *Onopordum acanthium* | Scotch Thistle |
| *Phalaris arundinacea* | Reed Canary Grass |
| *Phragmites australis spp. australis* | Invasive Phragmites |
| *Ranunculis acris* | Tall Buttercup |
| *Rhamnus cathartica* | European Buckthorn |

| Appendix F:Invasive species listed by the Invasive Species Council of Manitoba<br>Refer to Invasive Species Council of Manitoba Field Guide (2013) and website for identification | |
|---|---|
| Scientific name | Common name |
| *Saponaria officinalis* | Bouncing Bet |
| *Saponaria vaccaria* | Cow Cockle |
| *Sonchus arvensis* | Perennial Sow Thistle |
| *Tanacetum vulgare* | Common Tansy |
| *Tribulus terrestris* | Puncture Vine |
| *Typha angustifolia and Typha x glauca* | Narrow-leaved and Hybrid Cattail |
| *Vicia cracca* | Bird Vetch |
| Note: Listed species are category 2 species (localized presence in Manitoba) listed by the Invasive Species Council of Manitoba. Invasive species also are listed under The Noxious Weeds Act of Manitoba. | |

# Appendix G

# Noxious Weeds Regulation Species List

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# Appendix G: Noxious Weeds Regulation Species List

| **Designated Tier 1 Noxious Weeds** | | |
|---|---|---|
| **Common name** | **Scientific name** | **Area for which Designation applies** |
| Amaranth, Palmer | *Amaranthus palmeri* | All areas of the province outside the Municipality of Bifrost-Riverton and the Rural Municipalities of Armstrong, Fisher, Gimli, Rockwood, St. Andrews and St. Clements |
| Bartsia, red | *Odontes vernus* | Whole province |
| Crupina, common | *Crupina vulgaris* | Whole province |
| Cupgrass, woolly | *Eriochloa villosa* | Whole province |
| Goatgrass, jointed | *Aegilops cylindrical* | Whole province |
| Hawkweed, orange | *Hieracium aurantiacum* | Whole province |
| Hogweed, giant | *Heracleum mantegazzianum* | Whole province |
| Hound's-tongue | *Cynoglassum officinale* | Whole province |
| Knapweed, diffuse | *Centaurea diffusa* | Whole province |
| Knapweed, Russian | *Acroptilon repens* | Whole province |
| Knapweed, spotted | *Centaurea stoebe* | Whole province |
| Knapweed, squarrose | *Centaurea virgata* | Whole province |
| Knotweed, Japanese | *Fallopia japonica* | Whole province |
| Mile-a-minute weed | *Persicaria perfoliata* | Whole province |
| Mustard, garlic | *Allaria petiolata* | Whole province |
| Patterson's curse | *Echium plantagineum* | Whole province |
| Pigweed, smooth | *Amaranthus hybridus* | Whole province |
| Saltcedar | *Tamarix spp.* | Whole province |
| Star-thistle, yellow | *Centaurea solstitialus* | Whole province |
| Tussock, serrated | *Nassella trichotoma* | Whole province |
| Waterhemp, tall | *Amaranthus turbriculatus* | Whole province |

| **Designated Tier 2 Noxious Weeds** | | |
|---|---|---|
| **Common name** | **Scientific name** | **Area for which Designation applies** |
| Alyssum, hoary | *Berteroa incana* | Whole province |
| Baby's-breath | *Gypsophila paniculata* | Whole province |
| Bartsia, red | *Odontes vernus* | Municipality of Bifrost-Riverton and the Rural Municipalities of Armstrong, Fisher, Gimli, Rockwood, St. Andrews and St. Clements |
| Bouncingbet | *Saponaria officinalis* | Whole province |
| Brome, downy | *Bromus tectorum* | Whole province |
| Brome, Japanese | *Bromus japonicas* | Whole province |
| Campion, bladder | *Silene vulgaris* | Whole province |
| Chamomile, scentless | *Matricaria perforata* | Whole province |
| Common reed, invasive | *Phragmites australis australis* | Whole province |
| Daisy, ox-eye | *Leucanthemum vulgare* | Whole province |
| Nutsedge, yellow | *Cyperus esculentus* | Whole province |
| Scabious, field | *Knautia arvensis* | Whole province |
| Spurge, Cypress | *Euphorbia cyparissias* | Whole province |
| Spurge, leafy | *Euphorbia esula* | Whole province |
| St. John's-wort | *Hypericum perforatum* | Whole province |
| Tansy, common | *Tanacetum vulgare* | Whole province |
| Thistle, nodding | *Carduus nutans* | Whole province |
| Toadflax, Dalmatian | *Linaria dalmatica* | Whole province |

| Designated Tier 3 Noxious Weeds | | |
|---|---|---|
| **Common name** | **Scientific name** | **Area for which Designation applies** |
| Absinth | *Artemisia absinthum* | Whole province |
| Barberry | *Berberis vulgaris* | Whole province |
| Barley, foxtail | *Hordeum jubatum* | Whole province |
| Bellflower, creeping | *Campanula rapunculoides* | Whole province |
| Buckthorn, European | *Rhamnus frangula* | Whole province |
| Burdock, common | *Arctium minus* | Whole province |
| Burdock, greater | *Arctium, lappa* | Whole province |
| Burdock, woolly | *Arctium, tomentosum* | Whole province |
| Campion, biennial | *Silene dioica* | Whole province |
| Catchfly, night-flowering | *Silene noctiflora* | Whole province |
| Cleavers | *Galium aparine* | Whole province |
| Cleavers, false | *Galium spurium* | Whole province |
| Cockle, white | *Silene alba* | Whole province |
| Dandelion | *Taraxacum officinale* | Whole province |
| Dodder | genus *Cuscuta* | Whole province |
| Fleabane, Canada | *Conyza canadensis* | Whole province |
| Flixweed | *Descurainia Sophia* | Whole province |
| Hawk's-beard, narrow-leaved | *Crepis tectorum* | Whole province |
| Hemlock, poison | *Conium maculatum* | Whole province |
| Hemp-nettle | *Galeopsis tetrahit* | Whole province |
| Hoary-cress | *Cardaria draba* | Whole province |
| Jimsonweed | *Datura stromonium* | Whole province |
| Kochia | *Kochia scoparia* | Whole province |
| Lamb's quarters | *Chenopodium album* | Whole province |
| Lettuce, prickly | *Lactuca seriola* | Whole province |
| Milkweed, common | *Asclepias syriaca* | Whole province |
| Milkweed, showy | *Aslepias speciosa* | Whole province |
| Mustard, wild | *Sinapis arvensis* | Whole province |
| Nightshade, American black | *Solanum americanum* | Whole province |
| Nightshade, cutleaf | *Solanum triflorum* | Whole province |
| Nightshade, hairy | *Solanum sarachoides* | Whole province |
| Parsnip, wild | *Pastinaca sativa* | Whole province |
| Ragweed, common | *Ambrosia artemisifolia* | Whole province |
| Ragweed, false | *Iva xanthifolia* | Whole province |
| Ragweed, giant | *Ambrosia trifida* | Whole province |
| Sow-thistle, annual | *Sonchus oleraceus* | Whole province |

| **Designated Tier 3 Noxious Weeds** | | |
|---|---|---|
| **Common name** | **Scientific name** | **Area for which Designation applies** |
| Sow-thistle, perennial | *Sonchus arvensis* | Whole province |
| Sow-thistle, spiny annual | *Sonchus asper* | Whole province |
| Stinkweed | *Thlaspi arvense* | Whole province |
| Stork's bill | *Erodium cicutarium* | Whole province |
| Thistle, bull | *Cirsium vulgare* | Whole province |
| Thistle, Canada | *Circium arvense* | Whole province |
| Thistle, Russian | *Salsola pestifer* | Whole province |
| Toadflax, yellow | *Linaria vulgaris* | Whole province |
| Water hemlock, bulb-bearing | *Cicuta bulbifera* | Whole province |
| Water hemlock, northern | *Cicuta virosa* | Whole province |
| Water hemlock, spotted | *Cicuta maculate* | Whole province |
| Water hemlock, western | *Cicuta douglasii* | Whole province |
| Whitetop, hairy | *Cardaria pubescens* | Whole province |
| Whitetop, lenspod | *Cardaria chalepensis* | Whole province |

# Appendix H

# Pesticide Application Requirements For Manitoba Hydro Employees And Contractors

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Manitoba Hydro

## Corporate Safety & Health Division


# Pesticide Application Requirements For Manitoba Hydro Employees And Contractors

**For further information, please contact:**
Workplace Environment Department 204-474-4811

**Publication Number:** 0004/08R **Revised:** 2008 05 07

## Disclaimer:

**All printed versions of this handbook are not controlled documents.**

For the most up-to-date version, refer to the CS&H website at: http://coil.hydro.mb.ca/esh/services/_____

Forms are available at: http://coil.hydro.mb.ca/esh/services/_____

For any concerns or questions, please contact Workplace Environment Department at 204-474-4811

**TITLE: Pesticide Application Requirements For Manitoba Hydro Employees And Contractors**

**DESCRIPTION:** This publication is designed to provide regulatory and applicator licensing information; technical guidance; safety requirements and check lists for line managers responsible for pesticide application for the purpose of ensuring compliance with legal requirements and Manitoba Hydro policies. In addition, it will provide information for the purpose of ensuring consistent pesticide management at all Manitoba Hydro facilities thereby ensuring pesticide management is carried out in such as way that resulting environmental impact is minimal.

**TRAINING:**

- **audience (applicable):** Manitoba Hydro staff using pesticides
- **description:** as per publication items
- **prerequisites:** WHMIS, TDG
- **objectives:** provide guidance and direction to staff and contractors using pesticides
- **topics:**
  1 Integrated Pest Management Background
  2 Definitions
  3 Purpose
  4 Scope
  5 Ownership And Distribution
  6 References
  7 Application For Pesticide Use Permit
  8 Applicator's Licence
  9 Safety And Health
  10 Environmental Protection
  11 Contractors
  12 Roles And Responsibilities
  Appendix 1. Contractor Checklist
- **duration of training course:** 3 hours
- **HRMS Training & Personal Development Course Name:** Manitoba Hydro Pesticide Application Working Group (PAWG) Pesticide Application Requirements For Manitoba Hydro Employees and Contractors
- **Provider:** Manitoba Hydro Pesticide Awareness Working Group (PAWG)
- **contact person/telephone number:** Jacqueline Thompson 204-477-7785

**Process Owner: Workplace Environment Department**
**Document Date: 7 May 2008**

# PESTICIDE APPLICATION REQUIREMENTS FOR MANITOBA HYDRO EMPLOYEES AND CONTRACTORS

## TABLE OF CONTENTS

# Pesticide Application Requirements For Manitoba Hydro Employees And Contractors

## 1 Integrated pest management background

### 1.1 General

Formal Integrated Pest Management (IPM) plans are encouraged for each unique site or pest scenario. Once generated, the plans should be maintained at site.

IPM is a process that considers the ecosystem to determine pest management strategy. One objective of IPM is to suppress the pest population below the level that causes safety, operational, or economic problems. The overall objective of IPM is to control the pest while minimizing off-target effects, in balance with costs and needs. Pesticide use is one possible component of IPM. IPM strategy is generally designed to enhance natural pest controls, minimizing the need for human-made intervention.

Prevention is a key component of IPM, with the goal of preventing pest problems from developing or worsening. An example of such prevention mechanisms could be focusing on maintaining the health of a plant community that discourages the growth of tall woody species on the rights of way, broadleaf weeds in lawns, etc. The best management practices incorporate mechanical, chemical, biological and/or cultural options depending upon site conditions and the sensitivity of surrounding areas.

Planning for IPM considers many factors:

- Pest tolerance or threshold
- Pest biology
- Site use requirements
- Site landscape characteristics (water, soil, aspect, etc.)
- Landowner concerns (adjacent, local or remote)
- Adjacent land uses
- Alternative control methods or strategies
- Costs of control methods
- Environmental impacts and sensitivities
- Social impacts
- Economic impacts
- Short, medium and long term management objectives
- Applicable legislation
- Follow up plan to ensure success of the program and solicit feedback from stakeholders.

The most effective pest control is typically the result of an integrated approach, using a combination of strategies and methods to guide the natural forces of nature to the manager's advantage and to the detriment of the pest. It balances the direct costs, and the social and environmental implications with the benefits of the pest control.

In accordance with IPM philosophy Manitoba Hydro does not encourage chemical pesticide application to areas other than those where the presence of pests is a threat to safety, equipment integrity, effective equipment operation and/or maintenance. In addition, pesticide use is discouraged when it is not the most sustainable (economic, social and environmental) means to achieving management objectives.

IPM plans are required for pest control in national parks.

The subsequent instructions in this document detail the requirements of Manitoba Hydro facilities and individuals assigned to apply chemical pesticides.

At Manitoba Hydro, the IPM plan *must be* maintained by the responsible party (see Definitions section).

# 2 Definitions

**Applicator Licence**
Issued by Manitoba Agriculture and Food under the provisions and requirements of the Pesticides and Fertilizers Control Act and Regulations. Anyone applying pesticides for "a fee, charge or other valuable consideration" must possess a valid Applicator Licence, renewable annually for a fee, and re-certified every 5 years.

**Complaint:**
A second point of contact within the corporation from an outside party.

**Contract Administrator**
The Manitoba Hydro individual responsible for seeking out the contractor/contracted services, responsible for providing technical and site advice and responsible for the results of the contractor's actions.

**Contractor**
A company or person that is being paid by Manitoba Hydro, but is not a status employee, to apply pesticides at Manitoba Hydro locations and/or on behalf of Manitoba Hydro.

**Dangerous Good**
Product and substances that may be hazardous during transport or when they spill or leak.

A product, substance or organism that meets the criteria for inclusion in one or more of the nine classes of dangerous goods, as per the Dangerous Goods Handling and Transportation Act and Regulations which include Explosives, Gases, Flammable Liquids, Flammable Solids, Oxidizers and Organic Peroxides, Toxic or infectious substances, Radioactive Materials, Corrosives, and Miscellaneous Hazardous Materials.

**Integrated Pest Management**
IPM is a sustainable approach to pest management, combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health and environmental risks. It anticipates and prevents pests from reaching damaging levels by using all suitable techniques such as natural enemies, cultural management, and the judicious use of pesticides.

**On-site Inspector**
A Manitoba Hydro representative that oversees a contracted service to ensure compliance with contract requirements.

**Pest**
A plant, animal, or insect causing or capable of causing damage or interference with the operation of facility or plant.

**Pesticide**
Any chemical, natural or anthropogenic, used to kill a pest. Includes fungicides (wood preservatives), herbicides, insecticides, etc. All pesticides are registered for specific uses under the Pest Control Products Act, and must have a PCP registration number on its label.

**Pesticide Use Permit**
Issued by the Environmental Approvals Branch, Environmental Stewardship Division, Manitoba Conservation, under the provisions and regulations of the Environment Act – Pesticides Regulation. Anyone applying pesticides for or on behalf of government departments, crown corporations, municipal corporations, school boards, or on crown lands or rights-of-way on behalf of private corporations, must be in possession of a valid Pesticide Use Permit. The Use Permit process is the vehicle by which regulatory review of the use of pesticides is carried out.

**Program Coordinator**
The Manitoba Hydro individual responsible for coordinating program activities in a specific area including staffing and sequencing.

**Public Notice**
A public notice refers to any form of advertising used to fulfill the requirements of the Pesticide Use Permit. In the case of Manitoba Hydro, this usually refers to a newspaper add placed locally prior to application of any pesticides.

**PUP Administrator**
The Manitoba Hydro individual who has made application for the Pesticide Use Permit.

**Responsible Party**
The responsible Manitoba Hydro party is the facility or Department that is responsible for pesticide application and/or maintenance of a given area.

# 3 Purpose

## 3.1 General

- To provide regulatory & applicator licensing information; technical guidance; safety requirements and check lists for line managers responsible for pesticide application for the purpose of ensuring compliance with legal requirements and Manitoba Hydro policies.

- To provide information for the purpose of ensuring consistent pesticide management at all Manitoba Hydro facilities.

- To provide information with the goal of ensuring pesticide management is carried out in such as way that resulting environmental impact is minimal.

# 4 Scope

## 4.1 General

This guidance document applies to staff and contractors using pesticides, in the interest of Manitoba Hydro, for weeds, trees, poles and landscape maintenance.

This document is intended for all individuals involved in pesticide application, including the planning and execution of application at all levels and locations within Manitoba Hydro.

If you have any questions regarding this document or the referred legislation contact:

- Corporate Safety and Health, Dangerous Goods Officer
- Power Supply, Generation South, Environment Operations Support Section
- Customer Service & Marketing, Forestry Section, Forester
- Transmission & Distribution, Apparatus Maintenance Division, Waste Management Coordinator

In the event of a discrepancy between this document and any of the provincial or federal acts or regulations, the acts or regulations shall take precedence.

# 5 Ownership and Distribution

## 5.1 General

Accountability and responsibility for maintenance and revision of this document belongs to the Manitoba Hydro Pesticide Awareness Working Group (PAWG).

The PAWG is comprised of the following:
- Power Supply, Generation South, Environment Operations Support Section
- Corporate Safety and Health, Dangerous Goods Officer
- Customer Service & Marketing, Forestry Section, Forester
- Transmission & Distribution, Apparatus Maintenance Division, Waste Management Coordinator

**Corporate Safety and Health** Division (CS&H) is responsible for general distribution of this document.

Controlled copies of this document are available through MPower, on CS&Health Website.

# 6 References

## 6.1 Provincial

Some of the key provincial regulations are noted in this section, as reference only. The following list should not be assumed to be all inclusive; technical guidance should be sought regarding application and interpretation of legislation.

**Environment Act**

Pesticides Regulation (Man. Reg. 94/88R)

**Pesticides and Fertilizers Control Act**

Pesticides and Fertilizers Licence Regulation (Man. Reg. 216/87R)

**Dangerous Goods Handling and Transportation Act**

Environment Accident Reporting Regulation (Man. Reg. 439/87R)
Dangerous Goods Handling & Transportation Regulation (Man. Reg.55/2003)

**Workplace Safety and Health Act**

Workplace Hazardous Materials Information System Regulation (Man. Reg. 52/88)

Some provincial legislation is summarized in Manitoba Hydro Guide to Environmental Legislation.

## 6.2 Federal

Some of the key federal regulations are noted in this section, as reference only. The following list should not be assumed to be all inclusive; technical guidance should be sought regarding application and interpretation of legislation.

**Transportation of Dangerous Goods Act**

Transportation of Dangerous Goods Regulations (SOR 2008-0244)

**Pest Control Products Act**

http://laws.justice.gc.ca/en/ShowFullDoc/cs/P-9.01///en?noCookie

**Hazardous Products Act**
http://laws.justice.gc.ca/en/ShowFullDoc/cs/H-3///en?noCookie

Some federal legislation is summarized in the Manitoba Hydro Guide to Environmental Legislation.

## 6.3 Manitoba Hydro Policies, Procedures and Forms

### Manitoba Hydro Hazardous Materials Management Handbook Part 1: Spill Response; Part 2: Hazardous Waste Management; Part 4; Managing Specific Hazardous Materials.

Manitoba Hydro Chemical Storage publication available through MPower, on CS&H website

Manitoba Hydro Daily Weed Control Applicator's Report, available on MPower (eForms 0643)

Manitoba Hydro Daily Vegetation Control Report, available on MPower (eForms 1157)

# 7 Application for Pesticide Use Permit

## 7.1 General

***This section applies at the Facility/Station level and is specific to provincial requirements. (Any potential federal requirements will be handled on a case by case basis).***

No person shall apply pesticides for Manitoba Hydro unless the responsible Manitoba Hydro party is in possession of a valid pesticide use permit.

The Forestry Section, Customer Service & Marketing (CS&M) shall obtain the necessary permit on behalf of Transmission & Distribution (T&D), Customer Service & Marketing (CS&M) and Corporate Facilities, Operations and Maintenance. The Environment Operations Support Section, Generation South, Power Supply shall obtain the necessary permits on behalf of Power Supply (PS) operations.

Only pesticides approved by the Chief Forester and CS&H will be permitted for use.

Responsible parties must submit information pertaining to Pesticide Use Permit application by the beginning of February for the up-coming application season. This information must be returned to the Forestry Section (for T&D, CS&M and Corporate operations) and the Environment Operations Support Section (for PS Business Unit).

Information required includes:

- Pesticides intended for use (including the Pest Control Products Act Number)
- Location of application
- Name of applicator(s)
- Application method
- IPM plan in the case of application in National Parks or other applicable areas.

The Forestry Section (for T&D, CS&M and Corporate Facilities, Operations and Maintenance) and the Environment Operations Support Section (for PS Business Unit) will prepare the required public notices, on behalf of the responsible party.

Should the public have comments or concerns regarding the terms of the Pesticide Use Permit (as detailed in any public notices) they are to contact Manitoba Conservation directly. Manitoba Hydro personnel (or contractors) that receive comments from the public relevant to the Pesticide Use Permit shall inform the inquirer that comments are to be made directly to Manitoba Conservation. Public

Concerns submitted to Manitoba Conservation are forwarded to the PUP administrator.

Complaints received on site relating to operational issues or during an application operation, shall be dealt with according to local MH business practices. Unresolved issues may be referred to regulating bodies for final judgment through the PUP administrator. All public input received by or forwarded to MH PUP administrators will be kept on file and reported to Environmental Management Advisory Committee if requested.

Copies of permits received from Manitoba Conservation and the applicable Public Notice shall be sent to managers and/or delegates and Program Coordinators by May 1 of the year for which the permit is issued.

**A Pesticide Use Permit expires at the end of the calendar year for which it is issued.**

Copies of the Pesticide Use Permit must be available at the location of the responsible party and at the work site.

Where pesticide application is planned during the period January 1 to May 31 (e.g. stump, basal applications) appropriate Pesticide Use Permit must be applied for, as detailed in the preceding points of this section.

# 8 Applicator's Licence

## 8.1 General

***This section applies at the individual applicator level.***

The Forestry Section, Customer Service & Marketing (CS&M) shall obtain the necessary licences on behalf of Transmission & Distribution (T&D), Customer Service & Marketing (CS&M) and Corporate Facilities, Operations and Maintenance. The Environment Operations Support Section, Generation South, Power Supply shall coordinate the necessary licences on behalf of Power Supply (PS) operations.

Any person using pesticides in accordance with a pesticide use permit must possess or be under the direct supervision of someone possessing a valid applicator's licence.

The holder of an applicator's licence will train and supervise persons using pesticides in accordance with provisions of the pesticide use permit.

Where deemed necessary by management, non-licenced Manitoba Hydro employees may apply pesticides on Manitoba Hydro property as long as the following conditions are met:

The individual has been trained by a Manitoba Hydro employee who possesses a valid applicator's licence in accordance with Manitoba Regulation 94/88R, and has current spill response training, WHMIS and TDG certification.

The same two individuals have a pre-application meeting to discuss the application (i.e. products to be used, special concerns, terms and conditions of pesticide use permit, etc.).

The same two individuals have a post-application meeting to discuss details of the application and to ensure daily application records are complete.

The names of both the actual applicator and the supervising licenced individual are entered on the daily spray record.

The same two individuals have access to a means of communicating at all times during application (i.e. truck radio, cell phone, etc.).

In situations where no licensed applicator is available, and small quantities of DOMESTIC LABEL products are being used, pesticides may be applied by non-licensed MH employees without meeting the "non-licensed' conditions above.

However, daily application records must be completed and kept on site, and a copy forwarded to the appropriate PUP administrator.

Manitoba Hydro pesticide applicators are required to successfully complete the Manitoba Hydro prescribed training course, as provided in conjunction with Manitoba Agriculture.

**All applicators licences expire on December 31 of each year**.

Applicators licences will be sent to applicable applicators with the pesticide use permit by May 31. Provisions must be made to renew licenses where pesticide applications are contemplated in the interim period (i.e. January 1 to May 31).

Applicators shall be in possession of their current licence when applying product.

## 8.2 Application and Reporting Requirements

Applicators must be familiar with and adhere to the terms and conditions of the pesticide use permit, as well as the Manitoba Environment Act, Pesticides Regulation (Man. Reg. 94/88R).

Where applicable, applicators must be familiar with the requirements of the IPM plan.

Applicators must be provided a copy of the Pesticide Use Permit and understand and adhere to all terms and conditions and only apply pesticides listed on the permit. Applicators must also consider the requirements and limitations set out in any public notices regarding application in a specific area.

Applicators must have a copy of the permit and Public Notice on-site when applying product.

Within 24 hours of completion of every pesticide application, licenced applicators must record and report application details as per the Pesticide Application Permit reporting process. This information must also be retained on site for a period of three years.

- The Daily Weed Control Applicator's Report shall be completed for any herbicide application or operations that occur in contained sites, such as switchyards and dykes. The Daily Vegetation Control Report shall be completed for any tree control operations.

- The Daily Weed Control Applicator's Report and the Daily Vegetation Control Report are internal Manitoba Hydro documents used to facilitate the collection of information for submission to Manitoba Conservation. The forms are applicable to herbicide use only.

- Application detail information required by Manitoba Conservation for insecticide, fungicide, wood preservation or other applications not covered by the above forms must be coordinated by the Contract Administrator.

Complaints received on site relating to operational issues or during an application operation, shall be dealt with according to local MH business practices. Unresolved issues may be referred to regulating bodies for final judgment through the PUP administrator. All public input received by or forwarded to MH PUP administrators will be kept on file and reported to Environmental Management Advisory Committee if requested.

The responsible party shall forward the following information to the Forestry Section or Environment Operations Support Section respectively, by October 31:

- Pesticides used (including the Pest Control Products Act Number)
- Quantity used (L)
- Area Treated (ha) (Note: the same hectare sprayed twice in one season equals 2 hectares sprayed.)
- Name of Applicator(s) and their licence numbers
- A map indicating areas where spraying occurred
- A copy of all Daily Weed Control Applicator Reports and Daily Vegetation Control Reports
- Site type (e.g. electric substation, gas regulator station, dykes, switchyards, etc.)
- Site name or designation

All pesticides used by or on behalf of Manitoba Hydro must be reported in the Post Season Report, as specified by Manitoba Conservation.

The Forestry Section, Customer Service & Marketing (CS&M) shall submit the Post Season Report Forms on behalf of Transmission & Distribution (T&D), Customer Service & Marketing (CS&M) and Corporate Facilities, Operations and Maintenance to Manitoba Conservation. The Environment Operations Section, Generation South, Power Supply shall submit the Post Season Report Forms on behalf of Power Supply (PS) operations.

Landowners with properties adjacent to Manitoba Hydro rights of way shall be contacted to obtain consent prior to carrying out the pesticide application program. If landowners do not grant consent then Manitoba Hydro employees or contractors shall not apply pesticides to those areas. Landowner consent or refusal shall be documented (in paper or electronic form) and maintained by the responsible party.

# 9 Safety and Health

## 9.1 General

Applicators must have prepared a job planning worksheet.

Applicators shall not use public standpipes to mix pesticides and/or solutions.

Applicators must wear personal protective equipment as prescribed on product label, Material Safety Data Sheet (MSDS) and by Manitoba Hydro CS&H, such as disposable coveralls, chemical resistant gloves, chemical resistant boots, acid splash goggles and respirator with approved cartridges for pesticides.

A copy of the current MSDS and container label for each pesticide to be applied must be with the applicator.

All personnel handling pesticides must have successfully completed the Workplace Hazardous Materials Information System (WHMIS) and TDG training when required prior to application of pesticides.

All applicators, Manitoba Hydro employed or contracted, must be trained in spill response and be familiar with site specific spill response plans prior to application.

# 10 Environmental Protection

## 10.1 General

All applicators shall be familiar with the Hazardous Materials Management Handbook, which is available through MPower, on CS&H site.

Manitoba Hydro Applicators must also have a pesticide spill response kit readily available *at all times*. The applicator should also ensure that a shovel is kept in the vehicle and/or near the site of application and/or product transfer. In the event of a spill, a shovel may be used to construct a barrier around the spill site and remove contaminated soil. The spill kit should contain the following:

- 17" x 19" Absorbent Pads
- Absorbent socks
- Plug n Dike Hole Repair with gloves
- Splash Goggles
- Splash Gloves
- Poly Drain Cover
- Haz Mat Disposal Bag/Tie

A kit containing items, as described in Section 10.1.2, is available from Central Stores (CIIC 02-79-51).

Applicators shall notify the supervisor immediately of any release and complete the Hazardous Materials Incident Report (as per the Manitoba Hydro Hazardous Materials Management Handbook) which will be forwarded to the Hazardous Materials Officer in Corporate Safety and Health. Applicators and supervisors should contact the Area Spill Response Coordinator and the Hazardous Materials Officer if they require any additional resources to deal with the release.

## 10.2 Empty Pesticide Containers and Waste Pesticide

Excess or waste pesticide, or their solution, must be used as per container label or handled as hazardous waste.

Every pesticide applicator operating under a provincial pesticide use permit shall deposit empty, waste containers at the local pesticide container collection area or waste disposal grounds designated by the municipality.

For water soluble products, the container is to be triple rinsed with water and punctured prior to disposal. Wastewater generated during container rinsing is to be directed back to the tank and subsequently mixed with the pesticide for application. All containers must be kept in a controlled access location until they have been triple rinsed AND punctured.

For non water soluble products, the container is to be visibly scraped clean of residue and deposited at a collection site. The collected residue is to be used as per original label or handled as hazardous waste.

For Manitoba Hydro applicators, if a local pesticide container collection area or waste disposal grounds designated by a municipality is not available, then containers are to be triple rinsed, punctured and forwarded to:

**Manitoba Hydro**
**Waste Management Coordinator, Transmission and Distribution**
**1840 Chevrier Blvd, Winnipeg**

## 10.3 Transportation and Handling

Any person shipping, transporting or receiving a pesticide that is a dangerous good must have a valid Transportation of Dangerous Goods Certificate in their immediate possession.

If there is a dangerous goods incident during transport or handling, the applicator or any person on site shall notify the supervisor immediately of any release and complete the Hazardous Materials Incident Report (as per the Manitoba Hydro Hazardous Materials Management Handbook) which will be forwarded to the Hazardous Materials Officer in Corporate Safety and Health. Applicators and supervisors should contact the Area Spill Response Coordinator and the Hazardous Materials Officer if they require any additional resources to deal with the release.

## 10.4 Storage

All pesticides must be stored above the floor in their original labeled containers according to manufacturer's recommendations either on pallets or on racks and shelving constructed of non-combustible materials.

The pesticide storage facility should be secured to control access and be located as far away as reasonably practicable from any sensitive areas such as residences, schools, health care facilities, food/feed processing plants, open water ways, drainage systems or drinking water sources.

The pesticide storage facility must have the following signage posted at all pedestrian entrances:


Copies of the above sign are available through Corporate Health and Safety.

The pesticide storage facility must be maintained to housekeeping standards so as to ensure immediate access to fire exits and emergency response equipment such as fire extinguishers, eyewash stations, spill response kits and other personal protective equipment.

Refer to Manitoba Hydro Chemical Storage publication, which is available through MPower, on CS&H site.

the Manitoba Hydro personnel responsible for the pesticide storage facility shall maintain an up to date inventory of all pesticides kept within the facility.

# 11 Contractors

## 11.1 General

At the time of notification that a contractor has been awarded a contract or the extension of an existing pesticide application contract, a copy of this document "*Pesticide Application Requirements for Manitoba Hydro Employees and Contractors*" will be provided to the contractor by the contract administrator.

Contractors hired to perform work under the pesticide use permit must hold a valid applicator's licence with the appropriate classification. A copy of the valid licence must be provided to Manitoba Hydro site manager responsible for application, prior to application of the pesticides.

Contractors must be provided a copy of the Pesticide Use Permit and where applicable, made aware of the IPM plan, and understand and adhere to all terms and conditions. Contractors must only apply pesticides listed on the pesticide use permit.

Within 24 hours of completion of every pesticide application, contractor applicators must record and report application details as per the Pesticide Application Permit reporting process. This information must also be retained for a period of three years.

- The Daily Weed Control Applicator's Report shall be completed for any herbicide application or operations that occur in contained sites, such as switchyards and dykes. The Daily Vegetation Control Report shall be completed for any tree control operations, such as herbicide application.
- The Daily Weed Control Applicator's Report and the Daily Vegetation Control Report in either electronic or hardcopy form are internal Manitoba Hydro documents used to facilitate the collection of information for submission to Manitoba Conservation. The forms are applicable to herbicide use only.
- Application detail information required by Manitoba Conservation for insecticide, fungicide, wood preservation or other applications not covered by the above forms must be coordinated by the Contract Administrator.

The checklist (Appendix A) for contractors applying pesticides must be completed and signed off by the contract administrator (or designate) and contractor prior to pesticide application. A copy of the signed checklist must be maintained by site representative responsible for application.

## 11.2 Contractor Safety

Applicators must wear personal protective equipment as required by product label and MSDS such as disposable coveralls, chemical resistant gloves, chemical resistant boots, acid splash goggles and respirator with approved cartridges for pesticides,.

A copy of the current MSDS and container label for each pesticide to be applied must be with the applicator.

All contracted applicators must have WHMIS and TDG training when required prior to application of pesticides.

All contracted applicators, must be trained in spill response and be familiar with site specific spill response plans prior to application.

All contractors must complete some form of daily job planning worksheet.

Daily job plans must include a review of all Safety and Environmental issues related to the performance of the work.

The daily job plans must also document that all new employees to the work-site have been made aware of Manitoba Hydro's environmental policies, Environmental Management System (EMS) issues related to the performance of the work and the confirmation that they have "Spill Response Training" and are aware of the on-site spill response plans and familiar with the content of the pesticide product labels and MSDSs.

## 11.3 Environmental Protection by Contractors

Each Contractor shall have a Spill Response Plan and employee training in place that is appropriate to the type and quantity of chemicals to be used as well as the environment in which they will be used. The Spill Response Plan shall be reviewed and approved by the Manitoba Hydro contract administrator.

Response materials must be in sufficient quantity and adequate to respond to the capture, containment and cleanup of any product in use.

Contractors shall notify the Program Coordinator or On-site inspector immediately of any release, and complete the Hazardous Materials Incident Report (as per the Manitoba Hydro Hazardous Materials Management Handbook) which will be forwarded to the Hazardous Materials Officer in Employee Safety and Health. The On-site Inspector and/or Program Coordinator should contact the Area Spill Response Coordinator and the Hazardous Materials Officer if they require any additional resources to deal with the release.

All pesticides must be stored above the floor in their original labeled containers according to manufacturer's recommendations either on pallets or on racks and shelving constructed of non-combustible materials. Containers should be stored in a spill or leak containment system and in an upright position.

The pesticide storage facility should be secured to control access and be located as far away as reasonably practicable from any sensitive areas such as residences, schools, health care facilities, food/feed processing plants, open water ways, drainage systems or drinking water sources.

The pesticide storage facility must have signage similar to the following posted at all pedestrian entrances:


Copies of the above sign are available through Corporate Health and Safety.

The pesticide storage facility must be maintained to housekeeping standards so as to ensure immediate access to fire exits and emergency response equipment such as fire extinguishers, eyewash stations, spill response kits and other personal protective equipment.

The contractor personnel responsible for the pesticide storage facility shall maintain an up to date inventory of all pesticides kept within the facility.

Refer to Manitoba Hydro Chemical Storage publication, which is available through MPower, on CS&H site.

Disposal of all un-used and waste product, as well as waste containers, is the responsibility of the contractor. The Contract Administrator or On-Site Inspector must take steps to be reasonably assured that the contractor is handling waste and containers in an environmentally responsible and legal manner.

# 12 Roles and Responsibilities

## 12.1 Applicator

**The pesticide applicator is responsible for the following:**

- Ensuring possession of a valid applicator licence prior to application of any pesticides.
- Adhering to the terms and conditions of both of the pesticide use permit and the public notice for the specific location or station.
- Discarding out of date applicator licence.
- Training other non-licenced applicators, as required.
- Keeping the valid applicators licence on their person during pesticide application.
- Complete Weed Applicator's Report and/or Vegetation Control Report within 24 hours of completion of the application.
- Wearing necessary personal protective equipment.
- Ensuring knowledge of product risks.
- Properly disposing of pesticide containers.
- Ensuring familiarity with Manitoba Hydro spill response documents and procedures.
- Ensure the Spill Response Kit is available for use prior to applying pesticides.
- Be knowledgeable of the requirements of applicable IPM plans.
- Ensuring those under supervision adhere to all components of this guidance document, legal requirements and other applicable Manitoba Hydro policies and procedures.

## 12.2 Responsible Manitoba Hydro Manager

**The senior manager (or designate) of the facility, site or station responsible for pesticide application in a given area is responsible for the following:**

- Provide requested information to the respective environmental support staff (the Forestry Section, CS&M for CS&M, T&D and Corporate Facilities, Operations and Maintenance operations; the Environment Operations Support Section, Generation South, for Power Supply).
- During the public notification period public comments regarding planned pesticide application should be referred to Manitoba Conservation.
- Provide necessary support and training to Manitoba Hydro applicators.
- Maintaining out of date Pesticide Use Permits and all documentation applicable to that Pesticide Use Permit on site for a period of 3 years.
- Facilitate applicators completion of necessary training.
- Ensure completion of post season report forms.
- Ensure availability of spill kit.
- Ensure contractors are provided with the terms of the pesticide use application, and are applying pesticides in an environmentally safe manner.
- Ensure applicators are in possession of valid applicator licence.

## 12.3 Chief Forester

The Chief Forester, in conjunction with CS&H, is responsible for approving all pesticides used at Manitoba Hydro facilities.

## 12.4 Contract Administrator/or Designate

**The Manitoba Hydro Contract Administrator is responsible for:**

- Ensuring that contractors meet all regulatory and Manitoba Hydro requirements.
- Due diligent inspection of contractor storage facilities if storage is on Manitoba Hydro property, or if contractor is storing significant quantities on Manitoba Hydro's behalf
- Provide Contractors with a copy of this document prior to commencement of work.
- Completing the Checklist in Appendix A of this document.
- Verify appropriate applicator licence classification and validity.
- Obtain and retain a copy of the applicator licence
- Obtain and maintain a copy of the Daily Application report.
- Document public complaints and forward them to PUP administrator

## 12.5 Power Supply, Generation South, Environment Operations Support Section

**The Power Supply Environment Operations Support Section is responsible for providing the following support to Power Supply facilities:**

- Application for of necessary Pesticide Use Permits.
- Preparation of necessary public notices.
- During the public notification public comments regarding proposed pesticide application should be referred to Manitoba Conservation.
- Maintaining renewals for applicators in conjunction with Forestry Section.
- Preparation of Post Season Report for Power Supply facilities for submission to Manitoba Conservation.
- Document and maintain file of public complaints as received/reported from field administrator or provincial regulators. Report this information to Enivronmental Management Advisory Committee as requested.

## 12.6 Customer Service and Marketing, Forestry Section

The Forestry Section is responsible for providing the same support as the Power Supply Environment Operations Support Section (as per section 12.5 of this document) to Customer Service & Marketing and to Transmission and Distribution.

## 12.7 Non-licenced Manitoba Hydro employees

Manitoba Hydro employees that apply pesticides, but that are not licenced as per Manitoba Agriculture must be trained according to Manitoba Hydro health and safety requirements (WHMIS and TDG). They are responsible for ensuring that pesticide application is done in conjunction with a licenced applicator, as per Section 8.1 of this document.

## 12.8 Contractors

Contractors applying pesticides on behalf of Manitoba Hydro have the following responsibilities:

- Holding a valid applicator licence.
- Adhering to all terms and conditions of pesticide use permit.
- Adhering to all terms and conditions of all applicable Manitoba Hydro procedures. .
- Have a spill response plan and equipment in place for each area of application.
- Complete Hazardous Materials Incident Report when there is an incident involving a dangerous good.
- Conforming to all relevant sections of this document.
- Conformance to all Manitoba Hydro and legal health and safety requirements.

## 12.9 Corporate Safety & Health

Corporate Safety and Health (CS&H) is responsible for the following:

- Workplace Environment Department will provide technical expertise and assistance that facilitates the practice of due diligence, in accordance with safety, occupational health and environmental legislation that affects all employees of Manitoba Hydro.
- Interpret legislation related to hazardous materials.
- Evaluate and approve all pesticides used at Manitoba Hydro facilities, in conjunction with the Chief Forester.
- Train all employees in Hazardous Materials Management, including Transportation of Dangerous Goods, Workplace Hazardous Materials Information Systems (WHMIS) and Spill Response.
- Provide expertise and assistance in the event of a release of hazardous materials and facilitate the reporting to regulatory agencies.
- Publication and distribution of this document to the appropriate personnel.

## 12.10 Manitoba Hydro Pesticide Awareness Working Group

The Manitoba Hydro Pesticide Awareness Working Group is responsible for periodically reviewing and revising this document when appropriate.

## Appendix 1. Contractor Checklist

This checklist must be completed and signed off by the program coordinator and MH applicators prior to a pesticide application program annually. A copy of the signed checklist must be maintained at site.

| | YES | NO |
|---|---|---|
| 1. Did you receive and reviewed the Pesticide Application Requirements for Manitoba Hydro Employees and Contractors Publication? | ☐ | ☐ |
| 2. Does the contractor hold a valid applicator's licence from Manitoba Agriculture with appropriate classification? | ☐ | ☐ |
| 3. Has the contractor provided the contract administrator with a copy of valid licence? | ☐ | ☐ |
| 4. Have the terms of the Pesticide Use Permit, Public Notice, and IPM plan (if applicable) been reviewed with the contractor? | ☐ | ☐ |
| 5. Are all terms and conditions of the Pesticide Use Permit, Public Notice, and IPM plan (if applicable) understood by the contractor? | ☐ | ☐ |
| 6. Does the contractor have appropriate personal protective equipment, as required by the product label, MSDS and Manitoba Hydro CS&H? | ☐ | ☐ |
| 7. Does the contractor have electronic forms or hardcopies of the Weed Control Applicator's Report or the Vegetation Control Report or Wood Maintenance Pesticide Report? | ☐ | ☐ |
| 8. Does the contractor have a copy of the current MSDS for each pesticide to be applied? (Note: Download from supplier's website annually) | ☐ | ☐ |

9. Has the content and intended use of the Manitoba Hydro Hazardous Materials Incident Report been reviewed with the contractor? ☐ ☐

10. Has the contractor provided documentation of spill response training and demonstrated that they have a spill response plan and equipment in place that meets Manitoba Hydro requirements? ☐ ☐

11. Have site details, including treatment areas, been reviewed with the contractor? ☐ ☐

12. Has the contractor provided a copy of the TDG card (if required) and provided documentation verifying that WHMIS training is up to date. ☐ ☐

13. Does the contractor provide adequate pesticide storage and inventory control? ☐ ☐

14. Does the contractor have a plan for removal and final disposal of waste and empty containers? (triple rinse and puncture) ☐ ☐

15 Has Manitoba Hydro's environmental policies and Environmental Management System (EMS) issues related to the performance of the work been reviewed? ☐ ☐

**Special Concerns or Comments:**

| **Contract Administrator:** | **Contractor:** |
|---|---|
| _____ | _____ |
| Name (please print) | Name (please print) |
| _____ | _____ |
| Signature | Signature |
| _____ | _____ |
| Date | Date |

## Appendix 2. Manitoba Hydro
## Pesticide Applicator Checklist

This checklist must be completed and signed off by the program coordinator and MH applicators prior to a pesticide application program annually. A copy of the signed checklist must be maintained at site.

| | YES | NO |
|---|---|---|
| 1. Do the applicators hold valid applicator's licence from Manitoba Agriculture with appropriate classification? | ☐ | ☐ |
| 2. Do the applicators have a copy of the valid licence? | ☐ | ☐ |
| 3. Have the terms of the Pesticide Use Permit, Public Notice and IPM plan (if applicable) been reviewed with the applicators? | ☐ | ☐ |
| 4. Are all terms and conditions of the Pesticide Use Permit, Public Notice, and IPM plan (if applicable) understood by the applicators? | ☐ | ☐ |
| 5. Do the applicators have appropriate personal protective equipment as required by the product label, and MSDS and Manitoba Hydro CS&H? | ☐ | ☐ |
| 6. Do the applicators have copies of the Weed Control Applicator's Report or the Vegetation Control Report? | ☐ | ☐ |
| 7. Do the applicators have copies of the current Labels and MSDS for each pesticide to be applied (Note: Download from supplier's website annually)? | ☐ | ☐ |
| 8. Has the content and intended use of the Manitoba Hydro Hazardous Materials Incident Report been reviewed with the applicators? | ☐ | ☐ |
| 9. Do the applicators have spill response training and spill response kits? | ☐ | ☐ |

10. Have the applicators reviewed the spill response plan? ☐ ☐

11. Have site details, including treatment areas, been reviewed with the applicators? ☐ ☐

12. Have the pesticide storage and inventory control requirements been reviewed? ☐ ☐

13. Has a plan for removal and final disposal of waste and empty containers been reviewed? (triple rinse and puncture) ☐ ☐

**Special Concerns or Comments:**

_____

_____

_____

**Program Coordinator:**

_____
Name (please print)

_____
Signature

_____
Date

**Applicators:**

| | |
|---|---|
| _____ | _____ |
| Name (please print) | Name (please print) |
| _____ | _____ |
| Signature | Signature |
| _____ | _____ |
| Date | Date |

# Appendix I

# Summary of Consultation

**Appendix I: Summary of consultation**

# Introduction

Below is a summary and evidence of Manitoba Hydro's consultation with potentially affected persons, organizations, Indigenous communities, and federal and provincial authorities regarding the Rehabilitation and Invasive Species Management Plan (the Plan), including any concerns that were raised, steps that Manitoba Hydro has taken or will take to address those concerns.

# Consultation

Draft environmental protection and management plans, including this Plan were uploaded to the Project website and a web page was created in October 2018, including a fillable comment form to provide feedback.

As Manitoba Hydro completed draft plans, Indigenous communities and organizations, landowners, interested parties and the public were notified. Input was sought between May of 2018 until present. Manitoba Hydro sought feedback on most plans in October of 2018. This was done through the Project website, MMTP Monitoring Committee website, e-campaign, emails, and letters to landowners.

The construction environmental protection plan and associated management plans, including this Plan, have been discussed at two MMTP Monitoring Committee meetings on May 17, 2018 and October 10, 2018. As noted above, the Project website was shared with communities via email and the Plan was also posted on the MMTP Monitoring Committee website.

# Concerns raised and steps taken to address concerns

Manitoba Hydro received feedback on this Plan from a MMTP Monitoring Committee Representative Dakota Tipi First Nation (Table 1), Peguis First Nation (Table 2), and a MMTP Monitoring Committee Representative from Peguis First Nation (Table 3). Manitoba Hydro reviewed the feedback, updated the plan where appropriate including the list of revisions table and provided Dakota Tipi First Nation with a table including their comments and Manitoba Hydro's responses. As a result of this no further feedback has been received from these communities/organizations with regard to this Plan.

**Table 1 Comments from a MMTP Monitoring Committee Representative from Dakota Tipi First Nation**

| Section | Comments from Dakota Tipi First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| Overall | I reviewed the cultural and heritage resources protection plan, I'm very satisfied with hydro respect and transparent aspect to the plan, as well with the other 10 plans, Dakota Tipi first nation and myself look forward to a respectful positive outcome for all living spirits that will be involved in the construction of the MMTP project | Manitoba Hydro also looks forward to continuing to work with Dakota Tipi First Nation and thanks the Committee Representative for their review of the plans |

**Table 2 Comments sent via Peguis First Nation**

| Section | Comments sent via Peguis First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| Section 3.3.1 Wetlands and riparian areas | Under “Rehabilitation measures may include” it states, “implementation of erosion and sediment control measures where required”.<br><br>Does this mean that there are expected soil control measures?<br><br>If so, are they going to cut into the earth (as per the Erosion and Sediment control plan)?<br><br>If this is the case, is the project archaeologist going | Manitoba Hydro and project Archaeologist are in the process of completing an HRIA in coordination with HRB to clear archaeologically, any identified cultural and heritage sensitive sites prior construction at that site. |

| Section | Comments sent via Peguis First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| | to test these areas prior to any work in the area? If not, why not? | |
| Section 3.3.2 Cultivated lands | Under "Rehabilitation measures may include" it states, "implementation of erosion and sediment control measures where required".<br><br>Does this mean that there are expected soil control measures?<br><br>If so, are they going to cut into the earth (as per the Erosion and Sediment control plan)?<br><br>If this is the case, is the project archaeologist going to test these areas prior to any work in the area? If not, why not? | Manitoba Hydro and project Archaeologist are in the process of completing an HRIA in coordination with HRB to clear archaeologically, any identified cultural and heritage sensitive sites prior construction at that site. |
| Section 3.3.3 Access routes and trails | Under "Rehabilitation measures may include" it states, "implementation of erosion and sediment control measures where required".<br><br>Does this mean that there are expected soil control measures?<br><br>If so, are they going to cut into the earth (as per the Erosion and Sediment control plan)?<br><br>If this is the case, is the project archaeologist going to test these areas prior to any work in the area? If | Manitoba Hydro and project Archaeologist are in the process of completing an HRIA in coordination with HRB to clear archaeologically, any identified cultural and heritage sensitive sites prior construction at that site. |

| Section | Comments sent via Peguis First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| | not, why not? | |
| | Also, “Contouring or re-sloping” and “back blading or grading to remove ruts/level surface” are both techniques that include disturbing land surface.<br><br>Will there be any archaeological testing in these areas prior to the commencement of construction? If not, why not? | Manitoba Hydro and project Archaeologist are in the process of completing an HRIA in coordination with HRB to clear archaeologically, any identified cultural and heritage sensitive sites prior construction at that site.<br><br>Sensitive sites were selected based on land-based criteria such as proximity to waterways, type of terrain, degree of intactness, type of vegetation, nearness to known archaeological sites, and amount of previous disturbance of an area. Ortho-photos, windshield survey, reviewing the archaeological site inventory were conducted. In addition, landowner and community engagement provided additional areas of heritage potential, which were reviewed and investigated if locations were to be within the scope of the project. |
| Section 3.3.4 Forest, tame pasture and grasslands | Under “Triggers for the Assessment for rehabilitation by Contractor” it states that one of the triggers is “When rutting depth exceeds 30cm for more than 15m in length”. 30 cm is deep | Manitoba Hydro and project Archaeologist are in the process of completing an HRIA in coordination with HRB to clear archaeologically, any identified cultural and heritage sensitive sites prior |

| Section | Comments sent via Peguis First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| | enough to disturb or potentially destroy an archaeological site.<br><br>Will the project archaeologist be testing these areas prior to commencement of construction? If not, why not? | construction at that site. |
| | Under "Rehabilitation measures may include" it states, "implementation of erosion and sediment control measures where required".<br><br>Does this mean that there are expected soil control measures? | No, there may be erosion and sediment control measures required based on weather and ground conditions |
| | If so, are they going to cut into the earth (as per the Erosion and Sediment control plan)? | Yes, if required |
| | If this is the case, is the project archaeologist going to test these areas prior to any work in the area? If not, why not? | Manitoba Hydro and project Archaeologist are in the process of completing an HRIA in coordination with HRB to clear archaeologically, any identified cultural and heritage sensitive sites prior construction at that site. |
| Section 3.3.5 Borrow Pits and Quarries | Both Borrow pits and quarries will certainly disturb and most likely destroy any archaeological site that may be in the areas being quarried or borrowed | For new borrow pits or quarries, Manitoba Hydro will clear these sites archaeologically as required. No new quarries are planned for the project. |

| Section | Comments sent via Peguis First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| | from. There does not appear to be any information anywhere in the literature about these areas; neither borrow pit/quarry locations nor plans for their inspection are available online.<br><br>Is there no plan to test these places archaeologically? If not, why not? | |
| | Both "contouring or re-sloping" and "Back blading or grading to remove ruts" are listed in Rehabilitation measures. These activities will damage or destroy archaeological sites.<br><br>Will there be any archaeological testing in these areas prior to the commencement of construction? If not, why not? | Yes |
| Section 3.5 site preparation | In this section, Manitoba Hydro states that "site preparation may include the following: contouring…addition or removal of topsoil…grading of ground material…soil de-compaction [discing or tilling of soil]"<br><br>These activities will potentially disturb or destroy an archaeological site.<br><br>Will the project archaeologist be testing these | Manitoba Hydro and project Archaeologist are in the process of completing an HRIA in coordination with HRB to clear archaeologically, any identified cultural and heritage sensitive sites prior construction at that site. |

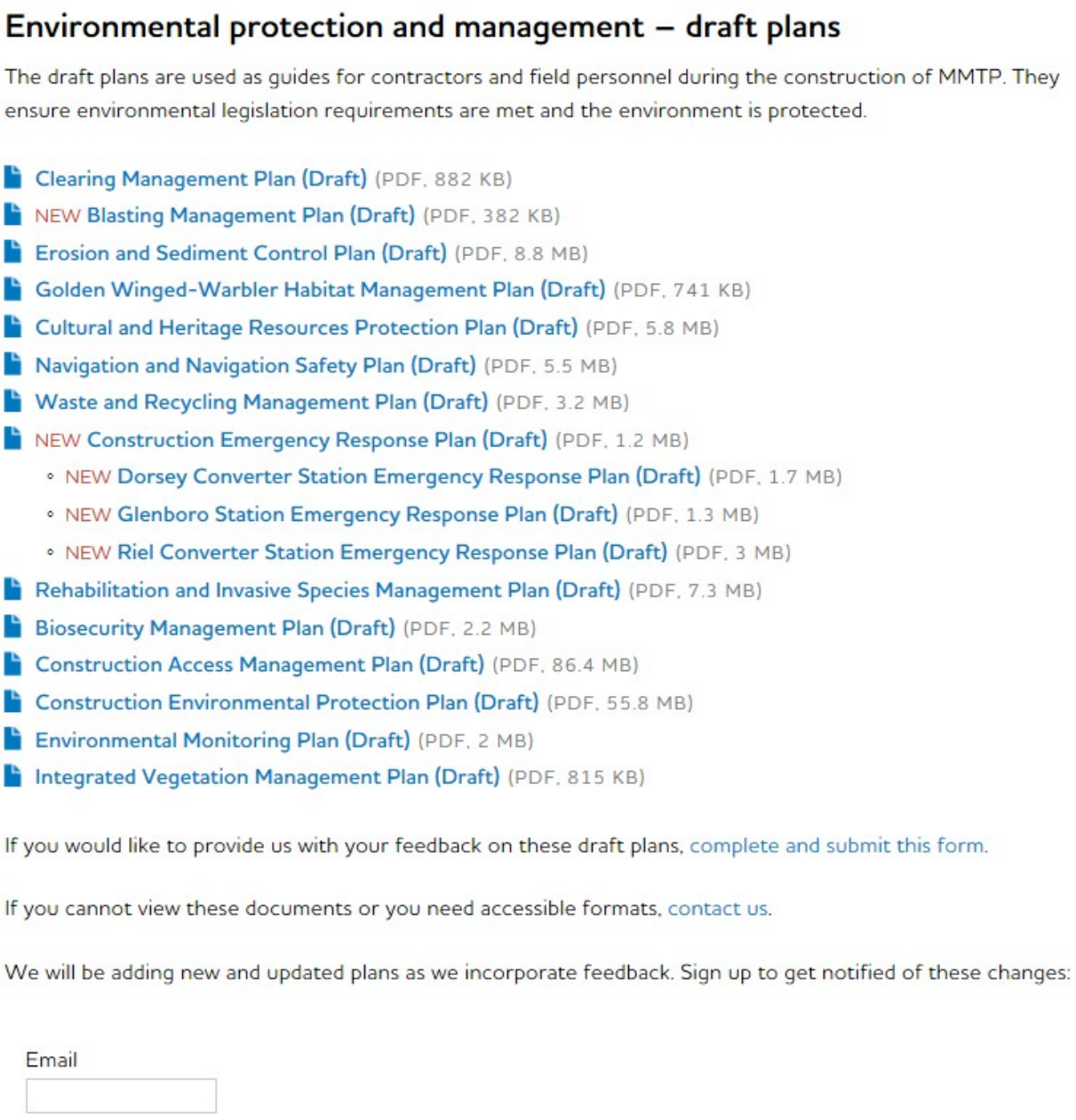
| Section | Comments sent via Peguis First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| | areas prior to the commencement of construction, borrow pitting, or quarrying activities? If not, why not? | |
| Section 3.6.2.2 Seeding options | Drill Seeding: "Drill seeding should be done into well-cultivated soil, free of lumps and debris, and firmly roller packed." Cultivation of soils is destructive to archaeological sites and removing debris will include any archaeological artifacts.<br><br>Will the project archaeologist be testing these areas prior to the commencement of construction, borrow pitting, or quarrying activities? If not, why not? | Manitoba Hydro and project Archaeologist are in the process of completing an HRIA in coordination with HRB to clear archaeologically, any identified cultural and heritage sensitive sites prior construction at that site. |

**Table 3 Comments from a MMTP Monitoring Committee Representative from Peguis First Nation**

| Section | MMTP Monitoring Committee representative comments from Peguis First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| Page 3 1.2 Purpose and Objectives: | Statement "MBH seeks to enhance habitat and biodiversity on the right of way"<br><br>Question/Concern: What is meant by enhancing habitat? | Rights-of-ways can become healthy, diverse environments that provide habitat for a variety of species if properly managed. Through vegetation management, habitat is enhanced when a low-growing, stable plant community is successfully established on the ROW compared to a ROW that is not managed and invasive species are allowed to thrive. This statement was referring to this understanding. |
| Page 5 3.6.2.1 Planting Options: | Statement "Sprigging can be effective method for disturbed and erodible stream crossings".<br><br>Question/Concerns: Why is sprigging effective in erodible stream crossing sights? If sprigging does not work what then? Why is Hydro going through or contributing to erosion site? | Sprigging is effective as it rapidly establishes vegetation in areas of sensitive soils, preventing further erosion. If sprigging is unsuccessful, alternatives would be considered such as transplanting or seeding. Due to the nature of construction activities, including the removal of soils, there is the potential to expose soils that may be at risk of erosion. |
| Page 14 4.5 Step 4 Select weed and management | Biological/Cultural/Native treatment s spell check should be one-word treatments. | Noted. |

| Section | MMTP Monitoring Committee representative comments from Peguis First Nation | Manitoba Hydro response, steps taken and rationale |
|---|---|---|
| treatment method: | | |
| Page 16 4.6 Treatment options for common species: | Statement "Chemical control is effective. Earlier applications have greater success".<br><br>Question/Concern: Has the water below the treated area been tested for pollution? Worried that contamination may be in drinking water through the fertilizers. Why is it when a concern is brought forth about using chemical control and how it is not good for environment then its replaced by some other chemical? Why not stop the use of Chemicals altogether? | Manitoba Sustainable Development has conducted substantial water quality testing in the Lake Winnipeg watershed for nutrients such as those typically found in fertilizers.<br><br>Herbicides are an important tool in integrated vegetation management to reduce impacts to the environment during maintenance events. Using purely mechanical and manual methods would likely require more regular clearing. This would lead to greater greenhouse gas emissions, the destruction of ground-based nests and increased disturbance of wildlife. The key is to ensure the right methods are being applied in the right locations with the minimum volumes of herbicide applied to achieve acceptable control. Once a healthy low-growing plant community exists, the need for herbicide use diminishes. Both the amount of herbicide applied and the frequency of its application both decline over time as the need for its use goes away when there are fewer tall growing species present. |

Draft environmental protection and management plans, were uploaded to the Project website and a web page was created in October 2018. A recent screen shot of the Manitoba Hydro Project Website is below (Figure A).



## Environmental protection and management – draft plans

The draft plans are used as guides for contractors and field personnel during the construction of MMTP. They ensure environmental legislation requirements are met and the environment is protected.

- Clearing Management Plan (Draft) (PDF, 882 KB)
- NEW Blasting Management Plan (Draft) (PDF, 382 KB)
- Erosion and Sediment Control Plan (Draft) (PDF, 8.8 MB)
- Golden Winged-Warbler Habitat Management Plan (Draft) (PDF, 741 KB)
- Cultural and Heritage Resources Protection Plan (Draft) (PDF, 5.8 MB)
- Navigation and Navigation Safety Plan (Draft) (PDF, 5.5 MB)
- Waste and Recycling Management Plan (Draft) (PDF, 3.2 MB)
- NEW Construction Emergency Response Plan (Draft) (PDF, 1.2 MB)
  - NEW Dorsey Converter Station Emergency Response Plan (Draft) (PDF, 1.7 MB)
  - NEW Glenboro Station Emergency Response Plan (Draft) (PDF, 1.3 MB)
  - NEW Riel Converter Station Emergency Response Plan (Draft) (PDF, 3 MB)
- Rehabilitation and Invasive Species Management Plan (Draft) (PDF, 7.3 MB)
- Biosecurity Management Plan (Draft) (PDF, 2.2 MB)
- Construction Access Management Plan (Draft) (PDF, 86.4 MB)
- Construction Environmental Protection Plan (Draft) (PDF, 55.8 MB)
- Environmental Monitoring Plan (Draft) (PDF, 2 MB)
- Integrated Vegetation Management Plan (Draft) (PDF, 815 KB)

If you would like to provide us with your feedback on these draft plans, complete and submit this form.

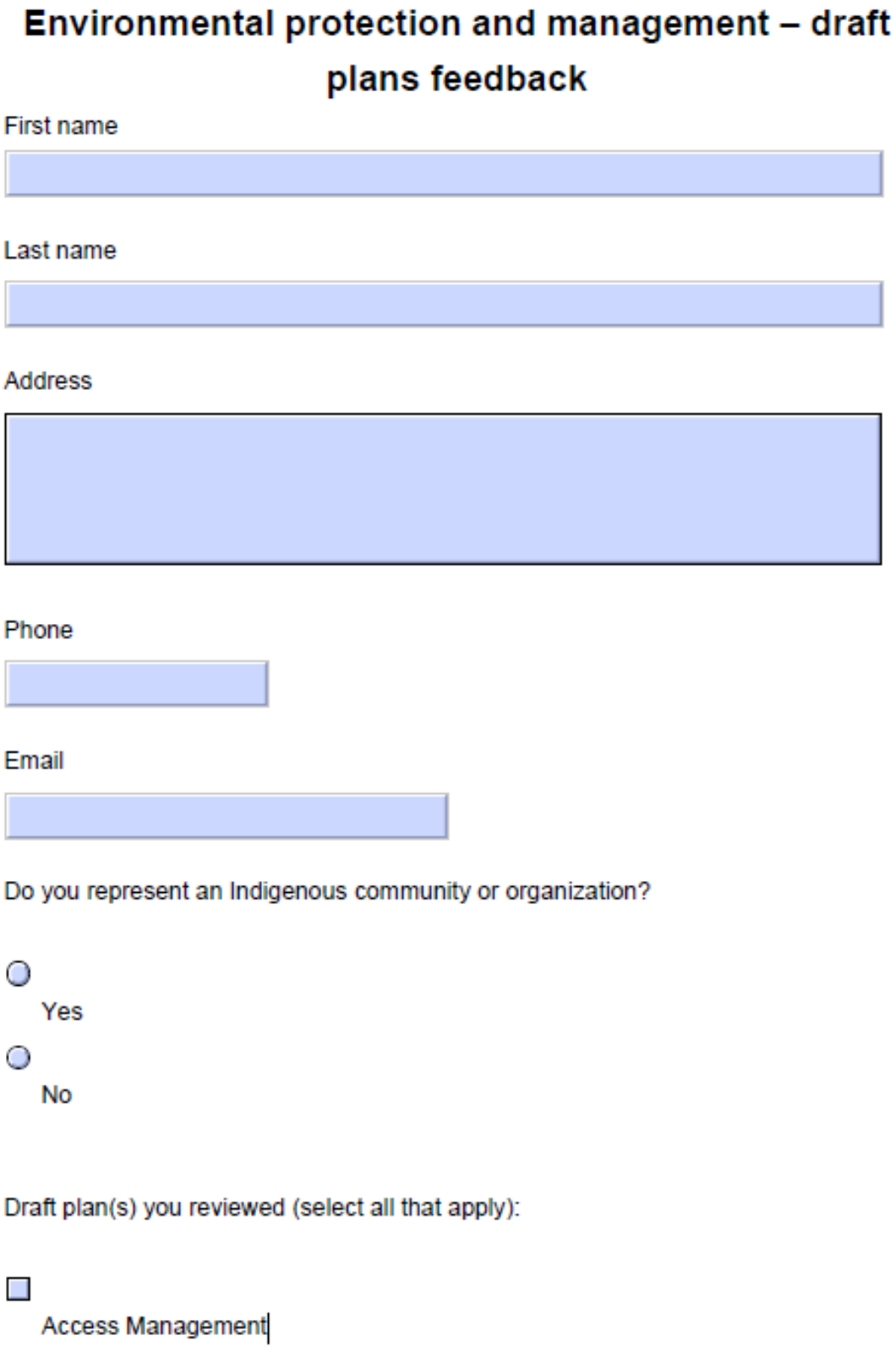
If you cannot view these documents or you need accessible formats, contact us.

We will be adding new and updated plans as we incorporate feedback. Sign up to get notified of these changes:

Email

**Figure A screen shot of Manitoba Hydro project page website**

A fillable comment form to provide feedback was created in October 2018. A screen shot of the fillable comment sheet can be found below (Figure B).



**Environmental protection and management – draft plans feedback**

First name

Last name

Address

Phone

Email

Do you represent an Indigenous community or organization?

- Yes
- No

Draft plan(s) you reviewed (select all that apply):

- Access Management


Figure B Fillable comment form to provide feedback

Draft environmental protection and management plans were uploaded to the MMTP Monitoring Committee website in October 2018. A screen shot of the MMTP Monitoring Committee website is below (Figure C).


**Figure C MMTP Monitoring Committee website screenshot**

Below is a screen shot of the e-campaign that was sent to 825 recipients (Figure D.

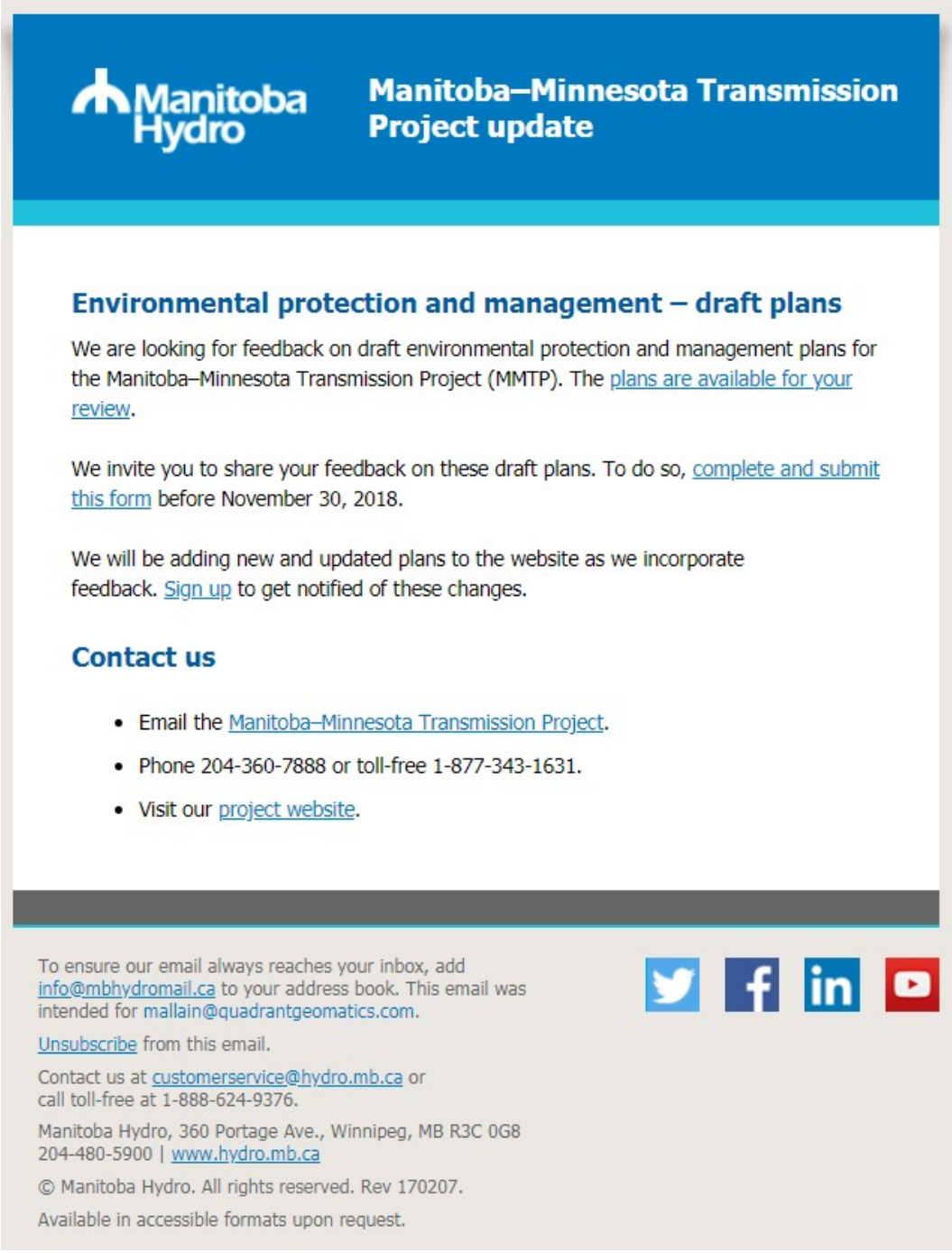



**Figure D e-campaign screenshot**

Below is the content from the letter sent to landowners (Figure E).

Manitoba Hydro

2018 10 24

«Landowner»
«Owner_address»
«City», MB «POSTAL_CODE»

**Manitoba-Minnesota Transmission Project: Draft environmental protection and management plans**

«Landowner»,

As part of planning for the Manitoba-Minnesota Transmission Project (MMTP), Manitoba Hydro is seeking feedback on draft environmental protection and management plans. The following is a link to the document library that contains these plans: https://www.hydro.mb.ca/projects/mb_mn_transmission/document_library.shtml.

The information you have shared regarding your land through discussions with me, Manitoba Hydro property agents, or with our Environment Officer Evan Johansson, have and will inform the details of these plans.

We would like to hear your feedback regarding these plans in a manner that works best for you. The website has a link to a comment form for the plans. Please feel free to call me at «Liaison_phone_number» to share your feedback directly or to set up a site meeting with Evan Johansson please call 204-360-3731, if you have not had the opportunity to do so. We are accepting feedback until November 30, 2018.

We will be adding new and updated plans to the website as we incorporate feedback. I encourage you to visit the Project website (www.hydro.mb.ca/mmtp) for more information or to sign up for project updates.

Please note that Manitoba Hydro will not be moving forward with construction until it has received regulatory approvals.

Yours truly,

«Liaison»

360 Portage Avenue (3) • Winnipeg Manitoba Canada • R3C 0G8
Telephone / *N° de téléphone* : 1-877-343-1631
MMTP@hydro.mb.ca

**Figure E Content from the letter sent to landowners**

Below is a screen shot of an email sent to the MMTP Monitoring Committee (Figure F).

**From:** Coughlin, Sarah
**Sent:** Friday, October 19, 2018 5:31 PM
**To:**

[redacted]

**Cc:** [redacted]

**Subject:** RE: MMTP Monitoring Committee Meeting October 10, 2018

Please find attached draft minutes for the October 10, 2018 MMTP Monitoring Meeting. Please submit any changes/comments by October 31, 2018 and mark your calendars for **November 14, 2018** - the next MMTP Monitoring Meeting at Dakota Tipi First Nation offices near Portage la Prairie, Manitoba. [redacted]

At the October 10, 2018 meeting the group was asked to provide comment on a series of draft environmental management and protection plans. Manitoba Hydro is seeking comments on these draft plans from MMTP Monitoring Committee members. Attached you'll find a short description of each to help determine if the plan is of interest to you. Each of the these draft plans guides contractors and field personnel while constructing the Manitoba-Minnesota Transmission Project in a manner that meets environmental legislation requirements and protects the environment. We'd like to hear comments or concerns in a manner that works best for you. Please feel free to call me at (204)360-3016 to share your comments directly or to set up a meeting with us. You can also visit our project website at where a comment form has been provided for the plans. We are accepting comments until November 30, 2018. The draft plans are linked here:
https://www.hydro.mb.ca/projects/mb_mn_transmission/document_library.shtml

Thank you and I look forward to seeing you on November 14!

Sarah Coughlin
Senior Environmental Specialist
Licensing & Environmental Assessment
**Transmission, Manitoba Hydro**
360 Portage Ave, Winnipeg, MB
w (204) 360-3016
c (204) 918-9848
scoughlin@hydro.mb.ca

**Figure F Screen shot of an email sent to the MMTP Monitoring Committee**

Below is a follow-up email sent to the MMTP Monitoring Committee (Figure G).

**From:** Coughlin, Sarah
**Sent:** Thursday, November 01, 2018 11:30 AM
**Cc:** MMTP
**Subject:** Manitoba Minnesota Transmission Project Draft Environmental Protection Plan Review

Good morning. As part of our ongoing engagement on the Manitoba Minnesota Transmission Project we would like to notify you that we have posted Draft Environmental Protection and Management Plans on the Project website (https://www.hydro.mb.ca/projects/mb_mn_transmission/document_library.shtml) and are looking to gather feedback on these plans by November 30th.

Please note that notification that these plans have been posted is also being shared with landowners, participants of the MMTP Monitoring Committee, and those that have signed up for e-blast notifications so you may have already received this notice through another communication avenue.

Each of these draft plans, guides contractors and field personnel while constructing the Manitoba-Minnesota Transmission Project in a manner that meets environmental legislation requirements and protects the environment. It is noted below where the plan is new or updated since provided initially through the regulatory process:

- draft Environmental Monitoring Plan (updated)
- draft Construction Environmental Protection Plan (updated)
- draft Cultural and Heritage Resources Protection Plan (updated)
- draft Biosecurity Management Plan (new draft plan)
- draft Clearing Management Plan (new draft plan)
- draft Right-of-Way Habitat Management Plan for Managing Critical Golden-winged Warbler Habitat during Construction and Operation(no change)
- draft Erosion and Sediment Control Plan (new draft plan)
- draft Navigational Safety Plan Summary (new draft plan)
- draft Rehabilitation and Invasive Species Management Plan (updated)
- draft Waste and Recycling Management Plan (new draft plan)
- draft Access Management Plan (updated)

Feel free to contact me ((204)360-3016) should you have feedback you would like to provide, or you are welcome to make use of the comment forms that are available on the website as well.

We look forward to hearing your feedback or responding to questions about this notification.

Sarah Coughlin
Senior Environmental Specialist
Licensing & Environmental Assessment
**Transmission, Manitoba Hydro**
360 Portage Ave, Winnipeg, MB
w (204) 360-3016
c (204) 918-9848
scoughlin@hydro.mb.ca

**Figure G Follow-up email sent to the MMTP Monitoring Committee**

## Below is a screen shot of an email sent to interested parties (Figure H) and a list of the interested parties (Table 4)

As part of our ongoing engagement on the Manitoba Minnesota Transmission Project we would like to notify you that we have posted Draft Environmental Protection and Management Plans on the Project website (https://www.hydro.mb.ca/projects/mb_mn_transmission/document_library.shtml) and are looking to gather feedback on these plans by November 30th. You are receiving this email as you were a participant in the Clean Environment Commission Hearings and the National Energy Board hearing process for the Project.

(please note that notification that these plans have been posted is also being shared with landowners, participants of the MMTP Monitoring Committee, and those that have signed up for e-blast notifications so you may have already received this notice through another communication avenue)

Most of these draft plans were shared prior to, or during, the hearing processes. It is noted below where the plan is new since the hearing process, or updated since that time. Each of these draft plans, guides contractors and field personnel while constructing the Manitoba-Minnesota Transmission Project in a manner that meets environmental legislation requirements and protects the environment.

- draft Environmental Monitoring Plan (updated)
- draft Construction Environmental Protection Plan (updated)
- draft Cultural and Heritage Resources Protection Plan (updated)
- draft Biosecurity Management Plan (new draft plan)
- draft Clearing Management Plan (new draft plan)
- draft Right-of-Way Habitat Management Plan for Managing Critical Golden-winged Warbler Habitat during Construction and Operation(no change)
- draft Erosion and Sediment Control Plan (new draft plan)
- draft Navigational Safety Plan Summary (new draft plan)
- draft Rehabilitation and Invasive Species Management Plan (updated)
- draft Waste and Recycling Management Plan (new draft plan)
- draft Access Management Plan (updated)

Feel free to contact me (204-360-7677) or Sarah Coughlin (204-360-3016) should you have feedback you would like to provide, or you are welcome to make use of the comment forms that are available on the website as well.

We look forward to hearing your feedback.

Kind regards,

**Maggie Bratland**

## Figure H Sample email sent to interested parties

## Table 4 Manitoba Hydro's list of interested parties for the Project includes the following organizations

| Interested parties list |
|---|
| Beausejour Community Planning Services |
| Beef Producers of Manitoba |
| Bird Atlas |
| Canadian Parks and Wilderness Society (CPAWS) |
| City of Steinbach |
| City of Winnipeg |
| Consumers Association of Canada |
| Cooks Creek Conservation District |
| Dairy Farmers of Manitoba |
| DOA Outfitters |

| Interested parties list |
| --- |
| Ducks Unlimited |
| Forest Industry Association of Manitoba |
| Green Action Centre |
| HyLife, Land Manager |
| Integrated Resource Management Team (Eastern Region) |
| Keystone Agricultural Producers |
| La Salle Redboine Conservation District |
| Local Urban District of Richer, Committee Member-Chairperson |
| Macdonald-Ritchot Planning District |
| Manitoba Indigenous and Northern Relations |
| Manitoba Aerial Applicators |
| Manitoba Agriculture (Land Use) |
| Manitoba Agriculture (Agri-Resource Branch) |
| Manitoba Association of Cottage Owners |
| Manitoba Bass Anglers (MBA) |
| Manitoba Canoe & Kayak Centre - Winnipeg |
| Manitoba Chamber of Commerce |
| Manitoba Chicken Producers |
| Manitoba Climate Change and Air Quality |
| Manitoba Crown Lands |
| Manitoba Fly Fishing Association (MFFA) |
| Manitoba Forestry Association |
| Manitoba Groundwater Management |
| Manitoba Habitat Heritage Corporation |
| Manitoba Historic Resources Branch |
| Manitoba Infrastructure |
| Manitoba Infrastructure Highway Engineering |
| Manitoba Infrastructure Highway Regional Operations |
| Office of Fire Commissioner |
| Manitoba Lodges and Outfitters Association |
| Manitoba Paddling Association |
| Manitoba Parks and Regional Services - Parks and Protected Spaces |
| Manitoba Petroleum Branch |
| Manitoba Pork Council (Industry Services Co-ordinator |
| Manitoba Protected Areas Initiative |
| Manitoba Public Health |
| Manitoba Resource Development Division Growth, Enterprise and Trade |
| Manitoba Sustainable Development |
| Manitoba Sustainable Development (Aboriginal Relations) |
| Manitoba Sustainable Development (Office of Drinking Water) |

| Interested parties list |
| --- |
| Manitoba Sustainable Development (Water Control Works and Drainage Licensing) |
| Manitoba Sustainable Development (Water Quality Management) |
| Manitoba Trails Association |
| Manitoba Trappers Association |
| Manitoba Sustainable Development (Fish and Wildlife) |
| Manitoba Water Use Licensing |
| Manitoba Woodlot Association |
| Maple Leaf Agri-Farms |
| Nature Conservancy of Canada |
| Organic Producers Association of Manitoba Co-Operatives Inc. |
| Paddle Manitoba |
| Portage la Prairie Community Planning Services |
| REDBOINE BOATING CLUB |
| Rural Municipality of Glenboro South - Cypress |
| Rural Municipality of Headingley |
| Rural Municipality of La Broquerie |
| Rural Municipality of McDonald |
| Rural Municipality of Piney |
| Rural Municipality of Ritchot |
| Rural Municipality of Rosser |
| Rural Municipality of Springfield |
| Rural Municipality of Ste. Anne |
| Rural Municipality of Stuartburn |
| Rural Municipality of Tache |
| Ruth Marr Consulting |
| Save the Seine |
| Seine-Rat River Conservation District |
| Sharp-Tails Plus Foundation |
| Sno-Man Inc |
| South East Snoriders |
| Southwood Golf & Country Club |
| St. Norbert Ward - Winnipeg |
| St. Vital Ward - Winnipeg |
| Steinbach Community Planning Services |
| Steinbach Game & Fish Gun Range Inc |
| Town of St. Pierre Jolys |
| Town of Ste. Anne |
| Trails Manitoba |
| TransCanada Pipelines Limited |

| Interested parties list |
| --- |
| Travel Manitoba |
| Village of Glenboro |
| Wa Ni Ska Tan |
| Walleye Anglers Association of Manitoba (WAAM) |
| Wilderness Society |
| Winnipeg Rowing Club |