# Manitoba-Minnesota Transmission Project

**Biosecurity Management Plan** 

August 2019

Prepared by:

# Licensing and Environmental Assessment Department

Manitoba Hydro



# 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 Biosecurity Management Plan (the Plan) for the construction of the Manitoba-Minnesota Transmission Project (the Project) and is based on Manitoba Hydro's Biosecurity Policy and Transmission Standard Operating Procedures. 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 agricultural biosecurity in the Project area within Manitoba. More importantly it presents a Project-specific implementation plan and actions required to protect biosecurity on agricultural lands on which the Project will be constructed. Inspection and compliance along with monitoring and evaluation programs are described to confirm adherence to required actions including documentation and record-keeping. Environmental Management Practices and field forms are included in the Appendices.

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

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#### Version – Final 1.01

#### List of Revisions

Number	Nature of revision	Location	Revised by	Date
Draft	Updated wording to Soil Sample collection methodology for clarity and accuracy	Pages 16-17	Manitoba Hydro	20181114
Draft	Added the statement "Please refer MSDS sheets prior to use for safe handling procedures" in the descriptions for disinfectants approved for the project	Page 29-31	Manitoba Hydro	20181114
Draft	Updated Figure 2 "Environmental Protection Program Components"	Page 3	Manitoba Hydro	20181114
Draft	Added Figure 8: Conceptual diagram of Controlled access zones, Control access points and Transition zones	Page 21	Manitoba Hydro	20181114
Draft	Added Figure 9: Conceptual diagram of a Cleaning Station	Page 29	Manitoba Hydro	20181114
Draft	Added acknowledgement to Preface	Page ii	Manitoba Hydro	20190211
Draft	Updated Figure 8	Figure 8	Manitoba Hydro	20190211
Draft	Clarify language in propylene- glycol section	Section 4.4.4.3	Manitoba Hydro	20190211
Draft	Cleaning stations –modify cleaning station types description	Section 4.4.4.2	Manitoba Hydro	20190211
Draft	Prevail disinfectant replaced with Accel- same active ingredient	Section 4.4.4	Manitoba Hydro	20190418
Draft	Appendix G – Summary of Consultation	Appendix G	MANITOBA HYDRO	20140425

Number	Nature of revision	Location	Revised by	Date
1.01	Updated Roles Responsibilities Table with Third party monitors	Table 1	Manitoba hydro	30/07/2019
1.01	Added third party monitors to environmental reporting structure	Figure 3	Manitoba hydro	30/07/2019
1.01	Describes third party inspection and reporting procedures and Manitoba Hydro procedures to address issues raised.	Section 6.0	Manitoba hydro	30/07/2019

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# Definitions

Accumulation – an amount of something that has been collected such as: soil, plant material or crop debris

Agricultural Land – land zoned for agricultural use by the provincial government, a municipality, planning commission or planning district.<sup>1</sup>

Biosecurity – the protection of crops and livestock systems and natural environments against the threats of weeds, disease, pests, including invasive species.<sup>1</sup>

Controlled Access Point (CAP) – Visually-defined (i.e. signed) entry point where vehicles, equipment and workers enter into and exit from a Project work area identified as a controlled/restricted access zone.

Controlled Access Zone (CAZ) – Agricultural land parcel requiring prescribed and/or specific actions to protect against a biosecurity risk. Two levels of controlled access zones are defined:

- Controlled access zone low risk: a controlled access zone where a low level risk is identified.
- Controlled access zone high risk: a controlled access zone where a high level risk is identified.

Frozen Soil Conditions – environmental conditions which result in the top layers of soil being frozen and able to support vehicle, equipment and pedestrian travel without rutting or accumulation of soil.

Frozen and Snow-Covered Soil Conditions – environmental conditions which result in the top layers of soil being frozen and able to support vehicle, equipment and pedestrian travel without rutting or accumulation of soil, and snow cover is sufficient such that bare soil is not visible including when traversed by vehicles or equipment (i.e. snow prevents direct tire or track contact with the soil surface).

<sup>&</sup>lt;sup>1</sup> Modified from Manitoba Hydro Agricultural Biosecurity Policy

Invasive Species – 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

Noxious Weed – means a plant that is designated as a tier 1, tier 2 or tier 3 noxious weed in Manitoba's The Noxious Weeds Act and includes the seed of a noxious weed, whether it is still attached to the noxious weed or is separate from it.

Non-Frozen, Bare Soil Conditions – ground conditions that are not frozen adequately to support equipment travel without transfer of dirt, debris or mud. Soil moisture content or wetness play an important role in soil accumulating on vehicles, equipment and boots:

- Dry conditions soil surface is dry and the potential for soil sticking to vehicles, equipment and boots is reduced; a field check to confirm dry soils is if your pants are dry after kneeling on the soil surface for 10 seconds.
- Moist/wet conditions soil surface is moist to wet and the potential for soil sticking to vehicles, equipment and boots is increased; a field check to confirm moist or wet soils is if your pants show wetness after kneeling on the soil surface for 10 seconds.

Plan, the - the Biosecurity Management Plan

Project, the or MMTP - the Manitoba-Minnesota Transmission Project

Restricted Access Zone (RAZ) – Area where access is restricted. Vehicles, equipment or workers should not enter a restricted zone or area unless under special circumstances and with prior approval of the landowner/producers and a Manitoba Hydro Environmental Officer.

Rough cleaning - Remove to the extent possible accumulated soil, plant material or crop debris from openings, tracks, tires and wheels using a hand scraper, shovel, broom, brush or compressed air.

Topsoil – the uppermost layer of soil, which typically contains elevated levels of organic matter. Topsoil is the portion of the soil environment that is of the most concern for biosecurity as it contains weed seeds, pathogens and other pests. It is also the most important soil layer for crops as it contains the nutrients and moisture required for growth.

Transition Zone – Visually-defined (i.e., signed) designated areas between controlled access zones (e.g., between "low risk" and "high risk" fields within a land section).

Transition Zones are where workers stop prior to entering an adjacent controlled access, and review and implement required actions. The requirement for Transition Zones between controlled access zones can be mitigated by access from opposing sides of CAZ and not crossing the Transition Zone, choosing a direction of travel that moves from low risk area to high risk area, or the use of continuous matting throughout CAZ.

Work Area – the work area on the right-of-way, approach driveways, marshalling yards, temporary work areas and access trails or other areas approved by Manitoba Hydro. The work area includes agricultural field access approaches and undeveloped road allowances. The work area excludes developed municipal and provincial roads (gravel and paved road surfaces) which may be used to travel to the work area.

# 1.0 Introduction

## 1.1 Purpose and objectives

This Biosecurity Management Plan (the Plan) has been developed for the Manitoba-Minnesota Transmission project (the Project) to provide guidance to Manitoba Hydro staff and contractors in order to prevent the introduction and spread of weeds and other pests, including invasive species, through Project pre-construction and construction activities.

Development of the Plan fulfills the requirements of Manitoba Hydro's Corporate Biosecurity Policy. The purpose of the corporate policy is to ensure that Manitoba Hydro staff and contractors take necessary precautions to protect the health and sustainability of the agricultural sector. The Plan provides additional guidance and required actions specific to the Project. The Plan contains general guidance information (e.g., summary of pertinent biosecurity issues in the Project area) and a detailed implementation plan. This includes direction to individuals who may be required to enter agricultural lands, such as the level of cleaning necessary to reduce the likelihood of soil and manure transport of organisms of concern (diseases, weeds, and other pests, including invasive species). An overview of these two layers in Manitoba Hydro's biosecurity program for the Project is provided in Figure 1.



Figure 1: Manitoba Hydro Biosecurity Program Components Relevant to the Project

The objectives of the Plan are to inform staff, contractors, regulators and the public on the:

- general information about how the Plan fits into the Project Environmental Protection Program and the relevant regulatory context
- roles and responsibilities in delivering the Plan
- guidance on the implementation of the Plan and steps to be taken in its implementation, including prescribed actions and sampling protocols
- inspection and compliance activities to provide assurance the plan requirements are being followed and met
- monitoring and evaluation activities to confirm the effectiveness of the plan in protecting biosecurity

## 1.2 Engagement Activities

Below is a summary and evidence of Manitoba Hydro's consultation with potentially affected persons, organizations, Indigenous communities, and federal and provincial authorities regarding this 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 H.

Draft environmental protection and management plans, including Biosecurity 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 H).

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 H).

The construction environmental protection plan and associated management plans, including the Biosecurity 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 H).

## 1.3 Roles and responsibilities

This section outlines the major roles and responsibilities of those involved in the implementation of the Plan. The Plan forms a component of the Environmental Protection Program (EPP), which provides the framework for the delivery, management and monitoring of environmental and socio-economic protection measures for the Project. The EPP describes how Manitoba Hydro is organized and functions to deliver timely, effective, and comprehensive solutions and mitigation measures to address potential environmental effects from Project activities. A visual reference for how the Plan fits into the overall EPP organization structure is provided in Figure 2.



#### **Figure 2: Environmental Protection Program Components**

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 3.

Role	Key Responsibilities		
Manitoba Hydro	• Determine potential biosecurity risk locations through consultation with landowners, Manitoba Agriculture and field assessments/soil testing, if necessary.		
	<ul> <li>Conduct a pre-construction weed survey and document baseline weed occurrences observed on the Project right-of-way.</li> </ul>		
	• Conduct pre-construction clubroot sampling on lands under cultivation along the Project right-of-way.		
	<ul> <li>Identify and map biosecurity control zones with identified pests such as clubroot, and noxious and invasive weeds, on or adjacent to agricultural lands along the Project right-of-way.</li> </ul>		
	<ul> <li>Select appropriate equipment cleaning station locations and types based on identified risk levels along the Project right-of-way.</li> </ul>		
	• Obtain approval of the landowner/producers for access to Restricted Access Zones.		
	• Follow Biosecurity Management Plan including employee training, implement cleaning stations, prescribed actions, signage and submit all required cleaning documentation.		
	<ul> <li>Implement post-construction weed management in areas identified with weed occurrences, as per the Plan.</li> </ul>		
	• Conduct post construction monitoring and reporting as per Environmental Monitoring Plan using the pre-construction survey report for baseline comparison.		
	• Continue to implement post-construction weed management in areas with unresolved weed occurrences, as per the Plan.		
	• Continue to monitor and report as per Environmental Monitoring Plan using the pre-construction survey report for baseline comparison.		
Third Party Biosecurity Contractor	• Lead development of technical program materials, including workplans, implementation plan, and data collection and reporting requirements and forms		

#### Table 1: Roles and responsibilities

Role	Key Responsibilities
	<ul> <li>Conduct biosecurity cleaning inspections at cleaning station locations as per sampling protocol.</li> <li>Review contractor cleaning records both submitted and on-site at cleaning stations</li> <li>Inspect cleaning stations for signage, clearing equipment and disinfectant</li> <li>Submit daily monitoring data to online data management system</li> <li>Develop and deliver training program for field monitoring staff</li> <li>Develop recommendations to Manitoba Hydro for improvements/corrective actions for contractor based on compliancy issues identified</li> <li>Review ongoing monitoring program progress and advises Manitoba Hydro of process improvements (i.e., adaptive management plan)</li> </ul>
Contractor	<ul> <li>Shall adhere to Biosecurity Management Plan including employee training, implement cleaning stations, prescribed actions, signage and submit all required cleaning documentation.</li> <li>Respond and act promptly to resolve if any activities are identified as not in compliance with the BMP or any regulatory requirements.</li> <li>Supply and maintain all required, signage, cleaning equipment, approved disinfectants.</li> </ul>

#### Table 1: Roles and responsibilities



#### Figure 3: Environmental communication reporting structure

# 2.0 Regulatory context and provincial guidance

Within Manitoba there is no legislation or regulations specific to biosecurity for agricultural operations, Manitoba Agriculture has developed biosecurity protocols as guidance for different end users, including landowners, agricultural service providers, utility companies and researchers (Manitoba Agriculture n.d.[a]). Biosecurity Management on Agricultural Land for the Energy and Transportation Industries is the guidance protocol that applies to transmission line projects. Its objective is to prevent the spread of soil-borne pests such as weeds, protists and nematodes in agricultural soils by limiting soil movement between fields and across ROWs (MAFRD n.d.(a)).

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 B.

There are no regulations in Manitoba explicitly addressing biosecurity as it pertains to livestock operations, however Manitoba Hydro recognizes the authority of the Provincial Chief Veterinary Officer in managing outbreaks, including quarantines.

Additional measures prescribed in the Project's Environment Act Licence are addressed within this Plan.

# 3.0 General considerations and guidance

This section is intended to provide general supporting information and guidance to users of the biosecurity management plan, including general considerations, information on biosecurity risk identification and control areas, and general strategies for managing biosecurity issues on the Project.

Development of the Plan represents a critical step in the biosecurity management program, prior to construction and subsequent to the completion of the environmental assessment. Additional steps in the process are presented in an overview in Figure 4. Following the principle of adaptive management, any lessons learned on the Project (e.g., new biosecurity issue determined, Plan component found ineffective) will be used to inform and adapt the Manitoba Hydro's other biosecurity management plans or standard operating procedures to improve overall biosecurity protection effectiveness.



Figure 4: Overview of Project Biosecurity Management Program development process

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## 3.1 Biosecurity risk identification

Biosecurity risks known to be a concern in the Project area were presented by (Manitoba Hydro, 2015) and include:

- Weed seeds weed seeds are ubiquitous in agricultural topsoils. The weed species designated as noxious weeds (tier 1, tier 2, tier 3; Appendix A) under the Noxious Weeds Regulation (42/2017) are of primary concern for the Plan.
- Soil-borne pathogens and other soil-borne pests soil borne pathogens are known to be a concern in the area traversed by the Project. Clubroot, a disease affecting canola, has been confirmed throughout the Project area by Manitoba Agriculture (see Figure 5 for known distribution of Clubroot). This clubroot distribution map is limited to reporting at a Rural Municipality level and does not cover the City of Winnipeg, through which much of the Southern Loop component of the Project is located. A Project-specific map will be developed for the Project including results from a fieldlevel, Project-specific, pre-construction sampling program. Verticilium wilt and soybean cyst nematode were raised as concerns during the public engagement period of the environmental assessment process; however, neither is currently confirmed in Manitoba. Anthrax, a disease that affects cattle, can reside in soil spores; however, its presence and distribution within the Project area is unknown.
- Livestock disease transmission the primary mechanisms of livestock disease transmission during Project construction include worker contact with animals (e.g., grazing animals, Intensive Livestock Operations), transferring manures between fields where animals may be grazing and manure spreading operations. Porcine Epidemic Diarrhea (PED) Virus that affects pigs and is primarily transmitted through manure and is a primary concern of the Plan.



Source: Manitoba Agriculture, accessed December 2017 at:

https://www.gov.mb.ca/agriculture/crops/plant-diseases/pubs/clubrootmap-revised.pdf

#### Figure 5: Clubroot distribution in Manitoba

## 3.2 Biosecurity Management Strategy

Manitoba Hydro will implement a biosecurity management strategy that will focus on preventing and managing the spread and introduction of noxious weeds and other pests such as soil-borne pathogens, onto and along the project right of ways.

## 3.2.1 Aquatic invasive species management

Manitoba Hydro will implement an aquatic invasive species management strategy that will focus on preventing and managing the spread and introduction of aquatic invasive species into waterways across and along the project right of ways.

### 3.2.2 Weed management

Manitoba Hydro will implement a weed management strategy that will focus on preventing and managing the spread and introduction of noxious weeds onto and along the project right of ways. This adaptive management process involves the use of various methods in a cost-effective and responsible manner to reduce the use of herbicides, and facilitate management of weed species as per the Noxious Weeds Regulation. Construction and rehabilitation methods, designed to mitigate weed spread onto and along the construction right-of-way, will be implemented along with weed management techniques before, during and following construction, as follows:

- Pre-construction weed surveys will be conducted to identify areas with Noxious Weeds and invasive species of concern, and to help determine the type and timing of mitigation (e.g., cleaning stations) required for weed management.
- 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.

#### 3.2.2.1 Weed identification and monitoring

Weed identification and monitoring will be conducted during all phases (pre-construction, construction and post-construction) of the Project. All Environmental Inspectors/Officers or Manitoba Hydro employees assigned to weed monitoring will be trained in weed identification and will be familiar with legislated weed species listed within Manitoba.

A pre-construction weed survey will be conducted in order to ensure that weed presence and density along the right of way are assessed and documented, and if required, preconstruction vegetation management can be implemented prior to the commencement of construction.

In addition, the pre-construction weed survey will provide the baseline data for comparison of weed presence and densities found during construction monitoring

activities. During pre-construction surveys, consultation with local weed supervisors has provided information on weeds of concern along the right-of-way.

Should the construction monitoring (see Section 5.0) identify weed occurrences that warrant immediate weed management measures, Manitoba Hydro will implement options as outlined in the Project's as described in the Rehabilitation and Invasive Species Management Plan.

#### 3.2.2.2 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 threshold objectives for weed species for the Project are as follows.

- Weed species of management concern 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 weed conditions found during pre-construction surveys and as compared to adjacent lands at the time of construction.
- Weeds must be treated and managed in compliance with the Noxious Weeds Act and Regulation. Under the regulation, a person must:
  - o destroy all tier 1 noxious weeds that are on land that the person owns or occupies
  - destroy all tier 2 noxious weeds 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 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 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 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.

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

Table 2: Priority levels for weed management

### 3.2.3 Crop pest management

Manitoba Hydro developed a risk-based framework to manage its activities on agricultural lands, intended to mitigate the spread of diseases, pests, such as soil borne pathogens to the extent practicable and reasonable. The biosecurity strategy involves identifying biosecurity risks, implementing cleaning measures, and/or other appropriate mitigation measures.

#### 3.2.3.1 Pest identification

Clubroot is the primary, confirmed soil borne pathogen of concern in the Project area, as discussed in Section 3.2. Other soil borne pests of concern to cropland biosecurity are difficult to identify, and often require a crop evaluation by an experienced agronomist or intensive soil sampling to detect and diagnose biosecurity concerns in a given field. This is not a practical or effective approach. For other soil borne pathogens, diligence in ensuring cleaning protocols for vehicles, equipment and worker's boots are implemented and followed is the most effective mitigation approach.

#### 3.2.3.2 Management thresholds

Manitoba Agriculture indicates that it is generally reported that 100,000 clubroot spores per gram of soil are required to see symptoms in fields; however, under favourable conditions lower concentrations can cause symptoms (Manitoba Agriculture, n.d.[b]). Therefore, clubroot spore counts at lower concentrations than 100,000 spores per gram may be cause for concern and require action. Manitoba Hydro will elevate any property that tests positive (> 800 spores/gram) for clubroot as part of its clubroot sampling program to a High Risk Level designation.

#### Manured lands

The Project traverses areas of various types of livestock operations (e.g., cattle, hogs, poultry) that spread manure on crop land. Project construction activities have the potential to spread disease and other pests contained in land-spread manures that can be harmful or devastating for livestock operations. The pathway for disease and pest transfer consists of transfer of recently-spread manure on matting, vehicles and equipment to other crop land or fields where animals may be grazing.

Manitoba Hydro through discussions with landowners will elevate any property that has recently-spread manure to High Risk.

## 3.3 Livestock operations biosecurity management strategy

The Project traverses various types of livestock operations (e.g., cattle, hogs, horses, poultry) and has the potential to interact with various livestock operation activities (e.g., grazing animals) during construction. Through these activities, there is the potential to spread disease that can be harmful or devastating for livestock operations. Pathways for disease transfer include<sup>2</sup>:

- close contact between construction staff and animals (e.g., cattle grazing in field in close proximity to workers, workers traversing through ILOs)
- transfer of soil containing disease spores on matting, vehicles and equipment into areas of livestock activity

For example, anthrax is a naturally occurring disease caused by spore forming bacteria(*Bacillus anthracis*) that is found soil and can exist in the soil for long periods of time, this disease can quickly kill cattle, sheep and other grazing livestock (Manitoba Hydro 2015; Canadian Food Inspection Agency 2013b) and is a known concern in southeastern Manitoba. Project activities such as soil disturbance for tower construction and construction traffic along the right-of-way have the potential to transfer soil and spores into close contact with grazing animals (Manitoba Agriculture n.d.[c]).

Given that it is not practical to be able to identify pests of concern for livestock, the focus of management activities is to reduce the risk of contact between construction activities,

<sup>&</sup>lt;sup>2</sup> Manured lands are addressed under cropland biosecurity in Section 3.3.3.

livestock and ILOs (and avoiding construction activities in recently-manured fields). Some approaches that will be implemented during Project construction to reduce the risk of compromised biosecurity include:

- Project staff will meet the requirements of established farm-level biosecurity measures that an operation has in place.
- Avoiding access through ILOs (Figure 6) or other areas where there is a concentration of livestock.
- Where construction activities have the potential to interfere with field activities, discussions with the landowner or producers will be held to move livestock/equipment during those activities.



Figure 6: Intensive Livestock Operations (ILOs) are important sites for biosecurity management

## 4.0 Biosecurity implementation

The intent of this section is to provide for implementation instructions to Manitoba Hydro and Contractor Project staff. The four key steps to implementing the plan are: 1) Risk Identification, 2) Control Area Development, 3) Risk Classification, and 4) Risk Mitigation Actions (Figure 7). Once risks are identified through various means (Section 4.1), control areas are identified (Section 4.2), then risks will be classified into a risk level (Section 4.3), which will in turn be used to determine the nature of actions to be undertaken to manage the risk (Section 4.4). Mitigative actions will be determined and undertaken; the objective of which is to prevent the introduction, establishment, and spread of pests (i.e., weeds and diseases). Prescribed or issue-specific actions will be determined based on assessment of the biosecurity issue.

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



#### Figure 7: Implementation steps for Biosecurity Management Plan

## 4.1 Biosecurity risk identification

Manitoba Hydro will conduct assessments appropriate to the area in which there is a biosecurity concern based on the results of consultation with Manitoba Agriculture and Sustainable Development staff and/or individual landowners or producers, identified risks of spreading weeds and invasive species or disease pests of concern, and regulatory requirements. Specific actions undertaken include:

- pre-construction meetings and discussion with landowners, including the identification of reasonable site-specific biosecurity concerns, if any
- pre-construction soil sampling program for the presence of clubroot on the ROW, access routes and any other Project infrastructure such as marshalling yards located on cultivated agricultural lands
- pre-construction weed surveys for determination of location and type (i.e., tier 1, tier 2, or tier 3) of weed concerns
- pre-construction inventory of livestock operations to identify risk areas associated with livestock and manure
- pre-construction inventory of waterbodies with aquatic invasive species present

### 4.1.1 Pre-construction sampling protocol

### 4.1.1.1 Benchmark sampling for Clubroot

#### Soil Sample collection methodology

The soil sampling collection methodology as describe below was developed from methods established by Manitoba Agriculture.

1. Soil samples should be a composite of one cup scoops of soil taken at each of five points in one field. As clubroot concentration have been found to be the highest at field approaches in infected fields, the samples should be taken within the vicinity of where vehicles, equipment and pedestrians would usually enter into the field. Samples may also be collected when there is a significant change in cropping practice and/or potential for additional field entry. Travelling in a "W" pattern, stop at the five points of the "W" keeping each of these five points at least 20 metres from each other and at least 20 metres from the field edge.

2. Clear away residue from the soil surface, and scoop approximately one cup of the top zero to 10 cm of soil at each site (approximately one litre from all five points combined).

Document collection location with following information:

- Biosecurity Zone reference number
- legal description of land parcel
- sample reference number
- GPS location of last sampling point
- name of the person who collected the sample
- date of sampling
- 3. Air-dry soil samples in paper boxes and send them to approved laboratory for testing.

#### Sample testing methodology

Soil samples will be submitted to an independent third-party laboratory, such as Pest Surveillance Initiative or Manitoba Agriculture Labs (each a "Testing Laboratory"). The selection of the Testing Laboratory will be at the discretion of Manitoba Hydro. The selected Testing Laboratory will perform conventional Polymerase Chain Reaction analysis on each composite sample submitted for testing, with a view to identifying the presence of clubroot DNA to a confidence level of 103 (1000 spores/gram).

#### Test results

Manitoba Hydro will keep all test results in confidence, but will have the right to disclose test results (i) to the landowner to whose property they pertain; (ii) to those persons authorized by the landowner to whose property the test results pertain; (iii) to Manitoba Hydro and to contractors who will be undertaking work on the property, iv) to the Pest Surveillance Initiative; v) to Manitoba Agriculture or other Regulatory Authorities.

#### Sampling crew protocol

- If it is (i) reasonably practicable and (ii) safe, sampling crews will avoid parking motorized vehicles in field accesses.
- Sampling crews will travel by foot on lands to be sampled.

- Sampling crews will either (i) spray all footwear using an approved disinfectant solution prior to crossing a change in Controlled Access Zone, or (ii) wear disposable boot covers over footwear, which will be changed between each sampling site.
- Disposable gloves will be worn for soil sampling and will be changed at each sampling site.
- Hand tools used during the sampling process will be Rough Cleaned, and sprayed with a 1% Virkon solution upon leaving each sampling site.

#### 4.1.1.2 Weed surveys

The weed survey methodology as described below was developed from methods established by Adams et al. (2009).

Weed survey data collection methodology

- Species will be recorded in field books, and GPS coordinates and photographs will be captured at each location.
- Environmental monitoring of these sites will involve recording species composition and determining species densities, if movement occurs into the Project right of way from roadside ditches.
- Weed density distribution will follow Adams et al. (2009) and involve a quantitative description of species abundance. Species abundance codes range from none to continuous occurrence of plants with a distinct linear edge.
- All legislated weeds and invasive plant species will be documented and phenology will be recorded (i.e., flowering, fruiting, seeding, vegetative).
- A site sketch will be completed for infestations into the Project right of way and photographs will be taken.

Sampling crew protocol

- If it is (i) reasonably practicable and (ii) safe, sampling crews will avoid parking motorized vehicles in field accesses.
- Sampling crews will travel by foot on lands to be sampled.
- Sampling crews will either (i) spray all footwear using an approved disinfectant solution, or (ii) wear disposable boot covers over footwear, which will be changed between each sampling site on agricultural land.

- At selected sites along the right of way, pre-construction roadside surveys will be conducted (e.g., bordering agricultural lands) to establish a baseline for future monitoring comparison.
- From the roadside, ditches will be traversed on foot to document species presence and record infestations into adjacent lands.

#### 4.1.1.3 Livestock operations

Various types of livestock operations were identified during the environmental assessment process (Manitoba Hydro, 2015). The location and type of these have been inventoried and mapped and will be used by Manitoba Hydro to determine biosecurity risk areas and levels related to livestock operations.

## 4.2 Agricultural land parcel zoning and access control

Manitoba Hydro has developed a Biosecurity Management Plan Mapbook (Appendix B) including the identification of controlled access points, transition zones and the classification of control and restricted zones for agricultural land parcels.

Different levels of access restriction and required actions, are assigned to controlled access zones and restricted access zones. Controlled access points are visually identifiable (i.e., signed) points used as access points into controlled/restricted access zones in Project work areas, and are used to control entry into and exit from these zones. Transition Zone are designated areas between controlled access zones (e.g., between "low risk" and "high risk" fields within a land section). These zones and controls are further defined in Table 3.

Zone or point identification	Definition
Controlled Access Point	Visually-defined (i.e., signed) entry point where vehicles, equipment and workers enter into and exit from a Project work area identified as a controlled/restricted access zone.
Transition Zone	Visually-defined (i.e., signed) designated areas between controlled access zones (e.g., between "low risk" and "high risk" fields within a land section). Transition zones are where workers stop prior to entering an adjacent controlled access, and review and implement required actions.
Controlled Access Zone	Agricultural land parcel requiring prescribed and/or specific actions to protect against

Zone or point identification	Definition
	<ul> <li>a biosecurity risk. Two levels of controlled access zones are defined:</li> <li>Controlled access zone – low risk: a controlled access zone where a low level risk is identified.</li> <li>Controlled access zone – high risk: a controlled access zone where a high level risk is identified.</li> </ul>
Restricted Access Zone	Area where access is restricted. Vehicles, equipment or workers should not enter a restricted zone or area unless under special circumstances and with prior written approval of the landowner/producers and a Manitoba Hydro Environmental Officer.

Table 3: Biosecurity zones and control points

The requirement for Transition Zones between controlled access zones can be mitigated by permitting access from opposing sides of CAZ and not crossing the Transition Zones, choosing a direction of travel that moves from low risk area to high risk area, or the use of continuous matting throughout CAZ.

A conceptual diagram of controlled access points, transition zones and controlled access zones (low and high risk) is presented in Figure 8.



# Figure 8: Conceptual diagram of Controlled access zones, Controlled access points and Transition zone

## 4.3 Biosecurity risk classification

Manitoba Hydro will conduct a classification of the identified biosecurity risks for the Project based on the level of risk, in terms of the potential consequences associated with not undertaking risk mitigation actions. Risks will be classified as Low or High, according to the definitions provided in Table 4. Generally, the risk of soil borne biosecurity issues (i.e., weed seeds in soil, soil borne pathogens [e.g., clubroot, anthrax]) decreases according to the following soil conditions: non-frozen, bare soil – moist/wet > non-frozen, bare soil – dry > frozen, bare soil > frozen, snow-covered soil.

Known biosecurity risks for the Project are listed in Table 5, including the classified risk level for each identified risk. Any mapping produced will not be labelled with the name of the specific concern (i.e. clubroot, PED, Anthrax) for the controlled access zone to protect confidentiality concerns.

Risk level	Risk definition
Low	A low risk to biosecurity is one in which may result in the introduction of new concerns or increased prevalence where concerns already exist if appropriate mitigative actions are not undertaken. In the case of low risks, the potential introduction or increased prevalence of a biosecurity concern is not anticipated to result in immediate or substantive damage to crops or livestock.
High	A high risk to biosecurity is one in which immediate and/or substantive damage could occur to crops or livestock if appropriate mitigative actions are not applied. These damages may occur from the introduction of new pests or the increase in prevalence of existing pests in a given area.
WC (Risk level modifier)	Winter Conditions (WC) is a risk level modifier that may be applied (when directed by Manitoba Hydro) to low or high risk sites where the activity is less likely to result in the introduction of new concerns or increased prevalence where concerns already exist when the soil is frozen or frozen, snow-covered. This risk level modifier only applies to activities that are not likely to create subsurface disturbance such as pedestrian, vehicle and equipment travel activity, if any soil accumulates on the boots, vehicles or equipment the applicable low or high risk cleaning procedures apply. This risk level modifier does not apply to construction activities that create subsurface disturbance such as grubbing, excavation, drilling, foundation installation, clearing, conductor stringing, etc.

#### Table 4: Biosecurity risk levels

Table 5: Biosecurity risk	classification	matrix
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	Risk level		
Biosecurity issue	Nonfrozen soil	Frozen soil	Frozen, snow- covered soil
Agricultural lands where no weeds, soil borne crop diseases, manure	Low	WC <sup>1</sup>	WC <sup>1</sup>
spreading or active livestock settings have been identified that present a substantial risk to biosecurity		Low <sup>2</sup>	Low <sup>2</sup>
Specific sites identified as Tier 1 Noxious weeds as defined in the Noxious Weeds Regulation.	High	High	Low
Specific sites identified as Tier 2 or 3 Noxious weeds as defined in the Noxious Weeds Regulations and present a substantial biosecurity risk that the project activities will transfer the identified issue from one area to another.	Low	Low	Low
Laboratory testing has indicated clubroot spores are present	High	WC <sup>1</sup>	WC <sup>1</sup>
		High <sup>2</sup>	High <sup>2</sup>
Manitoba Hydro will designate an operation with an existing and established biosecurity management plan as High risk. Manitoba Hydro will strive to meet the existing farm level biosecurity measures in these instances.		High	
Manitoba Hydro will designate active livestock settings (e.g., ILOs, active grazing areas) as High risk.		High	
Agricultural lands on which manure has been spread.	High	High	WC <sup>1</sup>
			High <sup>2</sup>

Note 1: This risk level modifier only applies to activities that create no subsurface disturbance such as vehicle travel, inspection, surveying, etc.

Note 2: This risk level applies to activities that create subsurface disturbances such as grubbing, excavation, drilling, foundation installation, clearing, conductor stringing, etc.

## 4.4 Risk mitigation actions

### 4.4.1 Project mobilization

The contractor must ensure that all equipment shall arrive at the Project work area clean of soil and plant material to the satisfaction of the Manitoba Hydro Environmental Inspector/Officer or designate. Any equipment that arrives dirty will not be permitted entry into the Project work area or adjacent lands until it has been cleaned. The Vehicle and Equipment Cleaning Field Log (Appendix C - Field Activity and Inspection Forms) will be completed for all equipment entering the work site. See Section 4.4.3 for more information on equipment cleaning requirements.

### 4.4.2 Prescribed Actions

Prescribed actions to prevent or reduce the potential for an increased biosecurity risk as a result of Project activities are listed below according to the assessed risk level.

#### Winter Conditions Modifier (WC)

No prescribed mitigative actions are required for pedestrians, vehicles and equipment travelling through controlled access zones when the WC risk level modifier is applied to low or high risk sites, however if any soil, manure, plant material and foreign matter accumulates on the boots, vehicles or equipment the applicable low or high risk prescribed actions (as described below) apply. The applicable low or high risk prescribed actions (described below) apply to construction activities that create subsurface disturbance such as grubbing, excavation, drilling, foundation installation, clearing, conductor stringing, etc.

#### Low Risk

The following are prescribed mitigative actions for controlled access zones classified as Low Risk :

- 1. Ensure clothing, matting, vehicles and equipment is clean of soil, manure, plant material and foreign matter prior to entering agricultural lands.
- 2. When leaving agricultural lands, visually inspect clothing, matting, vehicles, and equipment for seeds, soil, or manure and if required, rough clean all surfaces prior to leaving the land. Rough cleaning (i.e, brushing, scraping, and/or compressed air) will remove most surface soil, plant material, and foreign matter from clothing, vehicles and equipment.
- 3. Complete the Biosecurity Cleaning Record (Appendix C).

Equipment	Cleaning requirements
Footwear	Rough clean
Vehicles	Rough clean
Matting	Rough clean
Equipment	Rough clean

#### Table 6: Low Risk Equipment cleaning requirements

#### High Risk

The following are prescribed actions for controlled access zones classified as High Risks:

- 1. If possible, avoid the immediate area of the biosecurity risk (e.g., use alternate access to avoid active livestock grazing areas, identified weed infestations, avoid travelling through High Risk controlled access zones).
- If possible, schedule activities to occur when ground conditions are more favorable (i.e., frozen or frozen and snow-covered or utilize matting and geotextile underlayment).
- 3. Ensure clothing, matting, vehicles and equipment is clean of soil, manure, plant material and foreign matter prior to entering controlled access zones.
- 4. When leaving the controlled access zone, visually inspect clothing, matting, vehicles and equipment for soil, manure, plant material or foreign matter and if required, rough clean all surfaces prior to leaving the zone. Brushing and/or scraping will remove most surface soil, plant material, and foreign matter from clothing, matting, vehicles and equipment.
- 5. Matting, vehicles and equipment may require fine cleaning to remove remaining soil, manure, plant material and foreign matter (see Table 6). Fine cleaning will be conducted using high pressure water, steam or compressed air to remove remaining soil, manure, plant material and foreign matter.
- 6. Fine cleaning and disinfecting of matting and equipment only, may be completed off site, if the matting or equipment is transported directly to a Manitoba Hydro approved wash facility.
- 7. In cases where there is a risk of spreading soil to agricultural lands (such as vehicle or equipment tires/tracks), pressure washing/steaming/compressed air cleaning must occur before leaving the controlled access zone.

- 8. After rough or fine cleaning, disinfection of matting, vehicles and equipment through the use of an approved disinfectant spray that is applied to all surfaces that have been in contact with soil, manure, plant material and foreign matter is required.
- 9. Only disinfectants approved by Manitoba Hydro are to be utilized.
- 10. To clean footwear, use a brush or scraper to remove soil, manure, plant material and foreign matter. Apply disinfectants approved by Manitoba Hydro. Alternatively, use disposable footwear booties or change dirty footwear for clean footwear when leaving the controlled access zone.
- 11.Complete the Biosecurity Cleaning Record as required by Manitoba Hydro departmental or contract requirements.

Equipment	Cleaning requirements
Footwear	Rough clean and disinfectant spray
Vehicles	Rough, fine clean and disinfectant spray
Matting	Rough, fine clean and disinfectant spray
Equipment	Rough, fine clean and disinfectant spray

 Table 7: High Risk Equipment cleaning requirements

Cleaning requirements for high risk areas must be carried out before moving between controlled access zones (i.e., landowner boundaries with a change in biosecurity risk and/or risk level, or change in land use). If there are continuous controlled access zones classified as high risk and where equipment will travel continuously along the right-ofway, the requirement will be to fine clean and spray with a disinfectant at the established controlled access point of the entire defined high risk area, and to complete the specified type of cleaning in designated transition zones between controlled access zones, if applicable. Controlled access points and transition zones are identified in the Biosecurity Management Plan Mapbook and any subsequent amendments.

Additional details on cleaning and cleaning areas/stations are found in Section 4.4.4.

### 4.4.3 Specific Actions

As part of the adaptive management planning, it is understood that currently unknown and site-specific biosecurity issues and concerns yet to be identified may require assessment and action to manage risk associated with Project activities. For example, if during the construction phase a "new" biosecurity issue or threat is determined to occur
in the Project area, the issue or threat will be reviewed by Manitoba Hydro and changes will be made to the Plan in order to appropriately protect against biosecurity risk. It is not possible to consider all potential situations or risks, therefore actions may need to be developed, as required and as appropriate, in these situations. In these cases, Manitoba Hydro Environmental Officer will discuss with Contractor Environmental Representative and an appropriate course of action will be developed. The issue and specific actions required will be documented by Manitoba Hydro, and will need to be followed up by the contractor(s) and their personnel.

If existing agricultural operation biosecurity measures exist, Project staff and contractors will strive to meet the requirements of the agricultural operation when access is required. Again, these specific actions will be documented by Manitoba Hydro and will need to be implemented by contractor(s) and their personnel. In the event of an emergency situations (e.g., injured personnel, etc.), Project work areas may have to be accessed by emergency response personnel without adherence to mitigation actions.

## 4.4.4 Equipment Cleaning Requirements

Equipment cleaning is a critical component of the biosecurity management plan. Vehicles and equipment being used during all project phases (i.e., pre-construction, clearing, construction, commissioning) must arrive at site clean and free of aquatic invasive species, soil, vegetative matter, and will require cleaning during work on the Project, as described in further detail below.

### 4.4.4.1 Types of Cleaning

Different types of cleaning of matting, vehicles and equipment are required as determined by the level of risk and the nature of the concern. The different types of cleaning that are required for the Project are presented in Table 7.

Cleaning type	Description
Rough clean	Remove to the extent possible accumulated soil, plant material or crop debris from openings, tracks, tires and wheels using a hand scraper, shovel, broom, brush or compressed air. This level of cleaning must occur on-site before leaving the selected cleaning location or the work area. Personnel cleaning the equipment must complete a visual inspection for accumulated soil and plant material prior to leaving the cleaning station.

Table 8: Description of cleaning types

Cleaning type	Description
Fine clean	Fine clean means high pressure water wash, high pressure air wash or high pressure steam wash to remove accumulated soil, plant material or crop debris. Wash matting, vehicles, and equipment paying extra attention to areas where soil or plant debris is likely to accumulate (i.e., tires or undercarriage). For hydrovac trucks, cleaning includes the inside of the tank and any implement in contact with soil. Prior to fine cleaning, matting, vehicles and equipment should receive a rough clean.
Disinfectant spray	Use disinfectant spraying as the final cleaning phase when working on controlled access zones where there is a confirmed high risk of encountering and spreading viruses, diseases that can be effectively treated with a disinfectant spray. Spray tracks, openings, tires, wheels and implements that may come in contact with soil, plant material or crop debris with an approved disinfectant solution. Disinfectant sprays should be used in accordance with label directions and applied according to the information presented in Section 4.3.4. Foot traffic may also utilize disposable boots. Hydrovac truck cleaning includes the inside of the tank and any implement that came into contact with soil or plant material or crop debris.
Decontamination	See Appendix F for details on decontamination of aquatic invasive species watercraft and equipment.

#### Table 8: Description of cleaning types

### 4.4.4.2 Cleaning Stations

Cleaning area/station locations (see Figure 9 below) will be identified prior to construction by Manitoba Hydro and be established by the contractor(s) at applicable controlled access points and transition zones. Cleaning stations will be established to address the determined risk level and the associated type of cleaning prescribed. There are two types of cleaning stations:

- 1. Low Risk Cleaning Station contains equipment for rough cleaning and when required disinfecting spray.
- 2. High Risk Cleaning Station contains equipment for rough and fine cleaning along with disinfecting spray.

Cleaning stations will have signs placed appropriately onsite by the contractor(s) to notify Project personnel of the risk level and type of cleaning that should be conducted. Sediment released from the washing process will be fully contained (i.e., sump pit, berm).

When cleaning station sump pits, sump materials (dirt, water and disinfectant solution from washing activities) must be either:

• mixed and buried on-site at a minimum depth of 2 m (requires landowner permission)



disposed of at an MH approved disposal facility

### Figure 9: Conceptual diagram of a Cleaning Station

### 4.4.4.3 Disinfectants

Manitoba Hydro approves the use of disinfectants on Manitoba Hydro projects. Approved disinfectants for this Project include Virkon, Accel and Synergize. Mixing and use of these disinfectants are discussed below.

#### Virkon

Virkon is approved by Manitoba Hydro, for use in the prevention of the transport of invasive organisms in soil and manure onto or off of agricultural land. Please refer MSDS sheets prior to use for safe handling procedures. For disinfection, staff and contractors are to use Virkon 5 gram tablets, mixed and applied in accordance with the manufacturer's specifications. Virkon is biodegradable and no further treatment of the waste solution is required. The process for cleaning equipment and disinfecting is as follows:

- a) Scrape off all heavy soil accumulations and utilize pressure washing, steaming or compressed air to clean all surfaces that have been in contact with the soil.
- b) Virkon disinfectant is to be mixed as one tablet for every 500 ml of water for above freezing weather conditions.
- c) Virkon disinfectant is to be mixed as one tablet for every 500 ml of solution (400 ml of water and 100 ml of propylene glycol, pre-mix prior to adding disinfectant) for below freezing weather conditions.

- d) To ensure maximum effectiveness, mixed solution has a 7-day shelf life or when pink color fades and solution begins to appear milky.
- e) Virkon must be applied by spraying or the use of a mop, sponge or cloth to evenly apply onto the equipment surface that has been in contact with the soil. A minimum wetted contact time of 10 minutes is required for all surfaces that have been in contact with soil.
- f) Any waste solution associated with disinfection is to remain on the field where it was used. It must be disposed of at least ten metres from a drain or drainage ditch.
- g) Do not re-use a solution which has been used to soak contaminated tools or equipment.

#### Accel

Accel is approved by Manitoba Hydro, for use in the prevention of the transport of invasive organisms in soil and manure onto or off of agricultural land. For disinfection, staff and contractors are to use Accel mixed and applied in accordance with the manufacturer's specifications. Please refer MSDS sheets prior to use for safe handling procedures. Accel is biodegradable and no further treatment of the waste solution is required. The process for cleaning equipment and disinfecting is as follows:

- a) Scrape off all heavy soil accumulations and utilize pressure washing, steaming or compressed air to clean all surfaces that have been in contact with the soil.
- b) Accel disinfectant is to be mixed at 1:40, 100 ml of concentrate per 4 L of water for above freezing weather conditions. A minimum wetted contact time of 5 minutes is required for all surfaces that have been treated.
- c) For below freezing weather conditions, Accel is not recommended due to 40 minute minimum wetted contact time.
- d) To ensure maximum effectiveness, mixed solution has a 30-day shelf life.
- e) Accel must be applied by spraying or the use of a mop, sponge or cloth to evenly apply onto the equipment surface that has been in contact with the soil.
- f) Any waste solution associated with disinfection is to remain on the field where it was used. It must be disposed of at least ten metres from a drain or drainage ditch.
- g) Do not re-use a solution which has been used to soak contaminated tools or equipment.

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### Synergize

Synergize is approved by Manitoba Hydro, when requested by the landowner for use in the prevention of the transport of invasive organisms in manure.

Synergize has known aquatic environmental impacts on aquatic fish invertebrates. The application of the product will be contained in the field away from any watercourses to mitigate environmental impacts. Disinfecting with this product shall be done on the field away from any watercourse and leftover product will be disposed of at an approved facility. Please refer MSDS sheets prior to use for safe handling procedures. The process for cleaning equipment and disinfecting is as follows:

- a) Scrape off all heavy soil accumulations and utilize pressure washing, steaming or compressed air to clean all surfaces that have been in contact with the soil.
- b) Synergize is to be mixed with a ratio of 4 ml Synergize to 1 L water for above freezing weather conditions.
- c) Synergize is to be mixed with a ratio of 8 ml Synergize to 1 L solution (900 ml of water and 100 ml of propylene glycol, pre-mixed prior to adding disinfectant) for below freezing weather conditions.
- d) To ensure maximum effectiveness, mixed solution has a maximum 7-day shelf life.
- e) Synergize must be applied by spraying or the use of a mop, sponge or cloth to evenly apply onto the equipment surfaces that have been in contact with the soil. A minimum wetted contact time of 10 minutes is required for all surfaces that have been treated.
- f) Do not re-use a solution which has been used to soak contaminated tools or equipment.
- g) Any leftover product will be disposed of at an approved facility.

### Propylene glycol

For the use of above-described solutions during freezing weather conditions, pure United States Pharmacopeia (USP) or food-grade propylene glycol must be utilized in the disinfectant solution. Propylene glycol improves spraying by preventing freezing of solution at low temperatures and fragmenting the solution drops into smaller particles, allowing for a better distribution and coverage of the sprayed surface. Propylene glycol is biodegradable, water-soluble, and is safe for humans.

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## 4.5 Signage

Contractors will be required to supply and install signage prior to commencement of preconstruction and construction activities to notify and inform contractor's field personnel and Manitoba Hydro staff of controlled access zones. Signage will be installed at all controlled access points where personnel are required to enter into and exit from a controlled access zone, Signage will have to differentiate between a Controlled Access Zone and a Restricted Access Zone. At the Controlled Access Point(s), or transition zone(s) will be established with signage installed to inform personnel of cleaning requirements. Signage will prompt workers to review additional information on the biosecurity risk and requirements in Project documentation (i.e., Biosecurity Risk Map Book and Information spreadsheet).

Signage is required as follows:

- Controlled Access Point or Transition Zone signage must contain:
  - o Indication to Stop
  - Cleaning requirements as applicable to current Controlled Access Zone risk rating.

# 4.6 Training

Manitoba Hydro and the contractor(s) each have responsibility to ensure that their respective personnel are appropriately trained to carry out their role in the protection of biosecurity, and that proper documentation and communication is being conducted throughout the Project. Manitoba Hydro has prepared Environmental Management Practices Guides (Appendix D) for variety of topics covered in this plan for use by Project field staff

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

Manitoba Hydro will also hold a separate pre-construction environmental meeting to provide the opportunity for Manitoba Hydro and Contractor environmental representatives to discuss Project specifics and environmental requirements in more depth. It is a mandatory requirement that the contractor(s) provide all personnel involved in construction work in the field or involved in supervision of those personnel (i.e., project manager, supervisors) Project-specific Biosecurity Management Plan orientation training prior to starting work. This training will present the objectives of the plan, roles and responsibilities, biosecurity issues and required actions, and documentation requirements. A training attendance record must be maintained by the contractor(s) and submitted to Manitoba Hydro Environmental Protection Information Management System.

## 4.7 Documentation

Once the matting, vehicles and equipment has been cleaned in accordance with the assigned risk level, the Cleaning Record Form will be filled out and signed off by the contractor personnel managing the cleaning station or the operator completing the cleaning. All Cleaning records will be digitized into an Excel Spreadsheet and submitted by the Contractor on a weekly basis to the Manitoba Hydro Environmental Protection Information Management System by the Contractor. Contractor will maintain all original copies until Project completion and will be transferred to Manitoba Hydro upon request.

# 5.0 Communication

In addition to the Plan, Mapbook and accompanying landowner information spreadsheet form critical components of communicating biosecurity requirement to personnel working on the Project. Manitoba Hydro will provide the contractor(s) a Biosecurity Management Plan Mapbook visually identifying biosecurity information:

- Identified controlled access zones, and preliminary risk levels, as appropriate.
- Proposed access locations, controlled access points and transition areas, where cleaning areas/stations will be located.

Locations of controlled access points, transition areas and cleaning station areas/stations will be finalized by Manitoba Hydro in conjunction with the contractor(s). Any contractor-proposed additions, location modifications or Plan requirement revisions will be submitted in writing to Manitoba Hydro and include a map containing legal land description and GPS location. Any Manitoba Hydro-required revisions to the Plan will be communicated to the contractor's Project Manager for distribution to Project staff.

# 6.0 Monitoring and Follow-up

Manitoba Hydro will monitor the work carried out under the Plan. Each Contractor's work will be monitored to assess public and worker safety, permitting requirements and approvals, environmental concerns, completion schedules and adherence to, and compliance with, commitments made in the Plan.

The field monitoring program will be risk-based and will utilize agricultural risk management zones to guide monitoring efforts, with the focus on zones deemed at high risk of biosecurity issues. These high risk sites include sites of known clubroot occurrence, livestock production and manure spreading. Further, field monitoring will focus on areas of potential breaches of biosecurity, including controlled access points into agricultural risk management zones, transition areas between management zones of differing risk levels and cleaning stations.

Third party biosecurity monitors will be responsible for conducting inspections and reviewing the cleaning records and logs to ensure that prescribed actions and measures identified within this Plan are being followed. The third party monitor will develop a sampling program based on a phased approach, whereby monitoring activities will be more frequent and intensive during the initial construction start-up and monitoring period, with reduced frequency and intensity anticipated during the remainder of the construction and monitoring period. During project start-up it is monitors will observe as large a proportion of contractor activities as is practically-feasible with a focus on high risk parcels. This will allow early confirmation of the adequacy of the contractor biosecurity management program and early detection and correction of biosecurity compliancy issues and trends, as appropriate. During the remainder of the construction phase, monitoring will defer to the frequencies and intensities determined using the statistical sampling approaches to achieve a high level of compliance expected of the Contractor.

Inspections will involve assessing all vehicles, equipment and pedestrian access at controlled access points or transition areas using the Cleaning Standards Assessment Guide in Appendix E. Inspections will also include reviewing logs, along with assessing cleaning equipment availability and disinfectant at the Cleaning Stations.

If the third party Biosecurity Monitor inspection determines that documentation, adherence to prescribed actions, cleaning station equipment and/or setup or any other related activity does not meet the minimum expectations of this Plan, measures to remedy the deficiencies will be communicated directly to onsite Contractor staff or to Manitoba Hydro Construction Supervisor/Environmental Officer. If deficiencies are not remedied by the Contractor onsite through immediate corrections, Manitoba Hydro will communicate with the Contractor through Non-Conformance Report(s), Environmental Improvement or Stop Work Order(s) to ensure compliance and overall Project success.

Third Party Monitors will generate and submit daily, weekly, and monthly reports to Manitoba Hydro. Contents of reports are as follows:

### <u>Daily</u>

- daily field monitoring activities and monitor hours
- summary information on contractor compliancy (# observations, # compliance flags, etc.)
- summary of individual field observations where compliancy issues were determined, including links to available photos/videos

#### <u>Weekly</u>

- summary information on contractor compliancy (# observations, # compliance flags, etc.)
- indicators for trends in contractor compliancy (e.g., week-over-week, seasonal trend)
- summary of weekly compliancy issues, including categorization (type, degree), general comments and links to available photos/videos
- recommendations for program and/or compliancy improvement

#### **Monthly**

- summary information on contractor compliancy (# observations, # compliance flags, etc.)
- indicators for trends in contractor compliancy (e.g., monthly trend, seasonal trend)
- summary of compliancy issues that remain unresolved (new in month, carryover from previous months, including categorization (type, degree), general comments and links to available photos/videos
- summary of improvement recommendations (implemented and to be implemented) to address compliancy issues or other program elements

Manitoba Hydro will review the above reports and take one or more of the following actions depending on severity of issue:

- Issue Non-Conformance Reports to the Contractor with requirement of root cause analysis and the development of corrective actions.
- Issuance of Environmental Improvement Order to the Contractor with requirement of root cause analysis and the development of corrective actions.
- Issuance of Environmental Stop Work Order to the Contractor with requirement of root cause analysis and the development of corrective actions.

## 6.1 Post-treatment weed evaluation

The timing and procedure for evaluating the effectiveness of specific weed management options will depend upon the management method. Weed management effectiveness will be monitored as part of the Environmental Monitoring Plan and ongoing issues will be tracked in environmental inspection reports and in annual monitoring reports. Weed management success will be evaluated to determine the need for further weed management. Weed management program evaluations will be based on visual estimates of the construction right-of-way and construction cleaning areas (if located off right-ofway), and will be conducted by an environmental specialist qualified and experienced to conduct the evaluations.

## 6.2 Post-construction Environmental Monitoring Program

During the Environmental Monitoring Program, the effectiveness of weed management measures implemented prior to construction, during construction and as described in the Environmental Monitoring Plan will be evaluated by a Qualified Environmental Specialist.

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# Appendix A

# Noxious Weeds Regulation Species List

## Appendix A: Noxious Weeds Regulation Species List

Common name	Scientific name	Area for which Designation applies
		All areas of the province outside the
Amorath Dalmar		Municipality of Bifrost-Riverton and the Rural
Amaranth, Palmer	Amarantnus paimeri	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	
		Municipality of Bifrost-Riverton and the Rural	
Bartsia, red	Odontes vernus	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 <i>Cuscuta</i>	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	lva xanthifolia	Whole province
Ragweed, giant	Ambrosia trifida	Whole province
Sow-thistle, annual	Sonchus oleraceus	Whole province
Designated Tier 3 Noxious Wee	ds	
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 B

# Biosecurity Management Plan MapBook

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# Appendix C

# Field Activity and Inspection Forms

**Biosecurity Cleaning Record** 

Vehicle and Equipment Cleaning Field Log

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		Bi	osecurity Clean	ing Rec	ord		Version:2	019/05/08
Completed Cleaning Records	must be su	ubmitted to T	LC.AgriculturalBiosecurit	ty@hydro.m	<b>b.ca</b> in accordar	ce with project submiss	ion requirements.	Use abbreviations
as described in brackets. No	"Quotes" to	be used to s	ignify same as above, fill o	ut each cell.		1,		
Location	Risk	Risk Level	Туре	Cleaning	Disinfect			
(Must enter at least one)	Level	Modifier		Туре				
Structure # / Access ID / Legal Description	Low (L), High (H)	Winter Conditions (WC)	Boots/tools, Vehicle, Equipment (if applicable include unit #)	Rough (R), Fine (F)	Virkon (V), Synergize (S), Accel (A)	Name (Print)	Date YYYY-MM-DD	Comments

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### EQUIPMENT CLEANING RECORD TRANSMISSION LINE CONSTRUCTION

Project *	Section *		
Complete at cleaning area.			
Unit number *			
Equipment type *		DATE OF	yyyy mm dd
		CLEANING *	
Cleaned by *			
Location of cleaning *		Free of oil leal	<s? *<="" td=""></s?>
		Ye	es No
Inspected by *	Signed by *		yyyy mm dd
Remarks			

### Complete at destination site.

Destination				
Delivered to site by				
Inspected for cleanliness at site?	Free of oil leaks?			
Yes No	Yes No			
Inspected by	Signed by	уууу	mm	dd
Remarks				

# Appendix D

# **Environmental Management Practices Guides**

# CLEANING STATION



**Description Cleaning Station:** facilities that are located at designated Controlled Access Points or Transition Areas for the purposes of cleaning footwear, matting, vehicles and equipment of soil, manure, plant material and foreign matter

**Wash Facility**: facilities that are located outside of a controlled access zone and may be of two types: commercial wash facility or a washing facility developed by the contractor at a location and design that has been approved by Manitoba Hydro (MH)

#### Implementation Activities and Requirements

- To be established at all designated Controlled Access Points and Transition Areas identified in the latest version of the Biosecurity Management Plan Map Book
- Signage must be installed that describes cleaning requirements
- All Project staff must stop and review required cleaning requirements, implement required actions and initiate documentation requirements prior to entering a controlled access zone
- Cleaning Log Book entries must be completed for all pedestrian, matting, vehicles and equipment cleaning and/or inspection activities
- Sediment released from the washing process will be contained by berms or other containment to prevent surface run-off to another field or water course
- Only MH approved disinfectants are permitted to be used (See Disinfectants EMP)
- Sediment materials (dirt, water and disinfectant solution from cleaning activities) must be either buried on-site at a minimum depth of 2 m (requires written landowner permission and approval by MH) or, disposed of at an MH approved disposal facility
- Geotextile must be placed under matting or cleaning area to facilitate clean-up and disposed of at an MH approved disposal facility

### **Example Cleaning Stations**



Cleaning Station Design



Disinfection at Cleaning Station



Compressed Air Cleaning Station at Controlled Access point

#### See Also

- Controlled Access Points/Transition Areas
  - Disinfectants
  - Risk Level Determination
  - Cleaning Requirements
  - Cleaning Standards

# INSPECTION AND CLEANING REQUIREMENTS



### Description

Inspection and cleaning requirements are determined by accumulation of soil, manure, plant material or foreign matter on footwear, mats, vehicles and equipment and current risk level assigned to controlled access zone.

#### Implementation • Activities and Requirements

- All Project staff must stop and review required cleaning requirements, implement required actions and fulfill documentation requirements prior to entering or exiting a controlled access zone
  - Foot traffic may utilize disposable boot covers that are replaced/cleaned before entering additional controlled access zones
  - Personnel cleaning the equipment should complete a visual inspection post cleaning for accumulated soil, manure, plant material or foreign matter prior to leaving the cleaning station
  - Only MH approved disinfectants are permitted to be used (See Disinfectants EMP)
- Footwear, matting, vehicles are equipment are considered clean when they meet the cleaning standards (See Cleaning Standards EMP) as required by the current Risk Level assigned to the controlled access zone
- Manitoba Hydro Environmental Officer or designate determines if cleaning standards have been achieved

## Steps for Inspection and Cleaning

STEPS	DESCRIPTION
1- Inspection	• Inspect all footwear, matting, vehicles and equipment prior to exiting or entering a controlled access zone at designated controlled access points and transition areas for soil, manure, plant material or foreign matter
2- Rough Clean	<ul> <li>Remove clumps of soil, manure, plant material or foreign matter from mats, footwear, vehicle and equipment openings, tracks, tires and wheels using a hand scraper, shovel, broom or wire brush</li> <li>This step in cleaning of mats, vehicles and equipment must occur on-site before leaving the controlled access zone to a Wash Facility (See Cleaning Station EMP)</li> </ul>
3- Fine Clean	<ul> <li>Fine clean means high pressure water wash, high pressure air wash or high pressure steam wash. Wash matting, vehicles, and equipment paying extra attention to areas where soil, manure, plant material or foreign matter can accumulate (i.e., tires or undercarriage)</li> <li>For hydrovac trucks, cleaning includes the inside of the tank and any implement in contact with soil</li> <li>Prior to fine cleaning, matting, vehicles and equipment should receive a rough clean</li> </ul>
4- Disinfectant Mist	<ul> <li>Use disinfectant misting as the final cleaning step when working in controlled access zones where the current risk rating is High</li> <li>Spray footwear, tracks, openings, tires, wheels and implements that may come in contact with soil, manure, plant material or foreign matter with an approved disinfectant solution (See Disinfectants EMP)</li> <li>Hydrovac truck cleaning includes disinfecting inside of the tank and any implement in contact with soil, manure, plant material or foreign matter</li> <li>Prior to disinfecting. matting, vehicles and equipment should receive a fine clean</li> </ul>

See Also

- Controlled Access Points/Transition Areas
- Disinfectants
- Risk Level Determination
- Cleaning Stations Cleaning Standards

# **BIOSECURITY RISK CLASSIFICATION**



#### Description

Risks will be classified as Low or High, according to the definitions provided in Risk Classification Matrix. Winter Conditions (WC) is a risk level modifier implemented only when approved by Manitoba Hydro.

### Implementation • Activities and Requirements

- All Project staff must stop and review required cleaning requirements, implement required actions and fulfill documentation requirements prior to entering or exiting a controlled access zone
- Manitoba Hydro Environmental Officer or designate has final determination of risk level

### Biosecurity risk classification matrix

	Risk level			
Biosecurity issue	Nonfrozen soil	Frozen soil	Frozen, snow- covered soil	
Agricultural lands where no weeds, soil borne crop diseases, manure spreading or active livestock settings have been identified that present a substantial risk to biosecurity	Low	WC <sup>1</sup> Low <sup>2</sup>	WC <sup>1</sup> Low <sup>2</sup>	
Specific sites identified as Tier 1 Noxious weeds as defined in the Noxious Weeds Regulation.	High	High	Low	
Specific sites identified as Tier 2 or 3 Noxious weeds as defined in the Noxious Weeds Regulations and present a substantial biosecurity risk that the project activities will transfer the identified issue from one area to another.	Low	Low	Low	
Laboratory testing has indicated clubroot spores are present	High	WC <sup>1</sup> High <sup>2</sup>	WC <sup>1</sup> High <sup>2</sup>	
Manitoba Hydro will designate an operation with an existing and established biosecurity management plan as High risk. Manitoba Hydro will strive to meet the existing farm level biosecurity measures in these instances.		High		
Manitoba Hydro will designate active livestock settings (e.g., ILOs, active grazing areas) as High risk.		High		
Agricultural lands on which manure has been spread.	High	High	WC <sup>1</sup>	
NT-1.4 TTL: 2.1 1 1		1		

Note 1: This risk level modifier only applies to activities that create **no** subsurface disturbance such as vehicle travel, inspection, surveying, etc.

Note 2: This risk level applies to activities that create subsurface disturbances such as grubbing, excavation, drilling, foundation installation, clearing, conductor stringing, etc.

#### See Also

- Controlled Access Points/Transition Areas
- Disinfectants
- Risk Level Determination
- Cleaning Stations
- Cleaning Standards

# Appendix E

# Cleaning Standards Assessment Guide

### BIOSECURITY MONITORING CLEAN EQUIPMENT/VEHICLE GUIDELINE

Grade	Pass/Fail	Definition
1	Fail	No effort was made to clean the vehicle/equipment/footwear. Vehicle/equipment/footwear has clumps of mud
		and/or seeds attached to it. When travelling on public roadways, muddy tracks are left on the road.
		*No vehicles/equipment should be permitted to enter OR leave any site in this condition, regardless of Risk.
2	Fail	Vehicle/equipment/footwear was mechanically cleaned but there are still clumps of mud and/or seeds
		attached. No disinfectant was used.
		*At Low Risk site ONLY, may be permitted to leave site for off-site cleaning, though no vehicles/equipment
		may enter site in this condition.
3	Pass	Vehicle/equipment/footwear was mechanically cleaned, with no sign of clumping wet soil/seeds/debris
		remaining. Any small pockets of dirt/debris that cannot be removed have been disinfected.
		*High Risk Site: All vehicle/equipment surfaces that have come in contact with soil MUST be disinfected
		when exiting, to pass inspection.
4	Pass	Vehicle/equipment/footwear is clean. No clumps of mud or seeds are present.
		*High Risk Site: All vehicle/equipment surfaces that have come in contact with soil MUST be disinfected
		when exiting, to pass inspection.

When working in agricultural areas, all reasonable effort must be made to ensure that all equipment, vehicles and clothing going from one property to another is not transporting any invasive species or pathogens. Above is the scale that will be used by Manitoba Hydro to grade the cleanliness of vehicles, equipment and footwear entering and leaving work sites in agricultural or invasive species areas on the project.

### BIOSECURITY MONITORING CLEAN EQUIPMENT/VEHICLE GUIDELINE

## Grade 1 (Fail)

- -No effort made to clean vehicle; clumps of wet mud/seeds stuck to surfaces.
- -No equipment/vehicles should be permitted to enter OR leave a site in this condition, regardless of Low or High Risk area.









### BIOSECURITY MONITORING CLEAN EQUIPMENT/VEHICLE GUIDELINE

## Grade 2 (Fail)

-Mechanical cleaning, but still clumps of wet mud/seeds in wheel wells/tracks/boot treads. No disinfectant used.

-\*At low risk site, may be permitted to leave site for off-site cleaning, though no vehicles/equipment may enter site in this condition.






## BIOSECURITY MONITORING CLEAN EQUIPMENT/VEHICLE GUIDELINE

## Grade 3 (Pass)

-Mechanical cleaning, with only minimal sign of dirt with no clumps/seeds/debris remaining. Pressure wash and/or disinfectant applied to any surfaces where dirt clumping remains.

-ALL vehicles/equipment leaving High Risk site MUST be disinfected upon exit.











## BIOSECURITY MONITORING CLEAN EQUIPMENT/VEHICLE GUIDELINE

## Grade 4 (Pass)

-Equipment/Vehicle/Footwear is clean. No signs of soil/seeds/debris on any surfaces.

-All vehicles/equipment entering a job site should be at this level.



## Appendix F

## Aquatic Biosecurity Mitigation Measures



## **Application**

Mobilization, use, and demobilization of all vehicles, watercraft, and water-related equipment in contact with untreated surface water where aquatic invasive species (AIS) may be present.

## **Environmental Protection Objective**

To prevent the spread of all AIS, from sources both within and outside Manitoba. The Contractor shall comply with the most recent version of the Manitoba *Aquatic Invasive Species (AIS) Regulation* when performing work that requires use of watercraft (including boat trailers, pontoon planes, etc.) and/or water-related equipment.

## **Environmental Mitigation Measures**

Category	ID	Mitigation
Pre-Mobilization	1	All watercraft, water-related equipment, and other items for use
		within or adjacent to water bodies must be free of AIS at all life
		stages. This includes personal items.
		All Aquatic Invasive Species (AIS), debris, aquatic organisms, aquatic
		plants, aquatic mud and bait must be removed and disposed of at the
		point of origin.
	2	If work is to proceed within or adjacent to water bodies in
		designated control zones, means to decontaminate watercraft and
		water-related equipment must be planned for in advance.
Non-Control Zone	1	If movement between multiple water bodies is required, start work
Water Bodies		where AIS are not present. Move to work locations where AIS are
		present (i.e., control zone water bodies) afterword.
	2	Vehicles, watercraft, equipment, etc. must be free of AIS, aquatic
		plants, water, and mud before demobilizing from or entering any
		water body in Manitoba.
		The above must also be dry to the touch. If that is not possible, they
		must be decontaminated.
	3	Watercraft must be transported with the drain plug(s) removed
Control-Zone	1	Decontamination is required before demobilizing from any control
Water Bodies		zone water body. If that is not possible, decontaminate at the
		earliest opportunity. Decontamination must comply with the AIS
		Regulation.
Inspection Stations	1	When transporting watercraft or water-related equipment, stop at
		all provincial AIS inspection stations that are in operation. Operating
		stations are located on Manitoba highways and are identifiable by
		signs or placards. Submit to all inspections and abide by all orders.
AIS Observations	1	Should AIS be or suspected to be observed, report to Manitoba

\_\_\_\_

Category	ID	Mitigation
		Sustainable Development (MSD) and MH. Observations of AIS
		known to be present in a particular control zone water body do not
		need to be reported.
	2	Do not transport AIS from the water body but be prepared to
		preserve the specimen per MSD's instructions.
		AIS permits and authorizations from Manitoba Sustainable
		Development are required if water samples are being transported.

Cross Reference	Regulatory References Fisheries Act, 1985 [R.S.C., 1985, c. F-14] Aquatic Invasive Species Regulations (SOR/2015-121)
	Water Protection Act, 2005 [C.C.S.M. c.W65] Aquatic Invasive Species Regulation (MR 173/2015)
	Manitoba Sustainable Development – Stop AIS Program: http://www.gov.mb.ca/waterstewardship/stopais/

## **Photos**



Photo 1: Mature zebra mussel. Zebra mussels may be as small as a grain of sand and better detected by feel. The distinctive striped pattern may also be absent.



Photo 2: Mass of spiny waterflea. Individuals measure 1.0 - 1.5 cm in length when fully grown.



Photo 3: Black algae filaments. Filaments may form large matts that either float or submerge on lake bottoms.



Photo 4: Common places where AIS can be found on a boat and trailer.

Appendix G

Summary of Consultation

## Appendix G: 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 Biosecurity 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). 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.

Manitoba Hydro had meetings with the Manitoba Beef Producers (February 13, 2019), Manitoba Pork Council (February 19, 2019) and Keystone Agriculture Producers (March 8, 2019), where the Plan was discussed along with any new concerns in the respective industries, no changes were made to the Plan as a result of the discussions.

# Table 1 Comments from a MMTP Monitoring Committee Representative from Dakota TipiFirst 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

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

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

## 

Access Management

	Biosecurity Management
	Clearing Management
	Construction Environmental Protection
	Cultural and Heritage Resources Protection
	Environmental Monitoring
_	Erosion and Sediment Control
	Golden Winged-Warbler Habitat Management

For each plan you selected above, share your comments, concerns, and suggestions for how your concerns might be addressed.



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).



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: <a href="https://www.hydro.mb.ca/projects/mb\_mn\_transmission/document\_library.shtml">https://www.hydro.mb.ca/projects/mb\_mn\_transmission/document\_library.shtml</a>.

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 (<u>www.hydro.mb.ca/mmtp</u>) 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 (5) • Winnipeg Manitoba Canada • R3C 0G8 Telephone / N<sup>e</sup> 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:





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.

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 (<u>https://www.hydro.mb.ca/projects/mb\_mn\_transmission/document\_library.shtml</u>) and are looking to gather feedback on these plans by November 30<sup>th</sup>.

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 2)

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 (<u>https://www.hydro.mb.ca/projects/mb\_mn\_transmission/document\_library.shtml</u>) and are looking to gather feedback on these plans by November 30<sup>th</sup>. 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 2 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