

## **8.0 Assessment approach and methods**

### **8.1 Regulatory environment**

The environmental assessment of the proposed De Salaberry East Station Project was carried out based on information provided by Manitoba Hydro, the public, through engagement activities, reference materials obtained from Manitoba Sustainable Development and Manitoba Hydro libraries, literature and internet searches, and personal reference collections. Environmental assessments conducted on other transmission stations in Manitoba were also reviewed.

Requirements of *The Environment Act* (Manitoba) and the *Canadian Environmental Assessment Act* and regulations, guidelines and policy statements were considered in the preparation of the environmental assessment for the proposed station Project. The proposed Project is considered a Class 2 development under the Classes of Development Regulation of *The Environment Act* (Manitoba). This Environmental Assessment Report was prepared to fulfill the guidelines for preparing an Environment Act proposal report described in “Information Bulletin – Environment Act Proposal Report Guidelines” (December 2015).

### **8.2 Scope of the assessment**

The scope of the environmental assessment includes the identification, description, analysis and mitigation of potential adverse environmental effects, identification of any required follow-up actions, and evaluation of significance for any residual environmental effects. The definition of “environment” means air, land and water, or plant and animal life, including humans and the social and economic components consistent with the principles of sustainable development. Direct and indirect biophysical and socio-economic effects, cumulative environmental effects, effects of accidents and malfunctions, and effects of the environment on the Project are considered. The purpose and need for the proposed Project are described, and alternative means of carrying out the Project are compared. Public engagement was carried out as part of the environmental assessment.

### **8.3 Scope of factors to be assessed**

The Study Team undertook a scoping exercise using a Project interaction matrix to determine the types of interactions between Project activities/components and the environment. This process also aided in the selection and refinement of factors (i.e., Valued Components - VCs) to be considered in the assessment. The individual Project activities are discussed in the Project Description chapter. The Project activity VC interactions are provided in Table 8-1.

The assessment of potential Project effects on the biophysical and socio-economic environment is based on identification of what Project activities and physical works will interact with the VCs and are likely to have effects. The Project components are described in Section 4.4. The potential effects of the identified interaction are described and assessed in Chapter 9.

Table 8-1: Project Interaction Matrix

Project Activities / Phases	Physical / Meteorological Environment	Native Vegetation	Fish and Fish Habitat	Wildlife and Wildlife Habitat	Land Use and Ownership	Heritage Resources	Traditional Land / Resource Use	Resource Use	Health (Noise, Air Emissions, EMF and Aesthetics)	Employment and Economy	Infrastructure and Services	Protected Areas
<b>Pre-construction/construction</b>												
Property acquisition					X							
Workforce presence				X					X	X	X	
Access road			X									
Culvert upgrade												
Material hauling				X					X			
Surveying												
Stripping/ stockpiling/ excavating/ grading soils			X	X					X			
Machinery operation				X					X			
Equipment installation									X			
Foundation installation	X								X			
Site preparation	X		X									
Oil containment			X									
Ground grid installation	X											
Backfill, clean-up, final restoration									X			
Equipment testing and coolant installation			X	X								
Waste disposal									X			
<b>Operation and Maintenance</b>												
Station operation and presence				X					X	X	X	
Station maintenance (equipment repairs / equipment installation)				X					X			

### **8.3.1 Rationale for assessment of valued components**

Physical / Meteorological Environment has been carried through for assessment as Project construction may interact with local groundwater through the development of foundations. Greenhouse gas contributions and air emissions are discussed under Health, to follow.

The proposed site does not support native vegetation locally, and therefore no impacts are anticipated for this aspect of the environment.

Fish and Fish Habitat has been carried through for assessment as there is potential for soil works, including construction of the access road, to contribute erosive materials to Tourond Creek. Consideration has also been given to the potential for spills and their effect to the Fish and Fish Habitat in this section.

Aspects of Wildlife and Wildlife Habitat (birds, mammals) have been carried through for assessment as the increased presence of people and machinery may affect wildlife and wildlife habitat through a reduction in habitat availability and increase in mortality risk from workforce presence, material hauling, stripping / stockpiling / excavating / grading soils, machinery operation, equipment testing, site operation and maintenance. No Species at Risk have been identified locally and amphibians or reptiles are not typically found in agricultural crop land, and generally prefer natural habitats. No natural habitat types occur within the proposed Project site.

Land Use and Ownership has been carried through for assessment as property acquisition will result in a transition from agricultural to industrial land use.

Heritage Resources have not been identified locally in the Project footprint; however, heritage resources have been carried through for assessment in the event that previously unknown heritage resources are unearthed or exposed during pre-construction surveys or construction activities.

Traditional land / resource use and Resource Use have not been carried through for assessment. Although the Project area lies within Treaty 1, and the Metis Natural Resource Harvesting Zone 35A, no resource use or traditional resource use has been identified in the local Project area after engagement with Indigenous communities, the local landowner, and the Province of Manitoba.

Health (Air Quality Emissions, GHG, Noise, Aesthetics) has been carried forward for assessment as the presence of a workforce and all vehicle and equipment use will contribute air emissions, GHG's and noise to the environment. Aesthetics has been carried through for

assessment as the station, as well as other Manitoba Hydro projects in the local area, will affect aesthetics of the area.

Employment and Economy and Infrastructure and Services have been carried through for assessment as services and the Project is anticipated to bring a workforce to the area, creating jobs and impacts to local infrastructure and services.

Protected areas have not been carried through for assessment as no protected areas have been identified in the Project local assessment area and protected areas identified in the region do not interact with the Project.

## **8.4 Assessment boundaries**

Spatial and temporal boundaries are identified for the assessment and assist in quantifying effects. Spatial boundaries set the geographic areas over which the assessment will be conducted, and temporal boundaries set the time frame to be considered.

### **8.4.1 Spatial boundaries**

Spatial boundaries for the assessment are selected principally in consideration of the geographic extent over which Project activities and their effects on the VCs are likely to occur, as well as other ecological, technical and social considerations. Three types of areas are defined for VC assessment purposes as defined below.

The Project footprint consists of the area physically disturbed by the Project and includes the footprint of the proposed station (150m x 170m) and total area purchased for the Project. The Project footprint is the same for all VCs.

The **local assessment area (LAA)** encompasses the area in which both:

- Project-related environmental effects (direct or indirect) can be predicted or measured with a level of confidence that allows for assessment; and
- there is a reasonable expectation that those potential effects in the LAA will be a concern. The LAA includes the Project footprint and is selected principally in consideration of the geographic extent of effects - consequently it is VC-specific.

The **regional assessment area (RAA)** is the area that establishes the context for determining Project-specific effects. It is also the area within which potential cumulative effects-the residual effects from the Project in combination with those of past, present and reasonably

foreseeable projects—are assessed. The RAA encompasses the Project footprint and the LAA, and is VC-specific.

The LAA and RAA used for each VC are identified in the assessment section for each valued component. Maps showing the LAA and RAA, and justification for the areas selected are provided in each VC section.

### 8.4.2 Temporal boundaries

The assessment addresses the interactions of potential effects during the Project's construction, and operation and maintenance phases with timescales that capture relevant variability and trends. Discussion on trends and variability can be found in the existing conditions descriptions for VCs to illustrate how past events have contributed to the current status of the VC and how long a VC may take to recover from effects.

The effects of decommissioning are not assessed. Transmission stations are expected to be operational for more than 100 years. When decommissioning is scheduled, Manitoba Hydro will adhere to the environmental policies and regulatory framework in place at that time.

The temporal boundaries of the Project that were identified for the identification and evaluation of potential Project effects include the following:

**Preconstruction phase:** The preconstruction phase includes activities that are completed prior to constructing the station such as utility locates, obtaining permits, surveying and site preparation;

**Construction phase:** The construction phase will include all activities that are associated with the construction of the station, from site preparation through to site restoration. The construction phase is anticipated to last just under 2.5 years; and

**Operations and maintenance phase:** As a result of the lifespan of a station being indefinite, a 100 year period has been identified as the temporal boundary for operations and maintenance activities.

### 8.4.3 Valued components

The selection of VCs is based on several factors, including consideration of input from regulators, the public, First Nations, Metis, and stakeholders, as well as the professional judgment of Manitoba Hydro and the environmental assessment team.

VCs were elements that have the potential to interact with the Project and that met one or more of the following criteria:

- represent a broad environmental, ecological or human environment component that might be affected by the Project;
- are a part of the heritage of First Nations and Metis or a part of their current use of lands for traditional purposes;
- are of scientific, historical, archaeological importance; or
- have been identified as important issues or concerns by stakeholders or by other effects assessments in the region.

After considering potential interactions between Project activities and phases and each biophysical and socioeconomic element, the following elements have been identified as having potential to interact with the Project and are considered VCs moving forward:

- Physical / Meteorological Environment;
- Fish and Fish Habitat;
- Wildlife and Wildlife Habitat;
- Human Health;
- Employment and Economy; and
- Infrastructure and Services.

## **8.5 Mitigation of Project environmental effects**

A description of mitigation measures that will avoid, reduce or eliminate the potential environmental effects is discussed later in this chapter and Chapter 10, Environmental Protection and Follow-up.

The Environmental Protection Plan will document the environmental protection measures to provide for compliance with regulatory and other requirements, and to achieve environmental protection goals consistent with corporate environmental policies.

## **8.6 Identification and assessment of residual effects**

Residual effects are a resultant change in the environment after the application of mitigation measures. The environmental effects are first considered to be either potentially positive (having a positive effect on the VC), neutral (have no measurable effect on the VC), or negative in direction (having a negative effect on the VC). This direction is described in each VC analysis.

## 8.7 Significance

The significance of the residual environmental effects for the proposed Project was evaluated using an adversity matrix. While positive effects are presented in the assessment, only adverse effects are provided a significance determination. A description of the different adversity ratings are provided below (Table 8-2). The individual components that make up each rating such as temporal boundaries, geographic extent of the effects and magnitude of the effects differ based on each VC and will be considered in the characterization of the residual effects and significance determination. A significant adverse effect is any biophysical or socio-economic effect with an adversity rating of high.

Table 8-2: Adversity Categories

<b>Adversity Category</b>	<b>Biophysical Effects</b>	<b>Socio-Economic Effects</b>
Beneficial	Net improvement to the biophysical environment expected.	Net improvement of social and economic well-being expected.
Adverse	Net impairment to the biophysical environment expected.	Net impairment of social and economic well-being expected.
High	Effect on an entire region, population or habitat in sufficient magnitude and over a sufficient period to cause a decline in abundance and/or adverse change in distribution beyond which natural irregularities would cause. Reversibility time for population is several generations.	Effect is either long duration or affecting an entire group of people in sufficient magnitude to cause significant changes in social and economic well-being. Reversibility time to baseline conditions expected to be several generations.



Table 8-2: Adversity Categories

Adversity Category	Biophysical Effects	Socio-Economic Effects
Moderate	Effect on a portion of the region, population or habitat is localized, but that results in a change in abundance and/or adverse distribution over one or more generations dependent upon it, but does not change the integrity of any population as a whole.	Effect is either limited to one or two generations but affects a moderate portion of the population while not necessarily affecting the integrity of the population as a whole.
Low	Effect on a local area, specific group of individuals or habitat in the Project area and/or over a short period (one generation or less), but do not affect other trophic levels or integrity of population as a whole.	Effect either short-term or affects a specific group of people in the local area but does not necessarily affect the integrity of the entire group as a whole.

## 8.8 Cumulative environmental effects

Cumulative environmental effects are the environmental effects that are likely to result from a Project in combination with the environmental effects of other past, existing and future projects or activities. The Canadian Environmental Assessment Agency Operational Statement (March 2015) provides guidance on how cumulative environmental effects should be considered. Although this Project is not being reviewed under federal legislation, the guidance document provides direction for practitioners conducting cumulative effects assessments. The operational statement outlines a five-step environmental assessment process for cumulative environmental effects that includes: 1. Scoping; 2. Analysis of effects; 3. Identification of mitigation; 4. Evaluation of significance; and 5. Follow-up. The cumulative effects assessment for this Project generally follows this approach and is found in Section 9.5.