

ATTACHMENT:

Federal Authority Advice Record

Response due by October 15, 2020

Great Sandhills Railway Switching Operation at North West Terminal Project

Agency File: 005770

Registry Number: 80998

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1. Is it probable that your department or agency may be required to exercise a power or perform a duty or function related to the Project to enable it to proceed?

If yes, specify the Act of Parliament and that power, duty or function.

Based on the Initial Project Description, ECCC does not expect that it will be required to exercise a power or perform a duty or function related to the Project to enable it to proceed. Once the scope of the Project and of the assessment are established by the Agency, this may change as additional activities or Project components could come into scope.

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2. Is your department or agency in possession of specialist or expert information or knowledge that may be relevant to the conduct of an impact assessment of the Project?

Specify as appropriate.

ECCC has specialist or expert information that may be relevant to the impact assessment in the areas listed below, as well as information regarding federal policies, standards, and regulations that may be relevant to the assessment. Once the scope of the Project and of the assessment are established by the Agency, this list may change if additional Project activities or components should come into scope.

Air Quality: ambient air quality; sources of emissions; emissions estimation and measurement; dispersion modelling; and follow-up monitoring.

Greenhouse Gas Emissions and Climate Change: estimations of greenhouse gas (GHG) emissions (net and upstream); GHG mitigation measures and determination of Best Available Technologies/Best Environmental Practices (BAT/BEP); credible plan to achieve net-zero GHG emissions by 2050, climate change science to inform evaluation of potential changes to the environment and Project resilience to effects of climate change; climate change policies; and national GHG projections.

Water Quality and Quantity: surface water quality; contamination sources for surface water; wastewater, seepage and runoff effects; management of contaminated soils or sediments; hydrology (flooding and extreme events management, drainage control, water levels, water balances); follow-up and monitoring.

Wildlife, Species at Risk, and Habitat: migratory birds, their nests, eggs, and habitat; species at risk, their habitat including recovery strategies and management plans; ecological function of wetlands; ecotoxicology.

Environmental Emergencies: emergency management planning and guidance; atmospheric transport and dispersion modelling of contaminants in air; fate and behaviour, hydrologic trajectory modelling of contaminants in water.

Climate and Meteorology: long-term climate patterns and norms.

3. Has your department or agency considered the Project; exercised a power or performed a duty or function under any Act of Parliament in relation to the Project; or taken any course of action that would allow the Project to proceed in whole or in part?

Specify as appropriate.

No.

4. Has your department or agency had previous contact or involvement with the Proponent or other party in relation to the Project? (for example, enquiry about methodology, guidance, or data; introduction to the Project)

Provide an overview of the information or advice exchanged.

Based on information readily available, ECCC [Prairie and Northern Region] has not had any involvement with the Proponent or other parties that would be relevant to the assessment of this Project.

5. Does your department or agency have additional information or knowledge not specified, above?

Specify as appropriate.

Not at this time.

6. From the perspective of the mandate and area(s) of expertise of your department or agency, what are the issues that should be addressed in the impact assessment of the Project, should the Agency determine that an impact assessment is required?

For each issue discussed, provide a concise, plain-language summary that is appropriate for inclusion in the Summary of Issues.

Air Quality:

Projects that involve an increase in capacity for rail traffic (e.g. intermodal yard expansion) have the potential to adversely affect air quality. More specifically, the combustion of fossil fuels to power the rail engines results in the emission of air contaminants such as sulphur oxides (SOx), nitrogen oxides (NOx), volatile organic compounds (VOCs), and fine particulate matter (PM_{2.5}). In addition, increased capacities of rail loading facilities may increase opportunities for fugitive emissions of VOCs and PM_{2.5} during construction and operation. When some contaminants settle out of the air in the surrounding environment, their deposition may result in acidification and potential exceedance of ecosystems' critical loads. The emission of these air contaminants can result in local or regional degradation of ambient air quality, with potential impacts on human health as well as sensitive ecosystem receptors.

Projects which involve on-road vehicles and fixed or mobile off-road machines for construction, operation and decommissioning, or that lead to an increase in road traffic (e.g. hauling of material by truck to rail terminal), have the potential to adversely affect air quality. More specifically, the combustion of fossil fuels results in the emission of air contaminants such as sulphur oxides (SOx), nitrogen oxides (NOx), volatile organic compounds (VOCs), and fine particulate matter (PM_{2.5}). When some contaminants settle out of the air in the surrounding environment, their deposition may result in acidification and potential exceedance of ecosystems' critical loads. The emission of these air pollutants can result in local or regional degradation of ambient air quality, with potential impacts on human health as well as sensitive ecosystem receptors.

Greenhouse Gas Emissions and Climate Change:

The construction, operation, and decommissioning of the proposed Project will result in GHG emissions. Furthermore, the Project has the potential to be affected by future climate change, possibly resulting in impacts to the environment.

The Strategic Assessment of Climate Change (SACC) provides guidance related to climate change throughout the impact assessment process. The SACC outlines information that the Proponent should provide during the impact assessment process on GHG emissions, GHG mitigation measures, and climate change resilience; the circumstances in which an upstream GHG assessment will be required; and when additional information such as a determination of the best available technology/best environmental practice (BAT/BEP) will be required.

Net GHG Emissions

The Proponent provided estimates of GHG emissions in section 23 of the Initial Project Description of 50 thousand metric tons of CO₂ equivalent annually over the life of the Project (operating 2020-2120). These emissions, as described may not align with the long-term goal of the Government of Canada to achieve net-zero emissions by 2050. The Proponent will need to demonstrate how they will achieve this long-term goal.

- ECCC recommends the Proponent include in the Detailed Project Description clarification on the scope of activities included in the estimate, an estimate of GHG emissions for each phase of the Project (i.e. construction, operation and decommissioning), and methodology, data, emission factors and assumptions used to quantify annual GHG emission estimates.
- Section 3.1 of the SACC provides guidance on how to quantify GHG emissions from a Project and section 4.1 provides guidance on information requirements for the Initial and detailed Project Descriptions.

Carbon sinks

The Project as described could have adverse effects on carbon sinks (i.e., forests, oceans or other natural environments that absorb carbon dioxide from the atmosphere).

- ECCC recommends the Proponent include in the Detailed Project Description the following information related to impacts of the Project on carbon sinks as outlined in section 4.1.2 of the SACC: a description of the activities that would result in an impact on carbon sinks, and land areas expected to be impacted by the Project, by ecosystem type (forests, cropland, grassland, wetlands, built-up land) over the course of the Project lifetime, including any areas of restored or reclaimed ecosystems.

GHG Mitigation Measures

The Proponent has indicated they will provide basic information related to GHG mitigation measures.

- ECCC encourages the Proponent to provide, in their Detailed Project Description, the measures being considered to reduce the Project's GHG emissions on an on-going basis, as outlined in section 4.1.3 of the SACC. For Projects with a lifetime beyond 2050, proponents are encouraged to provide an overview of the measures being considered to ensure the Project achieves net zero emissions by 2050.

Climate Change Resilience

Because climate over the lifetime of the Project is projected to be different from past and current climate in the area, and the lifetime of the proposed Project is to 2120, climate change considerations are relevant to the review. Climate changes in the Project area, such as possible changes in mean and extreme precipitation and temperature and related environmental conditions, may alter baseline conditions, with implications for climate sensitive aspects of Project design and associated effects on the environment. The Proponent should identify any Project components and/or activities for which climate change resilience could be important.

Further information can be found in the Strategic Assessment of Climate Change (SACC)

<https://www.canada.ca/en/services/environment/conservation/assessments/environmental-reviews/get-involved/draft-strategic-assessment-climate-change.html#toc32>.

Water Quality and Quantity

The activities linked to the construction, operation, and decommissioning of railways can have adverse effects on the quality of groundwater and surface water, as well as on the hydrological regimes of watercourses and water bodies.

Erosion, Sedimentation and Particulate Matter

Disturbing soils, rock, and streambanks during construction activities, such as water crossings, earthworks and construction of access roads, may cause erosion and result in deposition of soils and sediments to waterbodies. Soils and sediments can also enter waterbodies through streambed disturbance. These suspended solids can have adverse effects on water quality and may carry contaminants.

Disturbing soil and rock may also result in processes such as acid rock drainage, or metal leaching, which has adverse effects on water quality due to acidification and introduction of metal contaminants into the waterbody.

The deposition of airborne particulate matter generated by the Project could also be a source of surface water contamination.

Site Runoff and Water Management

Contaminants may be introduced into waterbodies through wastewater discharge, groundwater resurgence, surface water runoff carrying contaminants (such as creosote) or spills resulting in adverse effects on water quality. The initial Project description mentions the need for surface runoff drainage controls, groundwater management, and ditches and culverts to divert runoff away from the railway tracks. Without appropriate mitigation measures for water and waste management, there is the potential for adverse effects to surface waters.

Wildlife, Species at Risk, and Habitat

The activities linked to the construction, operation, and decommissioning of a linear Project could have negative effects on terrestrial wildlife resources (wildlife), including migratory birds and non-aquatic species at risk (amphibians, arthropods, birds, lichens, terrestrial mammals, mosses, reptiles, and vascular plants) listed on the Species at Risk Act (SARA), their habitat, and wetlands.

The nature of effects to wildlife and habitat (including residences and critical habitat defined under the *Species at Risk Act*) can vary based on a number of factors, including: Project location, duration, scale, and configuration; ancillary Project activities (land clearing); existing cumulative effects; the type of habitat that may be disturbed; and sensitivity of species found in the Project area. The pathway through which potential effects are conveyed will depend on the land, air, and water constituents associated with the site along with the behavioural adaptability, presence and interaction with the species limiting factor (e.g., habitat supporting staging, nesting, roosting or foraging) and population resilience.

Migratory Birds and Non-Aquatic Species at Risk and their Habitat

Individual mortality and the destruction of nests and eggs or any other structure necessary for the reproduction and survival of species at risk could occur during all Project phases, particularly during site preparation, right-of-way maintenance and Project dismantling. Mortality in migratory birds and species at risk could also occur because of collisions with vehicles or infrastructure related to the Project. Accidental oil or chemical spills could also have adverse effects if these substances make their way into the habitats frequented by migratory birds and species at risk. There is a higher risk that these effects would be more severe for migratory birds that are also species at risk and species where habitat is sensitive to disturbance (e.g., wetlands) or where there is already a high degree of cumulative effects to habitat or individuals.

There is the potential for removal of habitat important for nesting, foraging, staging, and overwintering migratory birds.

Migratory birds and non-aquatic species at risk could be affected by sensory disturbances during the construction, operation, and decommissioning of the Project. Some examples of potential sources of sensory disturbance include noise from various Project activities, lights, vibrations from excavation and blasting work and the operation of machinery, as well as the presence of workers. The amount, duration, frequency, and timing of noise are important to understand potential effects. Sensory disturbance may make adjacent habitats unsuitable for use by wildlife and cause avoidance effects in many species.

Wetlands

The activities linked to the construction, operation, and decommissioning of a project could have negative effects on wetlands and their ecological functions. The destruction and modification of wetlands is likely to cause negative effects on or harm the migratory birds and species at risk that use these areas for breeding and migration, as well as for foraging or resting areas.

The activities linked to the construction, operation, and decommissioning of a linear project can contribute to the introduction and spread of invasive plant species. A linear disturbance is more likely to create introduction and dispersal pathways for invasive species like the Common Reed (*Phragmites australis*). The spread of invasive species may pose a threat to wetlands present in the preferred planning area and study corridor.

Environmental Emergencies

The proposed Project includes linear infrastructure such as shop tracks and wye tracks, waterway and pipeline crossings, mobile equipment and storage areas. As such, there is a potential for adverse environmental and human-

health effects from accidents and malfunctions such as fuel and hazardous materials spills in both the construction and operations phases and from derailments. Adverse effects to water quality, wildlife and wildlife habitat could result from accidental releases of hydrocarbons and contaminants to the surrounding environment. Optimized prevention, preparedness and response measures and systems will be important given the risk of spills of hazardous substances to water and uncontrolled releases of explosive gases that could potentially affect dwellings and reserve lands.

<Original signed by>

Signature

Margaret Fairbairn

Name of Departmental / Agency Responder

A/ Regional Director, Prairie & Northern Region

Title of Responder

October 15, 2020

Date