

**LAKE MANITOBA AND LAKE ST. MARTIN OUTLET CHANNELS PROJECT
RESPONSE TO IAAC TECHNICAL INFORMATION REQUESTS**

Question IAAC-47

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Abbreviations and Acronyms

EIS	environmental impact statement
LAA	local assessment area
LMOC	Lake Manitoba outlet channel
LSMOC	Lake St. Martin outlet channel
PDA	project development area
PR	provincial road
ROW	right-of-way
SAR	species at risk

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EIS Guideline Reference: 7.3.2 Migratory Birds

EIS Reference: 8.3.6.4 Change in Movement

Context and Rationale

Section 7.3.2 of the EIS Guidelines requires an assessment of the potential effects of the Project on migratory bird migration patterns, flyways, local movement, and seasonal habitat use.

Consideration of all potential pathways of effects is required to understand the adverse effects to migratory birds.

The proponent's assessment of the effects of the Project on wildlife movement did not consider how changes to waterbodies and wetlands might affect staging waterfowl and the movements of migratory birds. The EIS does not consider the use of the channels and/or waterbodies created by quarries and borrow pits and does not provide justification to support conclusions that the predicted Project effects to waterbodies and wetlands used by staging waterfowl will be temporary (i.e. during construction only).

The EIS does not describe mortality effects to migratory birds and SAR from collisions and electrocution from power lines in sufficient detail, nor were mitigation measures proposed for such effects. In the absence of mitigation, increased mortality, which may include migratory birds, including SAR, should be described and evaluated in order to understand the potential risk from power lines to migratory birds and SAR.

Information Requests

- a) Describe the potential use of project components by migratory birds and SAR, and the potential effects of the Project on migratory birds at each stage of the Project (including operation) including:
 - i. Migration patterns
 - ii. Flyways
 - iii. Local movement
 - iv. Seasonal habitat use
- b) Describe proposed measures to prevent and mitigate bird collision and electrocution from the Project's power distribution line. Identify migratory bird species and SAR which may interact with the power distribution line, and evaluate the predicted effects of the Project on migratory bird species and SAR, including mortality.

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- a) The primary Project components described in Volume 1, Section 3.4 are: outlet channels, water control structures, permanent bridges, provincial road (PR) 239 realignment, borrow sources, and distribution line (Volume 1, Figures 1B-3 and 1B-4). Potential use and effects on these components by migratory birds and species at risk (SAR) are described below relative to migration patterns, flyways, local movements, and seasonal habitat use.

Migration Patterns and Flyways

The Project is located within the Central Flyway, an area spanning three provinces in central Canada and over 2.5 million km² of North America (HMANA 2019). None of the above listed Project components, or a combination of components, will affect migratory bird migration patterns or flyways. While the channels may provide birds with roosting habitat, the likelihood they would concentrate birds and function as staging habitat (i.e., areas that provide birds with abundant, predictable food resources [Warnock 2010]) is low given the quality of habitat within the channels (see discussion below) and availability of more suitable staging habitat elsewhere in the region (e.g., the bays and wetlands of Lake Manitoba, Lake St. Martin, Lake Winnipeg, and Dog Lake IBA located approximately 18 km south of Lake Manitoba Outlet Channel (LMOC) [Bird Studies Canada 2020]). Migration patterns and flyways are influenced by a variety of factors, most of which operate at larger regional and global spatial scales, such as meteorological conditions and climate change (Sparks et al. 2002).

Local Movement

The environmental impact statement (EIS) assessed the Project's potential to limit or reduce wildlife movement from the perspective of the channels being potential barriers to movement. Using this approach, Volume 3, Section 8.3.6 concluded that during operation, "there is no pathway for a change in movement for migratory birds and no related adverse effects will occur". However, since construction of the Project is expected to reduce the availability of wetland and upland habitat for migratory birds, including SAR, within the project development area (PDA), it has potential to affect local movement (Volume 3, Section 8.3.6). Project components having the greatest potential to interact with local movement of birds and SAR are the outlet channels because they will contain water and span the landscape between Lake Manitoba, Lake St. Martin, and Lake Winnipeg.

In most years, the channels will be inactive and not convey water for flood relief. When channels are open and conveying water (active operation), the region will be experiencing a large-scale flood event. Without the Project there would be widespread changes in local bird and SAR movements due to regional flooding of wetland and upland habitats. However, with the Project, these changes are reduced as regional flood waters are mitigated with the channels.

No provincially or federally recognized migratory bird staging or stop-over habitat will be lost within the PDA as a result of construction and operation (active or inactive) of the outlet channels. While 1,013.6ha of wetland habitat will be removed in the PDA (i.e., a loss of 6.7% of all wetlands [15,153.3 ha] in the local assessment area [LAA]), none of the wetland classes (i.e., all of the marsh

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class, all of the shallow open water class) will be lost from the LAA (Volume 3, Section 8.2.4.5). New marginal breeding and/or foraging habitat for migratory birds may form in the drainage ditch located along the western side of LMOC and eastern side of Lake St. Martin Outlet Channel (LSMOC).

The presence of the water-filled channels during periods of inactivity (i.e., water control structures closed and channels not conveying water) may attract birds and SAR such as northern leopard frog. However, as described in Volume 3, Section 8.3.6.2, the channels may only provide marginal habitat for waterfowl once vegetation establishes along the invert portions of the channel. Ducks and geese may use the channels for roosting, but they are not expected to provide a substantial source of forage, escape cover, or nesting. The Revegetation Plan will encourage vegetation growth necessary for erosion control and bank stabilization within the invert portions of the channel; however, extended periods of inundation or exposure (i.e., drying) may kill vegetation, requiring ongoing vegetation enhancements (as per the Revegetation Plan). The channels may attract fish-eating birds such as cormorants and mergansers however, in the absence of wetland vegetation, habitat for most migratory and non-migratory birds is expected to be limited within the channels. Northern leopard frog may be attracted to the channel; however, channel substrate, may be one of many factors limiting the suitability of the channels for overwintering. Northern leopard frogs rely on mud and/or mud/cobble substrates for hibernation (Kreitals et al. 2014).

Seasonal Habitat Use

Habitat use associated with the construction and operation of the outlet channels and realignment of PR 239 is discussed in Volume 3, Section 8.3.6.2.

Other Project components having potential to interact with migratory bird and SAR seasonal habitat use are quarries and borrow pits. The Project will use existing quarries and borrow pits for material and develop new ones as needed. Unless required for ongoing project maintenance, new quarries and/or borrow pits will be decommissioned and reclaimed when the Project construction is complete. Depending upon the level of activity, active quarries and borrow pits have the potential to support migratory birds (e.g., killdeer) and SAR (e.g., bank swallow and common nighthawk) by providing bank habitat and bare ground for nesting. Decommissioned quarries and borrow pits will be reclaimed and may provide habitat for some migratory birds such as ducks and geese and SAR including bank swallow and common nighthawk.

- b) The distribution line is expected to be constructed in accordance with Manitoba Hydro's standard industry specifications for distribution lines, which describes environmental protection measures for wildlife including migratory birds.

The distribution line is expected to extend approximately 15 km from an existing line along PR 513 northwest of the outlet channel to a pad-mount transformer at the LSMOC water control structure (Volume 1, Section 3.4.3.7). The distribution line alignment will likely require a 30 m wide right-of-way (ROW) to accommodate conductors strung on wooden poles that would typically be 12 m high. Vegetation clearing will result in a relatively small amount of direct habitat loss or alteration for

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migratory birds and SAR and may create habitat for species that use edges or forest openings (e.g., eastern whip-poor-will, golden-winged warbler).

Migratory birds most at risk to overhead line strikes are the less maneuverable species (i.e., large, heavy species with high wing-load such as swans, herons, and cranes), while more maneuverable species (i.e., small, light species with low wing-load such as songbirds) are least vulnerable (Bevanger 1998; Bernardino et al. 2018). Most bird collisions with overhead wires occur within 400 m of water (Faanes 1987) and in areas that concentrate birds (APLIC 2012). The preliminary route for the distribution line traverses lands located over 1.6 km from the northern edge of Lake St. Martin. The distribution line comes within 400 m of an open-water wetland near the LSMOC water control structure before terminating 180 m from the Lake St. Martin shoreline. Manitoba Infrastructure will meet with Manitoba Hydro prior to construction of the distribution line to discuss the findings of the EIS, the regulatory process and pertinent information gathered through the engagement and consultation processes, and confirm measures Manitoba Hydro will take to minimize environmental effects. For example, measures may be implemented to reduce the potential for bird-wire strikes by equipping sections of the overhead distribution line that come within 400 m of a waterbody with bird deterrents such as line markers to increase visibility of conductors to birds. However, Manitoba Hydro will be the owner of the infrastructure and is well versed in identifying and implementing measures to minimize effects to the environment from distribution lines. With the inclusion of mitigation, if and where appropriate, the risk of bird line strikes is low. The need for, and nature of, appropriate mitigation measures may also be further informed by Indigenous groups through ongoing discussion that will occur in association with the Consultation process.

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