

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

Question IAAC-39

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Abbreviations and Acronyms

AEMP	Aquatic Effects Monitoring Plan
CEMP	Construction Environmental Management Program
DFO	Department of Fisheries and Oceans
EIS	environmental impact statement
EMP	Environmental Management Program
EOC	emergency outlet channel
IAAC	Impact Assessment Agency of Canada
LMOC	Lake Manitoba outlet channel
LSMOC	Lake St. Martin outlet channel
OEMP	Operation Environmental Management Program
PER	Project Environmental Requirement

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EIS Guideline Reference: 9.1 Follow-up programs; 9.2 Monitoring

EIS Reference: 12.5 Follow-up and Monitoring Program: Fish and Fish Habitat; Appendix A: Proposed Lake Manitoba and Lake St. Martin Operating Guidelines

Context and Rationale

The EIS guidelines require that the EIS present preliminary follow-up and monitoring programs, which should also include intervention mechanisms used in the event that an unexpected deterioration of the environment is observed.

Section 12.5 of the EIS, outlines the follow-up and monitoring program for fish and fish habitat. Contingency measures have not been identified in the case that Lake St. Martin water levels are low and base flow is required in the channels. In addition, fish rescue options should be in place should Dissolved Oxygen monitoring indicate the potential death of fish. A monitoring schedule after operation of the channels should be in place.

Information Requests

- a) Provide detailed monitoring plans and fish rescue plans. If full plans are not yet available, present preliminary plan details that describe methods, principles, and objectives of the plans and discuss means of ensuring effectiveness of monitoring and contingency measures.

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- a) Full detailed monitoring plans and fish rescue plans will be provided as a component of an Aquatic Effects Monitoring Plan (AEMP) that is currently under development and will be provided to regulators prior to Project construction. The intent of the AEMP will be to monitor the measurable parameters identified for potential pathways of effect with the greatest likelihood of occurrence and/or greatest potential consequence to fish and fish habitat, rather than addressing all potential changes. Components monitored as part of the AEMP will include, but not necessary be limited to:
 - water quality (including total suspended solid concentrations and dissolved oxygen concentrations)
 - sediment quality
 - quality and quantity of fish habitat (including lower trophic levels)
 - abundance, distribution and reproductive success of focal fish populations

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- fish stranding/rescue
- fish tissue contaminant concentrations (i.e., methylmercury).

A substantial amount of baseline information has been collected to form the foundation of the AEMP. This includes data collected from 2011 to 2015 as part of the EOC aquatic effects studies and studies conducted from 2015 to 2018 to establish a baseline for the Lake Manitoba Outlet Channel (LMOC) and Lake St. Martin Outlet Channel (LSMOC). Additional baseline information for the AEMP that will be collected in 2020, including:

- water quality data (including total suspended solid concentrations and dissolved oxygen concentrations)
- sediment quality data (including particle size distribution and metals concentrations)
- acoustic enumeration of the fall migration of lake whitefish in the Dauphin River
- an acoustic telemetry study to determine spawning destinations (i.e., lake basin, river) of lake whitefish migrating up the Dauphin River and when lake whitefish migrate back to Lake Winnipeg
- methylmercury concentrations in fish from Lake Manitoba and Lake St. Martin.

Monitoring results will be reported in compliance with provincial and federal legislation and Environment Certificate or permit conditions issued to the Project. Results of the AEMP will be used to direct mitigation and adaptive management strategies. The AEMP will be conducted at a frequency that will allow prompt implementation of additional mitigation and/or adaptive management should it be necessary. The AEMP will establish objectives for mitigation and adaptive management, and triggers for implementation. The AEMP will be made available to the Department of Fisheries and Oceans (DFO) for comment prior to its submission as part of the Application for *Fisheries Act* Authorization for the Project.

Additional follow-up and monitoring will include measures outlined in the Project Environmental Management Program (EMP), as described in Section 3.7 of the Environmental Impact Statement (EIS), which will provide a framework for the Construction Environmental Management Program (CEMP) and an Operation Environmental Management Program (OEMP). The EMP will outline targeted programs that will guide construction of the Project while also protecting the aquatic environment; details respecting construction-related mitigation will be more fully described in the CEMP and associated plans. The following EMP plans relevant to fish and fish habitat include:

- Environmental Protection Plans
- Project Environmental Requirements (PERs)
- Access Management Plan
- Sediment Management Plan

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- Water Management Plan (including Surface Water and Groundwater management plans)
- Revegetation Plan
- Waste Management Plan
- Hazardous Waste Management Plan

Some of these plans will also include monitoring to determine mitigation success and to protect against guideline exceedances and environmental damage. For example, the Sediment Management Plan will include a comprehensive sediment monitoring program, with thresholds for implementation of additional mitigation, that will be implemented during both construction and operation. Details on monitoring will be contained within monitoring plans such as the AEMP.