

# Environmental Assessment Approval

Approval Date: FEB 09 2017

## Lake Major Dam Replacement Project

Halifax Water

Halifax County, Nova Scotia

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The Lake Major Dam Replacement Project (the "Undertaking"), proposed by: Halifax Water (the "Approval Holder") in Lake Major, Halifax County, Nova Scotia is approved pursuant to Section 40 of the *Environment Act* and Section 13(1)(b) of the Environmental Assessment Regulations. This Approval is subject to the following conditions and obtaining all other necessary approvals, permits or authorizations required by municipal, provincial and federal acts, regulations and by-laws before commencing work on the Undertaking. It is the responsibility of the Approval Holder to ensure that all such approvals, permits or authorizations are obtained before commencing work on the Undertaking.

This Environmental Assessment Approval is based upon the review of the conceptual design, environmental baseline information, impact predictions, and mitigation presented in the Registration Document.

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### Terms and Conditions for Environmental Assessment Approval

#### 1.0 General Approval

- 1.1 The Environmental Assessment Approval for the Undertaking is limited to the Undertaking as described in the Environmental Assessment Registration Document. Any proposal by the Approval Holder for expansion, modification or relocation of any aspect of the project from that proposed in the Registration Document must be submitted to the Environmental Assessment Branch for review and may require an environmental assessment (EA).
- 1.2 The Approval Holder must, within two years of the date of issuance of this Approval, commence work on the Undertaking unless granted a written extension by the Minister.

The Approval Holder must notify Nova Scotia Environment (NSE) of the commencement date of the Undertaking, at a minimum 30 days prior to the commencement.

- 1.3 The Approval Holder must not transfer, sell, lease, assign or otherwise dispose of this Approval without the written consent of the Minister. The sale of a controlling interest of a business or a transfer of an approval from a parent company to a subsidiary or an affiliate is deemed to be a transfer requiring consent.
- 1.4 The Approval Holder must implement all mitigation and commitments in the Registration Document, unless approved otherwise by NSE.

## **2.0 Facility Construction, Operation and Maintenance**

- 2.1 The Approval Holder, as part of the application for the Part V Approvals under the *Environment Act*, must address flowage rights requirements as required by NSE.
- 2.2 The Approval Holder must manage and maintain all structures in accordance with the Canadian Dam Association's Dam Safety Guidelines and associated technical bulletins, as amended from time to time. The Approval Holder must ensure a qualified professional engineer or consulting firm (licensed to practice in the Province of Nova Scotia with the necessary experience and qualifications outlined by the Canadian Dam Association's Dam Safety Guidelines) oversees compliance with this condition.
- 2.3 Prior to operation of the new dam, the Approval Holder must prepare and implement the following plans, and provide the plans to NSE immediately upon request:
  - a) an emergency preparedness plan to identify potential dam hazards and roles and responsibilities of all relevant parties, including provision of flood mapping associated with the project activities and potential accident and malfunction associated with the dam. The plan must follow Canadian Dam Association's Dam Safety Guidelines;
  - b) an emergency response plan outlining actions to be taken in response to unusual or emergency situations. The plan must follow Canadian Dam Association's Dam Safety Guidelines.

## **3.0 Water Resources**

- 3.1 The Approval Holder must not undertake any project related activities within 30 metres of a watercourse and/or wetlands unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted unless otherwise approved by NSE.

- 3.2 Prior to commencement of the project, the Approval Holder must obtain approval under the Activities Designation Regulations from NSE regarding the wetland alterations related to the project.
- 3.3 The Approval Holder must ensure project activities adhere to the Lake Major Watershed Protected Water Area Regulations.
- 3.4 The Approval Holder, as part of the application for the Part V Approvals under the *Environment Act*, must submit and implement an Environmental Protection Plan to include the following points. Based on the results of the monitoring and management programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE:
- a) a surface water monitoring plan including sampling locations and parameters to monitor water quality changes, water flow and water level during construction and operation of the project;
  - b) a plan to sample sediments for potential contaminants between the new and the old dams prior to any potential release into the watercourse as a result of construction activities, and a plan for disposal of the sediment in accordance with applicable regulations;
  - c) a plan to sample the potential for and extent of sulphide bearing materials, and a plan to manage any exposed acid generating material and associated drainage in accordance with applicable regulations;
  - d) a blasting plan if requested by NSE. The plan must include an updated pre-blast survey for structures and water wells within 800 metres of the blast area, a detailed blast monitoring plan, and a full blast damage response policy as required by NSE;
  - e) an evaluation of the potential for the increase of methyl mercury contamination in fish as a result of the increase of water level, and a mitigation plan as required;
  - f) an erosion and sedimentation control plan to mitigate the potential release of sediments into the environment during construction and operation of the project; and
  - g) an evaluation of the potential for threats to the quality of drinking water during construction, and a plan to address them including a backup water supply if required.
- 3.5 The Approval Holder must replace or repair, at their expense, any water well which has been lost or damaged as a result of project operations to the satisfaction of NSE.

- 3.6 The Approval Holder, as part of the application for the Part V Approvals under the *Environment Act*, must provide a detailed plan for the reclamation of the area between the new and the old dams to the satisfaction of NSE, and must be implemented.
- 3.7 The Approval Holder, as part of the application for the Part V Approvals under the *Environment Act*, must summarize the changes to upstream and downstream watercourse conditions and potential impacts to infrastructure and private property associated with the increases in water level and flow from the new dam, relative to existing conditions, for a range of potential flow conditions (e.g., scenarios for the 1 in 5, 1 in 20 and 1 in 100 year return period flows). The Approval Holder as part of the Part V application must also provide mapping showing existing and post-construction flooding upstream and downstream for the 1 in 100 year return period flows.

#### 4.0 Flora and Fauna

- 4.1 Prior to commencement of the project, the Approval Holder must provide Nova Scotia Department of Natural Resources (DNR), Wildlife Division with digital way points and/or shape files revealing precise locations for all S1, S2 and S3 listed species (under the Atlantic Canada Conservation Data Center), identified during field work within the area of the Undertaking. The date of the above noted field data must also be provided to DNR. The Approval Holder must report to NSE that the files have been provided to DNR.
- 4.2 Prior to the commencement of the project, the Approval Holder must develop in consultation with DNR, Wildlife Division a wildlife management plan to include the following points, and must implement the plan once approved by NSE. Based on the survey results, the Approval Holder must make necessary modifications to mitigation plans and/or operations in consultation with DNR and as required by NSE.
  - a) a plan to survey during construction for Snapping Turtle (*Chelydra serpentina*) nests at soil or sand stock piles at the project site during sensitive nesting period (June 15 to July 7);
  - b) a plan to survey during construction for Common Loon (*Gavia immer*) nests during sensitive nest period (May 15 to June 15); and
  - c) a plan to achieve the gradual drawdown of water within the cofferdam during construction. This is to ensure wildlife such as invertebrates and amphibians have time to retreat and adjust to the changes in water level.

- 4.3 The Approval Holder must clear vegetation outside of the breeding season for most bird species (April 15 to August 31), unless otherwise approved by NSE.

## **5.0 Air Quality and Noise**

- 5.1 At the request of NSE, the Approval Holder must develop and implement an air quality and/or dust monitoring plan. This plan must include but not be limited to sampling locations, parameters, monitoring methods, protocols and frequency. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.
- 5.2 At the request of NSE, the Approval Holder must monitor noise levels. Based on the results of monitoring program as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.

## **6.0 Archaeological and Heritage Resources / Aboriginal Interests**

- 6.1 Prior to commencement of the project, the Approval Holder must submit the result of the shovel testing conducted in 2016 to the Nova Scotia Department of Communities, Culture and Heritage (CCH) for review. Based on the result of the shovel testing, the Approval Holder must make necessary modifications to mitigation plans and/or operations in consultation with CCH and as required by NSE.
- 6.2 The Approval Holder must cease work and contact the Special Places Coordinator, Nova Scotia Department of Communities, Culture and Heritage immediately upon discovery of an archaeological site or artifact unearthed during any phase of the Undertaking. If the find is of certain or suspected Mi'kmaq origin, the Approval Holder must also contact the Executive Director of the Kwilmu'kw Maw-klusuaqn Negotiation Office.

## **7.0 Public Consultation**

- 7.1 Prior to commencement of the project, the Approval Holder must develop and implement a complaint resolution plan to address all concerns associated with the Undertaking. The Approval Holder must appoint a contact person designated to deal with complaints, and must provide the contact information to NSE.
- 7.2 At the request of NSE, the Approval Holder must form a Community Liaison Committee (CLC). The NSE's Guidelines for the Formation of a Community Liaison Committee should be used for guidance. The Approval Holder must operate the CLC for the duration of the Undertaking and until released in writing by NSE.

## 8.0 First Nation and Aboriginal Engagement

8.1 Prior to commencement of the project, the Approval Holder must submit the archaeology report of the shovel testing conducted in 2016 to Sipekne'katik First Nation once the report has been approved by CCH, unless otherwise approved by NSE.

## 9.0 Contingency Plans

9.1 The Approval Holder, as part of the application for the Part V Approvals under the *Environment Act*, must submit and implement the following plans:

a) a water conservation plan which outlines triggers for various conservation measures to maintain Lake Major reservoir water level and downstream flow requirements particularly during dry conditions; and

b) a spill contingency plan which meets NSE's Contingency Planning Guidelines.

## 10.0 Site Reclamation and Closure

10.1 The Approval Holder, as part of the application for the Part V Approvals under the *Environment Act*, must provide for review and approval a preliminary reclamation and closure plan.

10.2 Project operations must be completed and reclaimed to the satisfaction of NSE and other appropriate regulatory departments.



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Margaret Miller, MLA  
Minister of Environment