GUIDELINES

for a

Revised Environmental Preview Report

for the

Long Pond Weir

Honourable Derrick Bragg
Minister
Department of Municipal Affairs and Environment

June, 2020

Registration No. 1783

ENVIRONMENTAL PREVIEW REPORT GUIDELINES

The following guidelines will assist the proponent, the City of St. John's, with the preparation of a revised Environmental Preview Report (EPR) for the proposed Long Pond Weir, as required by the Minister of Municipal Affairs and Environment in a letter of May 9, 2016. The revised EPR is a report that presents the results of an investigation based on readily available information that supplements the information previously provided in the proponent's registration document of February 6, 2015 and EPR dated March 2016. The purpose of the information in the revised EPR is to assist the Minister in making a determination as to whether the project can proceed in an environmentally acceptable manner, or whether further study is needed. The Minister can make a recommendation to the Lieutenant Governor in Council at any time during an environmental assessment that an undertaking should not proceed because it is contrary to a law or to a policy of the government of the province.

The revised EPR is expected to be as concise as possible while presenting the comprehensive information necessary to enable an informed decision. The EPR shall include and update the relevant information provided in the proponent's information requirements of these revised EPR Guidelines. The EPR shall provide sufficient detail to enable the Minister of Municipal Affairs and Environment to make an informed decision as to the potential for significant environmental effects from the undertaking. The contents of the EPR should be organized according to the following format:

1.0 NAME OF UNDERTAKING:

The undertaking should be assigned a name that clearly identifies the proposed project. The undertaking has been assigned the name, "Long Pond Weir." In every respect, the proposed weir at Long Pond will act and behave as a dam. The proposed structure meets the Canadian Dam Association (CDA) definition of a dam. If the structure fails, there will be an uncontrolled release of the water being impounded, as per the failure of a dam.

2.0 PROPONENT:

Name the proponent and the corporate body, if any, and state the mailing address and the E-mail address.

Name the chief executive officer if a corporate body, telephone number and E-mail address.

Name the principal contact person for purposes of environmental assessment and state the official title, mailing address, telephone number and E-mail address.

3.0 THE UNDERTAKING:

State the purpose/rationale/need for the Long Pond Weir Project (the Project) from the perspective of the City of St. John's.

If the proposal is in response to an established need, this should be clearly stated. Identify needs that are immediate as well as potential future needs. Identify any broader private or public sector policies, plans or programs to which the objectives of the Project contribute, i.e. the Rennies River Catchment Stormwater Management Plan, the City's Subdivision Design Manual, the City's Stormwater Detention Policy and the provincial The Way Forward on Climate Change in Newfoundland and Labrador 2019.

If the project has changed from the description presented in the EPR that was submitted to the Minister of the former Department of Environment and Conservation Municipal Affairs and Environment on March 10, 2016, clearly identify the proposed change(s) and state the rationale for the change(s).

4.0 DESCRIPTION OF THE UNDERTAKING:

In the following sections you are expected to provide complete information concerning the preferred choice of location, design, construction and maintenance of the weir.

The type of material used in the construction of the weir/dam can have a significant impact on the design of the structure. Justification for the type of material selected must be provided, considering the expected useful life of the structure and design requirements.

Classify the proposed structure as per the Canadian Dam Association (CDA) Dam Safety Guidelines (2013). This classification will have bearing on the annual exceedance probability (AEP) design flood and other dam safety measures that may be required. Supporting information is required to justify the dam consequence classification.

Undertake a sensitivity analysis of the flow of the Rennie's River catchment using the 100 year Climate Change AEP flow plus 30 per cent, which is the province's standard sensitivity range for flood risk studies. Find the flow which ensures that a minimum elevation difference of 1.15 metres is always maintained between the water level in Long Pond and the entrance to the Health Science Centre (HSC) Utility Tunnel located at Clinch Crescent East (57.15 metre elevation). This will be the limiting flow. The elevation gradient of 1.15 metres is the difference between the elevation at the entrance to the HSC Utility Tunnel and the projected peak water level in Long Pond during the 1:100 year AEP flow.

Describe the sensitivity analysis that was undertaken for the Long Pond Weir EPR and the limiting flow that was determined to ensure that a minimum elevation difference of 1.15 metres is always maintained between the water level in Long Pond and the

entrance to the Health Science Centre (HSC) Utility Tunnel located at Clinch Crescent East (57.15 metre elevation). In consideration of the new redundancy in power supplied to the HSC, the current design proposal for the Long Pond Weir, and the request from the City to reduce the minimum elevation gradient, demonstrate how the limiting flow identified in the previous EPR will ensure that a minimum elevation difference of 1.15 metres is always maintained between the water level in Long Pond and the entrance to the Health Science Centre (HSC) Utility Tunnel.

Design the dam to ensure that a minimum elevation difference of 1.15 metres is always maintained between the projected peak water level in Long Pond and the entrance to the HSC Utility during the 1:100 year Climate Change AEP flow plus 30 per cent.

Any flows that would reduce the elevation gradient of 1.15 metres, from the projected peak water level in Long Pond to the entrance of the HSC Utility Tunnel, must pass through the dam without dam failure.

Design the dam to ensure that no structure impedes the flow of water through/above the spillway, e.g. a pedestrian walkway.

Install an automated real-time water level monitoring system at Long Pond, under a memorandum of understanding (MOU) with the Department of Municipal Affairs and Environment, and describe an Alert Plan that will be implemented by the City to inform property owners including the Health Sciences Centre, Memorial University of Newfoundland, the Elaine Dobbin Centre, the Pippy Park Commission and private property owners above and below the weir of increasing water levels in Long Pond and Rennies River. The Water Resources Management Division of the Department of Municipal Affairs and Environment will provide details on the MOU and establishing the water level monitoring station.

Design a berm to prevent additional flooding of the East end of the National Research Council (NRC) building. The berm is henceforth referred to as the NRC Berm.

Design flood control structures to prevent additional flooding of any property, as a result of the dam and/or the NRC Berm, such as the Elaine Dobbin Centre for Autism, the Memorial University Splash Facility, or any other public or private property.

If the design of the dam cannot meet the flood AEP recommendations and other design criteria (i.e., freeboard) of the CDA Dam Safety Guidelines based on the identified dam classification, acknowledge this fact and implement a more extensive dam safety risk management approach as outlined in Section 6.

Given that the proposed project will be sensitive to climate and weather, particularly extreme precipitation events and ice damage, mitigative measures should be factored into the design to ensure that the risk of infrastructure and environmental damage and other accidents is minimized. Climate data, historical data, local area knowledge and increasing ranges of weather events should be taken into account in determining the adequacy of the structural design.

4.1 Geographical Location/Physical Components/Existing Environment

a) Provide an accurate physical description of the weir/dam, the NRC berm, and any other flood control structure designed in accordance with section 4.0 above, including the location, composition, width, length, height and slopes associated with the structures. Provide illustrations and/or drawings of the proposed structures clearly indicating the above-noted dimensions;

b) Provide hydro-technical and geotechnical analysis for the dam as appropriate including, but not limited to, freeboard analysis, stage-discharge analysis, slope stability analysis, and spillway erosion analysis etc., for the dam as per the CDA Dam Safety Guidelines;

c) Ensure that the spillway capacity of the dam structure is adequate to meet the design flood AEP as per the CDA Dam Safety Guidelines, the design flood AEPs as per flood mapping requirements (1:20 year Climate Change AEP flow, 1:100 year Climate Change AEP flow, and the 1:100 year Climate Change AEP flow plus 30 per cent), and the maximum water level limitation on Long Pond (56 metres);

d) Submit an elevation profile of the land extending from the weir, up to and surrounding Long Pond, and extending southwest to the Clinch Crescent West Bridge, both before and after the construction of the weir/dam, NRC berm, and any other flood control structure;

e) Submit an elevation profile of the land extending from immediately below the weir and along the banks of Rennies River until it discharges into the headwaters of Quidi Vidi Lake;

f) Provide pre and post weir plus NRC berm plus any other flood control structure floodplain mapping from Clinch Crescent West to the weir, and extending downstream to the headwaters of Quidi Vidi Lake, for the 1:20 year climate change, 1:100 year climate change, and 1:100 year Climate Change plus 30 per cent AEP flows;

g) Using sensitivity analysis and various AEP flows, including the 1:20 year Climate Change AEP flow, 1:100 year Climate Change AEP flow, and the 1:100 year Climate Change AEP flow plus 30 per cent, clearly identify adjacent land uses, structures, wetlands, public and private property that may be impacted by increased water levels during precipitation events, both pre and post dam and NRC berm construction, from Clinch Crescent West to the headwaters of Quidi Vidi Lake;

h) Ensure that the sensitivity analysis, floodplain mapping and flood inundation mapping use current aerial imagery and LiDAR data to reflect the impact of the weir and NRC berm on current development;

i) Language in the revised EPR and dam risk management documents must be revised accordingly, to reflect updated water levels, dam design, sensitivity analysis, floodplain mapping and flood inundation mapping; and

j) Provide information regarding ownership and/or zoning of the land upon which the Project is to be located and any restrictions imposed by that ownership or zoning, i.e. the Pippy Park Commission.

4.2 Construction:

a) State the total project construction period (if staged, list each stage and its approximate duration) and proposed date of first physical construction-related activity.

b) Provide details, materials, methods, schedule, and location of all planned construction activities and laydown areas.

c) Provide details on site construction methods including the operation of a cofferdam and the management of flow during construction.

d) Identify and assess the construction design flow that will be implemented to manage the risk of construction site inundation during the work period.

e) Describe the potential sources of pollutants during the construction period(s) including soil erosion, sedimentation and siltation. All available construction materials should be considered including pre-cast concrete, corrosive resistant steel, and those materials best suited to the conditions and intended use of the structure. Selection of the preferred construction material should include a consideration of the full life-cycle of the material (ease of use, design factors associated with the construction material and maintenance requirements). Environmental implications (i.e. storm and ice damage) should also be considered.

f) Describe measures that will be undertaken to ensure that activities associated with the construction of the Long Pond weir are conducted in compliance with the Occupational Health and Safety Act and its Regulations. This includes the responsibility for ensuring that contractors hired to perform work also comply with this legislation, as per OHS Act s.10.

g) Identify potential causes of resource conflicts during the construction phase(s) including temporary disruption of vehicular and pedestrian traffic and disruption of fish habitat.

h) Provide a contingency plan for structure failure and/or failure of flow control equipment during the construction phase;

4.3 Operation and Maintenance:

All aspects of the operation of the proposed Long Pond weir shall be presented in detail.

Predict the duration of water retention in Long Pond after the weir and NRC berm, and any other necessary flood control structures are constructed for the following return period flows: 1:20 year Climate Change AEP flow, 1:100 year Climate Change AEP flow and 1:100 year Climate Change AEP flow plus 30 per cent.

Describe the potential effects of increased water levels upstream of the weir, that occur as a result of the weir, on property below Allandale Road, the Allandale Road Bridge, above the Allandale Road Bridge, surrounding Long Pond, and including the HSC, the Elaine Dobbin Centre, Memorial University of Newfoundland, the East Coast/Pippy Park Walking Trail and associated structures, as well as wetlands around the perimeter of Long Pond.

Describe how the weir will be operated to ensure that a minimum 1.15 metre elevation gradient is maintained between the projected peak water level in Long Pond (as per the 1:100 year Climate change AEP flow plus 30 per cent) and the entrance to the HSC Utility Tunnel at Clinch Crescent East.

5.0 ALTERNATIVES

The EPR must identify and describe alternative means for carrying out the Project that are technically and economically feasible, to meet the stated purpose and rationale. The following steps for addressing alternatives are recommended:

a) Identify alternative means, designs and locations to carry out the Project, and provide reasons for the rejection of alternatives;

b) Describe the advantages and disadvantages of constructing the weir using earthen materials versus using concrete and demonstrate the rationale for the selected material of construction;

c) Explain why the installation of a weir below the Allandale Road bridge was selected as the preferred location, despite the recommendation in the Rennies River Catchment Stormwater Management Plan that the weir be located at the mouth of Long Pond, immediately upstream of the Allandale Road bridge, and identify the advantages and disadvantages of both locations;

d) Explain why a passive flow control structure is preferred, as opposed to a structure with operable parts that may be used to manage the release of water out of Long Pond.

6.0 POTENTIAL ENVIRONMENTAL EFFECTS and MITIGATION:

Provide detailed information regarding the potential effects of the proposed Project on the environment and details of proposed mitigations.

6.1 Dam Risk Management

The following dam risk management measures should be included in the revised EPR:

a) Dam break analysis and flood inundation mapping downstream of the dam;
b) An Emergency Preparedness and Response Plan (EPRP), including plans for public notification of residents downstream of the dam, and a warning system that incorporates real-time water level monitoring into the detection and response;
c) A testing schedule for the EPRP;
d) Information to describe how preventive actions listed in the EPRP will be implemented to reduce or eliminate an emergency dam situation in the case of the loss of freeboard or dam cross section, e.g., how dam discharge will be maximized, how and where water will be diverted and pumped, and how upstream floodwater retention can be maximized;
e) A dam Operation, Maintenance and Surveillance Manual (OMS Manual);
f) An inspection program including inspection form, frequency and procedures for corrective action;
g) A Dam Safety Review (DSR) schedule;
h) A self-assessment tool for the City to assess its state of readiness in the event of dam failure;
i) Complete Hazard Identification and Risk Assessment (HIRA) covering dam safety emergencies;
j) Information to explain how rankings of "low," "moderate," and "low-moderate" were determined in Table 2 of the HIRA document;
k) Information to describe actions that will be taken to address higher ranked hazards identified in Table 2 of the HIRA document, such as overtopping, flow obstruction and foundation, weir and gate failure; and
l) Confirmation of the City's commitment to install an automated real time water level monitoring system in Long Pond prior to construction of the weir.

Criteria for completion of the above-noted measures are described in the CDA Dam Safety Guidelines and Associated Bulletins.

6.2 Provide a contingency plan for flow control equipment and/or structure failure during the construction phase(s).

6.3 Using sensitivity analysis for various AEP flows, including the 1:20 year, 1:100 year Climate Change, and 1:100 year Climate Change AEP flow plus 30 per cent, identify mitigative measures that will be implemented prior to weir construction to protect adjacent land uses, structures, wetlands, public and private property that may be impacted by increased water levels during precipitation events after the weir is installed.

6.4 Describe measures that will be undertaken to ensure that a zero net run-off policy will be maintained for all future development in the Rennie's River watershed.

6.5 Describe methods that will be used to prevent discharges from project work involving concrete, cement, mortars and other lime-containing construction materials (if applicable) from entering the aquatic environment.

6.6 Provide information on erosion prevention and drainage control measures, such as filter fabrics, sediment traps and/or settling ponds that will be installed prior to any land disturbance, to minimize the effects of dam construction and operation on fish and migratory birds and their habitat. Describe regular monitoring and repair activities that will be undertaken to ensure the continued effectiveness of such control devices.

6.7 The revised EPR shall describe measures that will be undertaken to uphold any conditions, requirements and recommendations made by Fisheries and Oceans Canada to protect fish habitat and facilitate fish passage during construction and operation of the weir.

6.8 Explain methods that will be used to avoid or minimize the impacts of the Project on wetlands.

6.9 Provide information on best practices that will be undertaken with regard to fuelling and servicing equipment, using biodegradable fluids, fuel spills and environmental emergency plans to protect fish, migratory birds and their habitats.

6.10 Define plans to ensure that a quick and effective response to a spill event is possible, and that spill response equipment is readily available on-site. Response equipment, such as absorbents and open-ended barrels for collection of clean-up debris, should be stored in an accessible location on-site. Personnel working on the project should be knowledgeable about response procedures. Develop, test and implement an environmental emergency contingency plan, which includes information regarding the location of on-site spill response equipment and a trained contractor, in the event of a spill.

6.11 Describe strategies and best available control technologies that will be used to minimize the project's impact on climate change with respect to greenhouse gas emissions, i.e. indicate plans to operate all heavy equipment used during construction in a manner that will maximize fuel efficiency.

6.12 Identify methods that will be used to minimize interference with vehicular and pedestrian traffic during construction and maintenance of the weir;

6.13 On April 28, 2016, the City of St. John's responded to a letter from the Pippy Park Commission (PPC), which outlined their concerns about the proposed Long Pond Weir project. In their response letter, the City described mitigation measures that will be implemented to address PPC's concerns. The City is advised that the mitigation measures described in the letter should be included in the revised EPR, to inform the public and to

provide an opportunity for public comment.

6.14 Indicate measures that will be undertaken to resolve potential land use conflicts with the Pippy Park Commission during construction and operation and the dam.

6.15 Please note that a Table of Concordance must be included in the revised EPR indicating where, in the document, responses to each of the revised EPR Guideline requirements can be found.

7.0 PROJECT- RELATED DOCUMENTS:

Provide a bibliography of all project-related documents already generated by or for the proponent (i.e. the Rennies River Catchment Stormwater Management Plan, the Regional Stormwater Detention Feasibility Study, Ken Brook and Leary's Brook Floodplain Delineation Study, Report on Proposed Weir Structure–Long Pond St. John's NL, and the Report on Fish Passage at the Proposed Long Pond Weir). Provide access to information contained in previous studies specific to this project, i.e. web links.

8.0 APPROVAL OF THE UNDERTAKING:

List the main permits, licences, approvals, and other forms of authorization required for the undertaking, together with the names of the authorities responsible for issuing them (e.g., federal government departments, provincial government departments, municipal councils, etc.).

The Water Resources Management Division advises that a permit is required under Section 48 of the Water Resources Act, for any work in any body of water (including wetlands) prior to the start of construction. It should be pointed out that more than one permit may be required in relation to this Project within Long Pond and its watershed area.

Describe the Department of Fisheries and Oceans Canada (DFO) regulatory requirements for this project.

9.0 PUBLIC INFORMATION MEETING:

A Public Information Session will be required in order to:

- provide information concerning the undertaking to the people or other stakeholders whose environment may be affected by the undertaking;
- record and respond to the concerns of the local community regarding the environmental effects of the undertaking;
- present the information gathered to fulfill the requirements of Section 5 of these guidelines.

The Public Information session must adhere to all restrictions to mitigate the impacts of COVID-19 that are in place at the time of the session. Information sessions may be conducted by virtual means through a live streaming, video conferencing or teleconferencing process, such as Facebook Live, Zoom, Microsoft Teams, Skype, Webex, Go To Meeting, and others.

You are required to notify the Minister and the public of the scheduled meeting not fewer than 7 days before that meeting. Public concerns shall be addressed in a separate section of the EPR.

Protocol for these public sessions will comply with Section 10 of the Environmental Assessment Regulations, 2003. Public notification specifications are outlined in Appendix A, and additional measures to notify the public of the information session shall be undertaken, such as the use of twitter and Facebook, notification on the proponent's web site and if permitted, on local community web sites and local community TV channels,

A minimum of 6 paper copies of the EPR and an electronic version for posting to the Environmental Assessment website should be forwarded, together with a covering letter, to:

Director, Environmental Assessment Division
Department of Municipal Affairs and Environment
P.O. Box 8700
St. John's NL A1B 4J6

APPENDIX A

Public Notices

Under the provisions of the Environmental Assessment Regulations 2003, Section 10, and where the approved Guidelines require public information session(s), the following specified public notification requirements must be met by the proponent prior to each meeting.

Minimum information content of public advertisement - (Proponent to substitute appropriate information for italicized items):

PUBLIC NOTICE

Public Information Session on the Proposed

Name of undertaking
Location of undertaking

shall be held at
Date and Time
Location

This session shall be conducted by the Proponent,
Proponent name and contact phone number,
as part of the environmental assessment for this Project.
The purpose of this session is to describe all aspects of the proposed Project,
to describe the activities associated with it, and to provide an opportunity for all interested persons to request information or state their concerns.

ALL ARE WELCOME

Minimum newspaper ad size: 2 column widths; Minimum posted ad size: 7" x 5"

Minimum newspaper ad coverage: Weekend preceding meeting and 3 consecutive days prior to meeting date; to be run in newspaper locally distributed within meeting area or newspaper with closest local distribution area.

Minimum posted ad coverage: City of St. John's web page to be posted continually for 1 full week prior to meeting date.