GUIDELINES

for an

Environmental Preview Report

for the

Long Pond Weir

Honourable Dan Crummell
Minister
Department of Environment and Conservation

June 9, 2015

ENVIRONMENTAL PREVIEW REPORT GUIDELINES

The following guidelines are intended to assist the proponent, the City of St. John's, with the preparation of the Environmental Preview Report (EPR) for the proposed Long Pond Weir. The EPR is a report that presents the results of an investigation based on readily available information that supplements the information already provided by the proponent upon registration of the undertaking. The purpose of the information in the EPR is to assist the Minister of Environment and Conservation in making a determination as to whether an Environmental Impact Statement (EIS) will be required for the proposed undertaking. The EPR is expected to be as concise as possible while presenting the comprehensive information necessary to make an informed decision.

The EPR should include and update the information provided in the original registration and focus on the information gaps identified during the government and public review of the registration. The EPR should address the information gaps in sufficient detail to enable the Minister of Environment and Conservation 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. 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. 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. 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 Climate Change Action Plan 2011.

If the project has changed from the original project description, as presented in the Environmental Assessment (EA) registration document dated February 6, 2015, clearly identify the proposed change(s) and state the rationale for the change(s).

4. DESCRIPTION OF THE UNDERTAKING:

Provide complete information concerning the preferred choice of location, design, construction and maintenance standards.

The type of material used in the construction of the dam can have a significant impact on the design of the structure. Justification for the type of dam material 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 classification.

Undertake a sensitivity analysis of the flow of the Rennie's River catchment using the 100 yr 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 1.45 m 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 m elevation). This will be the limiting flow. The elevation gradient of 1.45m 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 AEP flow.

Design the dam to ensure that water levels in Long Pond do not exceed those associated with the limiting flow. Any flows that would reduce the elevation gradient of 1.45 m, from the 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 and/or above the spillway, e.g. a pedestrian walkway.

Install an automated real-time water level monitoring system in Long Pond, under the federal-provincial Hydrometric Agreement, 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 of increasing water levels in Long Pond. The Water Resources Management Division of the Department of Environment and Conservation can provide details on establishing the water level monitoring station under the Hydrometric Agreement.

If the design of the dam cannot meet the flood annual exceedance probability recommendations of the CDA *Dam Safety Guidelines (2013)* 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

Provide an accurate physical description of the dam, including the location, composition, width, length, height and slopes associated with the structure. Provide illustrations and/or drawings of the proposed structure clearly indicating the above-noted dimensions.

Provide hydro technical and geotechnical analysis for the dam as appropriate including freeboard analysis, stage-discharge analysis, slope stability analysis and spillway erosion analysis etc., for the dam as per the CDA Dam Safety Guidelines (2013).

Ensure that the spillway capacity of the structure is adequate to the design flood AEP and/or water limitation in Long Pond.

Submit an elevation profile of the land surrounding Long Pond, extending southwest to the Clinch Crescent West Bridge, both pre and post dam construction.

Using sensitivity analysis and various AEP flows, including the 1:5, 1:20, 1:50, 1:100 AEP and 1:100yr 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 construction.

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:

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

Provide details, materials, methods, schedule, and location of all planned construction activities.

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

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

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.

Describe measures that will be undertaken to ensure that activities associated with the construction of the Long Pond dam are conducted in compliance with the *Occupational Health and Safety Act, O.C. 2012-005* 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.*

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

4.3 Operation and Maintenance:

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

Predict the duration of water retention in Long Pond after the dam is constructed for the following return period flows: 1:5, 1:20, 1:50, 1:100 AEP and 1:100yr Climate change AEP flow plus 30 per cent.

Describe the potential effects the increased water levels will have on property adjacent to Long Pond, 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 dam will be operated to ensure that a minimum 1.45 m elevation gradient is maintained between the maximum water level in Long Pond (as per the 1:100yr Climate change AEP flow plus 30 per cent) and the entrance to the HSC Utility Tunnel at Clinch Crescent East.

5. 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:

- Identify alternative means, designs and locations to carry out the Project, and provide reasons for the rejection of alternatives;
- Describe the advantages and disadvantages of constructing the dam using earthen materials versus using concrete and demonstrate the rationale for the selected material of construction;
- Explain why the installation of a dam at the outlet of Long Pond was selected as the first priority amongst a number of flood protection improvements that were recommended as part of a related study, the *Rennies River Catchment Stormwater Management Plan;*
- Explain why earth berms and concrete walls, recommended in the above-noted study, are not being constructed in the vicinity of Clinch Crescent East to Clinch Crescent West prior to the installation of the dam to manage potential backwater effects;
- Explain why a fixed 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. POTENTIAL ENVIRONMENTAL EFFECTS and MITIGATION:

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

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

- Dam break analysis and flood inundation mapping downstream of the dam;
- An Emergency Preparedness and Response Plan (EPRP), including plans for public notification of residents downstream of the dam;
- A dam Operation, Maintenance and Surveillance Manual (OMS Manual);
- An inspection program including inspection form, frequency and procedures for corrective action;

- A Dam Safety Review (DSR) schedule;
- A testing schedule for the EPRP;
- A self-assessment tool for the City to assess its state of readiness in the event of dam failure;
- Complete Hazard Identification and Risk Assessment (HIRA) covering dam safety emergencies.

Criteria for completion of the above-noted measures are described in the CDA Dam Safety Guidelines (2013) and Associated Bulletins.

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

Using sensitivity analysis for various AEP flows, including the 1:5, 1:20, 1:50, 1:100 yr and 1:100yr Climate Change AEP flow plus 30 per cent, identify mitigative measures that will be implemented prior to dam 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 dam is installed.

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.

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

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.

The Department of Fisheries and Oceans Canada (DFO) has conducted an independent assessment of the Project. The EPR shall describe measures that will be undertaken to uphold the conditions, requirements and recommendations given by DFO to protect fish habitat and facilitate fish passage during construction and operation of the weir.

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

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.

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.

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, thereby reducing greenhouse gas emissions that could contribute to climate change issues.

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

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

7. 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. 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.).

Water Resources Management Division advises that the proponent must apply for and obtain a permit under the *Water Resources Act,* 2002, specifically Section 48 http://assembly.nl.ca/Legislation/sr/statutes/w04-01.htm for any work in any body of water (including wetland) 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.

The Department of Fisheries and Oceans Canada (DFO) has assessed this project and has given approval subject to conditions. The conditions outlined by DFO for this project must be adhered to by the City of St. John's.

9. PUBLIC INFORMATION MEETING:

An Open House Public Information Session is required to be held in a centralized location within the City of St. John's to present the information gathered to fulfill the requirements of Section 5 of these guidelines. You are required to notify the Minister and the public of the scheduled meeting not fewer than 7 days before that meeting. Public concerns should 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.

A minimum of 8 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:

Minister
Environment and Conservation
P.O. Box 8700
St. John's NL A1B 4J6
Attention: Director of Environmental Assessment

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: Local Town or City Hall or Office, and local Post Office, within town or city where meeting is held, to be posted continually for 1 full week prior to meeting date.