

Additional Information Requirements For Projects Involving Constructed Wetlands

Pursuant to Section 5(2) of the *Environmental Impact Assessment Regulation* of the Clean Environment Act, this document is intended to assist proponents in preparing a registration submission for projects involving the above-mentioned sector. It should be read in conjunction with the General Information Requirements as outlined in the latest version of the Registration Guide. Note that the following items are requirements **in addition to** those outlined in the Registration Guide. The information requested in the Registration Guide must also be provided. For further assistance, please contact the Project Assessment and Approvals Branch, Department of Environment at (506)-444-5382.

After reviewing a registration submission, the Technical Review Committee may require other information beyond the items listed below and in the Registration Guide.

Definition

This guideline is applicable to all enterprises, activities, projects, structures, works or programs involving the construction of an artificial wetland. Constructed wetlands are typically of three general types: a) wastewater treatment/effluent polishing facilities b) erosion and sedimentation/site runoff controls; or c) facilities for the creation of wildlife habitat (e.g., Ducks Unlimited projects).

A complete list of potential triggers for project registration is provided in Schedule "A" of the Regulation. To determine if that registration is required for a specific project, please contact the Project Assessment and Approvals Branch at the number listed above.

1.0 THE PROPONENT

See Registration Guide

2.0 THE UNDERTAKING

(v) Siting Considerations:

- Some key considerations for siting constructed wetlands include but are not limited to: a) the location with respect to floodplains, flowing water and shorelines, b) the presence of species at risk (e.g., rare plants) within the footprint of the facility, c) the type of habitat that will receive runoff from the constructed wetland - e.g., aquatic habitat – rivers, lakes, streams), and d) the presence of adjacent sensitive land use (residential, etc.). The selected location should minimize the potential of the facility to affect or be affected by flooding, wave action, flow velocities and ice scour, etc., and should minimize the potential of the facility to adversely affect the natural environment and adjacent sensitive land uses. The latter is of particular importance for wastewater treatment/effluent polishing facilities.

(vi) Physical Components and Dimensions of the Project:

Provide a detailed description of the proposed project, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- If applicable, provide an estimate of daily water use and describe the source of any required water supply for the artificial wetland.
- Provide a 1:10,000 scale site plan and a colour aerial photograph of the site, indicating all project components, including ancillary infrastructure such as access roads, drainage ditches and culverts, treatment facilities or sedimentation ponds, all buildings, stockpiled materials (dredge spoil, rock, gravel, sand, etc). The plan should also show any natural/existing wetlands and watercourses, including lakes/ponds and their drainage characteristics (relationship to other wetlands/watercourses), in the vicinity of the proposed site, or which may receive drainage/runoff/effluent from the site. The site plan should identify any environmentally significant areas (ESAs) in the vicinity of the development including National Wildlife Areas, Migratory Bird Sanctuaries, game reserves, Provincial or National Parks, Habitat conservation project (e.g., Ducks Unlimited; EHJV projects), or habitats for species at risk, etc.
- If the constructed wetland is for the treatment of human waste, details of the area to be serviced should be included for use in calculating daily sewage flows (e.g. number of bedrooms, number of dwellings, number of office units, etc.) Resultant sewage flow must be calculated and justified with appropriate scientific methodology. It will also be necessary to consult the document: Additional Information Requirements for Wastewater Treatment Projects.
- A design brief should be provided for the proposed facility, describing the purpose and function of the wetland, and highlighting the design features that will be used to achieve the desired function. If the purpose of the wetland is to treat effluent or run-off, the target quality of the treated effluent or run-off should be specified.

(vii) Construction Details:

Provide a detailed description of the proposed construction activities and methods, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- Provide detailed information on the construction phase of the proposed project, including timeframes and approximate dates for all project components/activities. This information should also be provided for all future phases of development.

- If work within a natural/existing wetland cannot be avoided, please provide detailed information on any activities proposed within the wetland or its 30m buffer, including the timing of such activities.
- Describe the source of any organic soils/plant materials, etc. to be used during construction. Note that the registration must include a clear statement that existing natural wetlands will not be used as a source for such materials.
- Provide a complete list of plant species that would be used in the constructed wetland. Only non-invasive plants that are native to New Brunswick will be permitted.
- Will an impervious liner be installed? If so, provide details (construction material, thickness, etc.).

(viii) Operation and Maintenance Details:

Provide a detailed description of the proposed project's operation and maintenance characteristics, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- Provide detailed information on the type and frequency of all maintenance activities.
- Describe the capacities of any pumps, aerators, etc, that will be part of the project.
- If the wetland is designed to treat run-off or effluent, state how many wetland cells are being proposed? Would the cells operate in series or in parallel? Is supplemental treatment (e.g. aeration) being proposed?

ix) Future Modifications, Extensions or Abandonment:

- What is the proposed use for the constructed wetland, following the end of its operational life?

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

Include all relevant environmental features as noted in the Registration Guide. Examples of issues that may be of particular relevance to this class of project include but are not limited to the following:

- A description of the physical and natural features of the area, including use of the site by wildlife and birds, at different times of the year.

- Detailed information on any existing wetlands in the vicinity (e.g., wetland type, functions provided, wetland boundary, etc) and watercourses (e.g., channel width, water depth, seasonal flow, water quality, fish habitat, etc).
- The potential occurrence of species at risk (any species protected under the NB Endangered Species Act or federal Species at Risk Act that may be affected by the proposal.

4.0 SUMMARY OF ENVIRONMENTAL IMPACTS

All anticipated impacts should be described and discussed. These will depend on the scope and complexity of the project as well as the project location. See the Registration Guide for further information. Examples of impacts resulting from this class of project may include but are not limited to the following:

Construction

- Grubbing, clearing, draining, hauling and building are typical components of construction activities. These activities can produce water, noise, air and solid waste pollution, and result in adverse environmental effects, including erosion and sedimentation, and impacts on water quality, fish habitat and natural/existing wetlands.

Operation and Maintenance

- Operational activities can also negatively affect environmental components. Examples of potential impacts resulting from the construction of artificial wetlands, may include:
 - water quantity and quality impacts;
 - impacts to fish/fish habitat;
 - noise impacts on wildlife from pumps and other infrastructure;
 - impacts on natural/existing wetland geology and hydrology; and
 - impacts on species at risk and critical habitat features.

5.0 SUMMARY OF PROPOSED MITIGATION

Describe all mitigative measures that will be employed to minimize the potential environmental impacts identified above. These may include but are not limited to the following:

- Reclamation or restoration plans for affected natural/existing wetland habitat, in consideration of the objective of returning any impacted areas to functioning wetland habitat/ecosystem.
- An Environmental Protection Plan (EPP) is a valuable tool for ensuring minimization of environmental impacts during the construction and the operation of the site (by linking

proposed mitigative measures to a geographic location). Typically, a site-specific EPP (including an erosion control and surface water management plan) will be required.

- What flow measurement or effluent monitoring programs will be carried out ?

6.0 PUBLIC INVOLVEMENT

See Registration Guide.

7.0 APPROVAL OF THE UNDERTAKING

See Registration Guide.

8.0 FUNDING

See Registration Guide.

9.0 SIGNATURE

See Registration Guide.

10.0 SUBMISSION INSTRUCTIONS

See Registration Guide.

OTHER APPLICABLE GUIDELINES

- If the wetland will be used to treat wastewater, it will also be necessary to consult the document: [Additional Information Requirements for Wastewater Treatment Projects](#).