

# **Model Class Screening Report for Small Scale Water Quality and Habitat Improvement Projects**

prepared for:  
**Environment Canada**

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This Report should not be perceived as a substitute for the *Canadian Environmental Assessment Act*, the *Fisheries Act* or any other federal legislation referred to in this Report. In the event of any inconsistency between this Report and the legislation, the latter would prevail. Individuals with specific legal concerns are urged to seek legal advice.

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Fisheries and Oceans Canada  
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## 1. Introduction

Each year, Environment Canada, through its various funding programs, supports several hundred small scale\* water quality and habitat improvement projects that are carried out at priority sites across Canada. Some of these funding programs are solely administered by Environment Canada, while others are administered co-operatively with other federal departments or agencies. Often, the funding programs engage partners from outside of the federal government, such as the provinces and territories, representatives from the non-renewable resource sectors, Aboriginal groups, conservation organizations, community groups and landowner associations.

- \* Small scale, in context of this document, refers to the extent of the project's effects on the environment and local land uses. Small scale projects involve works and activities with an area of influence that is primarily limited to the project's footprint and immediate site vicinity (i.e., not a regional scale). Small scale infrastructure projects will not facilitate any increase in production of goods and services or in resource consumption.

Environment Canada's funding programs are intended to help non-profit groups or organizations, Aboriginal groups, provinces, territories and municipalities implement projects that protect, restore and/or enhance the environment in their communities and build the capacity of communities to sustain environmental stewardship activities into the future. These projects vary in scale, from the installation of simple bird boxes to the cleanup and restoration of disturbed or degraded sites. The more typical projects tend to be small scale and frequently include any or a combination of the following:

- stream bank, channel or shoreline modifications and improvements (e.g., engineered structures, bioengineering and stream channel modifications);
- fish passage improvements (e.g., culvert or weir modifications, dam by-pass structures, fish passage obstruction removal);
- artificial nesting structures;
- basking structures and hibernacula;
- landscape alteration and rehabilitation (e.g., wetland creation, expansion and rehabilitation, landscape grading and excavations, interpretive structures and signage);
- access control fencing; and
- farm infrastructure improvements (e.g., alternate livestock watering systems, storage facilities for nutrient management, and septic system installation, repairs and upgrades).

While Environment Canada and other agencies primarily support these projects through funding, community stakeholders usually provide additional resources through volunteer labour, in-kind contributions, and other financial support.

Since these projects are small in scale they typically result in few adverse environmental effects, which tend to be predictable, well understood and easily mitigated. Overall, the implementation of these projects is

anticipated to result in a net environmental benefit. With appropriate project design and implementation, some of the following beneficial effects may result:

- improved ambient air quality;
- reduced point and non-points sources of pollution;
- improved physical drainage patterns, stream or shoreline morphology;
- improved water quality and clarity due to changed sedimentation and erosion, point and non-point sources of pollution;
- improved groundwater quality; and
- improved biodiversity due to changes to habitat.

Given this context, Environment Canada initiated the preparation of this class screening in order to establish a consistent streamlined planning and environmental assessment procedure. Environment Canada will be responsible for all reporting and coordination requirements under the *Canadian Environmental Assessment Act* (CEAA) and this Model Class Screening Report (MCSR).

Fisheries and Oceans Canada will also be an RA for projects that require an authorization under the *Fisheries Act* which triggers CEAA. Fisheries and Oceans Canada has agreed to use the process outlined in this MCSR to fulfill its EA requirements. Fisheries and Oceans Canada also acknowledges the limitations placed on the use of this MCSR, which include a condition that the MCSR cannot be used to assess projects that take place within, or in connection with, marine (salt water) environments.

Transport Canada will also be an RA for projects that require an authorization under the *Navigable Waters Protection Act* and which trigger CEAA. Transport Canada has agreed to use the process outlined in this MCSR to fulfill its EA requirements.

Should any other federal department be an RA for a project that is covered by this MCSR, they will be approached by Environment Canada and invited to provide written notification to Environment Canada that they agree to use the process outlined in the MCSR to fulfill their EA requirements. Environment Canada will then provide written notification to the Agency and ensure this is documented on the Canadian Environmental Assessment Registry.

## **1.1 Class Screening and the Canadian Environmental Assessment Act**

The *Canadian Environmental Assessment Act* was brought into force in 1995 to ensure that federal authorities consider the environmental effects of projects before irrevocable decisions are made. CEAA applies to projects which require a federal authority (FA) to make a decision or take an action, whether as a proponent, land administrator, source of funding or regulator (issuance of a permit or license). The FA then becomes a responsible authority (RA) and is required to ensure that an environmental assessment of the project is carried

out. The large majority of projects subject to CEAA are assessed using screenings which are self-directed assessments.

Anticipating the large number of projects likely to undergo screenings, Section 19 of CEAA provides the Canadian Environmental Assessment Agency (the Agency) with the authority to declare, upon request by an RA, that a report be used as a Model Class Screening Report in conducting screenings of other projects within the same class. Once declared, a Model Class Screening Report can be used to assess projects within the same class.

Generally, class screenings are suitable for projects that share common characteristics, are repetitive, routine and result in environmental effects that are predictable and can be mitigated by using well understood methods. The projects also share common characteristics such as project scope, activities, or proponent.

The following six criteria for model class screenings apply to the projects assessed in this MCSR:

1. *Well-defined project.* A class screening process is applicable to small scale water quality and habitat improvement projects because their proposed construction, operation and maintenance involve a number of common physical works and activities. These projects are well defined in terms of the equipment used, how and where the works are undertaken, and the likely constraints on their implementation, such as seasonal timing restrictions to avoid impacts on migration and spawning. The design, function and purpose of all works and activities assessed in this MCSR are described in detail based on common best practices.
2. *Well-understood environmental setting.* While site specific details are unknown, the environmental setting for small scale water quality and habitat improvement projects is understood. For example, all stream rehabilitation projects are located within or adjacent to rivers or their tributaries. All wetland creation or enhancement projects are located in areas that are, or have historically been, wetland and that are conducive to self-sustaining natural wetland functions. All farm infrastructure and livestock access control projects are located on agricultural lands that currently support livestock. All habitat structures are located in areas that currently support, or have historically supported, native wildlife populations. Most of the projects are located in natural areas that have experienced degradation because of encroaching urban and industrial development.
3. *Unlikely to cause significant adverse environmental effects, taking into account mitigation.* The projects assessed in this MCSR are identical to hundreds of other projects that have been assessed by Environment Canada as individual screenings. The application of best management practices that include standard designs and proven mitigation measures helps ensure that these projects are unlikely to cause significant adverse environmental effects.
4. *Follow-up measures (if necessary).* The MCSR provides a mechanism for its users to consider the need to conduct follow-up and to report the results.



5. *Effective and efficient planning and decision-making process.* From Environment Canada's experience of almost two decades of preparing individual project screenings and from recent experience with the development of Class Screenings, it is now evident that greater efficiency can be achieved by using a Class Screening process for these projects. This MCSR ensures that its users obtain and consider sufficient information about the projects to determine the appropriateness of the MCSR, determine the need for and methods of consultation, consider project effects and mitigation measures that are not included in the MCSR, and determine the significance of residual and cumulative adverse effects.
6. *Public concerns unlikely.* For several decades, Environment Canada has assessed and supported projects identical to those assessed in this MCSR. There have been no, or very few, public concerns regarding these projects.

Class screening is a two-part environmental assessment process consisting of a Model Class Screening Report and a Class Screening Project Report which are described below.

#### ***Model Class Screening Report (MCSR)***

A Model Class Screening Report (MCSR) sets out the environmental assessment process for projects within a particular class. The MCSR typically includes the rationale for the projects included in the class, the scope of project, the scope of assessment, the typical environmental setting, the potential environmental effects, the mitigation measures to be applied, and follow-up and monitoring requirements, if applicable. The MCSR also describes the process and procedures that will be followed in assessing projects within the class including roles and responsibilities, referrals, documentation requirements, an amendment mechanism and any other issue that is appropriate.

#### ***Class Screening Project Report (CSPR) (forms)***

A Class Screening Project Report (CSPR) is a project specific screening report that is prepared in accordance with the procedures outlined in the MCSR. The CSPR contains additional site specific information to supplement the information contained in the MCSR. Typically, CSPRs are designed as forms for the Responsible Authorities to fill out and sign-off. Together, the MCSR and the CSPR constitute a class screening and provide the basis for meeting the requirements of CEAA.

## **1.2 Applicability of Class Screening to Environment Canada's Funding Programs**

The MCSR was developed by Environment Canada in co-operation with the Agency, Fisheries and Oceans Canada, funding agencies, other government departments and provincial authorities. This class screening process was developed for preparing class screening reports for which Environment Canada is the lead RA. This MCSR applies solely to projects supported by existing or future funding programs administered by Environment Canada that are dedicated to supporting works and activities focused on environmental restoration and enhancement. These funding programs review each project application received to ensure its environmental

targets are clear, technically sound and compatible with Environment Canada's habitat and water quality improvement initiatives. If the project application meets these criteria, then the project is reviewed under CEAA.

Currently, this class screening process has applicability to at least two major funding programs administered by Environment Canada:

1. **EcoAction** is a national funding program, solely administered by Environment Canada, which helps groups to implement projects that protect or enhance the environment in their community. Specifically, EcoAction supports projects that protect, rehabilitate or enhance the natural environment, and build the capacity of communities to sustain activities into the future. This may include implementing a pollution prevention program to get small businesses to reduce their use of hazardous chemicals.
2. **The Great Lakes Sustainability Fund (GLSF)** is a component of the Great Lakes Program's Great Lakes Basin 2020 Action Plan, which supports Canada's commitment toward restoring the beneficial uses of the Great Lakes. The GLSF, which has evolved from the Great Lakes 2000 Cleanup Fund, was announced in July 2000 and aims to significantly accelerate efforts to restore the environmental quality of Canada's remaining 15 Areas of Concern.
  - Other funding programs administered by Environment Canada but not named in this MCSR may conduct screenings using this class screening process provided the intent of the programs is to fund projects that restore or enhance habitat and/or water quality.

This MCSR is intended for use by Environment Canada as a national tool to:

- promote the protection of the environment for future generations and ensure that projects funded by Environment Canada are being managed in a sustainable manner;
- provide a consistent, predictable and stream-lined approach to environmental assessments of projects funded by Environment Canada, thereby improving funding program delivery;
- improve the information exchange with project proponents by clarifying expectations in the environmental assessment process; and
- contribute towards national guidance for Environment Canada staff.

This class screening process helps ensure that all requirements of CEAA are fully implemented for the small scale water quality and habitat improvement projects that Environment Canada funds. It also helps ensure that Environment Canada demonstrates exemplary compliance with CEAA, which is consistent with the Department's role in promoting EA as a tool to anticipate and prevent the degradation of environmental quality. In developing and applying this class screening process Environment Canada is encouraging the integration of environmental factors into planning and decision-making in support of sustainable development.

## 1.3 Consultations

During the development of this MCSR, consultation was undertaken within Environment Canada through a special committee comprised of representatives from Environment Canada's EA program in the Department's headquarters and five regional offices, two of Environment Canada's key funding programs, and the Canadian Wildlife Service. Consultations were also undertaken with the Canadian Environmental Assessment Agency and with other federal departments, including Fisheries and Oceans Canada, Transport Canada, Natural Resources Canada, Indian and Northern Affairs Canada, Industry Canada, Agriculture and Agri-food Canada, Human Resources and Development Canada, Health Canada and Parks Canada. Consultations with other authorities, such as the Ontario Ministry of Natural Resources, the Ontario Ministry of the Environment, Conservation Ontario, Manitoba Conservation, Saskatchewan Environment, Alberta Energy and Utilities Board and Alberta Environment were also undertaken.

Following its submission to the Canadian Environmental Assessment Agency, the MCSR underwent a period of public review prior to declaration. As with the consultation on the development of the MCSR, comments received were recorded, considered and incorporated into the MCSR, as appropriate.

## 2. Small Scale Water Quality and Habitat Improvement Projects Subject to the Class Screening

The following sections define those water quality and habitat improvement projects that are subject to the Model Class Screening and those not covered by the Model Class Screening because of project or site specific conditions.

All of the project works and activities are grouped into classes. Each class represents types of routine projects that have a similar function (i.e., are intended to fulfill the same general purpose). These project classes are further grouped into sub-classes. Each sub-class represents types of projects that are anticipated to have a similar range of environmental effects and for which the proven mitigation measures or best management practices identified in this MCSR can be applied effectively.

### 2.1 Projects Subject to and Excluded Under the *Canadian Environmental Assessment Act*

#### *Projects Subject to the Act*

To require an environmental assessment under CEAA, a project must:

- 1) be an undertaking in relation to a physical work or a physical activity captured in the *Inclusion List Regulations* of CEAA: and

- 2) under section 5 of CEAA, have Environment Canada or another federal authority with one or more of the following responsibilities:
  - a) is the proponent of a project;
  - b) grants money or other financial assistance to a project;
  - c) grants an interest in land to enable a project to be carried out; or
  - d) exercises a regulatory duty in relation to a project, such as issuing a permit, license or authorization that is covered under the Law List Regulations.

Because of its involvement with Small Scale Water Quality and Habitat Improvement projects, Environment Canada has declared itself a Responsible Authority under Section 5 of CEAA. Fisheries and Oceans Canada may also declare itself a Responsible Authority for some of the Small Scale Water Quality and Habitat Improvement projects outlined in the MCSR, if there is a requirement to issue an authorization under Section 35(2) of the *Fisheries Act*, which is a trigger under the *Law List Regulations* of CEAA. In such cases where Environment Canada and Fisheries and Oceans Canada are both Responsible Authorities for a project, Environment Canada will coordinate the completion of the CSPR for the project.

Transport Canada may also declare itself a Responsible Authority for some of the Small Scale Water Quality and Habitat Improvement projects outlined in the MCSR. If an approval is required under paragraph 5(1)(a) of the *Navigable Waters Protection Act*, which is a trigger under the *Law List Regulations* of CEAA, and both Environment Canada and Transport Canada are Responsible Authorities, Environment Canada will coordinate the completion of the CSPR for the project.

A number of federal departments may play a role as an expert federal department for the assessment of Small Scale Water Quality and Habitat Improvement projects, and provide advice and/ or mitigation that address site specific issues on a project-by-project basis.

### ***Projects Excluded from the Act***

Projects may be excluded from an environmental assessment if they are described on the *Exclusion List Regulations*. EA practitioners should review the most current version of the *Exclusion List Regulations* prior to initiating an environmental assessment.

## **2.2 Projects Subject to the Model Class Screening Report**

The following table identifies the Classes and Sub-Classes of projects that are subject to this Model Class Screening. A summary description of each sub-class is provided. Projects receiving funding may involve one or more of the Classes and Sub-Classes described below. For example, Stream Channel Modification (A3) may also involve Bioengineering components (A2) or some Engineered Structures (A1). In such cases it will be important for the full scope of the project to be assessed.

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**Table 2.2-1**

**Description of Projects Subject to this Model Class Screening Process**

Name of Class and Sub-Class	Description of Project Components
<b>Class A: Stream Bank, Channel or Shoreline Modifications and Improvements</b>	
<i>A1: Engineered Structures</i>	<ul style="list-style-type: none"> <li>Construction, installation or modification of rip-rap, rock armouring, gabions, in-stream flow deflectors such as rock vortex weirs, and/or sheet piling aimed at stabilizing stream banks or shorelines deflecting and/or reducing stream flows, near shore flows or wave action. Also includes structures aimed at trapping sediments (e.g., gravels, sands) in-stream or along shorelines.</li> </ul>
<i>A2: Bioengineering</i>	<ul style="list-style-type: none"> <li>Placement or installation of features such as boulders, live stakes, fascines, brush layers, brush mattresses, willow posts, live crib walls, log shelters, log bank cover (lunkers), cribs, spawning boxes, and root wads, aimed at stabilizing stream banks or shorelines, deflecting and/or reducing stream flows, near shore flows or wave action. These features may also serve to increase the complexity of stream banks, channels, lakebeds or shorelines, for cover, feeding or spawning habitat for fish or other aquatic organisms.</li> </ul>
<i>A3: Stream Channel Modifications</i>	<ul style="list-style-type: none"> <li>Excavation, relocation/realignment and restoration of stream channels and/or stream banks aimed at creating a stream reach that has a geomorphologically stable plan form and cross-section.</li> </ul>
<b>Class B: Fish Passage Improvements</b>	
<i>B1: Culvert or Weir Modifications</i>	<ul style="list-style-type: none"> <li>The installation, modification or replacement of culverts or flow control weirs or modification of substrates, specifically aimed at improving the movement of fish between stream reaches.</li> </ul>
<i>B2: Dam by-pass Structures</i>	<ul style="list-style-type: none"> <li>The construction and operation of fish passage by-pass channels or other fish ways for the purposes of enabling or improving the movement of fish between stream reaches, and/or restrict access by selected competitive species.</li> </ul>
<i>B3: Fish Passage Obstruction Removal</i>	<ul style="list-style-type: none"> <li>The removal of small dams, weirs or other channel obstructions (e.g., log jams, beaver dams) enabling or improving the movement of fish between stream reaches. This is not intended to apply to removals of large engineered structures (e.g., hydro-electric, flood control and irrigation dams).</li> </ul>
<b>Class C: Artificial Nesting Structures</b>	
<i>C1: Aquatic Setting</i>	<ul style="list-style-type: none"> <li>Construction, installation or modification of nesting boxes, platforms, reef rafts or other artificial structures in, on or within a water body or wetland aimed at providing shelter and encouraging the nesting or loafing of birds.</li> </ul>
<i>C2: Terrestrial Setting</i>	<ul style="list-style-type: none"> <li>Construction, installation or modification of nesting boxes, tunnels, bat boxes or other artificial structures aimed at providing shelter and encouraging the nesting or loafing of birds, bats or other wildlife.</li> </ul>
<b>Class D: Basking Structures and Hibernacula</b>	
<i>D1: Aquatic Setting</i>	<ul style="list-style-type: none"> <li>Placement or installation of features such as rocks, wooden platforms, concrete slabs or other natural or artificial structures in, on or within a water body or wetland aimed at providing surface area for basking turtles, frogs or other herptiles and loafing areas for birds.</li> </ul>
<i>D2: Terrestrial Setting</i>	<ul style="list-style-type: none"> <li>Placement or installation of features such as rocks, wooden platforms, concrete slabs or other natural or artificial structures, aimed at providing surface area for basking amphibians or reptiles.</li> </ul>
<i>D3: Constructed Snake Hibernacula</i>	<ul style="list-style-type: none"> <li>Excavation and/or placement of features such as rocks, artificial piping aimed at providing a damp location above the water table to allow snakes or other herptiles to hibernate.</li> </ul>

**Table 2.2-1  
Description of Projects Subject to this Model Class Screening Process**

Name of Class and Sub-Class	Description of Project Components
<b>Class E: Landscape Alteration and Rehabilitation</b>	
<i>E1: Wetland Creation</i>	<ul style="list-style-type: none"> <li>Excavation and construction of wetlands in freshwater environments where there is no existing wetland (includes wetland creation, small ponds or ephemeral pools in an area where a historical wetland has been filled) with the objective of creating a new wetland and wetland functions.</li> </ul>
<i>E2: Wetland Expansion and Rehabilitation</i>	<ul style="list-style-type: none"> <li>Excavation of adjacent lands to existing wetlands and/or dredging or filling of existing wetland beds, with the objective of increasing the wetland's area and improving contours and its water quality and quantity control function. This includes activities such as vegetation planting to improve vegetation diversity, creation of islands or shoals, draw downs for nutrient oxidation.</li> </ul>
<i>E3: Landscape Grading and Excavations</i>	<ul style="list-style-type: none"> <li>Construction, excavation or modification of landscape features to provide landscape terrain, such as minor drainage swales, berms, small ponds, side or back channels, that may provide additional niches for terrestrial upland species, frogs, salamanders or newts, or additional habitat for aquatic species</li> </ul>
<i>E4: Interpretive Structures and Signage</i>	<ul style="list-style-type: none"> <li>Installation of structures and signage aimed at improving public viewing opportunities, awareness of projects or providing information regarding site access, health or safety precautions.</li> </ul>
<b>Class F: Access Controls</b>	
<i>F1: Access Control Fencing</i>	<ul style="list-style-type: none"> <li>Installation of electric, page wire, barbed wire or other form of fencing along or around environmental features aimed at controlling livestock, vehicle or human access or stabilizing landforms from erosion.</li> </ul>
<b>Class G: Farm Infrastructure Improvements</b>	
<i>G1: Livestock Watering Systems</i>	<ul style="list-style-type: none"> <li>Construction, installation, operation or modification of mechanical systems for livestock watering, including dugout ponds, seepage troughs, ram pumps, nose pumps, solar or wind powered or gravity flow watering systems, including their associated piping and intakes.</li> </ul>
<i>G2: Nutrient Storage and Management</i>	<ul style="list-style-type: none"> <li>Construction, operation or modification of facilities for the temporary storage of nutrients such as manure, milkhouse washwater, crop residues, wood chips for subsequent application as fertilizer or soil conditioners.</li> </ul>
<i>G3: Private Septic System Repairs and Upgrades</i>	<ul style="list-style-type: none"> <li>Installation, modification, repairs, decommissioning and abandonment of septic systems, including septic and holding tanks, leaching/tile beds, adsorption trenches and associated pumps and piping</li> </ul>

## 2.3 Projects Not Subject to the Model Class Screening Report

Some projects which require an environmental assessment under CEAA are not subject to this MCSR as their environmental effects are either unknown or may be significant. In some cases, this may be known at the beginning of the environmental assessment process (based on the project information provided by the project proponent) or during the preparation of the environmental assessment, based on new information about the project and its environmental setting. Such projects are not covered by this Model Class Screening Report and will require a separate individual environmental assessment. The project or site specific conditions that would exclude a project from this Class Screening are as follows:

- any “physical works” or “physical activities” for which CEAA applies and that are not described in Table 1 of the Class Screening Project Report (CSPR);
- projects that would require a permit under the *Species at Risk Act* (SARA);
- projects that are likely to have an adverse effect on species at risk, either directly or indirectly, such as by adversely affecting their habitat.\* Species at risk include:
  - species identified on the List of Wildlife Species at Risk set out in Schedule 1 of SARA, and including the critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of SARA.
  - species that have been recognized as "at risk" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or by provincial or territorial authorities;
- \* **If, after commencing a class screening using this MCSR, it becomes known or reasonably suspected that species at risk could be adversely affected by the project, do not proceed.**
- projects located in a National Park;
- projects located in a Migratory Bird Sanctuary or National Wildlife Area;
- projects within or adjacent to a water body, which involve the excavation, exposure or storage of natural rock with demonstrated acidic drainage;
- projects that involve marine (salt water) environments;
- projects that involve the development of new permanent roads or trails to provide access for the movement of heavy machinery;
- projects that have the potential to reduce the capacity for downstream water withdrawal;
- projects that involve blasting;
- projects that involve disturbance of areas with known contaminated groundwater, soils or sediments, or areas with likely pesticide application (other than herbicides as described in the CSPR) within the past 12 months;
- projects involving stream modifications in unstable channels where significant\* downstream effects to channel geomorphology may be anticipated (\*see Section 5.7 of the MCSR);
- projects that are likely to result in an increased risk of flooding or erosion to adjacent or upstream properties;
- projects that involve infilling within interconnecting channel of international boundary waters;
- projects that involve the creation of ponds or wetlands for the purpose of stormwater treatment;
- projects where the flow control may present a new permanent barrier to fish passage;
- projects that involve the installation or removal of flow control structures that are primarily for hydroelectric power generation, flood control or irrigation;
- projects that involve the application of chemical pesticides (e.g., insecticide, fungicide, algaecide) other than herbicides;

- projects that involve the deposit or discharge of any substances that require an Ocean Disposal Permit;
- projects that involve the construction or operation of facilities for aquaculture;
- projects that involve the deposit of a deleterious substance into waters frequented by fish or into any place under any conditions where the deleterious substance may enter waters frequented by fish; and
- projects that involve the deposit of a substance that is harmful to migratory birds into waters or an area frequented by migratory birds or into a place from which it may enter such waters or such an area that is harmful to migratory birds.

## **2.4 Projects that Require Referral to, or Consultation with, Other Federal or Provincial Government Departments and Agencies**

In certain circumstances, small scale water quality and habitat improvement projects may require consultation with a specific unit of Environment Canada, consultation and/or a referral to another federal department or provincial agency.

### **Competent Minister for Species at Risk**

Under s.79(1) of the *Species at Risk Act* (SARA), the RA **must** notify the competent Minister (or Ministers) if the project is likely to have an effect (beneficial or adverse) on a listed wildlife species or its critical habitat. The notification must be made in writing. Competent ministers under SARA are:

- a) the Minister of Fisheries and Oceans with respect to aquatic species, other than individuals mentioned in paragraph (b); and
- b) the Minister of the Environment with respect to all other individuals, including individuals in or on federal lands that are administered by that Minister and that are national parks, national historic sites, national marine conservation areas, or other protected heritage areas as those expressions are defined in subsection 2(1) of the *Parks Canada Agency Act*.\*

\*As of December 12, 2003, the Parks Canada Agency reports to Parliament through the Minister of the Environment. However, it remains an agency that is separate from Environment Canada and continues to exercise the powers, duties and functions relating to the species at risk within the protected areas it manages. Where individuals of species at risk are located in protected areas managed by Parks Canada, notifications should be sent to the Parks Canada Agency.

Depending on the species at risk, the RA must without delay notify Environment Canada, Parks Canada or Fisheries and Oceans Canada.\* Where there is more than one competent minister responsible for the species affected, notification must be sent to each department or agency with responsibility for the species. All three



departments/agencies have determined that notification should be regional, through the usual environmental assessment channels for that department.

Subsection 79(2) of SARA requires that, where a federal environmental assessment is being carried out on a project that may affect a listed wildlife species or its critical habitat:

- potential adverse effects on the listed species or its critical habitat must be identified and mitigated;
- if the project is carried out:
  - ensure that measures are taken to avoid or lessen those adverse effects and to monitor them, and
  - ensure that such measures are consistent with any applicable recovery strategy and action plans.

### **Environment Canada**

Consultation with **Environment Canada – Canadian Wildlife Service** is required to confirm whether or not there are any project specific mitigation measures (in addition to those identified in the MCSR) to be applied to the project to ensure that there is no potential for significant adverse effects on migratory birds, species at risk (for which the Minister of Environment is the competent minister) or other implications with respect to the *Migratory Birds Convention Act 1994*, the *Species at Risk Act* and the Federal Policy on Wetland Conservation.

Consultation with **Environment Canada** may also be required to confirm whether or not there are any project specific mitigation measures (in addition to those identified in the MCSR) to be applied to the project to ensure that there is no potential for significant adverse effects on soils, groundwater or surface water due to the potential discharge of a deleterious substance.

### **Fisheries and Oceans Canada**

Consultation with Fisheries and Oceans Canada is required to confirm whether or not there are any project specific mitigation measures (in addition to those identified in the MCSR) to be applied to the project to ensure that there is no potential for significant adverse effects on species at risk (for which the Minister of Fisheries and Oceans is the competent minister) or other implications with respect to the *Species at Risk Act*.

Referral to **Fisheries and Oceans Canada** (as a potential RA) is also required whenever works or undertakings may result in the harmful alteration, disruption or destruction (HADD) of fish habitat (Section 35(2) of the *Fisheries Act*). Projects most likely to cause the HADD of fish habitat are:

- A1: Engineered Structures
- A2: Bioengineering
- A3: Stream Channel Modifications
- B1: Culvert or Weir Modifications
- B2: Dam by-pass Structures

- B3: Fish Passage Obstruction Removal
- C1: Artificial Nesting Structures – Aquatic Setting \*
- D1: Basking Structures and Hibernacula – Aquatic Setting \*
- E1: Wetland Creation
- E2: Wetland Expansion and Rehabilitation

\* only if these projects are likely to involve any infilling of fish habitat

**Fisheries and Oceans Canada** (as a Federal Authority) should be consulted whenever there are questions as to whether project or site specific conditions warrant project specific mitigation measures to protect fish and fish habitat, in addition to those identified in the MCSR.

Fisheries and Oceans Canada's national and area Operational Statements (available 2005/2006 onwards) list project designs and mitigation measures that would, when applied under specific circumstances for certain types of projects, prevent adverse effects on fish habitat. These Operational Statements are being made available to federal government departments, including Environment Canada. Proponents who intend to implement fish habitat protection measures outlined in the Operational Statements should notify Fisheries and Oceans Canada of their plans but may proceed with their project without a formal review under the *Fisheries Act*. Any Operational Statements relevant to projects assessed by this MCSR should be considered in association with the applicable measures described in this document

### **Transport Canada**

Referral to **Transport Canada** is required for approval under the *Navigable Waters Protection Act (NWPA)* for projects that have potential to interfere with navigation and for any named works in, on, over, under, through or across navigable waters. Projects requiring approval under the NWPA will most likely include:

- A1: Engineered Structures
- A2: Bioengineering
- A3: Stream Channel Modifications
- B1: Culvert or Weir Modifications
- B2: Dam by-pass Structures
- B3: Fish Passage Obstruction Removal
- C1: Artificial Nesting Structures – Aquatic Setting
- D1: Basking Structures – Aquatic Setting
- E1: Wetland Creation
- E2: Wetland Expansion and Rehabilitation

**Transport Canada** should be consulted whenever there are questions as to whether project or site specific conditions warrant project specific mitigation measures pertaining to navigation in addition to those identified in the MCSR or if there is any uncertainty whether the project may interfere with navigation.

### **Aboriginal Groups**

Apart from any requirements under CEAA, there may be an obligation to consult Aboriginal groups. In such cases, refer to the relevant policies and guidelines of the Government of Canada concerning aboriginal consultations.

### **Other Departments**

Depending on the funding partnerships, project location and proponentcy, Environment Canada will consult other departments on a case by case basis.

### **Provincial and Local Governments and Agencies**

Projects involving work in nutrient management, floodplains, wetlands or provincially designated sites of special concern (e.g., Areas of Natural and Scientific Interest, Environmentally Significant Areas, etc.) will warrant consultation with the provincial authorities responsible for natural resource management (e.g., Provincial Ministries of Environment, Provincial Ministries of Natural Resources, Conservation Authorities). However, project proponents are responsible for ensuring that the project meets all legislative requirements that are applicable at the time of planning and carrying out the undertaking; and that all relevant licenses, permits and authorizations are obtained.

## **3. Project Description and Physical Works and Activities for Each Class of Projects**

The following sections describe each of the classes of projects subject to this MCSR and summarize the physical works and physical activities, and potential accidents and malfunctions associated with each class of projects. This summary of physical works and physical activities and the identified accidents and malfunctions will serve as the basis for the identification of the applicable environmental effects for each class of projects. It is noteworthy that there are many interrelationships between the physical works and physical activities listed and the environmental effects that would result. For instance, physical works or physical activities such as earthworks, vegetation clearing and grubbing may also involve operation of heavy equipment and vehicles or operation of hand machinery. An attempt has been made to identify a unique set of environmental effects for the various physical works and physical activities.

Table A.2 of the Class Screening Project Report (CSPR) identifies the various physical works and activities that may be undertaken during site preparation, construction, operation, maintenance, monitoring and repair; and decommissioning stages of projects within this class. Table A.3 of the CSPR identifies the potential accidents and malfunctions associated with projects within this class.

### **3.1 Class A – Stream Bank, Channel or Shoreline Modifications and Improvements**

#### ***A1. Engineered Structures***

Small scale water quality and habitat improvement projects that require engineered structures can involve the construction or installation of rip-rap, rock armouring, gabions, in-stream flow deflectors such as rock vortex weirs, and/or sheet piling aimed at stabilizing stream banks or shorelines deflecting and/or reducing stream flows, near shore flows or wave action, including structures aimed at trapping sediments (e.g., gravels, sands) in-stream or along shorelines.

#### ***A2. Bioengineering***

Small scale water quality and habitat improvement projects that use bioengineering typically involve the placement or installation of features such as boulders, live stakes, fascines, brush layers, brush mattresses, willow posts, live crib walls, log shelters, log bank cover (e.g., LUNKERS), cribs, spawning boxes, and root wads, aimed at stabilizing stream banks or shorelines, deflecting and/or reducing stream flows, near shore flows or wave action. These features may also serve to increase the complexity of stream banks, channels, lakebeds or shorelines, for cover, feeding or spawning habitat for fish or other aquatic organisms.

#### ***A3. Stream Channel Modifications***

Small scale water quality and habitat improvement projects may involve stream channel modifications. These modifications typically involve the excavation, relocation/realignment and restoration of stream channels and/or stream banks. Such modifications are aimed at creating a stream reach that has a geomorphologically stable plan form and cross-section.

### **3.2 Class B – Fish Passage Improvements**

#### ***B1. Culvert or Weir Modifications***

Small scale water quality and habitat improvement projects may involve the installation, modification or replacement of culverts or flow control weirs or modification of substrates. These projects are aimed at improving the movement of fish between stream reaches.

#### ***B2. Dam By-Pass Structures***

Small scale water quality and habitat improvement projects may involve the construction and operation of fish passage by-pass channels or other fish ways solely for the purposes of enabling or improving the movement of fish between stream reaches, and/or restricting access by competitive species.

**B3. Fish Passage Obstruction Removal**

Small scale water quality and habitat improvement projects may involve the removal of dams, weirs or other channel obstructions (e.g., log jams, beaver dams) enabling or improving the movement of fish between stream reaches. These projects do not include removals of large dams/engineered structures (e.g., hydro-electric power generation or flood control dams).

### **3.3 Class C – Artificial Nesting Structures**

**C1. Aquatic Setting**

Artificial nesting structure projects in an aquatic setting involve the construction, installation or modification of nesting boxes, platforms, reef rafts or other artificial structures in, on or within a water body or wetland aimed at providing shelter and encouraging the nesting or loafing of birds.

**C2. Terrestrial Setting**

Artificial nesting structure projects in a terrestrial setting involve the construction, installation or modification of nesting boxes, tunnels, bat boxes or other artificial structures, aimed at providing shelter and encouraging the nesting or loafing of birds, bats or other wildlife.

### **3.4 Class D – Basking Structures and Hibernacula**

**D1. Aquatic Setting**

Basking structure projects in an aquatic setting involve the placement or installation of features such as rocks, wooden platforms, concrete slabs or other natural or artificial structures in, on or within a water body or wetland aimed at providing surface area for basking turtles, frogs or other amphibians and loafing areas for birds.

**D2. Terrestrial Setting**

Basking structure projects in a terrestrial setting involve the placement or installation of features such as rocks, wooden platforms, concrete slabs or other natural or artificial, aimed at providing surface area for basking amphibians or herptiles.

**D3. *Constructed Snake Hibernacula***

Constructed snake hibernacula projects involve the excavation and/or placement of rocks and artificial piping aimed at providing a damp location above the water table to allow snakes or other herptiles to hibernate.

## **3.5 Class E – Minor Landscape Alteration and Rehabilitation**

**E1. *Wetland Creation***

Wetland creation projects typically involve the excavation of soils in upland areas, excavation or dredging along watercourse or water bodies and construction of wetlands in an area where there is no existing wetland (includes wetland creation, construction of berms, liners, small ponds or ephemeral pools in an area where a historical wetland has been filled). The main objective of these projects is creating a new wetland habitat and functions such as water quality and quantity control functions, and/or creating a buffer from extreme weather events (e.g. storm surges). This can involve connecting a new wetland feature to the landscape hydrology, through channelization and/or berming, excavation and contouring of a basin to meet project objectives for plant and animal communities; construction and/or installation of habitat features for fish, herptiles or bird habitat.

**E2. *Wetland Expansion and Rehabilitation***

Wetland expansion and rehabilitation projects involve the excavation of lands adjacent to existing wetlands and/or dredging or filling of existing wetland beds. The main objective of these projects is to increase wetland area, contours and/or its water quality and quantity control function. These projects can also serve to create new habitat or wetland functions such as creating a buffer from extreme weather events (e.g. storm surges). These projects can include vegetation planting, construction of berms, liners, islands or shoals and creation of draw downs for nutrient oxidation.

**E3. *Landscape Grading and Excavations***

Small scale water quality and habitat improvement projects may involve the construction, excavation or modification of landscape features to provide landscape terrain, such as minor drainage swales, berms, side or back channels, that may provide additional niches for terrestrial upland species, amphibians (e.g., frogs, salamanders or newts), or additional habitat for aquatic species.

**E4. *Interpretive Structures and Signage***

Interpretive structures and signage projects involve the installation of amenities to improve visitor experience at a natural area. Interpretive structures and signs are aimed at improving public awareness of projects and education, or providing information regarding site access, health or safety precautions. These structures are usually open-sided, unserviced and usually single-level.

### 3.6 Class F – Access Controls

#### *F1. Access Control Fencing*

Access control fencing projects involve the installation of electric, page wire, barbed wire or other form of fencing along or around environmental features. These projects are aimed at controlling livestock, vehicle or human access or stabilizing landforms from erosion. Where access control fencing is intended to protect surface water quality from livestock damage or wastes, the project must be designed to provide total livestock exclusion from the water body.

### 3.7 Class G – Farm Infrastructure Improvements

#### *G1. Alternate Watering Systems*

Small scale water quality and habitat improvement projects may involve the construction, installation, operation or modification of systems for livestock watering. These systems may include dugout ponds, seepage troughs, ram pumps, nose pumps, solar or wind powered pumps or gravity flowing watering systems, and their associated piping and intakes. Dugout ponds are excavated ponds that collect surface runoff, groundwater and/or tile drainage water. Seepage troughs are installed in excavated trenches and intercept groundwater from seepage areas on slopes. Pumping systems convey drinking water to livestock that are restricted from direct access to an on-site watercourse. The intake hoses typically range from 2.5 to 10 centimetres in diameter, and are usually screened to prevent clogs of algae and debris. Alternate watering systems assessed in this MCSR are intended to protect water quality by providing an alternative to direct livestock access to a water body and are often carried out in conjunction with livestock access restriction projects, such as fencing.

#### *G2. Nutrient Storage and Management*

Small scale water quality and habitat improvement projects may involve the construction, operation or modification of containment facilities for the temporary storage of nutrients such as manure, milkhouse washwater, crop residues and wood chips for subsequent application as fertilizer or soil conditioner. Nutrient storage and management facilities assessed in this MCSR are intended to improve water quality by providing on-site containment for stored manure and other agricultural nutrients that would otherwise have potential to enter a water body.

Facilities in areas governed by nutrient management regulations must comply with regulated requirements. The following descriptions are only guidelines and do not supersede applicable municipal and provincial regulations.

The small scale nutrient management systems supported by Environment Canada's funding programs provide, **as a minimum**, storage for 200 days (if to be emptied twice per year) or 400 days (if to be emptied once per year). These facilities may be earthen or concrete, open or covered, and may provide storage for liquid or solid

nutrients. The storage capacity and design of these facilities depend on a number of variables, such as: types of livestock, livestock use (milking, feeders, broilers, etc.), type of nutrient (liquid, semi-solid, solid), runoff from yard/roof and bedding material. The sizing and composition of individual storage facilities is site specific but must follow nutrient management guidelines as a condition of federal funding.

All facilities are built according to local (e.g., provincial) design guidelines and, in specialized situations, following designs developed by a licensed professional engineer. Manure and other agriculture storage facilities are regulated by provinces that have instituted nutrient management legislation, which may entail provincial approvals for their construction and operation. All facilities must be installed by a licensed contractor and those requiring a municipal building permit are to be inspected by the province and/or the municipality as required.

### ***G3. Private Septic System Repairs and Upgrades***

Small scale water quality and habitat improvement projects may involve the installation, modification, repairs, decommissioning and abandonment of private septic systems, including septic and holding tanks, leaching/tile beds, adsorption trenches and associated pumps and piping.

## **4. Typical Environmental Settings**

The following sections describe the typical environmental settings that are associated with each of the classes of projects subject to this MCSR. Together with the summary of the physical works and activities, and potential accidents and malfunctions associated with each class of projects, this description will serve as another basis for the identification of the applicable environmental effects for each class of projects.

### **4.1 Class A – Stream Bank, Channel or Shoreline Modifications and Improvements**

**Engineered stream channel flow controls** are typically installed within first and second order streams, which are the upper tributaries, or headwaters, of the watershed and have small to medium sized channels with low or moderate flows. They are constructed on the stream bed and span the entire width of the channel. These engineered structures are typically located in areas where the stream bed is geomorphologically stable and channels are well defined, with stable banks or slopes. Stream banks or slopes may or may not have riparian vegetation.

**Stream channel modifications** are typically undertaken within first and second order streams, which are the upper tributaries, or headwaters, of the watershed and have small to medium sized stream channels with low or moderate flows. They consist of the alteration or relocation of one or both stream banks. These modifications



are undertaken in order to recreate a stable plan form and cross-section, or to protect public property, private property or municipal infrastructure from erosion and/or channel migration.

**Engineered stream bank erosion control structures** are typically installed on streams of various sizes (e.g., first, second, third order) in developed or developing watersheds. They are constructed at, or adjacent to, erosion features in order to protect steep slopes from further erosion and/or channel migration. This sort of structure is frequently combined with bioengineering and/or top of bank plantings to aid in the prevention of further erosion. **Engineered shoreline erosion control structures** are typically installed either parallel to, or perpendicular to shorelines that have been receding. They protect steep slopes from further erosion.

**Stream bank and shoreline bioengineering** can be undertaken on streams of various sizes and along shorelines in developed or developing watersheds. They are constructed at, or adjacent to, erosion or shoreline recession features in order to protect public property, private property, municipal infrastructure or steep slopes from further erosion and/or recession. The sites may be in park settings with some existing access or may require access to be developed in order to get crews and equipment to the work area. These sites are often where erosion has altered or destroyed the shoreline complexity and riparian vegetation. Restoring these sites typically includes re-grading the banks, installing in-water structures such as wooden cribs or log structures, modifying stream bed characteristics (e.g., excavating pools) and stabilizing the bank with vegetation.

## 4.2 Class B – Fish Passage Improvements

**Culvert or weir modification** projects typically take place in smaller streams in a variety of urban and rural settings. Culverts are usually corrugated steel pipe or concrete based over the stream bed. Modifications to culverts or weirs may be required as a result of erosion, engineering design, or improper installation, which have left the stream disconnected by elevation or velocity, or as the result of changing fish management objectives. These modifications are typically undertaken to improve connections between two stream reaches or to modify flow conditions to improve water quality or aquatic habitat. In existing culverts, most of the work is undertaken by hand given access constraints for larger machinery.

**Dam by-pass structure** projects also take place in a variety of urban and rural settings. Small dams constructed on private or public property for flood management, personal or commercial use, as well as those resulting from beaver activity may be modified with by-pass structures to improve connections between two stream reaches. These by-passes are typically designed as low flow channels, with grade control pools or steps facilitating fish passage over the dam. Small fish ways may also be developed around the dam, in which case, the bypass is usually constructed on dry land around the water feature with sufficient length to achieve proper grades for fish passage.

**Fish passage obstruction removal** projects typically take place in streams in a variety of urban and rural settings. Small dams or weirs constructed on private or public property for flood management, personal or commercial use, beaver dams, large log jams or other in-water obstructions (e.g., litter and debris) activity may be targeted for removal to improve connections between two stream reaches. Sites where fish passage obstructions are large or have existed for a long period of time may have blocked sediment movement

downstream, and therefore are typically characterized by thicker sediments upgradient than downgradient of the obstruction.

### 4.3 Class C – Artificial Nesting Structures

**Artificial nesting structures** that are placed in an **aquatic setting** are typically created on or within close proximity to a water body or wetland to provide opportunities for shelter (bats, fish), loafing areas (turtles, amphibians, birds) and breeding (birds, bats) to maintain or enhance biodiversity of a natural area.

**Artificial nesting structures** placed in a **terrestrial setting** are boxes or subterranean tunnels typically created well away from a water body or wetland to provide opportunities for breeding birds and bats to maintain or enhance biodiversity of a natural area, and provide loafing areas (platforms). They may be provided in support of a reintroduction program for extirpated or rare species such as Burrowing Owl or Barn Owl.

### 4.4 Class D – Basking Structures and Hibernacula

**Basking structures** in an *aquatic setting* are typically installed in wetlands, lakes or streams to provide safe refuge for various species that depend on water bodies for at least a portion of their life cycle. Those in a *terrestrial setting* are typically installed in open fields or forest edges/clearings to provide safe refuge for various species, especially those cold-blooded species whose survival is advantaged by opportunities to absorb light energy. This is particularly important for gravid herptiles.

**Constructed snake hibernacula** are typically placed in open areas with a good exposure to the sun, but close enough to the groundwater table as to provide adequate humidity during hibernation below frost level. Typical locations include riparian zones, wetlands, old fields and forest clearings and edges. The goal is to provide enhanced over-wintering opportunities, especially in areas disturbed by development pressures as well as to enhance biodiversity of the ecosystem.

### 4.5 Class E – Minor Landscape Alteration and Rehabilitation

**Wetland creation** projects typically occur in areas that were once wetlands and now have been drained or filled. These are usually carried out in areas adjacent to creeks, streams and rivers that can maintain flow through the wetland, in tableland areas with high water tables where excavation can intercept the water source, or in down-gradient portions of watersheds with sufficient surface water supply to maintain wetland conditions (this is calculated using a water budget). Soils are generally impervious, although pervious soils can be lined with clay to perch the water. In addition to creating or augmenting wildlife habitat, wetland creation projects may satisfy requirements for surface water control (e.g., flood attenuation), water quality improvement and/or erosion control.

**Wetland expansion and rehabilitation** projects usually occur in areas where an existing wetland has been disturbed to the extent that its function and/or attributes (e.g., species) have declined. The objective of these projects is usually to restore or improve water storage and water level fluctuation functions and/or rehabilitate habitat in general, or to provide enhanced habitat value for specific species (e.g., terns, waterfowl). This may involve vegetation planting to create buffer strips along the banks or shorelines of natural water bodies such as streams, ponds and small lakes, or within these water bodies themselves.

**Landscape grading and excavation** projects may be undertaken to restore or modify landscape hydrology, and/or to provide permanent or ephemeral (including vernal) pools as habitat features. These projects would typically occur in upland (i.e., terrestrial) settings adjacent to or within woodlands or forests, and may also be in association with a wetland habitat.

#### **4.6 Class F – Access Controls**

**Access control fencing** projects may be undertaken in either a natural or developed setting to control human or livestock access to natural features such as water bodies and woodlots. Fencing can be installed to mitigate the effects of wind on landscape features such as open fields and dunes. Agricultural sites would typically be active pasture or crop fields with few environmental constraints. Fencing for controlling livestock access to water bodies can be installed within the floodplain or along stream banks and shorelines.

#### **4.7 Class G – Farm Infrastructure Improvements**

**Farm infrastructure improvement** projects are conducted exclusively on agricultural lands with variable soil quality. Projects involving nutrient storage and management facilities, and septic system upgrades, are typically located on portions of farm properties that are used for pasture or are adjacent to other infrastructure such as, barns, garages and silos. Livestock watering systems such as nose pumps, solar or wind powered turbines are typically installed near or adjacent to water bodies, such as streams, dugouts or ponds. These may be installed in areas that are adjacent to a well established riparian zone, or that are poorly vegetated or entirely clear, depending on the site. The goal of these projects is to improve the environmental management of existing operations, not to facilitate or enable new or expanded operations.

### **5. Environmental Assessment of Small Scale Water Quality and Habitat Improvement Projects**

The environmental assessment of small scale water quality and habitat improvement projects is undertaken in the following steps:

1. The spatial and temporal boundaries of the assessment are defined (Section 5.1 of the MCSR).
2. The environmental components to be considered in the assessment are identified (Section 5.2 of the MCSR).
3. Based on experience with numerous small-scale water quality and habitat improvement projects across Canada, a long list of potential adverse environmental effects is developed according to the environmental components identified for this assessment. Those effects that are likely to occur as a direct result of the project are identified (Section 5.2 of the MCSR).
4. The potential adverse effects (under normal operating conditions) of small scale water quality and habitat improvement projects are identified by selecting only those applicable effects from the long list of environmental effects (Section 5.3 of the MCSR).
5. Potential adverse effects of potential accidents and malfunctions associated with small scale water quality and habitat improvement projects are identified by selecting only those applicable effects from the long list of environmental effects (Section 5.4 of the MCSR).
6. The effects of the environment on the project are considered. Those projects that are vulnerable to a variety of environmental conditions are identified (Section 5.5 of the MCSR).
7. Mitigation measures for each physical work and activity associated with small scale water quality and habitat improvement projects, including accidents and malfunctions, are identified according to their associated environmental effects (Tables A.6 to A.18 of Appendix A: Class Screening Project Report).
8. In order to assess the significance of the adverse environmental effects, significance criteria are defined (Section 5.7 of the MCSR).
9. Taking into consideration the identified mitigation measures for each environmental effect and by applying the significance criteria, the overall significance of the residual environmental effects is determined for each class of projects considered in this MCSR (Tables A.6 to A.18 of Appendix A: Class Screening Project Report).

The assessment of cumulative environmental effects and the design of any follow-up program is necessarily project and site-specific. The consideration of cumulative adverse effects and follow-up will be required during the completion of the CSPR.

## **5.1 Spatial and Temporal Boundaries**

An important aspect of the environmental assessment process is the determination of the study boundaries. Study boundaries serve to focus the scope of the work such that a meaningful analysis of potential effects arising from the proposed project can be made, and aid in determining the most effective use of available study resources. Study boundaries may be influenced by restrictions imposed by project scheduling and the varying

degree to which environmental effects can be quantified and objectively evaluated (i.e., the point at which an environmental effect can no longer be measured, noticed or observed).

A boundary is a function of the extent and duration of potential interaction between a proposed undertaking and relevant environmental components. Generally, these boundaries are defined by the temporal and spatial characteristics encompassing those periods and areas, during and within which, the environment is likely to interact with, or be influenced by, the project. The environmental assessment boundary for small scale water quality and habitat improvement projects is defined by the spatial and temporal extent of similar physical and chemical characteristics of the habitat, such as terrestrial and aquatic environments.

The projects covered under this MCSR are regularly conducted routine projects. The spatial boundary for basing a determination of potential effects includes the project site and additional areas influenced by the project around the site. This information will be identified on a case by case basis through the CSPR forms.

Temporal boundaries include all of the project phases from construction through to decommissioning. Project activities for small scale water quality and habitat improvement projects continue on a year round basis, however, most are initiated in spring, summer or fall seasons. Construction activities typically last up to six months depending on the specifics of the work. Modification, maintenance or repair activities are generally of shorter duration unless a major change is required. In this latter case, the project may take as long as the original construction to complete. Decommissioning and abandonment may also take several months depending on the location and complexity of the structure(s) being removed. The temporal boundaries for the cumulative effects assessment will be established on a case by case basis and noted in the CSPR.

## **5.2 Environmental and Related Socio-economic Components and Potential Environmental Effects**

The potential environmental effects and mitigation measures have been organized according to environmental and related socio-economic components most likely to be affected by the projects covered by this MCSR. Table 5.2-1, below, identifies these environmental and related socio-economic components as broad aspects of concern for the purpose of organizing and categorizing common types of effects, taking into consideration the ecological context of the projects' environmental settings.

**Table 5.2-1 Environmental and Related Socio-economic Components Potentially Affected**

Air Quality Aquatic Sediments Fauna Flora Groundwater Quality and Quantity	Species at Risk – Terrestrial Surface Water Hydrology Surface Water Quality Terrain and Topography Wildlife Habitat ( <b>terrestrial and aquatic</b> )
--	--

Humans Soil Quality Species at Risk - Aquatic	Cultural and Heritage Resources Land and Resource Use
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The environmental and related socio-economic components most likely affected by the full range of activities assessed in this MCSR were identified based on Environment Canada’s experience with assessing numerous small-scale water quality and habitat improvement projects across Canada. A subset of these components was then listed for each project activity, with consideration of the likely environmental setting in which the activity would occur.

Using information from the existing screenings of similar works and activities, a long list of potential project effects was then developed and reviewed by Environment Canada specialists, expert agencies, such as Fisheries and Oceans Canada, Natural Resources Canada and Agriculture and Agri-food Canada, the Ontario Ministry of Food and Agriculture, and Conservation Ontario, as well as by several project proponents.

### **5.3 Effects of Normal Operations**

The potential adverse effects (under normal operating conditions) of small scale water quality and habitat improvement projects are shown in Table 5.3-1. These potential adverse environmental effects are those that are most likely to be caused by each of the physical works and activities associated with the full range of small scale water quality and habitat improvement projects subject to this MCSR. Potential adverse effects related to specific project components were identified by selecting only those applicable effects from the list of potential project-environment interactions shown in Table 5.3-1.

### **5.4 Effects of Accidents and Malfunctions**

The potential adverse effects of potential accidents and malfunctions associated with small scale water quality and habitat improvement projects are shown in Table 5.4-1. These potential adverse environmental effects are those that are most likely to be caused by vehicle collisions, vessel collisions, structural failures, and spills/leaks. They were identified by selecting only those applicable effects from the list of potential project-environment interactions shown in Table 5.3-1.

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**Table 5.3-1  
Potential Interactions between Project Activities and Environmental and Socioeconomic Components (under Normal Operations)**

Project Components	Environmental Components												Socio-economic Components		
	Air Quality	Aquatic Sediments	Fauna	Flora	Groundwater Quality and Quantity	Humans	Soil Quality	Species at Risk - Aquatic	Species at Risk - Terrestrial	Surface Water Hydrology	Surface Water Quality	Terrain and Topography	Wildlife Habitat	Cultural and Heritage Resources	Land and Resource Use
Earthworks	•		•		•	•	•		•	•	•	•		•	•
Engineered Surface Structures	•		•						•	•		•			
Habitat Structures			•						•				•		
Herbicide Application	•		•			•	•	•					•		
Installation of Permanent Fencing			•						•	•	•				
In-water or Near Water Works		•	•					•	•	•			•		•
Nutrient Storage and Management					•	•					•				
Operation of Hand Machinery	•		•	•		•			•		•				
Operation of Heavy Equipment, Vehicles and Vessels	•		•	•		•	•		•	•	•		•		
Paving and Other Hard Surfacing	•		•						•	•	•				
Vegetation Clearing and Grubbing	•		•	•					•		•	•			•
Withdrawal or Discharge of Groundwater					•			•			•				•
Withdrawal or Discharge of Surface Water			•	•				•	•	•	•		•		•

**Table 5.4-1**  
**Potential Project – Environmental Effects (Accidents and Malfunctions)**

Accidents and Malfunctions	Environmental Components												
	Air Quality	Aquatic Sediments	Fauna	Flora	Groundwater Quality and Quantity	Humans	Soil Quality	Species at Risk - Aquatic	Species at Risk - Terrestrial	Surface Water Hydrology	Surface Water Quality	Terrain and Topography	Wildlife Habitat
Equipment Misuse or Malfunction						•							
Spills and Leaks			•	•	•		•				•		
Structural Failures						•						•	
Vehicle Collisions			•			•							
Vessel Collisions						•							



## 5.5 Effects of the Environment on the Project

Under CEAA, an environmental assessment must consider the potential effects the environment may have on the project as part of the evaluation of effects. Table 5.5-1 identifies those projects that are vulnerable to a variety of environmental conditions. Generally, the potential effects of the environment on small scale water quality and habitat improvement projects include:

- Weather-related events (e.g., drought, extreme rainfall, flooding, wind storms and ice movements and jamming) can damage or otherwise adversely affect the project's physical integrity and may consequently lead to other environmental effects such as runoff and sedimentation.
- Subsidence of soils can also damage or adversely affect the physical integrity of projects, potentially leading to structural failures or reduced effectiveness of the project.

These weather and subsidence related effects that have been identified are considered mitigable through design and siting, and standard operating, maintenance and repair procedures and are described in the mitigation tables in Tables A.6 to A.18 of Appendix A: Class Screening Project Report.

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**Table 5.5-1 Effects of the Environment on the Project**

Environmental Conditions	Classes and Sub-Classes																		
	A. Stream Bank, Channel or Shoreline Modifications and Improvements			B. Fish Passage Improvements			C. Artificial Nesting Structures		D. Basking Structures and Hibernacula			E. Landscape Alteration and Rehabilitation				F. Access Control	G. Farm Infrastructure Improvements		
	A1	A2	A3	B1	B2	B3	C1	C2	D1	D2	D3	E1	E2	E3	E4	F1	G1	G2	G3
	Engineered Structures	Bio-engineering	Stream Channel Modifications	Culvert or Weir Modifications	Dam by-pass Structures	Fish Passage Obstruction Removal	Aquatic Setting	Terrestrial Setting	Aquatic Setting	Terrestrial Setting	Constructed Snake Hibernacula	Wetland Creation	Wetland Expansion & Rehabilitation	Landscape Grading & Excavations	Interpretive Structures & Signage	Fencing	Alternate Watering Systems	Nutrient Storage and Mgt.	Private Septic System Works
Drought	•	•	•	•	•		•		•		•	•					•		
Extreme Rainfall	•	•	•	•	•	•					•	•	•					•	•
Extreme Winds	•	•	•	•	•	•	•		•		•	•	•				•	•	•
Flooding	•	•	•	•	•		•		•		•				•	•	•		
Ice/ Ice Jamming	•	•	•				•								•	•			
Subsidence	•	•		•	•									•				•	•

This table is a general guide to determining potential environmental influences on a project’s success. Where relevant to a particular project, consideration of these impacts should be based on the project’s design, proposed construction methods, operational procedures and monitoring plans. Users of the MCSR can provide these project-specific details in Section A.6.2, “Effects of the Environment on the Project”, of the Class Screening Project Report (CSPR)

## 5.6 Mitigation of Effects

Tables A.6 to A.18 of Appendix A identify the applicable mitigation measures for each environmental effect that is applicable to the various physical works and activities associated with small scale water quality and habitat improvement project, including the effects of related accidents and malfunctions. In certain circumstances and depending on local site conditions, a subset of these mitigation measures may be more appropriate than the complete listing in these tables. Should additional mitigation measures be prescribed by other authorities, these must also be included in the project-specific CSPR. However, if any additional mitigation measures fundamentally change the project under consideration, then the applicability of the MCSR to the project under assessment must be re-confirmed and/or an individual screening completed.

## 5.7 Significance of Residual Environmental Effects

Taking into account the physical works and activities associated with each class of projects, Table 5.7-2 evaluates the significance of adverse environmental effects that may continue to occur following mitigation. The assessment of significance was undertaken according to the anticipated magnitude, geographic extent, duration, frequency of occurrence, and permanence of each effect. For the purposes of this MCSR, the significance criteria were defined and applied according to the following definitions:

**Table 5.7-1 Significance Criteria Ratings**

Criterion	Criteria Ratings		
	Low	Moderate	High
<b>Magnitude (of the effect)</b>	➤ Effect is evident only at or nominally above baseline conditions	➤ Effect is likely to be measurable over baseline conditions however is less than regulatory criteria, a published guideline value, or a level that might measurably affect the quality, quantity, value or use of an ecosystem component	➤ Effect may exceed a regulatory criteria, a published guideline value, or a level that might measurably affect the quality, quantity, value or use of an ecosystem component
<b>Geographic Extent (of the effect)</b>	➤ Effect is most likely to be limited to the project site/ footprint.	➤ Effect is likely to extend into areas adjacent to the project site/footprint boundary.	➤ Effect is likely to extend into areas beyond those adjacent to the project site/footprint boundary.
<b>Duration (of the effect related to the work stages)</b>	➤ Effect is most likely to be evident only during one of the following phases of the project: site preparation, construction or decommissioning.	➤ Effect is likely to be evident during construction, decommissioning and/or operations phase of the project.	➤ Effect is likely to be evident beyond the life of the project.

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Criterion	Criteria Ratings		
	Low	Moderate	High
<b>Frequency (of conditions causing the effect)</b>	➤ Conditions or phenomena causing the effect occur only once.	➤ Conditions or phenomena causing the effect occur more than once, but infrequently.	➤ Conditions or phenomena causing the effect are likely to occur at regular or frequent intervals
<b>Persistence (of effect)</b>	➤ Effect is likely to be reversible over a short period of time (e.g., within several days or months) after the completion of the activity causing the effect.	➤ Effect is likely to be reversible over an extended period of time (e.g., a growing season, following a freshet)	➤ Effect is likely to be permanent

After the application of these definitions, an environmental effect is assessed to be either a negligible effect, a minor adverse effect or a significant adverse effect, according to the following definitions:

- a) **Negligible Effects (Not Significant)** are those environmental effects which, after taking into consideration applicable mitigation measures have been assessed to have a “low” rating for the majority (i.e., at least 3 out of 5) of the criteria described above and the effect cannot have been assessed to be “moderate” or “high” for either the “magnitude” or “persistence” criteria. Overall, these effects are not likely to be measurable or noticeable beyond the project site / footprint boundary, are only evident during the site preparation, construction or decommissioning phases of the project or occur only once, and are completely reversible within a short period of time.
  
- b) **Minor Adverse / Mitigable Effects (Not Significant)** are those environmental effects which, after taking into consideration mitigation measures, have been assessed to have a “low” or “moderate” rating for the majority of the criteria described above. Any effect that has been assessed as “moderate” or “high” for either the “magnitude” or “persistence” criteria (but not both) is considered to be a minor adverse effect (not significant).
  
- c) **Significant Adverse Effects** are those environmental effects which, after taking into consideration mitigation measures, have a magnitude that is approaching a legal regulatory limit (i.e., moderate) or exceeds a legal limit (i.e., high) and exhibit any or all of the following:
  - effect extends into areas beyond those adjacent to the project site/footprint boundary;
  - effect is evident beyond the life of the project;
  - conditions or phenomena causing the effect occur at regular or frequent intervals; and
  - effect is permanent.







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Environmental Component	Potential Environmental Effects	Magnitude	Extent	Duration	Frequency	Persistence	Significance of Adverse Effect	Project Component #															
								1	2	3	4	5	6	7	8	9	10	11	12	13			
								<b>Terrain and Topography</b>	<ul style="list-style-type: none"> <li>• Ground subsidence from soil thaw and poor excavation and backfilling practices; ground surface mounding or structure movement due to frost heave from inappropriate backfill material or shallow foundation depth.</li> <li>• Increased soil exposure resulting in erosion, sedimentation, slope instability and risk of mudslides, slumping, rockfalls, etc.</li> <li>○ Disruption to resource uses (e.g., hunting, fishing and medicinal plant harvesting).</li> <li>○ Increased public access to remote or undeveloped areas, and areas used by Aboriginal persons for traditional purposes.</li> <li>○ Loss or disruption to known heritage (in particular, to Aboriginal heritage and spiritually significant sites or areas), archaeological and palaeontological features, undiscovered artifacts and features, and areas used for medicinal plant or subsistence harvesting.</li> </ul>	M	L	L	L	M	MAE	•	•						
<b>Wildlife Habitat</b>	<ul style="list-style-type: none"> <li>• Physical changes to aquatic habitat resulting from changes in water levels, flow volumes and temperature.</li> <li>• Physical changes to aquatic habitat resulting in a barrier to fish movement and a reduction in area, productive capacity and quality, or a change in function.</li> <li>• Physical damage and loss of habitat (terrestrial, riparian and/or wetland).</li> <li>• Reduced terrestrial habitat quality (i.e., diversity, area, function) and/or increased fragmentation of habitat.</li> </ul>	M	L	L	L	L	MAE	•															
		M	L	L	L	L	MAE																
		M	L	L	L	L	MAE																
		L	L	M	L	M	MAE	•															
		L	L	L	L	L	NEG																•
		L	L	L	L	L	NEG			•			•										
		L	L	L	L	L	NEG			•	•				•						•		
		L	L	L	L	L	NEG															•	



Table 5.7-2 indicates that after taking into consideration applicable mitigation measures, none of the environmental effects (i.e., the residual environmental effects) anticipated for small scale water quality and habitat improvement projects are likely to be significant. The vast majority of the residual environmental effects are considered to be minor adverse effects and not significant. These residual adverse effects may be measurable over baseline conditions; however they are not likely to exceed a regulatory criterion or a level that might measurably affect the quality, quantity, value or use of an ecosystem component. These residual adverse effects might extend into areas adjacent to the project site/footprint; may be evident during the construction, operation or decommissioning phases of the project; may occur more than once, but infrequently; and are considered to be completely reversible within an extended period of time such as a growing season or following a spring freshet.

Other environmental effects of small scale water quality and habitat improvement projects are considered to be negligible and not significant. Negligible effects are not likely to be measurable or noticeable beyond the project site/footprint boundary; will only be evident during the construction or decommissioning phases of the project; will occur only once; and are considered to be completely reversible within a short period of time.

## **5.8 Cumulative Environmental Effects and Mitigation**

Cumulative effects are those incremental effects on valued site-specific features or attributes caused by a project when added to or combined with the effects from other past, existing, and future operations at the site and other projects or activities off-site.

The effects of small scale water quality and habitat improvement projects alone are expected to be negligible or minor over the short and long-term. However, the effects of these projects in combination with others must be considered on a site-specific basis. For the types of projects described in this MCSR, the EA practitioner should do the following:

- determine if the project in its site specific context will have any adverse residual effects as identified in this MCSR;
- determine whether or not any of these adverse residual effects are likely to affect a valued site-specific feature or attribute in terms of its quantity, quality, value or use at any stage in the project (i.e., construction, operation, maintenance, decommissioning, abandonment);
- identify other past, existing or future projects or activities in the vicinity of the project (e.g., upstream or downstream, upgradient or downgradient; or in the site vicinity);
- if such an adverse effect on a valued site-specific feature or attribute can be demonstrated, determine if the incremental effect of the proposed project acts cumulatively with the effects of other past, existing or future projects identified; and

- determine if the effect of the project, in combination with the other effects, may cause a significant residual adverse effect now or in the future on the valued site-specific feature or attribute, after the application of mitigation for that project.

## 5.9 Follow-Up Program

Follow-up is defined in CEAA as a program for:

- a) verifying the accuracy of the EA of a project; and
- b) determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project.

In accordance with CEAA, the RA must consider whether an EA follow-up program is warranted for the project and, if so, must approve the design and implementation of the follow-up activities. Project specific follow-up and monitoring requirements have not and cannot be considered in this MCSR.

## 5.10 Compliance Monitoring

When Environment Canada has made a determination that a project is not likely to cause significant adverse environmental effects, after taking into consideration mitigation measures, then it shall ensure that the mitigation measures are implemented. This can be done by stipulating the mitigation measures to be implemented and follow-up requirements as individual conditions of approval; or by appending the CSPR to any permits, approvals, authorizations, agreements etc.

Environment Canada may choose to include a general statement in the documentation that all commitments regarding the project design, mitigation measures and follow-up shall be fulfilled. This could include a provision requiring the proponent to notify Environment Canada that the project has commenced and/or has been completed, and to prepare a compliance report to allow for Environment Canada to audit or monitor the project for compliance purposes. An EA compliance report would indicate how mitigation measures and other conditions of approval were addressed, if any deviations from the measures originally identified in the EA occurred, and if so, why were they necessary. For certain projects, Environment Canada may choose to require the services of an environmental inspector (preferably an Aboriginal community member when a project affects Aboriginal interests) to ensure that all necessary environmental requirements are addressed during various stages of project development.

## 6. Regulatory and Advisory Departments Involved in Small Scale Water Quality and Habitat Improvement Projects

### 6.1 Environment Canada's Roles and Responsibilities

Environment Canada will not exercise any power or perform any duty or function which may allow the project to proceed until completion of the environmental assessment (ss. 11(2)). To this end, it will be the responsibility of Environment Canada to:

- advise the proponent of the information requirements and provide the necessary forms that must be completed by the project proponent;
- determine whether the undertaking is a project that requires a screening in accordance with CEAA;
- ensure that appropriate projects are referred to Fisheries and Oceans Canada, as well as to any other RAs identified
- determine whether a project fits within the class of projects defined in this MCSR;
- obtain consensus among all relevant RAs that the process outlined in this MCSR meets their respective EA requirements and that Environment Canada, as the lead RA, will prepare the CSPR;
- ensure that a CSPR is prepared for each project subject to this MCSR;
- ensure that scientific and technical issues identified in the CSPR are reviewed and addressed by experts;
- make a determination and take a course of action concerning the proposed project pursuant to Section 20(1)(a) of CEAA by approving or rejecting the proposed project, or reclassify and subjecting the project to an individual screening and take a course of action pursuant to Section 20(1) of CEAA;
- maintain a project file that includes all records produced, collected or submitted with respect to the environmental assessment, ensure convenient public access to these records and respond to information requests in a timely manner;
- post specific records to the Canadian Environmental Assessment Registry in relation to a model class screening report, and any related class screening project reports.
- ensure that for any project that is proceeding, all appropriate mitigation measures are implemented (paragraph 16(1)d of CEAA); and
- determine whether a follow-up program is required and when appropriate, ensure it is designed and implemented (s.38 of CEAA).

Environment Canada may:

- delegate the conduct of the CSPR, and any part of the design and implementation of a follow-up program, with the exception of making its Section 20(1) determination under CEAA;
- choose to provide additional opportunities for public consultation during preparation of the CSPR; or
- choose to reclassify the project and conduct the environmental assessment as an individual screening.

## 6.2 Environment Canada – Canadian Wildlife Service

The Canadian Wildlife Service provides expert advice regarding wildlife matters that are the responsibility of the federal government. This includes the protection and conservation of migratory birds and nationally important wildlife habitat, species at risk, research on nationally important wildlife issues, control of international trade in endangered species, and international treaties. Environment Canada- Canadian Wildlife Service is also responsible for the enforcement of the *Species at Risk Act* and the *Migratory Birds Convention Act, 1994*.

Consultation with Environment Canada – Canadian Wildlife Service is required to confirm whether or not there are any project specific mitigation measures (in addition to those identified in the MCSR) to be applied to the project to ensure that there is no potential for adverse effects on species at risk, migratory birds and federal wetlands. The Canadian Wildlife Service may also provide expert advice regarding how to enhance the beneficial effects to wildlife and their habitat resulting from small scale water quality and habitat improvement projects.

## 6.3 Environment Canada – Other

Environment Canada is responsible for a variety of other programs and services, including the co-ordination of Environment Canada's specialist information and knowledge for the review of projects that are subject to CEAA, enforcement of the *Canadian Environmental Protection Act, 1999* (CEPA) and regulations, enforcement of the pollution prevention provisions of the *Fisheries Act* (S.36 and related provisions), emergency prevention and preparedness, regulations development, and participation in the delivery of many national programs such as the National Pollutant Release Inventory.

Consultation with Environment Canada is required to confirm whether or not there are any project specific mitigation measures (in addition to those identified in the MCSR) to be applied to the project to ensure that there is no potential for adverse effects on soils, groundwater or surface water due to the potential discharge of a deleterious substance.

## 6.4 Roles and Responsibilities of Other Responsible Authorities and Expert Departments

In certain circumstances, the completion of a CSPR for small scale water quality and habitat improvement projects may require consultation or a referral to a federal department for expert advice or, as is the case with Fisheries and Oceans Canada, a referral to a department as a potential Responsible Authority. Fisheries and Oceans Canada has formally agreed to use the process outlined in the MCSR to fulfill its EA requirements when identified as an RA for projects assessed by this MCSR

## 6.5 Fisheries and Oceans Canada – *Fisheries Act*

The federal *Fisheries Act* gives the Minister of Fisheries and Oceans the legislative authority to protect fish and fish habitat from destructive activities in waters that are or may be frequented by fish. Fisheries and Oceans Canada administers the habitat and pollution protection provisions of the *Fisheries Act* under Sections 22(1), 22(2), 22(3), 32, 35(2) and 37(2), which are binding on all levels of government and the public in areas such as:

- the provision of sufficient water flows;
- passage of fish around migration barriers;
- screening of intake screens;
- prohibition against the destruction of fish by means other than fishing unless authorized by Fisheries and Oceans Canada;
- restrictions on fishing near a barrier; and
- prohibition against the harmful alteration, disruption or destruction (HADD) of fish habitat unless authorized by Fisheries and Oceans Canada.

The *Fisheries Act* also states that no one is permitted to deposit a deleterious substance into waters containing fish.

### ***Role as Federal Authority When Conducting Screenings Under the MCSR:***

Fisheries and Oceans Canada, in the role of a Federal Authority, participated in the development of this MCSR for Small Scale Water Quality and Habitat Improvement projects by providing suggested mitigation, as defined in the Policy for the Management of Fish Habitat (1986) to the generic environmental assessment. The aim of the suggested mitigation is to reduce and/or eliminate the effects on water quality and fish passage, and the destruction of fish and fish habitat. Fisheries and Oceans Canada often plays a role as a Federal Authority (expert department) for many of the Small Scale Water Quality and Habitat Improvement projects on a project-by-project basis in the CSPR forms. The forms allow for a Federal Authority to ensure that scientific and technical issues have been addressed and if necessary to provide Environment Canada with extra mitigation to an individual project with an aim to reduce and/or eliminate effects on fish and fish habitat. In situations where

a harmful alteration, disruption or destruction (HADD) of fish habitat is expected, Fisheries and Oceans Canada will provide advice on mitigation and compensation to assist Environment Canada in ensuring the objectives of its department's Habitat Policy are met. An authorization under the *Fisheries Act* will be required if there is an expected HADD of fish habitat.

Referrals to Fisheries and Oceans Canada are required when the works or undertakings may require a regulatory approval under the *Fisheries Act*. Through this referral process, Fisheries and Oceans Canada (in the role of a Federal Authority) can provide additional advice and mitigation to Environment Canada on a project-by-project basis.

### ***Role as Responsible Authority When Conducting Screenings Under this MCSR***

Aside from providing expert advice as a Federal Authority, Fisheries and Oceans Canada is also a Responsible Authority for projects that require a regulatory approval under the *Fisheries Act*. Following a review of the MCSR, and after providing suggested mitigation to the MCSR to reduce effects on fish and fish habitat, Fisheries and Oceans Canada recognized that some of the proposed Small Scale Water Quality and Habitat Improvement projects may still require a *Fisheries Act* section 35(2) authorization for the HADD of fish habitat.

Referral to Fisheries and Oceans Canada is required when the works or undertakings may require a regulatory approval under the *Fisheries Act*. For the purposes of this MCSR, Fisheries and Oceans Canada has identified the following works or undertakings that are likely to require a referral:

- A1: Engineered Structures
- A2: Bioengineering
- A3: Stream Channel Modifications
- B1: Culvert or Weir Modifications
- B2: Dam by-pass Structures
- B3: Fish Passage Obstruction Removal
- C1: Artificial Nesting Structures – Aquatic Setting (*that involve infilling*)
- D1: Basking Structures and Hibernacula – Aquatic Setting (*that involve infilling*)
- E1: Wetland Creation
- E2: Wetland Expansion and Rehabilitation

If Fisheries and Oceans Canada proposes to issue specific authorizations or approvals associated with a project under the *Fisheries Act*, they become a Responsible Authority in accordance with the *Law List Regulations* of the CEAA. In such cases where Environment Canada and Fisheries and Oceans Canada are both Responsible Authorities for a project, Environment Canada will coordinate completion of the CSPP.

## 6.6 Transport Canada

Transport Canada has the responsibility to protect the right of public navigation under the federal *Navigable Waters Protection Act* (NWPA). The NWPA defines a navigable water as a “canal or any other body of water created or altered as a result of the construction of any works”, but in practice includes “any body of water capable of being navigated by a floating vessel of any description, for the purposes of transportation, recreation or commerce”. Construction or placement of a work in, on, over, under, through or across any navigable water may require approval from Transport Canada (paragraph 5(1)(a)). Formal approval is mandatory for a new bridge, dam, boom or causeway over navigable waters. Any other works that may cause changes to flow, water level or clearances in a navigable water body may also be of regulatory interest. For example, this may include the construction of “...any structure, device or thing... similar in character... that may interfere with navigation”.

This MCSR does not exempt a proponent from the requirement to obtain approval in accordance with Federal laws such as the NWPA. The NWPA still requires that the proponent apply for approval of any work located in, on, over, under, through or across any navigable water.

For the purposes of this MCSR, Transport Canada has identified the following works or undertakings that are likely to require a referral:

- A1: Engineered Structures
- A2: Bioengineering
- A3: Stream Channel Modifications
- B1: Culvert or Weir Modifications
- B2: Dam by-pass Structures
- B3: Fish Passage Obstruction Removal
- C1: Artificial Nesting Structures – Aquatic Setting (*that involve infilling*)
- D1: Basking Structures and Hibernacula – Aquatic Setting (*that involve infilling*)
- E1: Wetland Creation
- E2: Wetland Expansion and Rehabilitation

If Transport Canada issues specific authorizations or approvals associated with a project under the NWPA, they become a Responsible Authority in accordance with the *Law List Regulations* of the CEAA. In such cases where Environment Canada and Transport Canada are both Responsible Authorities for a project, Environment Canada will coordinate completion of the CSPR.

## **6.7 Indian and Northern Affairs Canada and Aboriginal Groups**

In fulfilling its mandate, Indian and Northern Affairs Canada (INAC) works collaboratively with Aboriginal groups and with other federal, provincial and territorial government agencies. INAC should be consulted, as a Federal Authority, when a project falls on or otherwise affects reserve land.

## **6.8 Co-ordination with Provincial Authorities**

Small scale water quality and habitat improvement projects may require consultation with provincial authorities. For example, projects involving wetlands or provincially designated sites of special concern (e.g., Areas of Natural and Scientific Interest and Environmentally Significant Areas), those requiring removal of a beaver dam that has become an impediment to fish passage may warrant consultation with the provincial authorities responsible for natural resource management. However, project proponents are responsible for obtaining all permits required by provincial authorities.

## **7.0 Preparation of Class Screening Project Reports**

Environment Canada, or a third party delegated to complete a Class Screening Project Report (CSPR) on behalf of Environment Canada, and any other RAs, will undertake or delegate the preparation of a CSPR for each project subject to this MCSR. The CSPR applicable to the projects subject to this MCSR is provided in Appendix A.

Although Environment Canada, or its delegate, will complete the CSPR, it will be the responsibility of the project proponent to complete the relevant applications for funding and provide any information required by Environment Canada. It will also be the responsibility of the project proponent to ensure that all information provided is as accurate as possible, that the project and identified mitigation measures are implemented appropriately, and that any required follow-up is undertaken as specified in the environmental assessment, funding agreements and any other regulatory permit or authorization. The proponent may be required to sign a statement to this effect. If it becomes known that inaccurate information has been provided by the proponent or that the project is not being implemented as specified, the funding program and regulatory agencies may take actions to rescind or modify their approvals.

### **7.1 Instructions for Completing a Class Screening Project Report**

The CSPR applicable to the small scale water quality and habitat improvement projects subject to this MCSR is provided in Appendix A. This section provides instruction for completing the CSPR.



Section 1 of the CSPR is intended to document whether or not CEAA and the MCSR apply. Upon review of the funding proposal, a determination needs to be made as to whether or not CEAA applies. CEAA applies when:

- The project is an undertaking in relation to a physical work that is not otherwise excluded from assessment under the *Exclusion List Regulations*. If any component of the project involves a physical work that is not described in the Exclusion List, then the project shall be scoped broadly enough to include the entire physical work; or
- The project involves any physical activity that is not in relation to a physical work but that requires an assessment under the *Inclusion List Regulations*. Refer to the *Inclusion List Regulations* for all physical activities not involving physical works; and
- Environment Canada and/or another Federal Authority (s. 5 of CEAA) is:
  - the proponent of a project;
  - grants money or other financial assistance to a project;
  - grants an interest in land to enable a project to be carried out; or
  - exercises a regulatory duty in relation to a project, such as issuing a permit, license or authorization that is covered under the *Law List Regulations*.

Because Environment Canada provides funding (i.e., granting money or other financial assistance) for small scale water quality and habitat improvement projects subject to this MCSR, CEAA is always triggered. It is the responsibility of Environment Canada to contact other federal departments so they can determine if they are also required to conduct an EA of the proposed project.

The CSPR can only be used for the projects described in this MCSR. Any project that is not described in the MCSR is either excluded from CEAA or else must be assessed outside of this MCSR.

Table A.1 of the CSPR lists all projects that are covered by this MCSR. After reviewing the funding proposal, all of the applicable components of the project under assessment should be identified. This information will be used when completing the remainder of the CSPR.

Table A.2 of the CSPR identifies the various physical works and associated activities that are commonly carried out during site preparation; construction; operation; maintenance, monitoring and repair; and decommissioning stages of each class and sub-class of projects subject to this Class Screening process. Table A.3 of the CSPR identifies the potential accidents and malfunctions associated with each class and sub-class of these projects. The information in these tables should be used as a guide when completing the CSPR. They are intended to be used as a reference when determining whether or not the physical works and associated activities is likely to apply to the project being assessed.

Once a determination has been made as to whether the undertaking is a “project” that requires a screening in accordance with CEAA and whether the project fits within one or more classes of projects defined in this Model Class Screening Report, the remainder of the CSPR will need to be completed.

Sections A.3 and A.4 of the CSPR must be completed prior to, or in consultation with, other Federal and Provincial Authorities. These sections provide relevant authorities with sufficient information about the project and its environmental setting to allow them to provide expert advice. In particular, Fisheries and Oceans Canada and Transport Canada, could provide expert advice, or determine whether they need to make a regulatory decision under the *Fisheries Act* or the *NWPA*, respectively.

A completed Section 3 of the CSPR will generally contain the following:

- National Environmental Assessment System (NEAS) Number
- Project File Number
- Project Title and Location
- Project Description (identifying the components relevant to this MCSR)
- Responsible Authorities and Trigger(s)
- Contact Information
- EA Start Date

All of the project components as they are described in the funding proposal are to be listed in the first column of Table A.4. In the second column, each of these components is to be classified according to their applicable MCSR sub-class from the Table A.1 of the CSPR. In the third column, the appropriate sub-class code is to be included from Table A.1 of the CSPR.

A completed Section A.5 of the CSPR will provide a description of the existing environment according to various aspects pertaining to the project that are listed in Column 1 of Table A.5. All of these aspects may or may not be relevant to the project under assessment. Applicable descriptions of those aspects that are relevant to the project and its proposed location(s) should be entered in Column 2 of Table A.5. Table 7.1-1 provides a sample of a completed Table A.5 from the CSPR.

**Any Species at Risk that are likely to occur in the project area and/or are being targeted as part of the habitat improvement project must be identified.**

EA practitioners are encouraged to refer to maps, figures or photos and/or contact local provincial and federal authorities for site specific information on migratory birds, species at risk, wetlands, important habitat areas and other environmental features. Where appropriate, EA practitioners may use the web sites below, however it should be noted that such web sites may not always provide sufficient detailed information for a site specific description of existing conditions.

1. An Environment Canada Web site that describes Canada's Ecozones and Ecoregions.
  - <http://www.ec.gc.ca/soer-ree/English/Framework/NarDesc>
2. Web sites that allow you to identify species assessed by COSEWIC, or search for species and range maps:
  - <http://www.speciesatrisk.gc.ca>
  - [http://www.speciesatrisk.gc.ca/search/default\\_e.cfm](http://www.speciesatrisk.gc.ca/search/default_e.cfm)
  - <http://www.cosewic.gc.ca>
3. Conservation Data Centres or Natural Heritage Information Centres accessible through NatureServe Canada, provides a searchable database on conservation status, taxonomy and distribution:
  - <http://www.natureserve-canada.ca>
4. SARA Registry provides an updated list of Schedule 1 species, recovery strategies or action plans which identify critical habitat, and information on SARA including prohibitions:
  - <http://www.sararegistry.gc.ca>

The MCSR can be used to assess projects in areas in which species at risk are found, providing the project and all of its associated activities:

- do not require a permit under SARA and/or
- will not have an adverse effect, either temporary or permanent, on species at risk including their residences and critical habitat.

**For all projects in areas where species at risk are present at any time during their lifecycle, immediately consult with the relevant department (Environment Canada or Fisheries, Oceans Canada or Parks Canada\*) regarding the appropriateness of conducting a class screening. Even after receiving a "green light" from the experts, you must continue to consider effects on species at risk through the preparation of the class screening report and elevate the assessment to an individual screening if any harmful effects are anticipated.\*\***

\* Parks Canada's authority under SARA is limited to the protected areas it manages. Projects within National Parks are not eligible for assessment under this MCSR; however, it may be appropriate to notify PCA if a project is adjacent to a protected area managed by PCA, and there are individuals of species at risk that may cross park boundaries. Such notification would be required under 79(1) of SARA; in addition, Parks Canada may have specialists that can provide valuable information on the species in question.

\*\* Note that SARA establishes prohibitions protecting individuals of a threatened or endangered listed species, their residences, and critical habitat; permits may be issued subject to certain conditions. For information on SARA and its provisions, visit the SARA Public Registry. Note that provincial or territorial prohibitions may also apply. The EA does not override your responsibility to comply with applicable legislation.

**Table 7.1-1**  
**Sample of Completed Table A.5 (Existing Conditions)**

<b>Aspects of the Project's Existing Environment</b>	<b>Description</b> <i>(provide details where applicable)</i>
<b>Land Use</b>	
➤ Site use within the past 12 months	➤ The site is currently unoccupied. The seasonal hunt camp, and a tepee structure located within 500 m of the site suggest that the area is used on an occasional basis for hunting, trapping and fishing.
➤ Land uses on adjacent properties	➤ The seasonal hunt camp, and a tepee structure located within 500 m of the site, suggests that the area is used on an occasional basis for hunting, trapping and fishing.
➤ Aboriginal interest (e.g. traditional use)	➤ First Nation community exists approximately 35 km upstream of the site. A tepee structure located within 500 m of the station suggests that the area is used on an occasional basis for hunting, trapping and fishing.
➤ On-site presence of known historical, heritage or archaeological sites	➤ None identified.
<b>Work Area</b>	
➤ Approximate area directly affected by the Project ( <i>in hectares or sq. m</i> )	➤ Approximately 0.5 ha
➤ Proposed access to site ( <i>e.g., existing road/trail or water access</i> )	➤ Access to the site is available directly from Highway 102 via an existing trail approximately 500 m in length. Access using a motorboat is possible along the river from an existing marina located approximately 2.5 km upstream of the project site.
<b>Surface Waters</b>	
➤ Conditions of existing on-site slopes (ground slopes, stream banks, shorelines)	➤ On-site slopes are gentle (less than 1% grade). The stream bank and shoreline are also gentle with a less than 2% grade. There are no areas of unstable slopes on-site or in the site vicinity.
➤ Type of on-site water bodies (watercourses, ponds, lakes, wetlands)	➤ The site is located along the Tackhart River
➤ Lengths of shorelines or stream banks to be affected by the Project	➤ The site will occupy approximately 5 m of shoreline.
➤ Distance of work area(s) to water bodies	➤ The site is located along the shoreline of the Tackhart River
➤ Surface water flow volumes to be altered by the Project	➤ The Tackhart River is approximately 50 m wide with a flow volume of approximately 500 m <sup>3</sup> / sec.
➤ Surface water quality	➤ No water quality data exists for the Tackhart River. There do not appear to be any major sedimentation or contaminant issues based on local land uses.
➤ Distance to nearest surface water intake	➤ Nearest surface water intake exists 500 m downstream.
➤ Types of aquatic substrates on-site	➤ Not applicable
<b>Goundwater</b>	
➤ Groundwater quality	➤ No contaminants issues identified.
➤ Distance to nearest groundwater well	➤ None identified.

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<b>Aspects of the Project's Existing Environment</b>	<b>Description</b> <i>(provide details where applicable)</i>
<b>Land</b>	
➤ Types of soils on-site	➤ On-site soils are largely thin cyosols and brunisols over bedrock. A till moraine exists approximately 500 m from the site.
<b>Wildlife and Habitat</b>	
➤ Fish and wildlife species, especially Species at Risk and migratory birds ( <i>on-site and adjacent properties</i> )	➤ Major fish species include: Walleye and Northern Pike. Major wildlife species include: wolf, hare, black bear, and ground squirrel.
➤ Type of natural vegetation / ground cover on site property. Identify any plant Species at Risk.	➤ The site area is dominated by shrubs on rock barrens along the river shoreline. No Species at Risk have been identified.
<b>Other</b>	➤ None

Section A.6 of the CSPR is intended to describe the environmental effects and mitigation measures that are applicable to 13 different physical works and associated activities (including their associated accidents and malfunctions) that may be undertaken for small scale water quality and habitat improvement projects. This Section is intended to identify and describe those environmental effects and mitigation measures that are applicable the project. To complete Section A.6 of the CSPR, the following steps should be undertaken:

- a) Identify which of the 13 physical works and associated activities are likely to be undertaken as part of the project. If the physical work and associated activity is likely to be undertaken check (X) the first box at the top of each table. Use Tables 2 and 3 of the CSPR as reference.
- b) For each physical work and associated activity that you checked, indicate (X) the project phases during which these activities will likely occur. The project phases are also listed at the top of each table. A physical work or activity may occur in more than one phase of the project. Check (X) all phases that are applicable.
- c) For each physical work and associated activity that you checked, identify any site specific features or attributes that are likely to be affected.
- d) Review the environmental effects and mitigation measures for each physical work and associated activity that you checked.
- e) Ensure that the standard mitigation measures identified encompass all the likely effects of the project. Sections A.5 and A.9 of the CSPR are provided for the identification of additional mitigation that you may identify or that may be recommended by others through consultation.

- f) If the project requires modifications or additions to the mitigation measures listed below that would change the project's function or its environmental effects, **DO NOT** proceed with the CSPR. An individual screening may be required for this project.

As the CSPR considers a wide range of common scenarios, it is expected that the full range of effects and mitigation measures listed for each physical work and associated activity may not pertain to every project. Discretion is to be applied when determining which, if any, of the listed measures are not required as a condition of project approval.

In Section A.6.1, describe any adverse environmental effect(s) not described in Tables A.6 to A.18 that are likely to occur as a result of the project, or any effects that are uncertain. Include the recommended mitigation measures and the significance of the residual adverse effects. **Any residual adverse environmental effects that are deemed to be significant will result in a determination of "Significant Adverse Effects" in Section A.11 of the CSPR, or will require changes to the project.**

Section A.7 of the CSPR is intended to assess cumulative adverse effects of the project in combination with other past, existing or future (certain or reasonably foreseeable) projects or activities that *also* affect or *may also* affect any environmental components of concern or special interest. The cumulative effects assessment should focus on those environmental components listed in the CSPR, including any **site specific** features or attributes, which are considered to be of concern or special interest based on consultation and other information relevant to the screening. Other past, existing or future projects or activities are to be identified and described in Table A.19 of the CSPR. If no other projects are identified, specify "Not Applicable" in the table.

Table 7.1-2 provides a sample of a completed Table A.19 from the CSPR. The EA practitioner should consult within Environment Canada, other departments, governments and Aboriginal groups and, where appropriate, members of the public to identify other projects and activities that may cause an adverse cumulative effect. If there is any potential for adverse cumulative effects, they must be described along with any recommended mitigation measures. The significance of any adverse cumulative effects will also need to be determined. **Any adverse cumulative environmental effects that are deemed to be significant will result in a determination of "Significant Adverse Effects" in Section A.11 of the CSPR, or will require changes to the project.**

**Table 7.1-2**

Sample of Completed Table A.19: Other Projects and Activities  
(from Appendix A: CSPR, Section A.7. “Cumulative Effects Assessment”)

Environmental Component(s) of Concern or Special Interest	Past, Existing, Planned or Likely Projects/Activities that can affect the Environmental Component	Description of Cumulative Effect(s)	Proposed Mitigation for Cumulative Adverse Effect(s)	Significance of Cumulative Adverse Effect(s)
<b>Wildlife Habitat (terrestrial &amp; aquatic)</b>	<p>Historical agricultural activities adjacent to the project area.</p> <p>Existing hydro corridor right-of-way (ROW) adjacent to project area.</p>	Cumulative reduction and fragmentation of terrestrial habitat due to historical clearing of woodlots for agricultural practices, regular maintenance mowing of hydro ROW, and vegetation clearing required for temporary access to the project site.	The effect will be short-term and will be mitigated by restoring disturbed areas with plant species that are native to the project area.	Negligible
<b>Fauna</b>	Planned recreational trail in proximity to the project area.	Changes in wildlife behaviour due to cumulative effects of disturbance caused by human activity associated with the trail use and ongoing maintenance activities required for the project.	The effect will be mitigated by erecting signage to advise workers and visitors of wildlife sensitivities and installing barriers to control access. Wildlife responses will be monitored to determine whether further measures are required.	Minor Adverse

Section A.7.1 of the CSPR may be completed, if applicable, to identify any other matter relevant to the screening such as anticipated beneficial effects of the project.

In Section A.8 of the CSPR, the EA practitioner must identify whether or not any consultation were undertaken identify those parties involved, when and where consultations took place and identify any issues raised and how they were addressed.

In Section A.9 of the CSPR, the EA practitioner must identify whether or not any additional mitigation measures were identified through consultation. The class screening should not proceed if the project-specific mitigation measures recommended by others fundamentally change the project under assessment. Project proponents must ensure that the standard mitigation measures identified for each effect are relevant and are implemented.

In Section A.10 of the CSPR, the EA practitioner must identify if a follow-up program is required for the project and if yes, describe the project specific follow-up activities that are warranted to verify the environment effects or the effectiveness of the mitigation measures. The responsibilities for each follow-up activity should also be identified.

In Section A.11 of the CSPR, Environment Canada and any other RA identified in the MCSR must make a decision in accordance with section 20(1)(a) of CEEA, based on the MSCR and the completed CSPR. Environment Canada's options are limited to the following:

1. The project is not likely to cause significant adverse environmental effects and the project can proceed with application of the mitigation measures specified in the EA report.
2. The project is likely to cause significant adverse environmental effects that cannot be justified and therefore the project cannot proceed.

Once a decision on whether or not the project should proceed, the individuals involved in preparing, reviewing and approving the CSPR must be identified in Section A.12. Each person must authorize the CSPR. If there were more than one Responsible Authority, representatives from the other Responsible Authorities will also need to authorize the CSPR.

## **7.2 The Canadian Environmental Assessment Registry**

This MCSR has been placed on the Canadian Environmental Assessment Registry (the Registry) managed by the Agency. The purpose of the Registry is to facilitate public access to records relating to environmental assessments and to provide, in a timely manner, notice of the assessments. The Registry consists of two components – an Internet site and a project file.

The Internet site is administered by the Agency. The responsible authority and the Agency are required to post specific records to the Internet site in relation to a model class screening report, and any related class screening project reports. The Agency will post records required during preparation of a model class screening report (e.g., public notices regarding public participation).

Upon declaration of the model class screening report, the Agency requires responsible authorities to post on the Registry, every three months, a statement of projects for which a class screening was used. The statement should be in the form of a list of projects, and will include:

- the title of each project for which the model class screening report was used;
- the location of each project;
- the date of the decision for each project; and
- contact name and/or phone number



The project file component is a file maintained by the responsible authority during an environmental assessment. The project file must include all records produced, collected or submitted with respect to the environmental assessment of the project, including class screening projects reports and all records included on the Internet site. The responsible authority must maintain the file, ensure convenient public access, and respond to information requests in a timely manner.

Further information regarding the Canadian Environmental Assessment Registry can be found in "The Canadian Environmental Assessment Registry: Practitioners' Guide", prepared by the Agency.

## **8.0 Amending the Model Class Screening Report**

The purpose of an amending procedure is to allow the modification of the MCSR after experience has been gained with its operation and effectiveness. The reasons for such modification may include:

- clarification of ambiguous areas of the document and procedures;
- streamlining or modifying the planning process in areas where problems may have arisen;
- minor modifications and revisions to the scope of assessment to reflect new or changed regulatory requirements, policies or standards; and
- new procedures and environmental mitigation practices that have been developed over time.

The responsible authority will notify the Agency in writing of its interest to amend the MCSR. It will discuss the proposed amendments with the Agency and affected federal government departments and may invite comment from stakeholders and the public on the proposed changes. The responsible authority will then submit the amended MCSR to the Agency, along with a request that the Agency amend the MCSR and a statement providing a rationale for the amendment.

The Agency may amend the MCSR without changing the declaration period if the changes:

- are minor;
- represent editorial changes intended to clarify or improve the screening process;
- do not materially alter either the scope of the projects subject to the MCSR or the scope of the assessment required for these projects; and
- do not reflect new or changed regulatory requirements, policies or standards.

The Agency may initiate a new declaration for the MCSR for the remaining balance of the original declaration period, or, for a new declaration period if the changes:

- are considered to be substantial; or
- represent modifications to the scope of the projects subject to the class or the scope of the assessment required for these projects.

## 9. Glossary of Terms

Term	Definition
<b>Air Contaminant</b>	Any solid, liquid, gas or odour or a combination of any of them that, if emitted into the air, would create or contribute to the creation of air pollution.
<b>Aquatic Biodiversity</b>	Includes both marine and freshwater biodiversity including wetlands, bogs, marshes, groundwater, etc.
<b>Bioaccumulation</b>	The process by which a substance accumulates in a living organism- either from the surrounding environment or through food containing the substance
<b>Biodegradable</b>	Any substance that decomposes through the action of micro-organisms.
<b>Biodiversity or Biological Diversity</b>	Variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. (CEPA, 1999)
<b>Boundary Waters</b>	The waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and Canada passes, including all bays, arms, and inlets thereof, but not including tributary waters which in their natural channels would flow into such lakes, rivers, and waterways, or waters flowing from such lakes, rivers, and waterways, or the waters of rivers flowing across the boundary.
<b>Compensation for Loss</b>	The replacement of natural habitat, increase in the productivity of existing habitat, or maintenance of fish production by artificial means in circumstances dictated by social and economic conditions, where mitigation techniques and other measures are not adequate to maintain habitats for Canada's fisheries resources.
<b>Comprehensive Study List</b>	A list of projects, prescribed pursuant to CEAA, which must undergo a comprehensive study.
<b>Cultural Heritage</b>	<ul style="list-style-type: none"> <li>a) Monuments: architectural works, works or monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science;</li> <li>b) Groups of buildings: groups of separate or connected buildings, which because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science; and</li> <li>c) Sites: works of humans or the combined works of nature and humans, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view.</li> </ul>
<b>Cumulative Environmental Effects</b>	The effects on the environment, over a certain period of time and distance, resulting from effects of a project when combined with those of other past, existing, and imminent projects and activities.
<b>Deleterious Substance</b>	Any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by humans of fish that frequent that water, or any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man or fish that frequent that water. ( <i>Fisheries Act</i> )
<b>Ecosystem</b>	A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. ( <i>Canadian Environmental Protection Act, 1999</i> )
<b>Endangered Species</b>	A wildlife species that is facing imminent extirpation or extinction. (SARA)

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Term	Definition
<b>Environment</b>	‘environment’ means the components of the Earth, and includes (a) land, water and air, including all layers of the atmosphere, (b) all organic and inorganic matter and living organisms, and (c) the interacting natural systems that include components referred to in paragraphs (a) and (b)”. (CEAA)
<b>Environmental Assessment</b>	In respect of a project, an assessment of the environmental effects of the project that is conducted in accordance with the <i>Canadian Environmental Assessment Act</i> and the regulations.
<b>Environmental Effect</b>	In respect of a project, a) any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of the <i>Species at Risk Act</i> , (b) any effect of any change referred to in paragraph (a) on (i) health and socio-economic conditions, (ii) physical and cultural heritage, (iii) the current use of lands and resources for traditional purposes by aboriginal persons, or (iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, or (c) any change to the project that may be caused by the environment, whether any such change or effect occurs within or outside Canada. (CEAA)
<b>Environmental Emergency</b>	An uncontrolled, unplanned, or accidental release of a substance into the environment; or the reasonable likelihood of such a release that may affect the environment, human life or health, or the environment on which human health depends. (CEPA, 1999)
<b>Erosion</b>	The process of wearing away the earth’s surface through the action of wind and water.
<b>Exclusion List</b>	A list of projects, prescribed pursuant to CEAA, which do not require assessment under CEAA.
<b>Extirpated Species</b>	A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild. (SARA)
<b>Fish</b>	Includes parts of fish, shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals.
<b>Fish Habitats</b>	Spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes.
<b>Follow-Up Program</b>	A program for: a) verifying the accuracy of the environmental assessment of a project; and b) determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project. (CEAA)
<b>Fuel</b>	Any form of matter that in its primary use is combusted or oxidized for the generation of energy. (CEPA, 1999)
<b>Groundwater</b>	All water under the surface of the ground.
<b>Habitat</b>	(a) in respect of aquatic species, spawning grounds and nursery, rearing, food supply, migration and any other areas on which aquatic species depend directly or indirectly in order to carry out their life processes, or areas where aquatic species formerly occurred and have the potential to be reintroduced; and (b) in respect of other wildlife species, the area or type of site where an individual or wildlife species naturally occurs or depends on directly or indirectly in order to carry out its life processes or formerly occurred and has the potential to be reintroduced. (SARA)
<b>Inclusion List</b>	A list of physical activities, prescribed pursuant to CEAA, which are not related to a physical work but are subject to assessment under CEAA.
<b>Law List</b>	A list, prescribed pursuant to CEAA that identifies federal statutory and regulatory project approvals that trigger an environmental assessment under CEAA.

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Term	Definition
<b>Migratory Bird</b>	A migratory bird referred to in the <i>Migratory Birds Convention Act</i> , 1994, and includes the sperm, eggs, embryos, tissue cultures and parts of the bird.
<b>Mitigation</b>	In respect of a project, the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means. (CEAA)
<b>Net Gain</b>	An increase in the productive capacity of habitats for selected fisheries brought about by determined government and public efforts to conserve, restore and develop habitats. (Fisheries and Oceans Canada's Policy for the Management of Fish Habitat, 1986).
<b>No Net Loss</b>	A working principle by which Fisheries and Oceans Canada strives to balance unavoidable habitat losses with habitat replacement on a project-by-project basis so that further reductions to Canada's fisheries resources due to habitat loss or damage may be prevented. (Fisheries and Oceans Canada's Policy for the Management of Fish Habitat, (1986).
<b>Particulate Matter</b>	Emitted directly from source (e.g., fossil fuel combustion) or formed in secondary atmospheric chemical reactions, creating compounds such as sulphates (from SO <sub>2</sub> ), nitrates (NO <sub>x</sub> ), organic particulates (from VOC) and ammonia (NH <sub>3</sub> ) gas.
<b>Pest</b>	Any injurious, noxious or troublesome insect, fungus, bacterial organism, virus, weed, rodent or other plant or animal pest, and includes any injurious, noxious or troublesome organic function of a plant or animal.
<b>Pesticide</b>	Virtually any thing that is designed to control, destroy, attract or repel a pest. The <i>Pest Control Products Act and Regulations</i> refer to a pesticide as a "control product". These control products usually come in the form of a chemical, organism or device.
<b>Proponent</b>	In respect of a project, means the person, body, federal authority or government that proposes the project. (CEAA)
<b>Public Lands</b>	Lands, including submerged lands, that belong to Her Majesty in right of Canada or that the Government of Canada has the power to dispose of, whether or not such disposal is subject to the terms of any agreement between the Government of Canada and the government of a province.
<b>Rehabilitation</b>	The return of a species, population or ecosystem to a healthy, functioning state.
<b>Release</b>	Includes discharge, spray, inject, inoculate, abandon, deposit, spill, leak, seep, pour, emit, empty, throw, dump, place and exhaust.
<b>Resources Harvesting</b>	The harvesting of biological resources for the purpose of subsistence or economic gain. Includes both aquatic and terrestrial resources.
<b>Restoration</b>	The return of a species, population or ecosystem to its state prior to disturbance.
<b>Soil</b>	The naturally occurring, unconsolidated mineral or organic material at least 10 cm thick that occurs at the earth's surface and is capable of supporting plant growth. In this definition 'naturally occurring' includes disturbance of the surface by human activities such as cultivation and logging but not displaced materials such as mine spoils. Soil extends from the earth's surface through the genetic horizons, if present, into the underlying material to the depth of the control section. Soil may have water covering its surface to a depth of 60 cm or less either at low tide in coastal areas or during the driest part of the year in areas inland. (Agriculture and Agri-Food Canada, <i>The Canadian System of Soil Classification</i> , Third Edition, 1998)
<b>Species at Risk</b>	An extirpated, endangered or threatened species, or a species of special concern. (SARA)
<b>Species of Special Concern</b>	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats. (SARA)
<b>Spoil</b>	Soil materials other than topsoil excavated from the trench. In most cases, the excavated soil is suitable for return to the pipeline trench, and allows for re-contouring of the right-of-way.
<b>Surface Water</b>	Water in a watercourse on the surface of the ground.
<b>Sustainable Development</b>	Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (Brundtland Report, 1987). Sustainable development focuses on improving the quality of life for all of the Earth's citizens without increasing the use of natural resources

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<b>Term</b>	<b>Definition</b>
	beyond the capacity of the environment to supply them indefinitely.
<b>Threatened Species</b>	A wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction. (SARA)
<b>Timber</b>	Trees standing or fallen, logs and bolts, cants, boards and lumber, and any other sawn or shaped product of trees.
<b>Topsoil</b>	The layer of soil moved in cultivation. Presumably fertile soil material used to tepdress road-banks, gardens, and lawns. The uppermost part of the soil that is ordinarily moved in tillage, or its equivalent in uncultivated soils. It ranges in depth from 7.5 to 25 cm (3 to 10 inches) and is frequently designated as the 'plow layer', the 'Ap layer,' or the 'Ap horizon.' (Agriculture and Agri-Food Canada, <i>Glossary of Terms in Soil Science</i> , 1976)
<b>Trigger</b>	An action by a federal authority that triggers or initiates the need for an environmental assessment; that is, one or more of the following duties, powers, or functions in relation to a project: <ul style="list-style-type: none"> <li>a) proposes the project;</li> <li>b) grants money or other financial assistance to a project;</li> <li>c) grants an interest in land for a project; or</li> <li>d) exercises a regulatory duty in relation to a project, such as issuing a permit or licence, that is included in the Law List prescribed in the Act's regulations. (CEAA)</li> </ul>
<b>Water</b>	All water on or under the surface of the ground.
<b>Water Body</b>	The bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh or other natural body of water; or a canal, ditch, reservoir, or other man-made surface feature, whether it contains or conveys water continuously or intermittently.
<b>Wetland</b>	Land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation and various kinds of biological activity which are adapted to a wet environment. Wetlands include bogs, fens, marshes, swamps and shallow waters (usually 2 m deep or less) as defined in <i>The Canadian Wetland Classification System</i> published by the National Wetlands Working Group of the Canada Committee on Ecological Land Classification (1987).
<b>Wetland Functions</b>	The natural processes and derivation of benefits and values associated with wetland ecosystems, including economic production (e.g., peat, agricultural crops, wild rice, peatland forest products), fish and wildlife habitat, organic carbon storage, water supply and purification (groundwater recharge, flood control, maintenance of flow regimes, shoreline erosion buffering), and soil and water conservation, as well as tourism, heritage, recreational, educational, scientific, and aesthetic opportunities.
<b>Wildlife Species</b>	A species, subspecies, variety or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus, that is wild by nature and <ul style="list-style-type: none"> <li>(a) is native to Canada; or</li> <li>(b) has extended its range into Canada without human intervention and has been present in Canada for at least 50 years (SARA)</li> </ul>

## 10. List of Acronyms and Short Forms

<b>CEAA</b>	Canadian Environmental Assessment Act
<b>CEPA</b>	Canadian Environmental Protection Act, 1999
<b>COSEWIC</b>	Committee on the Status of Endangered Wildlife in Canada
<b>CSPR</b>	Class Screening Project Report
<b>EA</b>	Environmental Assessment
<b>FA</b>	Federal Authority
<b>HADD</b>	Harmful alteration, disruption or destruction
<b>MCSR</b>	Model Class Screening Report
<b>NEAS</b>	National Environmental Assessment System
<b>NWPA</b>	Navigable Waters Protection Act
<b>RA</b>	Responsible Authority
<b>SARA</b>	Species at Risk Act
<b>The Agency</b>	The Canadian Environmental Assessment Agency
<b>The Registry</b>	The Canadian Environmental Assessment Registry

# Appendix A

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## **Class Screening Project Report (CSPR)**

*for the Model Class Screening Report  
for Small Scale Water  
Quality and Habitat Improvement  
Projects*

**To be completed by Environment Canada or its delegate.**

## A.1 Application of the Model Class Screening Report (MCSR)

A class screening may be conducted for a variety of small scale water quality and habitat improvement projects funded by Environment Canada, such as:

- stream bank, channel or shoreline modifications and improvements (e.g., engineered structures, bioengineering and stream channel modifications);
- fish passage improvements (e.g., culvert modifications, dam by-pass structures, fish passage obstruction removal);
- artificial nesting structures;
- basking structures and hibernacula;
- landscape alteration and rehabilitation (e.g., wetland creation, expansion and rehabilitation, landscape grading and excavations, interpretive structures and signage);
- access control fencing; and
- farm infrastructure improvements (e.g., alternate livestock watering systems, nutrient storage and management facilities, and septic system installation, repairs and upgrades).

The following sections will assist in determining whether or not the *Canadian Environmental Assessment Act* (CEAA) and the MCSR apply.

### A.1.1 Does the CEAA Apply?

*Yes (proceed)*

*No (do not proceed with the CSRP)*

The *Canadian Environmental Assessment Act* applies when:

- **The project is an undertaking in relation to a physical work that is not otherwise excluded from assessment under the *Exclusion List Regulations*.** If any component of the project involves a physical work that is not described in the Exclusion List, then CEAA applies to the *entire* project; or
- **The project involves any physical activity that is not in relation to a physical work but that is listed in the *Inclusion List Regulations*.** Refer to the Inclusion List Regulations for all physical activities *not* involving physical works; and Environment Canada and/or another Federal Authority (s. 5 of CEAA) is:
  - a) the proponent of a project;
  - b) grants money or other financial assistance to a project;
  - c) grants an interest in land to enable a project to be carried out; or
  - d) exercises a regulatory duty in relation to a project, such as issuing a permit, license or authorization that is covered under the Law List Regulations.



Because Environment Canada provides funding (i.e., granting money or other financial assistance) for such projects, CEAA is always triggered. In accordance with the Federal Coordination Regulations under CEAA, it is the responsibility of Environment Canada (as the lead RA), to contact other federal departments so they can determine if they are also required to conduct an EA of the proposed project.

## A.1.2 Does the Model Class Screening Report (MCSR) Apply?

The Model Class Screening Report for Small Scale Water Quality and Habitat Improvement Projects can only be used for the projects described in the table below. Any projects that are not described below are either excluded from CEAA or else must be assessed by an individual screening.

### Projects Covered by this MCSR

Table A.1 lists all projects that are covered by this MCSR. After reviewing the funding proposal, check all the boxes that are applicable to the project under assessment. This information will be used when completing the CSPR.

**Table A.1: Project Types Covered by this MCSR**

✓	Name of Class and Sub-Class	Description of Project Components
<input type="checkbox"/>	<b><i>Class A: Stream Bank, Channel or Shoreline Modifications and Improvements</i></b>	
<input type="checkbox"/>	♦ <b><i>A.1: Engineered Structures</i></b>	Construction, installation or modification of rip-rap, rock armouring, gabions, in-stream flow deflectors such as rock vortex weirs, and/or sheet piling aimed at stabilizing stream banks or shorelines deflecting and/or reducing stream flows, near shore flows or wave action. Also includes structures aimed at trapping sediments (e.g., gravels, sands) in-stream or along shorelines.
<input type="checkbox"/>	♦ <b><i>A.2: Bioengineering</i></b>	Placement or installation of features such as boulders, live stakes, fascines, brush layers, brush mattresses, willow posts, live crib walls, log shelters, log bank cover (lunkers), cribs, spawning boxes, and root wads, aimed at stabilizing stream banks or shorelines, deflecting and/or reducing stream flows, near shore flows or wave action. These features may also serve to increase the complexity of stream banks, channels, lakebeds or shorelines, for cover, feeding or spawning habitat for fish or other aquatic organisms.
<input type="checkbox"/>	♦ <b><i>A.3: Stream Channel Modifications</i></b>	Excavation, relocation/realignment and restoration of stream channels and/or stream banks aimed at creating a stream reach that has a geomorphologically stable plan form and cross-section.

**Table A.1: Project Types Covered by this MCSR**

✓	Name of Class and Sub-Class	Description of Project Components
	<b><i>Class B: Fish Passage Improvements</i></b>	
<input type="checkbox"/>	◆ <b><i>B.1:</i></b> <i>Culvert or Weir Modifications</i>	The installation, modification or replacement of culverts or flow control weirs or modification of substrates, specifically aimed at improving the movement of fish between stream reaches.
<input type="checkbox"/>	◆ <b><i>B.2:</i></b> <i>Dam By-Pass Structures</i>	The construction and operation of fish passage by-pass channels or other fish ways for the purposes of enabling or improving the movement of fish between stream reaches, and/or restrict access by selected competitive species.
<input type="checkbox"/>	◆ <b><i>B.3:</i></b> <i>Fish Passage Obstruction Removal</i>	The removal of dams, weirs or other channel obstructions (e.g., log jams, beaver dams) enabling or improving the movement of fish between stream reaches. This is not intended to apply to removals of large dams/engineered structures (e.g., hydro-electric dams).
	<b><i>Class C: Artificial Nesting Structures</i></b>	
<input type="checkbox"/>	◆ <b><i>C.1:</i></b> <i>Aquatic Setting</i>	Construction, installation or modification of nesting boxes, platforms, reef rafts or other artificial structures in, on or within a water body or wetland aimed at providing shelter and encouraging the nesting or loafing of birds.
<input type="checkbox"/>	◆ <b><i>C.2:</i></b> <i>Terrestrial Setting</i>	Construction, installation or modification of nesting boxes, tunnels, bat boxes or other artificial structures aimed at providing shelter and encouraging the nesting or loafing of birds, bats or other wildlife.
	<b><i>Class D: Basking Structures and Hibernacula</i></b>	
<input type="checkbox"/>	◆ <b><i>D.1:</i></b> <i>Aquatic Setting</i>	Placement or installation of features such as rocks, wooden platforms, concrete slabs or other natural or artificial structures in, on or within a water body or wetland aimed at providing surface area for basking turtles, frogs or other herptiles and loafing areas for birds.
<input type="checkbox"/>	◆ <b><i>D.2:</i></b> <i>Terrestrial Setting</i>	Placement or installation of features such as rocks, wooden platforms, concrete slabs or other natural or artificial structures, aimed at providing surface area for basking amphibians or reptiles.
<input type="checkbox"/>	◆ <b><i>D.3:</i></b> <i>Constructed Snake Hibernacula</i>	Excavation and/or placement of features such as rocks, artificial piping aimed at providing a damp location above the water table to allow snakes or other herptiles to hibernate.
	<b><i>Class E: Landscape Alteration and Rehabilitation</i></b>	
<input type="checkbox"/>	◆ <b><i>E.1:</i></b>	Excavation and construction of wetlands in an area where there is no existing

**Table A.1: Project Types Covered by this MCSR**

✓	Name of Class and Sub-Class	Description of Project Components
	<i>Wetland Creation</i>	wetland (includes wetland creation, small ponds or ephemeral pools in an area where a historical wetland has been filled) with the objective of creating a new wetland and wetland functions.
<input type="checkbox"/>	♦ <b>E.2:</b> <i>Wetland Expansion and Rehabilitation</i>	Excavation of adjacent lands to existing wetlands and/or dredging or filling of existing wetland beds, with the objective of increasing the wetland's area and improving contours and its water quality and quantity control function. This includes activities such as vegetation planting to improve vegetation diversity, creation of islands or shoals, draw downs for nutrient oxidation.
<input type="checkbox"/>	♦ <b>E.3:</b> <i>Landscape Grading and Excavations</i>	Construction, excavation or modification of landscape features to provide landscape terrain, such as minor drainage swales, berms, side or back channels, that may provide additional niches for terrestrial upland species, frogs, salamanders or newts, or additional habitat for aquatic species.
<input type="checkbox"/>	♦ <b>E.4:</b> <i>Interpretive Structures and Signage</i>	Installation of structures and signage aimed at improving public viewing opportunities, awareness of projects or providing information regarding site access, health or safety precautions.
<b>Class F: Access Controls</b>		
<input type="checkbox"/>	♦ <b>F.1:</b> <i>Access Control Fencing</i>	Installation of electric, page wire, barbed wire or other form of fencing along or around environmental features aimed at controlling livestock, vehicle or human access or stabilizing landforms from erosion.
<b>Class G: Farm Infrastructure Improvements</b>		
<input type="checkbox"/>	♦ <b>G.1:</b> <i>Livestock Watering Systems</i>	Construction, installation, operation or modification of mechanical systems for livestock watering, including dugout ponds, seepage troughs, ram pumps, nose pumps, solar or wind powered or gravity flow watering systems, including their associated piping and intakes.
<input type="checkbox"/>	♦ <b>G.2:</b> <i>Nutrient Storage and Management</i>	Construction, operation or modification of containment facilities for the temporary storage of nutrients such as manure, milkhouse washwater, crop residues, wood chips for subsequent application as fertilizer or soil conditioners.
<input type="checkbox"/>	♦ <b>G.3:</b> <i>Private Septic System Repairs and Upgrades</i>	Installation, modification, repairs, decommissioning and abandonment of septic systems, including septic and holding tanks, leaching/tile beds, adsorption trenches and associated pumps and piping.

### A.1.3 Conditions for Not Using the MCSR

The MCSR cannot be used if the project involves any or a combination of the following conditions:

- any “physical works” or “physical activities” for which CEAA applies and that are not described in Table 1 of the Class Screening Project Report (CSPR);
- projects that would require a permit under the *Species at Risk Act* (SARA);
- projects that are likely to have an adverse effect on species at risk, either directly or indirectly, such as by adversely affecting their habitat\*. Species at risk include:
  - species identified on the List of Wildlife Species at Risk set out in Schedule 1 of SARA, and including the critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of SARA.
  - species that have been recognized as "at risk" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or by provincial or territorial authorities;
- \* **If, after commencing a class screening using this MCSR, it becomes known or reasonably suspected that species at risk could be adversely affected by the project, do not proceed.**
- projects located in a National Park;
- projects located in a Migratory Bird Sanctuary or National Wildlife Area;
- projects within or adjacent to a water body, which involve the excavation, exposure or storage of natural rock with demonstrated acidic drainage;
- projects that involve marine (salt water) environments;
- projects that involve the development of new permanent roads or trails to provide access for the movement of heavy machinery;
- projects that have the potential to reduce the capacity for downstream water withdrawal;
- projects that involve blasting;
- projects that involve disturbance of areas with known contaminated groundwater, soils or sediments, or areas with likely pesticide application (other than herbicides as described in the CSPR) within the past 12 months;
- projects involving stream modifications in unstable channels where significant downstream effects to channel geomorphology may be anticipated;
- projects that are likely to result in an increased risk of flooding or erosion to adjacent or upstream properties;
- projects that involve infilling within interconnecting channel of international boundary waters;
- projects that involve the creation of ponds or wetlands for the purpose of stormwater treatment;
- projects where the flow control may present a new permanent barrier to fish passage;
- projects that involve the installation or removal of flow control structures that are primarily for hydroelectric power generation, flood control or irrigation;

- projects that involve the application of chemical pesticides (e.g., insecticide, fungicide, algaecide) other than herbicides;
- projects that involve the deposit or discharge of any substances that require an Ocean Disposal Permit;
- projects that involve the construction or operation of facilities for aquaculture; and
- projects that involve the deposit of a deleterious substance into waters frequented by fish or into any place under any conditions where the deleterious substance may enter waters frequented by fish;
- projects that involve the deposit of a substance that is harmful to migratory birds into waters or an area frequented by migratory birds or into a place from which it may enter such waters or such an area that is harmful to migratory birds.

**If any of the above conditions apply DO NOT proceed with the CSPR. An individual screening, as per Section 18 of CEAA is required.**

**If during the course of the project implementation, the scope of the project changes, the CSPR will need to be modified to reflect the changes or an individual screening will need to be conducted.**

## **A.2 Common Physical Works and Associated Activities and Potential Accidents and Malfunctions for Each Sub-Class of Projects**

Table A.2 identifies the various physical works and associated activities that are commonly carried out during site preparation; construction; operation; maintenance, monitoring and repair; and decommissioning stages of each class and sub-class of projects described in Table 1 of this Guide. Table A.3 identifies the potential accidents and malfunctions associated with each class and sub-class of projects.

**The information in these tables should be used as a guide when completing the CSPR. They are intended to be used as a reference when determining whether or not the physical works and associated activities is likely to apply to the project being assessed.**

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**Table A.2  
Common Project Components for each Sub-Class**

Project Components	Classes and Sub-Classes																		
	A. Stream Bank, Channel or Shoreline Modifications and Improvements			B. Fish Passage Improvements			C. Artificial Nesting Structures		D. Basking Structures and Hibernacula			E. Landscape Alteration and Rehabilitation				F. Access Control	G. Farm Infrastructure Improvements		
	A1	A2	A3	B1	B2	B3	C1	C2	D1	D2	D3	E1	E2	E3	E4	F1	G1	G2	G3
	Engineered Structures	Bio-engineering	Stream Channel Modifications	Culvert or Weir Modifications	Dam by-pass Structures	Fish Passage Obstruction Removal	Aquatic Setting	Terrestrial Setting	Aquatic Setting	Terrestrial Setting	Constructed Snake Hibernacula	Wetland Creation	Wetland Expansion and Rehabilitation	Landscape Grading and Excavations	Interpretive Structures and Signage	Fencing	Alternate Watering Systems	Nutrient Storage and Management.	Private Septic System Works
Earthworks	•	•	•	•	•		•	•			•	•	•	•		•	•	•	•
Engineered Surface Structures	•			•	•										•		•	•	•
Habitat Structures		•				•	•	•	•	•									
Herbicide Application		•												•					
Installation of Permanent Fencing																•	•	•	
In-water or Near Water Works	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Nutrient Storage and Management																		•	•
Operation of Hand Machinery	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Operation of Heavy Equipment, Vehicles and Vessels	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Paving and Other Hard Surfacing	•														•		•	•	
Vegetation Clearing and Grubbing	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Withdrawal or Discharge of Groundwater	•		•									•	•	•			•		•
Withdrawal or Discharge of Surface Water	•		•	•	•	•						•	•	•			•		

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**Table A.3**

**Project Components and Associated Accidents and Malfunctions**

Project Components	Accidents and Malfunctions				
	Equipment Misuse or Malfunction	Spills and Leaks	Structural Failures	Vehicle Collisions	Vessel Collisions
Earthworks					
Engineered Surface Structures		•	•		
Habitat Structures				•	
Herbicide Application		•			
Installation of Permanent Fencing			•		
In-water or Near Water Works					
Nutrient Storage and Management		•	•		
Operation of Hand Machinery	•	•			
Operation of Heavy Equipment, Vehicles and Vessels		•		•	•
Paving and Other Hard Surfacing		•			
Vegetation Clearing and Grubbing					
Withdrawal or Discharge of Groundwater					
Withdrawal or Discharge of Surface Water					

## A.3 Project Information

### A.3.1 Project File Numbers

NEAS *Record* \_\_\_\_\_ EC File No.: \_\_\_\_\_  
No.: \_\_\_\_\_

### A.3.2 Project Identification

Project Title: \_\_\_\_\_  
Location: \_\_\_\_\_

### A.3.3 Project Description

Briefly explain the purpose of the project and describe all of the physical works and activities applicable to the project class

\_\_\_\_\_

\_\_\_\_\_

List all the project components in the first column of the table below. In the second column, provide details on each project components as they are described in the funding proposal. In the last three columns, check all of the applicable project phases:

**Table A.4**  
**Classification of Project Components**

Physical Work or Activity	Description (Provide details for each Physical Work or Activity)	Site Preparation / Construction / Modification	Operation / Use / Maintenance	Decommissioning / Abandonment
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## A.4 Referral to Fisheries and Oceans Canada and Transport Canada

Fisheries and Oceans Canada and Transport Canada will also be RAs for projects that require an authorization under the *Fisheries Act*, or an approval under the *Navigable Waters Protection Act*, respectively, and which trigger the *Canadian Environmental Assessment Act*. Fisheries and Oceans Canada and Transport Canada have agreed to use the process outlined in this MCSR to fulfill their EA requirements. Refer to Section 2.4 of the MCSR, “Small Scale Water Quality and Habitat Improvement Projects that Require Referral to, or Consultation with, Other Federal or Provincial Government Departments and Agencies”, for the list of projects that can be assessed using this CSPR for which Fisheries and Oceans Canada and Transport Canada are most likely to be RAs.

### A.4.1 Responsible Authority(s) and Trigger(s)

Trigger	Check Applicable	Responsible Authority(s)
Funding	X	Environment Canada
Land		
Law List		
Proponent		

### Contact Information

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

Phone number \_\_\_\_\_ Fax number \_\_\_\_\_

E-mail address: \_\_\_\_\_

### Project Schedule

EA Start Date: \_\_\_\_\_

Estimated Start of Work: \_\_\_\_\_

Estimated Completion of Work: \_\_\_\_\_

## A.5 Description of Existing Environment

Various aspects pertaining to the project and the existing environment are listed in Column 1 of Table A.5 below. All of these aspects may or may not be relevant to the project under assessment. For those aspects that are relevant to the project and its proposed location(s), provide descriptive information in Column 2. Identify any site specific features or attributes that are considered to be important and sensitive to project effects. They may be defined broadly (e.g., on-site forests) or more specifically as a species (e.g., salmon) or a sensitive feature (e.g., drinking water supply intake). **Identify any Species at Risk that are likely to occur in the project area and/or are being targeted as part of the habitat improvement project.** Refer to maps, figures or photos where relevant. Refer to section 7.1 of the MCSR: “Instructions for Completing a Class Screening Project Report” for suggestions on obtaining information about species at risk that may be within the project’s zone of influence, and in conducting any necessary consultation.

**Table A.5  
Description of the Existing Environment**

Aspects of the Project and Existing Environment	Description (if applicable)
<b>Land Use</b>	
➤ Site use within the past 12 months	
➤ Land uses on adjacent properties	
➤ Aboriginal interest (e.g. traditional use)	
➤ On-site presence of known historical, heritage or archaeological sites	
<b>Work Area</b>	
➤ Approximate area directly affected by the Project ( <i>in hectares or sq. m</i> )	
➤ Proposed access to site ( <i>e.g., existing road/trail or water access</i> )	
<b>Surface Waters</b>	
➤ Conditions of existing on-site slopes (ground slopes, stream banks, shorelines)	

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<b>Aspects of the Project and Existing Environment</b>	<b>Description (if applicable)</b>
➤ Type of on-site water bodies (watercourses, ponds, lakes, wetlands)	
➤ Lengths of shorelines or stream banks to be affected by the Project	
➤ Distance of work area(s) to water bodies	
<b>Surface Water</b>	
➤ Surface water flow volumes to be altered by the Project	
➤ Surface water quality	
➤ Distance to nearest surface water intake	
➤ Types of aquatic substrates on-site	
<b>Groundwater</b>	
➤ Distance to nearest groundwater well	
<b>Land</b>	
➤ Types of soils on-site.	
<b>Wildlife and Habitat</b>	
➤ Fish and wildlife species, especially Species at Risk and migratory birds ( <i>on-site and adjacent properties</i> )	
➤ Type of natural vegetation / ground cover on-site. Identify any plant Species at Risk.	
<b>Other</b>	

## A.6 Environmental Effects and Mitigation Measures

Tables A.6 to A.18 describe the environmental effects and mitigation measures that are applicable to 13 different physical activities (including their associated accidents and malfunctions) that may be undertaken for small scale water quality and habitat improvement projects. This Section is intended to identify and describe those environmental effects and mitigation measures that are applicable the project. To accomplish this, follow the steps below.

- a) Identify which of the 13 physical activities are likely to be undertaken as part of the project. If the physical activity is likely to be undertaken, indicate (X) beside the project phases during which these activities will likely occur. The project phases are listed at the top of each table. A physical activity may occur in more than one phase of the project. Check (X) for all phases that are applicable. Use Tables A.2 and A.3 as reference.
- b) Review the environmental effects and mitigation measures for each physical work and associated activity that you checked.
- c) Ensure that the standard mitigation measures identified encompass all the likely effects of the project. Further Sections of this CSPR provide for the identification of additional mitigation you may identify or recommended by others after consultation.\*
- d) **If the project requires modifications or additions to the mitigation measures listed below that would change the project's function or its environmental effects, DO NOT proceed with this CSPR.**

As this CSPR considers a wide range of common scenarios, it is expected that the full range of effects and mitigation measures listed for each physical work and associated activity may not pertain to every project. Discretion is to be applied when determining which, if any, of the listed measures are not required as a condition of project approval.

\* Fisheries and Oceans Canada has prepared national and area Operational Statements that list project designs and mitigation measures that would, when applied under specific circumstances, prevent adverse effects on fish habitat (for example, for projects that would involve aquatic vegetation removal). As Fisheries and Oceans develops these Operational Statements the mitigation measures that they outline will take precedent over mitigation measures outlined in Tables A.6-A.18.

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**Table A.6 Earthworks**

(e.g., soil stripping, stockpiling and storage, grading, excavation, trenching, filling and compacting)

**If this physical work or activity applies to the project, check all of the applicable project phases:**

Site Preparation / Construction / Modification     
  Operation / Use / Maintenance     
  Decommissioning/ Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>➢ Decreased ambient air quality due to dust and other particulate matter.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid site preparation or construction during windy and prolonged dry periods.</li> <li>➢ Cover and contain fine particulate materials during transportation to and from the site.</li> <li>➢ Instruct workers and equipment operators on dust control methods.</li> <li>➢ Minimize cutting of vegetation and maintain windbreaks.</li> <li>➢ Restore disturbed areas as soon as possible to minimize duration of soil exposure.</li> <li>➢ Spray water to minimize dust off paved areas or exposed soils. Use dust suppressants only on large problem areas.</li> <li>➢ Stabilize high traffic areas with a clean gravel surface layer or other suitable cover material.</li> <li>➢ Stabilize stored and stockpiled construction materials, debris and excavated soils against wind erosion.</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➢ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid activities during sensitive periods of wildlife migration, staging, nesting, breeding, hibernation or nursing.</li> <li>➢ Avoid creating major obstructions at important wildlife crossing and movement points.</li> <li>➢ Establish vegetated buffer strips between construction zones and areas containing sensitive vegetation and wildlife.</li> </ul>
	<ul style="list-style-type: none"> <li>➢ Possible disease, mortality or decline in populations of wildlife due to exposure to disease bearing organisms (e.g., mosquitoes carrying West Nile Virus).</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid creating still water or stagnant wet areas that may attract and/or propagate disease bearing organisms that may negatively affect wildlife. (Note: If the project involves natural wetlands, once established, the wetland ecosystem will likely mitigate potential effects of disease bearing organisms.)</li> </ul>
	<ul style="list-style-type: none"> <li>➢ Wildlife injury or mortality from entanglement in silt fences.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid using heavy-duty silt fences, particularly those reinforced with wide mesh, in areas where large-bodied amphibians and reptiles (e.g., large snakes) are found.</li> </ul>
<b>Groundwater Quality and Quantity</b>	<ul style="list-style-type: none"> <li>➢ Changes in groundwater flow patterns and levels due to interception of aquifers, changes to infiltration conditions, dewatering or changes to surface flow patterns.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid compacting or other hardening of natural ground surface.</li> <li>➢ Avoid intercepting aquifers.</li> <li>➢ Avoid unnecessary disruption of active tile drains.</li> <li>➢ Maintain surface drainage, natural ponds, and existing ground cover and soil conditions, etc., in groundwater recharge areas.</li> <li>➢ Revegetate compacted ground surfaces to promote infiltration.</li> </ul>

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<b>Environmental Component</b>	<b>Description of Effect</b>	<b>Mitigation Measures</b>
<b>Humans</b>	<ul style="list-style-type: none"> <li>➤ Personal injuries to public and workers during construction activities due to exposure to disease bearing organisms (e.g., mosquitoes carrying West Nile Virus).</li> </ul>	<ul style="list-style-type: none"> <li>➤ Remove standing water from equipment and containers.</li> <li>➤ Wear protective clothing and insect repellent if working in areas where mosquitoes are breeding.</li> </ul>
<b>Soil Quality</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to microscopic organisms in the soil.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Limit size of stockpiles to avoid anaerobic conditions.</li> <li>➤ Protect stockpiled soils from exposure to and sterilization by solar radiation (or stockpile in an uncovered shaded area).</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Reduced soil capability through compaction and rutting, and mixing of topsoil and layers below.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid working during wet conditions and/or confine operation to paved or gravel surfaces.</li> <li>➤ Whenever possible, strip and store topsoil separately from the layers below and return to excavation in sequence.</li> </ul>
<b>Species at Risk - Terrestrial</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to terrestrial species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Surface Water Hydrology</b>	<ul style="list-style-type: none"> <li>➤ Adverse modifications to surface drainage patterns, affecting stormwater runoff rates and volumes.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that earthworks do not exacerbate flood hazards nor create undesired obstructions to drainage into natural water bodies.</li> <li>➤ Maintain effective surface drainage upon completion of the project, which may include re-establishment of, or improvement to, the original site drainage.</li> <li>➤ Minimize changes to the ground surface and vegetation cover that would affect infiltration and runoff characteristics.</li> <li>➤ Whenever possible, limit construction time in flood prone areas and any low-lying shoreline areas to 72 hours or less.</li> </ul>
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to increased erosion and sedimentation, and transport of debris.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Apply wet weather restrictions to construction activity.</li> <li>➤ Backfill and compact excavations as soon as possible. Optimize degree of compaction to minimize erosion and allow for revegetation.</li> <li>➤ Comply with any local regulations, policies and guidelines that stipulate a minimum acceptable buffer width (the allowable distance from a water body). Maximum buffer widths are desirable.</li> <li>➤ Create interceptor swales to divert runoff from the top of slopes that are susceptible to erosion.</li> <li>➤ Ensure that all materials placed below the high water mark of the water body are clean and free of silt and clay sized particles. All materials must meet the applicable regulations governing the placement of fill in water bodies.</li> <li>➤ If possible, direct surface drainage away from working areas and areas of exposed soils. To the maximum extent possible, promote overland sheet flow to well vegetated areas.</li> <li>➤ Install and maintain silt curtains, sedimentation ponds, check dams, coffer dams or drainage swales, and silt fences around soil storage sites and elsewhere, as required.</li> <li>➤ Securely contain and store all oils, lubricants, fuels and chemicals. If necessary, use impermeable pads or provide berms.</li> </ul>

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Environmental Component	Description of Effect	Mitigation Measures
		<ul style="list-style-type: none"> <li>➤ Stabilize slopes as appropriate for local site conditions. Possible methods include hard and soft designs or combinations of designs using crib walls, revetments, gabions, erosion control blankets, live fascines, or brush bundles.</li> </ul>
<b>Terrain and Topography</b>	<ul style="list-style-type: none"> <li>➤ Ground subsidence from soil thaw and poor excavation and backfilling practices; ground surface mounding or structure movement due to frost heave from inappropriate backfill material or shallow foundation depth.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that backfilling is undertaken using suitable materials free of ice and frozen soils, and that adequate soil compaction is conducted to avoid ground subsidence. Provide additional backfill where subsidence has occurred.</li> <li>➤ In areas with high groundwater levels, ensure that soils susceptible to frost heave (generally fine sands and silty soils) are not used for backfill.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Increased soil exposure resulting in erosion, sedimentation, slope instability and risk of mudslides, slumping, rockfalls, etc.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Create interceptor swales to divert runoff from the top of slopes that are susceptible to erosion.</li> <li>➤ Direct runoff and overland flow away from working areas and areas of exposed soils. Promote overland sheet flow to the maximum extent possible.</li> <li>➤ If necessary, install sediment and erosion controls prior to commencing the work and maintain them until the site has been stabilized.</li> <li>➤ If slope stabilization is not a project objective, avoid high risk areas with unstable slopes (e.g., steep slopes, soil liquefaction risk areas).</li> <li>➤ Keep site clearing to a minimum to maintain sufficient vegetated cover and windbreaks.</li> <li>➤ On steep slopes that do not require grading, hand clear, without grubbing.</li> <li>➤ Phase work to minimize duration of exposure of disturbed areas at risk.</li> <li>➤ Stabilize slopes as appropriate for local site conditions. Possible methods include hard and soft designs or combinations of designs using crib walls, revetments, gabions, erosion control blankets, live fascines, or brush bundles.</li> </ul>

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**Table A.6s Related Socio-economic Effects**

Socio-economic Component	Description of Effect	Mitigation Measures
<i>Groundwater Quality and Quantity</i>		
<i>Land and Resource Use</i>	<ul style="list-style-type: none"> <li>➤ Changes to yields of wells due to interception of aquifers, changes to infiltration conditions or damage to wells.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Provide alternative water supply and repair or replace damaged wells.</li> <li>➤ Reduce excavation depths and cuts near wells and sensitive areas, where safe and feasible.</li> <li>➤ Restore municipal drains and tile drainage fields; test and repair as required.</li> </ul>
<i>Terrain and Topography</i>		
<i>Cultural and Heritage Resources</i>	<ul style="list-style-type: none"> <li>➤ Loss or disruption to known heritage (in particular, to Aboriginal heritage and spiritually significant sites or areas), archaeological and palaeontological features, undiscovered artifacts and features, and areas used for medicinal plant or subsistence harvesting.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct detailed field investigations prior to major ground disturbing activities.</li> <li>➤ Identify, remove and document any significant artifacts in accordance with applicable guidelines.</li> <li>➤ In consultation with local heritage and archaeological organisations, identify and avoid known significant natural features.</li> </ul>



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**Table A.7 Engineered Surface Structures**

(e.g., platforms and foundations, nose pumps, solar or small wind powered irrigation structures, kiosks, conveyors, storage buildings, septic systems, signs, etc.)

**If this physical work or activity applies to the project, check all of the applicable project phases:**

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/ Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>➤ Decreased ambient air quality due to dust and other particulate matter.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Cover and contain fine particulate materials during transportation to and from the site.</li> <li>➤ Stabilize stored and stockpiled construction materials, debris and excavated soils against wind erosion.</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➤ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid activities during sensitive periods of wildlife migration, staging, nesting, breeding, hibernation or nursing.</li> <li>➤ Avoid creating major obstructions at important wildlife crossing and movement points.</li> <li>➤ If necessary, provide wildlife access over, under or around permanent obstructions.</li> </ul>
<b>Species at Risk - Terrestrial</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to terrestrial species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Surface Water Hydrology</b>	<ul style="list-style-type: none"> <li>➤ Adverse modifications to surface drainage patterns, affecting stormwater runoff rates and volumes.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid constructing structures in flood prone areas and low-lying shoreline areas.</li> <li>➤ Maintain effective surface drainage upon completion of the project, which may include re-establishment of, or improvement to, the original site drainage.</li> <li>➤ Minimize changes to the ground surface and vegetation cover that would affect infiltration and runoff characteristics.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Adverse modifications to water flow conveyance, volumes and levels.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure structures affecting water flow rates, volumes and levels are designed by an engineer, and that they are properly sized, constructed and maintained.</li> </ul>
<b>Terrain and Topography</b>	<ul style="list-style-type: none"> <li>➤ Ground subsidence from soil thaw and poor excavation and backfilling practices; ground surface mounding or structure movement due to frost heave from inappropriate backfill material or shallow foundation depth.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that foundations or below ground structures have sufficient burial depth.</li> <li>➤ For shallow foundations, ensure that frost susceptible soils are replaced with suitable, well drained, backfill material placed to an adequate depth.</li> </ul>

**Table A.7a Related Accidents and Malfunctions**

Environmental Component	Description of Effect	Mitigation Measures
<i>Spills and Leaks</i>		
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to spills and leaks.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Capture, contain and clean up spills and leaks immediately. Immediately notify local authorities of a reportable spill.</li> <li>➤ Refuel equipment off slopes and well away from water bodies.</li> <li>➤ Store all toxic materials in secure enclosures to prevent leaks and spills into the environment, and to minimize vandalism.</li> </ul>
<i>Structural Failures</i>		
<b>Humans</b>	<ul style="list-style-type: none"> <li>➤ Personal injuries to public and workers.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that all workers are equipped with appropriate safety and protective equipment.</li> <li>➤ Maintain a trained work force and ensure compliance with all occupational health and safety requirements.</li> </ul>
<b>Terrain and Topography</b>	<ul style="list-style-type: none"> <li>➤ Structural movement or collapse.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct regular inspections and maintenance of all structures.</li> <li>➤ Construct and operate all surface facilities and foundations in accordance with approved design specifications.</li> <li>➤ Ensure that structure design, siting and construction meet all federal, provincial and municipal requirements.</li> <li>➤ Where appropriate, ensure that all excavations are completely backfilled with appropriate materials.</li> </ul>

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**Table A.8 Habitat Structures**

(e.g., boxes, platforms, hibernacula, reef rafts, basking logs)

**If this physical work or activity applies to the project, check all of the applicable project phases:**

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/ Abandonment

Environmental Component	Description of Effect	Mitigation Measures
Fauna	<ul style="list-style-type: none"> <li>➤ Bioaccumulation of contaminants by wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid siting structures within or near areas of known soil or water contamination (e.g., stormwater detention ponds, treatment wetlands, former industrial sites, etc.).</li> <li>➤ Ensure that all wooden structures are composed of naturally rot-resistant wood (e.g., hemlock or cedar), and avoid the use of chemically treated wood or toxic wood preservatives.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Increased opportunities for opportunistic species such as non-native fauna, predators and parasitic nesters.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Protect all nesting structures from competitors and predators through proper structure design, siting and installation.</li> <li>➤ Whenever possible, inspect and clean all nesting structures prior to nesting season. Avoid inspections of nesting boxes during the first five days of incubation, and minimize frequency of maintenance activities during nesting season. (Note: In some cases, it may be impractical to disinfect these structures.)</li> </ul>
Species at Risk - Terrestrial	<ul style="list-style-type: none"> <li>➤ Disturbance to terrestrial species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
Wildlife Habitat (terrestrial and aquatic)	<ul style="list-style-type: none"> <li>➤ Physical changes to aquatic habitat resulting in a barrier to fish movement and a reduction in area, productive capacity and quality, or a change in function.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid summer construction in and adjacent to natural wetlands.</li> <li>➤ Implement mitigation measures in accordance with any requirements and recommendations stipulated by authorities under the <i>Fisheries Act</i>.</li> <li>➤ Minimize wetland disturbance through use of swamp mats and replacement of locally removed topsoil.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Physical damage and loss of habitat (terrestrial, riparian and/or wetland).</li> </ul>	<ul style="list-style-type: none"> <li>➤ Minimize physical damage to vegetation by avoiding push-outs and avoiding the placement of slash onto living vegetation.</li> <li>➤ Restore or replace disturbed habitat to ensure a net gain and increase in natural productive capacity.</li> <li>➤ Use existing roads and trails for site access.</li> </ul>

**Table A.8a Related Accidents and Malfunctions**

Environmental Component	Description of Effect	Mitigation Measures
<i>Vehicle Collisions</i>		
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➤ Injury to wildlife due to proximity of human activities (e.g., road kills and collisions).</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid creating wildlife habitat in high mortality risk areas such as major roads, power lines and industrial facilities.</li> <li>➤ Post signs warning of known wildlife crossings along access roads.</li> </ul>

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**Table A.9 Herbicide Application**

If this physical work or activity applies to the project, check all of the applicable project phases:

Site Preparation / Construction / Modification     
  Operation / Use / Maintenance     
  Decommissioning/ Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>➢ Decreased ambient air quality due to emissions and increased concentrations of chemical pollutants.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid spraying herbicides during windy conditions, during smog advisories or if the ambient temperature is expected to exceed 25°C on the day of application.</li> <li>➢ Follow any additional directions specified on the herbicide container label.</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➢ Bioaccumulation of contaminants by wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid spraying herbicides within 20 m of ungulate forage areas and, where practicable, erect barriers to prevent ungulates from grazing in sprayed zones.</li> <li>➢ Use herbicide products that are proven to be least toxic to wildlife.</li> </ul>
	<ul style="list-style-type: none"> <li>➢ Reduced biomass and diversity of aquatic organisms due to physical activities.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Comply with the most stringent of any applicable regulatory requirements and also ensure that herbicides are applied at a sufficient distance from any water body to minimize the risk of contamination of aquatic biota.</li> <li>➢ Follow the disposal and other environmental advisory statements on the container label.</li> <li>➢ Use herbicide products that are proven to be least toxic to aquatic organisms.</li> <li>➢ Use herbicides that are approved for use in Canada by the Pest Management Regulatory Agency (PMRA).</li> </ul>
<b>Humans</b>	<ul style="list-style-type: none"> <li>➢ Effects on human health due to exposure to airborne pollutants.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid spraying herbicides during windy conditions, during smog advisories or if the ambient temperature is expected to exceed 25°C on the day of application.</li> <li>➢ Erect signs and post notices warning the public of herbicide spraying and identifying the compounds used.</li> <li>➢ Follow any additional directions specified on the herbicide container label.</li> </ul>
	<ul style="list-style-type: none"> <li>➢ Effects on human health due to exposure to harmful chemicals when handling or disposing of herbicides.</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid mixing, loading, applying or disposing of herbicides in areas where they could enter water intakes or wells used for domestic purposes.</li> <li>➢ Contain, seal and store any unused herbicides for future use. Otherwise, return the product to the manufacturer or dispose of it through a licensed waste disposal company.</li> <li>➢ Install anti-back flow devices on mixing and loading equipment.</li> <li>➢ Keep adequate First Aid equipment on-site. Follow First Aid instructions on herbicide containers and obtain medical attention, as required.</li> <li>➢ Thoroughly rinse and drain herbicide containers prior to their disposal or recycling.</li> </ul>
<b>Soil Quality</b>	<ul style="list-style-type: none"> <li>➢ Contamination of soil and disturbance to microscopic organisms in the soil due to herbicide applications and disposal of</li> </ul>	<ul style="list-style-type: none"> <li>➢ Avoid using herbicides containing metals or other substances that are persistent in the environment.</li> <li>➢ Whenever possible, store and reuse equipment rinsate for mixing new batches. If this is not possible, spray small amounts of equipment rinsate on land that has been previously treated with the same</li> </ul>

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<b>Environmental Component</b>	<b>Description of Effect</b>	<b>Mitigation Measures</b>
	equipment rinsate on lands.	herbicide (provided that there are no steep slopes).
<b>Species at Risk - Aquatic</b>	➤ Disturbance to aquatic species at risk and/or their critical habitat.	➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Fisheries and Oceans Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.
<b>Species at Risk - Terrestrial</b>	➤ Disturbance to terrestrial species at risk and/or their critical habitat.	➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.
<b>Wildlife Habitat (terrestrial and aquatic)</b>	➤ Physical damage and loss of habitat (terrestrial, riparian and/or wetland).	<ul style="list-style-type: none"> <li>➤ Avoid spraying herbicides during windy conditions to prevent transport of airborne chemicals into non-targeted areas.</li> <li>➤ Conduct controlled applications to avoid drips onto non-targeted vegetation.</li> <li>➤ Follow the disposal and other environmental advisory statements on the container label.</li> <li>➤ Observe the terrestrial zone recommendations provided on the container label to protect non-targeted vegetation. Maximum buffer widths are desirable.</li> <li>➤ Use non-chemical controls in or adjacent to sensitive areas provided that these methods are effective in controlling the invasive exotic species and that they do not increase the potential for erosion.</li> </ul>

**Table A.9a Related Accidents and Malfunctions**

<b>Environmental Component</b>	<b>Description of Effect</b>	<b>Mitigation Measures</b>
<i>Spills and Leaks</i>		
<b>Fauna</b>	➤ Injury to wildlife due to physical activities and releases of deleterious substances.	➤ Handle herbicides off-site, where possible, or well away from critical wildlife habitat.
<b>Flora</b>	➤ Loss of unique or otherwise valued vegetation features	➤ Control applications to avoid drips or spills onto non-targeted vegetation.
<b>Soil Quality</b>	➤ Contamination of soil and disturbance to microscopic organisms in the soil due to spills and leaks of herbicide or rinsate.	<ul style="list-style-type: none"> <li>➤ Capture, contain and clean up spills and leaks immediately. Immediately notify local authorities of a reportable spill.</li> <li>➤ Handle herbicides off-site, where possible, or within an enclosed impermeable area.</li> <li>➤ Maintain an adequate supply of cleanup materials at the work site.</li> </ul>
<b>Surface Water Quality</b>	➤ Reduced water quality due to spills and leaks of herbicide or rinsate.	➤ Handle herbicides off-site, where possible, or well away from an inland water body.

**Table A.10 Installation of Permanent Fencing**

If this physical work or activity applies to the project, check all of the applicable project phases:

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➤ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that fencing does not create a significant barrier to wildlife access to breeding areas, food sources or shelter.</li> <li>➤ Establish vegetated buffer strips between construction zones and areas containing sensitive vegetation and wildlife.</li> </ul>
<b>Species at Risk - Terrestrial</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to terrestrial species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Surface Water Hydrology</b>	<ul style="list-style-type: none"> <li>➤ Increased ice jamming and flooding potential at bends, bridges, crossings, fordings and other flow constrictions (including effects of flooding on the project).</li> </ul>	<ul style="list-style-type: none"> <li>➤ After flooding events, remove any large debris accumulations on fencing downstream of any flood-vulnerable critical locations.</li> <li>➤ Choose materials that are least likely to contribute to flooding (e.g., page wire or high-tensile wire), if installing in areas that are prone to flooding.</li> <li>➤ Choose materials that are least susceptible to ice damage such as electric fencing with flexible posts, if installing in areas that are prone to ice jamming.</li> <li>➤ Where possible, align fencing in the direction of main flow, and locate fence on less frequently flooded ground.</li> </ul>
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to inputs of contaminants from surface runoff during construction and operation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid using materials with toxic substances for structures in and around water bodies.</li> <li>➤ Ensure that fencing designed to control livestock access provides total exclusion from any natural water bodies.</li> </ul>

**Table A.10a Related Accidents and Malfunctions**

Environmental Component	Description of Effect	Mitigation Measures
<i>Structural Failures</i>		
<b>Terrain and Topography</b>	➤ Structural movement or collapse.	➤ Conduct regular inspections and maintenance of all structures.



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**Table A.11 In-water or Near Water Works**

(e.g., stream bank, channel or shoreline modification; modifications to, or removal of, in-water or shoreline obstructions such as weirs, culverts, beaver dams, log jams, concrete and rubble, stop logs)

**If this physical work or activity applies to the project, check all of the applicable project phases:**

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/ Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Aquatic Sediments</b>	<ul style="list-style-type: none"> <li>➤ Physical alteration of water body substrates and/or increased potential for release of sediments downstream, including contaminated sediments.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Install and maintain sediment and erosion controls (e.g., silt curtains, check dams, coffer dams, silt fences), as required prior to construction.</li> <li>➤ Keep stream spoils separate from the bank spoils.</li> <li>➤ Remove accumulated sediments prior to removing barriers (i.e., check dams, on-line ponds, weirs).</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➤ Disruption to fish migration, spawning and nursery periods.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Restrict in-water works to approved timing windows to protect fish during migratory, spawning and nursery periods, and when eggs and fry are vulnerable to floodwaters and sediment. Timing windows vary depending upon species present and water temperature. Consult with regulatory authorities to verify timing windows applicable to the project site.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Schedule activities to avoid disturbance to water bird nesting areas until after the young have fledged.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Reduced biomass and diversity of aquatic organisms due to physical activities.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that fish which become trapped or isolated as a result of project activities are salvaged to the main channel of the watercourse.</li> <li>➤ If isolating the work site, remove any remaining fish and return them to an undisturbed area (i.e., fish salvage). Approval should be obtained from the appropriate federal or provincial agencies for this work.</li> <li>➤ Minimize duration of in-water work, whenever possible.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Wildlife injury or mortality from entanglement in silt fences.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid using heavy-duty silt fences, particularly those reinforced with wide mesh, in areas where large-bodied amphibians and reptiles (e.g., large snakes) are found.</li> </ul>
<b>Species at Risk - Aquatic</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to aquatic species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Fisheries and Oceans Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Species at Risk - Terrestrial</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to terrestrial species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Surface Water Hydrology</b>	<ul style="list-style-type: none"> <li>➤ Adverse modifications to stream or shoreline morphology, texture or</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that potential downstream effects due to erosion and mobilization of bed sediments (notably those retained behind channel obstructions and immediately downstream) are considered, and</li> </ul>

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<b>Environmental Component</b>	<b>Description of Effect</b>	<b>Mitigation Measures</b>
	topography of stream bed.	<p>mitigated as necessary, prior to removing any obstructions.</p> <ul style="list-style-type: none"> <li>➤ Fully restore stream banks, shorelines, approaches and channels to near original soil materials and contours where this activity is consistent with the purpose of the project.</li> <li>➤ Whenever possible, limit construction time to 72 hours or less.</li> <li>➤ Where practical, conduct in-stream or wetland work under frozen conditions.</li> </ul>
	➤ Adverse modifications to water flow conveyance, volumes and levels.	<ul style="list-style-type: none"> <li>➤ During the removal or modification of channel obstructions, monitor areas downstream to determine whether they are being affected by changes in water flow and volumes. Base water flow in the channel must be retained at a rate that is equivalent to the flow prior to the removal or modification of the obstruction, or at a level that will support fish downstream of the site.</li> <li>➤ Make provisions and contingencies for occurrence of unexpected high flow or low flow conditions during activity, as applicable.</li> <li>➤ Remove obstructions such as beaver dams and log jams manually.</li> <li>➤ Suspend work prior to imminent storm events.</li> </ul>
	➤ Increased ice jamming and flooding potential at bends, bridges, crossings, fordings and other flow constrictions (including effects of flooding on the project).	<ul style="list-style-type: none"> <li>➤ Avoid placement of materials, including plantings, in channel and floodplain areas that may reduce its natural flow conveyance capacity, and increase the risk of upstream flooding.</li> <li>➤ Ensure that there are appropriate cut and fill balances for in-water activities. (Note: Meet all appropriate regulatory requirements.)</li> <li>➤ Minimize encroachment of permanent facilities into water bodies by installing projects above the high water mark without infilling whenever possible and consistent with project objectives.</li> <li>➤ Remove all barriers and obstructions related to construction and break up any ice bridges prior to spring runoff to avoid ice jams, upstream flooding and downstream erosion.</li> </ul>
<b>Surface Water Quality</b>	➤ Reduced water quality and clarity due to increased erosion and sedimentation, and transport of debris.	<ul style="list-style-type: none"> <li>➤ Conduct in-stream work during dry conditions, where flow is low or under frozen conditions.</li> <li>➤ Ensure sandbags used for cofferdam construction are filled with clean sand and are free of fine particulates.</li> <li>➤ Ensure that all materials placed below the high water mark of the water body are clean and free of silt and clay sized particles. All materials must meet the applicable regulations governing the placement of fill in water bodies.</li> <li>➤ Install and maintain sediment and erosion controls (e.g., silt curtains, check dams, coffer dams, silt fences), as required prior to construction.</li> <li>➤ Minimize duration of in-water work, whenever possible.</li> <li>➤ Operate and store all materials and equipment in a manner that prevents any deleterious substance (e.g., petroleum products, silt, etc.) from entering the water.</li> <li>➤ Where possible, conduct activities in the dry, above the actual water level and above any expected rises in water level that may occur during a rainfall or snow melt event.</li> </ul>
<b>Wildlife Habitat (terrestrial and</b>	➤ Physical changes to aquatic habitat resulting in a barrier to fish movement	<ul style="list-style-type: none"> <li>➤ Avoid summer construction in and adjacent to natural wetlands.</li> <li>➤ Conduct removal or modification to channel obstructions at a time when effects on fish habitat can</li> </ul>

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Environmental Component	Description of Effect	Mitigation Measures
aquatic)	and a reduction in area, productive capacity and quality, or a change in function.	<p>be minimized (i.e., during periods of low water).</p> <ul style="list-style-type: none"> <li>➤ Consult with regulatory authorities regarding any beaver dam removal.</li> <li>➤ Implement mitigation measures in accordance with any requirements and recommendations stipulated by authorities under the <i>Fisheries Act</i>.</li> <li>➤ Minimize wetland disturbance through use of swamp mats and replacement of locally removed topsoil.</li> <li>➤ Restore habitat where necessary.</li> <li>➤ Revegetate stream banks and shorelines with native species known to be well adapted to the project area.</li> <li>➤ Upon project completion, remove all sandbags from the water.</li> </ul>

**Table A.11s Related Socio-economic Effects**

Socio-economic Component	Description of Effect	Mitigation Measures
<i>Surface Water Hydrology</i>		
<i>Land and Resource Use</i>	➤ Disruption to navigation due to obstructions (e.g., other vessels, ice, equipment, etc.).	<ul style="list-style-type: none"> <li>➤ Consult with Transport Canada and/or harbour or port authority.</li> <li>➤ Implement all conditions and recommendations contained in <i>Navigable Waters Protection Act</i> approvals.</li> </ul>

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**Table A.12 Nutrient Storage and Management**

(e.g., storage management of manure, milkhouse washwater, crop residues, wood chips)

If this physical work or activity applies to the project, check all of the applicable project phases:

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/ Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<p><b>Groundwater Quality and Quantity</b></p>	<ul style="list-style-type: none"> <li>➤ Contamination of groundwater during management and operation of facility.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Comply with all pertinent regulations, standards and guidelines regarding the siting, construction and operation of nutrient management facilities.</li> <li>➤ Ensure that the construction site is clear of all drainage tile to a distance of 3 m.</li> <li>➤ Ensure that the floor of the facility is above the normal water table and at least 1 m above bedrock.</li> <li>➤ If the natural clay content of the soil is less than 15%, include an impermeable membrane below and around the containment structure, configured to enable collection and monitoring of any effluent leakage.</li> <li>➤ Locate the storage facility at least 30 m (horizontal distance) from any water well or other groundwater source, taking into consideration any applicable regulatory requirements.</li> <li>➤ Where applicable, ensure that facility is sited and constructed in accordance with designs prepared by a qualified professional engineer.</li> </ul>
<p><b>Humans</b></p>	<ul style="list-style-type: none"> <li>➤ Discomfort to individuals exposed to odours from nutrient storage and application.</li> <li>➤ Effects on human health due to exposure to bacteria.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Consult with provincial ministries responsible for nutrient management activity regulation.</li> <li>➤ Ensure that facilities are located within areas that are zoned appropriately for agricultural nutrient storage.</li> <li>➤ Ensure that all open structures have barriers that extend at least 1.5 m above ground, and are in accordance with any regulated height requirement.</li> <li>➤ Identify all farm nutrient storage facilities with signs.</li> </ul>
<p><b>Surface Water Quality</b></p>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to inputs of contaminants from surface runoff during construction and operation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid siting concrete facilities in floodplains (100 yr flood) and ensure earthen facilities are appropriately designed for hydrostatic pressure and ice damage, if sited in a floodplain.</li> <li>➤ Comply with all pertinent regulations, standards and guidelines regarding the siting, construction and operation of nutrient management facilities.</li> <li>➤ Ensure that land application complies with all applicable regulations that prohibit nutrient spreading within a specified distance from a water body.</li> <li>➤ Ensure that open structures have sufficient capacity to contain the targeted quantities of nutrients to prevent overflow during extreme rain events.</li> <li>➤ Ensure that structures have sufficient capacity to avoid storage of uncontained excess on-site in open piles. Structures should have a minimum 200 day storage capacity if they will be emptied twice per year, and a minimum 400 day capacity if emptied once per year. Moreover, all structures must comply with any applicable regulations.</li> </ul>

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Environmental Component	Description of Effect	Mitigation Measures
		<ul style="list-style-type: none"> <li>➤ Maintain a vegetated buffer strip to protect water bodies adjacent to areas of land application. These buffers must, at a minimum, comply with applicable regulations governing the application of agricultural source nutrients.</li> <li>➤ Site facilities in areas where runoff is directed away from the facility. If necessary, construct berms or drainage swales to direct runoff away from open structures.</li> <li>➤ Where applicable, ensure that facility is sited and constructed in accordance with designs prepared by a qualified professional engineer.</li> </ul>

**Table A.12a Related Accidents and Malfunctions**

Environmental Component	Description of Effect	Mitigation Measures
<i>Spills and Leaks</i>		
<b>Groundwater Quality and Quantity</b>	➤ Contamination of groundwater during management and operation of facility.	➤ Monitor structure and surrounding area on a regular basis for signs of leaks, and take any required action to locate and repair leaks immediately.
<b>Surface Water Quality</b>	➤ Reduced water quality and clarity due to spills and leaks.	<ul style="list-style-type: none"> <li>➤ Ensure that a spill action plan is prepared to capture, contain and clean up any surface runoff or spilled materials immediately.</li> <li>➤ Maintain an adequate supply of cleanup materials at the work site.</li> </ul>
<i>Structural Failures</i>		
<b>Terrain and Topography</b>	➤ Structural movement or collapse.	➤ Ensure that structure design, siting and construction meet all federal, provincial and municipal requirements.

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**Table A.13 Operation of Hand Machinery**

(e.g., weed whips, chain saws, shovels, pumps, cement mixers, drills, etc.)

**If this physical work or activity applies to the project, check all of the applicable project phases:**

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>➤ Decreased ambient air quality due to emissions and increased concentrations of chemical pollutants.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Minimize operation and idling of vehicles and gas-powered equipment, particularly during local smog advisories.</li> <li>➤ Use well-maintained equipment and machinery within operating specifications.</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➤ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid activities during sensitive periods of wildlife migration, staging, nesting, breeding, hibernation or nursing.</li> <li>➤ Establish vegetated buffer strips between construction zones and areas containing sensitive vegetation and wildlife.</li> <li>➤ Survey the area for active nests, dens, burrows, etc., and avoid disturbing them.</li> </ul>
<b>Flora</b>	<ul style="list-style-type: none"> <li>➤ Introduction of non-native species, including opportunistic species.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Clean heavy machinery and equipment prior to transporting to new location.</li> </ul>
<b>Humans</b>	<ul style="list-style-type: none"> <li>➤ Discomfort to individuals exposed to noise from project activities.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conform to local noise by-laws and ordinances.</li> <li>➤ Minimize idling of gas powered equipment.</li> <li>➤ Notify residents of planned events that may cause disturbance, and schedule these activities to avoid sensitive time periods.</li> <li>➤ Use well-maintained equipment and machinery within operating specifications.</li> </ul>
<b>Species at Risk - Terrestrial</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to terrestrial species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to inputs of contaminants from surface runoff during construction and operation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that refuelling and handling of contaminants is conducted off-site, where possible, and away from any water body or from ditches and drains connecting to a water body.</li> <li>➤ Minimize use and discharge of chemicals and cleaning agents.</li> <li>➤ Refuel equipment off slopes and well away from water bodies.</li> <li>➤ Securely contain and store all oils, lubricants, fuels and chemicals. If necessary, use impermeable pads or provide berms.</li> </ul>

**Table A.13a Related Accidents and Malfunctions**

Environmental Component	Description of Effect	Mitigation Measures
<i>Equipment Misuse or Malfunction</i>		
<b>Humans</b>	<ul style="list-style-type: none"> <li>➤ Injury to workers during operation of equipment.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that all workers are equipped with appropriate safety and protective equipment.</li> <li>➤ Ensure that crews are fully trained in the safe handling of equipment.</li> <li>➤ Ensure that there are adequate supplies of First Aid equipment on-site.</li> <li>➤ Use well-maintained equipment and machinery within operating specifications.</li> </ul>
<i>Spills and Leaks</i>		
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to spills and leaks.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Capture, contain and clean up spills and leaks immediately. Immediately notify local authorities of a reportable spill.</li> <li>➤ Contain any contaminated soils or other contaminated materials in secure containers and dispose of them off-site at a licensed disposal facility.</li> <li>➤ Maintain an adequate supply of cleanup materials at the work site.</li> </ul>

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**Table A.14 Operation of Heavy Equipment, Vehicles and Vessels**

(e.g., backhoes, bulldozers, bobcats, trucks, trailers, barges, weed harvesters, etc.)

If this physical work or activity applies to the project, check all of the applicable project phases:

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/ Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Air Quality</b>	➤ Decreased ambient air quality due to dust and other particulate matter.	<ul style="list-style-type: none"> <li>➤ Install a tarpaulin on material stockpiles and haulage trucks, as appropriate.</li> <li>➤ Minimize vehicle traffic on exposed soils.</li> <li>➤ Stabilize high traffic areas with a clean gravel surface layer or other suitable cover material.</li> </ul>
	➤ Decreased ambient air quality due to emissions and increased concentrations of chemical pollutants.	<ul style="list-style-type: none"> <li>➤ Minimize operation and idling of vehicles and gas-powered equipment, particularly during local smog advisories.</li> <li>➤ Use well-maintained equipment and machinery within operating specifications.</li> </ul>
<b>Fauna</b>	➤ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.	<ul style="list-style-type: none"> <li>➤ Avoid activities during sensitive periods of wildlife migration, staging, nesting, breeding, hibernation or nursing.</li> <li>➤ Ensure that temporary crossings do not impede the natural water flow.</li> <li>➤ Ensure that temporary crossings do not present a barrier to fish movement.</li> <li>➤ Establish vegetated buffer strips between construction zones and areas containing sensitive vegetation and wildlife.</li> <li>➤ Minimize operation of machinery in areas where migratory birds are breeding.</li> <li>➤ Minimize vehicle movements within areas with wildlife habitat.</li> <li>➤ Survey the area for active nests, dens, burrows, etc., and avoid disturbing them.</li> </ul>
<b>Flora</b>	➤ Introduction of non-native species, including opportunistic species.	<ul style="list-style-type: none"> <li>➤ Clean heavy machinery and equipment prior to transporting to new location.</li> </ul>
<b>Humans</b>	➤ Discomfort to individuals exposed to noise from project activities.	<ul style="list-style-type: none"> <li>➤ Conform to local noise by-laws and ordinances.</li> <li>➤ Install noise barriers around work areas in close proximity to sensitive receptors (e.g., homes, schools, community facilities).</li> <li>➤ Minimize idling of gas powered equipment.</li> <li>➤ Minimize idling of vehicles.</li> <li>➤ Notify residents of planned events that may cause disturbance, and schedule these activities to avoid sensitive time periods.</li> <li>➤ Use well-maintained equipment and machinery within operating specifications.</li> </ul>
	➤ Effects on human health due to exposure to airborne pollutants.	<ul style="list-style-type: none"> <li>➤ Install a tarpaulin on material stockpiles and haulage trucks, as appropriate.</li> </ul>



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<b>Environmental Component</b>	<b>Description of Effect</b>	<b>Mitigation Measures</b>
<b>Soil Quality</b>	➤ Reduced soil capability through compaction and rutting, and mixing of topsoil and layers below.	<ul style="list-style-type: none"> <li>➤ Avoid working during wet conditions and/or confine operation to paved or gravel surfaces.</li> <li>➤ Maximize use of existing access roads and trails. Avoid veering off trails.</li> <li>➤ Whenever possible, strip and store topsoil separately from the layers below and return to excavation in sequence.</li> </ul>
<b>Species at Risk - Terrestrial</b>	➤ Disturbance to terrestrial species at risk and/or their critical habitat.	➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.
<b>Surface Water Hydrology</b>	➤ Adverse effect to water levels and flows due to temporary crossings.	<ul style="list-style-type: none"> <li>➤ Remove temporary winter crossings before spring freshet.</li> <li>➤ Use clear span (across normal flow channel), pontoon or ice bridges for temporary crossings. Where possible, avoid locating temporary bridges at stream bends.</li> <li>➤ Where possible, locate temporary crossings on straight sections of the channel.</li> </ul>
<b>Surface Water Quality</b>	➤ Reduced water quality and clarity due to increased erosion and sedimentation, and transport of debris.	<ul style="list-style-type: none"> <li>➤ Operate heavy machinery from above the top of the stream bank or on the shore above the normal water level.</li> <li>➤ Where possible, conduct activities in the dry, above the actual water level and above any expected rises in water level that may occur during a rainfall or snow melt event.</li> </ul>
	➤ Reduced water quality and clarity due to inputs of contaminants from surface runoff during construction and operation.	<ul style="list-style-type: none"> <li>➤ Clean all equipment prior to its entry into the water. Any part of the equipment entering the water should be free of fluid leaks, and externally cleaned/degreased to prevent deleterious substances from contaminating the water.</li> <li>➤ Refuel equipment off slopes and well away from water bodies.</li> <li>➤ Securely contain and store all oils, lubricants, fuels and chemicals. If necessary, use impermeable pads or provide berms.</li> </ul>
<b>Wildlife Habitat (terrestrial and aquatic)</b>	➤ Physical damage and loss of habitat (terrestrial, riparian and/or wetland).	<ul style="list-style-type: none"> <li>➤ Avoid or minimize trampling vegetation with equipment.</li> <li>➤ Minimize physical damage to vegetation by avoiding push-outs and avoiding the placement of slash onto living vegetation.</li> </ul>

**Table A.14a Related Accidents and Malfunctions**

Environmental Component	Description of Effect	Mitigation Measures
<i>Spills and Leaks</i>		
<b>Soil Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced soil quality due to spills and leaks.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Capture, contain and clean up spills and leaks immediately. Immediately notify local authorities of a reportable spill.</li> <li>➤ Ensure that refuelling and handling of contaminants is conducted off-site, or on impermeable pads, if necessary.</li> <li>➤ Maintain an adequate supply of cleanup materials at the work site.</li> </ul>
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to spills and leaks.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Capture, contain and clean up spills and leaks immediately. Immediately notify local authorities of a reportable spill.</li> <li>➤ Contain any contaminated soils or other contaminated materials in secure containers and dispose of them off-site at a licensed disposal facility.</li> <li>➤ Maintain an adequate supply of cleanup materials at the work site.</li> </ul>
<i>Vehicle Collisions</i>		
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➤ Injury to wildlife due to proximity of human activities (e.g., road kills and collisions).</li> </ul>	<ul style="list-style-type: none"> <li>➤ Maximize use of existing access roads and trails. Avoid veering off trails.</li> <li>➤ Post signs warning of known wildlife crossings along access roads.</li> </ul>
<b>Humans</b>	<ul style="list-style-type: none"> <li>➤ Personal injuries to public and workers.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that all workers are equipped with appropriate safety and protective equipment.</li> <li>➤ Keep within speed limits.</li> <li>➤ Minimize the number of vehicles on-site. Use a flag person during heavy traffic periods; and ensure large trucks and heavy equipment have backup signals and indicators.</li> </ul>
<i>Vessel Collisions</i>		
<b>Humans</b>	<ul style="list-style-type: none"> <li>➤ Personal injuries to public and workers.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Employ qualified vessel operators.</li> <li>➤ Ensure that all vessels are equipped with appropriate safety equipment, complying with Transport Canada's <i>Small Vessel Regulations</i>.</li> <li>➤ Keep within speed limits.</li> <li>➤ Minimize vessel movements. For example, do not operate vessels after dusk, during fog periods, severe weather events or bad weather.</li> <li>➤ Moor vessels at marinas or designated locations on-site.</li> </ul>

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**Table A.15 Paving and Other Hard Surfacing**

If this physical work or activity applies to the project, check all of the applicable project phases:

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>➤ Decreased ambient air quality due to dust and other particulate matter.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid site preparation or construction during windy and prolonged dry periods.</li> <li>➤ Instruct workers and equipment operators on dust control methods.</li> <li>➤ Spray water to minimize dust off paved areas or exposed soils. Use dust suppressants only on large problem areas.</li> <li>➤ Stabilize stored and stockpiled construction materials, debris and excavated soils against wind erosion.</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➤ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid activities during sensitive periods of wildlife migration, staging, nesting, breeding, hibernation or nursing.</li> <li>➤ Avoid creating major obstructions at important wildlife crossing and movement points.</li> </ul>
<b>Species at Risk - Terrestrial</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to terrestrial species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Surface Water Hydrology</b>	<ul style="list-style-type: none"> <li>➤ Adverse modifications to surface drainage patterns, affecting stormwater runoff rates and volumes.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid constructing paved and other hardened surfaces in flood prone areas and low-lying shoreline areas.</li> <li>➤ If flow pathways are constricted or blocked by works, provide alternate drainage (e.g., culverts, French drains, etc.) across paved area.</li> <li>➤ If trails or roads have the potential to collect and channel drainage, provide drainage outlets (water bars), or other means, spaced at regular intervals to redirect drainage into adjacent areas.</li> <li>➤ Minimize changes to the ground surface and vegetation cover that would affect infiltration and runoff characteristics.</li> </ul>
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to inputs of contaminants from surface runoff during construction and operation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Comply with any local regulations, policies and guidelines that stipulate a minimum acceptable buffer width (the allowable distance from a water body). Maximum buffer widths are desirable.</li> <li>➤ Direct surface runoff away from water bodies and into stormwater containment facilities or adequately vegetated areas.</li> <li>➤ Store all surfacing materials in secure areas on impermeable pads. Provide berms and covers, if necessary.</li> </ul>

**Table A.15a Related Accidents and Malfunctions**

Environmental Component	Description of Effect	Mitigation Measures
<i>Spills and Leaks</i>		
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to spills and leaks.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Capture, contain and clean up spills and leaks immediately. Immediately notify local authorities of a reportable spill.</li> </ul>

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**Table A.16 Vegetation Clearing and Grubbing**

If this physical work or activity applies to the project, check all of the applicable project phases:

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>➤ Decreased ambient air quality due to dust and other particulate matter.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Minimize cutting of vegetation and maintain windbreaks.</li> <li>➤ Restore disturbed areas as soon as possible to minimize duration of soil exposure.</li> </ul>
<b>Fauna</b>	<ul style="list-style-type: none"> <li>➤ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid activities during sensitive periods of wildlife migration, staging, nesting, breeding, hibernation or nursing.</li> <li>➤ Avoid clearing within wildlife movement corridors.</li> <li>➤ Conduct any required clearing outside of the nesting season of migratory birds known to breed in the area.</li> <li>➤ Survey the area for active nests, dens, burrows, etc., and avoid disturbing them.</li> </ul>
<b>Flora</b>	<ul style="list-style-type: none"> <li>➤ Introduction of non-native species, including opportunistic species.</li> </ul>	<ul style="list-style-type: none"> <li>➤ For revegetation purposes, use locally sourced seed mixes that contain native species and/or non-invasive agricultural species.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Loss of unique or otherwise valued vegetation features (e.g., hedgerows and medicinal plants).</li> </ul>	<ul style="list-style-type: none"> <li>➤ Identify and avoid sensitive, unique, or otherwise valued vegetation features (e.g., medicinal plants, specimen trees).</li> <li>➤ Mark and fence project site edges and significant woodlots.</li> <li>➤ Salvage and replant important species in areas designated for protection.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Loss of vegetated cover.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Keep site clearing to a minimum.</li> <li>➤ Minimize physical damage to vegetation by avoiding push-outs and avoiding the placement of slash onto living vegetation.</li> <li>➤ Restore area with native species adapted to the project area to enhance the local plant community.</li> </ul>
<b>Species at Risk - Terrestrial</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to terrestrial species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to increased erosion and sedimentation, and transport of debris.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If necessary, install sediment and erosion controls prior to commencing the work and maintain them until the site has been stabilized.</li> <li>➤ Keep site clearing to a minimum to maintain a sufficient vegetated buffer strip to help control runoff.</li> <li>➤ Maintain vegetated buffer strips along shorelines and stream banks. If minimum buffers cannot be maintained, avoid grubbing of vegetation root mass in close proximity to shorelines and stream banks.</li> </ul>
<b>Terrain and</b>	<ul style="list-style-type: none"> <li>➤ Increased soil exposure resulting in erosion, sedimentation, slope instability</li> </ul>	<ul style="list-style-type: none"> <li>➤ If a prolonged period of exposure is expected, stabilize surface using temporary cover (e.g., grass, mulch, gravel, erosion blanket, etc.), as appropriate.</li> </ul>

**Model Class Screening Report for Small Scale Water  
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Environmental Component	Description of Effect	Mitigation Measures
<b>Topography</b>	and risk of mudslides, slumping, rockfalls, etc.	<ul style="list-style-type: none"> <li>➤ Keep site clearing to a minimum to maintain sufficient vegetated cover and windbreaks.</li> <li>➤ On steep slopes that do not require grading, hand clear, without grubbing.</li> <li>➤ Phase work to minimize duration of exposure of disturbed areas at risk.</li> <li>➤ Stabilize slopes as appropriate for local site conditions. Possible methods include hard and soft designs or combinations of designs using crib walls, revetments, gabions, erosion control blankets, live fascines, or brush bundles.</li> </ul>
<b>Wildlife Habitat (terrestrial and aquatic)</b>	➤ Physical damage and loss of habitat (terrestrial, riparian and/or wetland).	<ul style="list-style-type: none"> <li>➤ Keep site clearing to a minimum to maintain sufficient vegetated cover and windbreaks.</li> <li>➤ Minimize physical damage to vegetation by avoiding push-outs and avoiding the placement of slash onto living vegetation.</li> <li>➤ Restore area with native species adapted to the project area to enhance the local plant community.</li> </ul>
	➤ Reduced terrestrial habitat quality (i.e., diversity, area, function) and/or increased fragmentation of habitat.	<ul style="list-style-type: none"> <li>➤ Avoid habitat fragmentation in sensitive areas.</li> <li>➤ Plant any newly exposed areas with light-tolerant species.</li> <li>➤ Plant species of native trees, shrubs and grasses that are well adapted to the project area to reconnect fragmented habitat and enhance the local plant community.</li> </ul>

**Table A.16s Related Socio-economic Effects**

Socio-economic Component	Description of Effect	Mitigation Measures
<i>Terrain and Topography</i>		
<i>Land and Resource Use</i>	➤ Disruption to resource uses (e.g., hunting, fishing and medicinal plant harvesting).	➤ Restore and revegetate temporary access roads, and staging and storage areas.
	➤ Increased public access to remote or undeveloped areas, and areas used by Aboriginal persons for traditional purposes.	➤ Avoid creating new access to sensitive natural areas, and remove temporary bridges and access roads as soon as their intended function is no longer required.

### Table A.17 Withdrawal or Discharge of Groundwater

(e.g., trench dewatering, operation of wells)

If this physical work or activity applies to the project, check all of the applicable project phases:

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/ Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Groundwater Quality and Quantity</b>	<ul style="list-style-type: none"> <li>➤ Changes in groundwater flow patterns and levels due to interception of aquifers, changes to infiltration conditions, dewatering or changes to surface flow patterns.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Comply with regulatory requirements for water withdrawal and obtain all necessary permits.</li> <li>➤ Maintain surface drainage, natural ponds, and existing ground cover and soil conditions, etc., in groundwater recharge areas.</li> </ul>
<b>Species at Risk - Aquatic</b>	<ul style="list-style-type: none"> <li>➤ Disturbance to aquatic species at risk and/or their critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Fisheries and Oceans Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.</li> </ul>
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced surface water quality and clarity due to discharges of groundwater containing suspended sediment.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that pumped water is discharged away from adjacent water bodies to a settling pond or filter bag, or a vegetated buffer strip of adequate size or width, respectively, to filter out suspended sediment from the discharge water prior to its entry into the water body.</li> </ul>

### Table A.17s Related Socio-economic Effects

Socio-economic Component	Description of Effect	Mitigation Measures
<i>Groundwater Quality and Quantity</i>		
<i>Land and Resource Use</i>	<ul style="list-style-type: none"> <li>➤ Changes in water supply and quality affecting domestic and/or commercial uses.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid dewatering in sensitive areas or near wells.</li> <li>➤ Provide alternative water supply and repair or replace damaged wells.</li> </ul>

### Table A.18 Withdrawal or Discharge of Surface Water

(e.g., dam and pump operations, water level and flow management)

If this physical work or activity applies to the project, check all of the applicable project phases:

Site Preparation / Construction / Modification

Operation / Use / Maintenance

Decommissioning/Abandonment

Environmental Component	Description of Effect	Mitigation Measures
<b>Fauna</b>	➤ Disruption to fish migration, spawning and nursery periods.	➤ Restrict in-water works to approved timing windows to protect fish during migratory, spawning and nursery periods, and when eggs and fry are vulnerable to floodwaters and sediment. Timing windows vary depending upon species present and water temperature. Consult with regulatory authorities to verify timing windows applicable to the project site.
	➤ Disruption to wildlife migration and movement patterns, breeding, nesting or hibernation.	➤ Schedule activities to avoid disturbance to water bird nesting areas until after the young have fledged.
	➤ Reduced biomass and diversity of aquatic organisms due to physical activities.	➤ Ensure that any sediment laden water is discharged to land prior to re-entry into a water body. ➤ Ensure that the pump for withdrawing water from the natural water body uses a suitable intake chamber or screen to avoid entraining fish, algae and debris. Refer to Fisheries and Oceans Canada's "End of Pipe Fish Screen Guidelines" <a href="http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/guidelines-conseils/guides/pipe/index_e.asp">http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/guidelines-conseils/guides/pipe/index_e.asp</a> ➤ If isolating the work site, remove any remaining fish and return them to an undisturbed area (i.e., fish salvage). Approval should be obtained from the appropriate federal or provincial agencies for this work.
<b>Flora</b>	➤ Disruption to vegetation from changes in surface water quantity.	➤ Manage water level regime to adapt to requirements of targeted species of flora.
<b>Species at Risk - Aquatic</b>	➤ Disturbance to aquatic species at risk and/or their critical habitat.	➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Fisheries and Oceans Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.
<b>Species at Risk - Terrestrial</b>	➤ Disturbance to terrestrial species at risk and/or their critical habitat.	➤ If any species at risk are known or expected to be present at any time within or adjacent to the project area, consult with Environment Canada specialists or the relevant provincial authority regarding measures to avoid harmful disturbance to these species.
<b>Surface Water Hydrology</b>	➤ Adverse modifications to water flow conveyance, volumes and levels.	➤ Comply with regulatory requirements for water withdrawal and obtain all necessary permits. ➤ Make provisions and contingencies for occurrence of unexpected high flow or low flow conditions during activity, as applicable. ➤ Minimize rates of withdrawal or discharge from any natural inland water bodies to avoid major alteration of existing stream flow or water level conditions (i.e., limit to < 10% of existing flow in



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Environmental Component	Description of Effect	Mitigation Measures
		stream, or 10% of normal surface water runoff and groundwater inflows to water body).
<b>Surface Water Quality</b>	<ul style="list-style-type: none"> <li>➤ Reduced water quality and clarity due to increased erosion and sedimentation, and transport of debris.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Ensure that the discharged water is directed to an appropriately sized energy dissipating outlet device to prevent bed or bank erosion at the point of discharge into the natural water body.</li> <li>➤ Ensure that the pump for withdrawing water from the natural water body uses a suitable intake chamber or screen to avoid entraining bed or bank sediment.</li> </ul>
<b>Wildlife Habitat (terrestrial and aquatic)</b>	<ul style="list-style-type: none"> <li>➤ Physical changes to aquatic habitat resulting from changes in water levels, flow volumes and temperature.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Implement mitigation measures in accordance with any requirements and recommendations stipulated by authorities under the <i>Fisheries Act</i>.</li> <li>➤ Maintain mitigation measures and ensure their ongoing effectiveness.</li> </ul>

**Table A.18s Related Socio-economic Effects**

Socio-economic Component	Description of Effect	Mitigation Measures
<i>Surface Water Hydrology</i>		
<i>Land and Resource Use</i>	<ul style="list-style-type: none"> <li>➤ Disruption to navigation due to obstructions (e.g., other vessels, ice, equipment, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>➤ Consult with Transport Canada and/or harbour or port authority.</li> <li>➤ Implement all conditions and recommendations contained in <i>Navigable Waters Protection Act</i> approvals.</li> </ul>
<i>Surface Water Quality</i>		
<i>Land and Resource Use</i>	<ul style="list-style-type: none"> <li>➤ Disruption to community or private surface water supplies (e.g., drinking water, livestock watering, irrigation, commercial and recreational uses).</li> </ul>	<ul style="list-style-type: none"> <li>➤ Avoid construction near water supply intakes.</li> <li>➤ Ensure that drainage, grading design and construction activities do not adversely impact ponds, irrigation systems or other uses of water resources in the area.</li> <li>➤ Provide alternative water supply and remediate damaged intakes.</li> </ul>

## A.6.1 Additional Environmental Effects

Taking into account the ecological context of the environmental components affected by project activities assessed in the applicable Tables A.6 to A.18, describe any **site specific** adverse environmental effect(s) that are likely to occur as a result of the project, or any effects that are uncertain. Include the recommended mitigation measures and the significance of the residual adverse effects.

a) *Physical Works or Associated Activities:*

---

b) *Project Phase (check all that apply):*

Site Preparation /  
Construction / Modification

Operation / Use /  
Maintenance

Decommissioning/  
Abandonment

c) *Environmental Component Affected:*

---

d) *Adverse Effect(s):*

---

e) *The Proposed Mitigation:*

---

f) *Significance of Residual Adverse Effect following Mitigation (check one):*

**Refer to the MCSR for instructions on determining significance**

Negligible Effect (i.e., not likely to be  
measurable or noticeable)

Minor Adverse Effect  
(not significant)

Significant Adverse Effect  
**DO NOT proceed\***

\* Any residual adverse environmental effects that are deemed to be significant **will** result in a determination of “Significant Adverse Effects” in Section 11 of the CSPR, or will require changes to the project.

## A.6.2 Effects of the Environment on the Project

Describe any effect(s) of the environment on the project that are **not described in Tables A.6 to A.18** and that are likely to occur as a result of the specific project location. Describe the proposed measures (e.g., design, operating procedures, monitoring and contingency plans) to prevent or manage these effects, and the significance of any anticipated residual effects. For assistance in determining the environmental effects most relevant to the project being assessed, refer to Table 5.5-1 of the main report.

a) *Environmental Condition Affecting the Project:*

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b) *Physical Works or Associated Activities Affected:*

---

c) *Effect of the Environment on the Project:*

---

d) *The Proposed Mitigation:*

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e) *Significance of Residual Adverse Effect following Mitigation (Check one after review of significance criteria and ratings in MCSR):*

*Negligible Effect (i.e., not likely to be measurable or noticeable)*

*Minor Adverse Effect (not significant)*

*Significant Adverse Effect*

**DO NOT continue with CSPR. Proceed to Section 11 – Determination**

## A.7 Cumulative Effects Assessment

Identify and describe other past, existing or future (certain or reasonably foreseeable) projects or activities that *also* affect or *may also* affect any environmental components of concern or special interest\*. Environmental components of concern or special interest should be a subset of those listed in the applicable Tables A.6 to A.18 and any additional site specific features or attributes noted in Table A.5. If no other projects are identified, specify "Not Applicable" in column 2 of the table below. For assistance in completing a cumulative effects assessment, refer to Section 7.1 of the MCSR: Instructions for Completing a Class Screening Project Report.

\* In context of the project under assessment, based on consultation and any other information relevant to the screening.

**Table A.19**  
**Other Projects and Activities**

Environmental Component(s) of Concern or Special Interest*	Past, Existing, Planned or Likely Projects/Activities that can affect the Environmental Component	Description of Cumulative Effect(s)	Proposed Mitigation for Cumulative Adverse Effect(s)	Significance of Cumulative Adverse Effect(s)

Any adverse cumulative environmental effects that are deemed to be significant will result in a determination of “Significant Adverse Effects” in Section 11 of the CSPR, or will require changes to the project

### A.7.1 Any Other Matter

Identify any other matter relevant to the screening. For example, identify any beneficial effects that are anticipated as a result of the project.

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## A.8 Referrals and Consultations

### A.8.1 Within Environment Canada

- Under s.79(1) of the *Species at Risk Act* (SARA), the **Canadian Wildlife Service** must be consulted if the project is likely to have an effect (beneficial or adverse) on species at risk, or their critical habitat, for which the Minister of Environment is the competent minister.

*Is consultation with Canadian Wildlife Service required regarding species at risk issues?*

*Yes*

*No*

If consultation was undertaken, identify the parties involved, when and where consultation took place and identify issues raised and how they were addressed. (Describe any additional mitigation measures prescribed through this consultation in Section 9 of the CSPR). Retain records of all consultations.

---

- Consultation with other branches or divisions of Environment Canada may also be warranted regarding aspects unrelated to species at risk.

Was consultation undertaken?  *Yes*  *No*

If consultation was undertaken, identify the parties involved, when and where consultation took place and identify issues raised and how they were addressed. (Describe any additional mitigation measures prescribed through this consultation in Section 9 of the CSPR). Retain records of all consultations.

---

### A.8.2 Fisheries and Oceans Canada

- Under s.79(1) of the *Species at Risk Act* (SARA), the RA **must** notify Fisheries and Oceans Canada if the project is likely to have an effect (beneficial or adverse) on aquatic species at risk or their critical habitat.

Is notification to Fisheries and Oceans Canada required regarding aquatic species at risk issues?  *Yes*  *No*

If consultation was undertaken, identify the parties involved, when and where consultation took place and identify issues raised and how they were addressed. Describe any additional mitigation measures prescribed through this consultation in Section 9 of the CSPR. Retain records of all consultations.

---

Referral to Fisheries and Oceans Canada is required whenever works or undertakings may result in the harmful alteration, disruption or destruction (HADD) of fish habitat.

Is consultation or a referral to Fisheries and Oceans Canada required regarding fish habitat issues?  *Yes*  *No*

If consultation was undertaken or the project was referred to Fisheries and Oceans Canada, identify the parties involved, the issues raised and how they were addressed. Describe any additional mitigation measures prescribed through this consultation in Section 9 of the CSPR. Retain records of all consultations.

---

### A.8.3 Transport Canada

Referral to Transport Canada is required for approval under the *Navigable Waters Protection Act* (NWPA) for any project that has the potential to interfere with the navigation and any named works (Paragraph 5(1)(a) of the NWPA in, on, over, under, through or across navigable waters.

This CSPR does not exempt a proponent from the requirement to obtain approval in accordance with Federal laws such as the NWPA. The NWPA still requires that the proponent apply for approval of any work located in, on, over, under, through or across any navigable water.

*Is referral to Transport Canada required to determine the applicability of the NWPA?*

*Yes*

*No*

If the project was referred to Transport Canada, identify the parties involved, the issues raised and how they were addressed. Retain records of all consultations.

Consultation with Transport Canada is also desirable whenever there are questions as to whether project or site specific conditions warrant project specific mitigation measures in addition to those identified in the MCSR or if there is any doubt that the project may interfere with navigation.

*Was consultation undertaken?*

*Yes*

*No*

If consultation was undertaken, identify the parties involved, when and where consultation took place and identify issues raised and how they were addressed. Describe any additional mitigation measures prescribed through this consultation in Section 9 of this CSPR. Retain records of all consultations.

---

### A.8.4 Consultation with Other Federal Departments/Agencies

*Was consultation undertaken?*

*Yes*

*No*

If consultation was undertaken, identify the parties involved, when and where consultation took place and identify issues raised and how they were addressed. Describe any additional mitigation measures prescribed through this consultation in Section 9 of the CSPR. Retain records of all consultations.

---

### A.8.5 Consultation with Other Government Ministries or Agencies Aboriginal Groups or Conservation Authorities

Consultation with Other Government Ministries or Agencies, Aboriginal Groups or Conservation Authorities

Was consultation undertaken?

Yes

No

If consultation was undertaken, identify the parties involved, when and where consultation took place and identify issues raised and how they were addressed. Describe any additional mitigation measures prescribed through this consultation in Section 9 of the CCSR. Retain records of all consultations.

---

### A.8.6 Consultation with the Public (e.g., residents, non-government organizations)

Was consultation undertaken?

Yes

No

If consultation was undertaken, identify the parties involved, when and where consultation took place and identify issues raised and how they were addressed. Describe any additional mitigation measures prescribed through this consultation in Section 9 of the CCSR. Retain records of all consultations.

---

## A.9 Mitigation Measures

Select one of the following options.

Project falls within the scope of the MCSR. No additional mitigation measures are recommended as a result of consultation.

**Standard mitigation measures described in this CCSR apply. PROCEED**

Project falls within the scope of the MCSR. Project specific mitigation measures are recommended by federal authorities or other stakeholders consulted to address the following issues: (*check all that apply*)

*Migratory Birds,*

*Fish and Fish Habitat*

*Migratory Bird Habitat*

*Wetlands*

*Navigable Waters*

*Species at Risk*

*Other* \_\_\_\_\_

**The following additional mitigation measures apply.**

---

**DO NOT proceed with filing a CSPR if the project specific mitigation measures above change the project's function such that it is no longer described by the MCSR and/or will result in significant residual environmental effects.**

## A.10 Follow-Up Program

**Is a follow-up program required for this project?**

*Yes*

*No*

If **YES**, describe any project specific follow-up activities that are warranted to verify the environmental effects or the effectiveness of mitigation measures. Describe responsibilities for follow-up activities.

---

If **NO**, explain why follow-up activities are not warranted

---



## A.11 Determination

Environment Canada has determined, in accordance with subsection 20(1) of CEAA, that (*check only one of the two boxes below*):

*The project is not likely to cause significant adverse environmental effects: the project can proceed with application of the mitigation measures specified in this report.*

*The project is likely to cause significant adverse environmental effects that cannot be justified. The project does not proceed.*

## A.12 Sign-Off

Pursuant to section 39 of the *Canadian Environmental Assessment Act* (CEAA), we certify on behalf of the Minister of Environment that an environmental assessment of this project has been completed in accordance with the requirements of CEAA and is duly signed by the Responsible Authority who exercises a power or performs a duty or function referred to in paragraph 5(1)(c) of CEAA.

➤ **Report Prepared By:**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

➤ **Report Reviewed and Approved By:**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

➤ **If Fisheries and Oceans Canada is an RA, Report Reviewed and Approved By:**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

➤ **If Transport Canada is an RA, Report Reviewed and Approved By:**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

The above has (have) reviewed the report and agree(s) that it meets the requirements of the *Canadian Environmental Assessment Act* and accept(s) responsibility for ensuring the implementation of all applicable mitigation measures and follow-up programs, if any, identified in this report.

# Appendix B

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## Letters of Endorsement

**Transport Canada  
Fisheries and Oceans Canada**



Place de Ville  
Ottawa  
K1A 0N5

Your file    Votre référence

Fax (613) 957-4260    Télécopieur (613) 957-4260

Our file    Notre référence

March 14, 2005

Mr. Bruce Young  
Director, Program Assessment  
Canadian Environmental Assessment Agency  
Place Bell Canada  
160 Elgin Street, 22<sup>nd</sup> Floor  
Ottawa, Ontario  
K1A 0H3

Re: Model Class Screening for Small Scale Water Quality and Habitat Improvement Projects

Dear Mr. Young,

As you know, Environment Canada has engaged Transport Canada (TC) in the development of their national Model Class Screening Report (MCSR) for Small Scale Water Quality and Habitat Improvement Projects.

Transport Canada may be a potential Responsible Authority (RA) under the *Canadian Environmental Assessment Act* for some of the small-scale water quality and habitat improvement projects subject to an approval under the *Navigable Waters Protection Act* (NWPA). As a potential RA, we were consulted during the development of this MCSR and we are satisfied that our interest in terms of protecting the right of public navigation under the NWPA has been addressed.

Once the MCSR is declared, the process outlined in the MCSR will satisfy Transport Canada's environmental assessment requirements whenever possible.

.../2

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Alec Simpson', with a long horizontal flourish extending to the right.

Alec Simpson  
Director, Environmental Programs  
Transport Canada

c.c.: Robyn-Lynne Virtue, Canadian Environment  
Sheila Allan, Environment Canada  
Diane Campbell, Environment Canada  
Viki-Marie Di Censo, Transport Canada  
Julie-Anne Marcoux, Transport Canada

Your file Votre référence

Our file Notre référence

March 22, 2005

Mr. Bruce Young  
Director, Program Assessment  
Canadian Environmental Assessment Agency  
Place Bell Canada  
160 Elgin Street, Floor 22  
Ottawa, Ontario  
K1A 0H3

Re: Model Class Screening for Small Scale Water Quality and  
Habitat Improvement Projects

Dear Mr. Young,

As you know, Environment Canada has engaged Fisheries and Oceans Canada (DFO) in the development of their national Model Class Screening Report (MCSR) for Small Scale Water Quality and Habitat Improvement Projects.

As a potential Responsible Authority for some of the projects subject to this MCSR, Fisheries and Oceans Canada was consulted in its preparation and we are satisfied that our interests in terms of fish and fish habitat have been addressed. This Model Class Screening Report also details our regulatory interests in these projects. Further, the Class Screening Project Report makes provisions for the referral of projects that may require an authorization and/or permit under the *Fisheries Act* to Fisheries and Oceans Canada.

Upon declaration, *Canadian Environmental Assessment Act* screenings completed by Environment Canada, using this Model Class Screening Report, will also satisfy Fisheries and Oceans Canada's environmental assessment requirements for these projects.

Sincerely,

  
Timothy Surette  
A/Director, EA and Major Projects Branch

Ottawa, Canada  
K1A 0E6

Canada