

**DRAFT GUIDELINES FOR THE PREPARATION OF THE  
ENVIRONMENTAL IMPACT STATEMENT FOR THE  
CACOUNA ENERGY PROJECT**

*CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY*

**AUGUST 2005**

*DRAFT*

## TABLE OF CONTENTS

FOREWORD.....	3
SCOPE OF THE PROJECT.....	4
INTRODUCTION.....	5
1. CHARACTERISTICS OF THE IMPACT STUDY.....	5
2. MINISTERIAL AND GOVERNMENT REQUIREMENTS.....	7
3. INTEGRATION OF SUSTAINABLE DEVELOPMENT OBJECTIVES.....	8
4. INCENTIVE FOR ADOPTING AN ENVIRONMENTAL AND SUSTAINABLE DEVELOPMENT POLICY.....	8
5. ENCOURAGING PUBLIC CONSULTATION AT THE BEGINNING OF THE PROCEDURE.....	10
PART I – CONTENT OF THE ENVIRONMENTAL IMPACT STATEMENT.....	11
1. PROJECT OVERVIEW.....	11
1.1 PRESENTATION OF THE PROPONENT.....	11
1.2 PROJECT BACKGROUND AND JUSTIFICATION.....	12
1.3 ALTERNATIVES TO THE PROJECT.....	14
1.4 RELATED PROJECTS AND FACILITIES.....	14
2. DESCRIPTION OF HOST ENVIRONMENT.....	14
2.1 IDENTIFICATION OF STUDY AREA.....	15
2.2 DESCRIPTION OF RELEVANT ASPECTS.....	15
3. DESCRIPTION OF PROJECT AND DEVELOPMENT ALTERNATIVES.....	21
3.1 DETERMINATION OF OPTIONS.....	21
3.2 SELECTION OF RELEVANT ALTERNATIVES.....	22
3.3 DESCRIPTION OF THE OPTION OR OPTIONS RETAINED.....	24
4. IMPACT ASSESSMENT FOR THE OPTIONS(S) SELECTED.....	28
4.1 DETERMINATION AND ASSESSMENT OF IMPACTS.....	28
4.2 MITIGATION OF IMPACTS OF THE OPTIONS(S) CHOSEN.....	33
4.3 SELECTION OF BEST OPTION AND COMPENSATION FOR RESIDUAL IMPACTS.....	34
4.4 PROJECT SUMMARY.....	35
5. RISK MANAGEMENT.....	35
5.1 TECHNOLOGICAL RISKS.....	35
5.2 SAFETY MEASURES.....	37
5.3 EMERGENCY RESPONSE MEASURES.....	37
6. ENVIRONMENTAL MONITORING PROGRAM.....	39
7. FOLLOW-UP PROGRAM.....	40
PART II – FORMAT OF THE ENVIRONMENTAL IMPACT ASSESSMENT STATEMENT.....	41
1. METHODOLOGICAL CONSIDERATIONS.....	41
2. CONFIDENTIALITY.....	42
3. REQUIREMENTS FOR THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT STATEMENT.....	43
4. OTHER DEPARTMENTAL REQUIREMENTS.....	44
DOCUMENTS OF REFERENCE.....	45

## Foreword

---

TransCanada PipeLines Limited and Petro-Canada are jointly proposing to implement the Cacouna Energy Project (the project), which involves building a liquefied natural gas (LNG) terminal in Cacouna on the south shore of the St. Lawrence estuary east of Rivière-du-Loup.

The Cacouna Energy Project is subject to the *Canadian Environmental Assessment Act* (the Act) given the need for Transport Canada to issue a lease and to obtain the necessary authorizations under the terms of the *Navigable Waters Protection Act* and *Fisheries Act*. At the request of the federal Ministers of Transport and Fisheries and Oceans, the federal Minister of the Environment referred the environmental assessment of the project to a review panel.

The project is also subject to a provincial environmental assessment and impacts review procedure under the terms of Quebec's *Loi sur la qualité de l'environnement*. Within the framework of the *Canada-Quebec Environmental Assessment Cooperation Agreement* (the Agreement, May 2004), a cooperative environmental assessment committee was set up. The main objective of this committee is to coordinate the various stages of the federal and provincial processes. In addition, it will have to examine the conformity of the environmental impact study with the requirements of the guidelines.

In May 2004, the Environmental Assessment Branch of Quebec's *ministère du Développement durable, de l'Environnement et des Parcs* issued its guidelines entitled *Directive pour le projet Cacouna – Implantation d'un terminal méthanier et des infrastructures connexes*. Pursuant to the Agreement, these guidelines have been developed based on the Quebec guidelines, providing, where relevant, the additional information required to meet the requirements of the Act. They follow the same table of contents, structure and numbering as the Quebec guidelines. Therefore, these draft guidelines must be read concurrently with the Quebec guidelines, which are presented here in their entirety.

These draft guidelines, together with the Quebec guidelines, constitute the consolidated guidelines prescribed by the Agreement. The proponent is invited to carry out an impact study that meets the requirements of these consolidated guidelines.

These draft guidelines are available for a 30-day consultation period. During this period, the public can submit written comments to the Canadian Environmental Assessment Agency. After taking into consideration the observations of the public received during the consultation period, the federal guidelines will be approved by the federal Minister for the Environment, and then transmitted to the proponent and made public.

## Scope of the Project

---

The scope of the project established for the environmental assessment includes the various components of the project as described by the proponent in the document entitled *Projet Énergie Cacouna. Description du projet – Loi canadienne sur l'évaluation environnementale. Septembre 2004.* , as well as the activities and works described in these guidelines.

The scope of the project established for the environmental assessment includes the construction, operation, maintenance and foreseeable changes, as well as, when relevant, cessation of business, decommissioning and site remediation related to the methane tanker terminal and more particularly to the following works and activities:

- the transportation of the liquid natural gas (LNG) by methane tanker inside the limits of the St. Lawrence estuary until its arrival to the terminal;
- marine facilities made up of a pier advancing some 350 meters in the St. Lawrence river (equipped with hinged jibs for unloading and with mooring dolphins) which is able to receive methane tankers whose capacity could reach 250 000 cubic metres of LNG, as well as LNG related unloading installations;
- cryogenic drains to carry the liquefied natural gas from the pier to the terminal;
- a terminal made up of two storage tanks with an approximate capacity of 160 000 cubic metres each;
- a regasification plant including pumps and vaporizers to heat the LNG and to transform to a gas state of roughly 500 million cubic feet of natural gas per day, as well as pipes and related equipment;
- all related works and activities including all temporary installations necessary for the construction of the terminal, in particular:
  - permanent and temporary access paths;
  - sources of power supply and temporary or permanent installations necessary to supply the site;
  - water supply and treatment of waste water;
  - dredging and storage of sediments, if necessary;
  - construction sites and storage areas;
  - the use of explosives, petroleum products and dangerous matters, their handling and storage; and
  - buildings, including all temporary installations necessary for the construction of the methane tanker terminal.

<b>INTRODUCTION</b>	
<p>This section provides a general description of an environmental impact assessment statement and the related departmental and governmental requirements. It also proposes to the project proponent integration of sustainable development objectives, adoption of an environmental and sustainable development policy and public consultation at the beginning of the assessment and review procedure.</p>	<p>In this document, the term “territory” not only refers to the project area but also to neighbouring areas that may be directly or indirectly affected by the project. In the context of a federal environmental assessment, the proponent must therefore consider as part of the territory the land and waters on and around the work site which belong to or are under the jurisdiction of federal authorities.</p>
<b>1. CHARACTERISTICS OF THE IMPACT STUDY</b>	
<p><i>The environmental impact statement is a planning tool...</i></p> <p><i>...that takes all environmental factors into account.</i></p>	<p>The environmental impact study is a key tool in planning the use and development of land and resources. It involves taking environmental concerns into account at all project stages, from project design to operation, including termination of the project, if applicable, and helps the proponent design a project that fits in more harmoniously with the receiving environment without jeopardizing the project’s technical and economic feasibility.</p> <p>The environmental impact statement takes into account all possible bio-physical and social components that could be affected by the project. On the basis of the impact statement, it is possible to analyze and interpret the relationships and interactions between the factors affecting ecosystems, resources and the quality of life of individuals and communities.</p>

*While focusing on significant aspects...*

The environmental impact statement highlights the components of the environment on which the project will have a significant impact. The relative significance of an impact is used in determining the critical elements on which to base choices and decisions.

*...it considers the interests and expectations of the parties involved...*

The environmental impact statement considers the views, reactions and main concerns of individuals, groups and communities. It discusses how the various parties were involved in the project planning process and takes the results of any consultations and negotiations into account.

*....in order to help them make informed choices and decisions.*

Comparison and selection of the different options are an intrinsic part of the environmental assessment process. The environmental impact statement clearly identifies the objectives and the criteria justifying the option retained by the proponent.

The environmental assessment conducted by the *ministère de l'Environnement of Québec (MDDEP)* and the report of the *Bureau d'audiences publiques sur l'environnement* (public environmental hearings board) also contribute to the government's decision-making process.

<p style="text-align: center;"><b>2. MINISTERIAL AND GOVERNMENT REQUIREMENTS</b></p>	<p>The environmental impact statement is carried out in accordance with the scientific method and must meet departmental and government requirements regarding project analysis, public consultation and the decision-making process. It provides a basis for considering the project development process from every angle. More specifically, it:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> specifies the characteristics and justification of the project, taking into account the context in which it is implemented;</li><li><input type="checkbox"/> describes, as accurately as possible, the current environment and its evolution during and after implementation of the project;</li><li><input type="checkbox"/> demonstrates how the project will be integrated to the environment through a comparative analysis of the impacts of each project alternative and identifies the measures intended to minimize or eliminate negative impacts and maximize positive impacts;</li><li><input type="checkbox"/> plans monitoring and follow-up programs to ensure compliance with government requirements and ascertain the proponent's commitments, and to monitor certain environmental aspects affected by the project.</li></ul>
	<p>Exchanges between the proponents and government organizations are encouraged to ensure the environmental impact statement properly addresses the information requested, the recommended methodology, and requirements under the various federal laws. Proponents will find in reference several guides offering information on the approaches recommended by certain federal government agencies.</p> <p>In addition, in relation to obtaining approval for their project, proponents shall contact the various federal authorities, namely Transport Canada, Environment Canada, and Fisheries and Oceans Canada, to ensure that they meet their respective regulatory requirements to obtain the necessary permits, authorizations and statements of conformity.</p>

<p><b>3. INTEGRATION OF SUSTAINABLE DEVELOPMENT OBJECTIVES</b></p>	<p>Sustainable development aims at satisfying the essential needs of present generations without compromising the ability of future generations to meet their own. The three objectives of sustainable development are the preservation of environmental integrity, improvement of social equity and improvement of economic efficiency. Thus the project tends toward the integration and balance of these three objectives and the public involvement into the planning and decision-making processes. The project, as well as any alternatives, must take into consideration the relationships and interactions between the ecosystem components and the needs of the communities.</p>	<p>Refer to provincial guidelines.</p>
<p><b>4. INCENTIVE FOR ADOPTING AN ENVIRONMENTAL AND SUSTAINABLE DEVELOPMENT POLICY</b></p>	<p>The MDDEP relies on the accountability of project proponent to support sustainable development. To this end, it strongly encourages such developers to adopt their own environmental policy, implement accountable management programs including a code of ethics and concrete, measurable objectives, or develop any other means for integrating environmental concerns into their day-to-day management.</p>	<p>Refer to provincial guidelines.</p>

**Quebec guidelines for the Cacouna Project – Implementation of an LNG terminal and related infrastructures**

**Draft Federal guidelines for the preparation of the environmental impact statement for the Cacouna Energy Project**

- More specifically, depending on the type of proponent or project, the characteristics of an environment and sustainable development policy are:
- environmental impact and risk management through prevention;
  - appointment of personnel in a position of authority to implement the environmental policy;
  - conservation and rational use of resources (reduction at source, efficient use, re-use, recycling, composting, etc.);
  - product life-cycle analysis;
  - periodical environmental auditing (ISO 14 000, etc.);
  - publishing a Best Practices guide;
  - ongoing research and development to improve activities;
  - employee information and training in environmental protection;
  - inclusion of environmental requirements in calls for tenders sent to suppliers of goods and services;
  - in terms of human and financial resources, support of local initiatives to compensate residual impacts (compensation for the biotic environment or for citizens);
  - information to neighbouring communities and creation of an environmental monitoring committee to address particular environmental issues;
  - feedback to senior management regarding policy implementation;
  - inclusion in the annual report of a section on the environmental measures taken by the company.

<p><b>5. ENCOURAGING PUBLIC CONSULTATION AT THE BEGINNING OF THE PROCEDURE</b></p>	<p>The MDDEP encourages the project proponent to make use of the capacity of citizens and communities to have their views and concerns taken into account regarding the projects that involve them. To this end, the MDDEP supports the project proponent's public consultation initiatives.</p> <p>More concretely, the MDDEP urges proponent to adopt a communication plan and consult all stakeholders (individuals, groups and communities as well as government departments and public and semi-public agencies) as soon as, and even before, a written notice of the project has been filed with the Minister. It is important that consultations begin as early as possible in the planning process so that stakeholders' comments can influence issues, choices and decisions. When public consultation takes place earlier in the decision-making process, the citizens have a greater impact on the project as a whole and, consequently, the project stands a better chance to be socially acceptable.</p> <p>Proponents are encouraged to take into account local knowledge, including local aboriginal communities, during the preparation of the environmental impact statement. For the purposes of this environmental assessment, local knowledge may be regarded as the knowledge, understanding and values of local populations which affect the determination of the project's impacts and proposed mitigation measures.</p> <p>Proponents shall describe consultation and information sessions held in relation to the project at the local, regional and national levels, as the case may be. They shall specify the approaches used, the locations of meetings, the persons and organizations met, the concerns that were expressed, and the extent to which these elements have been incorporated into the project design and the environmental impact statement.</p>
--	--

<b>PART I – CONTENT OF THE ENVIRONMENTAL IMPACT STATEMENT</b>	
<p>The content of the impact statement can be divided into seven main steps: project overview, description of biophysical and human environment, description of the project and project alternatives, impact assessment, risk management and environmental monitoring and follow-up programs.</p> <p>The scope of the environmental impact statement depends on the nature of the activities involved in the project and on the significance of the anticipated impacts.</p>	<p><b>1. PROJECT OVERVIEW</b></p> <p><a href="#">Refer to provincial guidelines.</a></p>
<b>1.1 Presentation of the Proponent</b>	
<p>The impact statement introduces the project proponent and, where applicable, its environmental consultant. It includes general information on the events leading up to the project, if necessary, an outline of the proponent’s environmental and sustainable development policy.</p>	<p><a href="#">Refer to provincial guidelines.</a></p>

<p><b>1.2 Project Background and Justification</b></p>	<p>The environmental impact statement provides the geographic coordinates of the project and its key technical characteristics, as they appear in the initial stages of planning.</p> <p>The statement also discusses the background and justification of the project, describing the current situation in the field of activity in question. It explains the objectives, the problems or needs motivating the project and identifies the limitations or requirements related to its realization. No energetic or economic justification of the project is required if the proponent can demonstrate that such justification reflects the requirements of an agency regulating the transport or distribution of gas, such as the National Energy Board or its provincial equivalent, the Régie de l'Énergie. The proponent must at the very least explain any representations it has made before such an agency and present a brief of the results in the impact study. The proponent must also illustrate which market the project is addressing.</p> <p>If need be, this section reports on the results of public hearings held by the proponent and describes the consultation process used.</p> <p>The purpose of this section on the project's integration and justification is to identify the environmental, social, economic and technical aspects of the project at the local, regional and, where applicable, national and international levels. Table 1 lists the principal aspects to be considered when presenting the project.</p> <p><a href="#">Refer to provincial guidelines.</a></p>
--	---

**TABLE 1 : USEFUL INFORMATION TO CONSIDER IN PROJECT BACKGROUND AND JUSTIFICATION**

- project objectives
- problems, needs and market opportunities in the field of activity
- interests and main concerns of the different stakeholders, taking into account the particular characteristics of Aboriginal communities where applicable
- principal environmental constraints
- technical and economic requirements regarding the realization and operation of the project, particularly in terms of magnitude and schedule
- government policies in the field of activity in relation to land use planning, environment, resource management, energy, and public safety
- negotiations and agreements with Aboriginal communities

<p><b>1.3 Alternatives to the Project</b></p>	<p>Refer to provincial guidelines.</p>
<p>The impact statement summarizes all alternatives, including shelving or postponing the project, and, if necessary, mentions any solutions that may have been proposed during preliminary hearings conducted by the proponent.</p> <p>The study justifies the choice of the solution retained while taking into account the target objectives along with the environmental, social, economic and technical issues. This justification must also take into account the current and proposed use of the territory. It also presents the arguments and criteria guiding the final choice.</p>	
<p><b>1.4 Related Projects and Facilities</b></p>	<p>Refer to provincial guidelines.</p>
<p>The impact statement mentions any existing facility or project in the planning stage or being implemented that might affect the proposed project or its potential impacts. This information must describe the potential interactions with the proposed project. In this instance, the cogeneration plant and gas pipeline currently being considered in a range of corridors, for example, are considered to be ancillary projects.</p>	
<p><b>2. DESCRIPTION OF HOST ENVIRONMENT</b></p>	<p>Refer to provincial guidelines.</p>
<p>This section of the environmental impact statement determines the study area and describes the components of the biophysical and human environment relevant to the project.</p>	

<p><b>2.1 Identification of Study Area</b></p> <p>The environmental impact statement determines a study area and justifies its boundaries. If necessary, the area can be made up of different sections delineated according to the impacts studied. The study area must be large enough to include all of the activities envisaged, as well as any activities required to complete the project (including the sector affected by the dispersion of sediments in water due to shoreline excavation or dredging, or by borrow pits required for backfilling) and to cover direct and indirect impacts on the biophysical and human environment.</p>	<p>The proponent must define the area of influence of the project. The project's time boundaries must cover all project phases, i.e. construction, operation, maintenance and foreseeable modifications, decommissioning of temporary works and, where relevant, the wind-up and rehabilitation of the sites affected by the project.</p>
<p><b>2.2 Description of Relevant Aspects</b></p> <p>The environmental impact statement describes the state of the environment prior to project implementation. Through the use of qualitative and quantitative surveys, it provides as accurate a description as possible of bio-physical and social environment aspects liable to be affected by the project. If the data available through governmental, municipal, Aboriginal or other sources should prove insufficient or non-representative, the proponent must conduct its own generally accepted practices surveys to complete this description.</p> <p>Whenever possible, the description must specify the relationships and interactions between the various aspects of the environment in order to identify high potential ecosystems or ecosystems of particular interest. It should indicate the presence and abundance of wildlife species on the basis of their life cycle, migration pattern, feeding habits. Surveys should reflect the social, cultural and economic values linked to the different components.</p>	<p>Proponents shall, without limiting themselves thereto, use the following list to describe the main components of the environment :</p> <p>Biophysical environment</p> <ol style="list-style-type: none"> <li>1. description of substrate (clay, silt, sand, gravel, cobble, rock, etc.) in the part of the St. Lawrence estuary that will be affected by the marine terminal;</li> <li>2. water levels attained at high tide (HW), higher high water large tide (HHWLT), low tide (LW), and at lower low water large tide (LLWLT);</li> <li>3. physical and chemical characterization of contaminants found in the deposits that will be resuspended or that are at risk of being resuspended;</li> <li>4. mapped delineation of water levels at different recurrences;</li> <li>5. seismology;</li> <li>6. ice conditions, including shore ice, ice cover, ice movement and bed scour ;</li> <li>7. climate change trends and how they affect the study area;</li> <li>8. underwater noise levels in the vicinity of the marine terminal;</li> </ol>

The environmental impact statement provides all information required to understand or interpret the data (methodology, inventory dates, location of sampling sites, etc.). When, during the course of the project, sediments must be dredged, dug up, deposited in open water, and used for filling and backfilling, the project proponent shall characterize said sediments along with the receiving soil in the area where they are deposited. The proponent shall have MDDEP approve its sediment or soil characterization program, including the sampling plan (location and depth of samples), the choice of parameters, and the sampling and analysis methods prior to the sampling.

Table 2 is a list of the principal components expected to be described in the environmental impact statement. It is focused on relevant aspects in terms of project issues and impacts, and contains only the data required to assess the impacts. Selection and description of the components must also reflect their social and environmental importance or value. Table 4 enumerates the criteria used to estimate the importance of a component. The statement specifies the reasons and criteria justifying the selection of the components to take into consideration.

**Biological Environment**

9. description and location of all wetlands in the study area, including type, functions and area of each wetland;
10. all marine mammal individuals or populations likely to be found in the St. Lawrence estuary with a special focus on resident species. In this last respect, the proponents shall, without limiting themselves thereto and depending on the circumstances :
  - provide the list of marine mammal species likely to use the project area and indicate the aquatic species at risk included on the federal list or under review by the Committee on the Status of Endangered Wildlife in Canada, along with their abundance ;
  - locate and describe the areas of use and concentration areas that may be considered essential (haulouts, feeding areas, calving area, seasonal movements, migration, socialization, etc.) ;
  - provide a summary of observations made on land and sea based on currently available information of individual or groups of marine mammals in the project area with emphasis on the last 10 years;

**TABLE 2 - MAIN ENVIRONMENTAL CONSIDERATIONS**

- the cadastral location (lot, range, township and municipality affected)
- the land's ownership status (public hydrological domain, municipal land, provincial or national parks, private properties, native reserves, etc.), including property and servitude rights extended and describing the procedure for acquiring them or reporting the progress of agreements to be reached where applicable. In the case of public land, localization must be aligned with the original survey and property rights confirmed by the land registry
- watercourses and lakes (quality and use)
- hydrogeological context (groundwater classification, physicochemical quality of groundwater, identification of aquifers, vulnerability of groundwater to pollution, direction of groundwater flow)
- rights of passage and servitudes
- high- and low-water marks, and average levels
- tides and their characteristics, including brackishness in marine estuaries
- ice conditions, including frazil, freeze-up, ice jams and break-up
- bathymetry and hydrodynamic conditions (surficial and deep currents)

11. all freshwater, saltwater or diadromous fish species in the study area, including the characteristics of their habitats (e.g. spawning, fry-rearing, nursery, feeding and wintering areas, migratory routes) likely to be affected by the project. In this respect, the proponents, without limiting themselves thereto and depending on the circumstances, shall :
  - provide a list of fish species within the meaning of the Fisheries Act which are likely to use the environment affected by the project, indicating aquatic species at risk included on federal and provincial watch lists or under review by the Committee on the Status of Endangered Wildlife in Canada;
  - specify the site and surface areas of potential or confirmed fish habitats and describe, based on physical attributes (substrate, slope, flow, bathymetry, etc.) and on biological attributes (vegetation, benthos), the use of such areas by fish (spawning, fry rearing, growing, winter survival, feeding, migration);
  - locate and provide an accurate description of habitats conducive to federally listed species at risk that have been found or are likely to be found in the area under study;
  - describe the migration and local movement conditions and needs (upstream/downstream migration) of the various fish species present in the environment (migratory or non-migratory) for areas where some component of the project might constitute an obstacle to the free passage of fish;

- sediment regime (erosion zones, transport, zones of accumulation)), particularly in dredging and backfilling areas, and potential sediment-disposal areas in open water
- littoral and riparian areas, wetlands, and current or future flood plains
- unconsolidated deposits, lithology, slopes, excavation areas, areas susceptible to erosion and ground movements
- in cases of suspected chemical contamination:
  - physicochemical characterization of dredged sediments and their toxicity if applicable, through bioassays, for example
  - physicochemical characterization of soils in the excavation area, both on dry land or riparian, with a description of past uses, and of surface water and groundwater
- topography, drainage, geology and hydrogeology in the area of potential deposition of sediments or soils in dry-land areas (with the exception of sites already approved by MDDEP)
- local weather conditions (temperature, precipitation, wind)
- ambient air quality (current concentration of contaminants, detectable odours)
- the sound environment (at the boundaries of the site and in proximity of sensitive points)

- describe and map aquatic plant beds (immersed, submerged) and aquatic and riparian vegetation (arborescent, shrubby and herbaceous), including the floodplain, in the sectors affected by the project and indicating its functions with respect to the fish habitat (e.g. spawning bed, shelter, cover, thermal protection, etc.);
12. the bird species that are present in the study area or are likely to use it, including the characteristics of their habitats (e.g. nesting, feeding, migration) that could be affected by the project. In this respect, the proponents, without limiting themselves thereto and depending on the circumstances, shall :
- provide a list of bird species that are likely to use the environment targeted by the project and indicate species at risk appearing on federal and provincial lists;
  - specify the location and areas of bird habitats and describe, on a quantitative basis (e.g. number of nesting couples/ha), how they are used by birds (nesting, feeding, resting, migration);
  - accurately locate and describe the habitats well-suited for at-risk species that appear on the federal list and have been or are likely to be found in the study area;

**TABLE 2 - MAIN ENVIRONMENTAL CONSIDERATIONS (CONT'D)**

- aquatic, riparian and terrestrial flora, especially species designated or likely to be designated as threatened or vulnerable, as well as species of economic or cultural interest
- wildlife species and their habitat (in terms of abundance, distribution and diversity), with particular attention to species designated or likely to be designated threatened or vulnerable, or species of social, economic or cultural interest
- if the project is to be implemented on public lands, current and planned uses of the area, with reference to the planning tools associated with the vocation of public lands and recreational development
- present and planned land uses, with reference to municipal and regional land use and development policies, diagrams and by-laws:
  - limits of urban development, settlements and housing, urban areas, planned residential development, subdivisions
  - commercial, industrial and other zones and development projects
  - agricultural areas, farming operations (buildings, crops, structures, etc.), agricultural drainage to control water table level, cadastral plan
  - forested areas, woodlot operations and maple production areas

- provide a list of bird species present in the study area that are of scientific, social, economic or cultural interest. Pay particular attention to species valued by Aboriginal communities;
13. wildlife and plant species of special interest (in terms of abundance, distribution and diversity) and their significant habitats, whether they are terrestrial or aquatic—paying special attention to species that are rare, vulnerable, threatened, or likely to be designated as threatened or vulnerable, and endangered species. More specifically, the proponents shall describe the use of the environment and habitats by the endangered species designated in the Schedule of the federal *Species at Risk Act* (SARA). The proponents shall provide a list of species at risk appearing on federal and provincial lists;
  14. mapping of all exceptional wildlife habitats requiring special protection, including the proposed boundaries for the St. Lawrence estuary marine protected area;

**Human Environment**

15. commercial and recreational navigation as well as harbour operations at the Gros-Cacouna port facilities under the jurisdiction of Transport Canada (e.g. transport and mooring activities in the area, support services for maritime traffic in the terminal sector and the approaches, frequently used shipping routes, transshipment of merchandise at Transport Canada's commercial dock, handling of merchandise on Transport Canada's inside and outside storage areas, ship manoeuvring within breakwaters);
16. commercial and recreational fishing (e.g. location of regional fisheries and seasonal variations in fishing);
17. nature activities, including bird watching, hiking and biking;

- protected and conservation areas or areas of recreational, aesthetic, historical, educational or spiritual value
- public service infrastructure (roads, railways, power lines, aqueducts, sewers, etc.), and community and institutional infrastructure (hospitals, schools, etc.)
- water supply systems, including private wells, municipal wells and other surface and groundwater collection systems, as well as their protective buffer zones
- boating in the study area (type, density, traffic, etc.)
- archaeological and cultural heritage: known archaeological sites, areas with archaeological potential, historic and built-up areas
- scenery, including a visual study if the scenic quality is exceptional and reflecting the value associated with tourism to the area (observability of the environment and appeal of the landscape) to observers
- social, economic, cultural and socio-sanitary profiles of the population concerned (demographic characteristics, composition of the social fabric, traditional way of life, local culture, health factors, etc.)
- the local and regional economy (agriculture, forestry, mining, industry, commerce, services, tourism, etc.)
- hunting, fishing, trapping (for commercial purposes or sport, or as a traditional activity for nutritional, ritual or social purposes)
- concerns, opinions and reactions of local communities, notably those directly affected

18. current use of land, wildlife and plant resources, both terrestrial and aquatic, including their use for traditional purposes by Aboriginal communities;
19. human health, including those factors such as noise environment, air quality, traditional food consumption, as well as social and cultural aspects.

<p><b>3. DESCRIPTION OF PROJECT AND DEVELOPMENT ALTERNATIVES</b></p> <p>This section of the environmental impact statement includes a description of possible project options and the determination, using discriminating criteria, of the most relevant option or options. The consideration of a number of options allows the proponent to review and improve certain aspects of the project. The statement then provides a description and a detailed impact analysis of the chosen option or options.</p>	<p>Refer to provincial guidelines.</p>
<p><b>3.1 Determination of Options</b></p>	<p>Proponents shall present alternatives for the following elements :</p> <ul style="list-style-type: none"> <li>▪ shipping routes used by the LNG tankers (choice of route used by the LNG tankers to reach the jetty and to moor) (refer to Section 3.2 of TERMPOL);</li> <li>▪ location of the jetty, the LNG terminal (land-based) and its components, layout of the LNG terminal (location of two storage tanks, plans for a third, etc.);</li> <li>▪ jetty design (refer to Section 3.10 of TERMPOL);</li> <li>▪ layout of temporary and permanent roads, power supply lines, location of worksites (water supply and sewer systems);</li> <li>▪ location of storage areas for hazardous materials;</li> <li>▪ dredging and disposal methods for dredged material, where applicable;</li> <li>▪ methods for blasting on land, in water or near water, where applicable.</li> </ul>

3.2 Selection of Relevant Alternatives	
<p>The proponent selects the most relevant options, focusing on the distinctive environmental, social, technical and economic aspects that are likely to influence the selection of the preferred options. The study outlines the advantages and disadvantages of the main technologies envisaged by the proponent, highlighting the most environmentally sound. This exercise may result in the selection of a single alternative. The environmental impact statement explains how the selected alternative differs from the other alternatives considered and why the latter were not retained for a detailed impact analysis.</p> <p>Selection of the most relevant options or, if applicable, the best option, is based on a clearly defined method that comprises, at the very least, the following criteria:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> the ability to meet demand (objectives, problems, needs, opportunities);</li> <li><input type="checkbox"/> technical and legal feasibility (accessibility, land tenure, zoning, availability of services, implementation schedule, work force availability, etc.);</li> <li><input type="checkbox"/> implementation at a cost that does not compromise the cost-effectiveness of the project;</li> <li><input type="checkbox"/> the ability to minimize negative impacts on the biophysical and human environment, and to maximize the positive effects.</li> </ul> <p>The impact study describes the criteria that were used to determine potential sites for the project. This description must be detailed enough to provide a clear understanding of the basic aspects for reliable comparison of their respective benefits from the environmental, social, technical, and economic viewpoints. It includes the following :</p>	<p>Selection of the alternative shall take into consideration federal legislative and regulatory constraints, including the <i>Migratory Birds Regulations</i> and the <i>Species at Risk Act</i>.</p> <p>In addition, the project shall be conducted in compliance with the Federal Policy on Wetland Conservation, as it is to be carried out on federal land.</p>

- physical and hydrogeological constraints;
  - possible technical and financial constraints;
  - extent of certain impacts entailed;
  - social and economic context.
- The proponent shall notably select alternatives according to the following environmental principles (in addition to the applicable regulations) :
- in order to minimize environmental impacts, backfilling or dredging in aquatic environments, whether for construction or maintenance can be authorized solely in cases of absolute necessity;
  - open-water backfilling will be approved only in cases of absolute necessity;
  - construction work must be conducted with the objective of no net loss of habitats in the biophysical ecosphere;
  - blasting in aquatic environments must be kept to a strict minimum;
  - contaminated sediments must be processed in accordance with the Critères intermédiaires pour l'évaluation de la qualité des sédiments du Saint-Laurent (interim criteria for assessing sediment quality in the Saint Lawrence;
  - contaminated soils and sediments in dry-land terrain must be processed in accordance with the Politique de réhabilitation des terrains contaminés (contaminated land rehabilitation policy);
  - sound reuse of dredged sediments must be considered in keeping with minimum-impact options among those deemed feasible, albeit in light of financial constraints;
  - the project must observe navigation safety standards and regulations during both construction and operational phases.

3.3 Description of the Option or Options Retained	
<p>The impact statement describes all known and anticipated characteristic of the chosen option or, if necessary, of every option retained for a detailed impact analysis. This description includes planned activities, developments and works, at all phases of the project, as well as any temporary, permanent and ancillary installations and infrastructure and their localization. The statement must list all technical characteristics of the project, of the transportation, receiving and storage of inputs, of industrial processes, waste management, and of the storage, transport and disposal of waste products and other refuse. Any activities likely to entail the emission of contaminant into the environment (including noise, odours and dust) shall be indicated, described and localized, along with the means and mechanisms provided to mitigate the problems. It also presents an estimate of the costs for each option and provides the schedule of the different implementation phases.</p> <p>Table 3 provides a sample list of the main elements that may be described in this section. It is by no means exhaustive, and the proponent must include all aspects deemed relevant to the project. The choice of elements will depend largely on the size and type of project concerned and the integration of each option into the host environment.</p> <p><b>TABLE 3 : PRINCIPAL PROJECT CHARACTERISTICS</b></p> <div style="border: 2px solid black; padding: 10px; margin-top: 10px;"> <ul style="list-style-type: none"> <li>- General layout of the project at an appropriate scale, including the location of tanks and other planned facilities and structures, including, if possible, the way such elements will blend with other structure already in place</li> </ul> </div>	<p>The proponents shall describe the following components, without limiting themselves thereto :</p> <ul style="list-style-type: none"> <li>▪ type, capacity and current and future features of the tankers that will transport the LNG, including air and water noise levels (frequencies and decibels) during different operational stages, along with LNG tanker speed in the estuary and when approaching the marine facilities;</li> <li>▪ delivery frequency, and the main navigational routes that will be used, including seasonal variations due to climate or other causes, and the mooring plan;</li> <li>▪ marine facilities, including the jetty, piers, boat slip and mooring areas, refuelling station, mooring dolphin, tugboat moorage areas, unloading arms, supervisory control systems for tanker movements and unloading, and all other relevant facilities, on the jetty and on land, and the air and water noise levels during the various stages of operation of the facilities;</li> <li>▪ dimensions, operating mechanisms, controls and couplings for transferring LNG from the tankers;</li> <li>▪ construction techniques or criteria used to determine the techniques proposed for all of the work carried out in the St. Lawrence River;</li> <li>▪ dredging work that will be required, with special attention to the distinction between dredging during construction and maintenance dredging, and specification of the location, surface area, volume and dredging and disposal methods, where applicable;</li> <li>▪ backfilling in water, with specification of the location, surface area and volume;</li> <li>▪ cryogenic equipment (pumps, pipes and installations for pressure control and metering);</li> </ul>

- For the construction phase**
- Development and construction activities and the scheduled operations, including the following :
    - demolition and disposal of concrete, scrap metal or other, including the safe processing of contaminated demolition material
    - removal of buildings and other structures or infrastructure
    - forest clearing
    - water crossings
    - blasting in either terrestrial or aquatic environments
    - dredging in aquatic environments and disposal of dredged material, including the dispersion plume created by the re-suspension of sediments at dredging sites and, as applicable, open-water disposal
    - drainage and runoff water (collecting, control, deviation, confinement)
    - backfilling in aquatic environment
    - fill and backfill (volume, origin, transport, storage and disposal)
    - materials used (characteristics, origin, transport, etc.)
    - atmospheric emissions (site-specific and diffuse)
    - solid residues (type, volume, sites and methods of disposal)
  - permanent installations associated with port activities per se :
    - ship launching and docking areas
    - handling equipment
    - receiving, handling and storage areas
    - tanks
    - temporary marine installations, as well as equipment used to perform the work
    - Facilities and related infrastructures: pipeline (various corridors considered), cogeneration plant, etc.

- the LNG terminal, including a description of the following elements :
  - storage tanks;
  - equipment and tubing (technical design) ;
  - LNG plant and storage capacity;
  - location, design, and control mechanisms of the LNG shutoff valves on the storage tanks as well as pumping, compression and vaporization facilities;
  - process flow chart and instrumentation diagram;
  - technical characteristics of the feedstock and product;
  - secondary containment systems;
  - maintenance, control and administration buildings;
  - metering station together with all related facilities, including gas fractioning installations;
  - gas vapour treatment systems;
  - combustible gas system;
- technical data on all pressure vessels and boilers;
- ventilation equipment for all of the project areas;
- LNG spill confinement measures in all of the project areas;
- all related works and activities including all temporary installations required for the construction of the above-mentioned facilities, in particular :
  - permanent and temporary access roads;
  - telecommunications networks;

**TABLE 3 : PRINCIPAL PROJECT CHARACTERISTICS (CONT'D)**

<ul style="list-style-type: none"> <li>- industrial installations</li> <li>- garages and warehouses</li> <li>- hangars for machinery, fuel and waste oil</li> <li>- offices and parking lots</li> <li>- water supply and sewers</li> <li>- boat and cradle storage area</li> </ul> <p><b>For the operations phase</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> transshipment, bulk and containers</li> <li><input type="checkbox"/> fuel pump stations</li> <li><input type="checkbox"/> processes and equipment, as well as diagrams and mass balances for each stage of the processes</li> <li><input type="checkbox"/> liquid, solid and gaseous waste</li> <li><input type="checkbox"/> wastewater treatment</li> <li><input type="checkbox"/> waste disposal areas</li> <li><input type="checkbox"/> maintenance dredging and sediment disposal</li> <li><input type="checkbox"/> maintenance of buildings, facilities and installations</li> <li><input type="checkbox"/> undertaking to provide decommissioning plans for installations a few years before activities are wound up</li> </ul> <p><b>Other information</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> timetable for each phase of the project</li> <li><input type="checkbox"/> duration of work (general dates and sequences)</li> <li><input type="checkbox"/> required manpower and daily work schedules for each phase of the project</li> <li><input type="checkbox"/> life cycle of the project and future development phases</li> <li><input type="checkbox"/> estimated costs of project and project options</li> </ul>
---

<ul style="list-style-type: none"> <li>o all temporary and permanent power supply lines;</li> <li>o required railway facilities, where applicable;</li> <li>o construction worksites, garages and storage areas;</li> <li>o handling and storage of petroleum products and hazardous materials;</li> <li>o handling, storage and use of explosives, where applicable, indicating the location and blasting plan (number of blasts required, type of explosives, blasting period, blasting number and frequency, etc.). Include air and water noise levels resulting from the use of explosives;</li> <li>o drinking water supply;</li> <li>o characteristics of the lighting systems that will be implemented and increase in light levels;</li> </ul> <p>■ <b>Other information</b></p> <ul style="list-style-type: none"> <li>o proponents should refer to the TERMPOL guide, including section 3.10;</li> <li>o scheduling changes that could affect the project;</li> <li>o detailed schedule of activities that could affect wildlife, wildlife habitats, protected areas and their respective uses;</li> <li>o foreseeable changes to the project;</li> <li>o timing for the decommissioning and wind-up of the project's various components.</li> </ul> <p>Proponents shall explain how their project design incorporates the objectives targeted by the St. Lawrence estuary marine protected area project.</p> <p>Proponents shall also explain how the infrastructure and operations will be adapted to take into account seasonal variations in climate and the presence of ice.</p>
---

<p><b>4. IMPACT ASSESSMENT FOR THE OPTIONS(S) SELECTED</b></p>	<p>In addition to the impact determination and assessment criteria presented in Table 4 of the Quebec guidelines, proponents shall consider the reversible or irreversible nature of the impacts.</p>
<p>This section of the impact statement is aimed at establishing and assessing the impacts of the option, or options, selected at every stage of the process, and on proposing various measures to mitigate negative impacts or offset inevitable residual impacts. Should more than one option be considered, a comparative assessment is conducted to eventually determine the ultimate compromise.</p>	

<p><b>4.1 Determination and Assessment of Impacts</b></p>	<p>The assessment of the project’s environmental impacts shall notably address the following elements, without limiting itself thereto :</p> <ol style="list-style-type: none"> <li>1. changes in the riverbed and shoreline of the St. Lawrence River in the study area;</li> <li>2. sedimentology of the site used to dispose of dredged sediment, in the event of a spill into the aquatic environment (forecasted stability of the deposit site in the short, medium and long terms, based on the granulometry and cohesiveness of the deposited sediment). If the site is dispersive, the proponents shall specify where the sediments will be transported after being deposited, in the short, medium and long terms;</li> <li>3. areas that have been temporarily or permanently encroached upon, drained or modified as a result of the project, with a description of these environments with respect to the various types of fish habitats (potential or confirmed);</li> <li>4. physical-chemical changes in the environment taking into account the effects of these changes on the fish species and their habitats</li> </ol>
<p>The proponent identifies the impacts of the retained option during the preparation, construction and operation stages, and assesses the significance of the impacts using appropriate methods and criteria. Positive, negative, direct and indirect impacts, as well as the cumulative, synergistic and irreversible effects of the project must be considered.</p> <p>Whereas project impacts are identified on the basis of anticipated occurrences, their assessment involves a value judgment. The assessment can be used not only to determine the thresholds or levels of acceptability, but also to establish impact mitigation criteria or monitoring and follow-up requirements.</p> <p>The significance of an impact depends primarily on the affected component, namely its intrinsic value to the ecosystem (uniqueness, ecological importance, rarity) and on its social, cultural, economic and aesthetic value for the population. Thus, the more valuable an ecosystem component is to the community, the more significant the impact on this component is likely to be considered. The concerns of the local population also influences impact assessment, especially when certain elements of the project pose a risk to</p>	

public health or safety or a threat to historical and archaeological sites. The significance of an impact also depends on the degree of change undergone by the environmental components affected. Thus, the greater the scope, frequency, duration or intensity of the impact, the more significant it will be. When relevant, the impact must be localized at the level of the study area, the region or the province (loss of biodiversity, for example).

The environmental impact statement describes the methodology used, as well as any associated uncertainties or biases. The methods and techniques used must be objective, concrete and reproducible. The reader must be able to easily follow the logic used by the proponent in identifying and evaluating the impacts. The environmental impact statement presents a mechanism for assessing the project activities and presence of structures against the components of the host environment. It may take the form of matrices, checklists or impact sheets.

The environmental impact statement clearly defines the criteria and terms used to determine the anticipated impacts and to classify them according to their significance. Criteria such as those presented in Table 4 may be helpful in identifying and assessing the impacts.

**TABLE 4 : IMPACT IDENTIFICATION AND ASSESSMENT CRITERIA**

<ul style="list-style-type: none"> <li><input type="checkbox"/> intensity or scope of the impact (degree of environmental disturbance, which depends on the sensitivity or vulnerability of the various ecosystem components)</li> <li><input type="checkbox"/> extent of the impact (spatial dimensions such as length or area)</li> <li><input type="checkbox"/> duration of the impact (length of time, irreversible nature)</li> <li><input type="checkbox"/> frequency of the impact (intermittency)</li> <li><input type="checkbox"/> probability of the impact occurring</li> <li><input type="checkbox"/> ripple effect (link between the affected component and other components)</li> </ul>
---

(turbidity, contaminants, etc.). Pay special attention to the effect that increased turbidity may have on herring;

5. modifications of hydrological and hydrometric conditions on fish habitat and the fish species' lifecycle activities (e.g. reproduction, fry-rearing, movements, etc.). Special attention should be paid to rainbow smelt, which is found in the study area;

6. geomorphological changes and their impact on hydrodynamic conditions and on fish habitats (e.g. modification of substrates, dynamic imbalance, silting of spawning beds, etc.);

7. modifications in migration conditions or local movements (upstream and downstream migration, and lateral movements) following the construction and operation of the works;

8. modification of species found and of ichthyological functions (spawning, fry-rearing and feeding grounds, migration corridor, etc.) at the dredging and disposal sites, during and after dredging work;

9. where applicable, the effects related to the use of explosives and demonstration of compliance with *Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters* (Wright and Hopky 1998) when using explosives. If this is not the case, a request for authorization under Section 32 of the *Fisheries Act* shall be submitted to Fisheries and Oceans Canada;

10. the project's contribution to atmospheric emissions, and particularly greenhouse gas emissions;

11. increase in light levels;

12. **potential effects on soil quality;**

13. the impact that the project and the operation of the terminal may have on marine mammal individuals or populations (while taking into account the objectives of the St. Lawrence estuary marine protected area project) by evaluating the following :

- risk of collision with tankers;
- disruption of activities (feeding, calving, movement, migration, etc.) and alteration of habitat;
- effect of noise on the behaviour and habits of marine mammals, as the latter are particularly sensitive to low

- sensitivity or vulnerability of the component
- uniqueness or rarity of the component
- sustainability of the component and ecosystems (durability)
- value attributed to the component by the population
- formal recognition of the component by an act, policy, regulation or official decision (park, ecological reserve, agricultural zone, threatened or vulnerable species, wildlife or plant habitat, known and classified archeological site, historical sites and districts, etc.)
- risks to the health, safety or well-being of the population

Table 5 summarizes the impacts and aspects to which the proponent must pay close attention in the course of the impact study.

**TABLE 5 : MAIN IMPACTS OF THE PROJECT**

- the extent of dredging and backfilling
- alterations of hydrodynamic conditions (velocity and distribution of currents), of ice conditions and of the thermal regime
- shoreline and bank erosion
- effects of sediment transport
- effects on contamination of the immediate environment
- temporary drying out of some sections of bodies of water during different phases of the project
- effects on the quality of surface water and groundwater (notably with respect to drinking water)
- effects on vegetation, wildlife and its habitats, particularly with respect to endangered or vulnerable species or species likely to be so designated, and on species of heritage, sporting or commercial importance

- frequencies (including the future commissioning of larger tankers);
- effect of increased turbidity on the feeding activities of beluga whales;
  - effect of oil spills and spills involving other chemicals;
- modifications in the use of the environment and habitats by designated endangered species;
14. losses of fish habitat areas, including marine mammals (disruption, deterioration and destruction) along with related functions;
  15. losses of area, fragmentation and losses of wetland functions;
  16. losses of habitat (quality, area, function) for avian communities, with special attention to species at risk and species of particular social, economic and cultural interest;
  17. risk of causing significant effects on renewable resources and compromising the capacity of these resources to respond to present needs as well as those of future generations;
  18. effects on the current use of terrestrial and aquatic resources by Aboriginal communities for traditional purposes;
  19. effects on maritime traffic (commercial, fishing and recreational) and port activities at the Transport Canada harbour in the event of a delayed LNG tanker;
  20. potential effects of intensified shipping and port activities on regional shipping networks, recreational boating and fishing;
  21. effects on underwater noise level at different operating sites (including for the tanker during transit);
  22. effects on noise level at site boundaries and sensitive sites (e.g. residential sectors, schools, hospitals);
  23. effects on port activities at the Gros-Cacouna port facilities under the jurisdiction of Transport Canada, while taking into account the activities currently scheduled for the project (tanker arrival/departure, terminal operations, etc.), as well as those for the forecasted modifications (refer to the TERMPOL guide, including Section 3.2);
  24. effects on commercial and recreational navigation during construction and operation (manoeuvring area, assistance required

**TABLE 5 : MAIN IMPACTS OF THE PROJECT (CONT'D)**

- loss of biodiversity in the area
- impacts on current and anticipated use of land, resources, shorelines and bodies of water, notably on use of land for industrial, commercial, agricultural or forestry purposes, urbanization perimeters, recreational activities, tourism, fishing and boating
- impact of the work on area's natural and cultural heritage, including effects on archeologically significant property, and on heritage buildings, the surface area of properties, the dissolution of existing subdivisions, property parcelling and building expropriation, as the case may be
- impacts on the quality of scenery and points of visual interest
- impacts on the public utilities and community infrastructure like roads, railways, existing or anticipated power lines, water intakes, public security services, parks and other natural sites of special interest, etc.
- impacts on the operation and management of current maritime infrastructure
- social impacts of the project as a whole, i.e. its effects on the population itself and its composition, the quality of life, and community relations like changes in lifestyle, for example, or the relocation of people and activities, etc.
- impacts on the well-being and quality of life of the communities involved, such as nuisance effects of noise, odours or dust, or the inconvenience of traffic slowdowns and reduced river access, etc.
- potential impacts on public health (based on public health criteria and on baseline noise levels in the host environment), more specifically the risks associated with impacts on drinking water quality, water bodies used for recreational purposes and fishery resources, and on the health and safety risks associated with handling hazardous waste and the dust generated by product handling

from tugboats, additional navigational aids, etc.) (refer to the TERMPOL guide, including Section 3.2);

26. effects of the projects and of project components and activities (including blasting and the presence of structures) on migratory birds, especially on their life cycle, habitat, feeding and resting activities, nesting sites and nesting, breeding success and productivity of the environment, effects on uses and users of the resource;
27. effects of the projects and of project components and activities (including blasting and the presence of structures) on endangered species on federal land that may be directly or indirectly affected by the project by placing special attention to species targeted by the *Species at Risk Act*, particularly with respect to elements of their life cycle, survival or recovery of these species;
28. effects of the projects and of project activities on federal land intended for protection or conservation, particularly on the value of the land, land management, land use and the land's users.

**Effects of the environment on the project**

As part of their analysis, the proponents shall take into account the effects of the environment on the project, namely exceptional meteorological conditions (e.g. strong winds, tides and fog, lightning), stability of the riverbed, sediment dynamics, shore zone physical processes, and ice conditions. The proponents shall also provide an analysis of the risks related to seismic activity in the area surrounding the LNG terminal. The proponents shall demonstrate that this information was integrated in both project planning and emergency measures planning.

**Cumulative Effects**

The proponents shall identify and assess the cumulative effects on the environment that are likely to result from the project in combination with other existing works or with projects or activities that have been or will be carried out. Cumulative effects may result if :

- implementation of the project being studied causes direct residual negative effects, taking into account the application of technically and

□ the local and regional economic spinoffs associated with the project (construction and operation) and other economic impacts for the population (e.g. possibility of employment, development of ancillary services, land and property values), for business (e.g. products involved, potential savings, concurrent use of infrastructure), and for local government (tax base and regional income)

economically feasible mitigation measures, on the environmental components; and

- the same environmental components are affected by other past, present or future actions (projects or activities) likely to be carried out.

The environmental components that will not be affected by the project or will be affected positively by the project can, therefore, be omitted from the cumulative effects assessment.

Accordingly, the proponents shall :

- identify and justify the choice of the main valued environmental components (VEC) that will be included in the cumulative effects assessment (note: endangered species likely to be affected by the project are VECs);
- present a justification for the geographic and temporal boundaries of the cumulative effects assessment. These limits can vary from one environmental component to the next;
- describe and justify the choice of projects and activities selected for the cumulative effects assessment, including past activities and projects and those being carried out and any future project or activity likely to be carried out (i.e. already in the process of obtaining approval, pipeline);
- describe the mitigation measures that are technically and economically feasible, determine the significance of the cumulative effects and, where applicable, the compensation measures. In order to clearly define the predicted effects, they shall assess the significance of the long-term residual effects. In cases where measures exist that could be effectively applied to mitigate these effects, but that are beyond the scope of the proponents' responsibility, the proponents shall identify these effects and the parties that have the authority to act. In such cases, the proponents shall summarize the discussions that took place with the other parties in order to implement the necessary measures over the long term; and

	<ul style="list-style-type: none"> <li>consider the need for a follow-up program to verify the accuracy of the assessment or to dispel the uncertainty concerning certain cumulative effects.</li> </ul> <p>The proponents shall discuss with the responsible authorities the determination of the scope of the cumulative effects assessment, including the selection of the environmental components, the choice of future projects and the determination of the temporal and spatial boundaries since they are the ones responsible for rendering decisions on these aspects.</p>
<p><b>4.2 Mitigation of Impacts of the Options(s) chosen</b></p> <p>The purpose of impact mitigation is to ensure that the project is integrated into the host environment with as little impact as possible. The environmental impact statement identifies the measures, structures, corrective action or additions planned at the various stages of implementation to eliminate or reduce the adverse effects associated with each option. Particular attention must be paid to river crossings during construction. The statement includes an evaluation and cost estimate of the proposed mitigation measures.</p> <p>For instance, the following mitigation measures may be considered :</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> procedures and measures for protecting the soil, shorelines, surface waters, groundwater, air, plant life, wildlife, wildlife habitats, including temporary measures;</li> <li><input type="checkbox"/> techniques to minimize sediment suspension in water;</li> <li><input type="checkbox"/> landscape management and restoration of plant cover at altered sites ;</li> <li><input type="checkbox"/> visual integration of structures and infrastructure, notably tank fields and plants;</li> <li><input type="checkbox"/> acoustic integrity of installations and activities;</li> <li><input type="checkbox"/> work periods schedules to avoid disturbing sensitive areas or compromising fishing or recreational activities, etc.);</li> <li><input type="checkbox"/> choice of itineraries and work schedules established in order to avoid nuisances (noise, dust, rush hour, safety, etc.);</li> </ul>	<p>The proponents shall describe the practices, policies and commitments that constitute mitigation measures and that will be applied as part of standard practice, regardless of location. The proponents shall then describe their environmental protection plan and their environmental management system through which they will deliver this plan. The plan shall provide an overall perspective on how potentially adverse effects will be managed over time. The proponents shall discuss any requirements with contractors and sub-contractors to ensure that these parties comply with these commitments and policies plan. Le plan doit fournir une perspective générale sur la façon dont seront gérés, dans le temps, les effets potentiellement défavorables. Ils doivent discuter des exigences faites aux entrepreneurs et aux sous-contractants visant à s'assurer que ces derniers se conforment à leurs engagements et politiques.</p>

boating safety measures during construction and operation.

As the case may be, the study will have to outline the measures considered to emphasize or maximize positive impacts such as the hiring of local manpower, for example, or the award of certain contracts to local businesses.

**4.3 Selection of Best Option and Compensation for Residual Impacts**

When the impact analysis addresses more than one possible option, a comparative assessment of each option must be provided which will notably rate the various options by total residual impacts, i.e. those impacts that remain even after mitigation measures have been applied. This exercise shall more particularly take into account the related costs associated with each option and the possibility of compensation for residual impacts in the biological environment or for the residents and communities affected. Loss of aquatic or wetland habitat should be specifically compensated by the creation or improvement of equivalent habitats. The possibility of re-using temporary installations or equipment for public or community purposes should also be considered as compensatory measures.

For inevitable residual effects, the proponents may propose compensation measures for the biological environment, for the citizens and the communities affected. The loss of fish habitat shall be compensated by the creation or improvement of equivalent habitats. It is important to note that the term “compensation” does not refer to financial compensation, unless the adverse effect relates to an economic loss. With regard to expropriations that may prove necessary, the proponents shall explain how financial compensation will be negotiated and who will be responsible for this process. They shall also describe the recourse available to owners in the event of a disagreement.

The proponent finally selects the project alternative. Ideally, the alternative should be the option that is most acceptable from a social and environmental perspective and the one that best meets the target requirements and objectives without compromising the project’s technical and economic feasibility. **The statement presents the criteria and reasoning justifying the final choice.**

The impact statement shall include an evaluation of the significance of the residual effects, taking into account the application of mitigation measures—which are technically and economically feasible—in a manner that is rigorous and as objective as possible. The chosen method and the criteria used to determine the significance of the effects must be clearly described and explained. The analysis of the significance of the effects shall contain enough information for the authorities concerned and the public to understand and evaluate the proponents’ reasoning.

If significant adverse effects are identified, the proponents shall determine the degree of probability that they will occur. The proponents shall also address the degree of scientific uncertainty related to the data and methods used within the framework of their environmental analysis.

<p><b>4.4 Project Summary</b></p> <p>The proponent provides a summary of the project, indicating the important elements to be included in the plans and specifications. The summary describes the procedures for implementing the project and operating regime, focusing on the key impacts and mitigation measures. The summary also includes an overview of how the three objectives of sustainable development applicable to the project will be taken into account. These objectives are the preservation of environmental integrity, improvement of social equity and improvement of economic efficiency.</p>	<p>The proponents shall include a summary of the project's residual effects after implementation of the mitigation and compensation measures in order to determine the real consequences of the project, the degree of mitigation of the effects and which effects cannot be mitigated. A summary table outlining the effects on the various components of the environment, before mitigation, the mitigation and compensation measures applied and the residual effects shall be included.</p>
<p><b>5. RISK MANAGEMENT</b></p> <p>Industrial ports, tanks and gas pipelines projects can generate major technological accidents (whose consequences could go beyond the borders of the project). The impact statement thus requires an analysis of the technological risks of accidents for these projects.</p> <p>All projects require a description of the safety measures and preliminary emergency response plan for the construction and operation phases.</p>	<p>Refer to provincial guidelines.</p>
<p><b>5.1 Technological Risks</b></p> <p>Major technological risk assessments consist in determining the specific hazards involved (dangerous goods, system failure, breaks or leaks, etc.) and then developing accident scenarios. A report on accident history (five-year period) having occurred in the context of similar projects—or failing which, in projects making use of similar processes—will provide additional information for developing such scenarios. All activities connected to the project (handling,</p>	<p>The proponents shall address the following factors, without limiting themselves thereto :</p> <ol style="list-style-type: none"> <li>1. properties of liquefied natural gas (LNG) and its behaviour during an accidental spill, on land or at sea;</li> <li>2. the risks of an accident for all project phases and for future proposed improvements (increase in ship size, 3rd tank, etc.);</li> </ol>

operation, transport, etc.) must be included in the report.

If the proponent is able to demonstrate that there is no risk of a major technological accident, he only includes the information previously collected for the emergency response planning. To this end, he may use the “standard scenario” proposed by the MDDEP, or the “worst-case scenario” developed by the EPA.

If the proponent is unable to demonstrate that there is no possibility of a major technological accident, he carries on with risk analysis by thoroughly analyzing each hazard and disaster scenario in order to determine the associated impacts and risks.

Special attention must be paid to sensitive elements in the vicinity which may cause the consequences of the accident to become significant or worse (residential areas, hospitals, exceptional ecosystems, zoning, etc.).

The impact statement presents a discussion of the results of risk assessment. The purpose of this stage is to define the zones within which the safety of neighboring communities and the integrity of the natural and human environments could be affected, as well as the presence of the sensitive elements previously identified. This information will be retained for emergency planning purposes.

Where there are sensitive elements in the area likely to be affected, the likelihood of accidents must be evaluated in order to determine the risks associated with the project. These risks must be described in the impact statement, indicating their geographical location in relation to the project site. A discussion on the results of the risk assessment is presented.

Safety measures such as retention dykes or safe-distance limits having an effect on the potential consequences or risks entailed in accident scenarios must be included and discussed with any analysis of such scenarios.

A brief analysis of external events that may lead to a major technological accident on the project site must also be included in the impact statement. Both natural (e.g. floods, earthquakes) and human elements or events (e.g. nearby

3. modelling of the dispersion of gas vapours, including :

- a description of the gas vapour dispersion models used during spills on land or at sea, including any formulated hypotheses, accompanied by supporting documentation and the results of the modelling;
- an evaluation of the existing gas vapour dispersion models regarding LNG spills on land or at sea and a rationale for the choice of models to be used.

At the site of the terminal (terrestrial and marine), proponents shall assess the probability of accidents resulting from marine traffic or the environment (e.g. presence of ice, seasonal climatic variations and seisms). For the assessment of risks related to navigation, proponents shall refer to sections 3.8 and 3.15 of the TERMPOL guide.

For the purposes of the federal environmental assessment, the report and analysis of past accidents should cover at least the last ten years.

plant, train derailment, plane crash) are considered. This information is used to develop the emergency response plan.

Risk assessment is carried out using generally accepted practices. The proponent should explain the reasons for using specific data, formulas and calculations assumptions, indicating limitations and areas of uncertainty, and providing references. Risk analysis must take into account all applicable laws, regulations and codes of practice.

**5.2 Safety Measures**

The environmental impact statement describes safety measures for project on site and offsite, including marine safety. The following aspects are described :

- restricted access to sites;
- safety systems and prevention measures (marine safety, surveillance, emergency shutdown and fire control, automatic sprinklers, emergency power system, leakage detector, high level alarms, retention basin, safe distances, etc.);
- storage and stockpiling of products based on their associated risk.

The proponents shall provide the following information, without limiting themselves thereto :

- how the facilities’ design and management of their operation will minimize the risks of accidents and hazards;
- description and rationale of the location and area of restricted zones or buffer zones (on land and offshore);
- description of the safety measures that may affect federal protected areas or their management as well as lands reserved for that purpose;
- with respect to shipping and transshipping at the terminal, the proponents shall provide the information required by sections 3.15 and 3.8 in the TERMPOL guide.

**5.3 Emergency Response Measures**

The environmental impact statement presents a preliminary emergency plan for ensuring an effective response in the event of an accident. The plan sets out the principal response measures to be considered in case of incident/accident. It clearly describes the link with municipal authorities as well as the emergency notification mechanisms.

For accidents that could have consequences (real or anticipated) on surrounding communities, the proponent is responsible for ensuring that its emergency response plan is consistent with that of the municipality.

The proponents shall conform to the requirements of the *Environmental Emergency Regulations* of the *Canadian Environmental Protection Act*.

The proponents shall provide the information described in Section 3.18 of the TERMPOL guide.

The proponents shall indicate how their emergency measures plan will fit in with that of the Gros-Cacouna port for construction, maintenance and future proposed modifications.

Generally speaking, an emergency response plan includes the following elements :

- description of the accident scenarios retained for planning purposes as defined in the accident risk assessment: consequences (quantity or concentration of released contaminants, thermal radiation, overpressure), probability of occurrence, areas affected, etc.;
- possible and probable scenarios;
- relevant information in the event of an emergency (individuals in charge, available equipment, site plans and maps indicating the structures, assembly areas, safety equipment, etc.);
- emergency response structure and internal decision-making mechanisms;
- means of communicating with outside public security organization;
- emergency response measures for spills, fires, accidental releases to the atmosphere, leaks in containment structures, explosions, etc.;
- planned response to emergency warnings (whether operations will be shut down, in-house transmission of warning, emergency calls, evacuation plan, etc.);
- measures to be considered to protect communities that could be affected;
- planned measures for effectively alerting communities that could be affected, in co-operation with the appropriate municipal and government organizations (alerting public authorities and subsequent information about the situation);
- safety measures in place on accident site;
- emergency response updating and re-evaluation program.

The environmental impact statement also includes a temporary emergency response plan for the construction phase. It sets out the risks to the safety of individuals and property, describes the measures planned to protect the public and the host environment in the event of an accident (oil spill, explosion, etc.) and provides the co-ordinates of those responsible on site.

<p>The proponent is encouraged to consult Canadian Standards Association standard CAN/CSA-Z731-95 for emergency response planning. A final emergency measures plan will have to be completed by the proponent before the project is commissioned.</p>	
<p style="text-align: center;"><b>6. ENVIRONMENTAL MONITORING PROGRAM</b></p> <p>The proponent must develop an environmental monitoring program, which aims to ensure compliance with :</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> the measures identified in the impact statement, including mitigation and compensation measures;</li> <li><input type="checkbox"/> the conditions set out in the Order-in-council;</li> <li><input type="checkbox"/> the proponent’s commitments as stipulated in ministerial authorizations;</li> <li><input type="checkbox"/> the relevant acts and regulations requirements.</li> </ul> <p>Environmental monitoring is carried out throughout the construction, operation, closing down or dismantling of the facilities. It can serve as a basis for reorienting works and improving construction activities.</p> <p>The proponent must submit an environmental monitoring program with the environmental impact statement. The program describes mechanisms put in place to ensure that legal and environmental requirements are met. It helps to ensure the proper operation of works, equipment and installations and to monitor any environmental disturbance caused by the construction, operation, closing down or dismantling of the facilities.</p> <p>The monitoring program must indicate :</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> a list of aspects requiring environmental monitoring;</li> <li><input type="checkbox"/> the intended measures to protect the environment;</li> </ul>	<p>If the project is likely to affect an endangered species covered by the <i>Species at Risk Act</i>, the proponents shall provide a detailed description of the elements of the program and measures that will be implemented to monitor the project’s impacts on the given species (see Section 79 of SARA).</p>

<ul style="list-style-type: none"> <li><input type="checkbox"/> the foreseeable monitoring program characteristics (location of the activities, protocols, a list of parameters, analysis methods, management schedule, human and financial resources allocated to the program);</li> <li><input type="checkbox"/> intervention mechanisms in case of non-observance of legal and environmental requirements or proponent’s commitments;</li> <li><input type="checkbox"/> proponent’s commitments in terms of filing monitoring reports (number, frequency, content).</li> </ul>	
<p><b>7. FOLLOW-UP PROGRAM</b></p>	
<p>Environmental follow-up is used by the proponent to verify, through on-site sampling, the accuracy of the assessment of certain impacts and the effectiveness of certain mitigation or compensation measures for which there is still some uncertainty.</p> <p>The knowledge acquired from previous follow-up programs may be used not only to improve predictions and assessment of the impacts of similar new projects, but also to develop mitigation measures and possibly to review standards, guidelines or policies regarding environmental protection.</p> <p>The proponent shall propose a preliminary environmental monitoring program in the impact statement. This preliminary program shall be completed, if applicable, once authorization for the project has been obtained. <b>The follow-up program must include the following elements :</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> the reasons for environmental follow-up, including a list of environmental aspects that should be included in the follow-up program;</li> <li><input type="checkbox"/> the objectives of the environmental follow-up program and the elements of the project to be included in the program (e.g. validation of impact assessment, assessment of the efficiency of mitigation measures regarding water, air, soil, etc.);</li> <li><input type="checkbox"/> the number of follow-up studies and their principal characteristics</li> </ul>	<p>Refer to provincial guidelines.</p>

<p><i>Quebec guidelines for the Cacouna Project – Implementation of an LNG terminal and related infrastructures</i></p>	<p><i>Draft Federal guidelines for the preparation of the environmental impact statement for the Cacouna Energy Project</i></p>
<p>(protocols and scientific methods considered, a list of parameters to be measured, implementation schedule);</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> details relating to the realization of the follow-up reports (number of reports, frequency, format);</li> <li><input type="checkbox"/> mechanisms of intervention in case of unforeseen deterioration of the environment;</li> <li><input type="checkbox"/> the proponent’s commitments for communicating the results of the follow-up programs to the communities concerned.</li> </ul> <p>A guide for the realization and implementation of the environmental follow-up program is available at the Direction des évaluations environnementales.</p>	
<p><b>PART II – FORMAT OF THE ENVIRONMENTAL IMPACT ASSESSMENT STATEMENT</b></p>	
<p>The second part of the guidelines addresses the format of the environmental impact statement. The environmental impact statement must meet the requirements of section III of the Regulation Respecting Environmental Impact Assessment and Review (RREIAR).</p>	<p>Refer to provincial guidelines.</p>
<p><b>1. METHODOLOGICAL CONSIDERATIONS</b></p>	
<p>The environmental impact statement must be clear and concise and should be limited to those elements that are required for a good understanding of the project and its impacts. Where possible, diagrams and/or maps, at appropriate scales, should be provided. The methods and criteria used must be presented and explained, indicating, where possible, their reliability, degree of accuracy and interpretation limitations. The proponent must include the elements necessary for an accurate evaluation of the quality of the environment (location of inventory and sampling stations, inventory dates, techniques, limitations). The sources of information must be provided as references. The name, profession and position of the individuals who contributed to the environmental impact statement must also be provided. However, other than the aforementioned collaborators, the proponent must comply with the</p>	<p>Refer to provincial guidelines.</p>

requirements of the Act respecting Access to documents held by public bodies and the Protection of personal information and of the Act respecting the protection of personal information in the private sector and must exclude such information in the impact statement.

As much as possible, information must be presented in a synthetic way in the form of a table and the data (quantitative as well as qualitative) submitted in the impact statement must be analyzed in relation to suitable documentation.

**In the interest of conciseness, information that may facilitate the reader's understanding or interpretation of the data, such as inventory techniques, should be provided in a separate section as not to bloat document.**

**2. CONFIDENTIALITY**

During the public participation phase of the environmental impact assessment and review process, the MDDEP forwards the environmental impact statement and all documents submitted by the proponent supporting its application for a certificate of authorization to the Bureau d'audiences publiques sur l'environnement (s.12 of RREIAR)

Furthermore, Section 31.8 of the Environment Quality Act stipulates that: "The Minister may withdraw from a public consultation any information or data concerning industrial processes and prolong, in the case of a given project, the minimum period of time provided for by regulation of the Government during which the Minister may be required to hold a public hearing."

Section 55 of the *Canadian Environmental Assessment Act* stipulates the need to establish the Canadian environmental assessment registry to facilitate the public's access to documents related to environmental assessments.

The information provided to a responsible authority may be excluded from the Canadian environmental assessment registry (accessible to the public) if the information meets the conditions for exclusion indicated in subsections 55.5 (1) and (2) of the *Canadian Environmental Assessment Act*.

- As a result, when the proponent transmits information concerning industrial processes that it considers to be confidential to the MDDEP, it must submit a request to the Minister to have it excluded from the public consultation. The proponent must support such a request by:
- demonstrating that the information or data concerns an industrial process;
  - demonstrating why the information is confidential and the prejudice that would be caused by its disclosure.

It is recommended that the proponent provide this information in a separate document and clearly identify that it is confidential.

Before the public consultation phase, the Minister will inform the proponent whether or not he will avail himself of the powers conferred by section 31.8 of the Act to exclude the information from the public consultations.

**3. REQUIREMENTS FOR THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT STATEMENT**

When the impact statement is presented to the Minister, the proponent must provide 30 copies of the complete file (article 5 of the *Règlement sur l'évaluation et l'examen des impacts sur l'environnement* (RÉEIE)), as well as two copies of the statement on an electronic medium in rtf format (Rich Text Format).

To facilitate the location of information and the analysis of the impact study, the information found in the soft copy must be divided into chapters or sections. Toward that end, the proponent is recommended to contact the project manager in charge of analyzing the document in order to define how the information should be presented on electronic media. The addenda produced subsequent to the MDDEP's questions and comments must also be provided in 30 copies and on electronic medium.

Since the environmental impact study must be made available to the public for consultation, the proponent must also provide a summary in layman's terms of the main points and conclusions of the study (section 4 of the CEAA), as well as any other document required to complete the file. The summary includes a general plan of the project and a diagram illustrating its impacts, mitigation measures and residual impacts. The summary must be provided in 30 copies, as well as two copies on an electronic medium in rtf format (Rich Text Format) before the environmental impact statement is released by the Minister of the Environment. It reflects the changes made to the environmental impact statement following questions and comments by the MDDEP on the admissibility of the environmental impact statement.

The proponents shall provide 10 copies of the complete environmental impact statement to the federal authorities, along with 10 copies on an electronic medium in an appropriate format. If addenda are produced in response to questions and comments from government agencies, they must also be provided in an equivalent number of copies.

Given that the copies of the impact statement and the summary on electronic format will be posted on the Bureau d'audiences publiques sur l'environnement Web site, the proponent must also provide a letter attesting the consistency between the paper and electronic copies of the documents. However, it is not required that maps, as well as such other documents that prove difficult to convert to electronic format, be included with the electronic copies of the impact statement and the summary.

To facilitate the identification of the documents submitted and their coding in the electronic database, the title page of the environmental impact statement must contain the following information:

- project name and site;
- title of the document, including the terms "Environmental impact statement" submitted to the Minister of the Environment;
- subtitle of the document (e.g. summary, main report, appendix, addendum);
- proponent's name;
- consultant's name, where applicable;
- date.

**4. OTHER DEPARTMENTAL REQUIREMENTS**

When applying for a certificate of authorization according to section 22 of the Environment Quality Act (R.S.Q., c. Q-2) following governmental authorization pursuant to section 31.5 of the Act, a proponent must provide certificates of regulatory compliance obtained from local municipalities according to section 8 of the Regulation respecting the application of the Environmental Quality Act (R.R.Q., c. Q-2, r. 1.001). He must pay special attention to the location of his project in relation to flood plains and the related regulation.

## Documents of Reference

---

Canadian Environmental Assessment Agency. 1999. Operational Policy Statement, Addressing Cumulative Environmental Effects under the *Canadian Environmental Assessment Act*, Internet : [www.acee-ceaa.gc.ca/013/0002/cea\\_ops\\_e.htm](http://www.acee-ceaa.gc.ca/013/0002/cea_ops_e.htm)

Environment Canada. 2004. Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada. Prepared by Pauline Lynch-Stewart for the Canadian Wildlife Service. Ottawa.

Environment Canada. 2002. Sediment Sampling Guide for Dredging and Marine Engineering Projects in the St. Lawrence River. Volume 1. Planning Guidelines; Volume 2. Field Operations Manual. Environment Canada, Environment Protection Branch, Quebec Region Technological and Industrial Sectors Section.

Environment Canada. 1998. Wetlands Environmental Assessment Guideline. By Robert Milko, Biodiversity Protection Branch, Canadian Wildlife Service.  
Internet : [www.cws-scf.ec.gc.ca/publications/eval/wetl/index\\_e.cfm](http://www.cws-scf.ec.gc.ca/publications/eval/wetl/index_e.cfm)

Environment Canada. 1998. Migratory Birds Environmental Assessment Guidelines. By Robert Milko, Biodiversity Protection Branch, Canadian Wildlife Service.  
Internet: [www.cws-scf.ec.gc.ca/publications/eval/mig/index\\_e.cfm](http://www.cws-scf.ec.gc.ca/publications/eval/mig/index_e.cfm)

Environment Canada. 1997. Guide for Impact Assessment on Birds. By Serge Lemieux, editor, Environmental Assessment Branch and Canadian Wildlife Service, Quebec Region.  
Internet : [www.qc.ec.gc.ca/faune/faune/pdf/guidebirds.pdf](http://www.qc.ec.gc.ca/faune/faune/pdf/guidebirds.pdf)

Environment Canada. 1991. Federal Policy on Wetland Conservation.

Fisheries and Oceans Canada. 2004. St.Lawrence Estuary Marine Protected Area Project.  
Internet : [www.qc.dfo-mpo.gc.ca/zpmestuaire/default\\_en.asp](http://www.qc.dfo-mpo.gc.ca/zpmestuaire/default_en.asp)

Fisheries and Oceans Canada. 1986. Policy for the Management of Fish Habitat. Internet: [www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/legislation-lois/policies/fhm-policy/index\\_e.asp](http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/legislation-lois/policies/fhm-policy/index_e.asp)

Health Canada. 2005. Canadian Handbook on Health Impact Assessment. Internet: [www.gc-sc.gc.ca/ewh-sempt/pubs/eval/handbook-guide/vol\\_1/index\\_e.html](http://www.gc-sc.gc.ca/ewh-sempt/pubs/eval/handbook-guide/vol_1/index_e.html)

Transports Canada. 2001. Termpol Review Process 2001. TP743E. Ottawa.  
Internet : [www.tc.gc.ca/MarineSafety/TP/Tp743/menu.htm](http://www.tc.gc.ca/MarineSafety/TP/Tp743/menu.htm)

Transports Canada, 2000, Marine Transport – Navigable Waters Protection Act.  
Internet : [www.tc.gc.ca/quebec/en/nwp/menu.htm](http://www.tc.gc.ca/quebec/en/nwp/menu.htm)

Wright, D.G. et G.E. Hopky. 1998. Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters. Can. Tech. Rep. Fish. Aquat. Sci. 2107.  
Internet: [www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/guidelines-conseils/guides/explosguide/pdf/explos\\_e.pdf](http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/guidelines-conseils/guides/explosguide/pdf/explos_e.pdf)