



Generic Guidelines for the Preparation of an Environmental Impact Statement

pursuant to the *Canadian Environmental
Assessment Act, 2012*

May 2016



Generic Guidelines for the Preparation of an Environmental Impact Statement

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DISCLAIMER

This document is not a legal authority, nor does it provide legal advice or direction; it provides information only, and must not be used as a substitute for the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) or its regulations. In the event of a discrepancy, CEAA 2012 and its regulations prevail. Portions of CEAA 2012 have been paraphrased in this document, but will not be relied upon for legal purposes.

Part 1 – Background

1. Introduction

The purpose of this document is to provide information to proponents on the requirements for the preparation of an environmental impact statement (EIS) for a designated project to be assessed pursuant to the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). This document specifies the nature, scope and extent of the information required. Part 1 of this document provides guidance and general instruction on the preparation of the EIS, and part 2 outlines the information that must be included in the EIS.

Section 5 of the CEAA 2012 requires an assessment of the proposed project's potential environmental effects:

5. (1) For the purposes of this Act, the environmental effects that are to be taken into account in relation to an act or thing, a physical activity, a designated project or a project are:
 - a) a change that may be caused to the following components of the environment that are within the legislative authority of Parliament:
 - i. fish and fish habitat as defined in subsection 2(1) of the *Fisheries Act*
 - ii. aquatic species as defined in subsection 2(1) of the *Species at Risk Act*
 - iii. migratory birds as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*
 - iv. any other component of the environment that is set out in Schedule 2
 - b) a change that may be caused to the environment that would occur
 - i. on federal lands
 - ii. in a province other than the one in which the act or thing is done or where the physical activity, the designated project or the project is being carried out
 - iii. outside Canada
 - c) with respect to Aboriginal peoples, an effect occurring in Canada of any change that may be caused to the environment on
 - i. health and socio-economic conditions
 - ii. physical and cultural heritage
 - iii. the current use of lands and resources for traditional purposes
 - iv. any structure, site or thing that is of historical, archaeological paleontological or architectural significance

5. (2) However, if the carrying out of the physical activity, the designated project or the project requires a federal authority to exercise a power or perform a duty or function conferred on it under any Act of Parliament other than this Act, the following environmental effects are also to be taken into account:
- a) a change, other than those referred to in paragraphs (1)(a) and (b), that may be caused to the environment and that is directly linked or necessarily incidental to a federal authority's exercise of a power or performance of a duty or function that would permit the carrying out, in whole or in part, of the physical activity, the designated project or the project
 - b) an effect, other than those referred to in paragraph (1)(c), of any change referred to in paragraph (a) on
 - i. health and socio-economic conditions
 - ii. physical and cultural heritage
 - iii. any structure, site or thing that is of historical, archaeological, paleontological or architectural significance

The Canadian Nuclear Safety Commission (CNSC) will use the proponent's EIS and other information received during the environmental assessment (EA) process to prepare an EA report that will inform the issuance of a decision statement by the Commission. Therefore, the EIS must include a full description of the changes the project will cause to the environment that may result in potential effects on areas of federal jurisdiction (i.e., section 5 of the CEAA 2012) – including changes that are directly linked or necessarily incidental to any federal decisions that would permit the project to be carried out. The EIS should also include a list of key mitigation measures that the proponent proposes to undertake in order to avoid or minimize any adverse environmental effects of the project. It is the proponent's responsibility to provide sufficient data and analysis on potential changes to the environment.

2. Guiding principles

2.1 Government of Canada interim measures

On January 27, 2016, the Minister of Environment and Climate Change Canada and the Minister of Natural Resources Canada announced an interim approach that includes principles and plans for major projects. These principles are the first part of a broader strategy to review and restore confidence in Canada's EA processes.

In particular, the Government of Canada has introduced the principle that direct and upstream greenhouse gas emissions linked to the projects under review will be assessed. The proponent is expected to take the necessary steps to provide sufficient information and evidence in accordance with this principle. For more information on assessing greenhouse gas emissions, refer to section 5.1 (part 2).

2.2 EA as a planning tool

An EA is a planning tool used to ensure that projects are considered in a careful and precautionary manner in order to avoid or mitigate possible environmental effects and to encourage decision makers to take actions that promote sustainable development.

2.3 Public participation

One of the purposes identified in the CEAA 2012 is to ensure opportunities for meaningful public participation during an EA. The CNSC ensures that the public is provided with opportunities to participate in the EA. Meaningful public participation is best achieved when all parties have a clear understanding of the proposed project as early as possible in the review process. The proponent is required to provide current information about the project to the public and especially to the communities likely to be most affected by the project.

2.4 Aboriginal engagement

A key objective of the CEAA 2012 is to promote communication and cooperation with Aboriginal peoples, which include First Nations, Inuit and Métis. The proponent is expected to engage with Aboriginal groups that may be affected by the project, as early as possible in the project planning process. The proponent will provide Aboriginal groups with opportunities to learn about the project and its potential effects, to communicate their concerns about the project's potential effects, and to discuss measures to mitigate those effects. The proponent is strongly encouraged to work with Aboriginal groups in establishing an engagement approach that is reasonable to both parties. The proponent will make reasonable efforts to consider traditional Aboriginal knowledge into the assessment of environmental impacts. For more information on considering Aboriginal traditional knowledge, refer to section 3.3.2 (part 1).

Information gathered through the EA process and associated engagement by the proponent with Aboriginal groups will be used to inform decisions under the CEAA 2012. In providing information to the CNSC, the proponent will ensure any confidential information shared with them by Aboriginal groups is treated in the appropriate manner. This information will also contribute to the Crown's understanding of any potential adverse impacts of the project on potential or established Aboriginal or Treaty rights and the effectiveness of measures proposed to avoid or minimize those impacts, and will assist the Crown in meeting its duty to consult obligations.

The proponent is encouraged to consult the following resources:

- [REGDOC-3.2.2, *Aboriginal Engagement*](#) (CNSC)
- [Aboriginal and Treaty Rights Information System](#) (Indigenous and Northern Affairs Canada)

2.5 Application of the precautionary approach

In documenting the analyses included in the EIS, the proponent will demonstrate that all aspects of the project have been examined and planned in a careful and precautionary manner in order to avoid significant adverse environmental effects.

The Canadian Privy Council Office's *A Framework for the Application of Precaution in Science-based Decision Making About Risk* (refer to bibliography) sets out guiding principles for the application of precaution to science-based decision making.

3. Preparation and presentation of the EIS

3.1 Guidance

The proponent is encouraged to consult the CNSC's [REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures*](#) for additional guidance on the preparation of the EIS. The proponent may also consider consulting the relevant EA policy and guidance documents provided on the [Canadian Environmental Assessment Agency website](#).

The proponent is further encouraged to consult with the CNSC and, if applicable, other federal authorities, during the planning and development of the EIS and supporting documentation.

3.2 Study strategy and methodology

The proponent is expected to respect the intent of these guidelines and to consider the effects that are likely to arise from the project (including situations not explicitly identified in these guidelines), the technically and economically feasible mitigation measures that will be applied, and the significance of any residual effects. Except where specified by the CNSC, the proponent has the discretion to select the most appropriate methods to compile and present data, information and analysis in the EIS as long as the methods are transparent, justifiable and replicable.

These guidelines may include matters that the proponent does not deem relevant or significant to the project. If such matters are omitted from the EIS, the proponent will clearly indicate it and provide a justification so that the CNSC, federal authorities, Aboriginal groups, the public and any other interested party will have an opportunity to comment on this decision. Where the CNSC disagrees with the proponent's decision, it will require the proponent to provide the specified information.

The proponent must explain and justify methods used to predict impacts of the project on each valued component (VC) (see section 5.2.1 in part 2 of this document for the definition of valued component). VCs include biophysical and socioeconomic components, the interactions among them, and their relationships within the environment. The information presented must be substantiated; in particular, the proponent must describe how the VCs were identified and what methods were used to predict and assess the project's potential adverse environmental effects on these components. The value of a component not only relates to its role in the ecosystem, but also to the value that humans

place on it. The culture and way of life of the people using the area affected by the project may be considered VCs themselves. The EIS will also explain and justify methods used to identify mitigation measures and follow-up program elements.

The EIS will document how scientific, engineering, traditional and local knowledge were used to reach conclusions. Assumptions will be clearly identified and justified. All data, models and studies will be documented such that the analyses are transparent and reproducible. All data collection methods will be specified. The uncertainty, reliability and sensitivity of models used to reach conclusions must be indicated. The sections in the EIS regarding the existing environment and the potential adverse environmental effects predictions and assessment must be prepared, using best available information and methods, to the highest standards in the relevant subject area. All conclusions must be substantiated.

The EIS will identify all significant gaps in knowledge and understanding related to key conclusions, and the steps to be taken by the proponent to address these gaps. Where the conclusions drawn from scientific, engineering and technical knowledge are inconsistent with the conclusions drawn from traditional and local knowledge, the EIS will contain a balanced presentation of the issues and a statement of the proponent's conclusions.

3.3 Use of information

3.3.1 Federal coordination of information or knowledge

Section 20 of the CEEA 2012 requires that every federal authority with specialist or expert information, or knowledge with respect to a project subject to an EA, make that information or knowledge available to the CNSC. The CNSC will coordinate the involvement, and notify the proponent, of federal departments and other jurisdictions with expert and specialist knowledge specific to the EA.

3.3.2 Community knowledge and Aboriginal traditional knowledge

Subsection 19(3) of the CEEA 2012 states that “the environmental assessment of a designated project may take into account community knowledge and Aboriginal traditional knowledge”.

The proponent will consider community and Aboriginal traditional knowledge to which it has access or that is acquired through Aboriginal and public engagement activities, in keeping with appropriate ethical standards and obligations of confidentiality. Agreement should be obtained from Aboriginal groups regarding the use, management and protection of their existing traditional knowledge information during and after the EA.

Where community and Aboriginal traditional knowledge has been considered by the proponent, the EIS will document the following:

- the traditional knowledge information gathered

- how the traditional knowledge information was gathered (e.g., interviews with key community leaders and elders, collaborative field research, Aboriginal traditional knowledge studies, etc.)
- the source of the traditional knowledge information
- how the traditional knowledge information gathered was taken into consideration by the proponent in the assessment, including both methodology (e.g., identifying VCs, establishing spatial and temporal boundaries, defining significance criteria) and analysis (e.g., baseline characterization, effects prediction, development of mitigation measures).

3.3.3 Existing information

In preparing the EIS, the proponent is encouraged to make use of existing information relevant to the project. When relying on existing information to meet requirements of the EIS guidelines, the proponent will either include the information directly in the EIS or clearly direct the reader to where it may obtain the information (i.e., through cross-referencing). When relying on existing information, the proponent will also comment on how the data were applied to the project, separate factual lines of evidence from inference, and state any limitations on the inferences or conclusions that can be drawn from the existing information.

3.3.4 Confidential information

In implementing the CEAA 2012, the CNSC is committed to promoting public participation in the EA of projects and providing access to the information on which EAs are based. All documents prepared or submitted by the proponent or any other stakeholder in relation to the EA are posted or referenced on the Canadian Environmental Assessment Registry and/or the CNSC's website and made available to the public upon request. For this reason, the EIS should not contain information that:

- is sensitive or confidential (i.e., financial, commercial, scientific, technical, personal, cultural or other nature) in accordance with the *Privacy Act* and the *Access to Information Act*, that is treated consistently as confidential, and the person affected has not consented to the disclosure
- may cause harm to a person or harm to the environment through its disclosure

If the EIS contains information that should be treated as “confidential” or “protected” in accordance with the *Privacy Act* and the *Access to Information Act*, the proponent should identify and request to the CNSC that such information be treated accordingly.

Part 2 – EIS Content and Structure

Part 2 of this document provides specific instructions for the content of each section in the EIS. The EIS as a whole must reflect the guiding principles in part 1 of this document.

1. Presentation and Organization of the EIS

To facilitate the identification of the documents submitted, the title page of the EIS and its related documents will contain the following information:

- project name and location
- title of the document, including the term “environmental impact statement”
- subtitle of the document
- proponent name and contact information
- date

The EIS will be written in clear, precise language. A glossary of technical words, acronyms and abbreviations will be included. It will include charts, diagrams, tables, maps and photographs, where appropriate, to clarify the text. Perspective drawings that clearly convey the various components of the project will also be provided. Wherever possible, maps will be presented in common scales and datum to allow for comparison and overlay of mapped features.

For purposes of brevity and to avoid repetition, cross-referencing within the EIS is preferred. The EIS may make reference to the information that has already been presented in other sections of the document, rather than repeating it.

Detailed studies (including all relevant and supporting data and methodologies) will be provided in separate appendices and will be referenced by appendix, section and page in the text of the main document. The EIS will explain how information is organized in the document. This will include a list of all tables, figures, and photographs referenced in the text. A complete list of supporting literature and references will also be provided. A table of concordance, which cross references the information presented in the EIS with the information requirements identified in the EIS guidelines, will be provided. The proponent will provide copies of the EIS and its summary for distribution, as directed by the CNSC, including paper and electronic version in an unlocked, searchable PDF format.

2. Executive Summary

For efficiency, the proponent may consider preparing a summary of the EIS in both of Canada’s official languages (French and English), which is to be provided to the CNSC at the same time as the EIS. The proponent is also encouraged to consider making the executive summary available in the language(s) spoken by Aboriginal communities in close proximity to the project (e.g., Cree, Dene).

The summary will include the following:

- a concise description of all key components of the project and related activities
- a summary of the consultation conducted with Aboriginal groups, the public, and government agencies, including a summary of the issues raised and the proponent's responses
- an overview of the key environmental effects of the project and proposed technically and economically feasible mitigation measures
- the proponent's conclusions on the residual environmental effects of the project after taking mitigation measures into account and the significance of those effects

The summary will be provided as a separate document and will have sufficient details for the reader to learn and understand the project, potential environmental effects, mitigation measures, the significance of the residual effects and follow-up program.

3. Introduction and overview

3.1 Project overview

The EIS will describe the project, key project components and associated activities, scheduling details, the timing of each phase of the project and other key features. If the project is a part of a larger sequence of projects, the EIS will outline the larger context.

The overview is to identify the project's key components, rather than providing a detailed description, which will follow in section 4 (part 2) of this document.

3.2 Project location

The EIS will contain a description of the geographical setting where the project will take place. This description should include those aspects of the project and its setting that are key to understanding the project's potential adverse environmental effects, including:

- geographical maps of the project location (at an appropriate scale) including project components, project boundaries of the proposed site with the Universal Transverse Mercator (UTM) coordinates – the lease boundary, site study area, local study area, regional study area, the major existing infrastructure, adjacent land uses and any important environmental features
- current land use in the area
- distance of the project facilities and components to any federal lands
- the environmental significance and value of the geographical setting in which the project will take place and the surrounding area
- environmentally sensitive areas, such as national, provincial and regional parks, ecological reserves, wetlands, estuaries, and habitats of federally (Schedule 1 of *Species at Risk Act*) or provincially listed species at risk and other sensitive areas

- description of local and Aboriginal communities
- traditional Aboriginal territories, treaty lands, and Indian reserve lands and Métis harvesting regions and/or settlements

3.3 Regulatory framework and the role of government

The EIS should identify:

- the environmental and other regulatory approvals and legislation, including CEAA 2012, that are applicable to the project at the federal, provincial, regional and municipal levels
- government policies, resource management plans, planning or study initiatives pertinent to the project and/or EA and their implications
- any treaty or self-government agreements with Aboriginal groups that are pertinent to the project and/or EA
- any relevant land use plans, land zoning, or community plans
- regional, provincial and/or national objectives, standards or guidelines that have been used by the proponent to assist in the evaluation of any predicted environmental effects

4. Project description

4.1 Purpose of the project

The EIS will describe the purpose of the project by providing the rationale for the project, explaining the background, the problems or opportunities that the project is intended to satisfy and the stated objectives from the perspective of the proponent. If the objectives of the project are related to broader private or public sector policies, plans or programs, this information should also be included.

4.2 Alternative means of carrying out the project

The EIS will identify and consider the effects of alternative means of carrying out the project that are technically and economically feasible as described in appendix A, section A.3.2 Alternative means for carrying out the project, of the CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures*.

The proponent will complete the following procedural steps for addressing alternative means:

- Identify and describe in sufficient detail the alternative means to carry out the project:
 - develop criteria to determine the technical and economic feasibility of the alternative means
 - identify those alternative means that are technically and economically feasible
- Identify the effects of each technically and economically feasible alternative means:

- identify those elements of each alternative means that could produce effects in sufficient detail to allow a comparison with the effects of the project
- the effects referred to above include both environmental effects and potential adverse impacts on potential or established Aboriginal and Treaty rights and related interests
- Describe the methodology used for the analysis of alternative means and the conclusion reached (i.e., preferred means).

For further information regarding the “purpose of” and “alternative means”, please consult the Agency’s operational policy statement, titled *Addressing “Purpose of” and “Alternative Means”* under the *Canadian Environmental Assessment Act, 2012*”.

The CNSC recognizes that projects may be in the early planning stages when the EIS is being prepared. Proponents are strongly encouraged to conduct an environmental effects analysis where they have not made final decisions about the placement of project infrastructure, the technologies to be used, or if several options exist for various project components.

4.3 Scope of project

The scope of project for the purposes of the EA includes all the phases, components, activities and federal decisions proposed by the proponent as described in the project description that has been determined to meet the requirements of the [*Prescribed Information for the Description of a Designated Project Regulations*](#). The CNSC’s Commission may also determine that other components and/or activities in relation to the project are to be included in the project scope.

The proponent will consider all phases, components, activities and federal decisions identified in the scope of project as part of the effects assessment.

4.3.1 Project components

The EIS will describe the project by presenting the project components, associated and ancillary works, and other characteristics that will assist in understanding the environmental effects.

4.3.2 Project activities

The EIS will include descriptions of each phase associated with the proposed project.

This will include descriptions of the activities to be carried out during each phase, the location of each activity, expected outputs and an indication of the activity's magnitude and scale.

Although a complete list of project activities should be provided, the emphasis will be on activities with the greatest potential to have environmental effects. Sufficient information will be included to predict environmental effects and address concerns identified by the public and Aboriginal groups. Highlight activities that involve periods of increased environmental disturbance or the release of materials into the environment.

The EIS will include a summary of the changes that have been made to the project since originally proposed, including the benefits of these changes to the environment, Aboriginal peoples, and the public.

The EIS will include a schedule including time of year, frequency, and duration for all project activities.

5. Scope of the environmental assessment

5.1 Factors to be considered

Scoping establishes the EA's parameters and focuses the assessment on relevant issues and concerns. The EA of the designated project must take into account the following factors, as listed in subsection 19(1) of the CEAA 2012:

- a) the section 5 environmental effects of the designated project (such as changes to fish and fish habitat, aquatic species, migratory birds), including the environmental effects of malfunctions or accidents that may occur in connection with the designated project, and any cumulative environmental effects likely to result from the designated project in combination with other physical activities that have been or will be carried out
- b) the significance of those environmental effects
- c) comments from the public that are received in accordance with the CEAA 2012
- d) mitigation measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the designated project
- e) the requirements of the follow-up program in respect of the designated project
- f) the purpose of the designated project
- g) alternative means of carrying out the designated project that are technically and economically feasible and the environmental effects of any such alternative means
- h) any changes to the designated project that may be caused by the environment
- i) the results of any relevant study conducted by a committee established under section 73 or 74 of the CEAA 2012
- j) any other matter relevant to the EA that the CNSC requires to be taken into account, in accordance with the *Nuclear Safety and Control Act*

Pursuant to subsection 19(2) of the CEAA 2012, the scope of the factors to be taken into account under paragraphs 19(1)(a), (b), (d), (e), (g), (h) and (j) is determined by the CNSC, as the responsible authority.

To implement the Government of Canada interim measure with respect to upstream greenhouse gas emissions, the CNSC may require consideration of these types of emissions in the scope of the EA. On March 19, 2016, a definition of upstream GHG emissions was published by Environment Canada and Climate Change in the Canada Gazette. The proposed definition of upstream includes “*all industrial activities from the*

point of resource extraction to the project under review.” The processes that are to be considered as upstream activities will vary by the type of resource and the nature of the project under assessment. In general, upstream activities will include extraction, processing and handling as well as transportation.

Where there is a reliable and feasible methodology for calculating upstream greenhouse gas emissions that are linked to the project, the proponent will be required to provide sufficient information to estimate these types of emissions. This information should be presented by individual pollutant and should be summarized in CO₂ equivalent units per year. If upstream greenhouse gas emissions are not considered in the assessment, the proponent will provide a rationale in the EIS.

5.2 Scope of factors

5.2.1 Valued components to be examined

Valued components (VCs) refer to environmental biophysical or human features that may be impacted by a project. The value of a component not only relates to its role in the ecosystem, but also to the value people place on it. For example, it may have scientific, social, cultural, economic, historical, archaeological or aesthetic importance.

The EIS will identify the VCs linked to section 5 of the CEAA 2012, including the ones identified in section 9.2 (part 2) that may be affected by changes in the environment, as well as species at risk and their critical habitat as per the requirement outlined in section 79 of the *Species at Risk Act* (SARA).

Under section 73 of SARA, the Minister of Environment and Climate Change Canada may grant permits authorizing an activity affecting a listed wildlife species or any part of its residence or critical habitat that would otherwise be prohibited. Should the proponent identify a listed wildlife species or any part of its residence or critical habitat that would be affected by the project activities, the proponent should consult directly with the Canadian Wildlife Service as early as possible in the process.

The final list of VCs to be presented in the EIS will be completed according to the evolution and design of the project and reflect the knowledge on the environment acquired through public consultation and Aboriginal engagement. The EIS will describe what methods were used to predict and assess the potential adverse environmental effects of the project on these components.

The VCs will be described in sufficient detail to allow the reviewer to understand their importance and to assess the potential for environmental effects arising from the project activities. The EIS will provide a rationale for selecting specific VCs and for excluding any VCs or information specified in these guidelines. Challenges with particular exclusions may arise, so it is important to document the information and criteria used to make each determination. Examples of justification include primary data collection, computer modelling, literature references, public consultation, expert input or professional judgement. The EIS will identify those VCs, processes, and interactions that were identified to be of concern during any workshops or meetings held by the proponent, or that the proponent considers likely to be affected by the project. In doing so, the EIS will indicate to whom these concerns are important and the reasons why, including environmental, Aboriginal, social, economic, recreational, and aesthetic

considerations. If comments are received on a component that has not been included as a VC, these comments will be summarised and the rationale for excluding the VC will be provided.

5.2.2 Spatial and temporal boundaries

The spatial and temporal boundaries used in the EA may vary depending on the VC and will be considered separately for each VC. The proponent is encouraged to consult with the CNSC, federal and provincial government departments and agencies, local government and Aboriginal groups, and take into account public comments when defining the spatial boundaries used in the EIS.

The EIS will describe the spatial boundaries, including local and regional study areas, of each VC to be used in assessing the potential adverse environmental effects of the project and provide a rationale for each boundary. Spatial boundaries will be defined by taking into account, but not limited to, the following criteria:

- a) the physical extent of the proposed project, including any offsite facilities or activities
- b) the extent of aquatic and terrestrial ecosystems potentially affected by the project
- c) the extent of potential effects arising from noise, light and atmospheric emissions
- d) the extent to which traditional land use or treaty rights could potentially be affected by the project
- e) current land and resource use for residential, commercial, industrial, recreational, cultural and aesthetic purposes by communities whose areas include the physical extent of the project
- f) the size, nature and location of past, present and reasonably foreseeable projects and activities which could interact with items (b), (c), (d) and (e)
- g) community and Aboriginal traditional knowledge, ecological, and technical considerations

The following geographic study areas should serve as the basis for developing project specific and effect-specific study areas:

Site study area: The site study area is the project footprint (i.e., where project activities would be undertaken including the project's proposed facilities, buildings and infrastructure).

Local study area: The local study area is defined as that area existing outside the site study area boundary, where measurable changes to the environment resulting from the proposed activities from any phase of the project, either through normal activities, or from possible accidents or malfunctions, may be anticipated. The boundaries must change if appropriate following an assessment of the spatial extent of potential effects. The geographic boundary will depend on the factor being considered (e.g., a local study area defined for the aquatic environment will differ from that defined for the atmospheric environment).

Regional study area: The regional study area is defined as the area within which the potential effects of this project may interact with the effects of other projects, resulting in the potential for cumulative effects. The geographic boundary for the regional study areas are also specific to the factor being considered.

Within the aforementioned study areas, the boundary of concern will extend to a depth that will include the full extent of the surface water and groundwater.

The EA's temporal boundaries will span all phases of the project determined to be within the scope of the project as specified under section 4.3 above. If impacts are predicted after project decommissioning, this should be taken into consideration in defining boundaries. At a minimum, the assessment is expected to include the period of time during which the maximum impact is predicted to occur. Community and Aboriginal traditional knowledge should factor into decisions around temporal boundaries. If the temporal boundaries do not span all phases of the project, the EIS will identify the boundaries used and provide a rationale.

6. Public and stakeholder consultation

In accordance with CNSC's [REGDOC-99.3, *Public Information and Disclosure*](#), the EIS will describe the ongoing and proposed participation activities that the proponent will undertake or that it has already conducted on the project. It will describe efforts made to distribute project information, as well information and materials that were distributed during the public consultation process. The EIS will indicate the methods used, where the consultation was held, the persons and organizations consulted, the concerns voiced and the extent to which this information was incorporated in the design of the project as well as in the EIS. The EIS will provide a summary of key issues raised related to the Project and its potential environmental effects, as well as describe any outstanding issues and ways to address them.

7. Aboriginal engagement

In accordance with the CNSC's [REGDOC-3.2.2, *Aboriginal Engagement*](#), the EIS will describe the proponent's engagement activities with potentially affected Aboriginal groups.

The EIS will include, and the proponent should consider engaging with potentially affected Aboriginal groups to obtain their views on, the following:

- the objectives of and the methods used for Aboriginal engagement activities
- each Aboriginal group's potential or established rights including geographical extent, nature, frequency, timing and maps and data sets (e.g., fish catch numbers) when this information is provided by a group to the proponent or available through public records
- comments, specific issues and concerns raised by Aboriginal groups and how the key concerns were responded to or addressed
- the potential adverse impacts of the project on potential or established Aboriginal or treaty rights

- effects of changes to the environment on Aboriginal peoples (health and socio-economic conditions; physical and cultural heritage, including any structure, site or thing that is of historical, archaeological, paleontological or architectural significance; and current use of lands and resources for traditional purposes) pursuant to paragraph 5(1)(c) of the CEAA 2012
- VCs suggested by Aboriginal groups for inclusion in the EIS, whether they were included, and the rationale for any exclusions
- measures identified to mitigate or accommodate potential adverse impacts of the project on the potential or established Aboriginal or treaty rights and effects of changes to the environment on Aboriginal peoples, including suggestions raised by Aboriginal groups

A suggested format for providing the information above is the creation of a tracking table of key issues raised by each Aboriginal group, including the concerns raised related to the project, proposed mitigation options, and where appropriate, a reference to the proponent's analysis in the EIS.

8. Description of the environment

8.1 Baseline environment

The EIS will include a description of the environment, including the components of the existing environment and environmental processes, their interrelations and interactions as well as the variability in these components, processes and interactions over time scales appropriate to the EIS. In characterizing the environmental effects of the project, the proponent will consider the current baseline environment and environmental trends within the project area. The description of the existing baseline and the environmental trends should include a consideration of past projects and activities carried out by the proponent and/or others within the project area.

Based on the scope of project described in section 4.3 (part 2), the EIS will present baseline information in sufficient detail to enable the identification of how the project could affect the VCs and an analysis of those effects. Should other VCs be identified during the conduct of the EA, the baseline condition for these components will also be described in the EIS. The baseline description should include results from studies done prior to any physical disruption of the environment due to initial project activities (e.g., site preparation).

The proponent will use the information in appendix B of the CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures* to develop the characterization of the baseline environment.

If a federal decision (as per section 5(2) of the CEAA 2012) in relation to the project may result in environmental changes such as changes on federal lands, outside the province or Canada, the proponent will use the information in appendix A, section A.3.7, Socio-economic environment, of the CNSC's REGDOC-2.9.1, *Environmental*

Protection: Environmental Policy, Assessments and Protection Measures, to describe the baseline conditions in relation to these potential changes.

9. Effects assessment

9.1 Predicted changes to the physical environment

The assessment will include a consideration of the predicted changes to the environment as a result of the project being carried out or as a result of any powers, duties or functions that are to be exercised by the federal government in relation to the project. These predicted changes to the environment are to be considered in relation to each phase of the project (i.e., construction, operation, decommissioning) and are to be described in terms of the following:

- magnitude
- geographic extent
- timing
- frequency
- duration,
- reversibility

As changes to various parts of the physical environment may be inter-related as part of an ecosystem, the EIS will explain and describe the connections between the changes described.

The proponent will use the information in appendix C of the CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures*, to assess the environmental effects of the project.

9.2 Predicted effects on valued components

Based on the predicted changes to the environment identified in section 9.1 (part 2) above, the proponent is to assess the environmental effects of the project on the VCs identified as per section 5.2.1 (part 2).

Based on the changes to the environment that have been identified in section 9.1 (part 2), additional VCs are to be selected based on the following:

- If there is the potential for the project to result in environmental changes on federal lands, another province, or another country, then VCs of importance not already identified above are to be listed in this section.
- If federal decisions about the project will lead to an environmental change, then these environmental changes are to be considered stand-alone VCs.

All interconnections between VCs and between changes to multiple VCs will be described.

9.3 Accidents and malfunctions

The proponent will use the information in appendix A, section A.3.4, Malfunctions and accidents, of the CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures*, to assess the potential health and environmental effects from postulated accident and malfunction scenarios.

9.4 Cumulative effects

The proponent will use the information in appendix A, section A.3, Cumulative effects, of the CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures*, to assess the project's potential cumulative effects.

9.5 Socio-economic environment

The proponent will use the information in appendix A, section A.3.7, Socio-economic environment, of the CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures*, to assess the project's indirect socio-economic effects.

9.6 Effects of the environment on the project

The proponent will use the information in appendix A, section A.3.9, Assessment of effects of the environment on the project, of the CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures*, to assess the effects of the environment on the project (i.e., severe weather events).

10. Mitigation measures

Every EA conducted under the CEAA 2012 will consider measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project. Measures that are technically and economically feasible include application of best industry practices, pollution prevention principles such as best available technology and techniques economically achievable (BATEA), and radiation protection principles such as keeping radiation exposure and doses as low as reasonably achievable (ALARA). Under the CEAA 2012, mitigation includes measures to eliminate, reduce or control the adverse environmental effects of a project, as well as restitution for damages to the environment through replacement, restoration, compensation or other means.

Each measure will be specific, achievable, measurable and verifiable, and described in a manner that avoids ambiguity in intent, interpretation and implementation. Mitigation measures may be considered for inclusion as conditions in the EA decision statement and/or in other compliance and enforcement mechanisms provided by other authorities' permitting or licensing processes.

As a first step, the proponent is encouraged to use an approach based on the avoidance and reduction of the effect(s) at the source. Such an approach may include the modification of the design of the project or relocation of project components.

The EIS will describe the standard mitigation practices, policies and commitments that constitute technically and economically feasible mitigation measures and that will be applied as part of standard practice regardless of location (including the measures directed at mitigating adverse socio-economic effects). The EIS will then describe the project's environmental protection plan and its environmental management system, through which the proponent will deliver this plan. The plan will provide an overall perspective on how potentially adverse effects would be minimized and managed over time. The EIS will further discuss the mechanisms the proponent would use to require its contractors and sub-contractors to comply with these commitments and policies and with auditing and enforcement programs.

The EIS will then describe mitigation measures that are specific to each environmental effect identified. Measures will be written as specific commitments that clearly describe how the proponent intends to implement them and the environmental outcome the mitigation is designed to address. The EIS will describe mitigation measures in relation to species and/or critical habitat listed under the *Species at Risk Act* (SARA). These mitigation measures will be consistent with any SARA permit, applicable recovery strategy and/or action plan.

The EIS will specify the actions, works, minimal disturbance footprint techniques, best available technology, corrective measures or additions planned during the project's various phases to eliminate or reduce the significance of potential adverse effects. The impact statement will also present an assessment of the effectiveness of the proposed technically and economically feasible mitigation measures. The reason(s) for determining if the mitigation measure reduces the significance of a potential adverse effect will be made explicit. The proponent is also encouraged to identify mitigation measures for effects that are adverse although not significant.

The EIS will indicate what other technically and economically feasible mitigation measures were considered, and explain why they were rejected. Trade-offs between cost savings and effectiveness of the various forms of mitigation will be justified. The EIS will identify who is responsible for the implementation of these measures and the system of accountability.

For proposed mitigation measures for which there is little experience or that have questionable effectiveness, the potential environmental risks and effects – should those measures not be effective – will be clearly and concisely described. In addition, the EIS will identify the extent to which technological innovations will help mitigate environmental effects. Where possible, it will provide detailed information on the nature of these measures, their implementation and management and how these are integrated in the follow-up program.

11. Conclusion on significance

The proponent will use the guidance and information in appendix A, section A.3.6, Significance of residual effects, of the CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures*, for the preparation of this section of the EIS.

12. Follow-up program

The proponent will use the guidance and information in appendix A, section A.3.10 EA follow-up program, of CNSC's REGDOC-2.9.1, *Environmental Protection: Environmental Policy, Assessments and Protection Measures* for the preparation of this section of the EIS.

Where applicable, the proponent will describe how the follow-up program relates to the project's environmental protection plan and environmental management system as mentioned in section 10 above.

Environmental assessment effects predictions, assumptions and mitigation actions that are to be tested in the follow-up program must be converted into field-testable monitoring objectives. The monitoring design must include a statistical evaluation of the adequacy of existing baseline data to provide a benchmark for testing project effects, and the need for any additional pre-construction or pre-operational monitoring to establish a firmer project baseline.

The proponent will propose a schedule for the follow-up program. The schedule should indicate the timing, frequency and duration of effect monitoring. This schedule would be developed after statistical evaluation of the length of time needed to detect effects given estimated baseline variability, probable environmental effect size and desired level of statistical confidence in the results (type 1 and type 2 errors).

The description of the follow-up program will include any contingency procedures or plans or other adaptive management provisions as a means of addressing unforeseen effects, or for correcting exceedances, as required, so as to comply with benchmarks, regulatory standards or guidelines.

The follow-up program will describe roles and responsibilities for the program and its review process, by both peers and the public.

The EIS should provide discussion on the follow-up program's requirements, and include:

- objectives and structure of the follow-up program and the VCs targeted by the program
- tabular summary and explanatory text of the main components of the program including:
 - a description of each monitoring activity under that component
 - which of the two generic program objectives the activity is relevant to (e.g., verify EA predictions, determine effectiveness of mitigation measures)
 - the specific statement from the EA that goes along with that generic objective and will be the focus for that activity (e.g., program objective: verify predicted effects; environmental assessment effect: no potential adverse effects)
 - the specific monitoring objective for that activity
 - planned schedule

- roles and responsibilities to be played by the proponent, regulatory agencies, Aboriginal people, local and regional organizations and others in the design, implementation and evaluation of the program results
- possible involvement of independent researchers
- program funding sources
- information management and reporting (reporting frequency, methods and format)
- possible opportunities for the proponent to include the participation of the public and Aboriginal groups, during the development and implementation of the program

The follow-up program plan should be sufficiently described in the EIS to allow independent judgment as to the likelihood that it will deliver the type, quantity and quality of information required to reliably verify predicted effects (or absence of them) and confirm the effectiveness of mitigation measures.

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