

# Environmental Assessment Certificate Application

## LNG Canada Export Terminal

### Section 3 – Assessment Process

October 2014



**LNG CANADA**  
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## **3 ASSESSMENT PROCESS**

### **3.1 Regulatory Framework**

The Project qualifies as a reviewable project under BCEAA and a designated project under CEAA 2012. The Project requires an EA under both provincial and federal legislation.

#### **3.1.1 Overview of the Provincial Assessment and Substitution Process**

The EA process under BCEAA provides a mechanism for the assessment of potential adverse effects of proposed reviewable projects. Reviewable projects are those that are within a category of projects described in the Reviewable Projects Regulation (BC Reg. 270/2002) pursuant to section 5 of BCEAA.

Reviewable projects under BCEAA require an EAC to proceed. The application for an EAC identifies the potential environmental, economic, social, heritage, and health effects that may result from the project, assesses the implications of the effects, and identifies measures to avoid, reduce or otherwise manage those effects. The application must provide the information necessary for the provincial Minister to make a decision on the project.

The EA process is managed by the EAO and consists of three stages: pre-application, application review, and decision. At the pre-application stage, the proponent submits a Project Description to the EAO to determine if the project is reviewable under BCEAA. In the event that BCEAA is triggered, the EAO proceeds to issue a procedural order and establish a Working Group (or Working Groups) comprising representatives of provincial and federal government agencies, Aboriginal Groups and local government. The primary role of the Working Groups is to advise the EAO and the proponent on issues related to the project and the proposed scope and methods for the assessment throughout the assessment process, including the preparation of the AIR. Through Aboriginal Groups' participation in a Working Group, the EAO, as representatives of the Crown, consult with Aboriginal Groups with respect to specific aspects of the project that, if approved, have the potential to affect the exercise of Aboriginal Interests, as well as measures to mitigate potential adverse effects. The AIR specifies the issues that will be addressed and the methods that will be used in the assessment. The public has the opportunity to review and comment on the draft AIR during a public consultation period and open houses led by the EAO that occur concurrently. The proponent is required to respond to all comments from the Working Groups and the public on the draft AIR to the satisfaction of the EAO.

The application is prepared by the proponent in accordance with the requirements of the AIR. At the application review stage, the EAO screens the application to ensure that all required information is included and that consultation has been adequate. The Working Groups and public are provided with an opportunity to review and comment on the application. The EAO may seek the expertise of the Working

Group on specific issues and content of the application. The proponent is required to respond to all Working Group and public comments on the application to the satisfaction of the EAO.

The Assessment Report is prepared by the EAO to summarize the findings of the application, the extent to which issues have been resolved, and any outstanding issues. The Assessment Report includes a recommendation by the EAO on the project based on the Application. The Assessment Report is submitted to the provincial Minister of the Environment for a decision on the project.

Reviewable projects in BC may require a federal assessment in addition to a provincial assessment. The Regulations Designating Physical Activities (SOR/2012-147) under CEAA 2012 as amended in the Regulations Amending the Regulations Designating Physical Activities (2013) (federal regulations) identify projects and activities that may require an environmental assessment by the Canadian Environmental Assessment Agency (CEA Agency).

The EAO may request substitution of the CEAA 2012 process with the BCEAA process under Section 3 of the federal-provincial MOU on Substitution of Environmental Assessments (2013). Substitution is granted by the federal Minister of the Environment when the requirements of CEAA 2012 can be met within the provincial process. For a substituted EA, the federal Minister makes a decision about the project based on the Assessment Report prepared by the province.

### 3.1.2 Provincial Framework

This Project is a reviewable project pursuant to Part 4 Energy Projects and Part 8 Transportation Projects of the Reviewable Projects Regulations under BCEAA. The provincial thresholds are described in Table 3.1-1.

**Table 3.1-1: Provincial Thresholds for the LNG Canada Project**

BCEAA Section	Applicable Category/Criteria	Rationale
Part 4 (Energy Projects) of the Reviewable Projects Regulation pursuant to the BCEAA	<ul style="list-style-type: none"> <li>▪ A new natural gas processing facility has the design capacity to process natural gas at a rate of &gt;5.634 million m<sup>3</sup>/day.</li> <li>▪ A new energy storage facility with the capability to store an energy resource in a quantity that can yield by combustion &gt;3 PJ of energy.</li> </ul>	<ul style="list-style-type: none"> <li>▪ At full build-out, the Project will process approximately 119 million m<sup>3</sup>/day of natural gas and have a storage capacity of 450,000 m<sup>3</sup> (approximately 10.5 PJ of potential energy).</li> </ul>
Part 8 (Transportation Projects) of the Reviewable Projects Regulation pursuant to the BCEAA	<ul style="list-style-type: none"> <li>▪ Modification of an existing facility, other than a ferry terminal, if the modification results in dredging, filling or other direct physical disturbance of                             <ul style="list-style-type: none"> <li>• &gt; 1,000 m of linear shoreline, or</li> <li>• &gt; 2 hectares of foreshore or submerged land, or a combination of foreshore and submerged land, below the natural boundary of a marine coastline or marine estuary.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ The planned dredging for berthing areas at the existing marine facility will disturb more than 2 ha of seabed.</li> </ul>

The EAO issued an Order under section 10 of BCEAA (section 10 Order) for the Project on April 3, 2013 and a section 11 Order on June 6 2013. A section 13 Order to amend the section 11 Order was issued by the EAO on August 7, 2013.

The scope of the Project and the scope of the assessment under BCEAA are described in Parts A and B of the section 11 Order. The Project's potential effects that are addressed as part of an environmental assessment under BCEAA are environmental effects, economic effects, social effects, heritage effects, and health effects.

### 3.1.3 Federal Framework

The Project is a designated project pursuant to federal regulations under CEAA 2012. The Project meets the criteria listed under subsection 14(d) under the Schedule of Physical Activities included in the federal regulations, which states:

- 14(d) The construction, decommissioning and abandonment of a new facility for the liquefaction, storage or regasification of liquefied natural gas, with a liquefied natural gas processing capacity of more than 3,000 t/d or a liquefied natural gas storage capacity of more than 55,000 t.

At full build-out, the Project will produce approximately 26 mtpa of LNG and have a storage capacity of 450,000 m<sup>3</sup> (approximately 10.5 PJ of potential energy).

On May 21, 2013, the CEA Agency initiated the environmental assessment under CEAA 2012, after acceptance of a Project Description from LNG Canada on April 2, 2013. The EAO submitted a request to substitute the CEAA 2012 process with the BCEAA process under Section 3 of the federal-provincial MOU on Substitution of Environmental Assessments (2013). The federal Minister of the Environment granted substitution of this assessment to the EAO subject to the following conditions:

- The designated project to be assessed is the construction, operation and decommissioning of a natural gas liquefaction facility, marine terminal and any incidental physical activities, including marine shipping activities
- The substituted process will include a consideration of the factors set out in subsection 19(1) of CEAA 2012 and the EAO will ensure that any orders under sections 11, 13 and 14 or 15 of BCEAA require subsection 19(1) factors
- The public will be given an opportunity to participate in the EA and will have access to records in relation to the EA to enable their meaningful participation
- At the end of the EA, in the decision stage of the assessment process, the EAO will submit a report to the CEA Agency and the report will be made available to the public
- Expert federal authorities will be involved in the BCEAA assessment process

- The EAO will provide the Assessment Report to the CEA Agency within a timeframe that will enable the Minister to make decisions under subsection 52(1) of CEAA 2012 within the time limits set out in CEAA 2012
- The EAO will conduct procedural aspects of Aboriginal consultation in accordance with the process set out in the MOU on Substitution of Environmental Assessments (2013), and
- The EAO will administer the funding provided by the CEA Agency to Aboriginal Groups to support Aboriginal consultation during the substituted EA.

An overview of the approach to address CEAA 2012 requirements in the Application for this Project is shown in Table 3.1-2. The Application provides a detailed summary of how the requirements of section 5 and 19(1) of CEAA 2012 have been considered as part of the assessment for the purposes of substitution (see Section 24). CEAA 2012 requirements were integrated in the effects assessment of relevant VCs in Part B of the Application. Environmental effects with a potential to affect the health and socio-economic conditions, physical and cultural heritage, lands and resources use and heritage of Aboriginal Groups pursuant to section 5(1)(c) of CEAA 2012 are also addressed in Part C, Section 15 of the Application, which includes a consideration of cumulative effects, identified measures to avoid, mitigate or otherwise manage these potential effects, as well as reports on the views of Aboriginal Groups, if provided.

**Table 3.1-2: Summary of Approach to CEAA 2012 Requirements in the Application**

CEAA 2012 Effect or Factor	Assessment Approach in the Application
Section 5(1)(a): A change that may be caused to <ul style="list-style-type: none"> <li>▪ fish and fish habitat, as defined in section 2 of the <i>Fisheries Act</i> and fish habitat,</li> <li>▪ aquatic species, as defined in subsection 2(1) of the Species at Risk Act (SARA)</li> <li>▪ migratory birds, as defined in subsection 2(1) of the Migratory Birds Convention Act, 1994 (MBCA)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Effects on freshwater fish and fish habitat as defined in the <i>Fisheries Act</i> and freshwater aquatic species as defined under SARA are addressed in the freshwater and estuarine fish and fish habitat assessment (Section 5.7).</li> <li>▪ Effects on marine fish and fish habitat, as defined in the <i>Fisheries Act</i> and marine aquatic species as defined under SARA are addressed in the marine resources assessment (Section 5.8).</li> <li>▪ Effects on migratory birds as defined under the MBCA are addressed in the wildlife resources assessment (Section 5.6). Key species assessed include protected species of migratory bird families named in Article I of the MBCA as amended by the 1995 Protocol: western sandpiper, harlequin duck, black oystercatcher, marbled murrelet, common goldeneye, and glaucous-winged gull.</li> </ul>

CEAA 2012 Effect or Factor	Assessment Approach in the Application
<p>Section 5(1)(b): a change that may be caused to the environment that would occur on federal lands, in a province other than the one in which the act or thing is done or where the designated project is being carried out, or outside Canada.</p>	<ul style="list-style-type: none"> <li>▪ Apart from Project air emissions (including GHG emissions) that may disperse over or deposit on nearby federal lands, such as Indian Reserves, there will be no changes to the environment on federal lands. The Project is located on fee simple land owned by LNG Canada and RTA (leased to LNG Canada). Effects on air quality are addressed in the air quality assessment (Section 5.2). Effects of acidifying emissions (SO<sub>x</sub> and NO<sub>x</sub>) are addressed in the vegetation resources (Section 5.5), surface water quality (Section 5.9) and human health (Section 9.2) assessments.</li> <li>▪ There will be no changes to the environment in another province. The Project is located on the Pacific coast of BC on land located at the head of Kitimat Arm (see Section 2). An exception is GHG emissions, which become part of the atmosphere and thus are trans-boundary. GHG emissions are addressed in the GHG management assessment (Section 5.3).</li> <li>▪ There will be no changes to the environment outside Canada with the exception of GHG emissions, which become part of the atmosphere and thus are trans-boundary. The Project is located on the Pacific coast of BC on land located at the head of Kitimat Arm. While the shipping of LNG will be undertaken along and outside of Kitimat Arm, the scope of the Project does not continue past Triple Island on the west coast of BC.</li> </ul>
<p>Section 5(1)(c): With respect to Aboriginal peoples, any change occurring in Canada of any change that may be caused to the environment on:</p> <ul style="list-style-type: none"> <li>▪ health and socio-economic conditions</li> <li>▪ physical and cultural heritage</li> <li>▪ current use of lands and resources for traditional purposes</li> <li>▪ any structure, site or thing that is of historical, archaeological, paleontological or architectural significance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Section 5(1)(c) requirements are considered in the effects assessment in Part B of the Application, specifically under the social, economic, heritage and health pillars; and in Part C Aboriginal Groups Information Requirements of the Application (Section 15). The assessment in Part C includes consideration of cumulative effects; measures to avoid, mitigate or otherwise manage potential environmental effects on these factors; and views of Aboriginal Groups regarding these measures. Potential adverse effects on Aboriginal Interests are assessed in Section 14.</li> </ul>
<p>Section 5(2)(a): A change (other than covered under section 5(1)(a) or (1)(b) above) that is directly linked or necessarily incidental to a federal authority's exercise of power, that would permit the Project, or part of the Project, to proceed</p>	<ul style="list-style-type: none"> <li>▪ The following federal permits and approvals will be required as part of the Project:                         <ul style="list-style-type: none"> <li>• permit for disposal at sea under section 127(1) of the <i>Canadian Environmental Protection Act</i></li> <li>• approval under Section 5(1) of the <i>Navigation Protection Act</i> (2012) for alterations to a work located in navigable waters</li> <li>• authorization to carry out a proposed work, undertaking or activity causing serious harm to fish under Section 35(2)(b) of the <i>Fisheries Act</i>, and</li> <li>• export licence under section 117 of the <i>National Energy Board Act</i>, which was approved by Governor in Council on February 22, 2013.</li> </ul> </li> </ul>

CEAA 2012 Effect or Factor	Assessment Approach in the Application
<p>Section 5(2)(b): an effect, other than those referred to in paragraph (1)(c), of any change referred to in paragraph (a) on</p> <ul style="list-style-type: none"> <li>▪ health and socio-economic conditions</li> <li>▪ physical and cultural heritage</li> <li>▪ any structure, site or thing that is of historical, archaeological, paleontological or architectural significance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential change to fish and fish habitat, aquatic species and migratory birds that lead to an effect on health and socio-economic conditions as they pertain to the public (excluding Aboriginal Groups; Aboriginal Groups are considered under section 5(1)(c) above) and are summarized in Section 24 (Table 24-1) of the Application. Detailed discussion regarding potential effects to fishing (recreational and commercial) and dietary requirements are provided in Section 7.4 and Section 7.5</li> <li>▪ Changes to fish and fish habitat, aquatic species and migratory birds were not considered to lead to an effect on physical and cultural heritage as they pertain to the public. A discussion of how these changes may affect Aboriginal Groups is provided in Section 15.</li> <li>▪ Change to fish and fish habitat, aquatic species and migratory birds were not considered to lead to an effect on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance that pertain to the public. A discussion of how these changes may affect Aboriginal Groups is provided in Section 15.</li> </ul>
<p>Section 19(1):</p> <ul style="list-style-type: none"> <li>▪ environmental assessment of a designated project must consider the following factors:                             <ul style="list-style-type: none"> <li>• environmental effects of the designated project, including environmental effects of accidents or malfunctions                                     <ul style="list-style-type: none"> <li>○ cumulative effects</li> <li>○ significance of effects</li> </ul> </li> <li>• comments from the public</li> <li>• purpose of the Project</li> <li>• alternative means for carrying out the Project</li> <li>• changes to the Project that may be caused by the environment</li> <li>• follow up programs</li> <li>• other matters relevant to the environmental assessment the responsible authority requires to be taken into account.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ An assessment of the potential environmental effects of the Project is provided in comprehensive detail within Part B of the Application.</li> <li>▪ An evaluation of environmental effects that may result from credible worst-case Project-related accidents or malfunctions and their significance are assessed in Section 10 of the Application.</li> <li>▪ Potential accidents or malfunction scenarios discussed in Section 10 that are not considered likely to occur were not considered further in the cumulative effects assessment.</li> <li>▪ LNG Canada will continue to share information with the public and provide the opportunity for the public to provide input on the Application. Detailed discussion of the Public Consultation Plan is provided in Section 18.</li> <li>▪ The purpose of the Project is addressed in Section 2.2.2.</li> <li>▪ Alternative designs and technologies for undertaking the Project, including marine access, power supply, disposal of marine sediment and location of workforce accommodation centre(s) are described in Section 2.3.</li> <li>▪ Section 11 includes an assessment of the environmental conditions that have the potential to adversely affect the Project. These include climate change, extreme weather events, seismic activity (including tsunamis) and forest fires.</li> <li>▪ Follow up programs and other matters considered relevant to the EA are addressed under applicable VCs in Part B and C of the Application and are summarized in Section 21.</li> </ul>

### 3.1.4 Summary of the Pre-Application Stage

This Application for an EAC is consistent with the approved AIR for the Project, dated February 24, 2014, and complies with the requirements of the section 11 Order and the section 13 Order. The key federal and provincial milestones in the pre-Application stage are provided in Table 3.1-3.

**Table 3.1-3: Key Federal and Provincial Milestones in the pre-Application Stage**

Key Milestone	Date
Project Description prepared by LNG Canada	March 23, 2013
EAO request for substitution sent to CEA Agency	March 27, 2013
Project Description posted on CEA Agency Website and public comment period initiated on Summary of Project Description and request for substitution	April 2, 2013
Project Description posted on EAO Website, signalling start of pre-Application stage	April 3, 2013
Section 10 Order issued by EAO under section 10(1)(c) of BCEAA	April 3, 2013
LNG Canada submits VC Scoping Document (draft) to EAO	May 16, 2013
CEA Agency determines that an environmental assessment is required under CEA 2012 and the Federal Minister of Environment approved the BC EAO's request for substitution	May 21, 2013
Section 11 Order issued by the EAO under section 11 of BCEAA	June 6, 2013
LNG Canada Working Group Meeting on draft VC Scoping Document in Kitimat, BC.	June 18–19, 2013
Draft Aboriginal Consultation Plan shared with Aboriginal Groups for review and comment	June 28, 2013
Section 13 Order amending section 11 Order of June 16, 2013 to clarify under a new subsection (13.3) that consultation activities with Métis groups listed on schedule D of the section 11 Order will be conducted on behalf of the Government of Canada and are not an acknowledgement by BC that it owes a duty of consultation or accommodation to Métis in BC under section 35 of the <i>Constitution Act</i> .	August 7, 2013
Public Consultation Plan published on EAO website	August 23, 2013
Aboriginal Consultation Plan submitted to EAO	August 30, 2013
LNG Canada Working Group Meeting on the AIR in Terrace, BC.	September 4-5, 2013
Draft AIR (dated November 08, 2013) posted on EAO website	November 11, 2013
Public comment period on the draft AIR	November 13– December 13, 2013
Public open houses on draft AIR hosted by EAO in Kitimat and Terrace, BC	November 27–28, 2013
Public comments on draft AIR posted on EAO website	December 11-12, 2013
Draft 1 <sup>st</sup> Aboriginal Consultation Report shared with Aboriginal Groups for comment	January 13, 2014
Final AIR (dated February 24, 2014), Working Group Comments tracking table and public comments tracking table posted on EAO website	February 24, 2014
Additional Response from EAO on comments in the Public Issues Tracking Table	February 24, 2014
1 <sup>st</sup> Aboriginal Consultation Report shared with Aboriginal Groups	March 13, 2014
Final Aboriginal Consultation Plan published on EAO website	March 25, 2014
Draft 2 <sup>nd</sup> Aboriginal Consultation Report shared with Aboriginal Groups for comment	June 2, 2014
LNG Canada Working Group Meeting on Application and Mitigation Measures	June 3-4, 2014
Final 2 <sup>nd</sup> Aboriginal Consultation Report shared with Aboriginal Groups	September, 2014
Submission of Application to EAO	September 18, 2014



## 3.2 Environmental Assessment Participants – Working Groups

The section 11 Order established two Working Groups for the Project:

- The Facility Working Group with a mandate to review information and documents related to the LNG facility and associated activities, including the LNG production and storage site, the marine terminal, power supply and supporting infrastructure, as described in section 2.1 of the section 11 Order.
- The Shipping Working Group with a mandate to review information and documents related to shipping operations, as related to the operation of LNG carriers and other supporting marine traffic along the marine access route, as described in section 2.2 of the section 11 Order.

Representatives of the following government agencies, municipal and regional agencies, and Aboriginal Groups were invited by the EAO to become members of the Working Groups for the Project:

- provincial agencies
  - OGC
  - Ministry of Community, Sport and Cultural Development (MCSCD)
  - MOE
  - Ministry of Forests, Lands and Natural Resource Operations (MFLNRO)
  - Ministry of Jobs, Tourism and Skills Training (MJTST)
  - Ministry of Transportation and Infrastructure (MOTI), and
  - Northern Health.
- federal agencies
  - CEA Agency
  - Fisheries and Oceans Canada (DFO)
  - Environment Canada (EC)
  - Health Canada, and
  - Transport Canada.
- municipal and regional agencies
  - District of Kitimat
  - City of Terrace
  - Regional District of Kitimat–Stikine (RDKS), and
  - Regional District of Skeena Queen Charlotte (SQCRD).

- Aboriginal Groups as identified in the section 11 Order:
  - Schedule B (Facility Working Group)
    - Haisla First Nation (Haisla Nation)
  - Schedule C (Shipping Working Group)
    - Haisla Nation
    - Gitga'at First Nation
    - Gitxaala First Nation (Gitxaala Nation)
    - Kitselas First Nation
    - Kitsumkalum First Nation
    - Lax Kw'alaams First Nation, and
    - Metlakatla First Nation.

LNG Canada notified Haida Nation about the Project during initial engagement and did not receive any notification of interest.

During the pre-Application stage, the EAO held a number of consultation meetings with the Working Groups where members had the opportunity to review and comment on issues related to the Project and the assessment process, including the draft VC Scoping Document and the development of the AIR. A summary of the key issues and concerns raised by the Working Groups during the pre-Application stage, and how these issues are addressed by LNG Canada in the Application, is provided in Table 3.2-1. The comments on the draft AIR from the Working Group members and LNG Canada responses to these comments are provided in full in the Working Group Issues Tracking Table that can be accessed on the EAO website.

The Working Groups will have the opportunity to review and comment on the Application following the submission of the Application to the EAO. The Working Groups will review the Application in accordance to their mandate, as described in section 12 of the section 11 Order. The EAO will also facilitate Working Group meetings where members can comment and provide input on the Application. LNG Canada will provide a response to all Working Group comments on the Application in a format approved by the EAO. The Working Groups will also review and provide comment for the draft Assessment Report on the Application, prepared by the EAO for the provincial and federal Ministers.

**Table 3.2-1: Summary of Key Issues and Concerns Raised by Working Group Members during the Pre-Application Stage**

Topic	Key Issue or Concern	LNG Canada Response and Action Items
Air quality	<ul style="list-style-type: none"> <li>▪ Effects of shipping on air quality at receptors along the marine access route</li> <li>▪ Effects of acidifying emissions (SO<sub>x</sub> and NO<sub>x</sub>) on the Kitimat airshed</li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to concerns raised by representatives of Aboriginal Groups on the Working Group, the scope of the air quality assessment was expanded to include receptors along the marine access route (Section 5.2)</li> <li>▪ Inclusion of an assessment of potential effects from acidifying air emissions on vegetation resources, surface water quality and human health (Sections 5.5, 5.9 and 9.2, respectively), based on methods approved by MOE.</li> </ul>
Anchorage	<ul style="list-style-type: none"> <li>▪ Anchorage of LNG carriers during bad weather conditions</li> </ul>	<ul style="list-style-type: none"> <li>▪ LNG Canada does not anticipate requiring any new anchorage between Triple Island and the Project site. In the event of bad weather, LNG carriers and other vessels will slow down or alter their inbound route to Triple Island to delay arrival. In the event of an emergency, should an anchorage be required, the LNG carriers or other vessels would anchor at existing anchorages alongside Stephen Island and would not be allowed to proceed to the marine terminal until conditions are acceptable for safe travel.</li> </ul>
Bilge and ballast water discharge	<ul style="list-style-type: none"> <li>▪ Effects of discharge of bilge and ballast water from LNG carriers</li> <li>▪ Introduction of invasive species</li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to concerns raised by representatives of Aboriginal Groups on the Working Group, the scope of the assessment for marine resources (Section 5.8) was expanded to include the potential effects of bilge and ballast water discharge from LNG carriers, including the potential for the introduction of invasive species.</li> </ul>
Climate change	<ul style="list-style-type: none"> <li>▪ Include potential future climatic conditions in the assessment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Section 11, Effects of the Environment on the Project, considers the effects of climate change on extreme weather event scenarios and the implications of such events to the Project. Trends and changes in rain events, flooding, sea level rise and ambient temperature due to climate change are included in this section, where information is available.</li> </ul>
Community Infrastructure and services	<ul style="list-style-type: none"> <li>▪ Risks from the presence of a large construction workforce</li> <li>▪ Effects on community infrastructure and services</li> <li>▪ Availability of affordable housing and displacement of low-income households.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Measurable parameters used in the assessments for economic conditions (Section 6.2), infrastructure and services (Section 7.2), and community health and wellbeing (Section 7.5) were modified to address these concerns, as expressed by Working Group.</li> </ul>

Topic	Key Issue or Concern	LNG Canada Response and Action Items
Dredge disposal	<ul style="list-style-type: none"> <li>▪ Information on disposal options being considered</li> </ul>	<ul style="list-style-type: none"> <li>▪ LNG Canada considered alternative methods for disposal of the dredge material, including marine and land disposal options. LNG Canada is currently pursuing disposal at sea as the preferred option. The Application describes the rationale for the selection of the preferred option (Section 2.3, Alternative Means of Undertaking the Project) and discusses potential effects on marine fish and fish habitat (Section 5.8.5)</li> <li>▪ LNG Canada will continue to provide information to interested parties about permitting or authorizations that are required for dredge disposal.</li> </ul>
EA methods (general)	<ul style="list-style-type: none"> <li>▪ Structure and content of Application (Part B and Part C) with respect to Aboriginal Interests</li> <li>▪ Extent of study areas</li> <li>▪ Scope of cumulative effects assessment</li> </ul>	<ul style="list-style-type: none"> <li>▪ The scope of Parts B and C of the Application was discussed with the Working Group during the AIR process. In response to concerns of Aboriginal members of the Working Group, LNG Canada modified Part C and local and regional study areas of the following VCs:                             <ul style="list-style-type: none"> <li>• economic conditions</li> <li>• infrastructure and services</li> <li>• community health and wellbeing</li> <li>• visual quality</li> <li>• air quality, and</li> <li>• acoustic environment.</li> </ul> </li> <li>▪ Projects and activities around Prince Rupert and Port Edward as well as other projects north of Terrace are included in the Project Inclusion List for the cumulative effects assessment.</li> </ul>
Economic effects	<ul style="list-style-type: none"> <li>▪ Consideration of Project benefits and their distribution is of great interest to Aboriginal Groups, communities, stakeholders and the public</li> <li>▪ Effects on community labour availability</li> <li>▪ Effects on cost of living</li> <li>▪ Changes to non-market values</li> </ul>	<ul style="list-style-type: none"> <li>▪ Project benefits, such as employment opportunities, business opportunities, and potential increased government revenues for construction and operation are included in the Application (Section 2.5, Benefits of the Project).</li> <li>▪ Concerns regarding adverse economic effects, including cost of living and labour availability are addressed in the economic conditions assessment (Section 6.2).</li> <li>▪ LNG Canada is not including an analysis of non-market values in Part B of the Application due to the inherent inconsistency associated with trying to define broadly accepted values for environmental components based on stated preferences. Part C (Section 14.2.2) make reference to previous studies on non-market values in Part C.</li> </ul>
Freshwater and estuarine fish and fish habitat	<ul style="list-style-type: none"> <li>▪ Effects on fish and fish habitat in the river and estuary due to water extraction from Kitimat River</li> <li>▪ Effects on loss of fish habitat in the Kitimat River estuary due to Project activities.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The effects on fish and fish habitat from potential water flow changes at various levels of flow in Kitimat River and the potential loss of fish habitat in the Kitimat River estuary are assessed in the freshwater and estuarine fish and fish habitat assessment (Section 5.7).</li> </ul>

Topic	Key Issue or Concern	LNG Canada Response and Action Items
Fisheries (marine)	<ul style="list-style-type: none"> <li>▪ Increased ship traffic may interfere with access to commercial and Aboriginal fishing and gear</li> </ul>	<ul style="list-style-type: none"> <li>▪ The effects on commercial, Aboriginal and recreational fisheries from increased ship traffic along the marine access route are assessed in Section 7.4, Marine Transportation and Use.</li> <li>▪ LNG Canada held a number of community workshops on fisheries in the communities potentially affected by the Project, including Kitimat and Prince Rupert. Prince Rupert and Kitimat. LNG Canada offered an additional Fisheries workshop to Aboriginal Groups. These workshops were held with Kitselas First Nation and Metlakatla First Nation.</li> </ul>
Greenhouse gases (GHG)	<ul style="list-style-type: none"> <li>▪ Concerns regarding GHG emissions from the LNG facility and shipping operations</li> <li>▪ Mitigation of GHG emissions over the lifespan of the Project</li> </ul>	<ul style="list-style-type: none"> <li>▪ GHG emissions are assessed in Section 5.3, Greenhouse Gas Management.</li> <li>▪ LNG Canada is committed to implement a GHG Management Plan for the operation of the Project, and LNG Canada will continue to review and assess best management practices for management of GHG emissions over the operational years of the Project.</li> </ul>
Health effects	<ul style="list-style-type: none"> <li>▪ Effects on human health from air contaminants (criteria and non-criteria air contaminants)</li> <li>▪ Synergistic effects of multiple pollutants</li> <li>▪ Accumulation of toxic chemicals in fish</li> </ul>	<ul style="list-style-type: none"> <li>▪ A Human Health Risk Assessment (HHRA) is provided as part of the Application. The HHRA provides a qualitative risk assessment for water, soil and food (including country food) ingestion pathways, and a quantitative risk assessment for inhalation pathways. The HHRA provides the basis for the effects assessment of Project-specific and cumulative effects in the assessment for human health (Section 9.2).</li> <li>▪ Quantitative assessments of the effects of multiple pollutants are only possible for a limited number of contaminants. The HHRA for LNG Canada provides a quantitative assessment of the combined effects of SO<sub>2</sub> and NO<sub>2</sub> using a novel scientific approach.</li> </ul>
Marine access route	<ul style="list-style-type: none"> <li>▪ Alternative options for marine access route and rationale for preferred option</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Application provides a review of the alternative marine access routes considered, including evaluation criteria and rationale for the preferred option (Section 2.3, Alternative Means of Undertaking the Project).</li> </ul>
Marine mammals	<ul style="list-style-type: none"> <li>▪ Increased shipping activities will affect marine mammals through potential acoustic disturbances and increased marine mammal strike risk.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential effects to marine mammals from acoustic disturbances are assessed in Section 5.8, Marine Resources</li> <li>▪ Potential vessel strikes to marine mammals are assessed in Section 10, Accidents or Malfunctions.</li> <li>▪ LNG Canada carried out intensive marine mammal population surveys along the marine access route as part of the baseline assessment.</li> </ul>
Marina use	<ul style="list-style-type: none"> <li>▪ Effects on marina accessibility and use as a result of the Project</li> </ul>	<ul style="list-style-type: none"> <li>▪ Marinas along the marine access are included in the assessment of marine transportation and use (Section 7.4).</li> </ul>

Topic	Key Issue or Concern	LNG Canada Response and Action Items
Power supply	<ul style="list-style-type: none"> <li>▪ Assessment of alternative technologies for power supply</li> <li>▪ Greenhouse gas emissions associated with power supply options</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Application provides a review of the alternative power supply options considered for the Project, including evaluation criteria and rationale for the preferred option (Section 2.3, Alternative Means of Undertaking the Project).</li> <li>▪ LNG Canada based the decision regarding the power supply option on a number of criteria, including reliability, affordability, deliverability, regional benefits and air emissions (including greenhouse gases). Finding ways to manage emissions from the LNG facility was a priority.</li> </ul>
Visual Quality	<ul style="list-style-type: none"> <li>▪ Increased shipping will affect visual quality at important viewpoints along the marine access route.</li> </ul>	<ul style="list-style-type: none"> <li>▪ LNG Canada consulted with interested Working Group members to determine important viewpoints along the marine access route. The effects of shipping on the visual quality from these viewpoints are assessed in Section 7.3, Visual Quality.</li> </ul>
Wake from LNG carriers	<ul style="list-style-type: none"> <li>▪ Effects on shoreline harvesting, marine resources, and cultural and archaeological heritage resources from wake generated by the increased shipping traffic.</li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to concerns raised by Aboriginal members of the Working Groups, LNG Canada contracted a third party to review existing wake studies. Based on results of this review and consultation with Aboriginal Groups LNG Canada is developing a Project specific model to predict wake heights, and potential wake effects.</li> <li>▪ Effects on marine resources, shoreline harvesting, and cultural and archaeological heritage from wake are included in the assessments of marine resources, marine transportation and use, and archaeological and heritage resources (Sections 5.8, 7.4 and 8.2, respectively) as well as in Part C.</li> </ul>
Water quality	<ul style="list-style-type: none"> <li>▪ Discharge of stormwater and wastewater effluent into the marine environment</li> <li>▪ Acidification and eutrophication of freshwater lakes and streams as a result of acidifying emissions from the LNG facility</li> <li>▪ Potential of toxic effects from disposal of contaminated marine sediment generated from construction dredging activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ The effects of wastewater discharged into marine waters in Douglas Channel are included in the assessment of marine resources (Section 5.8).</li> <li>▪ The potential for acidification and eutrophication of lakes and streams, in accordance with a workplan approved by the MOE, is assessed in Section 5.9, Surface Water Quality.</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>▪ Effects on wetlands and wetland functions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Areal extent of wetlands and wetland function is included as a measurable parameter in the vegetation resources assessment (Section 5.5).</li> </ul>