

LNG CANADA EXPORT TERMINAL PROJECT

SUMMARY ASSESSMENT REPORT

With Respect to

the Application by LNG Canada Development Inc.
for an Environmental Assessment Certificate
pursuant to
the *Environmental Assessment Act*, S.B.C. 2002, c.43
and
the *Canadian Environmental Assessment Act, 2012*, S.C. 2012 c. 19,
as a substituted environmental assessment

Prepared by:

Environmental Assessment Office
May 6, 2015



1 Introduction

This Summary assessment report provides an overview of the environmental assessment (EA) of the proposed LNG Canada Export Terminal Project conducted by the Environmental Assessment Office (EAO). It discusses the key findings and conclusions of the complete assessment report, and cross-references relevant sections of the assessment report, where more in-depth analysis and discussion can be found.

2 Project Description

LNG Canada Development Inc. (Proponent) is proposing to develop the LNG Canada Export Terminal Project (proposed Project), located in northwest British Columbia (BC) in the District of Kitimat, approximate 4 km from the Kitimat service centre. The Proponent is a joint venture comprised of Shell Canada Energy (Shell), Diamond LNG Canada Ltd. (an affiliate of Mitsubishi Corporation), KOGAS Canada LNG Ltd. (an affiliate of Korea Gas Corporation), and Phoenix – LNG Canada Partnership (an affiliate of PetroChina Investment [Hong Kong] Ltd).

The EA of the proposed Project included the liquid natural gas (LNG) facility (Figure 1) and shipping (Figure 2). The LNG facility includes various areas and infrastructure, such as:

- LNG processing and storage, which would include up to four processing or production units (“trains”), where natural gas is converted to liquid, as well as storage tanks and flare systems;
- LNG loading and circulation system, which would include the transport of LNG to the marine terminal for loading onto LNG carriers;
- A marine terminal, which would include two LNG carrier berths and a materials offloading facility; and
- Supporting infrastructure, such as a workforce accommodation centre, freshwater intake and pipeline, effluent discharge, electrical transmission lines, and road and railway upgrades.

During operations, the facility would receive between 170 and 350 LNG carrier visits per year; each vessel would be up to 345 m in length. BC Coast Pilots would board the LNG carriers near the Triple Island Pilotage Station and pilot the ships through Principe Sound and Douglas Channel to Kitimat Arm (Figure 2). The scope of the assessment considered the LNG carriers from the point where the pilots would leave or board the ships.

The EA included the evaluation of various alternative marine access routes, marine terminal locations, power supplies, disposal at sea methods and locations, and workforce accommodation centre sites.

The proposed Project would be operational for a minimum of 25 years, and would produce an estimated 26 million tonnes of LNG per year at full build out. Natural gas would be provided from the Coastal GasLink Pipeline Project. section 2.2 of the assessment report includes a more detailed overview of the proposed Project, including the evaluation of alternatives.

The proposed Project’s facility, including marine terminal, is in the asserted traditional territory of Haisla Nation. The shipping route is in the asserted traditional territories of Haisla Nation, Kitsumkalum First Nation, Gitga’at First Nation, Gitxaala Nation, Lax Kw’alaams Band, Metlakatla First Nation and the asserted harvesting area of Kitselas First Nation. Métis Nation British Columbia has chartered Métis communities in the vicinity of the proposed Project.

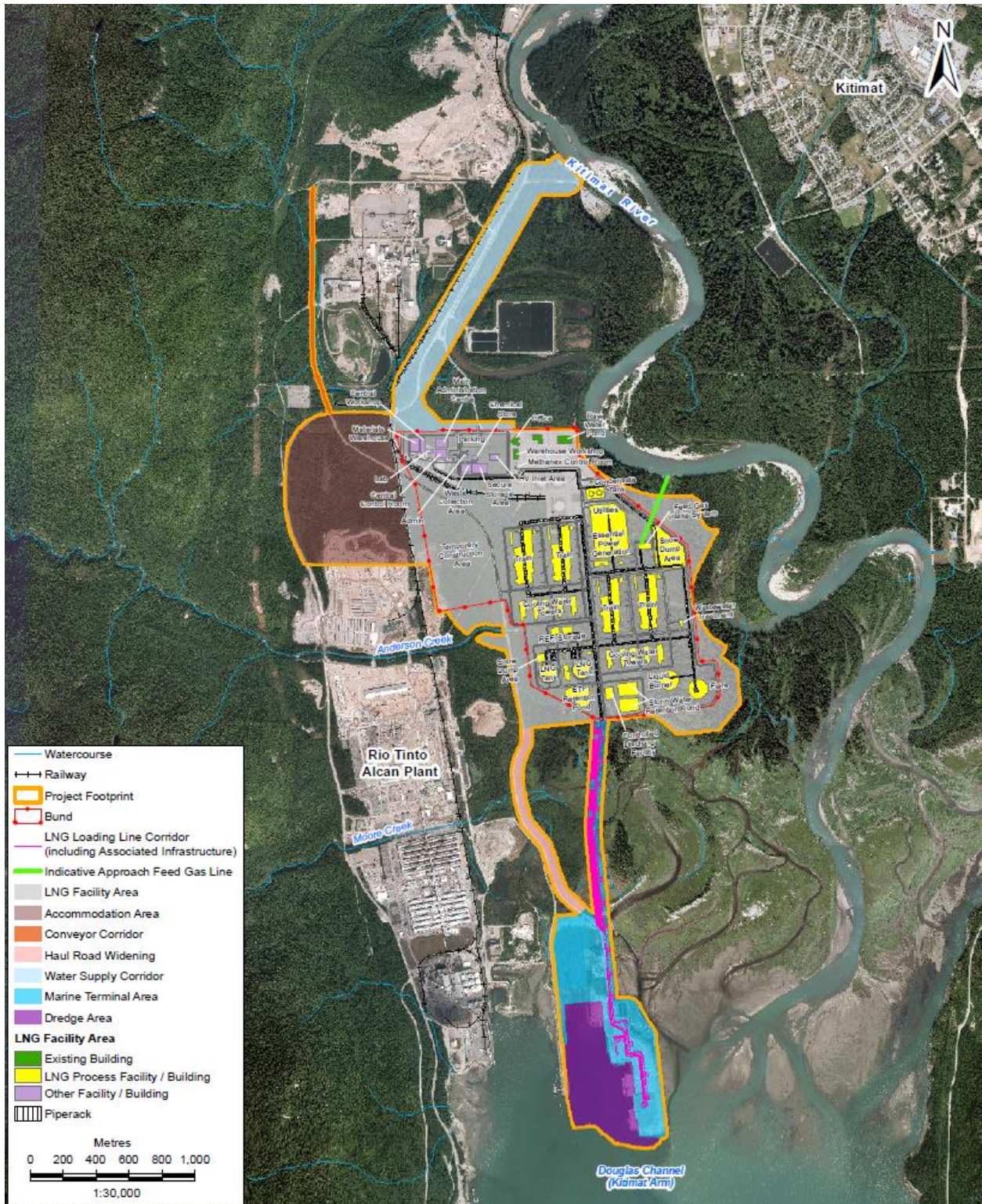


Figure 1: Proposed Project's LNG Facility Site

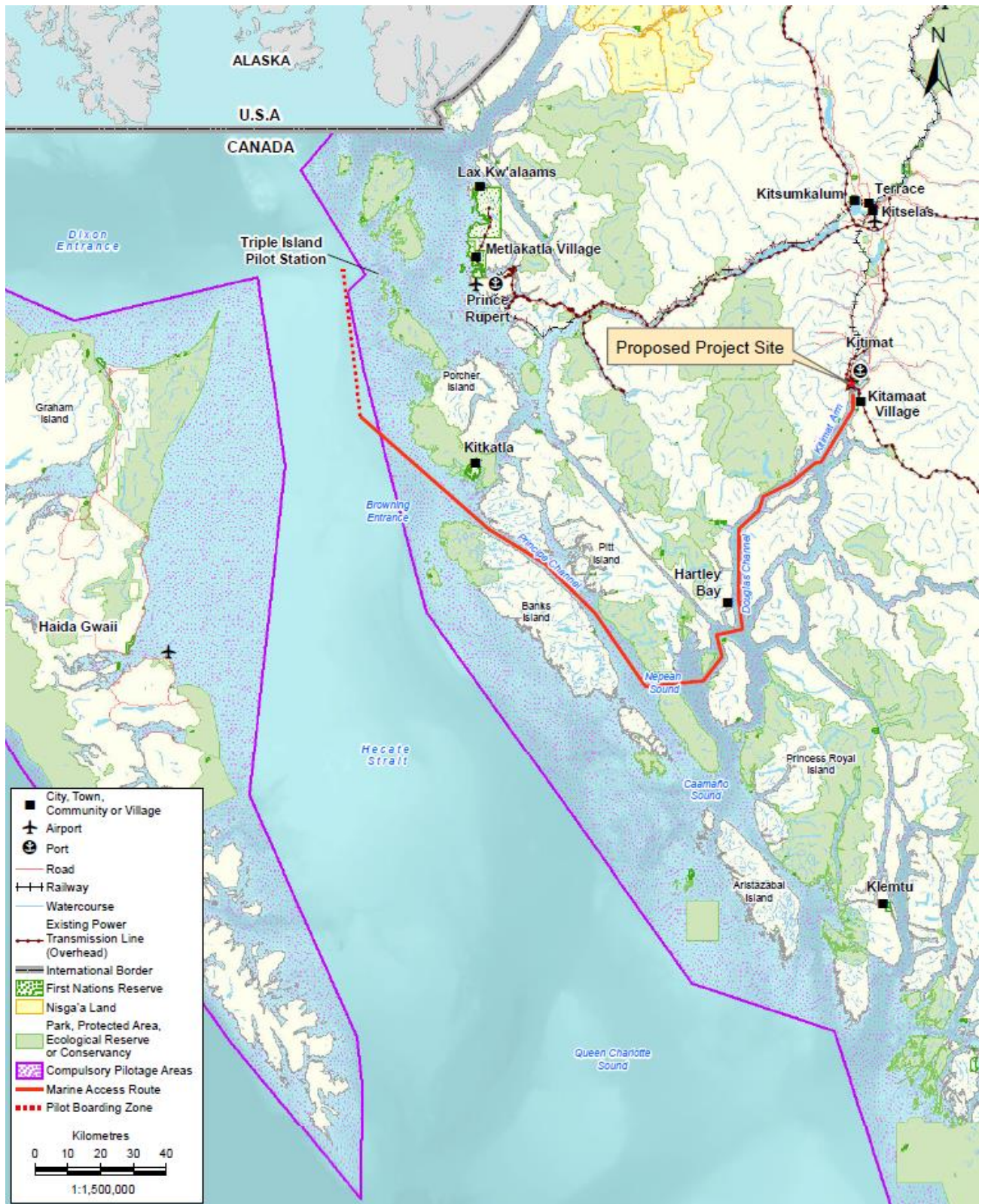


Figure 2: Proposed Project's LNG Shipping Route

3 Environmental Assessment Process

In conducting this EA, EAO considered the potential environmental, economic, social, heritage and health effects, including cumulative effects, of the proposed Project for the provincial EA under the *Environmental Assessment Act* (Act). The EA was also a “substituted environmental assessment” under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012).

EAO has conducted the EA of the proposed Project in consultation with an advisory working group made up of federal, provincial and local government representatives, with the mandates and skill sets relevant to the review of the proposed Project, as well as representatives of potentially affected Aboriginal Groups listed on Schedules B and C of the Section 11 Order.

EAO undertook public consultation activities during the course of the EA, including holding two public comment periods. All public comments, and the Proponent’s responses to these comments, were considered in completing the EA.

On April 3, 2013 EAO determined that the proposed Project was reviewable pursuant the Reviewable Projects Regulation for the following reasons, and issued a legal Order under Section 10 of the Act:

- It would generate at least 50 megawatts of electrical power (Part 4 – Power Plants);
- It would have the capability to store energy resources in a quantity that could yield by combustion greater than three petajoules of energy (Part 4 – Energy Storage Facilities);
- It would have the design capacity to process natural gas at rate of greater than or equal to 5.634 million m³/day (Part 4 – Natural Gas Processing Plants); and
- It would require the construction of a new marine port facility with the disturbance of more than 2 ha of foreshore and/or submerged land (Part 8 – Marine Port Facilities).

On May 21, 2013 the Canadian Environmental Assessment Agency (the Agency) determined that a federal EA was required for the proposed Project pursuant to the CEAA 2012.

On May 21, 2013 the federal Minister of the Environment approved the substitution of the EA process under CEAA 2012 with the process conducted under the Act. The substitution decision was granted in consideration of the approach set out in the *Memorandum of Understanding between the Canadian Environmental Assessment Agency (the Agency) and BC’s Environmental Assessment Office (EAO) on the Substitution of Environmental Assessments(2013)* (the MOU). The Agency also provided advice to EAO throughout the EA in relation to fulfilling the requirements of CEAA 2012.

On June 6, 2013, EAO issued a legal Order under Section 11 of the Act, which set out the scope, procedures and methods for the EA. Following a review and comment the draft Application Information Requirements (AIR) by the working group and the public, on February 24, 2014 EAO issued the final AIR for the proposed Project.

The Application Review stage of the EA started on November 7, 2014, following a 30-day evaluation of the Application against the AIR by EAO and the working group. The working group and public provided additional review and comment on the Application and supplementary material during the Application Review stage.

EAO completed the review of the proposed Project and, on May 6, 2015, referred the provincial decision to Ministers and provided the final referral package to the Agency.

Other Required Authorizations

The proposed Project would require various permits from federal, provincial and local government jurisdictions. The majority of provincial permits are provided through the BC Oil and Gas Commission (OGC), the primary operational regulator of oil and gas activities in BC. In particular, the OGC is responsible for the Liquefied Natural Gas Facility Regulation that regulates the design, construction, operations and decommissioning of LNG facilities in BC. OGC is also responsible for the LNG facility's air and waste discharge permits under the *Environmental Management Act*. The Proponent has begun a synchronous permitting process with the OGC.

The major federal authorizations would include an authorization from Fisheries and Oceans Canada (DFO) to carry on a proposed work, undertaking, or activity that could cause serious harm to fish, under the subsection 35(2) of the *Fisheries Act*, a permit for disposal at sea under subsection 127(1) of the *Canadian Environmental Protection Act, 1999*, and the maintenance and preservation of marine access under the *Navigation Protection Act*. On February 28, 2013 the Proponent was granted an export licence under section 117 of the *National Energy Board Act*.

4 Strategic Context

Substitution of the Federal Environmental Assessment

In March 2013, EAO and the Agency entered into the MOU. Substitution is a new tool enabled by the CEAA 2012. BC is the only jurisdiction that has entered into a substitution agreement with the Agency.

The essence of the MOU is that EAO, in conducting the substituted EA, would consider the factors as set out in subsection 19(1) of CEAA 2012 for the environmental effects of the proposed Project, as described in sections 5(1) and 5(2). EAO would also carry out the procedural aspects of Aboriginal consultation and would provide an assessment report to the Agency that includes the findings and conclusions of the EA with respect to those environmental effects. Ultimately, substitution results in one EA process designed to inform the two separate EA decisions to be made by BC and Canada.

On May 21, 2013 the federal Minister of the Environment approved EAO's substitution request for the proposed Project. This proposed Project is the first substituted EA referred for decision in Canada. EAO has completed the EA consistent with the MOU, and has met all requirements of CEAA 2012. For the purposes of meeting the CEAA 2012 substitution requirements, EAO considered effects that the proposed Project may have on environmental effects described in subsections 5(1) and 5(2) of CEAA 2012, as well as the *Species at Risk Act* (SARA), subsection 79(2).

Additional detail on the federal requirements can be found in section 3 of the assessment report, and reporting on the assessment of federal requirements is in section 13 of the assessment report and is summarized briefly below in section 9.

Strategic Approach to LNG-Related Environmental Assessments

In recognition of the high volume of LNG-related projects that have been proposed since early 2013, particularly in northern BC, EAO adopted a strategic approach to more efficiently and effectively engage with proponents, Aboriginal Groups, government agencies, stakeholders and the public. This approach has included:

- Working across government agencies to facilitate the early identification and resolution of strategic and operational policy issues;
- Coordinating regional forums, open houses and working group meetings to improve engagement with Aboriginal Groups, stakeholders and the public;
- Improving the seamless approach to the regulatory regime, including signing an MOU between EAO and the OGC, and deeply engaging key permitting agencies in all EAs;
- Developing similar conditions and certified project descriptions across projects;
- Working with the Ministry of Community, Sport and Cultural Development (CSCD) to develop a socio-economic effects management framework to support planning, mitigation, and reporting of project and cumulative effects to community infrastructure and services; and
- Coordinating closely with the Ministry of Aboriginal Relations and Reconciliation to support the Province’s work with Aboriginal Groups regarding economic benefit agreements and environmental stewardship.

In November 2014 four northern LNG-related projects (three pipelines and one facility) were issued provincial EA Certificates. One facility and one pipeline in northern BC had previously been issued EA Certificates. One facility and one pipeline in the Squamish area are currently in Application Review, and four facilities and one pipeline in northern BC are currently in the Pre-Application stage. EAO will continue to adopt a similar strategic approach to ongoing and upcoming LNG-related EAs.

5 Key Conclusions of the Environmental Assessment

EAs in BC use valued components as an organizing framework for the assessment of the potential effects for proposed projects. Valued components are components of the natural and human environment that are considered by the Proponent, public, Aboriginal Groups, scientists and other technical specialists, and government agencies involved in the assessment process to have scientific, ecological, economic, social, cultural, archaeological, historical or other importance. EAO’s assessment report for the proposed Project is organized around the following valued components:

<p>Environmental Effects</p> <ul style="list-style-type: none"> • Air quality (section 5.1) • GHG emissions (5.2) • Acoustics (5.3) • Surface water quality (5.4) • Freshwater and estuarine fish and fish habitat (5.5) • Marine resources (5.6) • Vegetation and wetland resources (5.7) • Terrestrial wildlife and marine birds (5.8) 	<p>Economic Effects</p> <ul style="list-style-type: none"> • Economic conditions (6.1) <p>Social Effects</p> <ul style="list-style-type: none"> • Infrastructure and services (7.1) • Community health and well-being (7.2) • Marine transportation and use (7.3) • Visual quality (7.4) <p>Heritage Effects</p> <ul style="list-style-type: none"> • Archaeological and heritage resources (8.1) <p>Health Effects</p> <ul style="list-style-type: none"> • Human health (9.1)
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EAO assessed the potential for the proposed Project to have significant adverse effects on these valued components. The assessment also considered how accidents and malfunctions (section 10) and changes to the environment (section 11) could affect these valued components. The assessment required under CEAA 2012 is discussed separately (section 13). These assessments were based on the Application provided by the Proponent, comments from the working group, Aboriginal Groups, and the public.

The remainder of this section provides a summary of some of the key issues and concerns that were the focus of the EA. A detailed discussion of the assessment of each valued component and topic can be found in the assessment report.

Air Quality and Related Effects

The EA considered the proposed Project's potential emissions of a variety of criteria air contaminants (CACs) (See section 5.1 of the assessment report). The proposed Project's contribution to future cumulative emission of sulphur dioxide (SO₂) and nitrogen dioxide (NO₂) were of particular concern. Nitrogen oxides (NO_x) are produced in most combustion processes and consist almost entirely of NO₂ and nitric oxide (NO). SO₂ is produced during combustion by the oxidation of sulphur-containing compounds present in fuels and can have adverse effects on plant and animal health, particularly on respiratory systems. SO₂ can also further oxidize and combine with water to form the sulphuric acid component of acid rain. Both SO₂ and NO_x can cause acid rain that can have acidification effects on freshwater and soils and can adversely affect vegetation. NO_x deposition can lead to eutrophication (i.e. increase in nitrogen) of water bodies, which can promote algal growth that leads to low oxygen levels that adversely affect fish and other aquatic biota.

Estimates of the ground level concentrations of CACs, including NO₂, were found to increase but would all remain below BC's Ambient Air Quality Objectives or other similar objectives. Estimates of SO₂ ground level concentrations were found to be well above MOE's interim Ambient Air Quality Objectives, and existing objectives from the World Health Organization and US Environmental Protection Agency. These exceedances were estimated to occur infrequently and in a localized area near the facility and on a hillside above and to the west of the facility. The proposed Project on its own did not exceed any objectives or guidance, but rather the exceedances were in consideration of the emissions from the Rio Tinto Alcan facility and modernization project.

Late in the Application Review stage, it was brought to the attention of EAO that SO₂ concentrations at the workforce accommodation centre could exceed BC's Ambient Air Quality Objectives, as a result of the Rio Tinto Alcan, once the modernization project is in operation. EAO proposes a condition that would require the Proponent to complete a human health risk assessment regarding the potential effects of air quality on workers residing at the workforce accommodation centre, and to implement additional mitigation measures, as necessary, to reduce risks to worker health posed by air emissions.

Modelling showed that the proposed Project would contribute to increased acidification of eight lakes that would already have critical load exceedances for acidification in the base case, and the proposed Project would result in one additional lake (End Lake) having critical load exceedances, with the proposed Project contributing up to 20%. The Proponent noted that the lakes with critical load exceedances are acidic or highly acid sensitive lakes with observed or inferred fish habitat despite the low pH conditions. The proposed Project would have negligible impact on nitrogen loading in surface water (i.e. eutrophication).

For a 4 ha vegetated area of mostly fir-hemlock forest immediately north of the facility, critical loads for nitrogen deposition are expected to be exceeded for nitrogen deposition and acid deposition. Wetlands occupy 1 hectare of the exceedance area and have notable sensitivity to eutrophication.

EAO proposes a condition requiring the development of an air quality management plan, which would specify how the mitigation measures proposed in the Application to reduce air emissions during

construction and operation phases would be implemented. The proposed condition would also require the Proponent to develop and implement an air quality and deposition monitoring plan in consultation with MOE, MOH and OGC, and would require the Proponent to participate in the Kitimat regional air quality monitoring initiative. The monitoring activity may include soil, water and vegetation monitoring, in addition to direct air quality monitoring. Regulatory processes under the *Environmental Management Act* will further consider and mitigate the impacts of the proposed Project's air emissions.

Considering the analysis summarized above and discussed in sections 5.1 (air quality), 5.4 (surface water quality), 5.7 (vegetation resources) and 9.1 (human health) of the assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that the proposed Project would not have significant adverse residual effects on air quality, and would not have significant adverse residual air quality effects to human health, surface water quality or vegetation.

Greenhouse Gas Emissions

Greenhouse gas emissions (GHGs) would be primarily emitted during operations as a result of the natural gas power generators used to drive the refrigeration compressors in the liquefaction trains (see section 5.2 of the assessment report). At full capacity the proposed Project would increase BC's GHG emissions by 6.6% over 2011 provincial emissions levels (or 0.57% over 2011 Canadian emissions).

In November 2014, BC passed the *Greenhouse Gas Industrial Reporting and Control Act* that puts in place a GHG intensity benchmark for LNG facilities of 0.16 tonnes of CO₂ equivalent (CO₂e) per tonne of LNG produced. LNG facilities can use offsets and a technology fund to reach the benchmark, and facilities below the benchmark can receive a credit that they can sell. The proposed Project is estimated to have a GHG intensity of 0.15 CO₂e per tonne of LNG produced. The proposed Project is able to achieve the benchmark through the use of aero-derivative gas turbine technology to drive the refrigeration compressors and using power from BC Hydro for all ancillary power needs.

EAO proposes a condition requiring the development of a GHG management plan that specifies the operational mitigation measures related to GHG emissions. The proposed Certified Project Description also requires the use of BC Hydro power for all ancillary power needs.

Considering the analysis summarized above and discussed in section 5.2 (GHGs) of the assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO has determined that the proposed Project would have a significant residual adverse effect related to GHGs. The effect is considered significant because of the existing context of global GHGs and the magnitude of the proposed Project's emissions, which would have a notable impact on BC's GHG emissions reduction targets.

Fish and Fish Habitat

The development of the proposed Project during construction would result in direct impacts to fish, as well as the alteration or destruction of freshwater, estuarine, and marine fish habitat. In particular, construction would require the rerouting of a large portion of Beaver Creek, part of Anderson Creek and a side channel of the Kitimat River. A portion of the tidally influenced estuarine channels of the Kitimat River would also be impacted. The habitat in these areas is important for various fish species, including eulachon and salmon species, and particularly coho salmon.

In the intertidal marine environment, the proposed Project would infill a salt water marsh consisting of marsh vegetation and a network of tidal channels subject to daily inundation at high tide that provides habitat for juvenile salmon and non-migratory fish species. The loss of this salt marsh is considered potentially serious harm to fish, and therefore the Proponent has proposed habitat offsetting. The subtidal area that would be dredged was typically mud bottom and, while generally lacking in structural complexity, it does contain an eelgrass bed. The Proponent would offset the loss of habitat causing serious harm to fish by creating salt marsh habitat and of intertidal rock reef habitat.

During EA, a key area of concern for DFO was whether the Proponent was adequately estimating the impacts to fish habitat, and whether an adequate amount of potentially viable habitat could be identified to offset the loss habitat. Additional analysis by the Proponent identified a greater amount of off-channel habitat and provided additional information to support its viability (e.g. because of available groundwater). Additional detail would need to be provided to DFO to support permitting. The final fish habitat offsetting for freshwater, estuarine, and marine fish habitat would be subject to approval from DFO under subsection 35(2) of the *Fisheries Act*.

Aboriginal Groups also had concerns about direct fish habitat loss, and any impacts this may have on salmon stocks in different nations' traditional territories. Haisla Nation was particularly concerned about the loss of eulachon habitat, as eulachon recovery is a key priority for the nation. Through the course of the EA the Proponent committed to considering eulachon during the development of their fish habitat offsetting plans, and in proposing complementary measures related to eulachon population research.

EAO acknowledges that the primary mitigation measure associated with impacts to fish and fish habitat is the general requirement to offset any serious harm to fish, as per subsection 35(2) of the *Fisheries Act*, and the detailed information required to support such a determination and/or application. In particular, in addition to identifying suitable habitat for offsetting, an application would require the specification of reduced risk timing windows for activities and measures to mitigate harm to fish within and outside of these timing windows. To provide certainty to Ministers and participants in the EA, EAO proposes a condition requiring that key mitigation measures identified during the course of the EA be included within the application to DFO.

Considering the analysis summarized above and discussed in sections 5.5 (freshwater and estuarine fish and fish habitat) and 5.6 (marine resources) of the assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that the proposed Project would not have significant adverse residual effects on fish and fish habitat in the marine, freshwater and estuarine environments.

Dredging and Disposal at Sea

The proposed Project has the potential to result in indirect impacts to marine species and habitat as a result of sedimentation or water quality. Sediment within the Project footprint contains contaminants, primarily polycyclic aromatic hydrocarbons (PAHs), but also metals (copper and zinc), dioxins, and furans from past industrial activities. Dredging would cause the resuspension of contaminants, which would have the potential to impact several valued components, particularly marine resources and human health. Marine resources could be impacted through direct habitat loss, direct injury or mortality, and increasing the bioavailability of toxins in sediment. Human health could be impacted through ingesting marine plants or animals that contain harmful levels of contaminants.

The proposed Project would require a dredge of up to 3.5 million cubic metres (m³). The dredged material that does not meet the screening criteria for disposal at sea but does meet the BC Contaminated Site Regulation for on land disposal would be dredged and placed directly in the salt marsh immediately north of the materials offload facility following its isolation. Contaminated dredge material would be disposed of at an appropriate facility. The dredged material that is expected to be disposed of on land would be approximately 0.5 million m³ (approximately the top 3-6 m). Only sediment that meets Environment Canada's disposal at sea screening criteria would be disposed of at sea, and is expected to be approximately 3 million m³.

The Proponent indicated that availability of contaminants would be limited through using containment methods during dredging activity. Direct impacts to marine resources would be mitigated by the timing of dredging activity. Kitimat Arm currently has a year-round ban on shellfish harvesting and consumption in this area due to the potential for domoic acid and paralytic shellfish poisoning. Haisla Nation indicated that their members do not harvest marine resources in the dredge area or its immediate vicinity. The Proponent completed an initial human health risk assessment and tissue sampling analysis of shellfish and groundfish.

Disposal at sea would only be for dredge material that is not contaminated, and is expected to have minimal impact on fish health. While disposal at sea sites do provide fish habitat, they are soft bottom, have a similar grain size to the dredge material, and do not include complex or sensitive habitats. Proposed sites are also below the photic zone, below which marine plants cannot grow. Benthic communities and fish assemblages in the soft bottom habitat at the disposal site are expected to recover within two years following disposal. Initially, three areas (or basins) were studied and proposed by the Proponent in their Application. Through the course of the EA, discussion with regulatory agencies and Haisla Nation led to the Proponent identifying one area for potential disposal at sea. The specific location within this area would be determined at permitting.

EAO proposes a condition that would require marine water quality management and monitoring, including additional tissue sampling. In addition, the proposed Certified Project Description provides restrictions on the areas that could be dredged or used for disposal at sea, based on the assessment completed.

Considering the analysis summarized above and discussed in sections 5.6 (marine resources) and 9.1 (human health) of the assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that the dredging or disposal at sea activities of the proposed Project would not have significant adverse residual effects on marine resources or human health.

Shipping

The proposed Project's shipping of LNG has the potential to result in a number of potential adverse effects. The full range of potential effects is discussed in the assessment report under various valued components. The potential effects of shipping on marine users and on marine mammals were a particular focus of the EA, and are discussed in this section.

Kitimat Arm and Douglas Channel are used by many marine mammal species, including some that are listed under the SARA. Designated humpback whale SARA critical habitat is identified along the shipping route, as is potential SARA critical habitat for northern resident killer whale. Underwater noise from

shipping may result in some behavioral change by marine mammals, potentially causing temporary stress-induced physiological changes, temporary altered sound perception and impaired communication, and avoidance behaviors that may disrupt migration or foraging patterns. Shipping may also cause injury or mortality to marine mammals as a result of vessel strikes. Data on vessel strikes is limited, but suggest that they are quite rare in BC.

In the Application, the Proponent indicated that subject to navigational safety needs carriers would generally travel 12 knots. In areas of high whale density between the northern end of Campania Island and the southern end of Hawkesbury Island, LNG carriers would travel at speeds of 8 to 10 knots from July through October (which is the predicted periods of high use by marine mammals). This reduction in speed would greatly reduce noise levels and would also decrease risk of collision.

In order to mitigate the effects of shipping on marine mammals EAO proposes a condition requiring a marine mammal management and monitoring plan during operations. This condition includes the requirement to adhere to speed profiles that reduce the risk to marine mammals and adaptively manage the effects to marine mammals.

At full build out, the proposed Project would include up to 350 LNG carriers per year, or approximately two transits per day (one arriving, one leaving). These carriers have the potential to directly interfere with or disturb marine users (e.g. fishers, recreationalists), and there is some risk that the wake from the carriers could also impact shoreline users. Aboriginal Groups expressed particular concern about how these effects could impact their members.

Three supplemental studies were conducted to seek to better understand the potential wake generated by LNG carriers, how these wakes may interact with the wakes from other vessels, and how these wakes may impact different shore types. Although the Proponent indicated that they took a conservative approach to estimating the potential wake, the models were highly simplified compared to reality; and it was hard for Aboriginal Groups on the working group to understand the potential effects of predicted wake on marine and shoreline users. In recognition of this uncertainty and the concerns of groups, EAO has proposed a condition that would require monitoring during operations and potential adaptive management.

There is the potential for a large cumulative increase in marine traffic in the Kitimat Arm and Douglas Channel. If all of the currently proposed projects proceed (Rio Tinto Alcan Terminal A Extension, Kitimat LNG Terminal, Enbridge Northern Gateway, and the Douglas Channel LNG Terminal), the number of ship transits in Kitimat Arm and Douglas Channel would increase from 0.5 transits daily currently, to 4.3 transits daily. In consideration of this context, EAO proposes conditions that include various requirements for the Proponent to seek to coordinate with other industrial shippers and participate in cumulative effects initiatives.

Considering the analysis summarized above, and discussed in sections 5.6 (marine resources) and 7.3 (marine transportation and use) of the assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that the shipping activities of the proposed Project would not have significant adverse residual effects on marine resources or marine transportation or use.

Community Impacts

During the EA, EAO determined that due to a large increase in population as a result of the proposed Project's construction and operations there is the potential for an increased demand on infrastructure and services and increased strain on community health and wellbeing. In 2011, the regional population was approximately 24,910, and the Proponent anticipates that the proposed Project would directly employ 4,500 to 7,500 people during peak construction and 450 to 800 people during operations, and would generate many more indirect and induced jobs. The potential adverse effects of these population changes are largely considered under two valued components in the assessment report, infrastructure and services (section 7.1) and community health and wellbeing (section 7.2).

Within the existing provincial government framework, provincial infrastructure and services costs associated with development and growth are funded through contributions to general revenue from taxes, royalties, fees and by borrowing. There may also be specific projects where funding can come in the form of partnerships. Local infrastructure and services are similarly funded in the local government context.

It is expected that the proposed Project would create increased demands for community infrastructure and services, some negative effects on housing availability and affordability, and increased traffic and pressure on transportation infrastructure, including air and road corridors. The potential rapid increase in population and the temporary workforce have the potential to adversely impact community health and wellbeing by disrupting community cohesion. However, it is recognized that in-migrating families (particularly during operations) could also have positive effects.

As this proposed Project occurs in the context of a number of proposed LNG-related projects in northwestern BC, EAO has worked in collaboration with CSCD to establish a consistent approach to mitigate potential socio-economic impacts, particularly related to community infrastructure and services. In this regard, EAO proposes a condition requiring the Proponent to develop a plan to manage socio-economic effects that particularly focusses on to infrastructure and services, includes an adaptive management approach, and requires planning, mitigation, and continued reporting.

EAO proposes a number of other conditions to mitigate adverse socio-economic effects on communities, including: supporting local economic opportunities; developing a health and medical services plan for their workforce; working with public infrastructure owners to further assess and plan for impacts to traffic infrastructure, including Haisla bridge; and, requiring on-going consultation with the public.

Considering the analysis summarized above and discussed in sections 7.1 (infrastructure and services) and 7.2 (community health and wellbeing) of the assessment report, and having regard to the proposed conditions and associated mitigation measures, EAO is satisfied that the proposed Project would not have significant adverse residual effects on infrastructure and services or community health and wellbeing.

Other Identified Effects and Proposed Conditions

EAO's assessment report assesses the impacts of the proposed Project on various other valued components, and identifies key mitigation measures for each and reaches conclusions on their residual effects, none of which are determined to be significant. To ensure the effects of the proposed Project

are sufficiently mitigated, EAO proposes a number of other conditions, which are discussed in the assessment report and listed in the Table of Conditions.

6 Aboriginal Consultation

EAO examined potential impacts of the proposed Project on asserted Aboriginal rights and title (Aboriginal Interests). Throughout the EA, EAO consulted with:

- Haisla Nation;
- Gitga'at First Nation;
- Gitxaala Nation;
- Kitselas First Nation;
- Kitsumkalum First Nation;
- Metlakatla First Nation;
- Lax Kw'alaams Band; and
- Métis Nation British Columbia (MNBC).

All Aboriginal Groups listed above were consulted at a deeper level, with the exception of MNBC, which was consulted at a notification level on behalf of the federal government. As part of the substituted EA process, EAO also consulted all the above Aboriginal Groups on behalf of the federal government.

As part of the consultation process EAO provided Aboriginal Groups with capacity funding, including funds provided by the Agency, to support their participation in the EA. Aboriginal Groups were also invited to participate as members of the EAO working group, comment on key EA documents, and meet directly with EAO to discuss issues and concerns. EAO also delegated procedural aspects of consultation with Aboriginal Groups to the Proponent. A more detailed description of the activities is discussed in the assessment report.

Haisla Nation

Haisla Nation is the only Aboriginal group with asserted traditional territory that overlaps the proposed Project's facility area, including marine terminal, and the shipping route would traverse approximately 50 km of Haisla Nation's asserted traditional territory.

EAO assessed that Haisla Nation has a strong *prima facie* strength of claim of Aboriginal rights to fish, gather, hunt and trap in the area of the proposed Project and a strong *prima facie* strength of claim of Aboriginal title in the vicinity of the proposed Project. Given the nature and location of the proposed Project, and the potential impacts on Haisla Nation's Aboriginal rights and title, EAO is of the view that the duty to consult Haisla Nation lies towards the deep end of the *Haida* spectrum. EAO consulted with Haisla Nation at a deeper level.

Haisla Nation was a very active participant in the EA, and EAO and the Proponent engaged with Haisla Nation in a variety of manners throughout the EA to seek to better identify, understand, and resolve concerns. Some of the key concerns identified by Haisla Nation related to loss of fish habitat, particularly eulachon habitat; impacts of disposal at sea; impacts of dredging activities on contaminants in marine foods; impacts of light pollution and visual quality from the facility; impacts to old forest; and, impacts of wake and sea level rise on their community. EAO fully considered all concerns raised by Haisla Nation in the development of proposed conditions. Haisla Nation has entered into an impact management and benefit agreement with the Proponent.

In EAO's opinion, the proposed Project would have a moderate impact on Haisla Nation's Aboriginal title, and would have minor to moderate impacts to Haisla Nation's asserted Aboriginal right to hunt, moderate impacts to Haisla Nation's asserted Aboriginal right to fish and harvest marine resources, negligible impacts to Haisla Nation's asserted Aboriginal right to trap, minor impacts to Haisla Nation's asserted Aboriginal right to gather, and minor impacts to Haisla Nation's culturally important sites, trails, and travelways.

EAO has ensured that Haisla Nation has been meaningfully consulted and accommodated on the potential effects of this proposed Project.

Gitga'at First Nation

Gitga'at First Nation's main community within its asserted traditional territory is Hartley Bay, which is along the marine shipping route. The proposed Project facility would be located approximately 13 km from Gitga'at First Nation's asserted traditional territory and the proposed Project shipping route would traverse approximately 100 km of Gitga'at First Nation's asserted traditional territory.

EAO assessed Gitga'at First Nation as having a strong *prima facie* claim of Aboriginal rights to harvest marine and terrestrial resources to areas in proximity to the shipping route that overlapped with its asserted territory. EAO is of the view that the information supports a moderate or strong *prima facie* claim of Aboriginal title at a number of locations along the marine shipping route. Gitga'at First Nation disagreed with EAO's assessment regarding Aboriginal title and indicated that they assert Aboriginal title to much of the Douglas Channel and at certain places through which the LNG carriers would pass. Given the nature and location of the proposed Project, and the potential impacts on Gitga'at First Nation's Aboriginal rights and title, EAO is of the view that the duty to consult Gitga'at First Nation lies in the middle of the *Haida* spectrum. EAO consulted with Gitga'at First Nation at a deeper level.

EAO and the Proponent actively consulted with Gitga'at First Nation throughout the EA to seek to better identify, understand, and resolve concerns. Some of the key concerns identified by Gitga'at First Nation included: concerns regarding cumulative air quality effects in their asserted traditional territory; potential visual impacts of ships; impacts to marine and shoreline users from LNG carriers, including wake effects; impacts of wake on shoreline erosion; impacts of LNG carriers on marine mammals; invasive species introduced from ballast water; impacts to fish habitat; and, social, cultural and health impacts to the community. Gitga'at First Nation has entered into an impact management and benefit agreement with the Proponent and EAO has been provided with a letter of support for the proposed Project from Gitga'at First Nation.

In EAO's opinion, the proposed Project would have minor impacts to Gitga'at First Nation's asserted Aboriginal rights to hunt, fish and harvest marine resources, and on culturally important sites, trails, and travelways, and negligible impacts to Gitga'at First Nation's asserted Aboriginal title and Aboriginal rights to trap and gather.

EAO has ensured that Gitga'at First Nation has been meaningfully consulted and accommodated on the potential effects of this proposed Project.

Gitxaala Nation

The main community of Gitxaala Nation is the village of Kitkatla on Dolphin Island, which is along the marine shipping route. The proposed Project would be approximately 30 km from Gitxaala Nation's asserted traditional territory, and the shipping route would traverse approximately 230 km of Gitxaala Nation's asserted traditional territory.

EAO assessed Gitxaala Nation as having a strong *prima facie* claim of Aboriginal rights to fish, hunt, trap and gather marine and terrestrial harvest resources from Wright Sound to Dolphin Island, along the shipping route, and a strong *prima facie* claim of Aboriginal title at a number of locations along the marine shipping route. Gitxaala Nation disagreed with EAO's assessment, indicating that it did not capture the full extent of potential impacts to Gitxaala Nation's Aboriginal rights from the proposed Project, as well as potential impacts to Gitxaala Nation's title to the area. Gitxaala Nation also claimed that its Aboriginal title is not limited to specific sites, but rather to all of the areas within its asserted traditional territory that would be affected by the proposed Project. Given the nature and location of the proposed Project, and the potential impacts on Gitxaala Nation's Aboriginal rights and title, EAO is of the view that the duty to consult Gitxaala Nation lies in the middle of the *Haida* spectrum. EAO consulted with Gitxaala Nation at a deeper level.

EAO and the Proponent actively consulted with Gitxaala Nation throughout the EA to seek to better identify, understand, and resolve concerns. Gitxaala Nation proposed specific valued components to inform the assessment of impacts to Aboriginal rights, which were adopted by the Proponent. EAO considered this approach in reaching conclusions regarding the potential impacts of the proposed Project on Aboriginal rights and title. Some of the key concerns identified by Gitxaala Nation included: impacts to marine and shoreline users from LNG carriers, including wake effects; impacts of wake on shoreline erosion; impacts to air quality, visual quality and noise from LNG carriers; impacts of LNG carriers on marine mammals; and, social, cultural and governance impacts to the community.

In EAO's opinion, the proposed Project would have minor impacts to Gitxaala Nation's asserted Aboriginal rights to hunt, fish and harvest marine resources, and on culturally important sites, trails, and travelways, and negligible impacts to Gitxaala Nation's asserted Aboriginal title and Aboriginal rights to trap and gather.

EAO has ensured that Gitxaala Nation has been meaningfully consulted and accommodated on the potential effects of this proposed Project.

Kitselas First Nation

Kitselas First Nation asserts both traditional territory and a marine harvesting area. Kitselas First Nation's main community is just east of Terrace. The proposed Project facility would be located approximately 6 km south of Kitselas First Nation's asserted traditional territory. The proposed Project shipping route traverses approximately 160 km of Kitselas First Nation's asserted marine harvesting area.

The asserted traditional territory is mostly terrestrial but extends to the mouth of the Skeena River and includes both Smith Island and Kennedy Island. Kitselas First Nation's asserted harvesting area is mostly marine and includes the northwest coastline, extending as far north as the borders of Alaska and as far

south as the southernmost tip of Banks Island. The marine harvesting area includes both Principe Channel and Triple Island.

EAO's assessment of Kitselas First Nation's *prima facie* claims to Aboriginal rights to areas in proximity to the shipping route proposed Project area is weak-to-moderate. Given the nature and location of the proposed Project, and the potential impacts on Kitselas First Nation's Aboriginal rights, EAO is of the view that the duty to consult Kitselas First Nation lies toward the low end of the Haida spectrum. EAO consulted with Kitselas First Nation at a deeper level.

EAO and the Proponent actively consulted with Kitselas First Nation throughout the EA to seek to better identify, understand, and resolve concerns. Some of the key concerns identified by Kitselas First Nation included: impacts to fish and fish habitat, including in relation to water withdrawals from the Kitimat River; socio-economic impacts in the Terrace area and to their communities; and the increase in the rail transportation of condensate through Kitselas reserve as a result of the proposed Project. The movement of condensate by rail was not within scope of the assessment of the proposed Project. However, the transportation of condensate by rail from Kitimat has taken place for many years and condensate was last transported from Kitimat in 2013. The expected volume of condensate proposed to be transported by the proposed Project is less than what has been previously transported along the same rail corridor. Kitselas First Nation have indicated to EAO that they would not support the proposed Project because of the three outstanding concerns above and because they did not feel that the Proponent was engaging with them in sufficient impact management and benefit discussions.

In EAO's opinion, the proposed Project would have minor impacts to Kitselas First Nation's asserted Aboriginal rights to fish and harvest marine resources, and negligible impacts to Kitselas First Nation's asserted Aboriginal rights to hunt, trap, gather, and on culturally important sites, trails, and travelways.

EAO has ensured that Kitselas First Nation has been meaningfully consulted and accommodated on the potential effects of this proposed Project.

Kitsumkalum First Nation

Kitsumkalum First Nation's main community is located just west of the city of Terrace, east of the junction of the Kitsumkalum and Skeena rivers. The proposed Project footprint would be located approximately 30 km from Kitsumkalum First Nation's asserted traditional territory, and the shipping route would traverse approximately 40 to 50 km of Kitsumkalum First Nation's asserted traditional territory.

EAO has assessed Kitsumkalum First Nation's *prima facie* claim to Aboriginal rights to fish in proximity to the shipping route by Stephens Island to be weak-to-moderate. Kitsumkalum First Nation has significant disagreement with EAO's opinion that historic Kitsumkalum First Nation use of coastal areas is or was subject to permission by the Nine Tsimshian Allied Tribes. This issue is discussed in more detail in section 20 of the assessment report. Given the nature and location of the proposed Project, and the potential impacts on Kitsumkalum First Nation's Aboriginal rights, EAO is of the view that the duty to consult Kitsumkalum First Nation lies at the lower end of the *Haida* consultation spectrum. EAO consulted with Kitsumkalum First Nation at a deeper level.

EAO and the Proponent actively consulted with Kitsumkalum First Nation throughout the EA to seek to better identify, understand, and resolve concerns. Some of the key concerns identified by Kitsumkalum

First Nation included: impacts from the facility and cumulative impacts to air quality, and any resulting impacts to surface water quality; impacts to marine harvesting; and socio-economic impacts in the Terrace area and to their community.

In EAO's opinion, the proposed Project would have minor impacts to Kitsumkalum First Nation's asserted Aboriginal rights to fish and harvest marine resources, and negligible impacts to Kitsumkalum First Nation's asserted Aboriginal rights to hunt, trap, gather, and on culturally important sites, trails, and travelways.

EAO has ensured that Kitsumkalum First Nation has been meaningfully consulted and accommodated on the potential effects of this proposed Project.

Metlakatla First Nation

The First Nation community of Metlakatla is located about 7 km northwest of Prince Rupert, and some distance from the marine shipping route. The proposed Project's LNG facility would be located approximately 20 km from Metlakatla First Nation's asserted traditional territory and the shipping route would traverse approximately 30 to 40 km of Metlakatla First Nation's asserted traditional territory.

EAO has assessed Metlakatla First Nation as having a strong *prima facie* claim to Aboriginal rights to fish, gather, hunt and trap marine and terrestrial resources in the northern portion of the proposed shipping route, and a moderate *prima facie* claim to Aboriginal title to the Stephens Island group. Given the nature and location of the proposed Project, and the potential impacts on Metlakatla First Nation's Aboriginal rights, EAO is of the view that the duty to consult Metlakatla First Nation lies in the low to middle end of the *Haida* spectrum. EAO consulted with Metlakatla First Nation at a deeper level.

EAO and the Proponent actively consulted with Metlakatla First Nation throughout the EA process to seek to better identify, understand, and resolve concerns. Some of the key concerns identified by Metlakatla First Nation included: impacts to marine and shoreline users from LNG carriers, including wake effects; impacts of wake on shoreline erosion; impacts to marine mammals; cumulative impacts from shipping and pilot boats around Triple Island, and pilot boats transiting through Metlakatla Pass; and impacts to air quality and acoustics from LNG carriers.

In EAO's opinion, the proposed Project would have minor impacts to Metlakatla First Nation's asserted Aboriginal rights to fish and harvest marine resources, and on culturally important sites, trails, and travelways, and negligible impacts to Metlakatla First Nation's asserted Aboriginal title and Aboriginal rights to hunt, trap and gather.

EAO has ensured that Metlakatla First Nation has been meaningfully consulted and accommodated on the potential effects of this proposed Project.

Lax Kw'alaams Band

The village of Lax Kw'alaams (also referred to as Port Simpson) is located on the Tsimpsean Peninsula approximately 30 km northwest of Prince Rupert, and approximately 130 km northwest of the proposed Project facility. The proposed Project facility would be located approximately 15 km south of Lax Kw'alaams Band's asserted traditional territory, and the shipping route would traverse approximately 20 km of Lax Kw'alaams Band's asserted traditional territory.

EAO is of the preliminary view that Lax Kw'alaams Band has a strong *prima facie* claim to Aboriginal rights to fish, gather, hunt and trap marine and terrestrial resources in the northern portion of the shipping route associated with the proposed Project, and moderate *prima facie* claim to Aboriginal title to the Stephens Island group. Lax Kw'alaams Band indicated that it does not agree with EAO's characterization of the range of rights that Lax Kw'alaams Band holds in the areas of the proposed Project, and that they have a strong claim to Aboriginal title to the Stephens Island group and the north end of Porcher Island. Given the nature and location of the proposed Project, and the potential impacts on Lax Kw'alaams Band's Aboriginal Interests, EAO is of the view that the duty to consult Lax Kw'alaams Band lies toward the low to middle end of the *Haida* spectrum. EAO consulted with Lax Kw'alaams Band at a deeper level.

EAO and the Proponent actively consulted with Lax Kw'alaams Band throughout the EA to seek to better identify, understand, and resolve concerns. Some of the key concerns identified by Lax Kw'alaams Band included: impacts to marine mammals; cumulative impacts from shipping and pilot boats around Triple Island and in the Prince Rupert harbour; and, impacts to marine and shoreline users from LNG carriers, including wake effects.

In EAO's opinion, the proposed Project would have minor impacts to Lax Kw'alaams Band's asserted Aboriginal rights to hunt, fish and harvest marine resources, and on culturally important sites, trails, and travelways, and negligible impacts to Lax Kw'alaams Band's asserted Aboriginal title and Aboriginal rights to hunt, trap and gather.

EAO has ensured that Lax Kw'alaams Band has been meaningfully consulted and accommodated on the potential effects of this proposed Project.

Métis Nation British Columbia

The Métis are originally the descendants of eighteenth-century unions between European men (explorers, fur traders and pioneers) and Indian women, mainly on the Canadian plains (Manitoba, Saskatchewan and Alberta).

EAO consulted MNBC on behalf of the Government of Canada pursuant to the *Memorandum of Understanding between the Canadian Environmental Assessment Agency and the British Columbia Environmental Assessment Office on Substitution of Environmental Assessments* (2013). This consultation is not an acknowledgement on the part of BC that it owes a duty of consultation, or accommodation to Métis in BC under section 35 of the *Constitution Act, 1982*. EAO consulted with MNBC at a notification level.

Information provided by MNBC indicated some use by members in the vicinity of the facility and along the shipping route. No specific concerns were raised with the proposed Project during the EA.

In EAO's opinion, the proposed Project would have negligible impacts to MNBC fishing and harvest of marine resources in the area of the proposed Project.

Weighing of Impacts to Aboriginal Interests with Other Interests

In weighing the impacts of the proposed Project on Aboriginal Interests as set out in the assessment report and summarized above, EAO recommends that Ministers consider the following facts in the context of potential impacts on Aboriginal Interests:

- Importance of the proposed Project to the local, regional, and provincial economy;
- Resources or values that may no longer be available for future generations; and
- Benefits of proposed Project to affected Aboriginal communities.

Importance to provincial and regional economy

The Province has made the development of the LNG industry a key priority. Exporting BC's natural gas has been described as a pivot to BC's economic recovery and growth, set out as a priority in every throne speech since October 2011.

Resources or values available for future generations

Traditional subsistence activities, such as hunting, fishing, gathering and trapping may be altered as a result of construction, operation, and shipping activities of the proposed Project, which could manifest itself through changes to local harvesting locations, behavioural alteration or sensory disturbance of environmental resources.

Although EAO believes there could be potential impacts to resources or values of importance to Aboriginal Groups, the majority of this disturbance and impact would be expected to be low to moderate in magnitude. EAO is of the view that the Proponent has made efforts to demonstrably avoid high value areas for Aboriginal Groups, by building on existing industrial lands, minimizing clearing wherever possible, and providing appropriate mitigation measures to reduce the potential effects of project shipping.

Benefits to affected Aboriginal communities

The Proponent has indicated that the proposed Project would provide capacity-building initiatives to support employment, contracting and business development for Aboriginal Groups. These initiatives would include:

- Providing capacity funding to support consultation activities;
- Identify training and capacity building partnerships or other arrangements to increase opportunities for participation;
- Encouraging and supporting the use of Aboriginal and local businesses by encouraging suppliers and subcontractors to adopt local procurement;
- Support for scheduled transportation between Terrace and the Project site (e.g., scheduled crew transportation) to facilitate residents of the greater Terrace area and nearby Aboriginal communities to participate in the Project; and
- The Proponent is actively engaged with the Aboriginal Groups, listed in Schedules B and C of the Section 11 Order, to ensure that local First Nation communities benefit directly from the proposed Project, including opportunities related to employment, training and contracting.

At present, the Proponent has entered into impact management and benefit agreements with Haisla Nation and Gitga'at First Nation.

In addition to benefits from the Proponent, the Province is also making available financial opportunities to Aboriginal Groups, which would continue with the operational life of the proposed Project.

7 Public Consultation

Public consultation requirements are intended to provide multiple opportunities for the public to provide input. The Proponent was required to prepare a Public Consultation Plan early in the EA that laid out the Proponent's consultation objectives and activities. Through the course of the EA, the Proponent submitted multiple public consultation reports to the EAO describing the progress in implementing its Public Consultation Plan.

EAO hosted the following two public comment periods and four open houses during the EA:

- The 30-day public comment period on the draft Application Information Requirements was held from November 13, 2013 to December 13, 2013 and 41 public comments were submitted. Public open houses were held in Kitimat and Terrace and approximately 110 people attended.
- The 45-day public comment period on the Proponent's Application was held from November 7, 2014 to December 22, 2014 and 52 public comments were submitted. Public open houses were held in Kitimat and Terrace, and approximately 110 people attended again.

The key issues raised by the public during the open houses and through the submitted public comments included concerns about the following:

- General questions regarding the LNG industry in BC and the potential impacts of upstream gas production and associated pipelines.
- Concerns about emissions from the proposed Project and potential effects on the local airshed, to human health, and to climate change.
- Comments regarding the extraction of water from the Kitimat River and the potential effects on freshwater species, the estuary, and the Kitimat River.
- Potential impacts to marine resources, including marine mammals, due to underwater noise and vessel speeds.
- Questions and concerns regarding plans for marine communications, shipping schedules, wake effects and effects of poor weather on vessel speeds.
- Interest regarding jobs, skills training and procurement opportunities, noting the importance of ensuring procedures for maximizing local involvement in benefits.
- Concerns related to the potential impacts to community health and well-being and the population influx and increased pressure on community infrastructure and services.
- Questions regarding the procedures in the event of an accident or malfunction, particularly in the marine environment.

The Proponent provided responses to all public comments. These comments and responses were considered and discussed further in the assessment report.

8 Local Government Consultation

The following local and regional governments were invited to participate on the EAO working group: District of Kitimat, City of Terrace, Kitimat-Stikine Regional District, and Skeena-Queen Charlotte Regional District.

The District of Kitimat and the Kitimat-Stikine Regional District participated in the evaluation and the review of the Proponent's Application, and raised the following key issues during Application review:

- The facility may put increased demands on local landfill sites, and local governments reinforced the importance of ongoing communication with affected local governments about using regional landfills to support the proposed Project.
- There may be an increase in pressure on infrastructure and services related to an increase in population in the regional district during construction, not only from workers who would be living in the workforce accommodation centre, but also those people who choose to live in the community with their families, and others who are not working on the facility but move to the region because of an increase in economic activity.
- The level of policing and emergency services that may be required during construction, and possibly during operations (in relation to accidents and malfunctions), may be beyond the District of Kitimat's current capacity.

Both the City of Terrace (January 8, 2015) and the District of Kitimat (December 17, 2014) provided EAO with letters extending their support for the proposed Project.

EAO proposes a number of conditions to mitigate these effects, including a condition that would require the Proponent to develop a plan to manage socio-economic effects that particularly focusses on to infrastructure and services.

9 Federal Government Perspectives

The following federal departments with specialist information or expert knowledge relevant to the proposed Project participated in the evaluation and the review of the Proponent's Application:

- The Agency provided guidance and information directly to EAO regarding the substituted process and federal EA requirements under CEAA 2012, but did not directly participate in the working group;
- Environment Canada provided comments and information related to their regulatory and statutory responsibilities related to vegetation resources, wildlife resources, surface water quality, disposal at sea, marine resources, human health, cumulative effects, air quality, greenhouse gas management, accidents and malfunctions and Aboriginal Interests;
- DFO provided comments and information related to their regulatory and statutory responsibilities related to freshwater and estuarine fish and fish habitat, marine resources and disposal at sea;
- Health Canada provided advice and information related to their regulatory and statutory responsibilities regarding human health;
- Natural Resources Canada provided advice and information related to their expertise in seismicity, marine geohazards, and sediment dispersion modelling; and
- Transport Canada provided comments and information related to their regulatory and statutory responsibilities related to marine transportation and use, accidents and malfunctions, Aboriginal Interests, cumulative effects and disposal at sea.

For the purposes of the substituted federal EA, EAO considered effects that the proposed Project may have on the components described in CEAA 2012 5(1) and 5(2), as well as in SARA 79(2). Specifically, EAO conducted the following assessments (see section 13 of the assessment report):

- CEAA 2012 5(1)(a) – assessment of changes the project may cause to several federal areas of responsibility: fish and fish habitat; aquatic species; and, migratory birds;
- CEAA 2012 5(1)(b) – assessment of a change that may be caused to the environment by the Project that may arise on federal lands, other provinces, or outside of Canada;
- CEAA 2012 5(1)(c) – assessment of any change to the environment caused by the Project on Aboriginal peoples': health and socio-economic conditions; physical and cultural heritage; the current use of lands and resources for traditional purposes; or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance;
- CEAA 2012 5(2)(a) – assessment of changes to the environment that are related to the exercise of a power or performance of duty or function by a federal authority;
- CEAA 2012 5(2)(b) – assessment of changes to any effects on health, socio-economic conditions, matters of historical, archaeological, paleontological or architectural interest, or other matters of physical or cultural heritage not already considered in under section 5(1)(c); and
- SARA 79(2) – the identification of adverse effects of the project on the SARA-listed wildlife species and its critical habitat and associated mitigation and monitoring measures.

In addition to the conditions proposed by EAO, the federal government will be proposing conditions related to the above federal requirements, which would become legally binding if the proposed Project is approved by Canada.

10 Additional Considerations

Ministers may consider other matters that they consider relevant to the public interest in making their decision on whether to grant an EA Certificate to the Proponent. The following information regarding the potential economic benefits of the proposed Project were presented in the Proponent's Application and considered during the Application Review stage.

The proposed Project would be built in two phases. The first (or initial) phase would include the construction and operation of two trains, while full build-out would include the construction and operations of four trains.

Economic Benefits

The Application estimates an initial capital cost of \$12.9-20.6 billion for construction, with \$2.5-4.1 billion spent in BC. The initial construction would contribute \$2.1-3.5 billion to BC's gross domestic product (GDP) and would provide \$200-320 million in provincial tax revenue. The capital cost for full build-out would be \$22.6-36.1 billion, and would include correspondingly greater contributions to GDP and taxes.

During operations, the Application states that the proposed Project would include \$3.3-4.6 billion in annual spending for the initial phase (\$6.5-9.2 billion for full build out). For the initial phase, this would include \$12 million per year in municipal taxes, \$102-146 million per year in provincial taxes, and \$17-28 million per year in federal taxes.

Contribution to Community Development

Annual municipal and regional revenues in BC are estimated to be \$35 million during construction and \$12 million per year during operations. Ongoing repair and maintenance services procured in Canada are expected to be \$65 million per year.

During construction, the Proponent estimates that 10% of the direct construction workforce would be hired locally, 20% from other parts of BC, 50% from other parts of Canada, and 20% from abroad. Initial construction would require 26,300 person years of employment, and full build out would generate 36,500 person years of employment.

During operations, the proposed Project would employ 450-800 full time equivalent positions, all of which would be located in BC and most of which would be local. The proposed Project would also generate other direct, indirect and induced employment.

Social and economic benefits are expected for local and Aboriginal communities, including training and education and employment opportunities for unemployed and underemployed individuals, and increased availability of funds for government programs.

Other Considerations

The BC government set its vision for an LNG industry in BC in September 2011, with the release of *Canada Starts Here: The BC Jobs Plan*. Key provincial strategies related to the LNG industry include:

- *BC Natural Gas Strategy (2012)*, which presented a vision for BC to “be a global leader in secure and sustainable natural gas investment, development and export.” To achieve this vision, the strategy outlined six goals for BC: maintain current and develop new markets and ensure a reliable, abundant supply; maintain competitiveness; maximize the benefits of natural gas development; ensure environmentally responsible development; and build partnerships to promote development.
- *BC Liquefied Natural Gas Strategy (2012)*, which presented a vision of three LNG plants in operation by 2020. This vision is supported by three goals: keep BC competitive in the global LNG market; maintain BC’s leadership on climate change and clean energy; and, keep energy rates affordable for families, communities and industry.

11 Conclusion

Based on:

- Information contained in the Proponent’s Application and the supplemental information provided during Application Review;
- The Proponent’s and EAO’s efforts at consultation with Aboriginal Groups, federal, provincial and local government agencies, and the public, and its commitment to ongoing consultation;
- Comments on the proposed Project made by Aboriginal Groups, federal, provincial and local government agencies, as members of EAO’s working group, and the Proponent’s and EAO’s responses to these comments;
- Comments on the proposed Project received during the public comment period, and the Proponent’s responses to these comments;
- Issues raised by Aboriginal Groups regarding potential impacts of the proposed Project and the Proponent’s responses and best efforts to address these issues;

- The design of the proposed Project as specified in the proposed Schedule A (Certified Project Description) of the EA Certificate to be implemented by the Proponent during all phases of the proposed Project; and
- Mitigation measures identified as proposed conditions in Schedule B (Table of Conditions) of the EA Certificate to be undertaken by the Proponent during all phases of the proposed Project.

EAO is satisfied that:

- The EA has adequately identified and assessed the potential adverse environmental, economic, social, heritage and health effects of the proposed Project, having regard to the proposed conditions set out in Schedule B (Table of Conditions) to the EA Certificate;
- Consultation with Aboriginal Groups, federal, provincial and local government agencies, and the public, and the distribution of information about the proposed Project have been adequately carried out by the Proponent and that efforts to consult with Aboriginal Groups will continue on an ongoing basis;
- Issues identified by Aboriginal Groups, federal, provincial and local government agencies, and the public, which were within the scope of the EA, were adequately and reasonably addressed by the Proponent during the review of the Application;
- Practical means have been identified to prevent or reduce any potential adverse environmental, social, economic, heritage or health effects of the proposed Project such that no direct or indirect significant adverse effect is predicted or expected, with the exception of a significant adverse effect to GHG emissions;
- The potential for adverse effects on the Aboriginal rights and title of Aboriginal Groups has been avoided, minimized or otherwise accommodated to an acceptable level; and
- The provincial Crown has fulfilled its obligations for consultation and accommodation to Aboriginal Groups relating to the issuance of an EA Certificate for the proposed Project.

The provincial Minister of Environment and the Minister of Natural Gas Development will consider this summary assessment report, the full assessment report and other accompanying materials in making their decision on the issuance of an EA Certificate to the Proponent under the Act.