



Impact Assessment Agency of Canada



ANALYSIS OF LNG CANADA DEVELOPMENT INC.'S PROPOSED CHANGES TO
THE LNG CANADA EXPORT TERMINAL PROJECT

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1. Introduction

LNG Canada Development Inc. (the proponent) proposed the construction and operation of the LNG Canada Export Terminal Project (the Project), a natural gas liquefaction facility and marine terminal for the export of liquefied natural gas (LNG) in the District of Kitimat, British Columbia (B.C.). The Project will convert natural gas to LNG, approximately 26 million tonnes per annum, for export to global markets. The Project is expected to have a life of at least 25 years. The Project began construction in 2015.

1.1 Impact Assessment Act

On August 28, 2019, the *Impact Assessment Act* (IAA) came into force, repealing the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). Section 184 of the IAA provides that Decision Statements issued under CEAA 2012 are deemed to be Decision Statements under the IAA and, therefore, subject to the provisions of the IAA. In addition, the former Canadian Environmental Assessment Agency is now the Impact Assessment Agency of Canada. In this report, the term “Agency” refers to either the former Canadian Environmental Assessment Agency or the current Impact Assessment Agency of Canada.

1.2 Assessment History

The Project was subject to an environmental assessment pursuant to CEAA 2012 and B.C.’s *Environmental Assessment Act, 2002*. The federal environmental assessment was conducted by means of substitution in accordance with the *Memorandum of Understanding between the Canadian Environmental Assessment Agency and the British Columbia Environmental Assessment Office (EAO) on Substitution of Environmental Assessments (2013)*.

As part of the substituted process, the EAO submitted to the Agency an Assessment Report that informed the former Minister of Environment and Climate Change’s environmental assessment decision under CEAA 2012. The EAO prepared the Assessment Report in consultation with an Advisory Working Group, made up of federal, provincial, and local government representatives with mandates and skill sets relevant to the review. The EAO consulted with representatives of Haisla Nation, Gitga’at First Nation, Gitxaala Nation, Kitselas First Nation, Kitsumkalum Indian Band, Lax Kw’alaams Band, and Metlakatla First Nation. The Agency provided advice to the EAO to fulfill the requirements related to CEAA 2012.

Following the substituted environmental assessment process, the former Minister of the Environment determined under paragraph 52(1)(a) of the CEAA 2012 that the Project would be likely to cause significant adverse environmental effects, taking into account the mitigation measures the Minister determined appropriate. In accordance with subsection 52(2) of CEAA 2012, the decision was referred to the Governor in Council on the matter of whether the significant adverse environmental effects were justified in the circumstances. In accordance with paragraph 52(4)(a) of CEAA 2012, the Governor in Council decided that the significant adverse environmental effects that the Project would be likely to cause were justified in the circumstances and the Project may proceed. On June 17, 2015, in accordance with subsection 53(1) of CEAA 2012, the former Minister issued a Decision Statement for the Project. The Decision Statement contains 87

legally-binding conditions, which include mitigation measures and follow-up requirements that the proponent must comply with for the life of the Project.

1.3 Purpose of this report

On December 18, 2020, the proponent provided the Agency with information and analysis of the proposed changes to the Project within its Amendment Assessment for Amendment #3 to Environmental Assessment Certificate #E15-01 (the proponent's amendment assessment, which can be found here: (<https://iaac-aeic.gc.ca/050/evaluations/document/138411?culture=en-CA>)). The Proponent's information described the changes, the potential effects of the changes to valued components, and a summary of engagement with Indigenous groups. The EAO carried out its own amendment process for the proposed changes and convened a Technical Advisory Committee (TAC) to assist with its review. The Agency participated in the TAC to minimize duplication of effort. The TAC included provincial ministries, federal departments, local and regional governments and Haisla Nation representatives. The EAO's Amendment Assessment Report and its amendment process can be found here: [EPIC \(gov.bc.ca\)](#).

This Report provides a summary of the Project changes and an analysis of whether these changes may result in adverse environmental effects within areas of federal jurisdiction. In addition, it considers whether existing conditions in the Decision Statement need to be amended, either to add a condition, remove a condition, or modify an existing condition.

2. Proposed Project Design Changes

The proponent is proposing the following changes to the Project:

- Develop two temporary access trails, between the module haul road and the central and southern sections of the loading line corridor; and
- Upgrade of existing roads as a supplementary haulage route for delivery of construction materials to the LNG facility site.

These proposed changes are shown in Figure 1.

2.1 Details of Proposed Changes

Temporary Access Trails

The Project includes a module haul road and a LNG loading line corridor (see Figure 1) that are used for the transport of construction equipment to the site. The temporary access trails are required to avoid the need for construction of a bridge across Anderson or More creeks, and to reduce disturbance to an area where the plant eminent bluegrass is found. Specifically, the proponent proposes to construct and use two temporary access trails within an access trail area located between the module haul road (within the Certified Haul Road Corridor) and the LNG loading line corridor (within the Certified Marine Terminal Area) (Figure 1).

The purpose of the proposed access trails would be to allow heavy construction equipment to access the LNG loading line corridor at ground level. This is required to enable construction of the loading line trestle beneath an existing high voltage transmission line using a low-headroom, land-based crane. The cantilever bridge machine that will be used to construct the loading line trestle would not have enough clearance to be used in transmission line work area and can only proceed along straight alignments, so an alternative construction approach is required.

The first access trail, called the Northern Access Trail, would enable construction equipment to access the central section of the loading line corridor from the west and avoid the need for construction of a bridge across Anderson or Moore creeks. An existing access trail would be extended by 240 metres in an unforested area east of the existing trail to the loading line corridor.

The Southern Access Trail would enable the establishment of a work area at the central section of the loading line corridor. This option would reduce disturbance to an area of eminent bluegrass (a plant species of interest) and avoid part of the lower Kitimat River estuary that is inundated during high tides by eliminating the footprint associated with the construction access road from the original Project design. The Southern Access Trail would extend approximately 200 metres from the southern haul road to the loading line trestle corridor, then turn and extend north for approximately 70 metres to a work area within the Certified Project Area. Some tree clearing would be required prior to construction of the new access trail.

Both access trails would be 10 metres wide, and constructed using temporary forestry road building techniques from the Engineering Manual of BC Ministry of Forests, Lands, Natural Resource Operations and

Rural Development (FLNRORD 2019). The Northern Access Trail construction would require vegetation clearing and grubbing, from Moore Creek to the loading line trestle corridor and along the entire length of the Southern Access Trail. Gravel and timber mats would be placed along both access trails to support the movement of equipment. Once construction of the LNG loading lines is complete, both temporary access trails would be reclaimed and revegetated using established techniques and best practices in line with the Engineering Manual (FLNRORD 2019). This includes removing timber mats and imported gravel, ground stabilizing/scarifying/decompacting the terrain, re-use of local topsoil, and revegetation using local plants. The temporary access trails would be in place for six to nine months.

Supplementary Haulage Route:

The proponent proposes to upgrade existing roads as a Supplementary Haulage Route (Figure 1). The proposed route is used for trucking construction materials to the facility site, and the upgrade would enable the route to support two-way traffic. This would enhance efficiency and worker safety during the construction of the Project, and through the operation and decommissioning phases. The extent of upgrades would be determined in discussions with the District of Kitimat, but are expected to include vegetation clearing (up to 10 metres wide), road widening, and grading. No culverts would be required. The localized road widening of the Supplemental Haulage Route would be permanent and remain for the life of the Project.

2.2 Agency's Analysis of Proposed Changes

The Agency conducted an analysis of the proposed Project changes to determine whether the changes constitute a new or different designated project that may require a new impact assessment. The changes to the Project only relate to the upgraded access and haul roads. These Project components are not described in the *Physical Activities Regulations*. The Agency is of the view that the proposed Project changes do not constitute a new or different designated project that may require a new impact assessment.

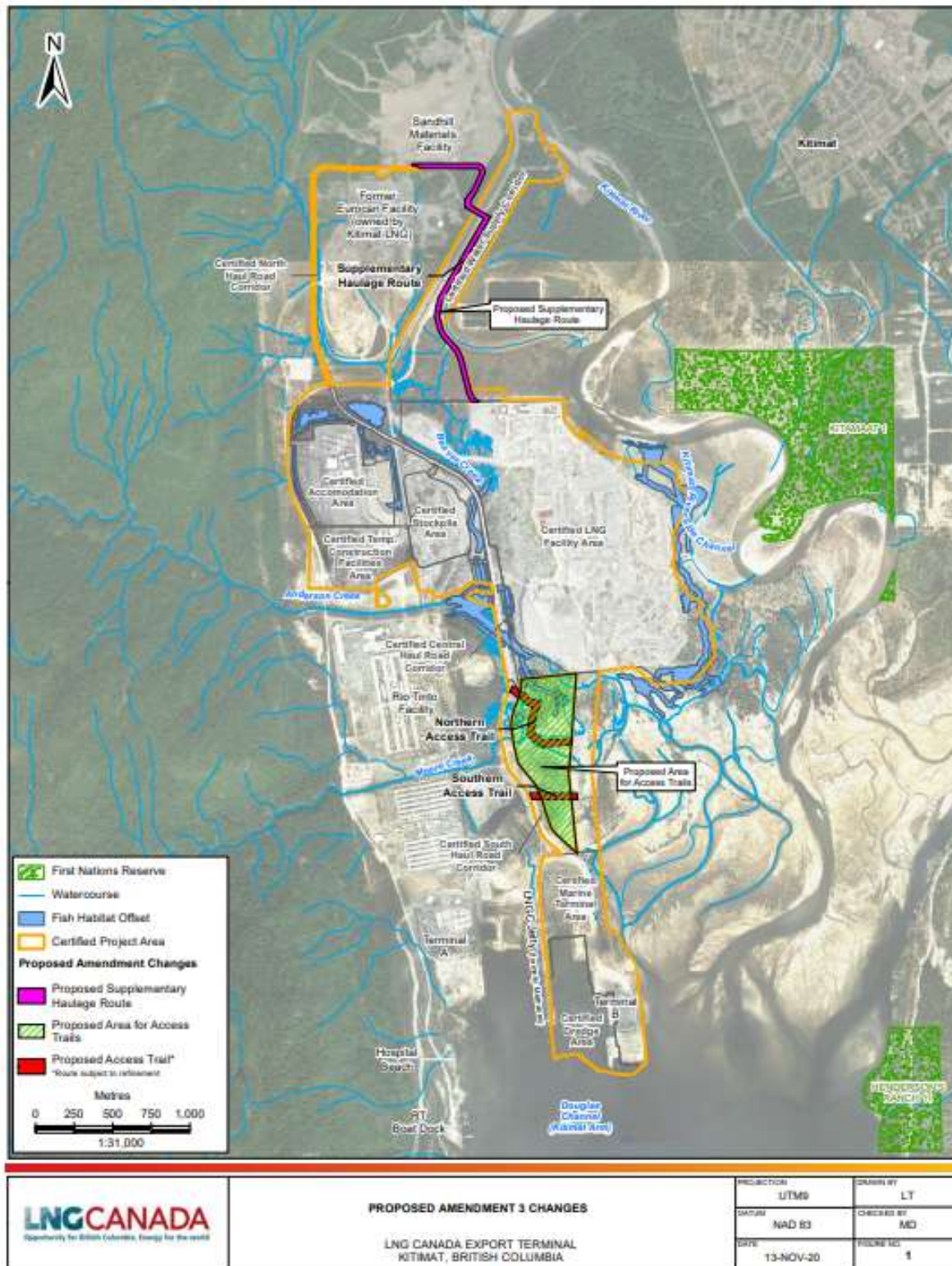


FIGURE 1: LOCATION OF PROPOSED CHANGES

3. Potential Adverse Environmental Effects from Proposed Project Changes

The following is an analysis of whether any of the changes to the Project related to the construction and operation of the temporary access roads and supplementary haul road would require modifications, including addition or removal of the mitigation measures and follow-up requirements included as conditions in the Decision Statement.

3.1 Fish and Fish Habitat

Effects to fish and fish habitat were assessed during the original environmental assessment and mitigation measures and follow-up requirements were developed.

3.1.1 Proponent's Assessment

The proponent has asserted within its amendment assessment that no fish habitat has been identified in the area of proposed changes associated with the supplementary haulage route or Southern Access Trail. The Northern Access Trail intersects a cross-channel between Moore Creek and Anderson Creek.

The footprint of the existing portion of the Northern Access Trail has resulted in disturbance to approximately 11 square metres (m²) of instream habitat and 1,829 m² of riparian habitat; expansion of the Northern Access Trail will disturb an additional 947 m² of riparian habitat. The Proponent identified that vegetation clearing and instream works would be the activities that could potentially result in adverse effects to fish and fish habitat. Riparian vegetation clearing has potential to result in changes to fish habitat through changes in erosion and sedimentation. Instream work below the high-water mark has the potential to result in changes in fish habitat, risk of physical injury or mortality to fish, or change in fish health through direct habitat changes, sedimentation, and risk to fish from equipment.

The proponent stated that it will adhere to measures to mitigate the adverse effects of the Northern Access Trail on fish and fish habitat, as outlined in Condition 2 of the *Fisheries Act* authorization by Fisheries and Oceans Canada (DFO) for supporting infrastructure (16-HPAC01079), and in the proponent's amendment assessment report. These mitigation measures include sediment and erosion control measures, surface water management methods, fish habitat management methods, spill response planning and annual reporting to DFO. The applicable measures and standards to avoid and mitigate serious harm to fish shall be implemented prior to the initiation of works, undertakings or activities associated with the Project.

The temporary road and bridge would be removed following construction of the loading line and the riparian habitat would be reclaimed. The Proponent concluded that no additional mitigation measures are needed to address the potential effects of the proposed changes on freshwater and estuarine fish and fish habitat. The proponent is of the view that the residual effects to fish and fish habitat associated with the Project changes would not change the cumulative effects assessment conclusions from the original environmental assessment.

3.1.2 Views Expressed

DFO stated that in order to make a determination on whether or not the Project would require a *Fisheries Act* authorization, the proponent would need to provide additional information to DFO through its regulatory review process. The proponent determined that the works would not result in the death of fish or harmful alteration, disruption, and destruction of fish habitat as long as the measures to protect fish and fish habitat are followed. Therefore, the proponent does not intend to submit a request for review form to DFO for works associated with the Northern Access Trail.

The District of Kitimat stated that there may be negligible effects to surface water quality due to increased traffic along the unpaved supplementary haul road. The proponent stated that increased traffic associated with the use of the supplementary haulage route is expected to cause a negligible change relative to the potential effects previously assessed in the EA Certificate Application, and that any change would be primarily related to the potential for increased dust. This potential effect would be mitigated by using existing mitigation measures and commitments, such as dust suppression, erosion and sediment control measures and environmental monitoring.

The District of Kitimat also stated that erosion and sediment control would be required for the widened gravel road. The proponent responded that erosion and sediment control measures would be put in place as per the Construction Environmental Management Plan developed in conformance with the Condition 20 of the EA Certificate.

The EAO concluded that effects to fish and fish habitat would result in a small temporary decrease in fish habitat area and a negligible increase of risk of injury or mortality and sensory disturbance to individual fish. It also stated that effects would be temporary and reversible through restoration and mitigation required through the proponent's *Fisheries Act* authorization, and that there would be no change from the conclusions of the original environmental assessment. The EAO also concluded that there is potential for a negligible impact on water quality due to erosion from the supplementary haulage route that can be mitigated through existing EA Certificate conditions, and that there would be no change from the conclusions of the original environmental assessment.

3.1.3 Agency's Analysis and Conclusions

It is the Agency's view that the conditions in the Decision Statement, specifically those related to the development and implementation of a plan to offset the loss of fish and fish habitat, would be sufficient to address any residual effects to fish and fish habitat caused by the Project changes. Therefore, taking into account the proponent's analysis, and the views expressed as outlined above, the Agency concludes that the proposed Project changes would not result in any change to adverse environmental effects to fish and fish habitat beyond those assessed during the original environmental assessment. Existing key mitigation measures and follow-up requirements from the original environmental assessment would adequately address any effects under CEEA 2012 resulting from the proposed changes, including mitigation measures related to erosion and sedimentation, loss of fish habitat, and fish mortality.

3.2 Air Quality

Effects to air quality were assessed during the original environmental assessment of the Project and mitigation measures and follow-up requirements were developed. The Decision Statement includes conditions to mitigate effects under CEAA 2012 specifically effects of air quality on human health.

3.2.1 Proponent's Assessment

The proponent stated within its amendment assessment report that the construction of the temporary access trails would result in negligible additional criteria air contaminants (CAC) and fugitive particulate matter (PM) emissions from the original environmental assessment.

The proponent also stated that potential changes to previously characterized effects are likely from the use of the supplementary haulage route. The supplementary haulage route would be used for trucking construction materials to the facility site resulting in direct emissions of CACs and fugitive PM emissions. Of these, fugitive emissions of 'dust' or coarse fraction PM (those which have an aerodynamic diameter ranging from 2.5 to 10 microns) have the greatest potential for changes to previously characterized residual effects, and as such were carried forward in this assessment.

The proponent stated that the existing conditions from the original environmental assessment with respect to air quality would mitigate the effects from upgrading the road.

The proponent developed an Air Quality Management Plan (AQMP) for construction including mitigation, monitoring and adaptive management. The AQMP was developed in consultation with the provincial Ministry of Environment and Climate Change Strategy, the Ministry of Health and the B.C. Oil and Gas Commission. The AQMP contains mitigation measures sufficient to manage air quality concerns related to use of the supplementary haulage route. The proponent concluded that no additional mitigation measures are needed to address the potential effects.

The anticipated residual effects to air quality, identified by the proponent, include an overall increase of CAC emissions, particularly coarse fraction PM emissions. The emissions from the proposed changes would be localized in the vicinity of the supplementary haulage route and within the Local Study Area (LSA) for air quality from the original environmental assessment. Along the supplementary haulage route, limited increases of coarse fraction PM ('dust') emissions are expected, but would not be materially different from those predicted in the original environmental assessment. Along the existing haul road small decreases of 'dust' emissions are expected (as some traffic from this route is displaced to the proposed haulage route), but not materially different from those previously assessed.

The proponent stated in its amendment assessment report that with the implementation of existing mitigation measures, potential residual effects to air quality due to proposed works and activities associated with the proposed changes will be limited to coarse fraction PM emissions along the supplementary haulage route; these are negligible compared to the overall Project. Therefore, the proponent is of the view that the Project changes would not result in changes to the characterization of residual effects as set out in the original environmental assessment. The proponent also concluded that the residual effects associated with the

proposed changes will not change the cumulative effects assessment conclusions provided in the original environmental assessment.

3.2.2 Views Expressed

The B.C. Ministry of Environment and Climate Change Strategy raised initial concerns about the assessment of fugitive dust emissions related to the Project changes. Air quality was therefore reviewed as a valued component in the consideration of the Project changes. ECCC did not have any additional comments.

The EAO also concluded in the EAO's Amendment Assessment Report that potential human exposures to road dust would be temporary, intermittent and brief for those travelling on Haisla Blvd, and that there would be no change from the conclusions of the original environmental assessment. The EAO concluded that Certificate conditions are in place to mitigate air quality effects of the Project.

3.2.3 Agency's Analysis and Conclusions

Taking into account the analysis within the proponent's amendment assessment, and the views expressed as outlined above, the Agency concludes that the Project changes would not result in any change to adverse environmental effects to human health as a result of air quality beyond those assessed during the original environmental assessment. Existing key mitigation measures described in the Decision Statement and follow-up requirements will adequately address any effects under CEAA 2012 resulting from the proposed changes.

3.3 Vegetation Resources

Effects to vegetation resources were assessed during the original environmental assessment of the Project and mitigation measures and follow-up requirements were developed. The Decision Statement includes conditions to mitigate effects under CEAA 2012, specifically effects on wetlands that support migratory birds, species at risk and use by Indigenous people.

3.3.1 Proponent's Assessment

The proponent's amendment assessment stated that the total area of clearing outside of the Project footprint associated with the proposed changes for the access trails and supplementary haulage roads is 3.4 hectares. Of this area, approximately 1.4 hectares (59%) are vegetated ecological communities and 2.0 hectares (41%) are anthropogenic, sparsely vegetated, or non-vegetated. The ecological communities of interest that occur in this area are approximately:

- 0.3 hectares of provincially red-listed communities;
- 0.2 hectares of provincially blue-listed communities;
- 0.1 hectares of old-growth forest;
- 1.0 hectares of floodplain units;
- 0.3 hectares of wetland; and
- 0.1 hectares of which are ecologically important (i.e., are red- or blue-listed and/or estuarine).

No rare plant species, unique Traditional Use plant species nor invasive plant species were identified in the clearing area associated with the proposed changes.

Vegetation clearing to support construction of the temporary access trails and supplementary haulage route may result in changes to ecological communities and plant species of interest, through the removal of approximately 1.4 hectares of vegetated ecological communities and the potential introduction or spread of invasive species through construction clearing activities.

No changes in health and diversity of native vegetation due to air emissions effects of sulphur dioxide fumigation, nitrogen deposition and acid deposition were predicted from the proposed changes, as no change in air emissions during operations are anticipated.

The proponent is of the view that any potential effects to vegetation resources associated with the Project changes would be mitigated through Project design and the implementation of mitigation measures from the original environmental assessment. The proponent outlined these existing conditions in Section 7.2.3 of its amendment assessment.

Additionally, the proponent anticipated that the proposed changes would reduce the potential effects to an area known to support eminent bluegrass, a plant species of interest, relative to those identified in the original environmental assessment. By constructing the Southern Access Trail, the potential disturbance to this species would be limited to the direct footprint of piles installed using the cantilever bridge machine. In comparison, the original Project design would lead to disturbance from the pile installation in addition to disturbance from the footprint of the construction access road.

The changes in abundance of plant species after mitigation according to the proponent are as follows:

- temporary loss of traditional use plants through vegetation clearing, although no unique species were identified within these areas in the original environmental assessment; and
- potential introduction or spread of invasive plants. The proponent stated that proposed changes will not result in a detectable residual change in the vegetated ecological communities within the LSA or RSA (Regional Study Area).

The proponent stated within its amendment assessment that the changes associated with the temporary access trails would be temporary because they would be reclaimed after six to nine months of use. There would be no net loss of wetland functions associated with ecologically important wetlands due to the implementation of the wetland compensation plan.

The proponent stated within its amendment assessment that residual effects to vegetation from the proposed changes would be localized within the vegetation LSA (a 120 metre buffer on the Project footprint). Approximately 350 metres of the proposed supplementary haulage route would be outside of the vegetation LSA presented in the original environmental assessment, but this area is currently a road and therefore not vegetated. Potential for introduction or spread of invasive plants in this area would be managed through implementation of the invasive plant management plan.

With existing mitigations applied, the proponent concluded that the residual effects to vegetation resources due to the Project changes (clearing of 1.4 hectares of vegetation) are negligible. There is no anticipated

change to the overall characterization of residual effects of changes in abundance of plant species of interest as presented in the original environmental assessment, as a result of the proposed changes.

The proponent also concluded that residual effects would not change the cumulative effects assessment conclusions of the original environmental assessment.

3.3.2 Views Expressed

ECCC expressed concern that vegetation clearing related to the haul road upgrade was not considered in the assessment of Project changes and compensation planning. The proponent stated that the loss of vegetated ecological communities associated with the haul road upgrade was included in the total vegetation losses identified in the proponent's amendment assessment and would be included in compensation planning where applicable.

The EAO concluded that clearing an additional 1.4 hectares of vegetated ecological communities would result in a small increase in the total area cleared, that it would be reversible through reclamation activities, and that there would be no change from the conclusions of the original environmental assessment. The EAO concluded that certificate conditions are in place to mitigate and compensate impacts of the project changes on vegetation.

3.3.3 Agency's Analysis and Conclusions

Taking into account the analysis within the proponent's amendment assessment, and the views expressed as outlined above, the Agency concludes that the Project changes would not result in any change to adverse environmental effects to vegetation resources beyond those assessed during the environmental assessment. Existing key mitigation measures and follow-up requirements, including those required through the Decision Statement, would adequately address any effects under CEAA 2012 resulting from the proposed changes.

3.4 Wildlife Resources

Effects to wildlife were assessed during the original environmental assessment of the Project and mitigation measures and follow-up requirements were developed. The Decision Statement includes conditions to mitigate effects under CEAA 2012, specifically effects on migratory birds.

3.4.1 Proponent's Assessment

The Project area supports a diverse faunal group that includes large and small mammals, songbirds, raptors, waterfowl, shorebirds, and amphibians.

The footprint of the proposed Northern Access Trail is 0.65 hectares. The Northern Access Trail overlaps vegetated ecological communities that provide habitat for wildlife and crosses a tidally-influenced channel between Moore Creek and Anderson Creek. Although the Northern Access Trail overlaps 0.18 hectares of a Geographic Location Polygon for marbled murrelet suitable nesting habitat, wildlife habitat suitability mapping did not rate this area as High or Moderate marbled murrelet breeding habitat.

The footprint of the Southern Access Trail is 0.21 hectares. The Southern Access Trail overlaps vegetated ecological communities that provide habitat for wildlife, but it does not cross any watercourses.

New vegetation clearing associated with the supplementary haulage route overlaps 0.54 hectares vegetated ecological communities that provide habitat for wildlife. A total of 1.4 hectares of wildlife habitat will be cleared.

The Proponent stated in its amendment assessment that potential effects to terrestrial wildlife resources, including loss or change in habitat, risk of injury or mortality, and sensory disturbance, would be likely from construction of the access trails and use of existing roads as the supplementary haulage route. Marine birds would not be affected as the proposed changes are entirely terrestrial.

The proponent described the existing measures that would serve to mitigate the effects from the Project changes (Section 7.3.3 of the proponent's amendment assessment). The proponent concluded that no additional mitigation measures would be needed to address the potential effects of the Project changes on wildlife resources.

The anticipated residual effects of the proposed changes on wildlife resources after mitigation has been applied include changes in wildlife habitat associated with construction of the access trails and the supplementary haulage route, and changes in the risk of injury or mortality and sensory disturbance associated with use of the supplementary haulage route and the temporary access trails.

Regarding residual effects of loss of wildlife habitat, the proponent stated that vegetation clearing associated with the proposed changes has the potential to result in a small increase in loss of wildlife habitat (1.4 hectares). The total loss of wildlife habitat associated with the proposed changes would be minor. The original environmental assessment evaluated residual effects to wildlife resources associated with a Project footprint of approximately 412 hectares. The proponent concluded that the loss of an additional approximately 1.4 hectares of wildlife habitat associated with the Project changes is not anticipated to change the overall characterization of residual effects to wildlife through loss or change in habitat.

Regarding residual effects of risk of injury or direct mortality, the proponent stated that project activities such as clearing of vegetation, upgrading of roads and increased road traffic, and human-wildlife interactions, might increase the risk of injury or mortality for wildlife resources. Changes in traffic patterns associated with upgrading and using existing roads as the supplementary haulage route could affect terrestrial wildlife mortality risk. However, given the existing disturbance and that the increase in traffic associated with the supplementary haulage route is predicted to be minor, the effect is predicted to be negligible. The proponent concluded that the Project changes are not anticipated to change to the overall characterization of residual effects to wildlife through risk of injury or mortality.

Regarding residual effects of sensory disturbance, the proponent stated that human and equipment activities and use of the supplementary haulage route might cause sensory disturbance to wildlife, primarily during the construction phase. Loud noise from vegetation clearing, tree felling, vehicle traffic and human activity might result in avoidance of established habitats by wildlife, or changes in movement patterns. Residual effects of sensory disturbance are predicted to be negligible and temporary and the Project changes are not anticipated to change the overall characterization of residual effects to wildlife resources through sensory disturbance.

Overall, the proponent stated that with the implementation of existing mitigation measures, potential effects to wildlife associated with the additional clearing of 1.4 hectares of wildlife habitat and use of the supplementary haulage route would be negligible compared to the overall effects assessed for the Project. The proponent concluded that the Project changes would be unlikely to alter the characterization of residual effects set out in the original environmental assessment.

The proponent also concluded that the residual effects would not change the cumulative effects assessment conclusions provided in the original environmental assessment.

3.4.2 Views Expressed

ECCC expressed concern regarding the use of active nest surveys as an avoidance measure during clearing or disturbance during the general nesting period and requested clarification regarding Marbled Murrelet surveys. The proponent stated that all tree clearing required for the construction of the LNG Terminal, except for the clearing required to construct the temporary access trails and upgrade the supplementary haulage route, has now been completed. The proponent committed to tree clearing outside of the migratory bird nesting period for the works associated with the Project changes, as far as possible. Bird nest surveys would only be completed if there was a future need to perform additional clearing during the migratory bird nesting period that would pose a risk to migratory bird breeding and nesting.

The EAO noted that Condition 12 of the provincial certificate #E15-01 requires the proponent to develop a Wildlife Management Plan to mitigate effects to wildlife during construction, and that construction activities would account for bird breeding periods. Clearing activities that would occur during bird breeding periods would incorporate measures to protect birds and their eggs, as per provincial and federal regulations. The EAO concluded that impacts to wildlife will result in a small temporary decrease in wildlife habitat and a negligible increase in risk of injury or mortality and sensory disturbance, and will be temporary and reversible through reclamation and mitigation, and that there would be no change from the conclusions of the original environmental assessment. The EAO concluded in its Amendment Assessment Report that EA Certificate conditions are in place to mitigate impacts of the Project on wildlife.

3.4.3 Agency's Analysis and Conclusions

Taking into account the proponent's analysis, and the views expressed as outlined above, the Agency concludes that the Project changes would not result in any change to adverse environmental effects to wildlife resources, specifically migratory birds, beyond those assessed during the original environmental assessment. Existing key mitigation measures and follow-up requirements, including those required through the Decision Statement, will adequately address any effects under CEAA 2012 resulting from the proposed changes.

3.5 Archaeological and Heritage Resources

Effects to archeological and heritage resources were assessed during the original environmental assessment of the Project and mitigation measures and follow-up requirements were developed. The Decision Statement includes conditions to mitigate effects under CEAA 2012, specifically effects on physical and cultural heritage and structure, site or thing of historical, archaeological, paleontological or architectural significance.

3.5.1 Proponent's Assessment

An archaeological impact assessment was undertaken for the Project in 2013 and 2015 under B.C.'s *Heritage Conservation Act* Provincial Heritage Inspection Permit 2013-0149, inclusive of the proposed area for access trails and the majority of the supplementary haulage route, with the exception of a small portion of the east-west leg of the proposed route planned immediately south of, and adjacent to, the Sandhill Materials Facility. The archaeological impact assessment resulted in the identification of one previously unrecorded archaeological site (GaTe-5) and one previously unrecorded historical site (GaTe-4), the latter located within the proposed area for access trails, approximately 100 metres southwest of the southern temporary access trail. GaTe-5 was initially recorded approximately 180 metres northeast of the proposed area for the access trails. Due to the fact that Project plans could not be revised to avoid GaTe-5, archaeological monitoring of vegetation clearing and soil stripping was conducted in 2019 and 2020 to mitigate Project-related impacts. During the site alteration work, all deposits associated with GaTe-5 were excavated, inspected archaeologically, and permanently stockpiled approximately 2.4 kilometres to the northwest, immediately north of the Project's Workforce Accommodation Centre.

The proponent stated in its amendment assessment that based on the results of previous archaeological impact assessment work and current Project plans, and in consideration of provincial requirements for avoidance or mitigation of any impacts to *Heritage Conservation Act*-protected heritage sites, potential effects to heritage resources are not anticipated from development of the supplementary haulage route or temporary access trails.

Regarding mitigation measures to avoid or address potential effects caused by the Project changes, the proponent stated in its amendment assessment that if any previously unknown heritage resource sites of value are identified during construction activities for the supplementary haulage route or temporary access trails, the Project's Chance Find Procedure for heritage resources will be implemented, and standard mitigations will be applied, as required by the federal and provincial conditions of the original environmental assessment. Standard mitigation may include detailed site recording, collection of artifacts or fossils, controlled mitigative excavation, or monitoring during construction activities.

The proponent stated in its amendment assessment that no residual effects to known archaeological or heritage resources are anticipated in association with the Project changes. Should the proposed supplementary haulage route or temporary access trail plans be revised to intersect any heritage resource sites previously recorded within the Project area, and/or if any previously unknown heritage resource sites are identified as a result of chance finds during construction, regulators may issue requirements for site avoidance or mitigation. For chance finds, the Project's Chance Find Procedure for heritage resources would be implemented. Thus, for heritage resources, effects would be mitigated prior to or during construction, therefore no additional effects are anticipated during the construction or operation of the supplementary haulage route or temporary access trails.

3.5.2 Views Expressed

The EAO noted in its Amendment Assessment Report that if any known archaeological or heritage resource sites of value are identified during construction activities for the supplementary haulage route or temporary access trails, the proponent's Chance Find Procedure for archaeological or heritage resources would be implemented and standard mitigations would be applied as required by regulators. The EAO concluded that no impacts to archaeological and heritage Resources are expected, and no changes are anticipated from the conclusions of the original environmental assessment.

3.5.3 Agency's Analysis and Conclusions

Taking into account the proponent's analysis, and the views expressed as outlined above, the Agency concludes that the Project changes would not result in any change to effects to archaeological and heritage resources beyond those assessed during the original assessment. Existing key mitigation measures and follow-up requirements, including those required through the Decision Statement, would adequately address any effects under CEAA 2012 resulting from the proposed changes.

3.6 Rights of Indigenous Peoples

The analysis of adverse effects of changes to the environment on current use of lands and resources for traditional purposes, health of Indigenous peoples, physical and cultural heritage, and biophysical resources informed the assessment of impacts on the rights of Indigenous Peoples as recognised and affirmed in section 35 of the *Constitution Act, 1982* during the original environmental assessment. Mitigation measures and follow-up requirements were developed and the Decision Statement includes related conditions.

3.6.1 Proponent's Assessment

The proponent stated within its amendment assessment that the Project changes have the potential to interact with the ability of Indigenous nations to exercise their Indigenous rights as recognized and affirmed by section 35 of the *Constitution Act, 1982* and Indigenous Interests.

The following Indigenous nations participated in the Technical Advisory Committee reviewing the proponent's proposed Project changes:

- Haisla Nation

In addition, the following Indigenous groups were notified of the amendment assessment process by the proponent, the EAO and the Agency:

- Gitga'at First Nation;
- Gitxaala Nation;
- Kitselas First Nation;
- Kitsumkalum Indian band;
- Lax Kw'alaams Band;

- Metlakatla First Nation; and
- Métis Nation BC.

Given the localized nature of the potential interactions presented in the proponent's amendment assessment, and the fact that the Project changes are limited to occurring solely in the traditional territory of the Haisla Nation, the proponent anticipates that the proposed changes would only have potential to interact with interests related to Haisla Nation. Indigenous Interests include traditional practices such as hunting, fishing, trapping, and plant gathering; access to traditionally harvested resources; effects to sites of traditional use; and effects to the cultural experience of traditional resource and land use. Several locations within the area for the proposed changes may have a particular cultural or spiritual importance and may be used for culturally important rituals, ceremonies or practices by Haisla Nation members.

The proponent anticipates that there would be no changes to the characterization of residual effects to Aboriginal Rights and Interests from the original environmental assessment. In addition, given the limited extent of the proposed changes, mitigation measures enabled, and feedback received by Haisla Nation, the proposed changes would not alter the analysis in the original environmental assessment on Indigenous Interests (e.g., hunting, fishing, trapping, and plant gathering; access to traditionally harvested resources; effects to sites of traditional use; and effects to the cultural experience of traditional resource and land use). No additional potential or residual project or cumulative effects have been identified since the original environmental assessment. The proponent understands and recognizes nonetheless that the dynamic nature of Indigenous Interests may change over time and location and it will continue to respond to questions and concerns from Haisla Nation and other interested Indigenous nations through ongoing consultation efforts.

3.6.2 Views Expressed

Haisla Nation indicated to the Agency and to the EAO that it has no concerns with the Project changes.

The Indigenous groups who were notified of the amendment assessment process did not raise concerns regarding the potential impacts of Project changes on Aboriginal rights. Kitsumkalum Indian Band sought clarification on the potential interactions between the proposed changes to the access trails and existing fish habitat offsetting. The Agency responded that the upgrades to the Northern Access Trail would cause a disturbance of 947 m² of riparian habitat and disturbance to fish and fish habitat caused by instream works. The conditions within the federal Decision Statement from the original environmental assessment including erosion and sedimentation control measures, revegetation of disturbed riparian areas, and the development and implementation of a fish and fish habitat offset plan would apply to these Project changes.

After a preliminary review of the Project changes, Lax Kw'alaams Band raised concerns regarding the potential environmental effects of the additional clearing required for the access trail and the potential effects of permanent road alterations. The Agency is of the view that existing key mitigation measures and follow-up requirements, including those required through the Decision Statement, would adequately address any effects under CEAA 2012 resulting from the proposed changes, and that the effects would be reversible.

The EAO stated in its Amendment Assessment Report that all of the Project changes would occur exclusively in the asserted traditional territory of Haisla Nation and potential effects were not anticipated to extend into the traditional territories of other Indigenous nations. The EAO stated that the potential effects on the Haisla Nation and their rights would be anticipated to be similar to those described in the original environmental

assessment, and no new mitigation measures were proposed. The EAO stated in its Amendment Assessment Report that there would be no incremental or additional impacts to Haisla Nation or their rights as a result of the Project changes, based on the review of the proponent's amendment assessment, as well as input from Haisla Nation

3.6.3 Agency's Analysis and Conclusions

The Agency concludes that the proposed Project changes would not change the residual effects assessment on environmental effects within federal jurisdiction, and is therefore satisfied that there would be no additional impacts to Rights of Indigenous Peoples beyond those assessed in the original environmental assessment.

4. Conclusion

The Agency is of the view that all potential adverse environmental effects within areas of federal jurisdiction from the proposed Project changes would be adequately addressed by existing key mitigation measures and follow-up requirements, including those required through the Decision Statement,. As such, no changes are required to the key mitigation measures and follow-up requirements identified in the original environmental assessment and set out as conditions in the Decision Statement.