

Decision Statement
Issued under Section 54 of the *Canadian Environmental Assessment Act, 2012*

to
Pacific NorthWest LNG Limited Partnership
c/o Adnan Zainal Abidin, President and Chief Executive Officer

Suite 2500, 666 Burrard Street
Vancouver, British Columbia
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for the
Pacific NorthWest LNG Project

Description of the Designated Project

Pacific NorthWest LNG Limited Partnership (the Proponent) is proposing the construction, operation, and decommissioning of a new facility for the liquefaction, storage, and export of liquefied natural gas. The Pacific NorthWest LNG Project (the Designated Project) is proposed to be located primarily on federal lands and waters administered by the Prince Rupert Port Authority approximately 15 kilometres south of Prince Rupert, British Columbia. At full production, the facility would receive approximately 9.1×10^7 cubic metres per day of pipeline grade natural gas and produce up to 20.5 million tonnes per annum of liquefied natural gas for over 30 years. The Designated Project also includes the construction, operation, and decommissioning of a marine terminal for loading liquefied natural gas on to vessels for export.

Conduct of the environmental assessment

The Canadian Environmental Assessment Agency (the Agency) conducted an environmental assessment of the Designated Project in accordance with the requirements of the *Canadian Environmental Assessment Act, 2012*. The Agency commenced the environmental assessment on April 8, 2013 and submitted its report to me in my capacity as Minister of Environment and Climate Change.

Decision on environmental effects referred to in subsection 5(1) of the *Canadian Environmental Assessment Act, 2012*

In accordance with paragraph 52(1)(a) of the *Canadian Environmental Assessment Act, 2012*, after considering the report of the Agency on the Designated Project and the implementation of mitigation measures that I consider appropriate, I have determined that the Designated Project is likely to cause significant adverse environmental effects referred to in subsection 5(1) of the *Canadian Environmental Assessment Act, 2012*.

In accordance with subsection 52(2) of the *Canadian Environmental Assessment Act, 2012*, I referred to the Governor in Council the matter of whether those significant adverse environmental effects were justified in the circumstances.

In accordance with paragraph 52(4)(a) of the *Canadian Environmental Assessment Act, 2012*, the Governor in Council decided that the significant adverse environmental effects that the Designated Project is likely to cause are justified in the circumstances.

In accordance with subsection 53(1) of the *Canadian Environmental Assessment Act, 2012*, I have established the conditions below in relation to the environmental effects referred to in subsection 5(1) of the *Canadian Environmental Assessment Act, 2012*, with which the Proponent must comply.

Decision on environmental effects referred to in subsection 5(2) of the *Canadian Environmental Assessment Act, 2012*

The carrying out of the Designated Project may require the following federal authorities to exercise a power or perform a duty or function conferred on them under an Act of Parliament other than the *Canadian Environmental Assessment Act, 2012*:

- The Minister of Fisheries and Oceans may issue authorization(s) under paragraph 35(2)(b) of the *Fisheries Act*;
- The Minister of Transport may approve works in and about navigable waters under subsection 6(1) of the *Navigation Protection Act* or may permit ancillary works under subsection 9(1) of the *Navigation Protection Act*;
- The Prince Rupert Port Authority may issue a lease and project approvals to occupy and use federal lands administered by the Prince Rupert Port Authority under the *Canada Marine Act, Port Authorities Operations Regulations* and Letters Patent;
- The Minister of the Environment may issue a permit for disposal at sea under subsection 127(1) of the *Canadian Environmental Protection Act, 1999*; and
- The Minister of the Environment may issue an agreement or permit under Section 73 of the *Species at Risk Act*, for engaging in activity affecting a listed wildlife species, any part of its critical habitat or its residences.

In accordance with paragraph 52(1)(b) of the *Canadian Environmental Assessment Act, 2012*, after considering the report of the Agency on the Designated Project and the implementation of mitigation measures that I consider appropriate, I have determined that the Designated Project is not likely to cause significant adverse environmental effects referred to in subsection 5(2) of the *Canadian Environmental Assessment Act, 2012*.

In accordance with subsection 53(2) of *Canadian Environmental Assessment Act, 2012*, I have established the conditions below in relation to the environmental effects referred to in subsection 5(2) of *Canadian Environmental Assessment Act, 2012*, with which the Proponent must comply.

Consultation with Indigenous groups

In establishing the conditions below in relation to the environmental effects referred to in subsections 5(1) and 5(2) of the *Canadian Environmental Assessment Act, 2012*, I took into account the concerns and interests identified in the consultation process with Indigenous groups. I also considered the measures to address these concerns and interests that have been identified in the environmental assessment and consultation processes. I am satisfied that the consultation process undertaken is consistent with the honour of the Crown and, with the conditions I have established, that the concerns and interests of Indigenous groups are appropriately accommodated for the purpose of issuing this Decision Statement.

1 Definitions

- 1.1. *Agency* means the Canadian Environmental Assessment Agency.
- 1.2. *Airdraft* means the distance from the surface of the water to the highest point on a vessel.
- 1.3. *Baseline* means the environmental conditions prior to initiating construction of the Designated Project.
- 1.4. *Cetacean* means whales, dolphins, and porpoises.
- 1.5. *Construction* means the phase of the Designated Project when site preparation, building or installation of any components of the Designated Project are undertaken by the Proponent.
- 1.6. *Culturally modified tree* means a tree that has been altered by Indigenous Peoples as part of their traditional use of the forest.
- 1.7. *Daylight* means from one hour before sunrise to one hour after sunset, as calculated by the National Research Council of Canada for Prince Rupert.
- 1.8. *Days* means calendar days.
- 1.9. *Decommissioning* means the phase of the Designated Project where the Proponent has permanently ceased commercial production and has commenced removal from service of any components of the Designated Project, and continues until the site is restored.
- 1.10. *Designated Project* means the Pacific NorthWest LNG Project as described in section 2 of the environmental assessment report prepared by the Canadian Environmental Assessment Agency (Canadian Environmental Assessment Registry Reference Number 80032).
- 1.11. *Environment and Climate Change Canada* means the Department of the Environment as established under subsection 2(1) of the *Department of the Environment Act*.
- 1.12. *Environmental effects* means “environmental effects” as described in section 5 of the *Canadian Environmental Assessment Act, 2012*.
- 1.13. *Fish* means “fish” as defined in subsection 2(1) of the *Fisheries Act*.
- 1.14. *Fish habitat* means “fish habitat” as defined in subsection 2(1) of the *Fisheries Act*.
- 1.15. *Fisheries and Oceans Canada* means the Department of Fisheries and Oceans as established under subsection 2(1) of the *Department of Fisheries and Oceans Act*.
- 1.16. *Follow-up program* means “follow-up program” as defined in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012*.
- 1.17. *Heritage value* means the aesthetic, historic, scientific, cultural, social or spiritual importance or significance for past, present or future generations.
- 1.18. *High water* means the highest level reached at a place by the water surface in one tide oscillation.

- 1.19. *Highest high water* means the average of the highest high waters, one from each of 19 years of predictions.
- 1.20. *Independent environmental monitor* means someone who is a qualified individual with demonstrated experience and knowledge of environmental monitoring for construction projects in British Columbia, to observe, record, and report on the implementation of the mitigation measures set out in this Decision Statement.
- 1.21. *Indigenous groups* means Lax Kw'alaams Band, Metlakatla First Nation, Gitxaala Nation, Kitsumkalum First Nation, Kitselas First Nation, and Gitga'at First Nation.
- 1.22. *Kaien landscape unit* means the Kaien landscape unit as shown on Schedule 1 of the *Central and North Coast Ministerial Order* established under British Columbia's *Land Act*.
- 1.23. *Liquefied Natural Gas* or *LNG* means a fluid in a liquid state that is composed predominately of methane and that may contain minor quantities of ethane, propane, nitrogen, or other components found in natural gas.
- 1.24. *Listed species at risk* means a species that is listed on the List of Wildlife Species at Risk set out in Schedule 1 of the *Species at Risk Act*.
- 1.25. *Marine mammal* means all mammal species which are morphologically adapted to the marine environment, including cetaceans and pinnipeds.
- 1.26. *Migratory bird* means "migratory bird" as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*.
- 1.27. *Mitigation measures* means "mitigation measures" as defined in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012*.
- 1.28. *Natural Resources Canada* means the Department of Natural Resources as established under subsection 3(1) of the *Department of Natural Resources Act*.
- 1.29. *Offsetting plan* means "offsetting plan" as defined in section 1 of the *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations*.
- 1.30. *Operation* means the phase of the Designated Project during which the commercial production takes place.
- 1.31. *Progressive reclamation* means a planned approach to reclamation which is carried out concurrently with all phases of the Designated Project to progressively return any physically disturbed areas to a state as close to the baseline as possible, as soon after the disturbance as practical.
- 1.32. *Project area* means the geographic area occupied by the Designated Project.
- 1.33. *Proponent* means Pacific NorthWest LNG Limited Partnership and its successors or assigns.

- 1.34. *Qualified individual* means someone who, through education, experience and knowledge relevant to a particular matter, may be relied on by the Proponent to provide advice within his or her area of expertise. Knowledge relevant to a particular matter may include community and Indigenous traditional knowledge.
- 1.35. *Relevant authorities* means federal and/or provincial authorities that are in possession of specialist or expert information or knowledge, or that have a responsibility for the administration of a law or regulation, with respect to the subject matter of a condition set out in this Decision Statement.
- 1.36. *Record* means “record” as defined in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012*.
- 1.37. *Reporting year* means July 1 of a calendar year through June 30 of the subsequent calendar year.
- 1.38. *Serious harm* means “serious harm” as defined in subsection 2(2) of the *Fisheries Act*.
- 1.39. *Structure, site or thing of historical, archeological, paleontological or architectural significance* means a structure, site or thing that is determined, on the basis of heritage value, to be directly associated with an important aspect or aspects of human history or culture.
- 1.40. *Train* means a liquefaction unit where treated natural gas is cooled by refrigeration cycles until it changes from a gas to a liquid state.
- 1.41. *Tuck landscape unit* means the Tuck landscape unit as shown on Schedule 1 of the *Central and North Coast Ministerial Order* established under British Columbia’s *Land Act*.
- 1.42. *Upriver Indigenous groups* means Gitanyow Hereditary Chiefs, Gitxsan Hereditary Chiefs (including Wilp Delgamuukw, Wilp Gwininitxw, and Wilp Luutkudziiwus), Office of the Wet’suwet’en, and Takla Lake First Nation.
- 1.43. *Wetland* means land saturated with water long enough to promote formation of water altered soils, growth of water-tolerant vegetation and various kinds of biological activity that is adapted to the wet environment and separated into five classes: fen, bog, marsh, swamp, and shallow open water wetlands (includes open water areas less than two metres deep with wetland characteristics).
- 1.44. *Wetland functions* means the natural processes and derivation of benefits and values associated with wetland ecosystems, including economic production, fish and wildlife habitat, organic carbon storage, water supply and purification (e.g. groundwater recharge, flood control, maintenance of flow regimes, shoreline erosion buffering), and soil and water conservation, as well as tourism, heritage, recreational, educational, scientific, and aesthetic opportunities.

Conditions

These conditions are established for the sole purpose of the Decision Statement issued under the *Canadian Environmental Assessment Act, 2012*. They do not relieve the Proponent from any obligation to comply with other legislative or other legal requirements of the federal, provincial, or local governments. Nothing in this Decision Statement shall be construed as reducing, increasing, or otherwise affecting what may be required of the Proponent to comply with all applicable legislative or legal requirements.

2. General conditions

- 2.1. The Proponent shall, throughout all phases of the Designated Project, ensure that its actions in meeting the conditions set out in this Decision Statement are considered in a careful and precautionary manner, promote sustainable development, are informed by the best available information and knowledge, including community and Indigenous traditional knowledge, are based on validated methods and models, are undertaken by qualified individuals, and have applied the best available economically and technologically feasible mitigation measures.
- 2.2. The Proponent shall, where consultation is a requirement of a condition set out in this Decision Statement:
 - 2.2.1. provide a written notice of the opportunity for the party or parties being consulted to present their views and information on the subject of the consultation;
 - 2.2.2. provide sufficient information on the scope and the subject matter of the consultation and a reasonable period of time to permit the party or parties being consulted to prepare their views and information;
 - 2.2.3. provide a full and impartial consideration of any views and information presented by the party or parties being consulted on the subject matter of the consultation; and
 - 2.2.4. advise the party or parties being consulted on how their views and information have been considered by the Proponent.
- 2.3. The Proponent shall, where consultation with Indigenous groups is a requirement of a condition set out in this Decision Statement, communicate with each Indigenous group with respect to the manner by which to satisfy the consultation requirements referred to in condition 2.2, including methods of notification, the type of information and the period of time to be provided when seeking input, the process for full and impartial consideration of any views and information presented on the subject of the consultation and the means by which Indigenous groups will be informed of how their views and information have been considered by the Proponent.
- 2.4. The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement, determine, as part of the development of the follow-up program and in consultation with Indigenous groups and relevant federal and provincial authorities, the following information, for each follow-up program:

- 2.4.1. the methodology, location, frequency, timing and duration of monitoring associated with the follow-up program as well as the scope, content and frequency of reporting of the follow-up results;
 - 2.4.2. the levels of environmental change relative to established baseline conditions that would require the Proponent to implement additional mitigation measure(s), including instances where the Proponent may require Designated Project activities to be stopped; and
 - 2.4.3. the range of technologically and economically feasible mitigation measures to be implemented by the Proponent if monitoring conducted as part of the follow-up program shows that the levels of environmental change referred to in condition 2.4.2 have been reached or exceeded.
- 2.5. The Proponent shall submit the information referred to in condition 2.4 to the Agency prior to the implementation of a follow-up program. The Proponent shall update that information in consultation with Indigenous groups and relevant federal and provincial authorities during the implementation of the follow-up program, and shall provide the updated information to the Agency, Indigenous groups and relevant federal and provincial authorities within 30 days of the information being updated.
- 2.6. The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement:
 - 2.6.1. conduct the follow-up program according to the information determined pursuant to condition 2.4;
 - 2.6.2. undertake monitoring and analysis to verify the accuracy of the environmental assessment as it pertains to the particular condition and/or to determine the effectiveness of any mitigation measure(s);
 - 2.6.3. determine whether additional mitigation measures are required based on the monitoring and analysis undertaken pursuant to condition 2.6.2; and
 - 2.6.4. if additional mitigation measures are required pursuant to condition 2.6.3, implement the additional mitigation measures in a timely manner and monitor them pursuant to condition 2.6.2.
- 2.7. Where consultation with Indigenous groups is a requirement of a follow-up program, the Proponent shall discuss with each Indigenous group opportunities for the participation of that Indigenous group in the implementation of the follow-up program, including the evaluation of the follow-up results and the identification of additional mitigation measures, as set out in condition 2.6.
- 2.8. The Proponent shall, commencing in the reporting year that implementation of the conditions set out in this Decision Statement begins, prepare an annual report that sets out:
 - 2.8.1. the activities undertaken in the reporting year to comply with each of the conditions set out in this Decision Statement;

- 2.8.2. how the Proponent complied with condition 2.1;
 - 2.8.3. for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation;
 - 2.8.4. the information referred to in conditions 2.4 and 2.5 for each follow-up program;
 - 2.8.5. the results of the follow-up program requirements identified in conditions 3.2, 4.1, 5.5, 6.29, 7.5, 8.3, 9.4, 9.6 and 10.4; and
 - 2.8.6. any additional mitigation measures implemented or proposed to be implemented by the Proponent, as determined under condition 2.6.
- 2.9. The Proponent shall submit to the Agency the annual report referred to in condition 2.8, including an executive summary in both official languages, no later than October 31 following the reporting year to which the annual report applies.
- 2.10. The Proponent shall publish on the Internet, or any medium which is widely publicly available, the annual reports and the executive summaries referred to in conditions 2.8 and 2.9, the wetland function compensation plan referred to in condition 5.3, the offsetting plan referred to in condition 6.25, the marine mammal management plan referred to in condition 6.31, the corrective actions related to exposure to noise and light referred to in condition 9.2, the archaeological and heritage resources management plan referred to in condition 11.1, the decommissioning plan referred to in condition 16.1, the annual reports related to decommissioning referred to in condition 16.3, the reports related to accidents and malfunctions referred to in conditions 17.4.3 and 17.4.4, the communication plan referred to in condition 17.5, the implementation schedule referred to in condition 18.1, and any update(s) or revision(s) to the above documents, upon submission of these documents to the parties referenced in the respective conditions. The Proponent shall keep these documents publicly available for 25 years following the end of operation, or until the end of decommissioning of the Designated Project, whichever comes first. The Proponent shall notify the Agency, the Prince Rupert Port Authority, Indigenous groups, upriver Indigenous groups, and the Council of Haida Nation of the availability of these documents upon publication.
- 2.11. The Proponent shall notify the Agency and Indigenous groups in writing no later than 60 days after the day on which there is a transfer of ownership, care, control or management of the Designated Project in whole or in part.
- 2.12. The Proponent shall consult with Indigenous groups prior to initiating any material change(s) to the Designated Project that may result in adverse environmental effects, and shall notify the Agency in writing no later than 60 days prior to initiating the change(s).
- 2.13. In notifying the Agency pursuant to condition 2.12, the Proponent shall provide the Agency with a description of the adverse environmental effects of the change(s) to the Designated Project, the measures proposed to be implemented by the Proponent to mitigate adverse environmental effects, and the results of the consultation with Indigenous groups.

3. Air quality and greenhouse gas emissions

- 3.1. At the commissioning of Train 2, the Proponent shall adhere to an annual average emissions intensity of less than or equal to 0.22 tonnes of equivalent carbon dioxide per tonne of LNG produced and shall emit no more than a total of 3.2 million tonnes of equivalent carbon dioxide per calendar year. At the commissioning of Train 3, the Proponent shall adhere to an annual average emissions intensity of less than or equal to 0.21 tonnes of equivalent carbon dioxide per tonne of LNG produced and shall emit no more than a total of 4.3 million tonnes of equivalent carbon dioxide per calendar year. The Proponent shall quantify and report to Environment and Climate Change Canada greenhouse gas emissions in a manner that is consistent with British Columbia's *Greenhouse Gas Industrial Reporting and Control Act* and its regulations. The Proponent shall implement mitigation measures during all phases of the Designated Project to reduce and control air emissions and greenhouse gas emissions, including by:
- 3.1.1. treating natural gas to remove hydrogen sulphide and volatile organic compounds prior to using it as fuel for compressor drivers and power generators;
 - 3.1.2. oxidizing hydrogen sulphide and volatile organic compounds and vaporizing hydrocarbon solids in the waste gas stream before venting;
 - 3.1.3. implementing dry low emission combustors or equivalent technology on compressor drivers to control nitrogen oxide emissions;
 - 3.1.4. ensuring complete combustion of fuel supplied to equipment using air-fuel ratio control or equivalent technologies in order to reduce carbon monoxide and volatile organic carbon emissions;
 - 3.1.5. using high-efficiency aero-derivative gas turbines, or an equally or more efficient turbine or other equipment, to drive refrigerant compressors;
 - 3.1.6. implementing a comprehensive annual leak detection and repair system for fugitive emissions at the site of the Designated Project throughout operation;
 - 3.1.7. incorporating waste heat recovery systems to recover waste heat during operation;
 - 3.1.8. capturing and re-using boil off gas from liquefied natural gas storage tanks and the carrier loading system;
 - 3.1.9. using non-emitting pneumatic devices for Designated Project-related activities; and
 - 3.1.10. measuring compressor vent flow rates from hydrocarbon gas compression systems on, at least, an annual basis, taking corrective action on any identified sign of packing deterioration for reciprocating compressors, and ensuring that seal systems for centrifugal compressors emit at a rate equal to or less than the rate of emissions from a dry seal system.

- 3.2. The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant federal and provincial authorities, and implement during all phase of the Designated Project, a follow-up program to determine the effectiveness of the mitigation measures as it pertains to air quality and greenhouse gas emissions.

4. Freshwater fish and fish habitat

- 4.1. The Proponent shall develop, prior to operation and in consultation with Indigenous groups and relevant federal and provincial authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the adverse environmental effects of acidification and eutrophication on freshwater fish and fish habitat and to determine the effectiveness of the mitigation measures. The Proponent shall implement the follow-up program. The follow-up program shall include:
 - 4.1.1. establishing water quality (including seasonal assessment of acid neutralizing capacity and critical loads of acidity), fish habitat quality, fish presence, and habitat use of fish-bearing waterbodies most likely to be affected by acidification and eutrophication, including the Wolf Creek system, the Hays Creek system, Alwyn Lake and two headwater lakes on Kaien Island. Data shall be collected over a minimum of one year and shall include data from each season prior to and within two years of the date of the start of operation of Train 1; and
 - 4.1.2. monitoring changes to the conditions established in condition 4.1.1, beginning from the start of operation of Train 1, and ending a minimum of one year following the date of the start of operation of Train 2. The Proponent shall monitor changes to the conditions established in condition 4.1.1 for a minimum of one year following the date of the start of operation of Train 3.

5. Wetlands

- 5.1. The Proponent shall mitigate the adverse environmental effects of the Designated Project on wetland functions with a preference for avoiding the loss of wetlands over minimizing the adverse effects on wetlands, and for minimizing the adverse effects on wetlands over compensating for lost or adversely affected wetlands.
- 5.2. The Proponent shall manage surface water and avoid erosion and sedimentation within the Designated Project area to maintain hydrology of wetlands adjacent to the Designated Project area and to protect water quality during all phases of the Designated Project.
- 5.3. The Proponent shall, for adverse effects from the Designated Project on wetlands that cannot be avoided or minimized, set out mitigation measures in a wetland function compensation plan which shall be developed prior to construction in consultation with Indigenous groups and relevant federal and provincial authorities and submitted to the Prince Rupert Port Authority for approval. The wetland function compensation plan shall take into account Canada's *Federal Policy on Wetland Conservation* and Environment and Climate Change Canada's *Operational Framework for Use of Conservation Allowances*. The mitigation measures that the Proponent shall set out in the wetland function compensation plan shall include:

- 5.3.1. implementing a 2:1 ratio of wetland area to compensate for the loss of wetland functions;
 - 5.3.2. identifying sites to compensate for the loss of wetland functions referred to in condition 5.3.1 that are within the Kaien landscape unit, or in immediately adjacent regions, and that reflect similar wetland types and functions to those lost; and
 - 5.3.3. selecting wetland restoration over enhancement, and wetland enhancement over creation.
- 5.4. The Proponent shall implement the wetland function compensation plan referred to in condition 5.3 and approved by the Prince Rupert Port Authority within five years of the date of the start of construction.
- 5.5. The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant federal and provincial authorities, a follow-up program to determine the effectiveness of the mitigation measures as it pertains to wetlands. The Proponent shall implement the follow-up program. Monitoring of the compensatory wetland sites shall start with their restoration, enhancement or creation and continue in years one, three, five, ten and twenty, or until wetland functions are attained, whichever comes first.

6. Marine fish (including marine mammals) and fish habitat

- 6.1. Prior to the start of in-water construction, the Proponent shall conduct high resolution modelling of the southwest tower and the anchor block of the suspension bridge and of two berthed LNG vessels, and regional three-dimensional modelling of the area likely to be affected by the Designated Project to confirm that the predicted changes of the erosion and deposition levels relative to the existing conditions are at least the same or less than the changes predicted during the environmental assessment in the *Supplemental Modelling Report For 3D Modelling Update* (November 2015). In doing so, the Proponent shall:
- 6.1.1. collect additional field data related to waves, currents, and total suspended solids concentrations to capture the range of conditions and seasonal variations encountered over Flora and Agnew Banks in the vicinity of the proposed marine infrastructure (including the southwest tower and the anchor block of the suspension bridge, the trestle, and the berths);
 - 6.1.2. refine the high-resolution models and the regional three-dimensional models by calibrating and validating the models using existing and additional field data referred to in condition 6.1.1 as well as a sediment budget analysis;
 - 6.1.3. incorporate, in all modelling referred to in condition 6.1, proposed construction-ready designs for the southwest tower and the anchor block of the suspension bridge, the final trestle alignment, and two berthed LNG vessels for the amount of time that LNG vessels are expected to be berthed;
 - 6.1.4. incorporate, in all modelling referred to in condition 6.1, the most up-to-date bathymetric information obtained from LiDAR technology, or from at least equivalent surveying technology, to determine the elevation of Flora Bank and to characterize the types and geometry of bedforms over Flora Bank. The bathymetric information shall

support an analysis of the changes in elevation on Flora Bank, the migration of bedforms over Flora Bank over time, the changes in the nature of the observed bedforms, and the hydrodynamic processes that likely produced the observed bedforms;

- 6.1.5. incorporate, in the regional three-dimensional modelling referred to in condition 6.1, the results of currents and eroded sediments modelled around the marine infrastructures, from areas around and under berthed LNG vessels, and from LNG vessels' propulsion systems;
 - 6.1.6. include, in all modelling referred to in condition 6.1, the same modelling cases that were used in the *Supplemental Modelling Report For 3D Modelling Update* (November 2015), including freshet conditions, a period with natural storm conditions, storms with various return periods (including a 50-year return period), and a one-year minimum time series. The Proponent shall compute the net sediment transport flux and seabed elevation changes over the duration of the modelling cases using sediment transport predictions at hourly intervals; and
 - 6.1.7. provide all documents, data and information associated with the modelling, including proposed and final workplans, detailed inputs (including model control files), methodologies and outputs, calibration information, interim and final results, and an analysis of the likely Designated Project effects on fish habitat over the life of the Designated Project based on the modelling results, as they become available, to the Agency, Fisheries and Oceans Canada, Natural Resources Canada, and Indigenous groups.
- 6.2. Within five years of completing construction of the southwest tower and the anchor block of the suspension bridge, the Proponent shall use at least 3 years of follow-up monitoring results referred to in conditions 6.29.4 to 6.29.6 to recalibrate the regional three-dimensional modelling and update the predictions of hydrodynamic and morphological change on Flora Bank. The Proponent shall re-run the regional three-dimensional modelling using the same modelling cases referred to in condition 6.1.6 to assess how the results of the regional three-dimensional modelling referred to in condition 6.1 compare with the results required by this condition. The Proponent shall provide all documents, data and information associated with the re-running of the regional three-dimensional modelling, including detailed inputs (including model control files), methodologies and outputs, calibration information, interim and final results, and an analysis of the likely Designated Project effects on fish habitat over the life of the Designated Project based on the modelling results, as they become available, to the Agency, Fisheries and Oceans Canada, Natural Resources Canada, and Indigenous groups. The Proponent shall use the results of the re-running of the regional three-dimensional modelling when updating the information referred to in condition 2.5 for the follow-up referred to in conditions 6.29.4 to 6.29.6.
- 6.3. The Proponent shall build the southwest tower and the anchor block of the suspension bridge based on the construction-ready designs incorporated in the additional high resolution modelling referred to in condition 6.1. The southwest tower and the anchor block of the suspension bridge shall incorporate scour protection that shall result in levels of erosion and deposition at least the same or less than the levels predicted in the environmental assessment.
- 6.4. The Proponent shall not conduct in-water impact pile driving at the Materials Offloading Facility and pioneer dock between April 15 and June 30 of every year of in-water construction.

- 6.5. The Proponent shall use confined bubble curtains when conducting in-water impact pile driving of temporary piles at the southwest tower and the anchor block of the suspension bridge and for the 375 metres easternmost portion of the approach trestle between April 15 and June 30 of every year of in-water construction.
- 6.6. The Proponent shall use confined bubble curtains when conducting in-water impact pile driving of permanent piles between April 15 and June 30 of every year of in-water construction for the 375 metres easternmost portion of the approach trestle.
- 6.7. The Proponent shall not conduct sub-tidal blasting between February 16 and November 29 of every year of in-water construction. The Proponent shall notify the Agency, Fisheries and Oceans Canada, and Indigenous groups of the schedule of sub-tidal blasting 20 days prior to commencing sub-tidal blasting.
- 6.8. The Proponent shall conduct sub-tidal blasting according to the schedule of sub-tidal blasting referred to in condition 6.7 and according to the requirements of condition 6.15.4.
- 6.9. The Proponent shall not conduct dredging at the Materials Offloading Facility between April 15 and July 15. The Proponent shall notify the Agency, Indigenous groups, Fisheries and Oceans Canada, and other relevant federal authorities of the schedule of dredging at the Materials Offloading Facility 20 days prior to commencing dredging.
- 6.10. The Proponent shall only conduct dredging at the Materials Offloading Facility according to the schedule of dredging at the Materials Offloading Facility referred to in condition 6.9.
- 6.11. The Proponent shall use coffer dams to isolate the southwest tower block and the anchor block of the suspension bridge during in-water construction and shall place scour protection around the coffer dams. The coffer dams shall be shaped in a manner that minimizes scour and turbulence around the site of the southwest tower block and the anchor block of the suspension bridge.
- 6.12. The Proponent shall dewater the coffer dams referred to in condition 6.11 and shall use bubble curtains outside of the coffer dams between April 15 and June 30 of every year of in-water construction when conducting in-water impact pile driving of permanent piles, unless the Proponent can demonstrate through sound verification monitoring that equivalent noise attenuation can be achieved to the satisfaction of Fisheries and Ocean Canada by using other mitigation measures that do not require maintaining a dewatered coffer dam.
- 6.13. The Proponent shall not exceed a root mean square sound pressure of 160 decibels at a reference pressure of one micropascal at distances greater than 1000 meters of all in-water construction activities year-round.
- 6.14. The Proponent shall not exceed a peak sound pressure level of 207 decibels at a reference pressure of one micropascal at distances greater than 20 meters of in-water impact pile driving year-round.
- 6.15. The Proponent shall develop, in consultation with Fisheries and Oceans Canada, and implement a marine mammal detection program for all in-water construction activities where underwater noise levels are predicted by the Proponent to exceed a root mean square sound pressure of 160 decibels at a reference pressure of one micropascal to reduce adverse behavioural change in or

injury to marine mammals. The Proponent shall implement the marine mammal detection program during construction. The marine mammal detection program shall include:

- 6.15.1. conducting predictive acoustic modelling, prior to the start of in-water construction, to identify the distance from each in-water construction activity at which underwater noise would exceed 160 decibels, including in-water construction activities occurring simultaneously, and the period(s) of time when these activities will occur, and notifying the Agency of that information, prior to undertaking these activities;
 - 6.15.2. establishing and maintaining through acoustic monitoring a safety radius for each in-water construction activity referred to in condition 6.15.1 at the distance from the in-water construction activity at which underwater noise is predicted by the Proponent to exceed 160 decibels, which shall be at a maximum distance of 1000 metres;
 - 6.15.3. employing marine mammal observers, who are qualified individuals, and requiring that they detect, through visual and passive acoustic monitoring, from locations in and along the perimeter of the safety radius referred to in condition 6.15.2 and report to the Proponent the presence of marine mammals within the safety radius for each in-water construction activity referred to in condition 6.15.1;
 - 6.15.4. commencing in-water impact pile driving or conducting sub-tidal blasting only during daylight hours and not during conditions of low visibility (including fog), unless the Proponent demonstrates the effectiveness of additional technologies to detect marine mammals during low visibility conditions to the satisfaction of Fisheries and Oceans and requires that marine mammal observers use these technologies;
 - 6.15.5. stopping in-water construction activities referred to in condition 6.15.1 if a marine mammal is detected within the safety radius referred to in condition 6.15.2 by the marine mammal observers referred to in condition 6.15.3 and not starting or re-starting in-water construction activities referred to in condition 6.15.1 until the marine mammal has moved out of the safety radius and no marine mammals have been detected in the safety radius for a period of at least 30 minutes; and
 - 6.15.6. implementing sound dampening technology and soft-start procedures to reduce adverse effects caused by underwater noise to marine mammals in the safety radius referred to in condition 6.15.2.
- 6.16. The Proponent shall stop dredging at the Materials Offloading Facility if a cetacean is detected within 250 metres of dredging and shall re-start dredging only when no cetacean is detected within 250 metres of dredging.
- 6.17. The Proponent shall implement a containment system around dredging, including the installation of silt curtains in areas of low to moderate currents (≤ 1 knot), and shall identify additional mitigation measures, following consultation with Fisheries and Oceans Canada, to avoid causing harm to marine fish and fish habitat when conducting dredging at the Materials Offloading Facility. The Proponent shall implement the additional mitigation measures when dredging at the Materials Offloading Facility.
- 6.18. The Proponent shall avoid serious harm to marine fish, including marine mammals, not otherwise authorized by Fisheries and Oceans Canada, during all Designated Project activities.

- 6.19. The Proponent shall direct lighting used during construction and operation toward active working areas to reduce artificial light spillage onto the marine waters, while meeting workers' safety requirements.
- 6.20. The Proponent shall place reflective material on the underside of over-water infrastructures to reduce light/dark contrast on marine waters.
- 6.21. The Proponent shall, during the operation of the Designated Project, use tugs that produce the least possible scour volumes from propeller action at the time tug activities are undertaken.
- 6.22. The Proponent shall conduct, prior to the start of in-water construction activities, a survey of Northern Abalone (*Haliotis kamtschatkana*) in areas of potential Northern Abalone habitat in accordance with Fisheries and Oceans Canada's *Impact Assessment Protocol for Works and Developments Potentially Affecting Abalone and their Habitat* (found in Appendix 2 of the *Recovery Potential Assessment for the northern abalone (Haliotis kamtschatkana) in Canada* and in Appendix 4 of the *Action Plan for the Northern Abalone (Haliotis kamtschatkana) in Canada*). The Proponent shall adhere to the procedure outlined in the most recent Impact Assessment Protocol for relocating Northern Abalone if the species is found by the Proponent during the survey. Prior to and within 30 days of undertaking the survey, the Proponent shall discuss with Indigenous groups about opportunities for the participation of Indigenous groups in the survey.
- 6.23. The Proponent shall require LNG vessels associated with the Designated Project to respect all speed profiles applicable to the operation of the Designated Project, subject to navigational safety.
- 6.24. The Proponent shall require that LNG vessels and tug operators associated with the Designated Project report collisions with marine mammals between Triple Island and the marine terminal to the Canadian Coast Guard, Fisheries and Oceans Canada and the Prince Rupert Port Authority within two hours of a collision being observed by the LNG vessels or tug operators, and notify Indigenous groups in writing within two days of a collision being observed.
- 6.25. The Proponent shall develop, to the satisfaction of Fisheries and Oceans Canada and in consultation with Indigenous groups, an offsetting plan related to the loss of fish and fish habitat associated with the carrying out of all phases of the Designated Project. The Proponent shall implement the offsetting plan.
- 6.26. For any fish habitat offset area(s) proposed in the offsetting plan referred to in condition 6.25, and prior to submitting the offsetting plan to Fisheries and Oceans Canada, the Proponent shall determine, in consultation with Indigenous groups, whether there are adverse environmental effects as a result of the implementation of the proposed fish habitat offset area(s):
- 6.26.1. on migratory birds and their habitats;
 - 6.26.2. on terrestrial species and their habitats;
 - 6.26.3. on listed species at risk and their habitats;
 - 6.26.4. on the current use of lands and resources for traditional purposes;
 - 6.26.5. on physical and cultural heritage and structures, sites or things that are of historical, archaeological, paleontological, or architectural significance;

- 6.26.6. on the flow rates, water depths or water widths that may adversely affect the passage of a vessel, including a vessel used by Indigenous Peoples in the context of their current use of lands and resources for traditional purposes; and
 - 6.26.7. from potential sources of contamination, including dioxins, furans and metals, on the receiving environment and human health.
- 6.27. The Proponent shall, if there are adverse environmental effects on any of the elements set out in conditions 6.26.1 to 6.26.7, develop and implement, following consultation with Indigenous groups, mitigation measures for those effects.
- 6.28. The Proponent shall confirm through modelling, prior to the first disposal of dredged material at sea event, the predicted changes to water quality and marine fish and invertebrates habitat from disposal of dredged material at Brown Passage using final dredged sediment volumes, sediment characterization, timing of disposal activities, and updated ocean current speed data. If the revised predicted changes to water quality and marine fish and invertebrates habitat are more adverse than the degree to which changes were originally predicted to be adverse during the environmental assessment, the Proponent shall develop, prior to the first disposal of dredged material at sea event and following consultation with Indigenous groups and relevant federal authorities, additional measures to mitigate the changes resulting from the disposal of dredged material activities at Brown Passage. The Proponent shall implement the additional mitigation measures when disposing of dredged material at Brown Passage.
- 6.29. The Proponent shall develop, in consultation with Fisheries and Oceans Canada, Natural Resources Canada, the Prince Rupert Port Authority, Indigenous groups, and other relevant federal authorities, a follow-up program for marine fish, including marine mammals, and fish habitat to verify the accuracy of the environmental assessment and to determine the effectiveness of mitigation measures. The Proponent shall implement the follow-up program. The follow-up program shall include:
- 6.29.1. monitoring of total suspended solids and turbidity during dredging at the Materials Offloading Facility to compare the levels of total suspended solids and turbidity outside of the containment system referred to in condition 6.17 to the Canadian Council of Ministers of the Environment's *Canadian Water Quality Guidelines for the Protection of Aquatic Life* for long-term exposure. If the levels of total suspended solids and turbidity exceed the levels included in the Guidelines, the Proponent shall implement additional measures to mitigate adverse environmental effects;
 - 6.29.2. monitoring of total suspended solids and turbidity during disposal of dredged material at Brown Passage to compare the levels of total suspended solids and turbidity to the concentration ranges and geographical extent predicted during the environmental assessment. If the amounts of total suspended solids and turbidity exceed the concentration ranges and geographical extent predicted during the environmental assessment, the Proponent shall implement additional measures to mitigate adverse environmental effects;
 - 6.29.3. monitoring of total suspended solids and turbidity during construction of the marine terminal to confirm that changes to water quality from construction activities (including construction vessel movement and removal of temporary piles) do not exceed the changes to water quality predicted during the environmental assessment. If the changes

to water quality exceed the changes to water quality predicted during the environmental assessment, the Proponent shall implement additional measures to mitigate adverse environmental effects;

- 6.29.4. monitoring of total suspended solids and turbidity for at least 10 years after construction of the marine terminal to compare the amount of total suspended solids and turbidity occurring on Flora Bank and around the marine terminal to the concentration ranges and geographical extent predicted during the environmental assessment. If the amounts of total suspended solids and turbidity exceed the concentration ranges and geographical extent predicted during the environmental assessment, the Proponent shall implement additional measures to mitigate adverse environmental effects;
- 6.29.5. monitoring of morphological changes due to erosion and deposition on Flora Bank to confirm that the marine terminal is not causing a continuous loss or deposition of sand or sediment on Flora Bank that results in adverse environmental effects on the health of eelgrass beds on Flora Bank and the use of Flora Bank by marine species. Monitoring shall begin prior to the start of construction of the marine terminal, as required to support the follow-up program, and shall continue during construction and for at least 10 years after construction of the marine terminal;
- 6.29.6. monitoring of morphological changes due to erosion and deposition around the southwest tower and the anchor block of the suspension bridge during construction of the marine terminal and for at least 10 years after construction of the marine terminal to confirm that the changes in net gain or net loss of sediments are within the ranges predicted during the environmental assessment. Monitoring shall continue until the equilibrium conditions of erosion and deposition are reached. If equilibrium is not reached after five years following the end of construction, the Proponent shall implement additional measures to mitigate adverse environmental effects;
- 6.29.7. monitoring of extent and density of eelgrass beds on Flora Bank, including monitoring of eelgrass beds during the months of July or August of each year and monitoring of eelgrass beds located in the sub-tidal area to a depth of -1.5 metre chart datum. Monitoring shall begin prior to the start of construction of the marine terminal, as required to support the follow-up program, and shall continue during construction and for at least 10 years after construction of the marine terminal;
- 6.29.8. monitoring of changes in current velocities in the waters around the southwest tower and the anchor block of the suspension bridge and in the eelgrass beds on Flora Bank, including extent and duration of the changes, for a minimum of one year after construction of the marine terminal;
- 6.29.9. when LNG vessels associated with the Designated Project are maneuvering and docking at the marine terminal berths, monitoring of total suspended solids and changes in bathymetry, including propeller wash-derived scour, to confirm that the amounts of total suspended solids are within the ranges predicted during the environmental assessment, including along the western flank of Agnew and Flora Banks and southern side of Flora Bank, and that any change(s) in bathymetry do not adversely affect marine fish habitat. Monitoring shall include periods of low tides. Monitoring shall continue for

at least the first 10 years of operation, or until equilibrium between erosion and deposition is reached, whichever is longer;

- 6.29.10. monitoring of presence, density and spatial and temporal habitat use of commercial, recreational and Indigenous fisheries species in the area affected by the Designated Project (including Brown Passage) and of levels of underwater noise in the areas where that monitoring occurs. Monitoring of commercial, recreational and Indigenous fisheries species shall include salmon, crab, shrimp, herring, eulachon (including larval eulachon) (*Thaleichthys pacificus*), flatfish, and forage species. Monitoring shall begin prior to the start of construction of the marine terminal, as required to support the follow-up program, continue during construction, and cease at the end of operation. Monitoring during years one, two, three, five, eight, and ten of operation shall be included in the follow-up program;
 - 6.29.11. monitoring of presence, density and spatial and temporal habitat use of marine mammals potentially affected by the Designated Project and of levels of underwater noise in the areas where that monitoring occurs. Monitoring of marine mammals shall include humpback whale (*Megaptera novaeangliae*), killer whale (including Bigg's killer whale and northern resident killer whale) (*Orcinus orca*), Dall's porpoise (*Phocoenoides dalli*), harbour porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), harbour seal (*Phoca vitulina*), Steller sea lion (*Eumetopias jubatus*), and sea otter (*Enhydra lutris*). If results of the monitoring identify disruption of marine mammals' ability to carry out one or more life process(es), the Proponent shall identify the need for additional mitigation measures following consultation with Fisheries and Oceans Canada and the Prince Rupert Port Authority. The Proponent shall implement any additional mitigation measure(s) required. Monitoring shall begin prior to the start of construction of the marine terminal, as required to support the follow-up program, continue during construction, and cease at the end of operation. Monitoring during years one, two, three, five, eight, and ten of operation shall be included in the follow-up program; and
 - 6.29.12. monitoring of changes to marine fish and invertebrates habitat caused by the disposal of dredged material at Brown Passage to confirm that the changes are not more adverse than the degree to which changes were predicted to be adverse during the environmental assessment. Monitoring shall start 6 months after the last disposal at sea event.
- 6.30. The Proponent shall monitor the presence, density and the spatial and temporal habitat use of harbour porpoise (*Phocoena phocoena*) within the Designated Project footprint and insonified areas and compare against control areas within Chatham Sound. Monitoring shall begin prior to the start of construction of the marine terminal, continue during construction, and cease at the end of operation. Monitoring during years one, two, three, five, eight, and ten of operation shall be included. The Proponent shall identify, prior to construction and in consultation with Fisheries and Oceans Canada, the Prince Rupert Port Authority, and Indigenous groups, the methodology, location, frequency, timing and duration of monitoring. The Proponent shall report the results of the monitoring activities to the Agency, Fisheries and Oceans Canada, the Prince Rupert Port Authority, and Indigenous groups annually.

- 6.31. The Proponent shall develop, in consultation with Fisheries and Oceans Canada, and provide to the Agency, Fisheries and Oceans Canada, the Prince Rupert Port Authority, and Indigenous groups a marine mammal management plan prior to the start of in-water construction activities. The marine mammal management plan shall include the following information:
- 6.31.1. the measures to be implemented to mitigate the adverse environmental effects of the Designated Project on marine mammals, including the mitigation measures set out in this Decision Statement;
 - 6.31.2. the marine mammal detection program referred to in condition 6.15;
 - 6.31.3. how the independent environmental monitor will observe, record and report on the implementation of mitigation measures related to marine mammals set out in this Decision Statement;
 - 6.31.4. the follow-up program for marine mammals referred to in condition 6.29.11, including the information referred to in conditions 2.4 and 2.5 for that follow-up program; and
 - 6.31.5. the details of the monitoring activities for harbour porpoise (*Phocoena phocoena*) referred to in condition 6.30.
- 6.32. The Proponent shall implement control measures to prevent water and sediment from within the Designated Project footprint on Lelu Island from entering the receiving environment unless water and sediment meet approved federal and provincial water and sediment quality guidelines, including water and sediment quality guidelines for the protection of aquatic life from the Canadian Council of Minister of the Environment or criteria established by relevant authorities.

7. Migratory birds

- 7.1. The Proponent shall carry out all phases of the Designated Project in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's *Avoidance Guidelines*. The Proponent's actions in applying the *Avoidance Guidelines* shall be in compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act*.
- 7.2. The Proponent shall not clear or develop Lelu Island within 30 metres from the high water mark except when required for the Lelu Island bridge, pioneer dock, Materials Offloading Facility, marine terminal and pipeline interconnection, or for safety or security considerations.
- 7.3. The Proponent shall avoid adverse effects to migratory birds by:
- 7.3.1. restricting flaring to the minimum required for operation, maintenance activities or emergency procedures;
 - 7.3.2. minimizing flaring required for operation and maintenance activities of the Designated Project during night time and during periods of migratory bird vulnerability; and

- 7.3.3. controlling lighting required for the operation of the Designated Project, including for direction, timing, intensity, and glare of light fixtures, while meeting operational health and safety requirements.
- 7.4. The Proponent shall avoid or lessen adverse effects caused by the Designated Project, and monitor these effects on the habitat of the marbled murrelet (*Brachyramphus marmoratus*). The Proponent shall compensate for the loss of nesting habitat of the marbled murrelet as a result of the Designated Project, taking into account Environment and Climate Change Canada's *Operational Framework for Use of Conservation Allowances* and Environment and Climate Change Canada's *Recovery Strategy for the Marbled Murrelet (Brachyramphus marmoratus) in Canada*.
- 7.5. The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant federal and provincial authorities, a follow-up program to determine the effectiveness of the mitigation measures to avoid harm to migratory birds, their eggs and nests, including the mitigation measures used to comply with conditions 7.1 to 7.4. The Proponent shall implement the follow-up program during all phases of the Designated Project.

8. Listed terrestrial species at risk

- 8.1. The Proponent shall identify, prior to construction and in consultation with relevant federal authorities, the Prince Rupert Port Authority, and Indigenous groups, timing windows of least risk for vegetation clearing on Lelu Island for little brown myotis (*Myotis lucifugus*) and shall undertake vegetation clearing on Lelu Island only during these timing windows of least risk. The Proponent shall base the identification of timing windows of least risk on the results of field surveys to identify summer and winter roosting activities on Lelu Island. The Proponent shall notify the Agency, relevant federal authorities, the Prince Rupert Port Authority, and Indigenous groups of the identified timing windows of least risk at least 60 days before the start of vegetation clearing on Lelu Island.
- 8.2. The Proponent shall, prior to construction and throughout all phases of the Designated Project, install, maintain, and monitor bat roosting structures at suitable sites at or nearby Lelu Island or otherwise located within the Kaien or Tuck landscape units to mitigate any potential adverse effects to little brown myotis (*Myotis lucifugus*) roosting habitat.
- 8.3. The Proponent shall develop, prior to construction and in consultation with relevant federal authorities, a follow-up program to monitor the effectiveness of the mitigation measures for little brown myotis (*Myotis lucifugus*) referred to in conditions 8.1 and 8.2. The Proponent shall implement the follow-up program starting prior to construction, as required to support the follow-up program, and continue during all phases of the Designated Project.

9. Human health

- 9.1. The Proponent shall implement noise reduction measures during all phases of the Designated Project to avoid or reduce potential adverse environmental effects on human health, including:
 - 9.1.1. conducting impact pile driving at the Lelu Island bridge and the pioneer dock only between 7:00 a.m. and 10:00 p.m.;

- 9.1.2. taking into account best practices and guidance for construction noise from the British Columbia Oil and Gas Commission's *Noise Control Best Practices Guideline*; and
 - 9.1.3. complying with the operational noise requirements of the British Columbia Oil and Gas Commission's *Liquefied Natural Gas Facility Regulation*.
- 9.2. The Proponent shall develop, prior to construction, and implement, during construction, a protocol for receiving complaints related to the exposure to noise and light from the Designated Project. The Proponent shall develop this protocol in consultation with Indigenous groups and other parties who may be adversely affected by noise and light from the Designated Project. The Proponent shall respond in a timely manner to any noise or light complaint(s) received, including by implementing corrective actions to reduce exposure to noise and light.
- 9.3. The Proponent shall install and manage exterior lighting from all Designated Project components during all phases of the Designated Project to prevent excessive emanation of light, taking into account the International Commission on Illumination's *CIE 150:2003 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations* for rural areas, while meeting workers' safety and marine transportation and aviation safety requirements.
- 9.4. The Proponent shall develop, prior to construction and in consultation with Indigenous groups and relevant federal and provincial authorities, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the adverse effects of dredging of marine sediment at the Materials Offloading Facility on human health as a result of changes to marine harvested foods. The Proponent shall implement the follow-up program. The follow-up program shall include the area(s) most likely to be affected by sediment dispersion and deposition, including Porpoise Channel. The follow-up program shall include:
- 9.4.1. collecting legal-sized Dungeness crabs (*Metacarcinus magister*) and at least two other adult species commonly-consumed by Indigenous Peoples (including one groundfish species) during at least four different sampling periods. The Proponent shall evaluate the need for additional sampling periods if the results from previous sampling periods indicate an increased risk to human health relative to baseline conditions from changes to marine harvested foods resulting from the dredging of marine sediments. At a minimum, the four different sampling periods shall include:
 - 9.4.1.1. prior to the commencement of in-water construction activities;
 - 9.4.1.2. immediately upon completion of dredging at the Materials Offloading Facility;
 - 9.4.1.3. six months following completion of dredging at the Materials Offloading Facility; and
 - 9.4.1.4. one year following completion of dredging at the Materials Offloading Facility.
 - 9.4.2. conducting laboratory analysis of all marine tissue samples, including the crab hepatopancreas, for concentrations of dioxins, furans, arsenic and copper for each sampling period; and
 - 9.4.3. reporting results of the monitoring to the Agency, Indigenous groups, relevant federal and provincial authorities, and local governments within 30 days following the end of each sampling period. The results to be reported shall include:

- 9.4.3.1. contaminant concentrations of dioxins, furans, arsenic and copper in all marine tissue samples collected by the Proponent and the methodology for determining sample size;
 - 9.4.3.2. a quantitative assessment of any changes in human health risk from consuming marine harvested foods for all receptor age groups; and
 - 9.4.3.3. updated recommendations by the Proponent on the quantity of marine harvested foods that can be safely consumed per week, using a hazard quotient of 0.2 to calculate the recommended maximum weekly intake. Updated recommended maximum weekly intakes shall take into account the additive risk from consuming multiple species in the same week.
- 9.5. The Proponent shall report to the Agency, Indigenous groups, relevant federal and provincial authorities, and local governments the additional mitigation measures implemented by the Proponent to reduce the risks to human health from changes to marine harvested foods resulting from the dredging of marine sediments.
- 9.6. The Proponent shall develop, prior to construction and in consultation with Indigenous groups, relevant federal and provincial authorities and other parties who may be adversely affected by noise caused by the Designated Project, a follow-up program to verify the accuracy of the environmental assessment as it pertains to noise exposure and human health. The Proponent shall implement the follow-up program during construction.

10. Current use of lands and resources for traditional purposes and socio-economic conditions

- 10.1. The Proponent shall build the suspension bridge and the Lelu Island bridge to a height and width which can accommodate vessels with an air draft of 11.3 metres from the highest high water level over known navigation channels.
- 10.2. The Proponent shall develop, prior to construction and in consultation with Indigenous groups and other marine users, marine communication protocols that respect existing marine communication practices. The Proponent shall implement the marine communication protocols during all phase of the Designated Project. The marine communication protocols shall include procedures and practices for providing information on navigation between the marine terminal and Triple Island and facilitating communication between the Proponent and the Indigenous groups and other marine users on the following:
- 10.2.1. location and timing of Designated Project-related construction activities, including temporary restrictions imposed on navigation due to construction, routing advisories and alternate routes;
 - 10.2.2. Designated Project-related safety procedures, such as aids to navigation and updated navigational charts;
 - 10.2.3. areas where navigation may be controlled for safety reasons;
 - 10.2.4. speed profiles and schedules applicable to the operation of LNG vessels associated with the Designated Project; and

- 10.2.5. ways for Indigenous groups and other marine users to provide feedback to the Proponent about adverse environmental effects on navigation caused by activities associated with the Designated Project, including construction activities and the operation of LNG vessels associated of the Designated Project, and ways for the Proponent to respond to the feedback received in a timely manner.
- 10.3. The Proponent shall incorporate traditional use plants in the restoration, enhancement or creation of compensatory wetland sites or when carrying out progressive reclamation and shall provide access to those sites to Indigenous groups for the purposes of gathering traditional use plants.
- 10.4. The Proponent shall develop, prior to construction and in consultation with Indigenous groups, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the adverse effects of the Designated Project on traditional and Indigenous commercial fisheries, including adverse environmental effects on the quantity of marine resources available for traditional and Indigenous commercial fisheries and adverse environmental effects on the access to fishing sites. The Proponent shall implement the follow-up program during all phases of the Designated Project. Monitoring shall begin prior to the construction of the marine terminal, as required to support the follow-up program, continue during construction and operation, and cease at the end of operation. The Proponent shall provide the results of the follow-up program and any additional mitigation measure(s) implemented as a result of the follow-up program to Indigenous groups.
- 10.5. The Proponent shall provide Indigenous groups with the implementation schedule, updates or revisions to the implementation schedule pursuant to conditions 18.1 to 18.3 at the same time the Proponent provides these documents to the Agency.

11. Physical and cultural heritage and structures, sites or things of historical, archaeological, paleontological or architectural significance

- 11.1. The Proponent shall develop, prior to construction and in consultation with the Prince Rupert Port Authority and Indigenous groups, and implement, during all phases of the Designated Project, an archaeological resources and heritage management plan for the Designated Project. The archaeological resources and heritage management plan shall take into account the Treasury Board of Canada's *Guide to the Management of Movable Heritage Assets* and the British Columbia's *Handbook for the Identification and Recording of Culturally Modified Trees* and activities that are part of the plan shall be undertaken by qualified individuals. The archaeological resources and heritage management plan shall include:
- 11.1.1. a description of the types of physical and cultural heritage features and structures, sites or things of historical, archaeological, paleontological or architectural significance (including culturally modified trees) that may be encountered by the Proponent during construction on Lelu Island or in the intertidal area affected by the Designated Project;
- 11.1.2. how Indigenous groups participate in pre-construction surveys of Lelu Island or of the intertidal area affected by the Designated Project and in on-site monitoring of construction activities that may adversely affect physical and cultural heritage features and structures, sites or things of historical, archaeological, paleontological or

architectural significance (including culturally modified trees), subject to the safety requirements of the Designated Project construction site;

- 11.1.3. procedures for the identification and removal of physical and cultural heritage features and structures, sites or things of historical, archaeological, paleontological or architectural significance (including culturally modified trees) that may be affected by construction activities on Lelu Island or in the intertidal area affected by the Designated Project;
- 11.1.4. procedures for the preservation and sharing of information about physical and cultural heritage features and structures, sites or things of historical, archaeological, paleontological or architectural significance (including culturally modified trees) recovered by the Proponent before construction activities affect them; and
- 11.1.5. a chance-find protocol if previously unidentified physical or cultural heritage features or structures, sites or things of historical, archaeological, paleontological or architectural significance (including culturally modified trees) are discovered by the Proponent or brought to the attention of the Proponent by an Indigenous group or another party during construction on Lelu Island or in the intertidal area affected by the Designated Project, that requires:
 - 11.1.5.1. determining the heritage value of the physical or cultural heritage features or structures, sites or things that have been discovered by the Proponent or brought to the attention of the Proponent; and
 - 11.1.5.2. if the physical or cultural heritage features or structures, sites or things that have been discovered by the Proponent or brought to the attention of the Proponent are determined to be of important heritage value, implementing information recovery measures, in consultation with Indigenous groups, to collect information about the finds before they are removed from their context or adversely affected further.

12. Independent environmental monitor

- 12.1. Prior to the start of construction, the Proponent shall make all reasonable efforts to obtain the approval of the Lax Kw'alaams Band, the Metlakatla First Nation, the British Columbia Environmental Assessment Office and the Agency for the retention of the service of an independent environmental monitor. The independent environmental monitor shall endeavor to coordinate its activities with the activities of any other individual(s) conducting monitoring activities associated with the Designated Project. In the event that there is no agreement concerning the appointment of an independent environmental monitor from the Lax Kw'alaams Band, the Metlakatla First Nation, or the British Columbia Environmental Assessment Office 90 days prior to the start of construction, the Proponent shall retain the service of the aforementioned independent environmental monitor with the approval of the Agency.
- 12.2. The Proponent shall give the independent environmental monitor the authority to stop Designated Project activities that do not comply with the conditions set out in this Decision Statement.

- 12.3. The Proponent shall require the independent environmental monitor to prepare weekly reports during construction and the first three years of operation and monthly reports thereafter, until the end of decommissioning of the Designated Project. The reports shall include:
- 12.3.1. a description, including through photo evidence, of the Designated Project activities that occurred and the mitigation measures that were applied during the reporting period; and
 - 12.3.2. if any, a description, including through photo evidence, of occurrences of non-compliance related to the implementation of mitigation measures set out in this Decision Statement observed during the reporting period, the date of the occurrence(s) of non-compliance, whether Designated Project activities were stopped as a result of non-compliance, how the occurrence(s) of non-compliance was or were corrected by the Proponent, the date that the corrective action(s) was or were completed by the Proponent, or, if any, the status of pending occurrence(s) non-compliance that have not been corrected yet, and a description of any adverse environmental effect(s) associated with the occurrence(s) of non-compliance.
- 12.4. The Proponent shall require the independent environmental monitor to retain the reports referred to in condition 12.3 during construction and operation, and until the end of decommissioning of the Designated Project. The Proponent shall require the independent environmental monitor to provide the reports referred to in condition 12.3 to the Agency, Indigenous groups, and relevant federal authorities within 10 days of their production. If occurrence(s) of non-compliance are observed by the independent environmental monitor, the Proponent shall require the independent environmental monitor to report all occurrence(s) of non-compliance directly to the Agency, Indigenous groups and relevant federal authorities immediately.

13. Environmental monitoring

- 13.1. The Proponent shall participate, at the request of relevant federal authorities, in any environmental monitoring initiative(s), including management and technical committees, established in relation to the Designated Project.

14. Cumulative effects

- 14.1. The Proponent shall participate, at the request of relevant federal authorities, in regional initiatives related to the monitoring, assessment, or management of cumulative environmental effects likely to result from the Designated Project in combination with other physical activities that have been or will be carried out, should there be any such initiative(s) during construction or operation of the Designated Project.

15. Baseline conditions and Designated Project start

- 15.1. In the event that the Proponent has not commenced in-water construction within five years of the date of issuance of this Decision Statement, the Proponent shall:

- 15.1.1. determine, in consultation with Indigenous groups and relevant federal authorities, if there have been any changes to baseline conditions for marine fish (including marine mammals) and fish habitat, and current use of lands and resources for traditional purposes since the issuance of this Decision Statement;
- 15.1.2. in the event that a change is identified pursuant to condition 15.1.1, determine, in consultation with Indigenous groups and relevant federal authorities, whether additional adverse environmental effects on marine fish (including marine mammals) and fish habitat, and current use of lands and resources for traditional purposes would result in relation to the Designated Project and determine whether additional mitigation measures are required;
- 15.1.3. provide the Agency with the analysis carried out in accordance with conditions 15.1.1 and 15.1.2, as well as the results of consultation with Indigenous groups and relevant federal authorities; and
- 15.1.4. if additional mitigation measures are required pursuant to condition 15.1.2, implement these additional mitigation measures in a timely manner and monitor them as part of the follow-up programs referred to in conditions 6.29 and 10.4.

16. Decommissioning

- 16.1. At least one year prior to the end of operation, the Proponent shall develop, in consultation with Indigenous groups and other relevant parties, and submit to the Agency a decommissioning plan. The decommissioning plan shall include a description of:
 - 16.1.1. any consultation undertaken by the Proponent during the development of the decommissioning plan, including any issues raised by Indigenous groups and other parties during consultation and how these issues were addressed by the Proponent;
 - 16.1.2. the components of the Designated Project that will be decommissioned by the Proponent and the components of the Designated Project that will not be decommissioned;
 - 16.1.3. the desired end-state objectives of the Designated Project area and a description of how the end-state objectives compare to baseline conditions;
 - 16.1.4. the components of the environment that may be adversely affected by decommissioning activities or by components of the Designated Project that will not be decommissioned;
 - 16.1.5. how the Proponent will conduct in-water and land-based decommissioning activities (including the location, the scheduling and sequencing of activities);
 - 16.1.6. the mitigation measures and monitoring to be implemented for adverse environmental effects from decommissioning activities;
 - 16.1.7. the plan for progressive reclamation, if applicable; and

- 16.1.8. the manner and timing of consultation of Indigenous groups and other relevant parties throughout decommissioning.
- 16.2. The Proponent shall implement the decommissioning plan referred to in condition 16.1.
- 16.3. The Proponent shall, from the reporting year in which decommissioning begins until the end of decommissioning, or for a maximum of 25 years, whichever comes sooner, submit to the Agency a written annual report no later than October 31 of the following reporting year. The written annual report shall include a description of:
 - 16.3.1. the decommissioning activities undertaken by the Proponent during the reporting year;
 - 16.3.2. any adverse environmental effects identified by the Proponent with respect to the decommissioning activities identified in condition 16.3.1;
 - 16.3.3. a description of the mitigation measures that were implemented by the Proponent to mitigate the adverse environmental effects identified in condition 16.3.2 and the results of any monitoring associated with decommissioning;
 - 16.3.4. any modifications made to the decommissioning plan referred to in condition 16.1; and
 - 16.3.5. consultation undertaken by the Proponent with Indigenous groups and other relevant parties during the reporting year.

17. Accidents and malfunctions

- 17.1. The Proponent shall take all reasonable measures to prevent accidents and malfunctions that may result in adverse environmental effects in relation to the Designated Project.
- 17.2. The Proponent shall, prior to construction, consult with Indigenous groups and relevant federal and provincial authorities, on the measures to be implemented to prevent accidents and malfunctions in relation to the Designated Project.
- 17.3. The Proponent shall, prior to construction and in consultation with Indigenous groups and relevant federal and provincial authorities, develop an emergency response plan in relation to the Designated Project.
- 17.4. In the event of an accident or malfunction with the potential to cause adverse environmental effects, the Proponent shall implement the emergency response plan referred to in condition 17.3 and shall:
 - 17.4.1. notify Indigenous groups, upriver Indigenous groups, the Council of Haida Nation and relevant federal and provincial authorities of the accident or malfunction as soon as possible and, in writing, the Agency;
 - 17.4.2. implement immediate measures to mitigate any adverse environmental effects associated with the accident or malfunction;
 - 17.4.3. submit a written report to the Agency no later than 30 days after the day on which the accident or malfunction took place. The written report shall include:

- 17.4.3.1. a description of the accident or malfunction and of its adverse environmental effects;
- 17.4.3.2. the measures that were taken by the Proponent to mitigate the adverse environmental effects of the accident or malfunction;
- 17.4.3.3. any views received from Indigenous groups, upriver Indigenous groups, the Council of Haida Nation and relevant federal and provincial authorities with respect to the accident or malfunction, its adverse environmental effects or measures taken by the Proponent to mitigate adverse environmental effects;
- 17.4.3.4. a description of any residual environmental effects, and any additional measures required by the Proponent to mitigate residual adverse environmental effects; and
- 17.4.3.5. details concerning the implementation of the emergency response plan referred to in condition 17.3.
- 17.4.4. submit a written report to the Agency, no later than 90 days after the day on which the accident or malfunction took place, on the changes made to avoid a subsequent occurrence of the accident or malfunction, and on the implementation of any additional measures to mitigate and monitor residual adverse environmental effects and to carry out any required progressive reclamation, taking into account the information in the written report submitted pursuant to condition 17.4.3.
- 17.5. The Proponent shall develop a communication plan prior to construction and in consultation with Indigenous groups, upriver Indigenous groups, and the Council of Haida Nation. The Proponent shall implement and maintain up to date the communication plan, in consultation with Indigenous groups, upriver Indigenous groups, and the Council of Haida Nation, during all phases of the Designated Project. The plan shall include:
 - 17.5.1. the types of accidents and malfunctions requiring a notification by the Proponent to each Indigenous group, upriver Indigenous group, and the Council of Haida Nation;
 - 17.5.2. the manner by which Indigenous groups, upriver Indigenous groups, and the Council of Haida Nation shall be notified by the Proponent of an accident or malfunction, and of any opportunities for the Indigenous groups, upriver Indigenous groups, and the Council of Haida Nation to assist in the response to the accident or malfunction; and
 - 17.5.3. the contact information of the representatives of the Proponent that the Indigenous groups, upriver Indigenous groups, and the Council of Haida Nation may contact, and of the representatives of each Indigenous group, upriver Indigenous group, and the Council of Haida Nation to which the Proponent shall provide notification.

18. Implementation schedule

- 18.1. The Proponent shall submit an implementation schedule for conditions contained in this Decision Statement to the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, at least 30 days prior to the start of construction. The

implementation schedule shall indicate the commencement and completion dates for each activity relating to conditions set out in this Decision Statement.

- 18.2. The Proponent shall submit an update to this implementation schedule in writing to the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, every two years on or before October 31 until completion of the activities.
- 18.3. The Proponent shall provide the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, with a revised implementation schedule if any material change(s) occur from the initial schedule referred to in condition 18.1 or any subsequent update(s). The Proponent shall provide the revised implementation schedule at least 30 days prior to the implementation of the change.

19. Record keeping

- 19.1. The Proponent shall maintain all records relevant to the implementation of the conditions set out in this Decision Statement, including any records that the Agency or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012* may consider relevant. The Proponent shall provide the aforementioned records to the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, upon demand within a timeframe specified by the Agency or the designated person.
- 19.2. The Proponent shall retain all records referred to in condition 19.1 at a facility in Canada. The records shall be retained and made available throughout construction and operation, and until the end of decommissioning of the Designated Project. The Proponent shall notify the Agency at least 30 days prior to any change to the physical location of the facility where the records are retained, and shall provide the address of the new location.

Issuance

This Decision Statement is issued in Ottawa, Ontario by:

<Original signed by>

The Honourable Catherine McKenna
Minister of the Environment

Date September 27, 2016