Potential Conditions

The Canadian Environmental Assessment Agency is contemplating the following potential conditions in relation to the Pacific NorthWest LNG Project (the Designated Project) for recommendation to the Minister of Environment and Climate Change for inclusion in a Decision Statement issued under the *Canadian Environmental Assessment Act, 2012*. If the Designated Project is ultimately allowed to proceed because the Minister of Environment and Climate Change decides that the carrying out of the Designated Project is unlikely to cause significant adverse environmental effects as defined under subsections 5(1) and 5(2), or if the Minister decides that the Designated Projects is likely to cause significant adverse environmental effects and the Governor in Council decides such effects are justifiable in the circumstances, any conditions established by the Minister would become legally binding.

1. Definitions

1.1. *Aboriginal groups* means Lax Kw'alaams Band, Metlakatla First Nation, Gitxaala Nation, Kitsumkalum First Nation, Kitselas First Nation, and Gitga'at First Nation.

1.2. *Agency* means the Canadian Environmental Assessment Agency.

1.3. *Airdraft* means the distance from the surface of the water to the highest point on a vessel.

1.4. *Baseline* means the environmental conditions prior to initiating construction of the Designated Project.

1.5. *Construction* means the phase of the Designated Project during 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 Aboriginal peoples as part of their traditional use of the forest.

1.7. *Days* means calendar days.

1.8. *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.

1.9. *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).

1.10. *Environment and Climate Change Canada* means the Department of the Environment as established under subsection 2(1) of the *Department of the Environment Act*.

1.11. *Environmental effects* means "environmental effects" as described in section 5 of the *Canadian Environmental Assessment Act, 2012*.

1.12. *Fish* means "fish" as defined in subsection 2(1) of the *Fisheries Act*.

1.13. *Fish habitat* means "fish habitat" as defined in subsection 2(1) of the *Fisheries Act*.

1.14. *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*.

1.15. *Follow-up program* means "follow-up program" as defined in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012*.

1.16. *Heritage value* means the aesthetic, historic, scientific, cultural, social or spiritual importance or significance for past, present or future generations.

1.17. *High water* means the highest level reached at a place by the water surface in one tide oscillation.

1.18. *Highest high water* means the average of the highest high waters, one from each of 19 years of predictions.

1.19. *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*.

1.20. *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.

1.21. *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*.

1.22. *Marine mammals* means all cetacean, pinniped and marine fissiped species.

1.23. *Migratory bird* means "migratory bird" as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*.

1.24. *Mitigation measures* means "mitigation measures" as defined in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012.*

1.25. *Natural Resources Canada* means the Department of Natural Resources as established under subsection 3(1) of the *Department of Natural Resources Act*.

1.26. *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.*

1.27. *Operation* means the phase of the Designated Project during which the commercial production takes place.

1.28. *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.

1.29. *Project area* means the geographic area occupied by the Designated Project.

1.30. *Proponent* means Pacific NorthWest LNG Limited Partnership and its successors or assigns.

1.31. *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.

1.32. *Reporting year* means from April 1 through March 31 of the subsequent calendar year.

1.33. *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.

1.34. *Train* means a liquefaction unit where treated natural gas is cooled by refrigeration cycles until it changes from a gas to a liquid state.

1.35. *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).

1.36. *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.

Potential conditions

These conditions may be 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 document shall be construed as reducing, increasing, or otherwise affecting what may be required 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 document are informed by the best available information and knowledge, including community and Aboriginal 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 document:

2.2.1. provide a written notice of the opportunity for the party or parties being consulted to present their views on the subject of the consultation;

2.2.2. provide sufficient information and a reasonable period of time to permit the party or parties being consulted to prepare their views;

2.2.3. provide a full and impartial consideration of any views presented by the party or parties being consulted; and

2.2.4. advise the party or parties that have provided comments on how the views and information received have been considered by the Proponent.

2.3. The Proponent shall, where consultation with Aboriginal groups is a requirement of a condition set out in this document, and prior to initiating that consultation, communicate with each Aboriginal group to determine the manner by which to satisfy the consultation requirements referred to in condition 2.2, including the methods of notification, the type of information and the period of time to be provided when seeking views, the process for full and impartial consideration of any views presented and the means by which each Aboriginal group will be informed of how the views and information received 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 document:

2.4.1. 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 measures;

2.4.2. determine whether additional mitigation measures are required based on the monitoring and analysis undertaken pursuant to condition 2.4.1; and

2.4.3. if additional mitigation measures are required pursuant to condition 2.4.2, implement the additional mitigation measures and monitor them pursuant to condition 2.4.1.

2.5. Where consultation with Aboriginal groups is a requirement of a follow-up program, the Proponent shall discuss with each Aboriginal group opportunities for the participation of that Aboriginal group in the implementation of the follow-up program as set out in condition 2.4.

2.6. The Proponent shall, commencing in the reporting year that construction begins, submit to the Agency an annual report, including an executive summary of the annual report in both official languages. The annual report shall be submitted by the Proponent no later than June 30 following the reporting year to which the annual report applies. In the annual report, the Proponent shall set out:

2.6.1. the activities implemented in the reporting year to comply with each of the conditions set out in this document;

2.6.2. how the Proponent complied with condition 2.1;

2.6.3. for conditions set out in this document 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;

2.6.4. the results of the follow-up program requirements identified in conditions 4.1, 5.5, 6.12, 7.5, 8.3, 9.4 and 10.3; and

2.6.5. any additional mitigation measures implemented or proposed to be implemented by the Proponent, as determined under condition 2.4.

2.7. The Proponent shall publish on the Internet, or any medium which is widely publicly available, the annual report and the executive summaries referred to in condition 2.6, the wetland function compensation plan referred to in condition 5.3, the plan to offset the loss of fish and fish habitat referred to in condition 6.6, the weekly reports referred to in condition 6.18, the archaeological and heritage resources management plan referred to in condition 11.1, the decommissioning plan referred to in condition 12.1, the annual report referred to in condition 12.3, the reports referred to in conditions 13.3.3 and 13.3.4, the communication plan referred to in condition 13.5, the implementation schedule referred to in condition 14.1 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, Aboriginal groups and the Prince Rupert Port Authority of the availability of these documents once they are published.

2.8. The Proponent shall notify the Agency 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.

2.9. The Proponent shall consult with Aboriginal groups prior to initiating any 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).

2.10. In notifying the Agency pursuant to condition 2.9, the Proponent shall provide the Agency with an analysis of the adverse environmental effects of the change(s) to the Designated Project, as well as the results of the consultation with Aboriginal groups.

3. Air quality

3.1. The Proponent shall implement best available technology and best management practices to reduce and control air emissions during all phases of the Designated Project to mitigate adverse environmental effects on freshwater fish and fish habitat and human health.

4. Freshwater fish and fish habitat

4.1. The Proponent shall develop, prior to operation, and implement a follow-up program to verify the accuracy of the environmental assessment in relation 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 follow-up program shall include:

4.1.1. establishing baseline water quality (including seasonal assessment of acid neutralizing capacity and critical loads of acidity), fish habitat quality, fish presence, and habitat use of the Wolf Creek system, the Hayes Creek system, Alwyn Lake and two headwater lakes on Kaien Island based on a minimum of one year (four seasons) of data collection prior to the start of operation of Train 1; and

4.1.2. monitoring changes to the baseline conditions established in 4.1.1, beginning from the start of operation of Train 1, and ending one year following the start of operation of Train 2.

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 Project area to maintain hydrology of wetlands adjacent to the 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 Aboriginal groups 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 to be 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;

5.3.3 selecting wetland restoration over enhancement, and wetland enhancement over creation;

5.3.4 whenever possible, incorporating traditional use plants in the restoration, enhancement or creation of the compensatory wetland sites and providing access to those sites to Aboriginal groups for the purposes of gathering traditional use plants; and

5.3.5 identifying sites to compensate for the loss of wetland functions related to habitat for listed species at risk, including little brown myotis (*Myotis lucifugus*).

5.4. The Proponent shall implement the wetland function compensation plan referred to in condition 5.3 within five years of the date of the start of construction.

5.5. The Proponent shall develop, prior to construction, and implement a follow-up program to verify that the compensatory wetland sites referred to in condition 5.3 are fulfilling the wetland functions they are replacing. Monitoring of the compensatory wetland sites shall start with their implementation 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. The Proponent shall identify, prior to the start of in-water construction activities, to the satisfaction of Fisheries and Oceans Canada and following consultation with Aboriginal groups and other relevant federal authorities, timing windows of least risk for in-water construction activities to protect marine fish, including marine mammals, during sensitive life stages, and notify the Agency and Aboriginal groups of the timing windows of least risk identified and the results of the pre-construction surveys supporting the identification of these timing windows once Fisheries and Ocean Canada has indicated it is satisfied and before in-water construction activities start. In doing so, the Proponent shall:

6.1.1. identify timing windows of least risk for each of the Materials Offloading Facility, trestle and suspension bridge, and disposal at sea areas and for each of the following in-water construction activities, as applicable: dredging, vibratory pile driving, impact pile driving, sub-tidal blasting, and sediment disposal at sea;

6.1.2. conduct dredging, vibratory pile driving, impact pile driving, and sediment disposal at sea during timing windows of least risk to the extent possible;

6.1.3. conduct sub-tidal blasting only during timing windows of least risk; and

6.1.4. identify and implement additional mitigation measures, following consultation with Fisheries and Oceans Canada, to avoid causing harm to marine fish, including marine mammals, and fish habitat if conducting dredging, vibratory pile driving, impact pile driving, or sediment disposal at sea outside of timing windows of least risk. When dredging or disposing of sediments at sea outside of timing windows of least risk, the Proponent shall take into account the Canadian Council of Ministers of the Environment's *Water Quality Guidelines for the Protection of Aquatic Life* for long-term exposure.

6.2. Prior to the start of in-water construction activities, the Proponent shall conduct high resolution modelling of the south-west tower and anchor block of the suspension bridge and regional three-dimensional modelling of the area likely to be affected by the Designated Project to confirm that erosion and deposition are at least the same or less than the levels predicted in the environmental assessment. The modelling shall incorporate proposed construction-ready designs for the south-west tower and anchor block of the suspension bridge and shall include two berthed LNG vessels. The Proponent shall calibrate the model using measured field data of waves, currents, and total suspended sediment concentrations over Flora Bank. The Proponent shall provide the results of the modelling, including detailed inputs, methodologies and outputs, to the Agency, Fisheries and Oceans Canada, Natural Resources Canada and Aboriginal groups.

6.3. The Proponent shall build the south-west tower and anchor block of the suspension bridge based on the construction-ready designs incorporated in the additional high resolution modelling referred to in condition 6.2. The south-west tower and 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 use silt curtains around in-water construction activities in areas of low to moderate currents (≤ 1 knot).

6.5. The Proponent shall take measures to exclude fish or reduce the presence of fish from the Materials Offloading Facility work area during dredging, blasting, and pile installation.

6.6. The Proponent shall use coffer dams to isolate the south-west tower block and anchor block work areas during in-water construction activities 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 south-west tower block and anchor block of the suspension bridge.

6.7. The Proponent shall use vibratory hammers for all pile installation to the extent feasible.

6.8. The Proponent shall use impact installation methods only when seating piles into bedrock and impact hammers shall be constructed of sound absorbent material.

6.9. The Proponent shall use bubble curtains and isolation casings when conducting impact pile driving activities and blasting.

6.10. The Proponent shall implement all reasonable measures to minimize the destruction of fish, or any the harmful alteration, disruption or destruction of fish habitat, during all phases of the Designated Project when using explosives in or around water frequented by fish.

6.11. The Proponent shall reduce the number of detonation occurring underwater and shall implement additional mitigation measures if underwater pressure pulse levels exceed 100 kilopascal during blasting or 30 kilopascal during impact pile driving.

6.12. The Proponent shall develop, in consultation with Fisheries and Oceans Canada, and implement a marine mammal observation program for all in-water construction activities where underwater noise levels are anticipated to exceed 160 decibels at a reference pressure of one micropascal to avoid adverse behavioural change in or injury to marine mammals. The marine mammal observation program shall include:

6.12.1. conducting predictive acoustic modelling, prior to the start of in-water construction activities, to identify to what extent in-water construction activities would generate underwater noise levels greater than 160 decibels, including activities occurring simultaneously, and the period(s) of time when these activities will occur;

6.12.2. establishing and maintaining through acoustic monitoring a safety radius for each in-water construction activity identified in condition 6.12.1 at the distance from the in-water construction activity at which the underwater noise level is predicted to reach 160 decibels;

6.12.3. employing marine mammal observers, who are qualified individuals, and requiring that they observe from locations in and along the perimeter of the safety radius and report the presence of marine mammals within the safety radius during in-water construction activities identified in condition 6.12.1;

6.12.4. conducting in-water construction activities identified in 6.12.1 only during daylight hours so marine mammal observers are able to conduct the observations referred to in 6.12.3;

6.12.5. stopping or not starting the in-water construction activities identified in condition 6.12.1 if a marine mammal is sighted in the safety radius by the marine mammal observers referred to in condition 6.12.3 and not re-starting the in-water construction activities identified in condition 6.12.1 until the marine mammal has moved out of the safety radius and no marine mammals have been sighted in the safety radius for a period of at least 30 minutes; and

6.12.6. implementing mitigation measures, including sound dampening technology and soft-start procedures, to reduce underwater noise levels in the safety radius referred to in condition 6.12.2.

6.13. The Proponent shall retain, prior to the start of in-water construction activities, the service of independent environmental monitors, who are qualified individuals, to observe, record and report on the implementation of the mitigation measures related to marine fish, including marine mammals, and fish habitat for in-water construction activities set out in this document. The Proponent shall give environmental monitors the authority to stop in-water construction activities if environmental monitors determine that adverse environmental effects to marine fish, including marine mammals, and fish habitat may occur if in-water construction activities do not stop.

6.14. The Proponent shall retain, prior to the start of in-water construction activities, the service of a registered professional biologist with accreditation with the British Columbia College of Applied Biology to oversee the work of the independent environmental monitors referred to in condition 6.13. The Proponent shall require the registered professional biologist to prepare weekly reports during the in-water construction phase. The weekly reports shall include:

6.14.1. a description of the in-water construction activities that occurred and the mitigation measures that were applied during the reporting week, including through photo evidence;

6.14.2. if any, a description of non-compliance issue(s) related to the mitigation measures for marine fish, including marine mammals, and fish habitat set out in this document observed during the reporting week and how non-compliance issue(s) were corrected; and

6.14.3. if any, a description of accident(s) and/or malfunction (s) which may have resulted in adverse environmental effects to marine fish, including marine mammals, and fish habitat during the reporting week and of how these adverse environmental effects were mitigated.

6.15. 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*) and shall adhere to the procedure outlined in the most recent Impact Assessment Protocol for relocating Northern Abalone if the species is found during the survey.

6.16. The Proponent shall use tugs that produce the least possible scour volumes from propeller action.

6.17. The Proponent shall require that LNG vessels associated with the Designated Project proceed at a safe speed and respect speed profiles applicable to the operation of the Designated Project, subject to navigational safety, to prevent or reduce the risks of collisions between LNG vessels and marine mammals.

6.18. The Proponent shall require that LNG vessels and tug operators associated with the Designated Project report collisions with marine mammals between Triple Islands and the marine terminal

berths to the Canadian Coast Guard and the Prince Rupert Port Authority within two hours of a collision being observed, and notify Aboriginal groups in writing.

6.19. The Proponent shall, to the satisfaction of Fisheries and Oceans Canada and in consultation with Aboriginal groups, develop and implement an offsetting plan related to the loss of fish and fish habitat associated with the carrying out of all phases of the Designated Project.

6.20. For any fish habitat offset area(s) proposed in the offsetting plan referred to in condition 6.19, and prior to submitting the offsetting plan to Fisheries and Oceans Canada, the Proponent shall determine whether there are adverse environmental effects:

6.20.1. on migratory birds and their habitats;

6.20.2. on terrestrial species and their habitats;

6.20.3. on listed species at risk and their habitats;

6.20.4. on the current use of lands and resources for traditional purposes by Aboriginal peoples;

6.20.5. on physical and cultural heritage and structure, site or thing that is of historical, archaeological, paleontological, or architectural significance to Aboriginal peoples;

6.20.6. on the flow rates, water depths or water widths that may affect the passage of a vessel, including a vessel used by Aboriginal peoples in the context of their current use of lands and resources for traditional purposes; and

6.20.7. from potential sources of contamination, including dioxins, furans and metals, on the receiving environment.

6.21. The Proponent shall, if there are adverse environmental effects on any of the elements set out in conditions 6.20.1 to 6.20.7, implement mitigation measures to address those effects.

6.22. The Proponent shall develop and implement 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 follow-up program shall include:

6.22.1. monitoring of total suspended sediments and turbidity during dredging at the Materials Offloading Facility to confirm that the levels of total suspended sediments and turbidity are within the ranges predicted during the environmental assessment;

6.22.2. monitoring of total suspended sediments during construction of the marine terminal and for at least 10 years after construction to confirm that the amount of total suspended sediments occurring on Flora Bank and around the marine terminal is within the ranges predicted during the environmental assessment. If the amount of total suspended sediments exceeds the Canadian Council of Ministers of the Environment's *Water Quality Guidelines for the Protection of Aquatic Life* for total suspended sediments, the Proponent shall implement additional mitigation measures to maintain the amount of total suspended sediments within the levels provided in the guidelines;

6.22.3. monitoring of morphological changes due to erosion and deposition on Flora Bank to confirm that the elevation changes on Flora Bank are within the natural range predicted during the environmental assessment and that the construction of the marine terminal is

not causing a continuous loss of sand volume on Flora Bank. Monitoring shall begin prior to the start of construction, as required to support the follow-up program, and shall continue for 10 years, or until monitoring results confirm that the criteria described above are not exceeded;

6.22.4. monitoring of morphological changes due to erosion and deposition around the south-west tower and anchor block of the suspension bridge during construction of the marine terminal and for at least 10 years after construction to confirm that the changes are within the range predicted during the environmental assessment. Monitoring shall continue until equilibrium between erosion and deposition is reached. If equilibrium is not reached after five years following the end of construction, the Proponent shall implement additional mitigation measures;

6.22.5. monitoring of the extent and density of eelgrass beds associated with Flora Bank to confirm that changes to eelgrass are within the range of natural variability. Monitoring shall continue for a minimum of 10 years after construction of the marine terminal;

6.22.6. monitoring of changes in current velocities around the south-west tower and anchor block of the suspension bridge, including extent and duration of the changes, for a minimum of one year after construction of the marine terminal to verify the accuracy of the predicted effects on marine fish and fish habitat, including eelgrass beds on Flora Bank;

6.22.7. when vessels associated with the Designated Project (including LNG vessels, tugs and construction vessels) are maneuvering and docking at the marine terminal berths and at the Materials Offloading Facility, monitoring of total suspended sediments and changes in bathymetry of the south end of Flora Bank and of the Materials Offloading Facility work area, including propeller wash-derived scour, to confirm that the amounts of total suspended sediment and scour are within the ranges predicted during the environmental assessment, including along the western flank of Agnew and Flora Banks and south-west corner of Flora Bank. Monitoring shall continue for a minimum of 10 years after construction of the marine terminal, or until equilibrium between erosion and deposition is reached;

6.22.8. monitoring of the abundance of commercial, recreational and Aboriginal fishery species and spatial and temporal use, distribution and composition of habitat potentially affected by the Designated Project. Monitoring of commercial, recreational and Aboriginal fishery species shall include salmon, crab, shrimp, herring, eulachon, flatfish, and forage species, and shall begin prior to the start of construction, as required to support the follow-up program, and cease at the end of the operation phase. Monitoring during years one, two, three, five, eight, and ten of operation shall be included in the follow-up program;

6.22.9. monitoring of the abundance of marine mammals and spatial and temporal use, distribution and composition of habitat potentially affected by the Designated Project. If results of the monitoring identify concerns related to the disruption of marine mammals' ability to carry out one or more life process (es), the Proponent shall implement additional mitigation measures following consultation with Fisheries and Oceans Canada and the Prince Rupert Port Authority. Monitoring shall begin prior to the start of construction, as

required to support the follow-up program, and continue for at least the first 10 years of operation; and

6.22.10. prior to the first disposal at sea event, confirming the environmental effects of sediment disposal at Brown Passage on marine fish and invertebrates and their habitat using final dredged sediment volumes, sediment characterization, disposal timing, and updated ocean current speed data. If the environmental effects are greater than the environmental effects predicted during the environmental assessment, the Proponent shall develop and implement, following consultation with relevant federal authorities and Aboriginal groups, additional measures to mitigate the adverse environmental effects of the disposal at sea activities at Brown Passage.

6.23. The Proponent shall develop the monitoring protocols associated with each element of the follow-up requirement referred to in conditions 6.22.1 to 6.22.10 prior to the start of in-water construction activities and in consultation with Fisheries and Oceans Canada, Natural Resources Canada, the Prince Rupert Port Authority, Aboriginal groups, and other relevant federal authorities. Monitoring protocols associated with each element of the follow-up requirement referred to in conditions 6.22.1 to 6.22.10 shall define, as appropriate, methodology, location, species, frequency, and duration of monitoring activities and reporting requirements. Monitoring protocols shall also identify action thresholds, if not already identified, for which, if monitoring results are above the identified thresholds, additional mitigation measures are required, and what those additional mitigation measures will be.

6.24. The Proponent shall develop, in consultation with Fisheries and Oceans Canada, and provide to Fisheries and Oceans Canada, the Prince Rupert Port Authority, and the Agency a marine mammal protection plan prior to the start of in-water construction activities. The marine mammal protection plan shall include the following information:

6.24.1. the timing windows of least risk for marine mammals referred to in condition 6.1 and the results of the pre-construction surveys of marine mammals supporting the identification of these timing windows;

6.24.2. 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 document;

6.24.3. the marine mammal observation program referred to in condition 6.12;

6.24.4. how environmental monitors referred to in condition 6.13 will observe, record and report on the implementation of mitigation measures related marine mammals; and

6.24.5. the follow-up program for marine mammals referred to in condition 6.22.8, including the details of the monitoring protocol associated with this follow-up program referred to in condition 6.23.

6.25. The Proponent shall participate, at the request of federal authorities, in regional initiatives relating to cumulative effects monitoring and the management of marine shipping, should there be any such initiative(s) during the construction and operation phases of the Designated Project.

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:

7.3.1. restrict flaring to the minimum required during operation, maintenance activities or emergency to prevent the accumulation of natural gas and protect from overpressure;

7.3.2. minimize 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. control lighting required for the operation of the Designated Project, including direction, timing, intensity, and glare of light fixtures, to avoid effects on migratory birds, while meeting operational health and safety requirements.

7.4. The Proponent shall avoid or lessen, and monitor effects on the habitat of the marbled murrelet (*Brachyramphus marmoratus*). The Proponent shall compensate for the loss of 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*.

7.5. The Proponent shall develop, prior to construction, and implement, during all phases of the Designated Project, a follow-up program to determine the effectiveness of the mitigation measures used to avoid harm to migratory birds, their eggs and nests, including the mitigation measures used to comply with conditions 7.1 to 7.4.

8. Listed terrestrial species at risk

8.1. The Proponent shall carry out site clearing between mid-September and mid-October to avoid or minimize adverse effects on little brown myotis (*Myotis lucifugus*).

8.2. The Proponent shall, prior to construction and throughout all phases of the Designated Project, install, maintain, and monitor roosting structures within a radius of five kilometres of the centre of Lelu Island to mitigate the loss of little brown myotis (*Myotis lucifugus*) roosting habitat.

8.3. The Proponent shall develop, prior to construction and in consultation with relevant federal authorities, and implement, starting prior to construction, as required to support the follow-up program, and during all phases of the Designated Project, 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 additional mitigation measures, in

consultation with relevant federal authorities, if the results of the follow-up program show that the Designated Project is causing adverse effects on little brown myotis (*Myotis lucifugus*).

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. applying best management practices and guidance for construction noise from the British Columbia Oil and Gas Commission's *Noise Control Best Practices Guideline*; and

9.1.2. 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 all phases of the Designated Project, a mechanism for receiving noise complaints, in consultation with Aboriginal groups and other parties who may be adversely affected by the noise caused by the Designated Project, and for responding in a timely manner to any noise complaint(s) received.

9.3. The Proponent shall design 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,* while meeting marine transportation and aviation safety requirements.

9.4. The Proponent shall develop, prior to construction, and implement in consultation with Aboriginal groups a follow-up program to verify that dredging of marine sediment at the Materials Offloading Facility does not result in increased risk to human health as a result of changes to marine country foods in Porpoise Channel. The follow-up program shall include:

9.4.1. collecting legal-sized Dungeness crabs (*Metacarcinus magister*) and at least two other commonly-consumed species (including one prawn species and one groundfish species) in Porpoise Channel in three different sampling periods:

9.4.1.1. prior to the commencement of in-water construction activities;

9.4.1.2. immediately upon completion of dredging; and

9.4.1.3. one year following completion of dredging;

9.4.2. conducting laboratory analysis of each animal's tissues, 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, Aboriginal groups and relevant federal and provincial authorities, as appropriate, within 90 days following the end of each sampling period. The results to be reported shall include:

9.4.3.1. all marine tissue contaminant concentrations from 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 country foods in Porpoise Channel for all receptor age groups; and

9.4.3.3. updated recommendations on the quantity of marine country 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 implement additional mitigation measures if the results of the follow-up program referred to in condition 9.4 show that there is an increased risk to human health from changes to marine country foods in Porpoise Channel resulting from the dredging of marine sediments.

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 a minimum airdraft of 11.3 metres from the highest high water level.

10.2. The Proponent shall develop, prior to construction, and implement, during all phases of the Designated Project, marine communication protocols that respect existing marine communication practices. The communication protocols shall include procedures and practices for sharing information and facilitating communication between the Proponent and the Aboriginal groups and other marine users on the following:

10.2.1. location and timing of Designated Project-related construction activities, including temporary restrictions due to construction, routing advisories and alternate routes;

10.2.2. location and timing of traditional activities by Aboriginal groups and of activities by other marine users;

10.2.3. Designated Project-related safety procedures, such as navigation aids and updated navigational charts;

10.2.4. areas where navigation may be controlled for safety reasons;

10.2.5. speed profiles and schedules applicable to the operation of LNG vessels associated with the Designated Project; and

10.2.6. ways for Aboriginal groups and other marine users to provide feedback to the Proponent about adverse environmental effects related to navigation caused by activities associated with the Designated Project, including construction activities and the operation of LNG vessels associated of the Designated Project.

10.3. The Proponent shall develop, prior to construction and in consultation with Aboriginal groups, and implement, during all phases of the Designated Project, a follow-up program to verify that the Designated Project does not result in decreased opportunities for traditional and Aboriginal commercial fisheries. As part of the follow-up program, the Proponent shall define, prior to construction, methodology, location, species, frequency, and duration of the associated monitoring and shall identify action thresholds beyond which, if opportunities for traditional and

Aboriginal commercial fisheries decrease below an agreed-upon level, additional mitigation measure are required and what those additional mitigation measures will be. The Proponent shall provide the results of the follow-up program and details of any additional mitigation measures implemented as a result of the follow-up program to Aboriginal groups.

10.4. The Proponent shall provide Aboriginal groups with the implementation schedule, updates or revisions to the implementation schedule pursuant to conditions 14.1 to 14.3 at the same time these documents are provided 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 Aboriginal 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*. 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;

11.1.2. how Aboriginal groups will be involved in pre-construction surveys of Lelu Island or the intertidal area and on-site monitoring of construction activities on Lelu Island or in the intertidal area that may 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;

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 Aboriginal group or another party during construction on Lelu Island or in the intertidal area, 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 to collect information about the finds before they are removed from their context or impacted further.

12. Decommissioning

12.1. At least one year prior to the end of operation, the Proponent shall develop, in consultation with Aboriginal groups and other relevant parties, and submit to the Agency a decommissioning plan. The decommissioning plan shall include a description of:

12.1.1. any consultation undertaken by the Proponent during the development of the decommissioning plan, including any issues raised by Aboriginal groups and other parties during consultation and how these issues were addressed by the Proponent;

12.1.2. 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;

12.1.3. the desired end-state objectives of the Project area;

12.1.4. 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;

12.1.5. how the Proponent will conduct in-water and land-based decommissioning activities (including the location, the scheduling and sequencing of activities);

12.1.6. how the Proponent will mitigate and monitor adverse environmental effects from decommissioning activities;

12.1.7. the plan for progressive reclamation, if appropriate; and

12.1.8. the manner and timing of consultation of Aboriginal and other relevant parties throughout the decommissioning phase.

12.2. The Proponent shall implement the decommissioning plan referred to in condition 12.1.

12.3. The Proponent shall, from the reporting year in which decommissioning begins until the end of the decommissioning phase or for a maximum of 25 years, submit to the Agency a written annual report no later than June 30 of the following reporting year. The written annual report shall include a description of:

12.3.1. the decommissioning activities undertaken by the Proponent during the reporting year;

12.3.2. any adverse environmental effects identified by the Proponent with respect to the decommissioning activities identified in condition 12.3.1;

12.3.3. a description of the mitigation measures that were implemented by the Proponent to mitigate the adverse environmental effects identified in condition 12.3.2 and the results of any associated monitoring;

12.3.4. any modifications made to the decommissioning plan referred to in condition 12.1; and

12.3.5. consultation undertaken by the Proponent with Aboriginal groups and other relevant parties during the reporting year.

13. Accidents and malfunctions

13.1. The Proponent shall take all reasonable measures to prevent accidents and malfunctions that may result in adverse environmental effects.

13.2. The Proponent shall, prior to construction, consult with Aboriginal groups on the measures to be implemented to prevent accidents and malfunctions.

13.3. The Proponent shall, prior to construction and in consultation with relevant federal and provincial authorities and Aboriginal groups, develop an emergency response plan in relation to the Designated Project.

13.4. 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 13.3 and shall:

13.4.1. notify relevant federal and provincial authorities and Aboriginal groups of the accident or malfunction as soon as possible and, in writing, the Agency;

13.4.2. implement immediate measures to mitigate any adverse environmental effects associated with the accident or malfunction;

13.4.3. 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:

13.4.3.1. a description of the accident or malfunction and of its adverse environmental effects;

13.4.3.2. the measures that were taken by the Proponent to mitigate the adverse environmental effects of the accident or malfunction;

13.4.3.3. any views received from relevant federal and provincial authorities and Aboriginal groups with respect to the accident or malfunction, its adverse environmental effects, or measures taken by the Proponent to mitigate adverse environmental effects;

13.4.3.4. a description of any residual environmental effects, and any additional measures required to mitigate residual adverse environmental effects; and

13.4.3.5. details concerning the implementation of the emergency response plan referred to in condition 13.3;

13.4.4. 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 residual adverse environmental effects, taking into account the information in the written report submitted pursuant to condition 13.4.3.

13.5. The Proponent shall develop and implement a communication plan in consultation with Aboriginal groups. The communication plan shall be developed prior to construction and shall be implemented and maintained up to date during all phases of the Designated Project. The plan shall include:

13.5.1. the types of accidents and malfunctions requiring a notification by the Proponent to the respective Aboriginal groups;

13.5.2. the manner by which Aboriginal groups shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Aboriginal groups to assist in the response to the accident or malfunction; and

13.5.3. the contact information of the representatives of the Proponent that the Aboriginal groups may contact and of the representatives of the respective Aboriginal groups to which the Proponent provides notification.

14. Implementation schedule

14.1. The Proponent shall submit an implementation schedule for conditions contained in this document 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 document.

14.2. 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 June 30, until completion of the activities.

14.3. 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 14.1 or any subsequent update(s). The Proponent shall provide the revised implementation schedule at least 30 days prior to the implementation of the change.

15. Record keeping

15.1. The Proponent shall maintain a written record, or a record in an electronic format compatible with that used by the Agency, and retain and make available that record to the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, at a facility close to the Designated Project in Canada (local facility). The record shall include information related to the implementation of the conditions set out in this document, and the results of all associated monitoring, including:

15.1.1. the place, date and time of any sampling, as well as techniques, methods or procedures used;

15.1.2. the dates and the analyses that were performed;

15.1.3. the analytical techniques, methods or procedures used in the analyses;

15.1.4. the names of the persons who collected and analyzed each sample and documentation of any professional certification(s) relevant to the work performed that they might possess; and

15.1.5. the results of the analyses.

15.2. The Proponent shall retain and make available upon demand to the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, the information referred to in condition 15.1 at a facility in Canada close to the Designated Project (or at another location within Canada and agreed upon by the Agency, should the local facility no longer be maintained). The information shall be retained and made available throughout construction and operation, and for 25 years following the end of operation or until the end of decommissioning of the Designated Project, whichever comes first.