

To	Impact Assessment Agency of Canada
From	Cedar LNG Partners LP
Date	July 4, 2024
Subject	Wetlands Follow-up Program
Document No.	PC21258A-EV-MEM-00004
Revision	0

Introduction

Cedar LNG Partners LP, by its general partner Cedar LNG Partners (GP) Ltd. (Cedar), a Haisla Nation-led partnership with Pembina Pipeline Corporation (Pembina), is planning to construct and operate a liquefied natural gas (LNG) export facility within the District of Kitimat, British Columbia (BC) (the Project). The Project was subject to the requirements of the provincial *Environmental Assessment Act* and federal *Impact Assessment Act* and underwent a comprehensive environmental assessment from 2019 to 2023. Cedar received an environmental assessment certificate (EAC #E23-01) under the *Environmental Assessment Act* on March 13, 2023 and a positive Decision under the *Impact Assessment Act* on March 15, 2023.

The *Environmental Assessment Act* and *Impact Assessment Act* processes have yielded conditions of approval that Cedar must address. The Decision Statement issued under the *Impact Assessment Act* includes conditions of approval that Cedar must address. Condition 10.12 requires Cedar to develop and implement a follow-up program to validate predicted adverse federal effects on wetlands and their functions before start of construction. This memorandum outlines Cedar's approach to meeting the requirements of this condition.

Condition 10.12

The text of Condition 10.12 is as follows:

"10.12 The Proponent shall develop, prior to construction and in consultation with Haisla Nation and relevant authorities (including Environment and Climate Change Canada), and implement a follow-up program with respect to adverse federal effects on wetlands and their functions. In doing so, the Proponent shall:

10.12.1. as part of the development of the follow-up program:

10.12.1.1. validate the areal extent of wetlands (including by size, wetland function(s) and distribution in the landscape) that may be directly or indirectly adversely affected by the Designated Project, taking into account the final design of the Designated Project;

10.12.1.2. determine whether the Proponent will implement wetland compensation for residual adverse federal effects on wetlands and their functions that cannot be avoided or minimized (including habitat functions for migratory birds and listed species at risk), taking into account any applicable published guidance by Environment and Climate Change Canada. If the Proponent determines that wetland compensation is required, the Proponent shall implement wetland compensation by prioritizing wetland restoration over enhancement and wetland enhancement over creation, and consult Indigenous groups and Environment and Climate Change Canada to determine how wetland compensation will be implemented;

10.12.1.3. if the Proponent determines in accordance with condition 10.12.1.2 that wetland compensation is not required, provide a justification for that determination when providing the information about the follow-up program in accordance with condition 2.7;

10.12.2. as part of the implementation of the follow-up program:

10.12.2.1. monitor, annually during construction, the integrity (including their wetland function(s)) of the residual wetlands that are directly or indirectly affected by the Designated Project (including residual wetlands left for natural revegetation); and

10.12.2.2. monitor the integrity (including the wetland function(s)) of any restored, enhanced or created wetland that the Proponent is implementing in accordance with condition 10.12.1.2.”

Design and Construction Mitigation Measures

In its EAC Application (Cedar 2022), Cedar committed to implementing design and construction mitigation measures together reduce potential effects of construction on wetlands. Consistent with this commitment, the construction access road design for the transmission line has been updated since the submission of the EAC Application to reduce the area of wetlands affected as summarized below. In addition, mitigation measures to reduce potential indirect effects on wetlands have been incorporated into the Construction Environmental Management Plan. These measures include actions such as reducing the footprint around wetlands, where feasible; sediment and erosion control measures; and letting wetlands naturally regenerate rather than seeding.

Updated Wetland Areas

As required by Condition 10.12.1.1, Cedar has determined the areal extent of the wetlands directly and indirectly affected by the Project using the most up to date design. The terrestrial ecosystem mapping prepared for the environmental assessment was updated by using LiDAR to refine the wetland boundaries. The updated mapping was overlaid on the Project features (powerline right-of-way and access roads, dated October 2023 as submitted to the BC Energy Regulator) to determine the area of wetland that may be affected.

The EAC Application (Cedar 2022) predicted a total wetland area disturbance of 0.6 ha, including:

- 0.5 ha in the transmission line access road
- <0.1 ha in the marine terminal footprint
- <0.1 ha in the transmission line right-of-way

Updated mapping predicts a total wetland area disturbance of less than 0.1 ha, including (Figure 1):

- <0.1 ha in the transmission line access road
- <0.1 ha in the marine terminal footprint

In addition to the area of direct wetland disturbance, 5.8 ha of wetlands may be indirectly affected. This area includes 4.0 ha of undifferentiated bog, 1.6 ha of undifferentiated fen and 0.3 ha of shallow open water. Potential wetland effects of the transmission line access road (direct and indirect) are within the same wetland complex.

Please refer to Section 7.4 (Vegetation Resources) of Cedar's Environmental Assessment Certificate Application for the analysis of potential effects that identified these areas of direct and indirect effects (Cedar 2022).

Wetland Functions

The total wetland area disturbance (<0.1 ha) includes <0.1 ha in the transmission line access road portion of the Project footprint, and less than 0.1 ha in the marine terminal footprint; the latter area will be maintained as a vegetated shrub structure. The wetland in the access road portion of the project footprint includes bog, fen, and shallow open water communities listed above, most of which (0.02 ha) is unclassified bog. Less than 0.1 ha of swamp in the marine terminal footprint will be removed, and associated functions lost (less than 1% of this community's functions in the marine terminal RAA).

As described in the EAC Application (Cedar 2022), the wetland functions that will be reduced for wetlands that cannot be avoided include:

- Hydrological functions: the affected swamp within the marine terminal footprint is a fragmented, small pole sapling structure swamp in a level area at the base of a short slope adjacent to an existing compacted gravel parking area. This wetland provides minor water flow moderation, with limited capacity to capture and store stormwater. Of the wetlands in the transmission line footprint, the shallow open water provides limited water flow moderation given its extent, while the fen contributes to moderate levels of water flow moderation. However, given the small area of the fen, its hydrological wetland functions are considered minimal. Other hydrological functions associated with these wetlands are negligible or not applicable given their size, location, or vegetation composition.
- Biogeochemical functions: the unclassified bog and fen in the transmission line access road footprint both have high carbon sequestration and storage capacity functions (i.e., the potential to capture and store atmospheric carbon within their biomass and organic soils), and the swamp within the marine terminal footprint has limited ability for carbon sequestration and storage given its size.
- Habitat functions: the fen, bog, and shallow open water wetlands in the transmission line access road footprint and the swamp in the marine terminal footprint have, but are not limited to, the following ecological habitat functions:
 - Breeding and/or foraging habitat for migratory songbirds and raptors—songbirds such as warbling vireo and yellow warbler were recorded in wetland habitats during field surveys (Stantec 2021)
 - Breeding and/or dispersal habitat for amphibians such as the western toad and the Columbia spotted frog, which were found during field studies (Stantec 2021)
 - Habitat for wildlife species at risk, including the federally listed western toad and the blue-listed grizzly bear

These same functions have potential to be indirectly affected by the transmission line access road construction.

Monitoring Methods

As required by Condition 10.12.2.1, wetlands adjacent to the clearing will be monitored during each year of construction activities to manage potential indirect effects. The monitoring program will include:

- Monitoring the integrity of culverts throughout the season to determine whether hydrological functions are affected by construction activities
- Monitoring water quality of site runoff during/after rain events to determine whether habitat functions are affected by construction activities
- Monitoring the effectiveness of erosion and sediment control measures to determine whether habitat functions are affected by construction activities

Cedar's Construction Environmental Management Plan (document number PC21258-EV-PLN-0001) specifies the mitigation measures to be implemented during construction and the scope and schedule for monitoring of construction activities. Triggers to implement additional mitigation measures will include:

- Water quality of site runoff during/after rain events results in exceedances of the applicable BC WQG-PAL for freshwater environments (BC ENV 2023):
 - Temperature: ± 1 change from ambient background
 - pH: 6.5 to 9.0
 - Dissolved oxygen: 8.0 to 11.0 mg/L
 - Turbidity/TSS: maximum increase of 8 NTU or 25 mg/L from background at any one time for a duration of 24 hours in all waters during clear flows or in clear waters.
 - Turbidity/TSS: maximum increase of 2 NTU or 5 mg/L from background at any one time for a duration of 30 days in all waters during clear flows or in clear waters.
 - Turbidity/TSS: maximum increase of 5 NTU or 10 mg/L at any time when background is between 8-50 NTU or 25-100 mg/L during high flows or in turbid waters.
 - Turbidity/TSS: maximum increase of 10% when background is greater than 50 NTU or 100 mg/L at any time during high flows or in turbid waters.
- Culverts that are plugged with vegetation and debris after typical rain events
- Pooling on the upstream side of culverts
- Dewatering of the wetland
- Erosion around the sides of culverts
- Erosion and sediment control measures (e.g., silt fences) that are consistently failing
- Presence of invasive plants or noxious weed species where they previously were not present
- Poor vegetation establishment in areas of natural recovery

Responses to these triggers will be identified by Cedar's Construction Manager or Senior Environmental Inspector could include:

- Culvert maintenance
- Replacement or realignment of the culvert
- Re-sizing of the culvert for the water volume and debris flow
- Installation of different or additional erosion and sediment control methods
- Invasive plant and/or noxious weed management

Cedar will monitor the change in wetland area within 12 months of full completion of the clearing work to determine whether as-built change in wetland area differs from the predicted change in area (i.e., <0.1 ha) as described above, using the updated terrestrial ecosystem mapping. This will be completed using pre-clearing and post-clearing air photos or satellite imagery in a GIS software programs such as ArcGIS along with information collected during field monitoring events. If the as-built change in wetland area is greater in area than predicted change in wetland area, then Cedar will work with a qualified professional (QP) to determine if existing

mitigation measures can be modified or new mitigation measures adopted to reduce the effect on wetland functions.

Rationale for No Wetland Compensation

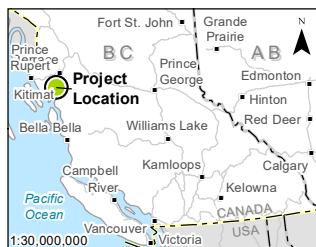
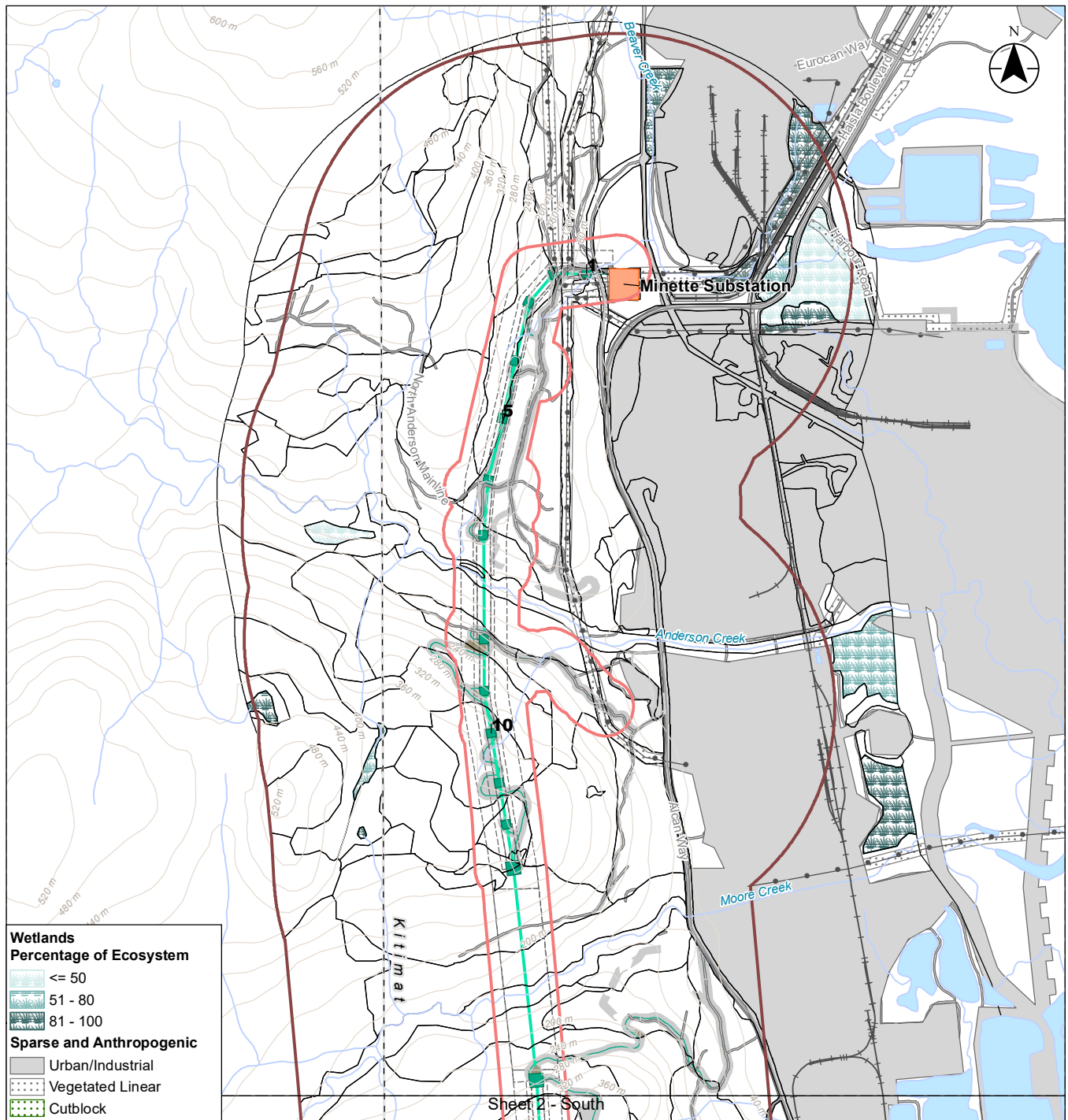
As required by Condition 10.12.1.2, Cedar has reviewed the federal policy and guidance to determine whether wetland compensation will be implemented.

There has been no change in the Federal Policy on Wetland Conservation since it was implemented in 1990. In addition, no new guidance has been issued by Canadian Wildlife Service / Environment and Climate Change Canada that would change the understanding around which wetlands require compensation. The wetlands that will be directly affected by construction are not provincially-listed plant communities, are not located in estuaries, are not within areas of regional or continental significance to waterfowl, and are not within areas with significant loss of wetlands. Further, the loss of wetland area is not related to a federal authorization (e.g., a *Species at Risk Act* permit or *Fisheries Act* authorization). Therefore, wetland compensation under the Federal Policy on Wetland Conservation is not required. As a result, Condition 10.12.1.3 and Condition 10.12.2.2 are not applicable to the Project.

Summary

Cedar believes that through the undertaking of the wetlands follow-up program outlined in this memorandum addresses the requirements of Condition 10.12 of the Decision Statement for the Project under the *Impact Assessment Act*. If the IAAC wishes to discuss the contents of the follow-up program, Cedar would be happy to arrange a meeting.

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Notes
1. Coordinate System: NAD 1983 UTM Zone 9N
2. Data Sources: DataBC, Government of British Columbia;
Natural Resources Canada; Canadian Hydrographic Service

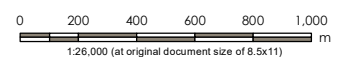
- Road
- Railway
- Transmission Line
- Topographic Contour
- Watercourse
- Waterbody
- District of Kitimat
- Municipal Boundary
- Minette Substation

Proposed Project Components

- Transmission Line Alignment
- Access Road
- Tower Pad (Tower Number is labelled)
- Transmission Line Right-of-Way
- Spoil Pile
- Clearing Extent

Vegetation Resources

- Local Study Area
- Regional Study Area



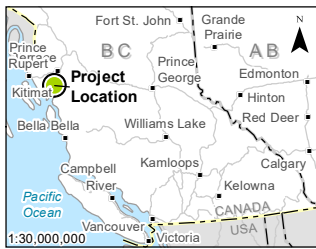
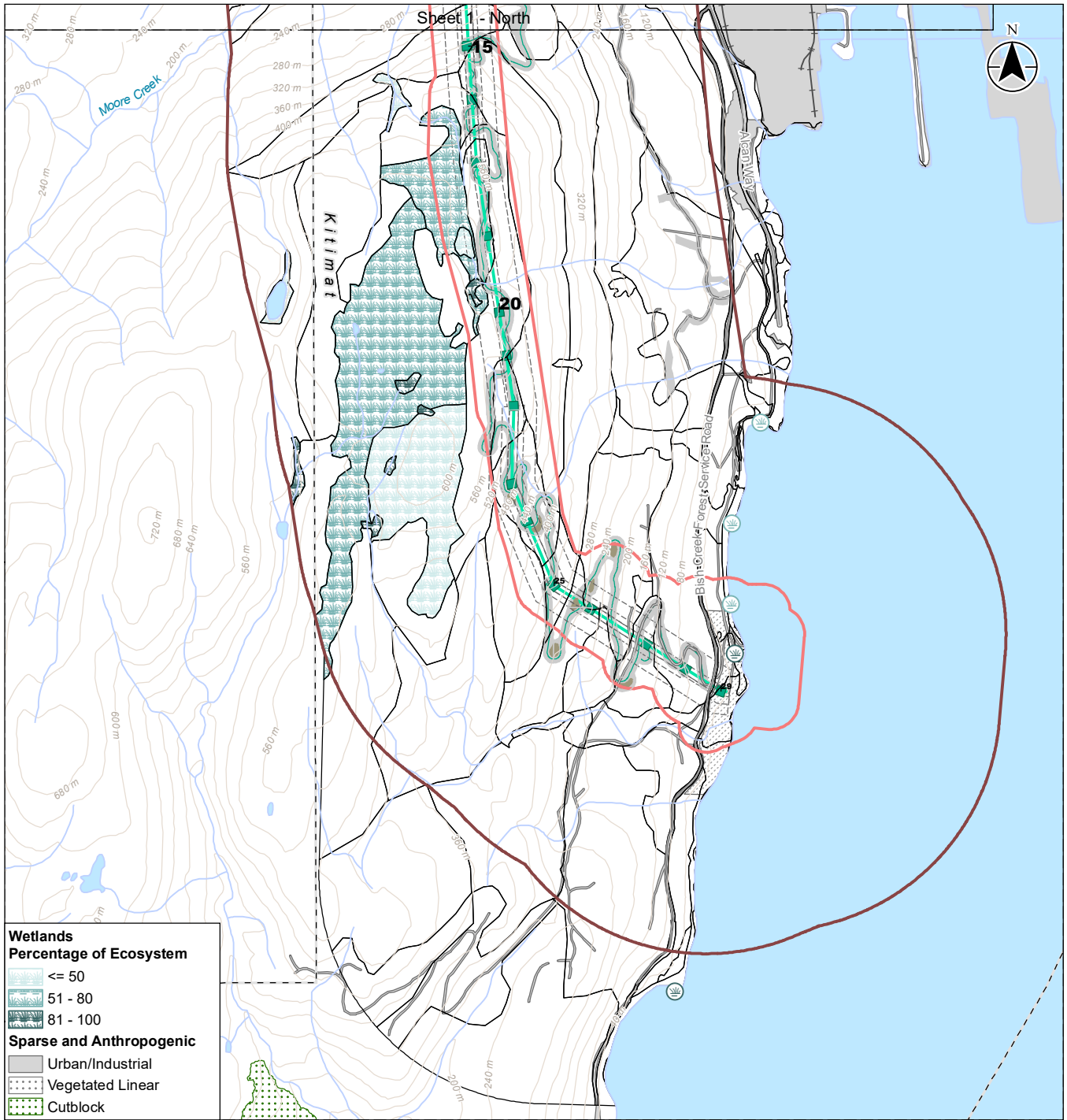
Project Location: Kitimat, British Columbia
Project Number 123222394
Prepared by LTRUDEL on 20231206
Discipline Review by CLION on 20231206

Client/Project/Report
Cedar LNG Partners LP
Cedar LNG Project
Wetlands in the Regional Study Area

Figure No.
1 Sheet 1 of 2

Title
Wetlands in the Project Area

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References

Cedar. February 2022. Cedar LNG Project Environmental Assessment Certificate Application. Available online at: <https://projects.eao.gov.bc.ca/p/5d64644c2f3e4f00223e81c0/application?pageSize=80¤tPage=1>

Stantec. 2021. Cedar LNG Project: Technical Data Report: Wildlife Technical Data Report. Burnaby, BC.