



SCREENING DECISION REPORT NIRB FILE No.: 18YN040

NPC File No.: 148838

August 7, 2018

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of University of Maryland Baltimore County's "Croker Bay Study and NW Passage Transit to Gjoa Haven" project is not required pursuant to paragraph 92(1)(a) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*).

Subject to the Proponent's compliance with the terms and conditions as set out in below, the NIRB is of the view that the project proposal is not likely to cause significant public concerns, and it is unlikely to result in significant adverse environmental and social impacts. The NIRB therefore recommends that the responsible Minister accepts this Screening Decision Report.

OUTLINE OF SCREENING DECISION REPORT

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- 5) VIEWS OF THE BOARD
- 6) RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS
- 7) OTHER NIRB CONCERNS AND RECOMMENDATIONS
- 8) REGULATORY REQUIREMENTS
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REGULATORY FRAMEWORK

The primary objectives of the NIRB are set out in Section 12.2.5 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and are confirmed by s. 23 of the *NuPPAA*:

Nunavut Agreement, Article 12, Section 12.2.5: In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of the residents of Canada outside the Nunavut Settlement Area.

The purpose of screening is provided for under s. 88 of the *NuPPAA*:

NuPPAA, s. 88: The purpose of screening a project is to determine whether the project has the potential to result in significant ecosystemic or socio-economic impacts and, accordingly, whether it requires a review by the Board...

To determine whether a review of a project is required, the NIRB is guided by the considerations as set out under s. 89(1) of *NuPPAA*:

NuPPAA, s. 89(1): The Board must be guided by the following considerations when it is called on to determine, on the completion of a screening, whether a review of the project is required:

- (a) a review is required if, in the Board's opinion,
 - i. the project may have significant adverse ecosystemic or socio-economic impacts or significant adverse impacts on wildlife habitat or Inuit harvest activities,
 - ii. the project will cause significant public concern, or
 - iii. the project involves technological innovations, the effects of which are unknown; and
- (b) a review is not required if, in the Board's opinion,
 - i. the project is unlikely to cause significant public concern, and
 - ii. its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.

It is noted that s. 89(2) of the *NuPPAA* provides that the considerations set out in paragraph 89(1)(a) prevail over those set out in paragraph 89(1)(b) of the *NuPPAA*.

As set out under s. 92(1) of the *NuPPAA*, upon conclusion of the screening process, the Board must provide its written report the Minister:

NuPPAA, s. 92(1): The Board must submit a written report to the responsible Minister containing a description of the project that specifies its scope and indicating that:

- (a) a review of the project is not required;
- (b) a review of the project is required; or
- (c) the project should be modified or abandoned.

Where the NIRB determines that a project may be carried out without a review, the NIRB has the discretion to recommend specific terms and conditions to be attached to any approval of the project proposal pursuant to paragraph 92(2)(a) of *NuPPAA* as follows:

NuPPAA, s. 92(2) In its report, the Board may also

- (a) recommend specific terms and conditions to apply in respect of a project that it determines may be carried out without a review.

PROJECT REFERRAL

On June 19, 2018 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen University of Maryland Baltimore County's (UMBC) "Croker Bay Study and NW Passage Transit to Gjoa Haven" project proposal from the Nunavut Planning Commission (NPC or Commission), with an accompanying positive conformity determination with the North Baffin Regional Land Use Plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 87 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*), the NIRB has commenced screening this project proposal and has assigned it file number **18YN040**.

PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

1. Project Scope

The proposed "Croker Bay Study and NW Passage Transit to Gjoa Haven" project would involve vessel-based research through the Northwest Passage in both the Qikiqtani (North Baffin) and Kitikmeot regions. The Proponent intends to conduct oceanographic surveys to better understand the ice and ocean physical and environmental conditions in Croker Bay and the Northwest Passage. The program is proposed to take place from July to August 2018.

As required under s. 86(1) of the *NuPPAA*, the Board accepts the scope of the "Croker Bay Study and NW Passage Transit to Gjoa Haven" project as set out by University of Maryland Baltimore County in the proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Use of facilities and accommodations on a 39 foot sailboat, *SV Toboggan*:
 - Transportation and storage of domestic water on board;
 - Transportation and storage of fuel on board
 - Domestic wastes to be stored on board with disposal at appropriate facilities;
- Measure conductivity, temperature and pressure (depth) with a CTD (conductivity, temperature and depth) data logger of the sea surface and water column;
- Assess ocean warming factor in glacial mass ice loss of the Devon Ice Cap in Croker Bay; and
- Conduct additional sea and ice surface observation collection methods to improve satellite models of sea ice concentrations of the National Weather Service.

2. Inclusion or Exclusion to Scoping List

The NIRB has identified no additional works or activities in relation to the project proposal. As a result, the NIRB proceeded with screening the project based on the scope as described above.

3. Key Stages of the Screening Process

The following key stages were completed:

| Date | Stage |
|---------------|---|
| June 19, 2018 | Receipt of project proposal and positive conformity determination (North Baffin Land Use Plan) from the NPC |
| June 19, 2018 | Information request |
| July 12, 2018 | Proponent responded to information request |
| July 12, 2018 | Scoping pursuant to s. 86(1) of the <i>NuPPAA</i> |
| July 13, 2018 | Public engagement and comment request |
| July 23, 2018 | Receipt of public comments |

4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on July 13, 2018 to community organizations in Arctic Bay, Resolute Bay, Pond Inlet, Kugluktuk, Cambridge Bay, Gjoa Haven, and Taloyoak, as well as to relevant federal and territorial government agencies, Inuit organizations and other parties. The NIRB requested that interested parties review the proposal and the NIRB's *proposed* project-specific terms and conditions, and provide the Board with any comments or concerns by July 23, 2018 regarding:

- Whether the project proposal is likely to arouse significant public concern; and if so, why;
- Whether the project proposal is likely to cause significant adverse eco-systemic or socio-economic effects; and if so, why;
- Whether the project proposal is likely to cause significant adverse impacts on wildlife habitat or Inuit harvest activities; and if so, why;
- Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (and providing any recommended mitigation measures); and
- Any matter of importance to the Party related to the project proposal.

The following is a summary of the comments and concerns received by the NIRB:

Crown – Indigenous Relations and Northern Affairs Canada (CIRNAC)

- No comments or additional terms and conditions at this time.

5. Comments and Concerns with respect to Inuit Qaujimaningit, Traditional, and Community Knowledge

No concerns or comments were received with respect to Inuit Qaujimaningit or traditional and community knowledge in relation to the proposed project.

ASSESSMENT OF THE PROJECT PROPOSAL IN ACCORDANCE WITH PART 3 OF *NuPPAA*

In determining whether a review of the project is required, the Board considered whether the project proposal had potential to result in significant ecosystemic or socio-economic impacts.

Accordingly, the assessment of impact significance was based on the analysis of those factors that are set out under s. 90 of the *NuPPAA*. The Board took particular care to take into account Inuit

Qaujimaningit, traditional and community knowledge in carrying out its assessment and determination of the significance of impacts.

The following is a summary of the Board's assessment of the factors that are relevant to the determination of significant impacts with respect of this project proposal:

1. *The size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts.*

The geographic area for the project proposal ranges includes the waters in Croker Bay off the southern end of Devon Island, and throughout the Northwest Passage. The proposed activities may take place within habitats for many far-ranging wildlife species such as marine mammals, migratory birds, and Species at Risk such as Polar Bears, as identified by mapping sources, and may potentially affect animal migratory patterns.

2. *The ecosystemic sensitivity of that area.*

The proposed project would occur in an area with no particular identified ecosystemic sensitivity. However, this area has been identified as having value and priority to the communities of Arctic Bay, Pond Inlet, Resolute Bay and Gjoa Haven, Cambridge Bay, and Kugluktuk for:

- i. Marine use activities, including tourism and sport hunting;
- ii. Fish species, especially turbot/halibut and arctic char;
- iii. Marine mammals, especially bowhead whale, beluga and seal;
- iv. Migratory birds, especially Eider ducks and guillemot/murre; and
- v. Polar Bears.

3. *The historical, cultural and archaeological significance of that area.*

The project Proponent has indicated that there are no known areas of historical, cultural and archaeological significance associated with the project area. Should the project be approved to proceed, the Proponent would be required to report any findings to the Government of Nunavut-Department of Culture and Heritage.

4. *The size of the human and the animal populations likely to be affected by the impacts.*

The proposed project would occur in marine areas along the Northwest Passage near Pond Inlet, Resolute Bay, and Gjoa Haven and travel past the other communities; as such, human populations from these communities may be affected. Although no significant public concerns were raised during the public commenting period, the NIRB notes that residents from several communities use the area for recreational/traditional pursuits, which could potentially contribute to public concerns developing. A term and condition has been recommended to direct engagement with the communities, hunters and trappers organization and interested parties to ensure residents are aware of the research activities being or to be conducted.

5. *The nature, magnitude and complexity of the impacts; the probability of the impacts occurring; the frequency and duration of the impacts; and the reversibility or irreversibility of the impacts.*

As the “Croker Bay Study and NW Passage Transit to Gjoa Haven” project is a proposed marine and vessel-based research project along the Northwest Passage, the nature of potential impacts is considered to be well-known, with potential for infrequent, localized impacts to the biophysical environment that are temporary in nature, reversible and mitigable with due care.

6. *The cumulative impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out.*

The proposed project would take place within a 100 kilometre radius to a number of other projects that are currently active, in addition to other projects proposed as listed in Table 1 below. The potential for cumulative impacts to wildlife or traditional activities resulting from the research activity and other projects occurring in the region has been identified and considered in the development of the NIRB’s recommendations. However, it is noted that this project is not likely to result in residual or cumulative impacts. Terms and conditions recommended for each of these projects are expected to reduce any residual impacts, and as such would limit or eliminate the potential for cumulative effects to occur.

Table 1: Project List

| NIRB Number | Project | Project Title | Project Type |
|------------------------|----------------|---|---------------------|
| <i>Active Projects</i> | | | |
| 06AN041 | | Diving and Snorkeling | Tourism |
| 13AN014 | | Students on Ice 2018 Arctic Expedition | Tourism |
| 16TN052 | | MS SILVER CLOUD Arctic and Greenland Expedition Cruise (Voyage 1819, 18 August-03-September 2018) | Tourism |
| 16YN027 | | Ocean Wise Scientific Diving Field Research on Board One Ocean Expeditions Cruise | Research |
| 17TN054 | | Complete Expeditions Tourist Operations – Private Yacht Northwest Passage Interpretive Trip | Tourism |
| 17YN002 | | Towards a Sustainable Fishery for Nunavummiut (TSFN) | Research |
| 17YN003 | | North Baffin Bedrock Mapping – Steensby-Barnes | Research |
| 17YN008 | | GEM-2 Boothia-Somerset: Integrated Geosciences along the Northwest Passage | Research |
| 17YN061 | | Kitikmeot Region Marine Science Study | Research |
| 17YN072 | | Functional, Structural and Biodiversity Studies of Arctic Freshwaters | Research |

| NIRB Number | Project | Project Title | Project Type |
|-----------------------------|----------------|---|---------------------|
| 18TN035 | | MS FRAM The Northwest Passage – In the Wake of Great Explorers Westbound | Tourism |
| 18UN037 | | Field Trip for Franklin Expedition Inuit Oral History Project | Other |
| 18YN017 | | ATKA Expedition | Research |
| 18YN028 | | Assessing Vessel Activity and Seabird Response in the Prince Leopold Island Migratory Bird Sanctuary using Remote Sensing Cameras | Research |
| 18YN029 | | URI Northwest Passage Project 2018 | Research |
| 18YN036 | | Archeological Survey of the Maud Bight Wreck (210X3) | Research |
| <i>Past Projects</i> | | | |
| 16YN046 | | Geotechnical and Environmental Baseline Studies – Pond Inlet Small Craft Harbour Development | Research |
| 17AN007 | | Arctic Expedition | Tourism |
| 17AN031 | | Canada C3 led by Students on Ice Foundation | Tourism |
| 17TN057 | | MY Archimedes Northwest Passage 2017 | Tourism |
| 17YN027 | | Arctic-Boreal Vulnerability Experiment (ABoVE) Airborne Campaign | Research |
| 17YN041 | | A Coastal, Pan-Canadian Collection of plants, microalgae and marine invertebrates for the Canadian Museum of Nature, as part of Canada C3 | Research |
| 18YN024 | | Landfast Ice Deterioration and Break-up Data Collection and Modelling for Northern Communities and Low-Impact Shipping in Ice | Research |

7. *Any other factor that the Board considers relevant to the assessment of the significance of impacts.*

No other specific factors have been identified as relevant to the assessment of this project proposal.

IEWS OF THE BOARD

In considering the factors as set out above in the screening of the project proposal, the NIRB has identified a number of issues below and respectfully provide the following views regarding whether or not the proposed project has the potential to result in significant impacts. In addition, the NIRB has proposed terms and conditions that would mitigate the potential adverse impacts identified.

Administrative Conditions:

To encourage compliance with applicable regulatory requirements and assist the Board and responsible authorities with compliance and effects monitoring for project activities, the following project-specific terms and conditions have been recommended: 1-4.

Ecosystem, wildlife habitat and Inuit harvesting activities:

Issue 1: Potential negative impacts to marine wildlife including marine fish and marine mammals, seabirds, and species at risk such as Polar Bears, and their respective habitats, from vessel operations, marine-based research activities, and potential increased noise associated with the activities.

Board views: As discussed above in the assessment of factors relevant to this project proposal, the potential for impact(s) is applicable to an extended marine research area along the Northwest Passage. Noise generated from vessel operations and research activities could result in disturbance of marine fish and marine mammals, migratory birds, and species at risk such as Polar Bears. However, any resulting impacts would be expected to be minimal and temporary only.

The Proponent would also be required to minimize wildlife disturbance and follow the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, *Species at Risk Act*, the *Wildlife Act (Nunavut)*, the *Arctic Waters Pollution Prevention Act*, and the *Canada Shipping Act* (see Regulatory Requirements sections).

Recommended Mitigation Measures: It is recommended that potential negative impacts may be mitigated by requiring the Proponent to adhere to specific measures for the protection of marine wildlife during vessel operations, and to ensure that project personnel are properly briefed on wildlife protocols, ecological and management procedures prior to undertaking marine-based research activities. The following terms and conditions are recommended to mitigate the potential adverse impacts: 5 through 17.

Issue 2: Potential negative impacts to marine water quality and marine ecosystems from vessel-based marine research activities and waste disposal.

Board views: There is potential for the proposed project to negatively impact marine water quality and marine ecosystems due to fuel spills and improper waste disposal during vessel operations and refueling activities. The potential for impacts is applicable to an extended marine area within the Northwest Passage, and the probability of impacts occurring is considered to be low, with potential adverse effects anticipated to be low in magnitude, infrequent in occurrence and reversible in nature.

The Proponent would also be required to follow the *Arctic Waters Pollution Prevention Act*, the *Transportation of Dangerous Goods Regulations*, *Transportation of Dangerous Goods Act*, and the *Canada Shipping Act*, the *Marine Liability Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: It is recommended that potential negative impacts to marine waters and marine ecosystems may be mitigated by requiring the Proponent to implement operational restrictions for vessels, including proper fuel storage and spill response on board, and comply with all regulations for preventing the introduction of unwanted aquatic organisms and implementing proper wastes disposal. The following terms and conditions are recommended to mitigate the potential adverse impacts: 5 and 10 through 17.

Issue 3: Potential negative impacts to public and traditional land use activities in the area due to vessel movement and marine-based research activities.

Board Views: The Proponent has indicated that the proposed project would traverse the Northwest Passage with specific marine research locations near Pond Inlet, Resolute Bay, and Gjoa Haven; thus, it is likely that marine areas near these communities would be used for traditional hunting and fishing activities. Further, noise from the operations of a research vessel and marine-based sampling activities may temporarily change the distribution of harvested species through avoidance, and may affect personal enjoyment of the marine areas.

Recommended Mitigation Measures: It is recommended that the potential negative impacts may be mitigated by measures such as requiring the Proponent to comply with wildlife management measures for vessel-based research activities. Term and condition 18 and has been recommended to ensure that the affected communities and organizations are informed about the project proposal and term and condition 19 has been recommended to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the project area. In addition, terms and conditions 5 through 9 have been recommended to minimize interference with the movements of wildlife and birds.

Socio-economic effects on northerners:

Issue 4: Potential negative impacts to historical, cultural and archaeological sites from marine-based research activities.

Board Views: The Proponent has indicated that no sites of known archaeological and paleontological are associated with the project areas. It is unlikely that the proposed vessel-based research activities would interact with any known archaeological and paleontological resources in the area. The Proponent is required to follow the *Nunavut Act* and would be required to contact the Culture and Heritage Department when encountering historical sites (see Regulatory Requirements section).

Recommended Mitigation Measures: Term and condition 18 is recommended to ensure that available Inuit Qaujimaningit can inform project activities and reduce the potential for negative impacts occurring to any additional historical sites.

Significant public concern:

Issue 5: No significant public concern was expressed during the public commenting period for this file.

Board Views: Follow up consultation is expected to mitigate any potential for public concern resulting from project activities.

Recommended Mitigation Measures: Term and condition 18 is recommended to ensure that the affected community and organizations are informed about the project proposal.

Technological innovations for which the effects are unknown:

No specific issues have been identified associated with this project proposal.

In considering the above factors and subject to the Proponent's compliance with the terms and conditions necessary to mitigate against the potential adverse environmental and social effects, the Board is of the view that the proposed project is unlikely to cause significant public concern and its adverse ecosystemic and socioeconomic impacts are unlikely to be significant, or are highly predictable and can be adequately mitigated by known technologies.

RECOMMENDED PROJECT-SPECIFIC TERMS AND CONDITIONS

The Board is recommending the following specific terms and conditions to apply in respect of the project:

General

1. University of Maryland Baltimore County's (the Proponent) shall maintain a copy of the Project Terms and Conditions at the site of operation at all times.
2. The Proponent shall forward copies of all permits obtained and required for this project to the Nunavut Impact Review Board (NIRB) prior to the commencement of the project.
3. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 148838), and the NIRB (Online Application Form, July 13, 2018).
4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

Wildlife - General

5. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
6. The Proponent shall not harass wildlife. This includes persistently circling, chasing, hovering over pursuing or in any other way harass wildlife, or disturbing large groups of animals.
7. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.

Migratory Birds and Raptors Disturbance

8. The Proponent shall minimize activities during periods when birds are particularly sensitive to disturbance such as migration, nesting and moulting.

9. The Proponent shall avoid the seaward site of seabird colonies and areas used by flocks of migrating waterfowl by three (3) kilometres.

Ship-based Activities

10. The Proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes (including waste water) or sediment into any marine waters.
11. The Proponent shall manage all wastes (including domestic, garbage and debris) on board the vessel prior to final disposal at approved port facilities.
12. The Proponent shall ensure that all personnel are properly trained in fuel and hazardous waste handling procedures, as well as spill response procedures. All spills of fuel or other deleterious materials of any amount must be reported immediately to the 24 hour Spill Line at (867) 920-8130.
13. The Proponent shall, where practicable, coordinate with other vessels to minimize simultaneous vessel traffic in critical wildlife habitat areas allowing wildlife to continue to use the habitat undisturbed (e.g., Navy Board Inlet, Lancaster Sound, Milne Inlet, Bellot Strait).
14. The Proponent shall ensure that all passengers are aware of the Proponent's responsibilities and requirements regarding wildlife and wildlife habitat protection.
15. While on the vessel, the Proponent shall limit viewing time of each concentration of marine mammals to a maximum of thirty (30) minutes in order to minimize disturbance.
16. The Proponent shall not attempt to intersect or interfere with the movements of marine mammals. Strategic positioning of vessels ahead of the path being traveled by mobile whales and waiting for the whales to pass is also prohibited.
17. The Proponent shall maintain a distance of 100 metres if a Polar Bear is encountered on land or ice while conducting activities. Further, all interaction with Polar Bears should be avoided if possible.

Other

18. The Proponent should consult with local residents regarding their activities in the area and solicit available Inuit Qaujimaningit and information that can inform project activities.
19. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.
20. The Proponent should, to the extent possible, hire local people and access local services where possible.

OTHER NIRB CONCERNS AND RECOMMENDATIONS

In addition to the project-specific terms and conditions, the Board is recommending the following:

Change in Project Scope

1. Responsible authorities or Proponent shall notify the Nunavut Planning Commission as appropriate, and the NIRB of any changes in operating plans or conditions, including phase advancement, associated with this project prior to any such change.

Bear and Carnivore Safety

2. The Proponent should review the Government of Nunavut's booklet on Bear Safety, which can be downloaded from this link: http://gov.nu.ca/sites/default/files/bear_safety_-_reducing_bear-people_conflicts_in_nunavut.pdf. Further information on bear/carnivore detection and deterrent techniques can be found in the "Safety in Grizzly and Black Bear Country" pamphlet, which can be downloaded from this link: http://www.enr.gov.nt.ca/sites/default/files/web_pdf_wd_bear_safety_brochure_1_may_2015.pdf.
3. There are Polar Bear and grizzly bear safety resources available from the Bear Smart Society with videos on polar bear safety available in English, French and Inuktitut at <http://www.bearsmart.com/play/safety-in-polar-bear-country/>. Information can also be obtained from Parks Canada's website on bear safety at the following link: <http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/d.aspx> or in reviewing the "Safety in Polar Bear Country" pamphlet, which can be downloaded from the following link: http://www.pc.gc.ca/eng/pn-np/nu/quttinirpaaq/visit/visit6/~/_media/pn-np/nu/auyuittuq/pdf/shared/PolarBearSafety_English.ashx.
4. Any problem wildlife or any interaction with carnivores should be reported immediately to the local Government of Nunavut, Department of Environment Conservation Office (Conservation Officer of Resolute Bay, phone: (867) 252-3879; Conservation Officer of Cambridge Bay, phone: (867) 983-4164).

Species at Risk

5. The Proponent review Environment and Climate Change Canada's "Environment Assessment Best Practice Guide for Wildlife at Risk in Canada", available at the following link: http://www.sararegistry.gc.ca/virtual_sara/files/policies/EA%20Best%20Practices%202004.pdf. The guide provides information to the Proponent on what is required when Wildlife at Risk, including *Species at Risk*, are encountered or affected by the project.

Migratory Birds

6. The Proponent review Canadian Wildlife Services' "Key migratory bird terrestrial habitat sites in the Northwest Territories and Nunavut", available at the following link: <http://publications.gc.ca/site/eng/317630/publication.html> and "Key marine habitat sites for migratory birds in Nunavut and the Northwest Territories", available at the following link: <http://publications.gc.ca/site/eng/392824/publication.html>. The guide provides information to the Proponent on key terrestrial and marine habitat areas that are essential to the welfare of various migratory bird species in Canada.
7. For further information on how to protect migratory birds, their nests and eggs when planning or carrying out project activities, consult Environment and Climate Change Canada's Incidental Take web page and the fact sheet "Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs" available at <http://www.ec.gc.ca/paom-itmb/>.

REGULATORY REQUIREMENTS

The Proponent is also advised that the following legislation may apply to the project:

Acts and Regulations

1. The *Fisheries Act* (<http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html>).
2. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (<http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>).
3. The *Species at Risk Act* (<http://laws-lois.justice.gc.ca/eng/acts/S-15.3/index.html>). Attached in **Appendix A** is a list of Species at Risk in Nunavut.
4. The *Wildlife Act (Nunavut)* and its corresponding regulations (<http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html>).
5. The *Nunavut Act* (<http://laws-lois.justice.gc.ca/eng/acts/N-28.6/>). The Proponent must comply with the proposed terms and conditions listed in the attached **Appendix B**.
6. The *Transportation of Dangerous Goods Regulations* (<http://www.tc.gc.ca/eng/tdg/clear-tofc-211.htm>), *Transportation of Dangerous Goods Act* (<http://laws-lois.justice.gc.ca/eng/acts/t-19.01/>), and the *Canadian Environmental Protection Act* (<http://laws-lois.justice.gc.ca/eng/acts/C-15.31/>).
7. The *Arctic Waters Pollution Prevention Act* (<http://laws-lois.justice.gc.ca/eng/acts/A-12/>).
8. The *Canada Shipping Act, 2001* (<http://laws-lois.justice.gc.ca/eng/acts/C-10.15/>).
9. The *Marine Liability Act* (<http://laws-lois.justice.gc.ca/eng/acts/M-0.7/>).
10. The *Navigation Protection Act* (<http://laws-lois.justice.gc.ca/eng/acts/N-22/index.html>).

Other Applicable Guidelines

11. The *Guidance Document for Passenger Vessels Operating in the Canadian Arctic* (<https://www.tc.gc.ca/eng/marinesafety/tp-tp13670-menu-2315.htm>).

CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the University of Maryland Baltimore County's "Croker Bay Study and NW Passage Transit to Gjoa Haven". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated August 7, 2018 at Iqaluit, NU.



Marjorie Kaviq Kaluraq, A/Chairperson

Attachments: Appendix A: Species at Risk in Nunavut
Appendix B: Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders

Appendix A Species at Risk in Nunavut

Due to the requirements of Section 79(2) of the Species At Risk Act (SARA), and the potential for project-specific adverse effects on listed wildlife species and its critical habitat, measures should be taken as appropriate to avoid or lessen those effects, and the effects need to be monitored. Project effects could include species disturbance, attraction to operations and destruction of habitat. This section applies to all species listed on Schedule 1 of SARA, as listed in the table below, or have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which may be encountered in the project area. This list may not include all species identified as at risk by the Territorial Government. The following points provide clarification on the applicability of the species outlined in the table.

- Schedule 1 is the official legal list of Species at Risk for SARA. SARA applies to all species on Schedule 1. The term “listed” species refers to species on Schedule 1.
- Schedule 2 and 3 of SARA identify species that were designated at risk by the COSEWIC prior to October 1999 and must be reassessed using revised criteria before they can be considered for addition to Schedule 1.
- Some species identified at risk by COSEWIC are “pending” addition to Schedule 1 of SARA. These species are under consideration for addition to Schedule 1, subject to further consultation or assessment.

If species at risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the species at risk Registry at <http://www.sararegistry.gc.ca> for information on specific species.

Monitoring should be undertaken by the Proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of species at risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.

For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.

Mitigation and monitoring measures must be undertaken in a way that is consistent with applicable recovery strategies and action/management plans.

Schedules of SARA are amended on a regular basis so it is important to check the SARA registry (www.sararegistry.gc.ca) to get the current status of a species.

Updated: September 2017

| Terrestrial Species at Risk ¹ | COSEWIC Designation | Schedule of SARA | Government Organization with Primary Management Responsibility ² |
|--|---|-------------------------|---|
| Migratory Birds | | | |
| Buff-breasted Sandpiper | Special concern | Schedule 1 | ECCC |
| Eskimo Curlew | Endangered | Schedule 1 | ECCC |
| Harlequin Duck (Eastern population) | Special Concern | Schedule 1 | ECCC |
| Harris's Sparrow | Special Concern | Pending | ECCC |
| Horned Grebe (Western population) | Special Concern | Schedule 1 | ECCC |
| Ivory Gull | Endangered | Schedule 1 | ECCC |
| Peregrine Falcon | Special Concern (<i>anatum-tundrius</i> complex ³) | Schedule 1 - Schedule 3 | ECCC |
| Red Knot (<i>islandica</i> subspecies) | Special Concern | Schedule 1 | ECCC |
| Red Knot (<i>rufa</i> subspecies) | Endangered | Schedule 1 | ECCC |
| Red-necked Phalarope | Special concern | Pending | ECCC |
| Ross's Gull | Threatened | Schedule 1 | ECCC |
| Rusty Blackbird | Special Concern | Schedule 1 | ECCC |
| Short-eared Owl | Special Concern | Schedule 1 | ECCC |
| Vegetation | | | |
| Blanket-leaved Willow | Special Concern | Schedule 1 | Government of Nunavut |
| Felt-leaf Willow | Special Concern | Schedule 1 | Government of Nunavut |
| Porsild's Bryum (Moss) | Threatened | Schedule 1 | Government of Nunavut |
| Arthropods | | | |
| Traverse Lady Beetle | Special Concern | Pending | Government of Nunavut |
| Terrestrial Wildlife | | | |
| Caribou (Barren-Ground population) | Threatened | Pending | Government of Nunavut |
| Dolphin and Union Caribou | Special Concern | Schedule 1 | Government of Nunavut |
| Grizzly Bear (Western Population) | Special Concern | Pending | Government of Nunavut |
| Peary Caribou | Endangered | Schedule 1 | Government of Nunavut |
| Peary Caribou (High Arctic Population) | Endangered | Schedule 2 | Government of Nunavut |
| Peary Caribou (Low Arctic Population) | Threatened | Schedule 2 | Government of Nunavut |
| Wolverine | Special Concern | Pending | Government of Nunavut |
| Wolverine (Western population) | Non-active | Pending | Government of Nunavut |
| Marine Wildlife | | | |
| Atlantic Walrus | Special Concern | Pending | DFO |
| Beluga Whale (Cumberland Sound population) | Endangered | Schedule 2 | DFO |
| Beluga Whale (Eastern High Arctic – Baffin Bay population) | Special Concern | Pending | DFO |
| Beluga Whale (Eastern Hudson Bay population) | Endangered | Pending | DFO |

| | | | |
|--|-----------------|------------|---------------------------|
| Beluga Whale (Southeast Baffin Island – Cumberland Sound population) | Endangered | Schedule 2 | DFO |
| Beluga Whale (Western Hudson Bay population) | Special Concern | Pending | DFO |
| Bowhead Whale (Eastern Arctic population) | Endangered | Schedule 2 | DFO |
| Bowhead Whale (Eastern Canada – West Greenland population) | Special Concern | Pending | DFO |
| Killer Whale (Northwest Atlantic / Eastern Arctic populations) | Special Concern | Pending | DFO |
| Narwhal | Special Concern | Pending | DFO |
| Polar Bear | Special Concern | Schedule 1 | Government of Nunavut/DFO |
| Fish | | | |
| Atlantic Cod, Arctic Lakes | Special Concern | Pending | DFO |
| Atlantic Wolffish | Special Concern | Schedule 1 | DFO |
| Bering Wolffish | Special Concern | Schedule 3 | DFO |
| Blackline Prickleback | Special Concern | Schedule 3 | DFO |
| Fourhorn Sculpin | Special Concern | Schedule 3 | DFO |
| Fourhorn Sculpin (Freshwater form) | Data Deficient | Schedule 3 | DFO |
| Northern Wolffish | Threatened | Schedule 1 | DFO |
| Roundnose Grenadier | Endangered | Pending | DFO |
| Spotted Whitefish | Threatened | Schedule 1 | DFO |
| Thorny Skate | Special Concern | Pending | DFO |

¹ The Department of Fisheries and Oceans has responsibility for aquatic species.

² Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

**Appendix B
Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders**



INTRODUCTION

The Department of Culture and Heritage (CH) routinely reviews land use applications sent to the Nunavut Water Board, Nunavut Impact Review Board and the Indigenous and Northern Affairs Canada. These terms and conditions provide general direction to the permittee/proponent regarding the appropriate actions to be taken to ensure the permittee/proponent carries out its role in the protection of Nunavut’s archaeological and palaeontological resources.

TERMS AND CONDITIONS

- 1) The permittee/proponent shall have a professional archaeologist and/or palaeontologist perform the following **Functions** associated with the **Types of Development** listed below or similar development activities:

| | Types of Development (See Guidelines below) | Function (See Guidelines below) |
|----|---|--|
| a) | Large scale prospecting | Archaeological/Palaeontological Overview Assessment |
| b) | Diamond drilling for exploration or geotechnical purpose or planning of linear disturbances | Archaeological/ Palaeontological Inventory |
| c) | Construction of linear disturbances, Extractive disturbances, Impounding disturbances and other land disturbance activities | Archaeological/ Palaeontological Inventory or Assessment or Mitigation |

Note that the above-mentioned functions require either a Nunavut Archaeologist Permit or a Nunavut Palaeontologist Permit. CH is authorized by way of the *Nunavut and Archaeological and Palaeontological Site Regulations*¹ to issue such permits.

¹P.C. 2001-1111 14 June, 2001

- 2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.
- 3) The permittee/proponent shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site.
- 4) The permittee/proponent shall immediately contact CH at (867) 934-2046 or (867) 975-5500 should an archaeological site or specimen, or a palaeontological site or fossil, be encountered or disturbed by any land use activity.
- 5) The permittee/proponent shall immediately cease any activity that disturbs an archaeological or palaeontological site encountered during the course of a land use operation until permitted to proceed with the authorization of CH.
- 6) The permittee/proponent shall follow the direction of CH in restoring disturbed archaeological or palaeontological sites to an acceptable condition. If these conditions are attached to either a Class A or B Permit under the Territorial Lands Act Indigenous and Northern Affairs Canada directions will also be followed.
- 7) The permittee/proponent shall provide all information requested by CH concerning all archaeological sites or artifacts and all palaeontological sites and fossils encountered in the course of any land use activity.
- 8) The permittee/proponent shall make best efforts to ensure that all persons working under its authority are aware of these conditions concerning archaeological sites and artifacts and palaeontological sites and fossils.
- 9) If a list of recorded archaeological and/or palaeontological sites is provided to the permittee/proponent by CH as part of the review of the land use application the permittee/proponent shall avoid the archaeological and/or palaeontological sites listed.
- 10) Should a list of recorded sites be provided to the permittee/proponent, the information is provided solely for the purpose of the proponent's land use activities as described in the land use application, and must otherwise be treated confidentially by the proponent.

Legal Framework

As stated in Article 33 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*:

Where an application is made for a land use permit in the Nunavut Settlement Area, and there are reasonable grounds to believe that there could be sites of archaeological importance on the lands affected, no land use permit shall be issued without written consent of the Designated Agency. Such consent shall not be unreasonably withheld. [33.5.12]

Each land use permit referred to in Section 33.5.12 shall specify the plans and methods of archeological site protection and restoration to be followed by the permit holder, and any other conditions the Designated Agency may deem fit. [33.5.13]

Palaeontology and Archaeology

Under the *Nunavut Act*², the federal government can make regulations for the protection, care and preservation of palaeontological and archaeological sites and specimens in Nunavut. Under the *Nunavut Archaeological and Palaeontological Sites Regulations*³, it is illegal to alter or disturb any palaeontological or archaeological site in Nunavut unless permission is first granted through the permitting process.

Definitions

As defined in the *Nunavut Archaeological and Palaeontological Sites Regulations*, the following definitions apply:

“archaeological site” means a place where an archaeological artifact is found.

“archaeological artifact” means any tangible evidence of human activity that is more than 50 years old and in respect of which an unbroken chain of possession or regular pattern of usage cannot be demonstrated, and includes a Denesuline archaeological specimen referred to in section 40.4.9 of the Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement).

“palaeontological site” means a site where a fossil is found.

“fossil” includes:

Fossil means the hardened or preserved remains or impression of previously living organisms or vegetation and includes:

- (a) natural casts;*
- (b) preserved tracks, coprolites and plant remains; and*
- (c) the preserved shells and exoskeletons of invertebrates and the preserved eggs, teeth and bones of vertebrates.*

Guidelines for Developers for the Protection of Archaeological Resources in the Nunavut Territory

(Note: Partial document only, complete document at: www.ch.gov.nu.ca/en/Archaeology.aspx)

Introduction

The following guidelines have been formulated to ensure that the impacts of proposed developments upon heritage resources are assessed and mitigated before ground surface altering activities occur. Heritage resources are defined as, but not limited to, archaeological and historical sites, burial grounds, palaeontological sites, historic buildings and cairns. Effective collaboration between the developer, the Department of Culture, and Heritage (CH), and the contract archaeologist(s) will ensure proper preservation of heritage resources in the Nunavut Territory. The roles of each are briefly described.

CH is the Nunavut Government agency which oversees the protection and management of heritage resources in Nunavut, in partnership with land claim authorities, regulatory agencies, and

² s. 51(1)

³ P.C. 2001-1111 14 June, 2001

the federal government. Its role in mitigating impacts of developments on heritage resources is as follows: to identify the need for an impact assessment and make recommendations to the appropriate regulatory agency; set the terms of reference for the study depending upon the scope of the development; suggest the names of qualified individuals prepared to undertake the study to the developer; issue an archaeologist or palaeontologist permit authorizing field work; assess the completeness of the study and its recommendations; and ensure that the developer complies with the recommendations.

The primary regulatory agencies that CH provides information and assistance to are the Nunavut Impact Review Board, for development activities proposed for Inuit Owned Lands (as defined in Section 1.1.1 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*), and the Indigenous and Northern Affairs Canada, for development activities proposed for federal Crown Lands.

A developer is the initiator of a land use activity. It is the obligation of the developer to ensure that a qualified archaeologist or palaeontologist is hired to perform the required study and that provisions of the contract with the archaeologist or palaeontologist allow permit requirements to be met; i.e. fieldwork, collections management, artifact and specimen conservation, and report preparation. On the recommendation of the contract archaeologist or palaeontologist in the field and the Government of Nunavut, the developer shall implement avoidance or mitigative measures to protect heritage resources or to salvage the information they contain through excavation, analysis, and report writing. The developer assumes all costs associated with the study in its entirety.

Through his or her active participation and supervision of the study, the contract archaeologist or palaeontologist is accountable for the quality of work undertaken and the quality of the report produced. Facilities to conduct fieldwork, analysis, and report preparation should be available to this individual through institutional, agency, or company affiliations. Responsibility for the curation of objects recovered during field work while under study and for documents generated in the course of the study as well as remittance of artifacts, specimens and documents to the repository specified on the permit accrue to the contract archaeologist or palaeontologist. This individual is also bound by the legal requirements of the *Nunavut Archaeological and Palaeontological Sites Regulations*.

Types of Development

In general, those developments that cause concern for the safety of heritage resources will include one or more of the following kinds of surface disturbances. These categories, in combination, are comprehensive of the major kinds of developments commonly proposed in Nunavut. For any single development proposal, several kinds of these disturbances may be involved

- *Linear disturbances: including the construction of highways, roads, winter roads, transmission lines, and pipelines;*
- *Extractive disturbances: including mining, gravel removal, quarrying, and land filling;*
- *Impoundment disturbances: including dams, reservoirs, and tailings ponds;*

- *Intensive land use disturbances: including industrial, residential, commercial, recreational, and land reclamation work, and use of heritage resources as tourist developments.*
- *Mineral, oil and gas exploration: establishment of camps, temporary airstrips, access routes, well sites, or quarries all have potential for impacting heritage resources.*

Types of Studies Undertaken to Preserve Heritage Resources

Overview: An overview study of heritage resources should be conducted at the same time as the development project is being designed or its feasibility addressed. They usually lack specificity with regard to the exact location(s) and form(s) of impact and involve limited, if any, field surveys. Their main aim is to accumulate, evaluate, and synthesize the existing knowledge of the heritage of the known area of impact. The overview study provides managers with baseline data from which recommendations for future research and forecasts of potential impacts can be made. A Class I Permit is required for this type of study if field surveys are undertaken.

Reconnaissance: This is done to provide a judgmental appraisal of a region sufficient to provide the developer, the consultant, and government managers with recommendations for further development planning. This study may be implemented as a preliminary step to inventory and assessment investigations except in cases where a reconnaissance may indicate a very low or negligible heritage resource potential. Alternately, in the case of small-scale or linear developments, an inventory study may be recommended and obviate the need for a reconnaissance.

The main goal of a reconnaissance study is to provide baseline data for the verification of the presence of potential heritage resources, the determination of impacts to these resources, the generation of terms of reference for further studies and, if required, the advancement of preliminary mitigative and compensatory plans. The results of reconnaissance studies are primarily useful for the selection of alternatives and secondarily as a means of identifying impacts that must be mitigated after the final siting and design of the development project. Depending on the scope of the study, a Class 1 or Class 2 Permit is required for this type of investigation.

Inventory: A resource inventory is generally conducted at that stage in a project's development at which the geographical area(s) likely to sustain direct, indirect, and perceived impacts can be well defined. This requires systematic and intensive fieldwork to ascertain the effects of all possible and alternate construction components on heritage resources. All heritage sites must be recorded on Government of Nunavut Site Survey forms. Sufficient information must be amassed from field, library and archival components of the study to generate a predictive model of the heritage resource base that will:

- allow the identification of research and conservation opportunities;
- enable the developer to make planning decisions and recognize their likely effects on the known or predicted resources; and
- make the developer aware of the expenditures, which may be required for subsequent studies and mitigation. A Class 1 or 2 permit is required.

Assessment: At this stage, sufficient information concerning the numbers and locations of heritage resources will be available, as well as data to predict the forms and magnitude of impacts. Assessments provide information on the size, volume, complexity and content of a heritage resource, which is used to rank the values of different sites or site types given current archaeological knowledge. As this information will shape subsequent mitigation program(s), great care is necessary during this phase.

Mitigation: This refers to the amelioration of adverse impacts to heritage resources and involves the avoidance of impact through the redesign or relocation of a development or its components; the protection of the resource by constructing physical facilities; or, the scientific investigation and recovery of information from the resource by excavation or other method. The type(s) of appropriate mitigative measures are dictated by their viability in the context of the development project. Mitigation strategies must be developed in consultation with, and approved by, the Department of Culture and Heritage. It is important to note that mitigation activities should be initiated as far in advance of the construction of the development as possible.

Surveillance and monitoring: These may be required as part of the mitigation program.

Surveillance may be conducted during the construction phase of a project to ensure that the developer has complied with the recommendations.

Monitoring involves identification and inspection of residual and long-term impacts of a development (i.e. shoreline stability of a reservoir); or the use of impacts to disclose the presence of heritage resources, for example, the uncovering of buried sites during the construction of a pipeline.