



SCREENING DECISION REPORT NIRB FILE No.: 13AN014

NPC File No.: 148699

April 25, 2018

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Student on Ice's "Students on Ice 2018 Arctic Expedition" 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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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 section 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 section 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 subsection 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 subsection 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 subsection 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 February 15, 2018 the Nunavut Impact Review Board (NIRB or Board) received a referral to screen Students on Ice's "Students on Ice 2018 Arctic Expedition" project proposal from the Nunavut Planning Commission (NPC or Commission), with an accompanying positive conformity determination with the North Baffin Regional Land Use Plan. The NPC noted that the previous conformity determinations issued for the activities associated with the current proposal continue to apply and determined that the project proposal is a significant modification to the project because it includes new locations in the community of Grise Fiord and Coburg Island.

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 section 87 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*), the NIRB commenced screening this project proposal. Due to the proposal containing activities that were sufficiently related to previously assessed activities under NIRB file number 13AN014, the NIRB viewed this project proposal as an amendment to the previously screened project and assigned this proposal with this previous file number. A summary of the previously screened project activities can be found in **Appendix A**.

PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

1. Project Scope

The proposed "Students on Ice 2018 Arctic Expedition" project is located within the Qikiqtani region (North Baffin). The Proponent intends to continue to conduct an educational cruise to various North Baffin communities, places of cultural importance, and wildlife areas, including migratory bird sanctuaries. The program is proposed to take place from July to August, 2018. The scope of activities previously approved for this ongoing tourism expedition (NIRB File No. 13AN014) has been included within **Appendix A**.

As required under subsection 86(1) of the *NuPPAA*, the Board accepts the scope of the "Students on Ice 2018 Arctic Expedition" project as set out by Students on Ice in the proposal. The scope of the project proposal includes the following modified undertakings, works, or activities for the 2018 tourism expedition:

- Transportation and accommodation for up to 200 passengers, staff, and crew aboard the *M/S Ocean Endeavour* cruise vessel;
- Use of 20 zodiacs (small boats) to facilitate shore landings, passenger transfer, and sightseeing excursions;
- Management of sewage, and combustible and non-combustible wastes in accordance with the International Convention for the Prevention of Pollution from Ships (MARPOL); and
- Landings via the cruise vessel or zodiacs in the following locations:
- Landings via wildlife areas, and locations of archaeological and cultural importance within the Nunavut Settlement Area:
 - Communities of Pond Inlet, Grise Fiord, and Resolute; and

- Sirmilik National Park; Qaiqsut; Bylot Island; Cape Coutts; Cape Graham Moore; Button Point; Cobourg Island; Devon Island; Dundas Harbour; Croker Bay; Beechey Island; and Prince Leopold Island.

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
February 15, 2018	Receipt of project proposal and positive conformity determination (North Baffin Regional Land Use Plan) from the NPC
February 15, 2018 and March 5, 2018	Information requests
March 14, 2018	Proponent responded to information requests
March 14, 2018	Scoping pursuant to subsection 86(1) of the <i>NuPPAA</i>
March 21, 2018	Public engagement and comment request
April 3, 2018	Receipt of public comments

4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on March 21, 2018 to community organizations in Pond Inlet, Grise Fiord, Arctic Bay and Resolute, 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 provide the Board with any comments or concerns by April 3, 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:

Government of Nunavut (GN)

- As the Project includes visits to several archaeological sites, the Proponent is required to apply for a Class 1 archaeology permit and respect the requirements of any applicable archaeological permits.

Indigenous and Northern Affairs Canada (INAC)

- No comments or additional terms and conditions to offer 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 section 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 amended project proposal would encompass three (3) communities, Sirmilik National Park, Qaiqsut, Bylot Island, Cape Coutts, Cape Graham Moore, Button Point, Cobourg Island, Devon Island, Dundas Harbour, Croker Bay, Beechey Island, Prince Leopold Island, and the vessel route in marine waters in the North Baffin region of Nunavut. The physical extent of the land-based components would be confined to relatively small areas to be accessed by small craft landings and travel only on foot. The proposed activities may take place within habitat for far-ranging wildlife, including migratory birds, terrestrial wildlife, marine wildlife, including marine fish populations and marine mammals, and Species at Risk such as Polar Bear, Ivory Gull, and Red Knot as identified by the Proponent and mapping sources. As such, project activities may potentially affect both marine and terrestrial animal migratory patterns.

2. *The ecosystemic sensitivity of that area.*

The proposed project will occur in areas, including Sirmilik National Park, Bylot Island and Prince Leopold Island, with known ecosystemic sensitivity to migratory birds, including several marine bird species. The area has also been identified as having value and priority to communities in the North Baffin region for:

- i. Marine mammals including various whale species such as Beluga, walrus, and seals,
- ii. Fish species including Arctic char,
- iii. Polar Bear, and

iv. Tourism.

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

The Proponent proposes to visit a number of archaeological sites, including on Devon Island and Beechey Island, as part of the project. As noted in previous sections of this report, the Government of Nunavut expressed concerns about the potential impacts of the proposed project activities to archaeological resources and requested that the Proponent apply for a Class 1 archaeology permit and adhere to the requirements of any applicable archaeological permit(s). In addition, the Proponent would be required to contact the Government of Nunavut-Department of Culture and Heritage if any additional sites of historical, cultural or archaeological significance are encountered.

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

Components of the amended proposed project would occur within the municipal boundaries of Pond Inlet, Grise Fiord, and Resolute; as such, human populations could be affected by potential project activities.

Specific wildlife populations identified to occur within the proposed project route that could be impacted by the project activities include: Polar Bears, whales, seals, and migratory birds, including marine birds. Terms and conditions have been recommended in the following section to mitigate any potential impacts to wildlife populations.

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.*

The “Students on Ice 2018 Arctic Expedition” project is a proposed education-based cruise tourism project, and although there are proposed stops in national wildlife areas and archaeological sites, expedition leaders would include Elders, scientists, archaeologists, and polar experts to ensure that the project does not result in adverse impacts to natural resources in the project area. In general, there is potential for infrequent, localised 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 amended project would take place within a 100 kilometre (km) radius of other projects that have been or are being assessed by the Board as listed in Table 1 below.

However, it is noted that this project is not likely to result in significant residual cumulative impacts. The potential for cumulative impacts to terrestrial and marine wildlife and habitat, migratory birds, fish and fish habitat, marine water quality, soil and vegetation, cultural and

archaeological resources, and traditional wildlife harvesting pursuits from the proposed project and other projects occurring in the region has been identified and considered in the development of the NIRB's recommendations. Terms and conditions recommended for each of these projects are expected to reduce any residual impacts, and as such would limit or reduce the potential for cumulative effects to occur.

Table 1: Project List

NIRB Number	Project	Project Title	Project Type
<i>Active Projects</i>			
08MN053		Mary River Project	Iron Ore Mine (year round)
16YN010		Ancient DNA in Lake Sediment	Research (seasonal)
17YN069		Effects of Anthropogenic Stressors on Arctic Seabirds	Research
<i>Past Projects</i>			
16TN039		MS Crystal Serenity – Crystal Cruises LLC Northwest Passage 2017	Tourism
17YN003		GEM-2 North Baffin Bedrock Mapping Project	Research
17YN014		Onshore Stratigraphy Studies, Northwest Baffin Bay	Research
17AN031		Canada C3 led by Students on Ice Foundation	Tourism
17YN041		A Coastal, Pan-Canadian Collection of plants, microalgae and marine invertebrates for the Canadian Museum of Nature, as part of Canada C3	Research
16YN054		Baseline Monitoring of Marine Productivity and Oceanography Spanning the Northwest Passage Using Ships of Opportunity	Research
17YN033		Westbaff-MSM66	Research
15UN036		Windy Lake Repeater Project, Auyuittuq National Park	Research
13AN028		L'AUSTRAL 2016 – Cruise Kangerlussuaq Greenland to Nome Alaska	Tourism

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.

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 Board has previously recommended terms and conditions 1 through 4, which continue to apply to the current project proposal. The Board is also recommending term and condition 24 to ensure complete reference to applicable regulatory requirements.

The Board would also note that, as justified in its previous decisions (NIRB File No. 13AN014 dated July 13, 2013 and April 24, 2016), terms and conditions 5 through 23 remain applicable to the “Students on Ice Arctic Expedition” project, while the additional impacts identified for the new components of the “Students on Ice 2018 Arctic Expedition” project warrant mitigation measures as justified below.

Ecosystem, wildlife habitat and Inuit harvesting activities:

Issue 1: Potential for adverse impacts to marine water quality and fish and fish habitat from potential fuel spills and deposition of waste associated with the use of cruise vessels and zodiacs.

Board views: As discussed above in the assessment of factors relevant to this project proposal, while the geographic area for marine based activities would encompass waters throughout the North Baffin region of Nunavut, the Proponent has committed to managing sewage and combustible and non-combustible wastes in accordance with the International Convention for the Prevention of Pollution from Ships.

The Proponent would also be required to follow regulations to prevent pollution of Arctic waters, including the *Canada Shipping Act* and the *Arctic Waters Pollution Prevention Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: It is recommended that the potential adverse impacts to marine water quality and fish and fish habitat may be mitigated by measures such as requiring the Proponent to ensure that appropriate spill response equipment and clean-up materials are readily available during any transfer of fuel or hazardous substances. The Board has previously recommended terms and conditions to mitigate potential adverse impacts to marine water quality and fish and fish habitat, specifically: 6, 7, and 14, which continue to apply to the current project proposal.

Issue 2: Potential adverse impacts to marine wildlife and marine habitat, birds and bird habitat, and terrestrial wildlife from the use of cruise vessel and zodiacs and from land-based excursions.

Board views: As indicated above in the assessment of factors relevant to this project proposal, the geographic area for marine-based activities would encompass waters throughout the North Baffin region and the physical area of land-based components will include Sirmilik National Park, Prince Leopold Island, and other islands in the region. The marine-based activities would be limited to wildlife observations onboard the vessel or zodiacs, and land-based activities would be confined to relatively small areas to be accessed on foot. Hence, the probability of impacts to marine wildlife, including Polar Bears, migratory and non-migratory birds, and terrestrial wildlife is considered to be low, with potential adverse effects anticipated to be of low magnitude, infrequent, and reversible. The Proponent has committed to ensuring that no species or specimens are interfered with or removed from site. Further, the Proponent has committed to undertaking field observations in accordance with Environment Canada's Guidelines for Seabird Colony Viewing for Cruise Ships and the Canadian Wildlife Service Guidelines for Visiting Seabird Colonies.

The Proponent would also be required to follow regulations for the protection of wildlife including the *Species at Risk Act* and the *Wildlife Act (Nunavut)*.

Recommended Mitigation Measures: It is recommended that the potential adverse impacts to terrestrial wildlife, marine wildlife, and migratory and non-migratory birds, may be mitigated by measures such as minimizing activities when wildlife and birds are particularly sensitive to disturbance especially during denning, migration, nesting, and moulting. The Board has previously recommended the following terms and conditions to mitigate the potential adverse impacts to marine wildlife and marine wildlife habitat, birds and bird habitat, and terrestrial wildlife: 8 through 13 and 15 through 18, which continue to apply to the current project proposal. In addition, the NIRB recommends the following term and condition to mitigate potential adverse impacts to Polar Bears: 25.

Issue 3: Potential for adverse impacts to vegetation and soil from land-based excursions.

Board Views: The proposed land-based activities consist of short excursions on foot; hence, the potential for impact(s) is applicable to a small geographic area and the probability of impacts occurring is considered to be low. Also, the potential adverse impacts to soil and vegetation are anticipated to be of low magnitude, infrequent, and reversible.

Recommended Mitigation Measures: It is recommended that potential adverse impacts to vegetation and soil may be mitigated by such measures as requiring the Proponent to use existing trails where possible in conducting the project activities. The Board has previously recommended the following terms and conditions to mitigate potential impacts to vegetation and the land: 5, 8, and 21, which continue to apply to the current project proposal.

Issue 4: Potential negative impacts to public and traditional land use activities due to increased tourism activities, along the proposed travel route, particularly in areas adjacent to the communities to be visited and areas of ecological sensitivity.

Board Views: The Proponent has indicated that the proposed amended project would include visits to various marine and terrestrial wildlife locations, as well as visits to the communities of Pond Inlet, Grise Fiord, and Resolute. It is likely that the terrestrial and marine areas near these communities would be used for traditional activities and noise from vessel operations may temporarily change distribution of harvested species through avoidance and may affect personal enjoyment of the land and marine areas. Terms and conditions have been recommended to minimize impacts to traditional land use activities and traditional marine use activities.

Recommended Mitigation Measures: The Board previously recommended term and condition 23 to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area. This term and condition continues to apply to the current project. In addition, the Board previously recommended terms and conditions 9 through 13, 15, 17, and 18 to minimize interference with the movements of wildlife, and migratory and non-migratory birds.

Socio-economic effects on northerners:

Issue 5: Potential adverse impacts to historical, cultural and archaeological resources from visits to historical and archaeological sites.

Board Views: The Proponent has indicated it will be visiting historical sites and would be applying for a Class 1 Archaeology Permit with the Government of Nunavut-Department of Culture and Heritage. The Proponent has further noted that its expedition team would include Elders and archaeologists to ensure that the requirements in any applicable archaeological permits are followed. The Proponent will be required to follow the *Nunavut Act* and *Canada National Parks Act* (as recommended in Regulatory Requirements section).

Recommended Mitigation Measures: Terms and conditions 19 and 22 were previously recommended to ensure that the Proponent inform clients and staff of its regulatory requirement and to ensure that available Inuit Qaujimaningit can inform project activities, and reduce the potential for adverse impacts to any additional historical sites. These terms and conditions continue to apply to the current project proposal.

Issue 6: Potential positive effect to local communities and to northerners from proposed temporary stop-overs in Pond Inlet, Grise Fiord, and Resolute and from improved knowledge of the Arctic from the education-based cruise.

Board Views: The proposed project could lead to an increase in tourism in the area which could further stimulate the local economy. In addition, benefits to local economies may be realized through the purchase of supplies, services and gifts during the proposed

community stops. Further, the proposal is an education-based cruise that provides students with an opportunity to explore areas of the Arctic that are not easily accessible.

Recommended Mitigation Measures: Term and condition 22 was previously recommended by the Board to ensure the Proponent, to the extent possible, hires local people for the project. Further, the Board has previously recommended term and condition 20 to ensure that sufficient notice is given to communities prior to visitation. These terms and conditions continue to apply to the current project.

Significant public concern:

Issue 7: No significant public concern was expressed during the public commenting period for this file.

Board Views: Follow up consultation and involvement of local community members is expected to mitigate any potential for public concern resulting from project activities.

Recommended Mitigation Measures: The Board previously recommended terms and conditions 20 and 22 to ensure that the potentially affected communities and organizations are informed of the project proposal, to mitigate any concerns that may arise from the project activities, and to ensure that sufficient advance notice is provided to communities where a landings are planned. These terms and conditions continue to apply to the current 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 previously issued terms and conditions in the July 3, 2013 Screening Decision Report for NIRB File No. 13AN014. On April 24, 2016 the NIRB released new and updated terms and conditions for NIRB File No. 13AN014 as the scope of activities for the project was amended. The terms and conditions issued on April 24, 2016 **continue to apply for the "Students on Ice 2018 Arctic Expedition" project as follows:**

General

1. Students on Ice (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 (Application to Determine Conformity, February 25, 2016), the NIRB (Project Map, March 11, 2016; NIRB Part 1 Summary Application Form in Inuktitut, March 14, 2016; and follow-up correspondence March 14, 2016).
4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

Waste Disposal

5. The Proponent shall keep all garbage until disposed of at an approved facility.

Fuel and Chemical Storage

6. The Proponent shall ensure that appropriate spill response equipment and clean-up materials are readily available during any transfer of fuel or hazardous substances.
7. 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.

Wildlife - General

8. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
9. The Proponent shall not harass wildlife. This includes persistently worrying or chasing animals, or disturbing large groups of animals. The Proponent shall not hunt or fish, unless proper Nunavut authorizations have been acquired.
10. The Proponent shall ensure that all project personnel are made aware of the measures to protect wildlife and are provided with training and/or advice on how to implement these measures.

Migratory Birds and Raptors Disturbance

11. The Proponent shall not disturb or destroy the nests or eggs of any birds. If nests are encountered and/or identified, the Proponent shall take precaution to avoid further interaction and or disturbance (e.g., a 100 metres buffer around the nests). If active nests of any birds are discovered (i.e., with eggs or young), the Proponent shall avoid these areas until nesting is complete and the young have left the nest.
12. The Proponent shall minimize activities during periods when birds are particularly sensitive to disturbance such as migration, nesting and moulting.

Caribou and Muskoxen Disturbance

13. The Proponent shall cease activities that may interfere with the migration or calving of caribou or muskox, until the caribou or muskox have passed or left the area.

Ship-based Activities

14. The Proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes (including waste water) or sediment into any marine waters, and shall manage wastes on

board the vessel prior to final disposal at approved port facilities.

Cruise Ship Tourism

15. The Proponent shall ensure that all passengers (clients and staff) are aware of the Proponent's responsibilities and requirements regarding wildlife and wildlife habitat protection. This should include pre-landing briefings on wildlife sensitivities and potential hazards, proper wildlife viewing techniques and safety practices.
16. While on the cruise ship or zodiacs, the Proponent shall limit viewing time of each concentration of marine mammals to a maximum of thirty (30) minutes in order to minimize disturbance.
17. 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.
18. The Proponent shall ensure that visitation of cliffs used by nesting and breeding birds is restricted to zodiacs only, and then only during morning and early afternoon hours. Noise should be kept to a minimum when visiting these bird colonies.
19. The Proponent shall ensure that all passengers (clients and staff) are aware of the Proponent's responsibilities and requirements regarding archaeological or palaeontological sites that are encountered during land-based activities. This should include pre-landing briefings explaining the prohibitions regarding removal of artifacts, and defacing or writing on rocks and infrastructure.
20. The Proponent is strongly advised to provide sufficient advance notice to communities where a landing is planned as part of project activities.

Other

21. The Proponent shall use existing trails where possible in conducting the project activities.
22. The Proponent should, to the extent possible, hire local people and consult with local residents regarding their activities in the area and available Inuit Qaujimaningit that can inform project activities.
23. The Proponent shall ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities.

In addition to the previously issued terms and conditions, the Board recommends the following project-specific terms and conditions:

General

24. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 148699) and the NIRB (Online Application Form, March 14, 2018).

Vessel Craft-based Tourism

25. The Proponent shall maintain a distance of 100 metres if a polar bear is encountered on land or ice while conducting activities from a zodiac or other small craft; all interaction with polar bears should be avoided if possible.

The Board previously noted other concerns and recommendations in the July 3, 2013 Screening Decision Report for NIRB File No. 13AN014. On April 24, 2016 the NIRB noted other concerns and recommendations for NIRB File No. 13AN014 as the scope of activities for the project was amended. These items from the April 24, 2016 Screening Decision Report **continue to apply for the “Students on Ice 2018 Arctic Expedition” project as follows:**

Change in Project Scope

1. Responsible authorities or Proponent shall notify the Nunavut Planning Commission (NPC) 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 (updated)

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 Pond Inlet, phone: (867) 899-8819; Conservation Officer of Grise Fiord, phone: (867) 980-4164; Conservation Officer of Resolute, phone: (867) 252-3879).

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/>.

The Board is currently also recommending the following:

Transport of Dangerous Goods and Waste Management

8. Environment and Climate Change Canada recommends that all hazardous wastes, including waste oil, receive proper treatment and disposal at an approved facility.
9. The Proponent shall ensure that proper shipping documents (waste manifests, transportation of dangerous goods, etc.) accompany all movements of dangerous goods. Further, the Proponent shall ensure that the shipment of all dangerous goods is registered with the Government of Nunavut Department of Environment, Department of Environment Manager. Contact the Manager (867) 975-7748 to obtain a manifest if dangerous goods including hazardous wastes will be transported.

REGULATORY REQUIREMENTS

The Board previously recommended legislation in the July 3, 2013 Screening Decision Report for NIRB File No. 13AN014. On April 24, 2016 the NIRB released new and updated legislation for NIRB File No. 13AN014 as the scope of activities for the project was amended. The legislation as issued on April 24, 2016 **continue to apply for the “Students on Ice 2018 Arctic Expedition” project as follows:**

Acts and Regulations (updated)

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 B** 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 C**.
6. The *Canada National Parks Act* (<http://laws-lois.justice.gc.ca/eng/acts/n-14.01/>).
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>).

In addition, the Proponent is also advised that the following legislation may apply to the project:

Acts and Regulations

11. 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/>).

Other Applicable Guidelines

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 Students on Ice "Students on Ice 2018 Arctic Expedition". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated April 25, 2018 at Whale Cove, NU.



Elizabeth Copland, Chairperson

Attachments: Appendix A: Previously-Screened Project Proposals
Appendix B: Species at Risk in Nunavut
Appendix C: Archaeological and Palaeontological Resources Terms and Conditions for Land Use Permit Holders

APPENDIX A: PREVIOUSLY-SCREENED PROJECT PROPOSALS

The original project proposal NIRB (File No. 13AN014), was received by the NIRB from Canadian Wildlife Service on April 15, 2013 and was screened by the Board in accordance with Part 4, Article 12 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)*. On July 3, 2013 the NIRB issued a *Nunavut Agreement* 12.4.4(a) screening decision to the then Minister of Environment, Government of Canada, which indicated that the proposed project could proceed subject to the NIRB's recommended project-specific terms and conditions.

The Students on Ice's (Proponent) original "Arctic Youth Expedition 2013" project was located in the Qikiqtani (North Baffin) region. The Proponent indicated that it intended to conduct a ship-based journey to explore the eastern Canadian Arctic and the area around Lancaster Sound. The project was proposed to take place from July 22 to July 27, 2013.

According to the previously screened project proposal, the scope of the project included the following undertakings, works or activities:

- Use of the cruise ship MV Sea Adventurer including on-board accommodations for approximately 132 people;
- Landings in the following areas are proposed:
 - Pond Inlet, Resolute Bay and Arctic Bay;
 - Bylot Island, Cape Hay, Cape Graham Moore, Beechey Island, Dundas Harbour, Milne Inlet, Port Leopold and Prince Leopold Island;
- Guided tours at each landing site; and
- Use of zodiacs for travel between the ship and shore.

An application associated with an authorization renewal request for the "Youth Arctic Expedition 2015" project was received by the NIRB on April 14, 2015 for review with a conformity determination and referral from the Nunavut Planning Commission on April 24, 2015. Following its review, the NIRB, on May 7, 2015, confirmed that the application was exempt from the requirement for further screening pursuant to Section 12.4.3 of the *Nunavut Agreement* and that the activities therein remained subject to the terms and conditions recommended in the original July 3, 2013 Screening Decision Report.

The scope associated with the April 14, 2015 application included:

- Continue previously approved cruise and research activities in the North Baffin region from August 3 to August 9, 2015.

On February 25, 2016 the NIRB received a screening referral from the NPC for Students on Ice's "2016 Arctic Expedition" as the proposal included significant modification to the location of the activities. On April 24, 2016 the NIRB issued a screening decision pursuant to paragraph 92(2)(a) of the *Nunavut Planning and Project Assessment Act* to the Minister of Environment and Climate Change which indicated that the proposed project could proceed subject to the NIRB's recommended project-specific terms and conditions.

The following is a summary of the previously screened project activities as received by the NIRB on February 25, 2016:

- Transportation and accommodations for up to 200 passengers aboard the MS Ocean Endeavour cruise vessel;
- Use of up to 15 zodiacs (small boats) for short sightseeing excursions, particularly to seabird colonies and wildlife areas, and ship to shore transportation;
 - Gasoline to be stored on zodiacs in five (5) gallon tanks; and
- Landings, via cruise ship or zodiac, within the Nunavut Settlement Area proposed in the following areas:
 - Killiniq, Hantzsch Island, Lady Franklin Island/Monumental Island, Kekerten Island Whaling Station, Pangnirtung, Auyuittuq, Sunneshine Fjord/Akpait National Wildlife Area, Qikiqtarjuaq, and Qaulluit National Wildlife Area/Davis Strait.
- Conduct all project activities in July 2016.

Appendix B

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 C

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.

- 2) The permittee/proponent shall not operate any vehicle over a known or suspected archaeological or palaeontological site.

¹ P.C. 2001-1111 14 June, 2001

- 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

² s. 51(1)

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 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

³ P.C. 2001-1111 14 June, 2001

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.