

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 November 29, 2017 the NIRB received a referral to screen Department of National Defence's (DND) "Operation NUNALIVUT 2018" 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 determination issued on November 12, 2016 for the activities associated with the current proposal continues to apply and determined that the project proposal is a significant modification to the project because of a change in location of activities from Hall Beach to Cambridge Bay.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the *Nunavut Agreement* and section 87 of the *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 **16DN063**, 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 "Operation NUNALIVUT 2018" project is located within the Kitikmeot and Qikiqtani regions, near the communities of Cambridge Bay and Resolute Bay. The Proponent intends to conduct military exercises to enhance the Canadian Armed Forces' (CAF) knowledge and capacity to operate in challenging environments, while allowing the CAF to demonstrate their ability to effectively respond to safety and security issues in the North. The program is proposed to take place from February to March 2018. The scope of activities previously approved for these ongoing military exercises (NIRB File No. 16DN063) has been included within **Appendix A**.

As required under subsection 86(1) of the *NuPPAA*, the Board accepts the scope of the NUNALIVUT 2018 project as set out by DND in the proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Mobilization of approximately 300 CAF personnel in Cambridge Bay and in Resolute Bay for military exercises;
 - Conduct military drills on land, on sea ice, underwater and in the air;
 - Conduct live fire exercises on the sea ice as well as undertake patrols and diving operations near Cambridge Bay and Resolute Bay;
 - Conduct training in arctic survival skills;
- Deployment of approximately 90 members of the 1st Canadian Ranger Patrol Group (1st CRPG) to support military activities of the Canadian Army Platoon and Royal Canadian Navy dive team near the communities of Cambridge Bay and Resolute Bay;
- Establishment of a Task Force Headquarters and patrol base in Resolute Bay consisting of approximately 20 members with an additional 40 support personnel;
- Use of military aircrafts (Globemaster and Hercules), including Twin Otters and a helicopter to support airborne military exercises and transportation of personnel and equipment;

- Use of tracked vehicles, all-terrain military vehicles (BV206), light-over-snow-vehicles and snowmobiles to support military exercises;
- Use of generators, compression chamber, and portable heaters for power generation, dive safety and heating;
- Temporary storage, transportation and use of the following fuels and hazardous materials:
 - 5,000 litres (L) and 820 L of diesel at Cambridge Bay and Resolute Bay, respectively;
 - 5,000 L and 410 L of gasoline at Cambridge Bay and Resolute Bay, respectively;
 - 200 L and 50 L of engine oil at Cambridge Bay and Resolute Bay, respectively;
 - 20 L of Naphtha fuel for Coleman stoves and lanterns in Cambridge Bay;
- Use of water from the communities for domestic purposes;
- Generation and management of wastes:
 - Greywater produced at Cambridge Bay and Canadian Armed Forces Arctic Training Centre in Resolute Bay to be disposed of via existing infrastructure;
 - Sewage to be collected and shipped south for proper disposal;
 - Combustible and non-combustible wastes to be collected and disposed of at the nearest community for proper disposal;
 - Collection and shipment of hazardous wastes to larger centres for proper disposal;
 - Potential incineration of human waste and combustible wastes; and
- Demobilization and removal of equipment and materials on completion of military exercises.

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
November 29, 2017	Receipt of project proposal and positive conformity determination (North Baffin Land Use Plan) from the NPC
November 29, 2017 & December 18, 2017	Information request(s)
December 28, 2017	Proponent responded to information request(s)
January 8, 2018	Scoping pursuant to subsection 86(1) of the <i>NuPPAA</i>
January 10, 2018	Public engagement and comment request
January 22, 2018	Receipt of public comments

4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on January 10, 2018 to community organizations in Cambridge Bay and Resolute Bay, 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 January 22, 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:

Resolute Bay Hunters and Trappers Organization

- Concerns with respect to wildlife and their habitat, marine mammals and their habitat, fish and their habitat and traditional land uses of land. Recommended the Proponent not leave garbage and metals on camp grounds, lake or ice.
- Recommended the Proponent not use fishing lakes for the project proposal.

Environment and Climate Change Canada (ECCC)

- No specific comments at this time.

Fisheries and Oceans Canada (DFO)

- Not aware of any significant public concern and has no concern with the Project as proposed.
- Noted the Project would not result in serious harm to fish or prohibited effects on listed aquatic species at risk, provided the Project is implemented in the manner and during the timeframe, as described.
- Noted the Proponent has outlined appropriate mitigation measures.
- Noted that it is the Proponents' Duty to Notify DFO if they have caused, or about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery.

Indigenous and Northern Affairs Canada (INAC)

- No comments or additional terms and conditions.

Parks Canada (PC)

- Noted the boundaries of the project activities include part of Qausuittuq National Park and as of yet, PC has not received a request to enter the park.
- For clarification, PC included a map and legal boundary description of the Park boundaries.
- Noted the following conditions would apply to activities in the national park:

- Anyone wishing to conduct activities within and/or to travel through the park, requires permission from PC and should contact PC well in advance of proposed activities for permitting information.
- Aircraft should maintain a normal flying altitude of 610 metres when in the air space over the park.
- Do not circle, chase, hover over, pursue or in any way harass wildlife. Do not alter the flight path to approach wildlife, and avoid flying directly over animals.
- Avoid congregations of animals.
- No fuel cache or landings to be permitted inside the park boundaries without prior approval.
- Any spills or accidents involving watercourse flowing into Qausuittuq National Park should be reported to the Park Manager as soon as possible.

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 project proposal would occur near the municipalities of Cambridge Bay and Resolute Bay with several designated operational boxes identified where military activities would be confined to reduce the areas likely to be directly impacted by the proposed activities. The proposed project activities may take place within habitats and seasonal ranges of various far ranging terrestrial wildlife including, caribou, muskox, wolves, wolverines, and non-migratory birds (such as ravens, snowy owl, ptarmigan) and Species at Risk (such as Polar Bears, Ross's Gulls and Ivory Gulls) as identified by the Proponent and NPC mapping sources. Further, marine wildlife such as ringed seal, Atlantic walrus, Beluga Whale, Bowhead Whale, grey whale, killer whale, and narwhal may also be encountered during the diving project activities. As such, the project may potentially affect animal migratory patterns.

2. *The ecosystemic sensitivity of that area.*

The proposed project would occur in areas with no particular identified ecosystemic sensitivity, with the exception of a portion of the project activities to occur in close proximity to the boundaries of the Polar Bear Pass National Wildlife Area and the Queen Maud Gulf Migratory Bird Sanctuary. However, activities would not occur within these areas. The project area has been identified as having value and priority to the local community for:

- i. Terrestrial wildlife including caribou and muskox,
- ii. Migratory birds,
- iii. Polar Bears; and
- iv. Sport hunting.

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

Neither the Proponent nor the Government of Nunavut have identified any 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 contact the Government of Nunavut – Department of Culture and Heritage if any historical sites are encountered.

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

The logistical support for the project as well as personnel accommodations would occur within the Hamlets of Cambridge Bay and Resolute Bay. As such resident human populations are likely to be affected by additional noise from traffic, and activities generated by the proposed project. In addition, far-ranging terrestrial wildlife species such as Polar Bears, caribou, muskox, non-migratory birds (ravens, snowy owl or ptarmigan) and marine wildlife such as ringed seal, Atlantic walrus, Beluga Whale, Bowhead Whale, grey whale, killer whale and narwhal are likely to be encountered within the area and may be impacted by the project proposal.

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 “Operation NUNALIVUT 2018” project proposal would be conducted in an area that has been frequently used for military exercises, the nature of potential impacts is considered to be well-known, and limited to 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 proposed and currently undergoing assessment by the Board as listed in Table 1

below. However, it is noted that this project is not likely to result in residual or cumulative impacts. The potential for cumulative impacts to surface water quality, marine water quality, and sea ice resulting from the military activities 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 eliminate the potential for cumulative effects to occur.

Table 1: Project List

NIRB Number	Project	Project Title	Project Type
<i>Proposed Developments – undergoing assessment</i>			
		Adventure Canada Expeditions 2018	Tourism
17YN072		Functional, Structural and Biodiversity Studies of Arctic Freshwaters	Research
<i>Active Projects</i>			
16DN061		NOREX 18	Defence
17YN002		Toward a Sustainable Fishery for Nunavummiut	Research (<i>seasonal</i>)
17AN010		Emergency Use of Polar Bear Wildlife Area Cabin	Access (<i>seasonal</i>)
17UN035		Bathurst/High Arctic Remediation and Risk Management Project	Remediation
17UN042		CAT-TRAIN: Canadian Arctic Tidal Transect Research and Infrastructure Network	Research (<i>seasonal</i>)
17YN074		Connecting Snow Melt to River Discharge in the Kitikmeot Region and Northwest Territories	Research
<i>Past Projects</i>			
16AN072		Northwest Passage Project	Tourism
17YN026		Geoscience Tools for Supporting Risk Assessment of Metal Mining	Winter Road/Winter Trail
17YN041		A Coastal, Pan-Canadian Collection of plants, microalgae and marine invertebrates for the Canadian Museum of Nature, as part of Canada C3	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.

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 30 to ensure complete reference to applicable regulatory requirements.

The Board would also note that, as justified in its previous decision (NIRB File No. 16DN063 dated February 1, 2017), terms and conditions 5 through 29 remain applicable to the project military exercises, while the additional impacts identified for the new components of the military exercises warrant mitigation measures as justified below.

Ecosystem, wildlife habitat and Inuit harvesting activities:

Issue 1: Potential adverse impacts to terrestrial wildlife, non-migratory birds and their respective habitats from military exercises, and noise generated from transportation and movement of personnel and equipment.

Board views: As discussed above in the assessment of factors relevant to this project proposal, the potential for impact(s) is applicable to targeted small geographic areas or military boxes and may overlap with seasonal home ranges of many terrestrial wildlife species, such as migrating caribou, muskox, wolves, wolverines, Polar Bears and non-migratory birds. Further, it is noted that some of the military activities outlined within this project proposal would also occur in proximity to the Polar Bear Pass National Wildlife Area and the Queen Maud Gulf Migratory Bird Sanctuary. However, any resulting impacts from the military activities and project-related noise would be expected to be short-term (up to 6 weeks), temporary only and low magnitude. Minimum flight altitudes and seasonal restrictions are expected to further mitigate potential adverse impacts to terrestrial wildlife, and non-migratory birds. Additionally, the Proponent has committed to training staff to be aware of wildlife issues and operational requirements to reduce the potential for impacts to wildlife.

The Proponent would also be required to follow the *Species at Risk Act*, the *Wildlife Act* (Nunavut) and the *Aeronautics Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: Specific and general measures have been recommended to mitigate any potential adverse impacts including recommending measures such as requiring the Proponent to maintain minimum flight altitudes, reducing wildlife attractants, avoidance tactics and minimizing project-related noise activities. The following terms and conditions have been previously recommended by the Board to

mitigate the potential adverse impacts to terrestrial wildlife and non-migratory birds: 7, 8, 14 through 20 and 21, which continue to apply to the current project proposal.

Issue 2: Potential adverse impacts to marine water quality, sea ice, and fish and fish habitat from military activities, noise from vehicle transport, potential spills as a result of re-fuelling during operations or accidents/malfunctions during the military exercises.

Board views: The potential for adverse impacts from the military exercises is applicable to specific areas within the defined operational boxes, and the impacts of are well-understood, and mitigable with due care. The probability of significant impacts occurring is considered to be low, with potential adverse effects anticipated from spills or accidents expected to be low in magnitude, infrequent in occurrence and reversible in nature. The Proponent has committed to ensuring that all hazardous materials, fuel storage, generator and vehicle parking areas are subject to inspection by environmental support staff, and that all hazardous materials and fuel would be properly stored in approved storage containers and facilities in accordance with municipal, territorial, and federal regulations. Further, the Proponent has committed to minimal disturbance to the natural environment in carrying out this project and properly disposing of wastes.

The Proponent would require a water licence from the Nunavut Water Board for the fuel storage activities. In addition, the Proponent would also be required to follow the *Fisheries Act*, the *Transportation of Dangerous Goods Regulations*, *Transportation of Dangerous Goods Act* and the *Canadian Environmental Protection Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: It is recommended that operational procedures for the storage and transfer of fuel and chemicals, use of secondary containment, and spill response equipment would reduce the risk of uncontrolled releases of fuel or hazardous materials resulting in adverse impacts to marine water quality, sea ice, fish and fish habitat. The following terms and conditions have been previously recommended to mitigate the potential adverse impacts from the military exercises and the potential for unintended spills to the marine environment: 9 through 13, and 22 through 25, which continue to apply to the current project proposal.

Issue 3: Potential adverse impacts to vegetation, soils, terrain stability, and potential increase to shoreline erosion from personnel and vehicle movement during the proposed military exercises around the communities of Cambridge Bay and Resolute Bay, and the storage and use of fuel.

Board Views: As discussed in the previous section, the potential for impact(s) is applicable to targeted specific areas around the Cambridge Bay and Resolute Bay military operations box and limited in duration due to the short period of time the military activities would occur near the communities. However, there is potential for adverse impact to vegetation health and ground stability from the use of vehicles to access the military operation sites. The Proponent has committed to providing training to those

participating in the project, and to ensure that all personnel are briefed with respect to spill responses and reporting procedures.

In addition, the Proponent would also be required to follow the *Fisheries Act*, the *Transportation of Dangerous Goods Regulations*, *Transportation of Dangerous Goods Act* and the *Canadian Environmental Protection Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: It is recommended that the potential adverse impacts may be mitigated by measures such as requiring the Proponent avoid disturbing the embankments of watercourses and paying attention to the terrain or sea ice being traversed or used for temporary structures. Further, operational procedures for storing and transfer of materials, use of secondary containment, and spill response equipment would reduce the risk of uncontrolled releases of fuel or hazardous materials resulting in negative impacts to sea ice, soils and vegetation. Additionally, clean up and restoration of all areas utilized would be required to preserve the integrity of the environment. The following terms and conditions have been previously recommended by the Board to mitigate the potential adverse impacts to the land and shoreline in addition to ensuring that transportation occurs only during appropriate conditions and that site remediation activities are undertaken: 9 through 13, and 22 through 27 which continue to apply to the current project proposal.

Issue 4: Potential adverse impacts to public and traditional land use activities in the areas of Cambridge Bay and Resolute Bay due to mobilization of personnel and transportation of equipment to the project site and ground based military activities.

Board Views: Due to the project's proximity to Cambridge Bay and Resolute Bay, there is the potential for adverse impacts to arise as a result of the military exercises overlapping with traditional land use, and harvesting activities from community members. The project activities are limited to the short period of time the military activities would occur, and if situations arise where the project may interfere with traditional land use, mitigation measures have been recommended to ensure minimal impacts to traditional land use activities.

Recommended Mitigation Measures: Term and condition 28 has been previously recommended to ensure that the affected community and organizations are informed about the project proposal and term and condition 29 has been previously recommended to ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities in the area which continue to apply to the current project proposal. In addition, terms and conditions 14 through 20 have been previously recommended to minimize interference with the movements of wildlife which continue to apply to the current project proposal.

Socio-economic effects on northerners:

Issue 5: Potential adverse impacts to historical, cultural and archaeological sites from ground based activities military activities.

Board Views: Although there are likely archaeological resources within each of the operations boxes that occur on land, as the project does not involve any permanent earthworks or alteration of the areas, it is unlikely that the Proponent would significantly alter archaeological sites. Therefore, the probability of significant impacts occurring are considered to be low; however, it is noted that the Proponent would be required to contact the Culture and Heritage Department of the Government of Nunavut when encountering historical sites (see Regulatory Requirements section).

The Proponent is required to follow the *Nunavut Act* (as recommended in Regulatory Requirements section).

Recommended Mitigation Measures: Term and condition 28 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 6: 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: Term and condition 28 is recommended to ensure that the affected communities and organizations are informed about the project proposal, and to provide the Proponent with an opportunity to proactively address or mitigate any concerns that may arise from the project activities findings.

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 following terms and conditions were previously issued by the NIRB in the February 1, 2017 Screening Decision Report for File No. **16DN063**, **and continue to apply to the NUNALIVUT 2018 project:**

General

1. Department of National Defence (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 the NIRB (additional information submitted on to the Nunavut Planning Commission (Applications to Determine Conformity, November 12, 2016), the NIRB (Online Application Form, November 15, 2016; Emergency Response Plan, Non-technical summaries in English and Inuktitut, November 18, 2016; and NIRB Part 1 form in Inuktitut, December 19, 2016).
4. The Proponent shall operate the site in accordance with all applicable Acts, Regulations and Guidelines.

Water Use

5. The Proponent shall not extract water from any fish-bearing waterbody unless the water intake hose is equipped with a screen of appropriate mesh size to ensure that there is no entrapment of fish. Small lakes or streams should not be used for water withdrawal unless approved by the Nunavut Water Board.
6. The Proponent shall not use water, including constructing or disturbing any stream, lakebed or the banks of any definable water course unless approved by the Nunavut Water Board.

Waste Disposal

7. The Proponent shall keep all garbage, hazardous waste, and debris in bags placed in a covered metal container or equivalent until disposed of at an approved facility. All such wastes shall be kept inaccessible to wildlife at all times.

Fuel and Chemical Storage

8. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
9. The Proponent shall ensure that fuel and other hazardous materials are stored in such a manner as to prevent their release into the environment.
10. The Proponent shall use adequate secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) when storing barreled fuel and chemicals.
11. The Proponent shall use drip pans or other equivalent device when refueling equipment. The Proponent shall also use secondary containment or a surface liner (e.g., self-supporting insta-berms and fold-a-tanks) at all refueling stations.
12. The Proponent shall ensure that appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available during any transfer of fuel or hazardous substances, at all fuel storage sites, at vehicle maintenance areas and at drill sites.
13. 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

14. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
15. 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.
16. The Proponent shall ensure that all project personnel are made aware of the Proponent's responsibilities and requirements regarding wildlife and wildlife habitat protection. This should include briefings on wildlife sensitivities and potential hazards as well as safety practices

Aircraft Flight Restrictions

17. The Proponent shall restrict aircraft/helicopter activity related to the project to a minimum altitude of 610 metres above ground level unless there is a specific requirement for low-level flying, which does not disturb wildlife.
18. The Proponent shall ensure that aircraft/helicopter do not, unless for emergency, touch-down in areas where wildlife are present.

Caribou and Muskoxen Disturbance

19. 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.
20. The Proponent shall not block or cause any diversion to caribou migration, and shall cease activities likely to interfere with migration such as movement of equipment or personnel until such time as the caribou have passed.

Winter Exercises

21. Vehicles must be fitted with standard and well-maintained noise suppression devices and engine idling is to be minimized.
22. The Proponent shall select a winter route that maximizes the use of frozen water bodies.
23. The Proponent shall not move any equipment or vehicles without prior testing the thickness of the ice to ensure the lake is in a state capable of fully supporting the equipment or vehicles.
24. The Proponent shall ensure that bank disturbances are avoided immediately adjacent to any watercourse.
25. The Proponent shall avoid disturbance on slopes prone to natural erosion, and alternative locations shall be utilized.

Restoration of Disturbed Areas

26. The Proponent shall remove all garbage, fuel and equipment upon abandonment.

27. The Proponent shall ensure that all disturbed areas are restored to a stable or pre-disturbed state as practical as possible upon completion of field work.

Other

28. The Proponent should engage with local residents regarding planned activities in the area and should solicit available Inuit Qaujimaningit and information regarding current recreational and traditional usage of the project area which may inform project activities. Posting of translated public notices and direct engagement with potentially interested groups and individuals prior to undertaking project activities is strongly encouraged.

29. 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

30. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (NPC File No.: 148656), and the NIRB (Online Application Form, December 28, 2017).

MONITORING AND REPORTING REQUIREMENTS

The Board has previously recommended the following on February 1, 2017:

Emergency Response Plan

The Proponent shall update its Emergency Response Plan to include emergency contact numbers for the Government of Nunavut-Department of Environment, Manager of Environmental Protection (867-975-7748) and Environment and Climate Change Canada, Enforcement Branch (867-975-4644).

OTHER NIRB CONCERNS AND RECOMMENDATIONS

In addition to the project-specific terms and conditions, the Board has previously recommended the following on February 1, 2017:

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

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. (updated) Any problem wildlife or any interaction with carnivores should be reported immediately to the local Government of Nunavut, Department of Environment Conservation Office (Conservation Officers of Resolute Bay, phone: (867) 252-3879; Igloolik (867) 934-8999; Hall Beach (867)-928-8507 and 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.

REGULATORY REQUIREMENTS

The Board previously recommended in the February 1, 2017 Screening Decision Report for the Operation NUNALIVUT 2017 project the following legislation, which continues to apply to the current proposal:

Acts and Regulations

1. The *Fisheries Act* (<http://laws-lois.justice.gc.ca/eng/acts/F-14/index.html>).
2. The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (<http://laws-lois.justice.gc.ca/eng/acts/n-28.8/>).
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. (updated) 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. (updated) 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 *Aeronautics Act* (<http://laws-lois.justice.gc.ca/eng/acts/A-2/>).
8. The *Arctic Waters Pollution Prevention Act* (<http://laws-lois.justice.gc.ca/eng/acts/A-12/>).
9. The *Marine Liability Act* (<http://laws-lois.justice.gc.ca/eng/acts/M-0.7/>).

The Board notes that should any activities occur within the Polar Bear National Wildlife Area, the follow acts and regulations may apply:

10. The *Canada Wildlife Act* (<http://laws-lois.justice.gc.ca/eng/acts/W-9/>) and the *Wildlife Area Regulations* (<http://laws.justice.gc.ca/eng/regulations/C.R.C., c. 1609/>).

CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the Department of National Defence's "NUNALIVUT 2018". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated February 1, 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. 16DN063), was received by the NIRB from the Nunavut Planning Commission on November 12, 2016 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)* and Section 3 of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 (*NuPPAA*). On February 1, 2017 the NIRB issued a screening decision pursuant to paragraph 92(2)(a) of the *NuPPAA* to the Minister of Indigenous and Northern Affairs which indicated that the proposed project could proceed subject to the NIRB's recommended project-specific terms and conditions.

The Department of National Defence's (Proponent) original "Operation NUNALIVUT 2017" project was located within the Qikiqtani, Kivalliq and Kitikmeot regions, based out of Resolute Bay and Hall Beach with activities occurring near the communities of Hall Beach, Kugaaruk, Igloolik, and Resolute Bay. The Proponent indicated that it intended to conduct military exercises based out of Hall Beach and Resolute Bay to enhance the Canadian Armed Forces' (CAF) knowledge and capacity to operate in challenging environments, while allowing the CAF to demonstrate their ability to effectively respond to safety and security issues in the North. The activities were proposed to take place from February to March 2017.

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

- Mobilization of approximately 290 CAF personnel to each site;
- Support to the operations by approximately 175 personnel of the Canadian Ranger Patrol Groups from Taloyoak, Kugaaruk, Nauyasat, and Igloolik via ground and air transport;
- Establishment of a Task Force Headquarters in Hall Beach, including multiple temporary tents around site to support operations and personnel accommodations;
- Conducting patrols on land and on sea ice near Hall Beach;
- Conducting live fire exercise on the sea ice;
- Conducting dive operations near Resolute Bay by a 60 person Dive Team;
- Use of aircrafts including Twin Otters, Hercules and Globemaster and a helicopter to support military exercises;
- Use of land-based track vehicles and snowmobiles to support military exercises;
- Establishment and decommissioning of temporary camps to support operations, including dive operations, and patrol safety.
- Use of two (2) 5 kilowatt generators, one (1) compression chamber, portable heaters, and two (2) unmanned aerial vehicles;
- Temporary storage, transportation and use of the following fuels and hazardous materials:
 - 3,895 and 820 litres of diesel at Hall Beach and Resolute Bay, respectively;
 - 3,895 and 410 litres of gasoline at Hall Beach and Resolute Bay, respectively;
 - 200 litres and 50 litres of engine oil at Hall Beach and Resolute Bay, respectively;
 - 20 litres of Naptha fuel for Coleman stoves in Hall Beach;
- Consumption of water from existing municipal facilities in Resolute Bay and Hall Beach for domestic purposes;
- Generation and management of wastes:
 - Grey water and sewage to be disposed of at existing municipal facilities;

- Combustible and non-combustible wastes to be disposed of at approved waste disposal facilities in the nearest community; and
- Demobilization and removal of equipment and materials on completion of military exercises.

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.