



SCREENING DECISION REPORT NIRB FILE No.: 13UN037

NPC File No.: 148311
NWB File No.: 3AM-GRA1624

November 3, 2017

Following the Nunavut Impact Review Board's (NIRB or Board) assessment of all materials provided, the NIRB is recommending that a review of Government of Nunavut-Community and Government Services' "Hamlet of Rankin Inlet Type 'A' Water Licence: Amendment – Lower Landing Lake" is not required pursuant to paragraph 92(1)(a) of the *Nunavut Planning and Project Assessment Act* (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

- 1) REGULATORY FRAMEWORK
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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) as follows:

"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.”

These objectives are confirmed under section 23 of the NuPPAA.

The purpose of screening is provided for under section 88 of the NuPPAA:

“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:

“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) provides that the considerations set out in paragraph 89(1)(a) prevail over those set out in paragraph 89(1)(b).

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. Specifically, paragraph 92(2)(a) of NuPPAA provides:

“92. (2) In its report, the Board may also
(a) recommend specific terms and conditions to apply in respect of a project that it determines may be carried out without a review.”

PROJECT REFERRAL

On June 19, 2016 the NIRB received a referral to screen Government of Nunavut-Community and Government Services’ (GN-CGS) “Hamlet of Rankin Inlet Type ‘A’ Water Licence: Amendment – Lower Landing Lake” project proposal from the Nunavut Planning Commission

(NPC or Commission) with an accompanying positive conformity determination with the Keewatin Regional Land Use Plan.

Pursuant to Article 12, Sections 12.4.1 and 12.4.4 of the Nunavut Agreement and section 87 of the NuPPAA, the NIRB has commenced screening this project proposal. Due to the proposal containing activities that are sufficiently related to previously assessed activities under NIRB file number **13UN037**, the NIRB views this project proposal as an amendment to the previously screened project and has assigned this proposal with this previous file number.

PROJECT OVERVIEW & THE NIRB ASSESSMENT PROCESS

1. Project Scope

The proposed “Hamlet of Rankin Inlet Type ‘A’ Water Licence: Amendment – Lower Landing Lake” project is located within the Kivalliq region, approximately four kilometres (km) northwest from Rankin Inlet, within the municipal boundaries. The Proponent intends to relocate the existing water pump and water pipeline from Char River approximately 200 meters northwest to Lower Landing Lake—the source of Char River—which provides a larger water source. The program is proposed to take place from May to July 2018. The scope of activities previously approved for this infrastructure (NIRB File No. 13UN037) has been included within **Appendix A**.

As required under subsection 86(1) of the NuPPAA, the Board accepts the scope of the “Hamlet of Rankin Inlet Type ‘A’ Water Licence: Amendment – Lower Landing Lake” project as set out by GN-CGS in the proposal. The scope of the project proposal includes the following undertakings, works, or activities:

- Construction of an access road to Lower Landing Lake and pad using approximately 1,050 cubic meters of granular fill sourced from existing aggregate sources:
 - Access road to be 145 meter (m) long from an existing road toward Lower Landing Lake;
 - Pad approximately 12 m by 15 m at the end of the new access road at Lower Landing Lake; and
 - Installation of culverts along the access road as required to facilitate surface water drainage.
- Relocation of the seacan containing the existing water pump at Char River to the new pad at Lower Landing Lake;
- Relocation of current seasonal floating water inlet from Char River to Lower Landing Lake; and
- Extending the existing water pipeline approximately 200 meters to the new pump location at Lower Landing Lake:
 - Approximately 180 m of pipe identical to the current pipeline installed on the ground, and
 - 20 m of pipespan to be seasonally suspended over Char River during pumping periods and stored alongside the road when pumping for the season has been completed.

2. Inclusion or Exclusion to Scoping List

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

3. Key Stages of the Screening Process

The following key stages were completed:

Date	Stage
June 19, 2016	Receipt of project proposal and positive conformity determination (Keewatin Regional Land Use Plan) from the NPC
June 30, 2016 August 3, 2016	Information request(s)
September 14, 2016	Assessment suspended pursuant to subsection 144(2) of the NuPPAA
September 27, 2017	Proponent responded to information request(s)
September 27, 2017	Scoping pursuant to subsection 86(1) of the NuPPAA
September 27, 2017	Public engagement and comment request
October 18, 2017	Receipt of public comments

4. Public Comments and Concerns

Notice regarding the NIRB's screening of this project proposal was distributed on September 27, 2017 to community organizations in Rankin Inlet, 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 October 18, 2017 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; if so, why;
- Whether the project proposal is of a type where the potential adverse effects are highly predictable and mitigable with known technology, (please provide 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:

Fisheries and Oceans Canada (DFO)

- Noted the proposed Project would not require an authorization under the *Fisheries Act* as serious harm to fish can be avoided by following standard procedures.

Indigenous and Northern Affairs Canada (INAC)

- No comments on the project proposal.

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 proposed expansion of the existing water pipeline consists of 180 meters of 250 mm pipe, a 20-meter seasonal span above Char River, an access road of approximately 725 square meters, and a pad of 180 square meters. The total surface area of the project is less than 0.5 hectares, and may affect habitat for small mammals and migratory and non-migratory birds, and fish and fish habitat. Due to the proximity of the project to Rankin Inlet, it is unlikely there will be significant disturbance to large mammals such as caribou.

2. *The ecosystemic sensitivity of that area.*

The proposed project would occur in an area with no particular identified ecosystemic sensitivity. However, this area has been identified as having value and priority to the local community for:

- i. Terrestrial wildlife,
- ii. Migratory birds, and
- iii. Fish.

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

Neither the Proponent nor any parties that submitted comments for this project identified any known areas of historical, cultural and archaeological significance associated with the project area. Should the project be approved to proceed, the Proponent would be required to conduct an archaeological assessment of the project area, and contact the Government of Nunavut-Department of Culture and Heritage if any 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.*

The proposed project would occur at a location approximately four kilometres from Rankin Inlet, the nearest community; as such, no human populations are likely to be affected by project impacts due to the localized and minor nature of the proposed activities. No specific animal populations have been identified as likely to be affected by potential project impacts.

Although no significant public concerns were raised during the public commenting period, the NIRB notes that the close proximity of the proposed activities to the community of Rankin Inlet and an area used by residents for recreational/traditional pursuits could potentially contribute to public concern developing. A term and condition has been recommended to direct engagement with the community, hunters and trappers organization and interested parties, as well as the posting of public notices to ensure residents are aware of the construction activities being or to be conducted.

The proximity of the location to Rankin Inlet and an existing road reduces the probability of significant animal populations that would be affected.

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 “Hamlet of Rankin Inlet Type ‘A’ Water Licence: Amendment – Lower Landing Lake” project would involve the extension of an existing water pipeline, move of existing water pumping equipment, construction of a short access road and pad from an existing road, and pumping of water, the nature of potential impacts is considered to be well-known. Potential adverse impacts are likely to be localized, of low magnitude, infrequent and restricted to the short period of construction and seasonal pumping. Based on past evidence of similar scope of activities, potential adverse impacts will be 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 occurs in an area with a history of development associated with the existing water line from Char River to Nipissar Lake and travel on the established road and bridge crossing of Char River. As the Proposed project would extend the existing pipe infrastructure and move the water intake and pump approximately 200 meters from its current location, the potential for any additional cumulative impacts is considered to be minimal. The existing infrastructure would be used, pumping activities would use the same equipment as previously permitted and currently used, and the size of the pad and short access road are unlikely to significantly alter the area outside of the immediate project footprint.

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.

Views of the Board

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

Administrative Conditions:

To encourage compliance with applicable regulatory requirements and assist the Board and responsible authorities with compliance and effects monitoring for project activities, the Board has previously recommended terms and conditions 1 through 4, and 35 which continue to apply to the current project proposal. The Board is also recommending term and condition 36 to ensure complete reference to applicable regulatory requirements.

The Board would also note that, as justified in its previous decision (NIRB File No. 13UN037 dated June 26, 2014), terms and conditions 8 and 25 through 30 remain applicable to the project activities, while the additional impacts identified for the new components of the relocation of the existing water pump and water pipeline warrant mitigation measures as justified below.

Ecosystem, wildlife habitat and Inuit harvesting activities:

Issue 1: Potential for impacts to wildlife, and migratory and non-migratory birds from construction activities and daily transportation of equipment, materials and personnel to project site.

Board views: As discussed above in the assessment of factors relevant to this project proposal, the potential for impact(s) is applicable to a very small geographic area and is limited due to the short period of construction and the seasonal pumping. The proximity of the site to Rankin Inlet, as well as the current pumping activity which is planned to be moved approximately 200 meters from its current location, is not likely to create disturbance any greater than that currently taking place. Further, there is the potential for noise disturbance from the construction activities that may disturb wildlife and migratory patterns.

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

Recommended Mitigation Measures: The Board has previously recommended terms and conditions to mitigate potential adverse impacts wildlife and wildlife habitats,

specifically: 7, 10, 13 through 20, 23 and 24, which continue to apply to the current project proposal.

Issue 2: Potential adverse impacts to surface water quality and quantity, and fish and fish habitat from the construction of the access road and pad, and relocation of the piping as well transportation of equipment and personnel to and from the community of Rankin Inlet.

Board views: There is the potential for the project to adversely impact surface water quality, fish and fish habitat from the operation of the pumping station, construction of the access road and pad, installation of culverts, seasonal installation and removal of the water pipeline suspended over Char River, and movement of machinery, fuel, and supplies. The potential for impacts is applicable to small geographic areas within the project footprint and the probability of impacts occurring is considered to be low, with potential adverse effects anticipated to be low in magnitude, infrequent in occurrence and reversible in nature.

In addition to the operational measures currently employed by the Project, it is expected that standard operational considerations would mitigate any potential adverse impacts to the surface water quality and quantity, and fish and fish habitat in the direct project area and areas adjacent to the proposed project.

The Proponent would require a water licence from the Nunavut Water Board for the continued water usage activities. In addition, the Proponent would also be required to follow the *Fisheries Act* (see Regulatory Requirements section).

Recommended Mitigation Measures: The Board previously issued terms and conditions to reduce adverse impacts from construction, storage and use of fuel, water pumping, and transportation of equipment and personnel to and from the community of Rankin Inlet by issuing terms and conditions 5, 6, 9, 12, 21, and 22, which continue to apply to the project.

Issue 3: Potential adverse impacts to ground stability, vegetation health, soil quality, terrain, and permafrost from development of the access road and pad construction, installation of culverts, and transportation of equipment and personnel to and from the community of Rankin Inlet.

Board Views: There is potential for adverse impacts to ground stability, vegetation health and soil quality from the use of vehicles during construction of the access road and pad. Specifically, the use of heavy equipment on exposed soil may result in soil compaction or rutting, which could contribute to soil erosion during snowmelt in late spring and early summer. In addition, fuel spills may result in soil contamination. Further, there is potential for impacts to vegetation health and soil quality from the dust generated during construction activities.

The Proponent has committed to construction of the access road and pad while the ground is still frozen, reducing the potential for damage to surrounding tundra.

Transportation of heavy equipment and material to the project area would be on an established road. Installation of culverts will allow for water drainage preventing pooling and reducing the risk of erosion. The potential adverse impacts to round stability, vegetation health, soil quality, terrain, and permafrost are considered to be of low magnitude and reversible.

Recommended Mitigation Measures: It is recommended that the potential adverse impacts to the terrestrial environment, particularly for ground stability, vegetation and surface soils would be mitigated by measures requiring the Proponent to follow appropriate procedures, and restoration of any disturbed areas. The Board has previously recommended the following term and condition which continue to apply to the current project proposal: 9, 11, 12, 22, 23, 30, and 31 through 33.

Socio-economic effects on northerners:

Issue 4: Potential positive impacts to the local community from the sourcing of equipment and accommodations for personnel within the community, purchasing of local goods and services, and the hiring of local workers, and sourcing water from a larger source.

Board Views: It is noted that the equipment and personnel used to construct the access road and pad will be from Rankin Inlet. It is also noted that moving the source of water from Char River to Lower Landing Lake will allow for water to be withdrawn without affecting the quantity of water in Char River due to increased demand.

Recommended Mitigation Measures: The Board has previously recommended term and condition 34 to ensure the Proponent continues to inform the community of the research activities and findings as well as provide community members with information to ensure a successful local hiring opportunity.

Significant public concern:

Issue 5: 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. In addition, it is recommended that the Proponent considers hiring local people for the project activities.

Recommended Mitigation Measures: The Board has previously recommended term and condition 34 to ensure that the affected community 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 June 26, 2014 Screening Decision Report(s) for File No. 13UN037, **and continue to apply to the Hamlet of Rankin Inlet Type 'A' Water Licence: Amendment – Lower Landing Lake project:**

General

1. The Government of Nunavut Department of Community and Government Services (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 NIRB and comprising its project proposal (NIRB Part 1 form, May 23, 2014, Nunavut Planning Commission Questionnaire, December 11, 2013), and the Nunavut Water Board (Amendment Application, September 3, 2014).
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 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. Unless authorized, the Proponent shall locate all fuel and other hazardous materials a minimum of thirty-one (31) metres away from the high water mark of any water body and in such a manner as to prevent their release into the environment.
9. Unless authorized, the Proponent shall ensure that re-fuelling of all equipment occurs a minimum of thirty-one (31) metres away from the high water mark of any water body.

10. The Proponent shall store all fuel and chemicals in such a manner that they are inaccessible to wildlife.
11. The Proponent shall use adequate secondary containment or a surface liner when storing barreled fuel and chemicals at all locations. Appropriate spill response equipment and clean-up materials (e.g., shovels, pumps, barrels, drip pans, and absorbents) must be readily available during any transfer of fuel or hazardous substances, as well as at vehicle-maintenance areas and the pump area.
12. The Proponent shall ensure that all personnel are properly trained in fuel and hazardous waste handling procedures, as well as spill response procedures. All spills of fuel or other deleterious materials of any amount must be reported immediately to the 24 hour Spill Line at (867) 920-8130.

Wildlife - General

13. The Proponent shall ensure that there is no damage to wildlife habitat in conducting this operation.
14. 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.
15. 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

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

Caribou and Muskoxen Disturbance

18. 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.
19. The Proponent shall not block or cause any diversion to caribou migration, and shall cease activities likely to interfere with migration such as the movement of equipment or personnel until such time as the caribou have passed.
20. During the period of May 15 to July 15, when caribou are observed within 1 km of project operations, the Proponent shall suspend all operations, including the use of equipment, as well as snowmobiles and all-terrain vehicles. Following July 15, if caribou cows or calves are observed within 1 km of project operations, the Proponent shall also suspend all operations in the vicinity, including use of equipment, as well as snowmobiles and all-terrain vehicles, until caribou are no longer in the immediate area.

Ground Disturbance

21. Unless authorized, the Proponent shall ensure there is no obstruction of natural drainage, flooding or channel diversion from the pipeline and other structures or facilities.
22. The Proponent shall implement suitable erosion and sediment suppression measures on disturbed areas before, during and after construction in order to prevent sediment from entering any waterbody.
23. The Proponent shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles must be suspended if rutting occurs.
24. All construction and road vehicles must be fitted with standard and well-maintained noise suppression devices and engine idling is to be minimized.

Winter Trail

25. The Proponent shall select a winter route that maximizes the use of frozen water bodies and shall ensure that no disturbance of the stream bed or banks of any definable watercourse be permitted.
26. 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 without rutting or gouging.
27. The Proponent shall ensure that winter lake and/or stream crossings are located to minimize approach grades and constructed entirely of ice and snow materials. Ice or snow free of sediment should be the only materials used to construct temporary crossings over any ice-covered watercourse.
28. The Proponent shall ensure that bank disturbances are avoided, and no mechanized clearing carried out immediately adjacent to any watercourse.
29. The Proponent shall ensure that stream crossings and/or temporary crossings constructed from ice and snow, which may cause jams, flooding or impede fish passage and or water flow, are removed or notched prior to spring break-up.
30. The Proponent shall implement sediment and erosion control measures prior to, and during operations to prevent sediment entry into the water during the spring thaw. This includes ensuring that a sufficient thickness of snow and ice is present on the winter road to prevent unnecessary erosion of the underlying ground surface and impact on underneath vegetation.
31. The Proponent shall implement a clean-up and reclamation stabilization plan which should include, but is not limited to, re-vegetation and/or stabilization of exposed soil in road bed.

Restoration of Disturbed Areas

32. The Proponent shall remove all garbage, fuel and equipment upon abandonment.
33. The Proponent shall complete all clean-up and restoration of the lands used prior to the end of each field season and/or upon abandonment of site.

Other

34. The Proponent should, to the extent possible, hire local people and to consult with local residents regarding their activities in the region.
35. (updated) Any activity related to this application, and outside the original scope of the project as described in the application, will be considered a new project and should be submitted to the Nunavut Planning Commission and the NIRB for assessment.

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

36. The Proponent shall operate in accordance with all commitments stated in correspondence provided to the Nunavut Planning Commission (Application to Determine Conformity, June 19, 2016), and the NIRB (Online Application Form, June 14, 2016; additional information, September 27, 2017).

MONITORING AND REPORTING REQUIREMENTS

The Board is also recommending the following:

Spill Contingency Plan

The Proponent shall update the Spill Contingency Plan to include the following 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 is currently also recommending the following:

Bear and Carnivore Safety

1. 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.
2. 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.

3. 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 Rankin Inlet, phone: (867) 645-8084).

Species at Risk

4. 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

5. 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.
6. For further information on how to protect migratory birds, their nests and eggs when planning or carrying out project activities, consult Environment and Climate Change Canada's Incidental Take web page and the fact sheet "Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs" available at <http://www.ec.gc.ca/paom-itmb/>.

REGULATORY REQUIREMENTS

The Board previously recommended in the June 26, 2014 Screening Decision Report for the "Hamlet of Rankin Inlet: Amendment Application – Seasonal Replenishment of Nipissar Lake" 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. (updated) The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (<http://laws-lois.justice.gc.ca/eng/acts/n-28.8/>).
3. The *Migratory Birds Convention Act* and *Migratory Birds Regulations* (<http://laws-lois.justice.gc.ca/eng/acts/M-7.01/>).
4. 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.

5. The *Wildlife Act* (<http://www.canlii.org/en/nu/laws/stat/snu-2003-c-26/latest/snu-2003-c-26.html>) which contains provisions to protect and conserve wildlife and wildlife habitat, including specific protection measures for wildlife habitat and species at risk.
6. 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**.
7. The *Canada National Parks Act* (<http://laws-lois.justice.gc.ca/eng/acts/n-14.01/>).
8. The *Arctic Waters Pollution Prevention Act* (<http://laws-lois.justice.gc.ca/eng/acts/A-12/>).
9. The *Navigable Waters Protection Act* (NWP) (<http://laws-lois.justice.gc.ca/eng/acts/N-22/index.html>).
10. (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/>). The Proponent must ensure that proper shipping documents accompany all movements of dangerous goods. The Proponent must register with the Government of Nunavut, Department of Environment Manager of Pollution Control and Air Quality at 867-975-7748
11. (updated) The *Storage Tank System for Petroleum Products and Allied Petroleum Products Regulations* (<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-197/FullText.html>). The Proponent must identify their tank system to Environment Canada and installation of new systems must comply with the regulations' design requirements.

CONCLUSION

The foregoing constitutes the Board's screening decision with respect to the Government of Nunavut-Community and Government Services' "3AM-GRA1624 GN-CGS Rankin Inlet Water Licence Amendment – Lower Landing Lake". The NIRB remains available for consultation with the Minister regarding this report as necessary.

Dated November 3, 2017 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

On August 23, 2013 the Nunavut Impact Review Board (NIRB) received the Government of Nunavut, Department of Community and Government Services' (GN-CGS) "Hamlet of Rankin Inlet: Amendment Application - Seasonal Replenishment of Nipissar Lake" project proposal from the Nunavut Water Board (NWB). On December 11, 2013 the NIRB received a positive conformity determination (Keewatin Regional Land Use Plan) from the Nunavut Planning Commission (NPC) for this file. The NIRB assigned this project proposal file number 13UN037.

Following receipt of the initial application materials, the NIRB undertook a preliminary completeness check and determined that the proposal as submitted did not contain sufficient information for the NIRB to permit proper screening. On September 10, 2013 the NIRB issued correspondence to the GN-CGS advising that a conformity determination from the NPC for this file would be required prior to commencing screening and recommended that additional information, specifically the NIRB's Part 1 and Part 2 forms, be provided in support of the project proposal. On December 17, 2013, following receipt of the positive conformity determination (Keewatin Regional Land Use Plan) from the NPC on December 11, 2013, the NIRB formally requested that the GN-CGS provide additional information in support of this proposal by January 3, 2013. Further, on December 20, 2013 the NIRB requested an extension to the screening timeline for this proposal from the Minister of Aboriginal Affairs and Northern Development. On May 13, 2014 the NIRB received the additional information from the Proponent as requested and commenced screening.

On May 29, 2014 the project proposal was distributed to community organizations in Rankin Inlet, as well as to relevant federal and territorial government agencies, and Inuit organizations.

On June 26, 2014, the Board issued a Screening Decision Report recommending the Project be allowed to proceed subject to terms and conditions.

As set out in the project proposal, the scope of the previously screened project included the following undertakings, works, or activities:

- Use and grading of the existing access road at the intake area along Char River;
- Development and use of a temporary winter access trail along the pipeline to transport equipment, materials and personnel (fuel to be stored in Rankin Inlet);
 - Approximately 10 Litres (L) of oils and lubricants to be used annually during the operation phase;
 - Used oil and waste fuel to be disposed of at an approved disposal facility in Rankin Inlet;
- Domestic waste to be disposed of at the Rankin Inlet Solid Waste Facility;
- Construction, operation and decommissioning of a 4.05 kilometre (km) overland water intake pipeline extending from the Char River to Nipissar Lake including:
 - Installation of a water intake area with pump and 75 horsepower diesel powered generator (to be refuelled with a hand pump or electric pump and stored in a sea canister);
 - 50 m intake hose with floating base (to anchor the intake hose during operation), and intake screen. Hose and floating base to be stored in the sea canister at the end of the operation season;

- 250 millimetre (mm) diameter high density polyethylene (HDPE) pipeline with one low point drain and two high point air releases to facilitate draining of the pipeline at the end of the operation season; and
- Discharge area at the high water mark of Nipissar Lake with the installation of a concrete slab (splash pad) and surrounding riprap;
- Installation of culverts under existing access roads to facilitate surface water drainage and to allow for passage of the pipeline;
- Approximately 0.5 m of granular material (sand) sourced from Rankin Inlet's community borrow pit to be placed on the pipeline in two areas to facilitate snowmobile access; and
- Amount of water required to prevent water level decreases in Nipissar Lake would be dependent on community need and expected to increase as the community increases in size, with a projected maximum 47,187 cubic metres (m³) to be transferred during the 2014 season and up to 271,924 m³ in 2030:
- A Withdrawal Plan was proposed to be developed using data collected from the 2014 pumping season for pumping activities to be conducted during subsequent years.

An additional authorization and extension request associated with the "Hamlet of Rankin Inlet: Amendment Application - Seasonal Replenishment of Nipissar Lake" project, received on March 27, 2015 from the Nunavut Water Board has also been reviewed by the NIRB following screening of the original project proposal (File No. 13UN037). On May 27, 2015 the NIRB confirmed that the application was exempt from the requirement for further screening pursuant to Section 12.4.3 of the Nunavut Agreement and the activities therein remained subject to the terms and conditions recommended in the original June 26, 2014 Screening Decision Report.

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.