



Sahtu Land and Water Board

Staff Report

Division: Land Program	Report No. 1
Date Prepared: January 8, 2019	File No. S18X-004
Meeting Date: January 10, 2019	

Subject: Type A Land Use Permit Application submitted by GNWT – Department of Infrastructure

1. Purpose/Report Summary

The purpose of this Report is to present to the Sahtu Land and Water Board for consideration:

- a) the new Land Use Permit (LUP or Permit) Application S18X-004 as submitted by GNWT – Department of Infrastructure (INF) (Attachment 1);
- b) Summary of stakeholder review comments and proponent responses;
- c) the draft Preliminary Environmental Screening Report;
- d) Engagement Record and Plan;
- e) Land Use Plan Conformity;
- f) Management Plans (Spill Contingency and Waste Management); and
- g) the draft terms and conditions for the new LUP.

2. Background

2.1 Process Requirements

Application Received: November 16, 2018

Application Deemed Complete: November 29, 2018

Application Forwarded for Review: November 30, 2018

Number of Review Agencies: 38

Review Period End Date: December 13, 2018

Proponent Response: December 20, 2018

End of 42-day timeline: January 10, 2019

Board Meeting: January 10, 2019

The activities as described trigger a Type A Permit in accordance with paragraph 4(a)(ii, iii, v) and (b)(i, ii) of the MVLUR:

4 No person shall, without a Type A permit, carry on any activity that involves

- (a) on land outside the boundaries of a local government,
 - (ii) the use of a vehicle or machine of a weight equal to or exceeding 10 t, other than on a road or on a community landfill, quarry site or airport,
 - (iii) the use of a single container for the storage of petroleum fuel that has a capacity equal to or exceeding 4 000 L,

- (v) the levelling, grading, clearing, cutting or snowploughing of a line, trail or right-of-way, other than a road or existing access trail to a building, that exceeds 1.5 m in width and 4 ha in area, for a purpose other than the grooming of recreational trails;
- (b) on land within or outside the boundaries of a local government,
 - (i) the use of motorized earth-drilling machinery the operating weight of which, excluding the weight of drill rods, stems, bits, pumps and other ancillary equipment, equals or exceeds 2.5t, for a purpose other than the drilling of holes for building piles or utility poles or the setting of explosives within the boundaries of the local government,
 - (ii) the use of a campsite outside a territorial park for a duration of or exceeding 400 person-days.

2.2 Project Overview

Since its construction in 2005, Oscar Creek has remained out of service due to alignment and erosion issues. Government of the Northwest Territories-Department of Infrastructure (GNWT-INF) is planning to relocate the Oscar Creek Bridge, located along the Mackenzie Valley winter road from its current location to a location 6 km upstream, as suggested from the 1975 Public Works of Canada (PWC) alignment. For this bridge relocation the GNWT-INF is continuing to work on the engineering design of the water crossings. Two critical and necessary elements for this work are the geotechnical data for the water crossings, and the identification of potential construction material sources in the surrounding area. A total of three (3) water crossings (Tributary 1, Tributary 2 and Oscar Creek) and three (3) material prospect sites will be investigated. The water crossings will be investigated using auger and core drills. The material prospects are all terrace landforms along Oscar Creek and these will be investigated using machine excavated test pits.

The purpose of this project is to gain access to the proposed sites in the winter by clearing a width of 30m within the 60 m right of way along the proposed winter road alignment in order to support site investigations. This investigation will inform and support the work associated with a complete application package for a Land Use Permit and Water License for the relocation of the bridge on Oscar Creek, permanent realignment of the winter road, and any required aggregate sources to do this work.

Boreholes and test pits will be logged, samples will be taken for laboratory analysis, and comprehensive reports will be developed to inform INF in finalizing the project. INF plans to use the services of a contractor for equipment and brush clearing, and the services of either a consultant or in-house staff for the geotechnical drilling and the material source investigations. INF and the contractor may adjust the exact borehole locations, locations throughout the areas of interest based upon engineering judgment as well as field conditions. The material prospect site cut lines and test pit locations will be determined on site through the use of engineering judgement.

Site Access and Winter Road Construction

Access to the sites will largely use existing cut lines and trails from the winter road alignment work completed in the 1970s. The project is expected to use approximately 8.5 km of existing cut lines and 4.1 km of new cut lines for accessing all sites. The estimated land use for the project (including winter road realignment, access roads, camp(s), and bridge/culvert clearings) will be 36 ha of which 19.7 ha is expected to be new clearings.

The existing cut lines are narrower than when they were first opened and it is expected that some clearing will be required to reopen them. Clearing for access to borrow sources will be no more than necessary to allow access and operation of the equipment; the maximum cutline width expected is 7.5 to 10 m. The cut line opening and clearing will be done by a tracked excavator with a mulcher head or a tracked mulcher. Tracked dozers may be used for this clearing work by installing shoes on the blade so it cannot cut into/disturb the frozen ground. With this method all timber over 125mm in diameter will be salvaged and placed along the edge of the clearing. If permitted, clearing in the vicinity of water courses will use the same methods; otherwise it will be done by hand.

The borehole locations for the waterway crossings will require a 15 m wide clearing to accommodate all of the drilling equipment. At the watercourse crossing the drilling will be done as close to the watercourse as possible along the alignment without drilling through the ice and water of the watercourse bed and staying outside of the ordinary high water mark.

As the clearing of the access routes proceeds, the contractor will prepare the route as a winter road and prepare ice crossings for watercourses as required. Typical safety precautions such as signing will be used to protect and inform the public as well as to protect the safety of the work crews. The preparation of the winter road will involve the use of snowcats, drags and the addition of water as needed to produce and maintain a 10 cm thickness of compacted snow and ice surface over the original ground. The 10 cm base will also be maintained at the camp locations.

The preparation of watercourse crossings with all-season flow might require increasing the thickness of the natural ice cover to meet the weight-bearing capacity required for the equipment and vehicles. The flooding of the ice surface by pumping water from the watercourse (or from another water source) and/or by the addition and compaction of snow is proposed to establish and maintain safe crossings. Where the watercourse has no winter flow, a snow fill crossing will be constructed. Water will be sourced from water bodies either on or off the cleared routes. If water sources off the access routes are selected, then further access trails to reach those sources will be required. DFO protocols for the withdrawal of water will be applied. The water use per source will be less than 100m³/day to remain below the threshold for requiring a water licence.

Watercourse Boreholes

The Department of Infrastructure estimates a bridge will be required for the Oscar Creek crossing as well as at tributary 2 (tributary NW of Oscar Creek), while tributary 1 (S of Oscar Creek) will require a culvert. INF is estimating that an auger drill(s) will drill 5 boreholes at the bridge location on Oscar Creek as well as both tributaries. The boreholes will be a minimum of 150 mm diameter. The use of a coring drill will be involved where bedrock is encountered at the bridge locations. The method of core drilling at the bridge locations will require small quantities of water, estimated at less than 0.5 m³ of water per borehole location. If refusal of the auger drill is experienced prior to the targeted limit of depth of investigation, then up to 3 additional trial borehole locations will be attempted to establish the nature of refusal.

The auger drilling method does not require the use of water to advance the borehole. There will be 5 boreholes, two of which will be at the Oscar Creek crossing location (one on each bank); two at the tributary 2 crossing (one on each bank); and the last one will be at the tributary 1 crossing. Upon completion of each borehole, the contractor will, unless otherwise directed, immediately backfill the hole with drill cuttings. While backfilling the borehole a bentonite clay or equivalent plug will be added to seal the holes.

Material Prospect Sites Test Pitting

The prime resource areas in each of the three prospect areas range in extent from 10 ha to 50 ha. Initial test pitting will be conducted along the baseline of each site. From the results, cross cut lines will be cleared to allow further testing to confirm the material source viability and extent. Test pitting will be conducted throughout the prospect sites using an excavator; they will be approximately 3m³ in volume and to a depth of 6m. Test pits will likely be spaced 150-200 m apart and in areas that show viable material sources, the spacing will be reduced to a spacing of 50-100 m. Upon completion of each test pit, the contractor will, unless otherwise directed, immediately backfill the pit with the excavated material and the material will be mounded to account for subsidence in the backfilled material. Testing at the colluvium along the northern edges of the material prospected sites will be conducted to evaluate their respective metal leaching and acid rock draining (ML/ARD) potential. Test pitting will be done as well to assess the gradation and size of the material.

Maps of the Oscar Creek area showing the water crossing locations, material prospects, and a listing of the associated coordinates for the area is provided in Appendix D and section 15.0 of the application, respectively.

2.3 Program Components

Management Plans

The following Management Plans and Studies were submitted with the Application:

- Engagement Record and Plan
- Traditional Knowledge Study
- Archaeological Impact Assessment
- Waste Management Plan
- Spill Contingency Plan.

Equipment and Infrastructure (Camp and Helicopter Landing Areas)

The following equipment is identified as required for the geotechnical drilling program in the LUP Application:

- Snowcat
- Grader
- Plow truck Tandem axle
- Loader
- Tracked Dozer (D8 or equivalent)
- Water truck (Tandem axle or semitrailer)
- Tracked Excavator equipped with or without mulcher head (Cat 320 or equivalent) Bucket attachment will be used for test pitting.
- Tracked mulcher
- Fuel truck
- Helicopter
- Geotechnical drill rig (track or truck mounted)
- Core drill unit (track, skid or truck mounted)
- Service Pickup ½ to 5 ton capacity
- Highway tractor with lowboy or highboy

- Skidoos
- Chainsaws
- Portable Diesel and Gas Generators
- Portable lighting/generator set
- Various construction and winter road equipment

The exact types, numbers, and weights of the equipment which will be used are not known until a contractor has been selected. However, equipment that would be used for a geotechnical project of this calibre would include: heavy construction equipment, a drill rig, pick-up trucks, a water truck, a sewage truck and possibly a fuel truck.

There is a camp associated with this operation. A mobile camp will be used for the estimated 20 people that will be required for the project for approximately 70 days (1400 person days). The camp will be composed of skid-mounted trailers and will include separate kitchen, wash and accommodation units sufficient to support the project's staffing needs.

The mobile camp will be set up at 1 or 2 locations on either side of Oscar Creek with the camp changing locations as the project progresses. The Department of Infrastructure and/or the contractor will discuss and seek approval of these camp locations from the land use inspector prior to clearing land for the camps. The camp clearing along the access roads will need to be 60 m by 50 m for the safe operation of the camp.

It is intended that potable water will be hauled to the camp by water truck however, the camp might also use local water sources for potable and non-potable uses if the water quality is acceptable.

Wastewater (sewage and grey water) will be collected in a heated and insulated holding tank. Sewage will be disposed of in sumps created in natural depression in the terrain or trucked to the Wastewater Treatment Lagoon in the Town of Norman wells. It is the preference of the Resource Management Land Inspector that sewage not be directed to sumps.

At approximately 5 locations the field crew will prepare helicopter landing areas. These areas will provide helicopter access in case there is an emergency. The helicopter landing areas will be approximately 20 m by 20 m. Wherever possible, helicopter landing areas will utilize existing clearings.

Eligibility

GNWT-INF is eligible per subsection 18(b) of the MVLUR: "...has the right to occupy the land and either contracts to have the land-use operation carried out or is the person who is to carry out the operation."

Fees

An application fee of \$150.00 was not required by the applicant as it is the territorial government.

Term

There is limited time available for the permitting, contracting and completion of this Project's fieldwork by March 25, 2019. In the event that all work is not completed within this time period, GNWT-INF has applied for a term of two years from January 10, 2019 until March 21, 2021.

3. Comments

Of the 38 organizations to which the application was distributed, 17 are represented within the Sahtu Settlement Area. Review comments were received from:

- Environment and Climate Change Canada (ECCC);
- Government of the Northwest Territories – Environment and Natural Resources (GNWT-ENR);
- Government of the Northwest Territories – Lands – Sahtu Region;
- Indigenous and Northern Affairs Canada (INAC) – NWT Inspector;
- Crown Indigenous Relations and Northern Affairs (CIRNA) – Environment - Yellowknife;
- NWT Legislative Assembly – Daniel McNeely - MLA Sahtu;
- Sahtu Land and Water Board - staff

The Review Comment Summary Table and submitted letter from ECCC, GNWT-ENR and NWT Legislative Assembly are attached to this report (Attachment 2).

3.1 Permission of Land Owner, Community Consultations, Traditional Knowledge and Archaeological Impact Assessment

Permission of Land Owner

The Project is located on Sahtu Settlement Lands. The Department of Infrastructure has acquired permission to access Sahtu land for the purposes of this Project. The Tulita District Land Corporation provided an email on October 29, 2018 granting INF access to Sahtu Lands for the purpose of conducting these investigations and clearing from Executive Director Louise Reindeer.

Community Consultation

Board staff have completed a conformity check of the Engagement Plan and Record against the Board's *Engagement and Consultation Policy* (the Policy) and the *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits* (the Guidelines). As a result of this conformity check (Table 1), Board staff have recommended that the Plan meets the criteria of the policy.

Table 1: Conformity Table, Assessment of Engagement Plan (The Policy, Appendix B)

Engagement Criteria	Board Assessment
Who was engaged?	Appropriate affected Aboriginal organizations/governments and other affected parties have been contacted; There have been reasonable responses and engagement from the affected parties.
Timing of engagement	Applicant began engagement in December 2017 and has been actively engaged since, delaying the project start in order to complete wildlife studies (raptor nest survey, bear den survey, fisheries study and updated Traditional Knowledge Study)
Achieved results	All relevant documents have been shared with affected communities; The Engagement Plan reflects Board's policy;

	<p>Applicant has invested much time in community meetings face-to-face; All responses from affected Aboriginal groups have been noted and included in the record;</p> <p>Applicant has a dispute resolution protocol/process;</p> <p>Applicant has responded to community concerns and noted actions taken to address concerns raised.</p> <p>Overall, this project received broad support from the community organizations and no major concerns or issues were brought up during engagement.</p>
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In addition to the Policy assessment tool, the Engagement Guidelines outlines six (6) components that an Engagement Plan must satisfy in order to be considered complete. Board staff has conducted a conformity check to ensure the Plan satisfies these requirements (Table 2).

Table 2: Conformity Table, Engagement Guidelines Requirements

Engagement Plan Must Have's:	How GNWT-INF's Engagement Plan satisfies these requirements:
1. Describe the goals and methods of engagement;	Goals and objectives of the community engagement plan are described; Methods of engagement are described and include: <ul style="list-style-type: none"> • Information letters, public notices • Face-to-face community meetings in all five Sahtu communities
2. Outline a frequency of engagement that allows for relevant and timely information sharing;	GNWT-INF's Engagement Plan describes seven triggers that would require engagement to take place throughout the life of the project.
3. Establish a process that allows the affected party to raise concerns on issues;	The purpose for each engagement trigger is described.
4. Allow opportunities for, when appropriate, community meetings to take place to be inclusive of perspectives from all sectors of the community, including women, youth, and Elders;	GNWT-INF has identified 21 organizations as primary contacts in their engagement processes.
5. Ensure the proponent has procedures in place to understand and respond to issues as they arise; and	GNWT-INF has a feedback and evaluation process to ensure all concerns are addressed. Stakeholder feedback is used to understand concerns, information sharing and inform decision making.
6. Provide the opportunity for relationships to be built proactively, not just when issues occur	GNWT-INF has responded to all community concerns, and delayed start of the project for one ear to collect additional information

No reviewer comments were related to engagement.

Traditional Knowledge

The Traditional Knowledge Study that was conducted by the Norman Wells Renewable Resource Council outlined the traditional knowledge on the area to supplement the Traditional Knowledge that was collected in 2003, prior to the original construction of Oscar Creek Bridge.

This study contained information on items such as:

- *Hunting and Trapping* - Hunting and Trapping has been carried out extensively in the proposed study area as means of providing food, clothing, shelter and transportation. Animals found within this area is moose, woodland caribou/ grizzly and black bears, wolverine, wolves, lynx, foxes, rabbits, beaver/muskrats, weasel/ mink/ squirrels/ porcupine, geese, ducks, ptarmigans, grayling, whitefish and jackfish.
- *Burial Sites* - There are burial sites around Oscar Lake but am not aware of any around Oscar Creek. There are probably a lot of burial sites that we are not aware of.
- *Plants and Berries* – the Dene and Metis have harvested many plants and roots, often for medicinal purposes. Today there is not much berry picking happening there as it is quite a distance from the communities.
- *Creeks and Lakes* - the water at Oscar Creek is drinkable and also used for cooking. It is sustaining a healthy fish and wildlife population.
- *Cabins and Trails* - cabins are situated on bank of Mackenzie River/ on left side of Oscar Creek. There is an old Indian trail from Oscar Creek which crosses the winter road and extends to Oscar Lake and onto Lennie & Kelly Lake. People from the past used this trail extensively. Because these trails haven't been used for a long time, they are probably very grown in.

All three interviewees stated that they did not believe that this bridge project will have an effect on traditional activities carried out in the surrounding area of Oscar Creek or that putting the bridge at Oscar Creek will have an impact on stream flow and fish and fish nurseries. However, all three interviewees stated that “All that area needs to be protected for future generations. It is so important to ensure that we have environmental monitors at this site pre, during and post installation of this bridge and even after the installation is complete (Leon Andrew, Edward Oudzi and John McDonald)”.

One comment from the previous TEK study noted the potential for erosion and high water levels in the spring: “Every three or four years in the spring the ice on the Mackenzie will block the mouth of the Oscar and water levels will go up 15 feet or more. That ice will take out anything you build there I think. I want you to be sure you are prepared for the kind of water velocities and ice that can happen at Oscar. You can see from how the banks are all eroded and lots of the bank faces are completely without grass and that the water and ice really move through there (Wilfred McDonald, August 11, 2003).”

No reviewer comments were related to traditional knowledge.

Archaeological Impact Assessment (AIA)

An AIA was completed for the Project site by Stantec Consulting, with test pits dug to determine if any evidence of cultural remains were present. None of the shovel tests excavated in association with any of the three creek crossings yielded cultural remains. No archaeological or traditional use sites were identified during the course of the AIA, and no evidence of a historic trail was observed in

the vicinity of either Tributary 1 or the Oscar Creek crossings. Numerous linear cutlines are visible in the area from the air, although most are heavily overgrown and difficult to identify on the surface.

No archaeological or traditional use sites were identified during the course of the AIA within Granular Prospects 1, 2 or 3. No evidence of a trail was observed anywhere along the upper terraces of these areas.

No reviewer comments were related to the AIA.

3.2 Management Plans

Waste Management Plan

A Waste Management Plan (WMP) was submitted for this Project. The following are the primary waste management methods in the WMP:

- Non-hazardous garbage will be taken to an approved solid waste facility.
- Camp sewage and grey water will be stored and removed off-site to Norman Wells sewage lagoon facility.
- Hazardous waste will be taken to an approved hazardous waste facility.
- Trees and brush cleared along the alignment will be mulched, or windrowed and compacted by heavy equipment along the side of the cleared area.
- Drill cuttings will be placed back into the borehole.

Board staff reviewed the Waste Management Plan (Version 1.0) with consideration of the basic requirements of MVLWB *Guidelines for Developing a Waste Management Plan* (2011) and have the opinion the Plan conforms with the intent of the Guidelines. There were no reviewer comments submitted regarding the Waste Management Plan.

Spill Contingency Plan

A Spill Contingency Plan was submitted for this Project. Board staff reviewed the Spill Contingency Plan (Version 1.0) with consideration of the basic requirements of Aboriginal Affairs and Northern Development Canada's *Guidelines for Spill Contingency Planning* (April 2007) and have the opinion the Plan conforms with the intent of the Guidelines. There were no reviewer comments submitted regarding the Spill Contingency Plan.

3.3 Potential for Environmental Impacts and Mitigation Measures

In evaluating the potential impacts of this Project, the following factors provide the correct context:

- 1) The Project is winter-only and temporary. It will occur over 12 weeks between January and March 2019.
- 2) The Project is mobile. The work will constantly progress along the alignment so the disturbance impact at any particular location will be temporary in nature. The longest-term impacts would be at the camp locations, which will only be for a few weeks at any given location.
- 3) The Project will require some clearing of trees and brush but it will not require the removal of the surface organic layer.
- 4) The Project will not be opening up access to a new, undisturbed area. Most of the Project is on an existing cut line. For those locations where new cut is required, there are existing cut lines in the vicinity that already provide access into the general area.
- 5) The cumulative impacts of this Project are minimal and time limited.

The following sections of the Preliminary Environmental Screening Report form provide specific and important information that may be of interest to the Board:

Physical/Chemical Effects

Ground Water - water quality changes

Surface Water – water level changes/water table alteration; water quality changes; use of water

Noise - noise in or near water

Land – ground disturbance; permafrost alteration;;

Air/Climate/Atmosphere – greenhouse gases;climate change

Biological Environment

Vegetation – species composition; species introductions; toxic/heavy metal accumulation; damage to ground vegetation and permafrost

Wildlife and Fish – effects on rare, threatened or endangered species; fish population changes; breeding disturbances; population reduction; behavioural changes; habitat changes; toxins/heavy metals; general wildlife

Interacting Environment – wildlife incidents

Social and Economic

Economic/employment opportunities

Cultural and Heritage

Changes to or loss of archaeological resources

Effects to Aboriginal lifestyle

All relevant environmental impacts and mitigation measures are addressed in the Preliminary Environmental Screening (Attachment 3).

3.4 Preliminary Environmental Screening

Under the Preliminary Screening Requirements of section 124(1) of the *Mackenzie Valley Resource Management Act* (MVRMA), the Board must conduct a preliminary screening of any proposed development prior to the issuance of a Licence, Permit, or Authorization, unless it is exempt from Part 5 of the MVRMA.

Based on the information provided in the application and by review agencies (see below), a Preliminary Environmental Screening (PES) was performed. The draft PES is attached (Attachment 3) The report concludes that the environmental impact of the proposed project can be mitigated with known technologies and no significant public concerns have been raised. The Draft Preliminary Environmental Screening Report and a Draft Staff Report was forwarded to the MVEIRB on January 8, 2019 and the final version will be forwarded to the MVEIRB once it has received approval from the Board.

3.5 Conformity with Land Use Plan

The SLUP was adopted by the Sahtu Land Use Planning Board (SLUPB) in April 2013 and received approval and came into effect on August 8, 2013. The location of the drilling program falls within Special Management Zone #63, the Deh Cho or Mackenzie River of the Sahtu Land Use Plan.

As per Part 3, Section 61(1) of the MVRMA, the Board may not issue, amend, or renew a licence or permit or authorization except in accordance with the applicable land use plan under Part 2. Board staff have required the Proponent demonstrate how the project meets the appropriate SLUP conformity requirements.

Table 3 outlines how these requirements are being addressed as presented by GNWT-INF with review by Board staff. Under evaluation by the SLWB staff, it appears the project conforms to the SLUP and therefore Board staff do not recommend referral to the SLUPB for a conformity determination as set out in Section 47. The SLWB has met the requirements as per Section 46 of the MVRMA.

Table 3: Oscar Creek Geotechnical Drilling Program – SLUP Conformity Requirements

Conformity Requirement	Application Section(s)	Supporting Evidence	Board Staff Review
General Conformity Requirement			
CR#1 – Land Use Zoning	N/A	Proposed land use is not prohibited within the project area Deh Cho Zone 63: Special Management Zone <ul style="list-style-type: none"> • No prohibitions except bulk water removal • Region identified as important regional and territorial transportation corridor (specific mention of winter road) • This project constitutes winter road improvement • No bulk water removal will be involved 	Confirmed
CR#2 – Community Engagement and Traditional Knowledge	Appendix A Appendix B Appendix C Appendix D Appendix E	Community Engagement and Traditional Knowledge studies have been carried out and documented in the Engagement Plan and Engagement Record and Traditional Knowledge Study updated by Norman Wells Renewable Resource Council <ul style="list-style-type: none"> • Multiple communications and meetings; Engagement completed in every Sahtu community between January – October 2018 • Early engagement in 2017 informed the need to delay the Project from Winter 2018 to Winter 2019, to allow for additional engagement, TK gathering, and wildlife survey. 	Confirmed, details discussed in section 3.1 of the staff report
CR#3 – Community Benefits	Section 6.11	Include but not limited to: <ul style="list-style-type: none"> • Infrastructure improvement • Early and continuous community 	Confirmed, proposed project addresses community concerns,

		<p>involvement in project design</p> <ul style="list-style-type: none"> • Operations and decisions • Improved access on the winter road • Improved resilience from climate change • Employment and economic activities, contract work 	<p>includes economic benefits, TK studies and documenting Elders knowledge for archival purposes.</p>
CR#4 – Archaeological Sites and Burial Sites	Appendix H Section 6.10	<p>AOA and AIA’s conducted in 2017 by Stantec</p> <ul style="list-style-type: none"> • No significant archaeological, cultural, or heritage resources identified or suspected • No likelihood for project to have impact to known cultural or burial sites 	<p>Confirmed, LUP conditions 26(1)(j) 52 specifies that the Permittee shall not operate any vehicle or equipment within 150 meters of a known or suspected historical or archaeological site or burial ground; and 53 specifies the Permittee shall not knowingly remove, disturb, or displace any archaeological specimen or site.</p>
CR#5 – Watershed Management	Section 6.5 Section 6.6	<p>Proposed project has little to no reasonable potential to substantially alter quality, quantity, or rate of flow for waters that flow on, through or are adjacent to Sahtu lands</p>	<p>Confirmed, Section 6 is a description of potential environmental impacts on water sources and describes mitigation measures to minimize the effect. There is a Spill Contingency Plan and Waste Management Plan.</p>
CR#6 – Drinking Water	Section 6.5 Section 6.6	<p>Proposed project will not result in the contamination of surface or groundwater within a community catchment.</p>	<p>Confirmed.</p>
CR#7 – Fish and Wildlife	Section 6.7 Section 6.9	<ul style="list-style-type: none"> • Proposed work not likely to have significant impact on fish or wildlife • Baseline fisheries assessment scheduled for July/August 2018 • Den and Nest survey completed October 2018 	<p>Confirmed</p>

		<ul style="list-style-type: none"> Resulting project to relocate bridge will be designed and managed such that impacts to fish and wildlife are minimized or mitigated in an acceptable manner. 	
CR#8 – Species Introductions	Section 6.8.1	<ul style="list-style-type: none"> The proposed project will take all reasonable precautions to prevent the introduction of non-native species or subspecies Equipment and vehicles used for the Project that are coming from outside of this area will be cleaned to prevent the spread of non-native plant species. 	Confirmed
CR#9 – Sensitive Species and Features	Section 6.8 Section 6.9	<p>According to Map 4: Sensitive Species and Features (p. 44 Sahtu Land Use Plan):</p> <ul style="list-style-type: none"> No sensitive features identified in the region See section on Vegetation and impact mitigation See effects on wildlife 	Confirmed
CR#10 – Permafrost	Section 6.4	<ul style="list-style-type: none"> Proposed project will be designed and carried out in a matter that prevents and/or mitigates adverse environmental impacts resulting from the degradation or aggradation of permafrost. Geotech will help to determine presence of permafrost in the area Tracked dozers may be used for this clearing work by installing shoes on the blade so it cannot cut into/disturb the frozen ground 	Confirmed
CR#11 – Project-Specific Monitoring		<ul style="list-style-type: none"> TDB based on execution of project Wildlife monitor may be hired based on feedback received 	Confirmed
CR#12 – Financial Security	N/A	Territorial Government exempt from security post	Confirmed. Pursuant to Section 94 (Exemptions) of the MVRMA, GNWT-INF is exempt from posting security.
CR#13 – Closure and Remediation	Section 7.0 Section 8.3 Section 9.0	<ul style="list-style-type: none"> Described in Project Description Report (PDR) 	Confirmed.
Special Management Conformity Requirements			
CR#14 –	Throughout	<ul style="list-style-type: none"> No indication of impact of project on 	Confirmed.

Protection of Special Values		archaeological and burial sites • No lasting or irreversible impacts to water quality of wildlife, and impacts minor and will be minimized through mitigation measures outlined in PDR	
CR#15 – The Great Bear Lake Watershed	N/A	Project not located in Great Bear Lake Watershed	Confirmed
CR#16 Fish Farming and Aquaculture	N/A	No fish farming or aquaculture will be conducted during the geotechnical drilling program.	Confirmed
CR#17 – Disturbance of Lakebed	N/A		Confirmed
CR#18 – Uses of Du K’ets’Edi Conservation Zone (Sentinel Islands)	N/A	Not applicable, project not within the Sentinel Islands	Confirmed
CR#19 – Water Withdrawal	N/A	Not applicable, water withdrawal is not occurring from Lac Belot, Stewart Lake or Tate Lake	Confirmed

3.6 Draft Permit

A draft Land Use Permit with Terms and Conditions was prepared and posted for review with the Application. Reviewer comments requested some changes and additions to the draft conditions. These were added as requested and with the agreement of GNWT-INF (Attachment 4).

3.7 Security Deposit

Pursuant to Section 94 (Exemptions) of the *Mackenzie Valley Resource Management Act* (MVRMA), GNWT-INF is exempt from posting security.

4. Other Agency Comments

The application was distributed to members of the Tulita District Distribution List; which includes 38 review organizations, requesting a reply by December 13, 2018. Seven organizations responded.

- Environment and Climate Change Canada (ECCC);
- Government of the Northwest Territories – Environment and Natural Resources (GNWT-ENR);
- Government of the Northwest Territories – Lands – Sahtu Region;
- Indigenous and Northern Affairs Canada (INAC) – NWT Inspector;
- Crown Indigenous Relations and Northern Affairs (CIRNA) – Environment – Yellowknife – no comment;
- NWT Legislative Assembly – Daniel McNeely - MLA Sahtu;
- Sahtu Land and Water Board – staff

ECCC was concerned that if the work was not completed prior to March 21, 2019, that there was potential for expansion of the Permit to work during the Migratory Bird nesting season. Conditions have been included in the Permit to ensure no work occurs during the period April 1 to December 31 (8) and that if migratory birds, nests, or species at risk are encountered during operations, activity will be minimized (84).

GNWT-ENR recommended that INF provide geospatial shapefile data to support CIMP's data requirements. This was agreed to by INF. ENR also acknowledged the proponent's Spill Contingency Plan but included recommendations for best practices for fuel storage and spill containment during project activities. All of the recommendations have been covered by standard conditions. ENR also reviewed the potential for impacts to species-at-risk and noted that " although the project overlaps with the range(s) of Grizzly Bear, Boreal Caribou, Little Brown Myotis (bat), and Barren-ground Caribou, ENR is of the opinion that the scope, areal extent, scale and/or timing of the proposed project are such that the likelihood of significant negative impacts to NWT-listed or pre-listed species at risk is minimal.

GNWT – Lands – Sahtu Region recommended a number of conditions be added to the Permit including: Width of right-of-way; Progressive Erosion; Sewage Disposal; Clearing of Sensitive Land; Salvage Timber; and Inspect Locations. INF agreed with all conditions except for the erosion control which they feel is not required for winter construction. Staff left the condition in and added a modifier to indicate that erosion control measures will be installed and maintained when and where required and at the request of an Inspector.

The Application had indicated that sumps would be used for disposal of sewage and greywater. This was not supported by the Inspector and the Waste Management Plan indicated the option to store the wastewater and truck it out by sewage truck to the sewage lagoon facility at the Town of Norman Wells. The Town has sent a letter on January 7, 2019 indicating they will accept this wastewater at their facility.

The Inspector also recommended that a Permafrost Protection Plan be prepared for this operation as well as a Sediment and Erosion Control Plan. GNWT-INF disagreed with these recommendations.

Permafrost Plan – The Project area is located in an area of discontinuous permafrost. Traditional Knowledge holders stated that permafrost would be unlikely at the creek crossings. At the test pit and borehole locations, the earth will be backfilled. Boreholes will be sealed using bentonite clay or an equivalent plug, and test pits will be backfilled and mounded to account for any subsidence.

The registry was searched for authorizations in which permafrost was being evaluated and required mitigation measures. A Land Use Permit (S12S-002) was issued in 2012 by the SLWB to Husky Oil Operation Ltd. for a Permafrost and Gravel Survey at Slater River EL462 and EL463 in the Tulita District. Mitigation for potential impacts to permafrost included:

- Investigations will use existing clearings or lines;
- Boreholes will be backfilled with cuttings and tamped;
- No stripping of soil will occur.

All of these mitigation measures have been included in the GNWT-INF Application. Staff agree that a permafrost protection plan is not required.

Sediment and Erosion Control Plan (SECP) - The mitigation against erosion for this project is to conduct the works during the winter when the subsurface, surface, and watercourses will all be frozen. This is the standard practice and has been used for geotechnical investigations on numerous INF projects including the Tli? cho? All Season Road as well as the ITH Highway. An erosion plan will be submitted as part of the permit applications for the bridge relocation and associated work as per the DOT ESC manual and best management practices.

The registry was searched for authorizations in which Sediment and Erosion Control Plans were required and there was work being conducted in both winter and summer seasons. The MVLWB Permit MV2015X0016 issued to Westcoast Energy Inc., included a Sediment and Erosion Control Plan for the Pointed Mountain Pipeline Removal at Kotaneelee River Crossing. The report noted that “Sediment control measures (i.e., perimeter silt fence barriers, spoil berms, sumps, ditches, check flow dams, and sediment traps) are generally used for warm season works and are not anticipated to be necessary during winter construction”. Some of the mitigation for winter construction included:

- Remove any sediment or materials that accumulate on the ice or snow surfaces to the extent practical, prior to the spring thaw;
- During removal of the winter crossing, create a v-notch in the centre of the ice bridge/snow fill crossing to allow it to melt from the centre and also to prevent channel erosion and flooding.

Both of these mitigation measures have been included in the GNWT-INF application and conditions.

A second authorization from the SLWB to the Department of Fisheries and Oceans for the Canadian Coast Guard Wharf at Norman Wells (Water Licence S16L8-002) included a Sediment and Erosion Control Plan. The report noted that “Winter activities make use of ice thickness and minimal water depths. The use of erosion control measures for dredging during winter in a river are not considered practical or feasible”.

The Alberta Erosion and Sediment Control Manual (Government of Alberta, June 2011) noted that for winter projects:

- Silt fences or hay bales cannot be installed in the winter and erosion control blankets cannot be installed over 1” snow;
- The main potential for erosion and sedimentation at borrow sources (the material prospect sites) would be related to site drainage. As the GNWT-INF will replace all excavated material after digging the test pits, the potential for erosion and sedimentation is minimal.

Staff agree that a SECP for work during the winter is not standard practice. A condition for progressive erosion control measures to be installed and maintained at the site “where and when required and at the request of an Inspector” has been included to ensure that if there are erosion problems during the Project, the Inspector can request mitigation.

INAC – NWT Inspector was concerned that the Project area prospect sites were located close to or on Federal Land. Staff have confirmed that the Project is located entirely on Sahtu Settlement Lands.

NWT Legislative Assembly: Daniel Mcneely MLA Sahtu submitted a letter of support for the Project stating that “it will enhance the opportunities and climate change safety for the winter road system”.

Board Staff – SLWB – sought clarification for the estimated amount of water use that may occur with the Project. GNWT-INF have responded that they will stay below the 100 m³ threshold water withdrawal per day. Concerns have been raised by the Sahtu Land and Water Inspectors about the need for a Water Licence for this Project. Generally, the SLWB has not issued Water Licences for geotechnical drilling programs. When the bridge relocation project is advanced, it will require a Water Licence. For this Project, water will be used to construct the winter road, as well as pads for the camp and helicopter landing. A Licence is not required for the water use to construct ice bridges. Water use will therefore be minimal and as required to complete the winter road construction. Staff recommend that the Board direct GNWT-INF to maintain a log of all water withdrawals and submit to the Board upon request and at completion of the Project.

5. Conclusion

The Preliminary Environmental Screening Report did not identify any Significant Adverse Environmental Impacts or Public Concerns with the proposed project. All potential environmental impacts identified by review agencies can be mitigated with known technology and have been addressed in the Term and Conditions of the Land Use Permit.

The draft Permit Conditions are based upon the standard condition list, and stakeholder comments. Board staff conclude that the conditions contained within this draft Permit should mitigate the potential environmental impacts this development may have on the land and water.

The outstanding issues for the Board to consider are the potential need for the Proponent to submit the following:

- Permafrost Protection Plan;
- Sediment and Erosion Control Plan;
- Water Licence Application.

If any of these items are determined by the Board to be required, INF has indicated that the Project would likely need to be put on hold until the following winter, as there will be insufficient time to prepare and approve these plans and/or develop the application.

A draft Land Use Permit cover page, reasons for decision and issuance letter are attached (Attachments 5, 6, and 7).

6. Recommendation

Board staff recommend that there are two options for the Board to consider.

OPTION 1: the Board proceed with the regulatory process for this Land Use Permit including:

- 1) Approve the draft **Preliminary Screening;**

- 2) Approve the **draft LUP**, with a term of two years;
- 3) Approve the **Engagement Plan**
- 4) Approve the **Conformity with the Sahtu Land Use Plan**;
- 5) Approve the **Spill Contingency Plan** and **Waste Management Plan**;
- 6) Approve the draft **Reasons for Decision** and draft **Letter of Issuance** prepared for Board consideration.

OR

OPTION 2: The Board invoke section 22 (2) (b) of the Mackenzie Valley Land Use Regulations requiring that further studies or investigations be made respecting the lands proposed to be used in the landuse operation and notify the applicant in writing of the reasons for the additional studies.

7. Reference Material Attached

- 7.1. Land Use Permit Application ([hyperlink only](#))
- 7.2. Review Comment Summary Table
- 7.3. Preliminary Environmental Screening Report
- 7.4. Draft Land Use Permit Term and Conditions
- 7.5. Draft Permit Cover Page
- 7.6. Draft Reasons for Decision
- 7.7. Draft Decision Letter

Respectfully submitted,



Bonnie Bergsma
Regulatory Specialist

Executive Director Comments:



Paul Dixon
Executive Director