

<b>1. PROJECT TITLE</b>	Frost Creek Campground Shelter Development
<b>2. INTERNAL PROJECT FILE NUMBER</b>	NNPMVRMA-2015001

<b>3. AUTHORITY</b>	<input checked="" type="checkbox"/>	Preliminary screening prepared under MVRMA
	<input type="checkbox"/>	EA prepared under Management Directive 2.4.2
<b>4. LEGAL REASON FOR PRELIMINARY SCREENING</b>	As per Schedule I Part II item 15 of the Preliminary Screening Requirement Regulations: <ul style="list-style-type: none"> <li>- Issuance of a National Parks of Canada Building Permit.</li> </ul>	
	As per Schedule I Part II item 17 of the Preliminary Screening Requirement Regulations: <ul style="list-style-type: none"> <li>- Issuance of a National Parks of Canada Natural Objects Permit</li> </ul>	

<b>5. LOCATION OF PROJECT</b>	Glacier Lake Area of Nahanni National Park Reserve
<b>6. PROPONENT CONTACT INFORMATION</b>	Scott Whitmore (Project Manager II): 867-695-7769

<b>7. OTHERS CONDUCTING A PRELIMINARY SCREENING ON THIS DEVELOPMENT</b>	
Department/Agency	
Contact information	
Reason for screening	
SARA Notification	

<b>8. EA COORDINATOR CONTACT INFORMATION</b>		
<b>AUTHOR</b>	Name:	Adam Zier-Vogel
	Title:	Resource Management Technician
	Phone:	(867)-695-7775

<b>9. DEVELOPMENT DESCRIPTION</b>
<p>In the summer of 2015 Parks Canada proposes to develop a day use shelter at the Frost Creek Campground, adjacent to the Frost Creek outflow at the north-west end of Glacier Lake in Nahanni National Park Reserve (NNPR). This development is intended to improve visitor experience and safety while reducing human impacts in the area.</p> <p><b>Design details:</b>                  The shelter will be a single-story 416 square foot (including the front deck) non-heated, panabode-style building. The interior features two chambers: the front (closest to the entrance) is intended to be a visitor day use area and may include a picnic table; the rear chamber is intended to be a gear storage area. The building will be oriented so that the front deck and entrance are oriented towards the Frost Creek gravel bar (south-west). Five bear-proof food storage lockers ("BearSaver Food Storage Locker") will be installed on the outside</p>

of the building along the north-west wall. No fuel cache is included in the design; however, space will be provided for 3<sup>rd</sup> parties to install their own fuel storage containers along the south-east side of the building, provided that they conform to NNPR's fuel caching protocols.

**Resource and material requirements and sources:**

The shelter will be constructed from western red cedar wood joined together using a "tongue and groove" system. The door will be pre-finished insulated steel and the windows will be double pane shatter proof glass. The roof will be made of metal. The foundation will consist of pressure treated wood pads (treated with alkaline copper quaternary) and will be entirely above-ground. All construction materials will be sourced from outside of the park and flown in. No hazardous materials will be used.

**Procedures:**

- *Footprint clearing:* Clearing of vegetation will take place over approximately 3 days, between June 28 and June 30, 2015 with personnel staged out of the Frost Creek Campground. Clearing will involve the removal of all surface level vegetation from the anticipated footprint of the shelter, plus an additional 4 foot buffer on all sides. The total projected area to be cleared is approximately 816 square feet. The foundation for the shelter will be entirely above ground; therefore, the underlying soil will not be disturbed. Work will be accomplished using mainly hand tools but may involve some minimal use of chainsaws. Because clearing will be taking place during nesting season, only trees small enough to verify that no nests are present will be removed. Any remaining trees will be removed in August as part of the installation work.
- *Transportation of construction materials:* Materials for the shelter will be slung by helicopter from Tungsten, NT to Glacier Lake between July 23<sup>rd</sup> and August 10<sup>th</sup>. 18-20 slinging trips are anticipated to be required over the course of 1-2 days. Materials will be stored on the gravel bar on the east side of the Frost Creek out flow, as far from the lake as possible.
- *Installation:* Installation will take place over approximately 14 days, beginning on August 11<sup>th</sup>. All personnel will be staged out of the Frost Creek Campground. The shelter will be assembled on site using hand and power tools, including chainsaws.

**Proposed Work Schedule:**

- Site clearing: June 28-30, 2015
- Shelter Construction: August 11-24, 2015

**Location:**

The proposed location for the shelter is at the Frost Creek Campground, on Glacier Lake in Nahanni National Park Reserve. The shelter will be located adjacent to the gravel bar on the east side of the Frost Creek out flow (62.087643° N, 127.586760° "W).

**10. DEVELOPMENT RATIONALE**

The proposed development is in the Glacier Lake area, which until recently was outside of Nahanni National Park Reserve's borders. However, with the expansion of Nahanni's borders in 2009 stewardship of the Glacier Lake area is now Parks Canada's responsibility.

The intended purpose of the proposed Frost Creek Campground shelter is to provide:

- An area which is secure from wildlife in which users can store food and gear while they visit the Cirque of Unclimbables
- An area for visitors to seek shelter from weather and insects during the day
- A storage area for Parks Canada to store emergency response supplies

The shelter is **not** intended to be used as overnight lodging for visitors or for Parks Canada staff.

Installation of a shelter in this area will help to reduce human impacts and increase visitor safety in the Frost Creek Campground by improving the containment of food and other wildlife-attractants. Visitor experience will be improved through the provision of a day-use refuge in which visitors can enjoy shelter from the elements and insects.

**11. POSSIBLE ALTERNATIVES**

Option A – Status quo:

There is currently an existing lease adjacent to the Frost Creek Campground which includes a small shelter. This existing shelter is a rustic building constructed of plywood and 2x4s. The owner currently allows visitors to use the shelter for food and gear storage; however, the shelter is not secure from bears or other wildlife and porcupines are frequently found within the building. There is no guarantee that the owner will continue to allow visitors to access this shelter.

If nothing is done, current food and gear storage practices which will continue to persist. Unsecured wildlife attractants create a hazard for both humans and visitors. The owner of the existing shelter may one day decide to remove the shelter or to deny access to visitors; in which case there would be no food and gear storage options on site. There would continue to be no day-use shelter for visitors to seek refuge from insects and the elements.

Option B - Install an elevated food cache:

Rather than constructing the proposed shelter an elevated food cache could be constructed. This would secure food from wildlife, provided that all food was appropriately contained to prevent access from birds. Downsides of this approach would be that visitors would be reluctant to leave their gear on an elevated food cache for extended periods of time, since it would remain exposed to the elements. Many users require food and gear to be stored for multiple weeks while they visit the Cirque of the Unclimbables; therefore this would not be an ideal solution for them. Furthermore, an elevated food cache would have to be quite large to accommodate all the potential storage requirements. There would continue to be no day-use shelter for visitors to seek refuge from insects and the elements. Upsides to this approach would be that an elevated food cache would have a smaller foot print and have a lower over-all human impact on the area.

Option C - Install a bear-proof food storage lockers:

Rather than constructing the proposed shelter a series of bear-proof food storage lockers could be installed. This would secure food from wildlife and from the elements; however there would not be adequate space for visitors to also store substantial amounts of gear. The major downside of this approach is that there is no provision for gear storage requirements; therefore some additional form of storage would be required – for example a gear shed. There would continue to be no day-use shelter for visitors to seek refuge from insects and the elements. Upsides to this approach would be that bear-proof food storage lockers would have a smaller foot print and have a lower over-all human impact on the area.

Option D – Install a smaller shelter with no day-use area.

Installing a smaller shelter with no day-use area would secure both food and gear, but would not provide an area for visitors to seek refuge from insects and the elements. The upside of this approach would be that the shelter would have a smaller foot print and have a lower over-all human impact on the area.

**12. COMPATIBILITY WITH MANAGEMENT PLAN**

<input checked="" type="checkbox"/>	The development has been reviewed and found to be compatible with the park or site management plan
<input type="checkbox"/>	The development is not compatible with the park or site management plan (provide explanation of the conflict in the space below)

The proposed Frost Creek Shelter development is consistent with the Naha Dehe Management Plan (2010) to promote visitor experience opportunities in the expansion area. It is also consistent with the corporate direction to increase visitation in National Parks.

### 13. SCOPE OF ENVIRONMENTAL ASSESSMENT

#### Scope of Development

This development will involve the clearing of a 34 ft x 24 ft footprint, the transportation and storage of all construction materials, and the construction of a 26 ft x 16 ft, single story panabode-style shelter at the Frost Creek Campground.

#### Scope of Factors to be Considered

**Geographical Area:** The geographical area that will be considered will be the area surrounding the proposed shelter location, within a radius of 150m. This region includes all areas which could potentially be affected by the development, including the surrounding forest, the campground, Frost Creek, and Glacier Lake.

**Time Period:** The time period that will be considered will focus on the site clearing work period (June 28<sup>th</sup>-30<sup>th</sup>, 2015) and the construction work period (August 11<sup>th</sup>-24<sup>th</sup>, 2015), but will also include the indefinite period following the installation in which the shelter will remain in place.

**Environmental Components:** The following environmental components will be considered in this assessment: wildlife (including species at risk), vegetation and soils, aquatics/hydrological resources, cultural/archaeological resources, pollution, public safety, socio-economic resources, and aboriginal land use.

### 14. DESCRIPTION OF ENVIRONMENT

The proposed locations for all three developments in this project are in the Glacier Lake area, which is in the Ragged Range Mid-Boreal alpine-subalpine (RRMBAS) ecoregion as defined in the Northwest Territories ecosystem classification framework. The environment of the Glacier Lake area can be described as follows:

#### Physical Environment

**Climate:** Pacific moisture is intercepted by the high peaks of the Ragged Range, resulting in high levels of precipitation in the area which have helped to create and maintain large icefields and glaciers in the higher elevations. Climate conditions are a function of elevation with average annual precipitation ranging from 600 mm in the valley bottoms up to 750 mm in the alpine. The average annual temperature in the valley bottoms is approximately -4.5°C, averaging 9.5°C in the summer and -19.5°C in the winter.

**Physiography:** Glacier Lake is located in the northern portion of the RRMBAS ecoregion, which encompasses some of the most spectacular mountain landscapes in the Northwest Territories. The mountains here are large and rugged, with peaks averaging 2200 m to 2500 m in height; and ranging up to 2773m at the summit of Mount Nirvana, the Northwest Territory's highest mountain. This area is also the home of the Northwest Territory's largest span of glacial ice: the Brintnell-Bologna Icefield.

The mountains of the Ragged Range are geologically unique within Mackenzie Mountains. They were created millions of years ago as formations of intrusive igneous rock were eroded out from below a blanket of sedimentary layers to form a range of rugged granite peaks. These mountains now form islands of igneous rock surrounded by a sea of metamorphic and sedimentary stone.

One of the most outstanding features of the Ragged Range is a group of peaks known as the "Cirque of the Unclimbables" (COTU) which is located roughly 5km North-West of Glacier Lake. Due to its towering granite

cliff faces and spires the COTU is considered one of the top destinations in the world for big-wall rock climbing. The peaks of the COTU range from ~2100m to 2759m in height and form a series of 4 cirques which intersect to form a single valley hanging 700m above the main Glacier Lake valley. Mount James MacBrien is the highest mountain in the COTU (2759m), and the second highest mountain in the Northwest Territories.

Substrate in the RRMBAS ecoregion is composed mainly of exposed bedrock or bouldery colluvium with very little soil development. Brunisols and Regosols occur under spruce forests at higher elevations on valley slopes. Valley bottoms of the boreal-subalpine are typically composed of glacial till, fluvial and lacustrine sediments, with valley slopes primarily composed of clastic and carboniferous deposits. Brunisols are prevalent in well-drained areas while gleysols often underlie poorly drained areas.

**Hydrology:** Melting glaciers produce streams which cascade down steep slopes to deposit sediment on alluvial fans in the valleys, often forming glacier lakes in hanging valleys and cirques. Glacial run-off from the Brintnell-Bologna Icefield forms the headwaters of Brintnell Creek, which is the main source of water for the Glacier Lake, which is the largest lake in the area.

Iron-rich creeks are common in the RRMBAS ecoregion due to the presence of black pyritic shales in the area. Valley bottoms often house wetlands and small ponds. There are multiple hotsprings in the area, including Hole-in-the-Wall Hot Springs and Lened Hot Springs.

All watercourses in the RRMBAS ecoregion are part of the South Nahanni Watershed and feed into the South Nahanni River. Significant lakes in the area include Glacier Lake, Shelf Lake, Crooked Lake, Drill Lake, Nightwind Lake, Rabbitkettle Lake, and Hole-in-the-wall Lake.

## **Biological Environment**

### **Vegetation**

Within the RRMBAS ecoregion discontinuous patches of sedge, shrub and lichen tundra occur between about 1500 m and 2000 m. Tundra cover is more unbroken in areas with more finely textured soils. Tree line ranges from approximately 1500 m to 1600 m on south facing slopes and is slightly lower on north-facing slopes. Alpine fir and spruce krummholz stands can be found at tree line; graduating to open spruce woodlands grade and finally into denser spruce forests at about 1400 m. Above 2000 m, plants are only found in isolated sheltered areas.

Vegetation surveys of the Frost Creek campground area performed in 2013 found vascular plant species which were consistent with the montane region of the Taiga Cordillera ecozone. The inventory of species included: bluebell (*Mertensia paniculata*), bunchberry (*Cornus canadensis*), mountain cranberry (*Vaccinium vitis-idaea*), fireweed (*Epilobium angustifolium*), horsetail (*Equisetum sp.*), lesser rattlesnake plantain (*Goodyera decipens*), twin flower (*Linnaea borealis*), one-sided wintergreen (*Pyrola secunda*), paper birch (*Betula papyrifera*), pink mountain heather (*Phyllodoce empetriformis*), river alder (*Alnus incana*), stiff clubmoss (*Lycopodium annotinum*), white spruce (*Picea glauca*), wild black currant (*Ribes hudsonianum*), wild rose (*Rosa acicularis*), willow (*Salix sp.*).

### **Birds**

There are five species of birds on the SARA list (Common nighthawk, Olive-sided flycatcher, Peregrine falcon, Rusty blackbird, Short-eared owl) whose described ranges overlap the locations proposed for the developments in this project. No nesting sites or colonies for any of these species have ever been recorded in the Glacier Lake area, and only the rusty blackbird has ever been observed in the project vicinity.

The single recorded observation of the rusty blackbird in the Glacier Lake area occurred near the Frost Creek Campground during the month of May. Rusty blackbirds prefer to nest near marshes and ponds therefore

nesting sites are not expected to be present near the proposed work location.

**Mammals**

Mammals present are generally characteristic of the Taiga Cordillera Ecozone and typical mega-fauna present includes caribou, grizzly and black bear, dall's sheep, mountain goats, moose, beaver, fox, and wolf. The only mammal species on the SARA list which occurs in the project area is the Woodland Caribou (Northern Mountain Population).

Woodland caribou occurring in the Glacier Lake area belong to the South Nahanni herd, which is part of a group of herds known as the Nahanni complex. Data gathered from traditional knowledge, staff observations, remote cameras and satellite collar based monitoring of the South Nahanni herd demonstrates a routine pattern of spring and fall migration along the South Nahanni River valley, with established summer and winter ranges. These more sensitive summer and winter habitats are west and east of the project area, respectively. Observations of caribou in the Glacier Lake area are almost exclusively limited to the spring migration period, and Glacier Lake is not within the primary migration corridor of the South Nahanni herd, therefore occurrences of caribou in the Glacier Lake area are relatively few.

**Human Environment**

The proposed development is located in Nahanni National Park Reserve, in the Dehcho region of the Southwest Northwest Territories. Originally established in 1976, the park protects a vast wilderness that has always been home to the Dehcho Dene, and more recently has become an icon for canoeists, who come to experience the white water, canyons, waterfalls, hot springs and caves. Nahanni received roughly 809 visitors in 2014, of which and estimated 62 groups visited the Glacier Lake area. Park users visiting the Glacier Lake area are often climbers who remain in the Cirque of the Unclimbables area for weeks at a time. As a result, the number of visitor use days is relatively high (~1134 in 2014), making it one of the most heavily used areas of the park.

The area surrounding Glacier Lake has a long history of human use, particularly the Frost Creek and Cirque of the Unclimbables areas. Archaeological evidence found in the Cirque of the Unclimbables has demonstrated pre-contact use, and post-contact records document visitation since at least 1934 when the Glacier Lake area was a hotbed of botanical and geological studies. Climbers began visiting the area in the 1950's beginning with an American expedition led by Andrew Wexler whose party accomplished 17 first ascents in the area. River trippers began appearing on the scene in the 1960's, side-tripping to the Glacier Lake area while on their voyages down the South Nahanni River.

There are no major permanent human settlements in the ecoregion.

**15. METHODOLOGY (optional)**

N/A

**16. ENVIRONMENTAL EFFECTS**

Potential adverse effects associated with this project are:

**Wildlife**

1. Loss of habitat due to removal of food or cover
2. Impeded/altered wildlife movement due to encroachment on wildlife movement corridors, creation of barriers to wildlife movement, habitat fragmentation
3. Damage to nests and/or disruption of nesting birds

4. Presence of workers and noise associated with the installation may disturb wildlife in the area.
5. The installation period may coincide with the calving period of some species of wildlife which may use this area

#### **Species at Risk**

1. The project falls within the known range of the following species identified in schedule 1 of the Species at Risk Act:
  - Olive-sided flycatcher – Threatened
  - Common nighthawk - Threatened
  - Peregrine falcon - Special concern
  - Rusty blackbird - Special concern
  - Short-eared owl - Special concern
  - Woodland caribou (northern mountain population) - Special concern
2. The project is within the summer and rut range of the South Nahanni caribou herd, which has been identified as an “important wildlife area”.

#### **Vegetation and Soils**

1. Damage to and/or removal of vegetation in immediate or adjacent areas
2. Introduction of non-native invasive plant species
3. Damage to and/or removal of soil in immediate or adjacent area

#### **Aquatics/Hydrological resources**

1. Reduced water quality in nearby waterbodies due to contaminated surface water input from accidental fuel leaks or spills

#### **Cultural/Archaeological resources**

1. Loss or disruption of heritage and/or archaeological features, including cultural landscapes, archaeological sites and artefacts

#### **Pollution**

1. Soil, vegetation, or water contamination due to accidental fuel leaks or spills

#### **Public Safety**

1. Injuries to public and workers arising from human-wildlife conflicts
2. Injuries to the public arising from a work-site accident

#### **Socio-economic Resources**

1. Disruption to park visitors due to noise arising from project installation
2. Disruption to park visitors due to crew monopolization of the campground

#### **Aboriginal land use:**

1. No impacts expected. Construction is low in complexity and will be completed in relatively short order. Disturbances to traditional harvesting practices are expected to be negligible.

### **17. MITIGATING MEASURES**

See Appendix A below

**18. RESIDUAL EFFECTS**

Residual effects are as follows:

- A 34 ft x 24 ft area will be cleared and maintained free of vegetation
- A 26 ft x 16 ft single story shelter will be built and maintained for decades
- 5 bear-proof storage lockers will be placed on the exterior of the building, within the established footprint- these lockers will remain for the lifetime of the shelter.
- By increasing the quality of visitor experience for park users, building a shelter at the Frost Creek Campground may have the residual effect of increasing overall visitor traffic and associated human-use impacts to the area.

**19. CUMULATIVE EFFECTS**

Multiple developments were undertaken in the Glacier Lake area in 2014, including a radio repeater tower installation on Mount Ida (see Preliminary Screening Report # NNPMVRMA-2014001), a green throne privy installation in the Frost Creek Campground, trail improvements to the Fairy Meadows Access Trail, and a fly-out barrel privy installation in the Fairy Meadows Campground (see Preliminary Screening Report # NNPMVRMA-2014002). The proposed Frost Creek Campground shelter development will increase the number of human-created developments in the Glacier Lake area. Increasing the number of developments could diminish the atmosphere of remote wilderness which some users seek to find in this area.

Along with the 2014 developments, the proposed Frost Creek Campground shelter development will enhance visitor experience and visitor safety in the Glacier Lake area. As result, visitation to the area may increase, which is consistent with NNPR’s goal of encouraging exploration and discovery of the park by visitors as outlined in the 2010 Naha Dehe Management Plan.

Overall, the anticipated cumulative result of the additional shelter development is a net reduction in human use impacts to the Frost Creek area. By properly securing wildlife attractants, human-wildlife conflict potential is reduced and animal welfare is improved. Every effort has been and will continue to be made to preserve the integrity of the wilderness experience of the area.

**20. PUBLIC CONSULTATION/PARTICIPATION**

<input type="checkbox"/>	Development description was not circulated to interested parties (state why, below)
<input checked="" type="checkbox"/>	Development description was circulated to interested parties (identify parties & summarize response)
<input type="checkbox"/>	Additional consultation was undertaken on the project (describe below)

**Parties invited to comment on development description**

- Air Tindi
- Alpine Aviation
- Black Feather Wilderness Adventure Company
- Black Sheep Aviation
- Dehcho First Nations
- Environment Canada – Environmental Assessment North
- Government of the Northwest Territories Department of Lands – Dehcho Region
- Great Slave Helicopters
- Heli Dynamics
- Liard Air
- Liidlii Kue First Nations
- Kecoa Heli (Tundra Helicopters)
- Kluane Airways



Mackenzie Valley Land and Water Board  
Mackenzie Valley Review Board  
Ft. Simpson Metis  
Nahanni River Adventures  
Nahanni Wilderness Adventures  
Naha Dehe Dene Band  
North Wright Airways  
Simpson Air  
Solitude Excursions  
South Nahanni Air  
Summit Air  
Trans North Helicopters  
Wolverine Air

**Comments from parties and approach for addressing comments (Summary only)**

Comments received

During the commenting period from May 5 to May 26<sup>th</sup>, 2015 Parks Canada received a total of three responses:

- 1) Bradley Summerfield, Environmental Assessment Coordinator for Environment Canada responded to state that he had reviewed the proposal and found no reason for concern.
- 2) David Hibbard, owner and operator of Nahanni Wilderness Adventures responded to express some concerns he had with the project (summarized below).
- 3) Sunny Peterson, owner and operator of South Nahanni Outfitters responded to state that he concurs with the concerns raised by David Hibbard.

Parks Canada sent a response to both David Hibbard and Sunny Peterson, addressing each of the concerns which had been raised. No further communications were received from either party.

Parks Canada Response to David Hibbard and Sunny Peterson

*Concern: Concern with the building of shelters or cabins anywhere on Glacier Lake.*

*Response: The building of a storage shelter at the Frost Creek Campground will provide for the proper containment of visitor supplies. Currently there is no secure storage option and the accessibility of wildlife attractants poses a risk to both visitors and wildlife.*

*Concern: Given a proper outhouse and food cache groups passing through the Frost Creek site will be equally served as others hikers are in hundreds of camp-sites throughout the National Parks. Human impact will be satisfactorily addressed with these minor additions to the site.*

*Response: The Frost Creek Campground presents unique challenges when compared with other campgrounds in the National Parks System. The location serves as a staging area for users (primarily climbers) who visit the nearby Cirque of Unclimbables, often for weeks at a time. Given the duration of their stay it is not feasible for these visitors to carry all of their supplies into the Cirque and therefore they require a secure storage area for food and gear.*

*In the absence of proper storage area visitors may improvise storage solutions for themselves, increasing the human use footprint of the area and potentially increasing the wildlife hazard if food is not adequately secured.*

Concern: *Visitors are attracted to Glacier Lake and the Cirque area because they perceived the region to offer a wilderness experience on a deeper level than what the main river corridor now affords.*

Response: Parks Canada is committed to preserving the remote wilderness character of the Glacier Lake Area. All efforts will be made to minimize the impact on the wilderness aesthetics of the area. The shelter is rustic by design and will be located in an unobtrusive location. Local vegetation will be managed to balance the aesthetics, safety and functionality of the site.

Concern: *Adding a permanent kitchen structure to the Frost Creek camp-site will be detrimental on the whole as it is for a 'sense of wilderness' people come searching to this part of the Nahanni.*

Response: The Frost Creek Campground Shelter is not intended to be a cooking area. The primary function of the shelter is as a storage area; however, Parks Canada believes making the shelter available for day use will result in a net-benefit for visitors by facilitating their enjoyment of the area without any additional loss to the wilderness character of the area.

Reasons for decision

It is Parks Canada's opinion that because the number of parties expressing concern is low and because the concerns expressed have been justifiably addressed that the potential for public concern is negligible.

**REASONS FOR DECISION – POTENTIAL FOR PUBLIC CONCERN**

<input checked="" type="checkbox"/>	There is no likelihood that the proposed development might be a cause of public concern.
<input type="checkbox"/>	The proposed development might be the cause of public concern, and the proposal should be referred to the Mackenzie Valley Environmental Impact Review Board for environmental assessment.

**21. REASONS FOR DECISION – POTENTIAL FOR SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS**

Taking into account the implementation of the proposed mitigation measures, the proposed development of a day use shelter at the Frost Creek Campground is not likely to cause significant adverse environmental effects to the ecological and/or cultural integrity of Nahanni National Park Reserve.

The proposed developments are consistent with the Naha Dehe Management Plan (2010) to promote visitor experience opportunities in the expansion area. This is also consistent with corporate direction to increase visitation in National Parks.

<input checked="" type="checkbox"/>	There is no likelihood that the proposed development might have a significant adverse impact on the environment.
<input type="checkbox"/>	The proposed development might have a significant adverse impact on the environment and the proposal should be referred to the Mackenzie Valley Environmental Impact Review Board for environmental assessment.

**22. FOLLOW-UP**

<input type="checkbox"/>	A follow-up program will not be conducted
<input checked="" type="checkbox"/>	A follow-up program will be conducted (state the reason(s) for the follow-up program in the space below)

The proposed developments will be monitored by park staff whenever they are in the Glacier Lake area (annually at

minimum); any new adverse effects or potential for adverse effects will be noted, reported and addressed in a timely manner.

**23. SPECIES AT RISK MONITORING**

<input checked="" type="checkbox"/>	Species at risk monitoring is not required
<input type="checkbox"/>	Species at risk monitoring is required and is compatible with the applicable recovery strategy or action plan

**24. SURVEILLANCE**

<input checked="" type="checkbox"/>	Surveillance monitoring is not required
<input type="checkbox"/>	Surveillance monitoring is required (provide surveillance contact and surveillance details below)

**25. REFERENCES**

Ecological Stratification Working Group. 1995. A National Ecological Framework for Canada. Agriculture and Agri-Food Canada, Research Branch, Centre for Land and Biological Resources Research and Environment Canada, State of the Environment Directorate, Ecozone Analysis Branch, Ottawa/Hull.

Ecosystem Classification Group. 2010. Ecological Regions of the Northwest Territories – Cordillera. Department of Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, NT, Canada.

National Parks Building Regulations, current to April 22, 2015

National Parks General Regulations, current to April 22, 2015

Parks Canada. 2010. Naha Dehe Management Plan.

Preliminary Screening Requirement Regulations, Dec 16, 1998 (current to April 22, 2015)

Zier-Vogel A. 2014. Mackenzie Valley Resource Management Act Preliminary Screening Report # NNPMVRMA-2014001: Mount Ida Radio Repeater System Expansion. Parks Canada Agency.

Zier-Vogel A. 2014. Mackenzie Valley Resource Management Act Preliminary Screening Report # NNPMVRMA-2014002: Glacier Lake Area Developments: Frost Creek Privy, Fairy Meadows Privy, Fairy Meadows Trail Realignment. Parks Canada Agency.

**26. SIGNATURES**

**AUTHOR**

Signature: \_\_\_\_\_



Adam Zier-Vogel

Resource Management  
Technician

June 16, 2015

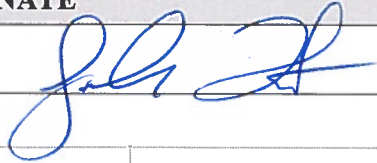
Name

Title

Date

**SUPERINTENDENT OR DESIGNATE**

Signature: \_\_\_\_\_



Jonathan Tsetso

Acting Superintendent

June 16, 2015

Name

Title

Date

**27. LIST OF ATTACHMENTS**

N/A

## Appendix A: Mitigations

### Wildlife - General

- If wildlife are in the vicinity work will cease to allow wildlife time to move on. All wildlife observations will be recorded. If any species at risk are observed or suspected to be in the vicinity of the work area, stop work and report it immediately.
- Ensure no calving grounds or dens are near the site when conducting work.
- Minimize the impacts of noise on wildlife. Manage the timing and location of the work accordingly.
- Minimize barriers to movement including equipment and human presence during daylight hours.
- If clearing must take place during the breeding/nesting season, sweep for bird nests before commencing work. Clear only trees which can be confirmed not to contain nests during the nesting season. Young birds must be allowed to fledge before nests are disturbed. Work must not violate Section 6 of the *Migratory Birds Regulations*.
- Flights will be limited to reduce impacts to wildlife, including but not limited to, woodland caribou and Dall's sheep. Follow the protocols outlined in the Yukon Environment publications *Flying in Caribou Country* and *Flying in Sheep Country*.
- Aircraft will not make direct approaches towards wildlife, and circling will be avoided. At all times low flying will be avoided other than when absolutely required for safety reasons.
- Construction is low in complexity and will be completed in relatively short order. Disturbance to wildlife is expected to be negligible.

### Wildlife - Species at Risk

- Taking into account the implementation of the proposed mitigation measures for wildlife and the low probability of encountering any of the described species at risk with regards to the scope of factors, there are no perceived significant impacts to species at risk from the proposed activities.

### Vegetation and Soils

- All vegetation debris will be laid flat and spread into less visible areas at least 5m from the edge of trails/facilities to aid decomposition and to avoid increasing fire hazards.
- Slash will be sufficiently scattered to avoid accumulations exceeding 5cm in depth.
- Minimize the potential for over cutting. Delineate work areas with high visibility marking methods. Retain vegetation where possible, especially trees and shrubs.
- Minimize damage to trees and roots on the edges of the cleared area.
- Clean any equipment coming from outside the park to ensure that no non-native species seeds are spread to backcountry.
- Use existing trails for site access and travel within the site.
- Maintain positive drainage and de-water as required to minimize soil erosion.

### Aquatics/Hydrological resources

- No rock, silt, cement, grout, asphalt, petroleum product, lumber, vegetation, domestic waste, or any deleterious substance shall be placed or allowed to disperse into any stream, river, pond, wetland, lake or other water course.
- Avoid work in high risk areas, particularly in areas of high water table, steeply sloped sites or in close proximity to streams.

#### Cultural/Archaeological resources

- Ensure measures are taken to protect known cultural resources in the area.
- If archaeological artifacts are discovered, stop work and report it immediately.

#### Pollution

- Ensure that environmentally appropriate materials are used
- Maintain all work sites in a clean and tidy condition, free from the accumulation of waste materials, debris and litter
- Prepare an appropriate Spill Response Plan. All spills must be reported to Parks Canada via the Nahanni Duty Officer (emergency response 24 hrs daily from June to September).
- Spill contingency plans, equipment and supplies (to clean up 110% of the site's largest possible fuel/chemical spill) will be present on-site at all times and employees trained in their use. Personnel are to be trained in use of spill containment equipment.
- Refuel equipment carefully to avoid spillage. Spill kits will be present in the event that minor spills occur.
- Stationary fuel storage sites will be bermed with an impermeable liner or other appropriate secondary containment to contain 125% of the largest container of fuel anticipated.
- Fuel drums and jerry cans must be handled with care while transporting to and from fuel cache locations.
- Fuel containers must be cached in some type of secondary containment, unless otherwise authorized through a special fuel cache request.
- Clean up all spills immediately, as per the Spill Response Plan.
- Dispose of contaminated soil at certified disposal sites outside of the park boundaries.
- Ensure all construction equipment is in good working order and free of leaks from oil, fuel or hydraulic fuels.
- Where possible use the least harmful fuels, lubricants and other fluids in machinery and equipment.
- Follow the best practices identified by Parks Canada's guidelines for the use, handling and disposal of treated wood.
- All waste and surplus materials from the installation are to be removed from the site and disposed of at an approved waste facility.

#### Public Safety

- Ensure crews have received bear safety training and possess the necessary equipment to travel safely in bear country.
- Ensure that proper sightlines are maintained for approaching and using the shelter, food storage lockers, and fuel cache
- Strategic vegetation clearing (*e.g.* removal of buffalo berries) should be considered in nearby areas with high human/bear conflict potential.

Socio-economic Resources

- Crews will utilize existing campgrounds as much as possible. When in a designated campground, care will be taken to locate tents so as not to monopolise the entire site, leaving room for other campers.
- Minimize the impacts of noise on public enjoyment of the park. Manage the timing and location of the work accordingly.

Aboriginal land use:

- No impacts expected. Construction is low in complexity and will be completed in relatively short order. Disturbances to traditional harvesting practices are expected to be negligible.