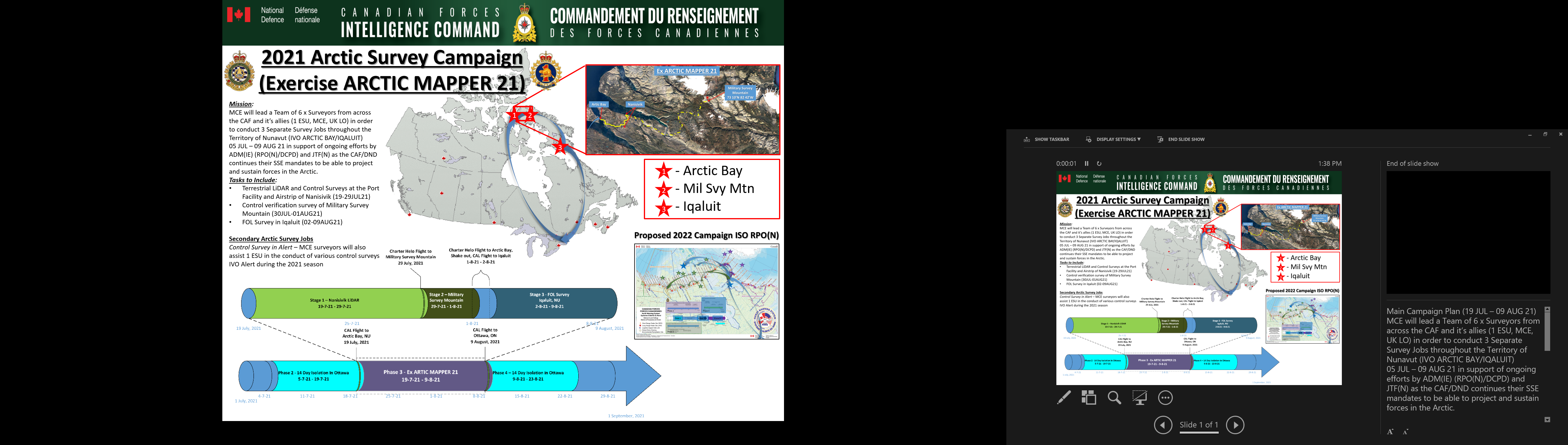
**2021 NORTHERN SURVEY CAMPAIGN**

**Exercise ARCTIC MAPPER 21**

**Nunavut**



**Applicant Name and Contact Information:**

Lieutenant-Colonel Mathieu Primeau, Commanding Officer

Mapping and Charting Establishment (MCE)

National Defense Headquarters,

101 Colonel By Drive, Ottawa, Ontario K1A 0K2

c/o

Major Shahab Rezaei-Zadeh

Email: [Shahab.Rezaei-Zadeh@forces.gc.ca](mailto:Shahab.Rezaei-Zadeh@forces.gc.ca)

Phone: (613) 995-8936

Fax: (613) 995-4359

**Co-applicant Name and Contact information:**

Major Andrew Colpitts, JEngr - Sp

Joint Task Force North (JTF(N))

Evans Building, 4816 49 St

Yellowknife, Northwest Territories X1A 2R3

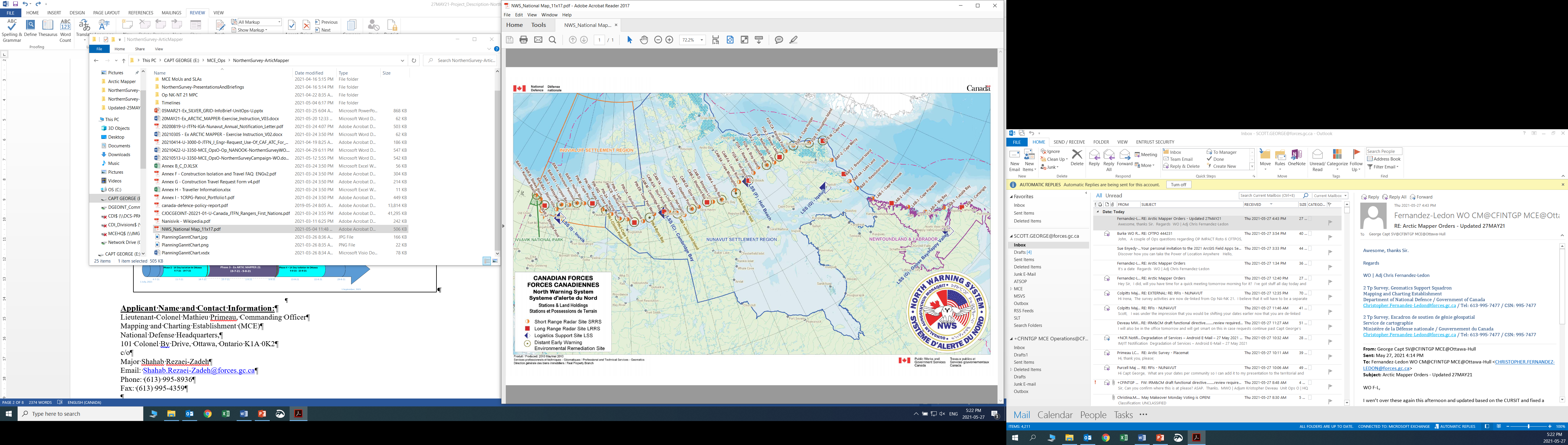
Email: [Andrew.Colpitts@forces.gc.ca](mailto:Andrew.Colpitts@forces.gc.ca)

Phone: (867) 873-0700 Ext 6029

Fax: (867) 766-6803

**GENERAL**

MCE in conjunction with 1 Engineer Support Unit (1 ESU) intend to conduct a Northern Survey Campaign from 19 July to 10 August 2021 from several locations throughout Nunavut. Initially the Team will stage out of Arctic Bay and commute to Nanisivik to conduct lidar and control surveys at the port facility and airstrip (approx. 19 – 29 Jul 21). The Team will then be flown to Military Survey Mountain at 73 10’N 82 42’W (approx. 30 Jul – 01 Aug 21) to conduct a control verification survey of the survey monument located at the site. Once this is completed the Team will return to Arctic Bay and immediately following they will be flown to Iqaluit (approx. 02 Aug 21) and will conduct an FOL Survey (02 – 09 Aug 21) before returning to Ottawa, ON. Figure 1 Depicts the Op Box for the Campaign out of Arctic Bay. The overall aim is to further enhance the Canadian Armed Forces’ (CAF) knowledge and capacity to operate in austere locations and challenging environments, while allowing the CAF to demonstrate their ability to effectively respond to safety and security issues in the Arctic.



72 00’N 80 00’W

74 00’N 86 00’W

*Figure 1. Area of Operations Ex ARCTIC MAPPER 21*

The 2021 Northern Survey Campaign (Ex ARCTIC MAPPER 21) will be conducted through terrestrial surveys of the Port Facility and Airstrip of Nanisivik, Military Survey Mountain (73⸰10’N 82⸰42’W) in Sirmilik National Park, and finally an FOL Survey in Iqaluit. It will involve a core team of 6 x Personnel who will stage their operations out of Arctic Bay and Iqaluit, NU.

**LAND BASED MOVEMENTS**

In Arctic Bay (Unless the facilities at Nanisivik are opened), the Team is intending to arrive via CAL on 20 Jul 21 and stay in the RCMP facility and commuting daily to the Nanisivik sites via rented pick-up or ATV until all survey data collection is completed. On 30 Jul 21, the team will be chartered by helicopter (either out of Arctic Bay or Nanisivik) to Military Survey Mountain to conduct their Control verification survey. At this time, the type of airframe to be used is undetermined but it will require access to Sirmilik National Park. The airframe itself will likely be chartered out of Logistics Support Site (LSS) Hall Beach. The same Airframe will return 01 Aug 21 to return the Team to Arctic Bay/Nanisivik where the team will return to their accommodations and prepare for transit via CAL to Iqaluit 02 Aug 21. There is no intent to have weapons involved with the team so 1 CRPG support for animal control will be required throughout this portion of their activities.

Approximately 02 – 09 Aug 21, the team will conduct an FOL Survey on the facilities in Iqaluit. One of the team members will be departing the group in order to return to Ottawa, ON, so the team working in Iqaluit will be composed of 5 personnel. As this will be in the vicinity of the built up area 1 CRPG support will not be requested or required.

All of the activities (save the overnight excursion to Military Survey Mountain) will be conducted out of established facilities so there will be no requirement for any type of formal Bivouac sites to be established. As access to Sirmilik National Park will require formal authorization, it is currently being sought through JTF(N) and the Nunavut Territorial Government.

AIR OPERATIONS

At this time the airframe to be used for transporting the team to Military Survey Mountain has yet to be identified; however, all other air movements will be through CAL to the airstrips at Arctic Bay and Iqaluit.

ENVIRONMENTAL CONSIDERATIONS

All activity conducted in this area is assessed as low impact and any wildlife sightings will be recorded and reported.

It is important to note the Department of National Defence/Canadian Armed Forces operates under strict environmental guidelines. In and out clearances will be conducted at each location used for resupply or bed down. Digital images of locations will be taken during and after use and will be included in the Post-Operation In/Out Clearance Report.

The permitting process requires detailed information regarding the nature and locations of the operation, and the information contained in the following document is all known information at the time of production. Minor variances may occur during the conduct of the operation.

The following is a list of potential impacts which could result from the proposed activities:

Activity and vehicle traffic from the proposed activities is expected to increase ambient noise levels and may also cause minor disturbance to the wildlife within the vicinity of activity locations. However, since all activities will be temporary, impacts are expected to be minimal.

Vehicles involved in in the campaign will release particulate into the atmosphere and contribute to greenhouse gas emissions. Air quality in the vicinity of activities may be temporarily reduced due to the increased fumes. However, due to the relatively short duration of the activity, and the use of new, lower emission vehicles, impacts to the atmosphere are expected to be minimal.

Despite direction to ensure all waste material is to be properly contained and transported back for disposal, the potential exists for waste material produced during the survey campaign to litter property or be windblown onto surrounding locations. However, every effort will be made to ensure this does not happen; therefore, the impact is considered to be easily mitigated and insignificant.

Should a fuel leak and/or spill occur from vehicles, equipment, etc, the possibility exists for contamination of ground water resources, soil and/or surface water. However, when traveling outside of the staging areas (i.e. Arctic Bay/Iqaluit) will have spill cleanup supplies, and will be instructed on their use; therefore, the potential for a malfunction and/or accident to cause any significant impact is low.

While there is potential for activities to impact the environment, mitigation measures have been established to minimize their significance. These mitigation measures include, but are not limited, to:

An environmental brief will be provided to personnel involved in the exercise to ensure they have the required general level of environmental awareness and knowledge, and are aware of requirements related to wildlife prevention, response and reporting.

Vehicle movement will be restricted in sensitive areas. In the event established trails are impassable, personnel will be instructed to use alternate routes for as limited a distance as necessary.

Individuals will be tasked to ensure waste material and litter is collected on the site prior to departing work locations. All waste produced on site will be packed out to Arctic Bay/Iqaluit for proper disposal.

In order to prevent any unnecessary wildlife encounters, all waste will be appropriately contained, stored and removed from the sites as soon as possible.

All caribou will be avoided and not disturbed in any way.

Personnel will be made aware of the potential for threats from local wildlife and instructed to avoid encounters or disrupt any wildlife unless absolutely necessary. For the Nanisivik activities, the team will directly follow the instructions provided by 1 CRPG.

Local treatment systems and municipal landfill or incineration will be used for the disposal of human waste. Waste generated during foot patrols or when municipal services are otherwise unavailable, will be bagged and packed out for appropriate disposal;

Local landfill or incineration will be used for the disposal of combustible waste. Disposal will occur in accordance with territorial and municipal regulations (waste will be handled by contract);

Local landfill, incineration or recycling centers, where available, will be used for the disposal of non-combustible wastes. Disposal will occur in accordance with territorial and municipal requirements (waste will be handled and disposed by contract);

All noise making activities will be limited as much as possible.

Vehicles and equipment will be maintained in good repair to prevent leakage of fuel, oil, etc.

When in Arctic Bay/Iqaluit, all vehicle/equipment refueling will occur in a central location.

Use of spill containment items including drip pans or mobile plastic berms will be maximized during refueling.

All hazardous materials (HAZMAT) and fuel will be stored in approved storage containers and facilities, including compliant secondary containment and will be stored in accordance with municipal, territorial, and federal regulations;

HAZMAT waste will be appropriately packaged and transported to a suitable facility for disposal, in accordance with appropriate regulations – provided by a third party waste disposal facility if required; and,

Photographs will be taken of austere camp locations (Military Survey Mountain) before, during and after use.

Based on all of the information available regarding the proposed survey campaign and the surrounding environment, if designed and carried out using the knowledge of the local 1 CRPG members in addition to the identified mitigation measures, and follow-up programs and monitoring, the Northern Survey Campaign is not likely to cause any significant effect on the environment.

LOCATIONS

Table 1. Op Box Coordinates, Northern Survey Campaign (Ex ARTIC MAPPER)

|  |  |  |  |
| --- | --- | --- | --- |
| **Op Box Corner Coordinates** | | | |
| **Location** | **Corner** | **Latitude** | **Longitude** |
| Resolute Bay Op Box | N/W | 74⸰N | 86⸰W |
| S/E | 72⸰N | 80⸰W |
| Iqaluit | FOL | 63⸰45’N | 68⸰31’W |

PERSONNEL

Table 2. Estimated number of person-days (number of people per day multiplied by the number of days).

|  |  |  |
| --- | --- | --- |
| **Personnel on the Land** | **19 JUL – 09 AUG 21** | **Total Person Days** |
| Arctic Bay | 6 | 90 |
| Iqaluit | 5 (One individual will return home following Arctic Bay activities) | 35 |

FUEL AND HAZMAT INVOLVED

Table 4. Fuel used during the operation.

|  |  |
| --- | --- |
| **Location** | **Gasoline (Rental Pick-Up / ATV)** |
| Arctic Bay | Volume will be locally purchased based on requirements |

MAJOR EQUIPMENT INVOLVED

All equipment usage will be based off of local availability. No additional Major Equipment will be brought into the area to support the campaign.

WATER AND WASTE

Table 6. Wastes produced and methods of disposal

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of waste** | **Projected amount generated** | **Method of Disposal** | **Additional treatment procedures** |
| Garbage | 20 L/Day | Garbage produced will be disposed of via existing infrastructure. | Nil |
| Sewage (human waste) | 10 L/day | Human waste produced in the field will be collected (bagged) and shipped south for proper disposal. | Nil |
| Greywater | 20 L/day | Greywater produced will be disposed of via existing infrastructure. | Nil |

INUIT OWNED LAND PARCELS

Parcels of Inuit Owned Land in the vicinity of Artic Bay/Nanisivik may be directly or indirectly impacted during the conduct of the survey campaign, or similar activities from 20 Jul to 03 Aug 2021. Agreements for the use of Inuit owned lands being used will be put into place.

SIRMILIK National Park

The survey team will require and is currently requesting access to Sirmilik National Park in order to conduct the control verification Survey of Military Survey Mountain (73⸰10’N 82⸰42’W).

CONCLUSION

The information provided is the most accurate information available at this time, and dates and locations may change slightly due to unpredictable circumstances such as weather. Regardless of circumstance, the CAF is accountable and committed to environmental stewardship, and will conduct the campaign with due diligence towards the environment.