Range and Training Area – Thunder Bay Region

Executive Summary

Developed by

Department of National Defence
Land Force Western Area
10305 152nd Ave
Edmonton AB T5E 2S2

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Introduction

This executive summary document the key points contained in the Project Description for the project Range and Training Area – Thunder Bay Region being proposed by the Department of National Defence, Land Force Western Area. For further information please refer to the Project Description for this project.

1. Project Information

Name of the Project

Range and Training Area - Thunder Bay Region

General Information

A lack of range and training area in North-Western Ontario has impacted the training capability for 38 Canadian Brigade Group Reserve Units and the Naval Reserve Unit HMCS Griffon who are situated in Thunder Bay Ontario. In order to rectify this deficiency, the Department of National Defence (DND) has proposed the construction of a 600 m conventional small arms range with an adjacent training area within a 200 km radius of the municipality of Thunder Bay, Ontario.

Project location

The proposed project location is part of the Abitibi Freehold Block 4, located approximately 15 km East of Upsala, Ontario (Figure 1). The distance of this property from Thunder Bay is approximately 135 km depending on which access point is used to enter the property. The parcel of land is approximately 22 km^2, bounded on the west side by Langworthy Township, and on the south by Savanne Township and on the north and east by the abandoned Grand Trunk Pacific rail bed now known as the Buchanan Forest Products (BFP) private road.

2. Contact Information

Name of the Proponent

The proponent for this project is the Department of National Defence - Land Forces Western Area. The Canadian Army is located throughout Canada; however this particular project is the responsibility of Land Forces Western Area, one of four Army Areas in Canada. For more information on the Canadian Army please consult http://www.army.forces.gc.ca/land-terre/home-accueil-eng.asp.

Address of Proponent

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Contacts

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3. Consultation

Public Consultation

DND initiated consultation on the Project with local communities in November 2012. Community open houses were held on November 9, 2012 in Upsala, Ontario and on November 10, 2012 in Thunder Bay, Ontario. Notifications of the open houses were published in the November 3, 2012 edition of the Thunder Bay Chronicle-Journal. Post card invitations were also mailed to individuals on the Project distribution list and through Canada Post's unaddressed ad-mail system to residents around the Project site and the community of Upsala.

There were 12 attendees at the community open house in Upsala. The Thunder Bay community open house was held in conjunction with the local Veteran's Week activities. There were a number of individuals that visited the session and 17 individuals signed up to be placed on the Project distribution list. The open houses consisted of 17 poster boards covering various aspects of the Project. Attendees were invited to view the information and have their questions answered by members of the Project team.

Comment Forms were also made available to each attendee and Project representatives encouraged attendees to complete the forms. There were no comment forms completed and returned during the Upsala session and 3 comment forms completed and returned during the Thunder Bay session. A number of attendees at both sessions took copies of the Comment Forms with them to review and share with others. Contact details were provided on the Comment Forms for individuals to send back. Overall feedback to the proposed Project was positive. There was some concern identified by individuals from the Upsala community session regarding use of privately-owned (American company) land (would prefer to see use of Crown land) and road (concern about quality and safety of the access road). Individuals identified an alternative road for access to the Project site. Concerns about the potential impact to wildlife and Species at Risk as well as potential impacts to other uses such as blueberry picking were also expressed.

Aboriginal Engagement

DND has initiated engagement with Lac des Mille Lac First Nation (LDML). The engagement began with a conference call between LDML, DND and the Canadian Environmental Assessment Agency (Agency) on October 18, 2012. During this conference call, DND provided an overview of the Project and the studies that were being completed to support the Project. LDML identified two potential areas of concern, including:

1. Potential impact of the RTA on wildlife in that area and subsequently the potential impact on big game hunting; and

2. Potential impact of the RTA on water.

It was identified that the second concern (potential impact on water) is likely no longer of concern as there are no waterways of use or interest at the proposed site.

As a result of the initial October 18, 2012 discussion, a face-to-face meeting was held in Thunder Bay on November 8, 2012. LDML identified that there are no known values on the proposed Project site known at this time. The LDML have used the region generally for hunting and gathering; and are continuing to research its history. LDML identified a concern in relation to the potential impact on the moose hunting season (first Saturday in October to December 15, annually). The concern relates also to the Savanne River Resort that has had success in attracting hunters. LDML identified that their preference would be to keep the range quiet during the first two weeks of moose hunting. DND can facilitate this request by closing the small arms range to live fire during this period. Information on this closure will be included in the Range Standing Orders. LDML also identified that they are no longer concerned about potential impacts to water based on information provided.

DND has contacted the Métis Nation of Ontario (MNO) about the Project. The MNO have confirmed (by letter) that they have no concerns about the project and do not wish to be involved in any further discussions.

Federal Department Consultation

CEAA on behalf of DND contacted members of the federal family on the 19 January 2012 to determine their interest in the project. These members included: Fisheries and Oceans Canada (DFO) and Environment Canada (EC), Transport Canada, Health Canada, Natural Resources Canada (NR Can), and Ontario's Ministry of Natural Resources (MNO). As a result of this initial contact, EC provided DND with an updated protocol for the survey of the Whip-poor-will on the project location and recommended that targeted monitoring surveys for Common Nighthawk be included as part of the follow-up program.

On the 5th of November 2012, DND conducted a teleconference with members from the Canadian Environment Assessment Agency (CEAA), Fisheries and Oceans Canada (DFO) and Environment Canada (EC). During this discussion, DND further outlined the Project, and discussed the Environmental Studies which had been conducted during the summer of 2012.

During this discussion DFO, discussed the importance of maintaining flow and characteristics of wetlands and ephemeral streams, and the need to ensure that proper silt fencing is erected around stock piled soil and debris to prevent sediment transfer to water bodies.

EC discussed migratory and species at risk species with emphasis on the Common Nighthawk and continued monitoring of the site as part of the follow-up program, and whether the survey protocols had been used by DND's Contractor (AMEC). DND indicated that the protocol had been used.

4. Environmental Assessment Requirements

As there are no established range and training areas in North-western Ontario, the conventional 600 m small arms range and training area will be constructed outside an existing military base or training area and as such, this project is subject to section 22 of the Regulations Designating Physical Activities (SOR/2012-147) under the Canadian Environmental Assessment Act

(CEAA) 2012. The Department of National Defence is the proponent for this project and will be the sole financer for the construction, operation and maintenance of this project.

Regional Environmental Study

The proposed Project location is not located in an area that has been the subject of a regional environmental study.

Ontario Environmental Assessment Regime

Due to the range and training area's location in the province of Ontario, this project may also trigger Ontario's Environmental Assessment Act as it applies to enterprises, activities, proposals, plans or programs by provincial ministries, municipalities, and public bodies. During initial consultation with the Province of Ontario, it was determined that this project was unlikely to trigger that Act.

5. Project Context and Objectives

A training capability deficiency has been determined for 38 Canadian Brigade Group Reserve Units and the Naval Reserve who are situated in Thunder Bay Ontario. Specifically, the deficiency has been identified as a lack of suitable small arms range co-located Training Area within a reasonable commuting distance from Thunder Bay, Ontario. Currently, Thunder Bay units are forced to travel extended distances to conduct routine training in Shilo, Manitoba or travel to the United States of America to utilize training facilities at Camp Ripley in Minnesota.

DND has determined that it would need to acquire through lease or purchase a minimum of 12,000 hectares (ha) (12 km^2) of land in order to accommodate the Canadian Army training requirements. A portion of the land would be used to develop a 600 m conventional small arms range, with the remaining area devoted to a training area large enough to conduct mounted and dismounted military activities.

Failure to complete this Project will continue to result in an unacceptable status quo which would continue to hamper the Army's ability to force generate (hire and train) soldiers from the Thunder Bay area, and maintain their skills. The training that is conducted by these units is a prerequisite to achieving battle task standards which are required for the international deployment of personal.

The Thunder Bay Units, like all other Reserve units, contribute to the Canadian Forces' ability to accomplish all of the core missions identified within the Canada First Defence Strategy.

6. Regulatory Requirements

As there are no established range and training areas in North-western Ontario, the conventional 600 m small arms range and training area will be constructed outside an existing military base or training area and as such, this project is subject to section 22 of the Regulations Designating Physical Activities under the Canadian Environmental Assessment Act (CEAA) 2012. The Department of National Defence is the proponent for this project and will be the sole financer for the construction, operation and maintenance of this project.

7. Project Components

The proposed project will require the development of a 600 m conventional small arms range which will be co-located with an administration area. The administrative area contains administrative and maintenance buildings, parking lots, and access to training facilities. The remainder of the property will be used for the training area. For more information on the project components, consult the Project Description for this project.

Administration Area

Administration Building**.** Structures will generally be of concrete block or similar construction materials and must meet all applicable Canadian building and safety codes. The building must be capable of accommodating approximately forty (40) personnel and be sited out of danger areas. Adjacent to the building will be a hard packed (gravel and soil mixed) parking lot that is approximately 100 m by 100 m.

Latrines. Latrine facilities are required on all permanent ranges intended for year round Use. Latrines will provide basic urinal, toilet, sink and potable water amenities, with basic toiletry and cleaning supplies. Rental portable toilets will be used in lieu of permanent facilities.

Roads: Access to the proposed location can be made from two locations from Highway 17 (Trans-Canada Highway) a primary highway going North-west. The southern access point will be to take Dog Pound Road (just north of Argon Ontario) to the BFP road. The Northern access would be from Concession Road 3 (primary road in the Upsala district) to either the Numack or Mack Road (both of which are tertiary roads) to the BFP road and enter the site location from the North. DND will have to ensure that access rights for the privately owned roads are received prior to use.

Access into the proposed site can be made at two points along the BFP road. Both entry points are already established, although the roads are not hardened. DND will need to review the road quality during the design phase of the project to determine if the entry points will need to be repaired or widened in order to allow safe access to the site. If the need for improvements is determined, mitigation and protection measures will in line with Ontario Provincial Standards and recommendations from DFO and EC.

DND is planning to use existing access roads to enter and exit the training area with limited improvements. However, if improvements, re-alignment, or expansion is required in order to allow safe access to the site and it is determined those culverts are required to maintain seasonal or permanent water flow, Ontario Provincial Standards Specifications will be used for their installation.

Communications. The primary means of communication between firing lines, or throughout the training areas will be by the use of the Iris Combat Net Radio (CNR). This system is employed domestically during training or operations throughout Canada. The systems are employed either vehicle mounted or carried in a man-pack. Motorola's or other off-the-shelf 2-way radio systems and cellular phones may also be used.

Electrical Lines. Electrical and communication lines will not be permanently installed at this location. Electricity will be generated by either a diesel (gas) generator installed on site, or a solar power generator system.

600 m Conventional Small Arms Range

Conventional small arms ranges are designed specifically for the conduct of marksmanship training and crew served weapon qualification. A conventional range is non-motorized and is constructed as a permanent facility with fixed firing points at 100 m intervals along a fixed firing axis and a stop butt. The plan for targetry on this range is to install small post holes in the ground that would allow for insertion of the target mounted on posts. Both the targets and posts would be constructed from wood.

Target Shack. The target shack will be co-located with the permanent facilities at 600 m conventional small arms range. These buildings will generally be constructed from concrete block or similar construction materials and must meet all applicable building and safety codes. The target shack shall be equipped with all necessary supplies, materials and tools for the construction and maintenance for the target type used on the range and when in use, fire fighting and first aid equipment will be available.

Fencing. Security fencing for the 600 m small arms range and administration area will be 3-strand barbed wire strung from 1.5 m (5') posts, approximately 2.4 m (8') apart. When the proper location of the fence, gate, corners, and posts has been determined, the locations will be staked out and 1.5 m (5') on both sides of the fence line will be cleared, grubbed, rough graded and cleaned up. Fencing will include bilingual signage.

Flags Lights and Flares. Ranges shall be marked by red flags on permanent poles at access points and as required at prominent locations during live firing training. At night red flares are used to signal live firing training in progress.

Training Facilities

Rappel Tower. Rappel towers are designed to simulate the effects of height and structure to practice rope descent techniques prior to conducting descents from buildings, rock faces or helicopters. Rappel towers include a low-wall rappel station and a high-wall rappel station and a free rappel station. Rappel towers are 12 m (40') with a landing zone that is covered to a depth of 300 mm layer of sand. The center of the site will be 400 mm of sand to allow for the drainage of water to the outer edges of the site.

Urban Operation Site. The urban operation site will be configured with 4-6 sea containers that are converted for use as training facilities. Each sea cans is 2.4 m wide by 6 m in length and 2.4 m tall. Sea cans may be configured as single story or multiple-story structures, with adjoining interior spaces to represent a realistic urban environment. Sea cans do not require foundations but should rest on a packed gravel bed with good drainage.

Training Area

The remainder of the property, commonly known as the training area, will be left in natural condition to allow for various mounted (on vehicles) and dismounted (on foot) military scenarios to occur. Small camps may be established on the site for short durations (less then 7 days); however no formal bivouac will be established. Riparian and streams will be identified as an out of bounds areas with signage to prevent access by military personnel or vehicles.

DND will install bilingual "warning" signs on the perimeter of the range to identify the boundaries and warn of the dangers of entering these areas. They will be posted on the boundaries, so as to be readily visible from any point outside the marked area, at barriers or gates, and at all junctions of the boundaries with rivers, lakes or tracks.

8. Production Capacity

There is no production capacity associated with this project.

9. Physical Works and Project Activities

The establishment of a 600 m conventional small arms range with an adjacent training area will require the construction of range facilities to support the use of the small arms range and ongoing military training. The specific infrastructure construction requirements to support military training are:

- 600 m small arms range with 15 firing lanes;
- Exterior lighting;
- Security fencing and gates;
- Range and training area signs;
- Administration building with limited interior division;
- Urban operations site;
- Rappel tower;
- Targetry shack;
- In and out roads or track routes; and
- Parking lot area.

The activities that will continue to occur on site after construction will include:

- Weapon Use. Firing of live ammunition on the 600m small arms range and firing of blank ammunition from currently used service weapons including: C7 5.56 mm service rifle (and its variants), C9 5.56 mm light machine-gun, and the 9 mm service pistol. Dud producing ammunition or pyrotechnics will not be authorized or used on this range.

- Individual Field craft. Use of the local environment and prefabricated equipment to camouflage vehicles, infrastructure and personnel. Use of the local environment may include limited removal of grasses, shrubs and trees by cutting or pulling.

- Offense/Defence Operations include Patrolling. Military personal must be skilled at confronting and protecting military assets. This is achieved by practicing offensive and defensive manoeuvres. These activities will be limited to the established training area and may include but are not limited to: installation and removal of defensive works (barbed wire, picket fences, trench systems), use of non-dud producing pyrotechnics (e.g. smoke grenades, and thunder flashes), establishment and removal of temporary field camps, winter operations (including the use of snowshoes, cross-country skis, toboggans, and construction of snow fortifications) and reconnaissance of the local area (cross-country).

- Vehicles. The military may use or contract several variants of vehicles to support their operation. Vehicles may include, but are not limited to, general civilian pattern cars/trucks, military pattern vehicles up to 10 tons, tractor-trailer, light/heavy vehicle recovery, commercial (tow-truck), snowplough, salt and sand spreader, all terrain vehicles (ATV) or over-snow vehicles (snowmobiles). These vehicles may navigate cross-country and access all areas of the RTA with the exception of the small arms range. The Department of National Defence has a policy that prohibits vehicle movement on, over or through riparian or stream habitats.

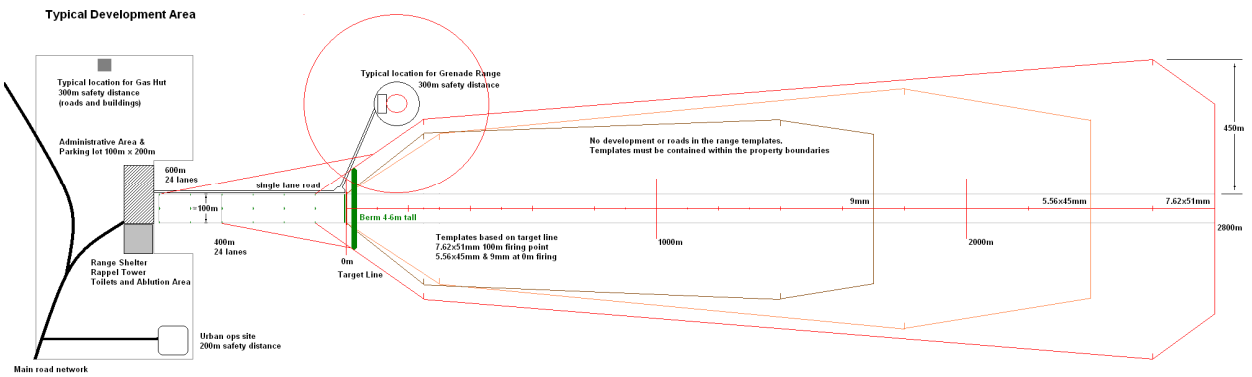

Figure 1. Typical development area and 600 m small arms range

Frequency of Use

As the proposed range and training area is being developed to support the reserve units of Thunder Bay, the anticipated use of the range will be primarily on Fridays, Saturdays and Sundays, with limited maintenance activities occurring during the weekdays. It may be possible that extended training activities (average of 7 days) could be conducted on the site once per year.

During discussions with the User Units in Thunder Bay, we are able to determine the expected use of the range and training area during the Reserves training year. The most frequent users are expected to be the Lake Superior Scottish Rifles who are typically accompanied and supported by other reserve units during their training activities (e.g. 38 Signal Regiment, and 18 Field Ambulance personnel).

The HMCS Griffon reserve personnel would be the most infrequent users of the range as they have different requirements for training. The Royal Canadian Navy direction for members to qualify on small arms C-7 service rifle, and C-9 machine gun once every 2 years, however the Ship's policy to qualify annually.

The Navy and Army Reserves in Thunder Bay both run High School Cooperative Education Programs which runs a Basic Military Qualification during the afternoons for high school credit from February to May. Several field training days are included in the curriculum for Students. Training on the RTA would be limited to use on weekends.

10. Project Wastes

Emissions, Discharges and Wastes

Range Contamination. Due to the firing of ammunition and non-dud producing pyrotechnics, the Department of National Defence expects that numerous particles will be released to the air and to the land. Releases of particles to the air include dioxins and furans, lead, carbon monoxide, sulphur dioxide, oxides of nitrogen, and particular matter. On site releases to land may be found on the firing line and/or impact areas and may include copper, zinc, and lead. The Canadian Army has been conducting several research projects over the past ten years to characterize contamination from ranges. The Department of National Defence intends to use the latest information from these studies to site the range so that the effects of firing will cause the least amount of impact to the immediate and surrounding area.

Dangerous Goods or Hazardous Materials. Dangerous goods or hazardous materials (e.g. petroleum, gas or lubricants) that are used or generated on the range will be removed by the user units and stored or disposed of as per existing contracts in Thunder Bay. Units will not be permitted to leave any dangerous goods or hazardous materials on site.

Any occurrences of products being spilled will be cleaned as per DND standard operating procedures which reflect the applicable federal and provincial requirements. Spill reporting will be done in accordance with provincial guidelines.

Solid Wastes. Solid wastes will be stored in bear-proof containers located in the bivouac areas and other strategic sites within the training area, where they will be subsequently collected and disposed. Removal of waste containers is to be conducted on a regular basis by contract and will commensurate with the training area usage. Solid waste will be disposed of according to all applicable provincial and federal guidelines and regulations. Burial of wastes, of any kind whatsoever, is prohibited by the department of National Defence Policies.

Excavation Requirements. Excavation on the site of the 600 m small arms range and administration area will likely be required. At this time it is unknown how much excavation will be required or where specifically it will be located. This information will be known after the geo-technical study for the site has been conducted. The Department of National Defence will then use this information to determine the location for the range. Excavation will likely include the removal of residual logging debris that has been left on site and soils. The logging debris will be disposed of through prescribed burning in accordance with provincial regulations including the development of a prescribed burn plan or will be moved to a suitable location on site. Burning of this material may cause localized air pollution through the release of particulate matter, and organic and inorganic compounds.

Dust from Roadway Use. Movement of military or civilian pattern vehicles travelling on gravelled or dirt roads will cause the release of dust particles which may be considered toxic under the Canadian Environmental Protection Act, 1999. Since this is a form or air pollution, it could affect the health of nearby inhabitants or workers. The Department of National Defence will monitor the road dust effects, and report its road dust releases to the National Pollutant Release Inventory administered by Environment Canada.

Monitoring of Environmental Effects

Range and Training Areas Sustainability System. The Department of National Defence will monitor the impact of disturbance from military activities from the start of construction and throughout the operation of the site by utilizing the Range and Training Areas Sustainability System, which has been developed by the Canadian Army. This system defines the process for selecting and developing environmental sustainability indicators to provide a snap-shot of the current environmental condition and highlight trends in environmental changes. As such, the indicators will facilitate proactive management decisions as changes to the value of an indicator can provide an early warning of adverse changes within the natural environment before unacceptable, and potentially irreversible, variation has occurred. For more information on the Range and Training Areas Sustainability System please consult the Project Description.

11. Schedule

Due to the high priority of this project by senior army commanders, an aggressive timeline for the establishment of the range has been established. The Department of National Defence is planning on initiating the design for the small arms range and training area during early 2013 Construction of the 600 m small arms range, administration area and training facilities is expected to be started in the fall of 2014 and completed by the spring of 2015. The range and training area is expected to be in operation for a minimum of 20 years and potentially longer. Once the site has been determined to be excess to the needs of the Department, the site will be decommissioned, remediated and reclaimed to the conditions stipulated in the licence agreement with Wagner Ontario Forest Management Limited. The detailed schedule for this project can be found in the Project Description.

12. Project Location

The proposed project location is part of the Abitibi Freehold Block 4, located approximately 15 km East of Upsala, Ontario (Figure 1). The distance of this property from Thunder Bay is approximately 135 km depending on which access point is used to enter the property. The parcel of land is approximately 22 km^2, bounded on the west side by Langworthy Township, and on the south by Savanne Township and on the north and east by the abandoned Grand Trunk Pacific rail bed now known as the Buchanan Forest Products (BFP) private road. Figure 1 provides a generalized map of the location.

The proposed project location coordinates are as follows:

	Latitude & Longitude	Degrees, Minutes, Seconds	Military Grid Reference System NAD 83 52G1
Northern Boundary	+49.09013 -90.393396	49°05' 24.4680" North 090°23' 36.2256 West	E 97600 N 41000
Eastern Boundary	+49.02351 -90.29291	49°01' 24.6360" North 090°17' 34.4760" West	E 97900 N 33600
Western Boundary	+49.02315 -90.20264	49°01' 23.3400" North 090°12' 09.5040" West	E 04500 N 33800

Land Ownership and Zoning of the Site

The site property is part of a set of 10 forestry management blocks that were originally granted to the Grand Trunk Pacific Railway Company as a construction subsidy for the railway by the Province of Ontario. From 1925 to 1951, 10 blocks were leased to Abitibi Price for forestry cutting. In 1951, these blocks were purchased by Abitibi Price as the Grand Trunk Pacific Railway Company was in receivership. In 1960, two of the blocks were returned to the Province of Ontario in exchange for cutting rights on the other eight blocks. In 2005, the remaining eight blocks (200,000 ha) were sold to North Star Forestry Limited, who now has the parcels managed by Wagner Ontario Forestry Management Limited. The site being proposed for the RTA is now known as the Voyager Tree Farm (West). This Freehold Block No. 4 has been logged since 2002, and is now considered to be 90% clear of merchantable timber. Ownership of the land is fee simple and includes the surface (cutting) and subsurface rights (ores, mines, minerals and aggregates), and land covered by water.

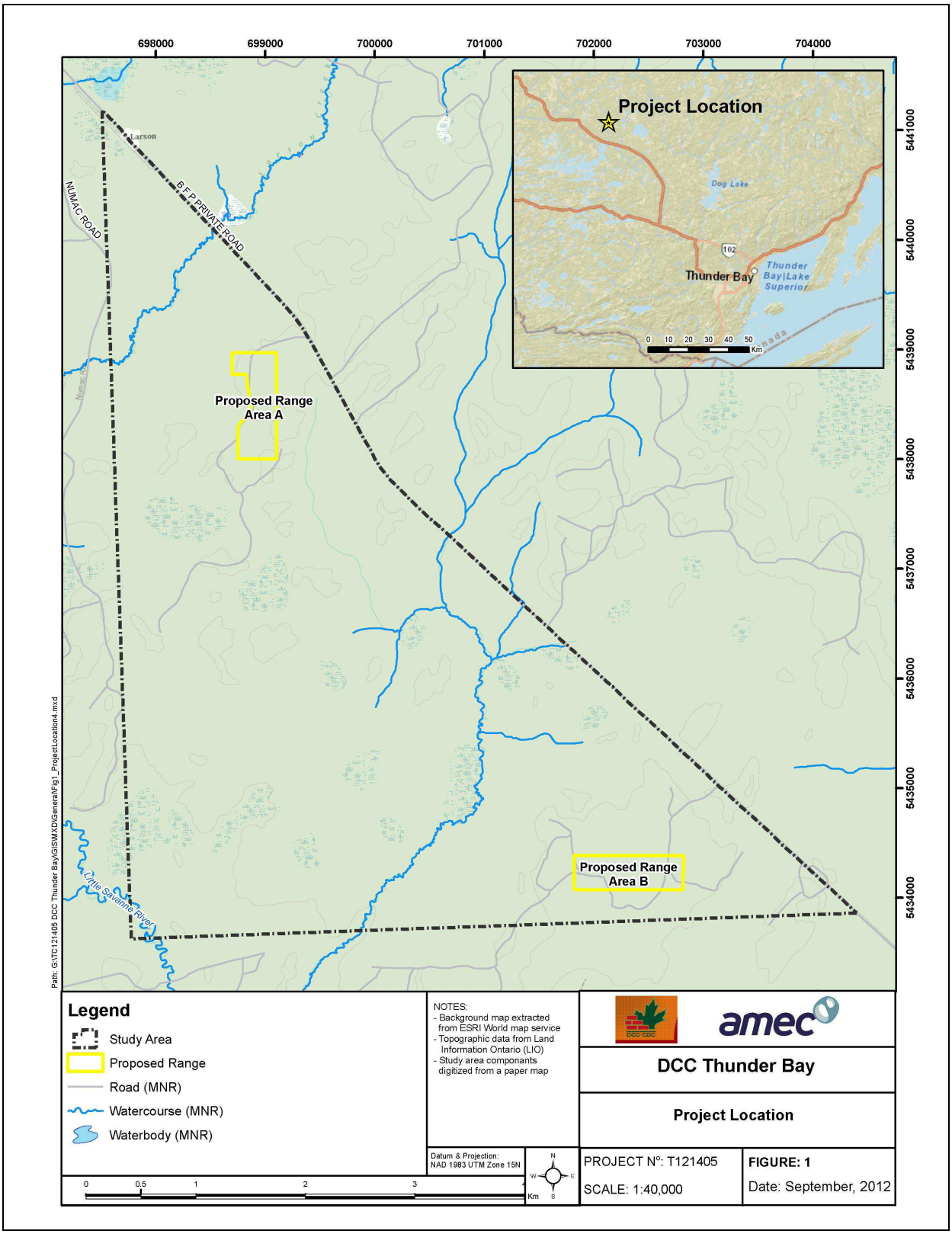

Figure 2. Proposed Project Location

Proximity to Other Projects and Residences

Other Project or Activities in the Area. The proposed location is collocated with the Abitibi Free hold block No. 4 which is owned and operated by the Wagner Ontario Forest Management Limited. Forestry activities are still occurring at this site. A review of other industrial activities for the region concluded that there are none in the immediate area that would be influenced or impact this project.

Residences and Recreational Activities. The proposed location is approximately 10 km from the Upsala Ontario municipal boundaries. Within a 10 km radius of the proposed location, there are several recreational resorts and fishing boat launches in the area (figure 3). However, they are on the southern side of highway 17, and should not be affected by the activities occurring on the proposed location. There is a small residential community just outside of Upsala, situated on Long Lake. Depending on road access to the potential site, this community will see limited increase in military traffic in the area, particularly on the weekends.

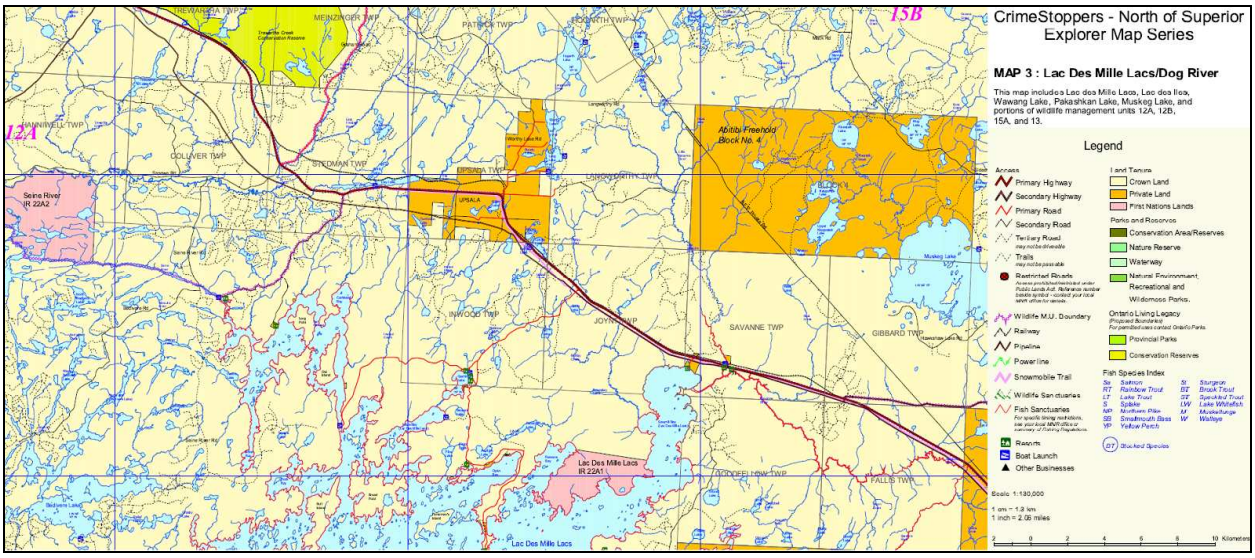

Figure 3. Regional Map Showing Proximity to Other Projects and Residences

First Nation Land Use. The LDML has approximately 560 registered Members who reside in and around Thunder Bay and is governed by a duly elected Chief and a three member Council. The LDML lands consist of two separate and distinct parcels of land approximately 30 km from the proposed site location. Due to extensive flooding during the 1950's, the Members of LDML were forced to abandon their community and take up residence elsewhere. Recently the LDML community has begun to re-establish their community and a new road and Round house has been developed. Near future development will see the construction of a community center with lodging for elders.

DND received a letter from the Métis Nation of Ontario (dated November 14, 2012) that identified that based on the information provided to them there would be nominal impacts by the Project on the Métis way of life with respect to land use.

13. Financial Support for the Project

The DND will be the sole provider for the funding for this Project. Funding will be provided by the Canadian Army for the construction, maintenance and decommissioning for this RTA.

14. Federal lands

The proposed Project is not located on or near any currently owned Federal or Provincial Properties.

15. Federal Authorizations

On the 5th of November 2012, DND conducted a teleconference with members from the Department of Fisheries and Oceans (DFO) and Environment Canada (EC). During this discussion, DND requested that DFO and EC provide them guidance on what permits would be required for this project during construction and operation of the Range.

Environment Canada indicated that a Species at Risk Act permit would be required for the Common Nighthawk during the construction of the range if it was conducted during the nesting season (June - August). Furthermore a permit would be required for the same species if they were found to be nesting on the range during the operation of the range during the same time period. EC recommended that an annual survey for the species be conducted to determine its presence on the range.

Environment Canada also indicated that a Migratory Bird Convention Act permit would be required during the construction of the range if the impact to migratory birds were not sufficiently mitigated though the EIS. It is DND's intent to construct the range outside of the breeding bird season to avoid impacts.

Based on the information that was provided to them, DFO does not believe that a permit to effect fisheries will be required as DND does not plan on crossing or utilizing the existing streams during the project lifecycle.

DND is subject to its own polices and regulation for the establishment and maintenance of RTAs and as such will also be responsible for attaining internal range use licences for this facility.

16. Physical and Biological Setting

Vegetation

Overall, a total of 151 vascular plant species were observed in the study area. The majority of plant species within the study area (85% of species) are provincially ranked as S5 (*Secure*) and globally ranked as G5 (*Very common*). Approximately 15% of the recorded species are exotic weeds, typically associated with roadsides and other disturbed habitats. No plant species of risk were recorded within the study area.

Six conifer dominated communities occur within the study area and comprise the vast majority of the intact forest. The most common of these communities is Black Spruce / Speckled Alder / *Sphagnum* (FEC code NW-V35) which covers 21% of the study area. One upland mixedwood community, Black Spruce Mixedwood / Herb Rich (FEC code NW-V19), was identified within the study area and is limited to 0.2% cover. Two distinguishable Speckled Alder Organic

Deciduous Shrub thicket communities (ELC code SWTO1-1) occur in the study area. Both of these communities represent wetland communities and are classified under CWCS as Slope Swamp (subform: *Drainageway Swamp*) and under OWES as tsS (tall shrub Swamp). Three regenerating community types occur in the study area and cover a total of 54%. The first of these communities is a Native Deciduous Regeneration Thicket Type (ELC code THDM4-1) which covers 41% of the study area. The other two of these regeneration communities are mixed conifer-deciduous stands which fall under the same community classification, Native Mixed Regeneration Thicket Type (ELC code THMM1-1) but are distinguishable based on species composition. This community covers 13% of the area.

Within some of the harvested areas, single scattered mature trees were retained. When pockets of these retained trees were larger than 0.5 ha, they were mapped as a "Retention Community" by Wagner Ontario Forestry Management Limited since, despite its mature canopy, the understory of these patches did not resemble that of a mature community, but rather had been influenced and overtaken by those ground layer species which favour disturbance and dominate in the regeneration areas. The patches of retained trees were either dominated by White Birch (code RT-BW), Trembling Aspen (code RT-PO), Black Spruce (code RT-SB), or Tamarack (RT-LA) and together cover 0.7% of the study area.

Further information and specific details on the vegetation communities that were identified on the project location can be found in the Project Description.

Terrain and Soil Conditions

The topography can be described as mainly moderate local relief undulating to rolling. The subordinate landform consists of mainly low local relief plain with dry to wet drainage conditions. Overall, the Project site is relatively flat with some muskeg/marshy areas scattered throughout.

The proposed RTA is located in the Canadian Shield physiographic region. The site is underlain by Neo- to Meso-Archean age bedrock consisting of massive to foliated granodiorite to granite in the northern portion of the study area, a band of foliated to massive tonalite to granodiorite in the central portion of the study area, and foliated to gneissic tonalite to granodiorite in the southern portion of the study area. Bedrock outcrops are common throughout the study area. Outcrops are more prevalent in Site A. Surficial soil in the study area is thin and largely consists of glaciofluvial outwash deposits of gravel and sand including proglacial river and deltaic deposits. Geotechnical sampling indicated compact to very dense sand and silty sand in Site A with depth to bedrock ranging from 2 m to 3.8 m; and loose to very dense sand and silty sand in Site B with depth to bedrock ranging from 2.6 m to 8.1 m.

Wildlife and Birds

The boreal forest is home to a wide variety of wildlife such as Black Bears, wolves and Lynx, large ungulates like Moose and Woodland Caribou, and many small furbearers such as the American Marten, Fisher, Snowshoe Hare and Red Fox. Over 360 bird species have been recorded in the Thunder Bay district, of which 160 breeding species and 40 permanent resident species are included (TBFN 2012). The draft Significant Wildlife Habitat Ecoregion 3E Criteria Schedules (MNR 2012) describes wildlife habitat types occurring in boreal Ontario. Wildlife surveys undertaken in 2012 investigated the presence of significant wildlife habitat and

compiled species inventories within the study area in order to characterize land use by wildlife.

Standardized breeding bird surveys conducted in accordance with protocols outlined in the Ontario Breeding Bird Atlas Guide for Participants (2001) and Whip-poor-will Roadside Survey Participant's Guide (BSC 2012) were conducted in 2012. A total of 81 bird species were recorded within the study area. All species observed were likely to nest within, or in forested lands adjacent to, the study area. Avian diversity included a wide variety of migratory breeders (e.g. flycatchers, warblers and thrushes) as well as permanent residents (e.g. woodpeckers, grouse and ravens) and woodland nesting raptors (e.g. hawks and owls). Despite an abundance of wetland habitat no waterfowl breeding or staging areas were present within the study area. Area-sensitive bird species (e.g. Winter Wren, *Troglodytes troglodytes*; Magnolia Warbler, *Setophaga magnolia*; and Blue-headed Vireo, *Vireo solitarius*) were prevalent in forested areas of the study area, though no open country or shrubland area-sensitive species were recorded.

Ten mammal species were recorded within the study area including Moose (*Alces alces*), Elk (*Cervus elaphus*), Black Bear (*Ursus americanus*), Snowshoe Hare (*Lepus americanus*), Red Squirrel (*Tamiasciurus hudsonicus*) and four bat species. Bats presence was recorded by Songmeter acoustic detectors and species identities were identified using Sonobat analysis software. No significant mammalian habitat features such as Moose aquatic feeding areas, cervid calving areas, cervid wintering areas, bat hibernacula, bat maternity roosts, mast producing areas, mineral licks, or movement corridors were reported by MNR to occur in the study area. Similarly, none were identified during 2012 field surveys. There are no Bear Management Areas within the study area (MNR 2012) as the study area lands are privately held. The study area occurs largely within trapline area TB098 (MNR 2012). No dens of bears, wolves, or other fur bearing mammals were recorded during site investigations. Northern Flying Squirrel (*Glaucomys sabrinus*) nests have been identified to DND as important wildlife consideration for the site. Information regarding locally sensitive wildlife habitat features will be included in the RSO and Range Briefings.

Standardized amphibian surveys following the Roadside Call Count Survey protocol (Konze and McLaren 1997) recorded five frog species within the study area. No salamanders or suitable salamander habitat was observed in the study area. Frogs were abundant and widespread despite the extent of logged lands within the study area. No reptiles were observed.

Species at Risk

Species at Risk (SAR) were identified during wildlife inventories conducted on DND's behalf for this project. Four SAR were recorded within the study area which included Common Nighthawk, Canada Warbler, Olive-sided Flycatcher, and Monarch Butterfly. All three birds SAR are federally designated as Threatened but provincially designated as Special Concern. Monarch butterfly is listed federally and provincially as Special Concern.

Little Brown Myotis (*Myotis lucifugus*) and Northern Myotis (*Myotis septentrionalis*) are designated as Endangered by COSEWIC, though neither of these species are provided any provincial protection under the *ESA*. It is anticipated that these species will soon be considered for inclusion under the (Species at Risk Act) and the *ESA* due to recent steep population

declines in Ontario and across northeastern North America due to White Nose Syndrome caused by the fungus *Geomyces destructans*.

During all phases of this project, DND will ensure that protection and management procedures are put into place for SAR and their habitat (including defined critical habitat).

17. Changes to the Existing Environment

Fish, Fish Habitat and Aquatic Species

The proposed Project is not likely to cause any changes to the environment that would affect fish, fish habitat or aquatic species. DND will plan the construction of the administration area, training facilities and the 600 m small arms range so that these are avoiding existing and ephemeral wetlands and water bodies. Wetlands and water bodies may be located in the danger template of the range; however this area will be strictly out of bounds to any troops or vehicles. Wetlands and water bodies within the training area will be marked out of bounds using a 30 m buffer from the high water mark. Additionally, DND's Policy for refuelling vehicles or generators or the use other hazardous materials will be conducted a minimum of 100 m from wetlands or water bodies.

DND is planning on utilizing the existing road system with minimal improvements. However during or after severe flooding events, road repair work may need to be completed which may include the installation of culverts. In this case, DND and their contractors will implement Ontario Provincial Standards Specifications.

Migratory Birds

Field surveys identified 67 bird species protected under the *Migratory Bird Convention Act*, *1994* (*MBCA*). The *MBCA* protects migratory birds and their nests from human disturbance, destruction, possession or trade. The proposed project may negatively impact migratory birds during the construction of infrastructure and during operations. Direct impacts to migratory birds during construction and operations may include death or injury as well as the destruction of nesting habitat or nest sites by way of vegetation clearing, increased vehicular traffic and training activities within the RTA. It is expected that the risk of direct mortality of migratory birds due to Project activities will be minimal.

Indirect impacts to birds occurring in habitat adjacent to the RTA may include decreased reproductive success or desertion of habitat due to elevated ambient noise and edge effects. Impacts resulting from construction and operation are thus likely to result in an overall decrease in local breeding bird population densities. Masking noise occurs when elevated ambient noise levels limit to the ability of wildlife to communicate with conspecifics (i.e. mates, offspring, or competitors), distinguish the sounds of approaching predators, or search for prey items. Mitigations of Project noise will minimize the extent of noise disturbance on local bird populations

To mitigate the potential impacts of construction on migratory birds, DND will plan its construction activities to occur outside of the breeding period for migratory birds in Northern Ontario (May 1st to August 15th). In this way breeding pairs, their nests, and nestlings will not

be put in danger of direct mortality by clearing activities and increased traffic, nor will masking noise created by construction interfere with avian breeding activities.

During operations, migratory birds and their nests will be protected from interference by training troops through instigation of policies in the RSOs for the RTA. Reserve units training typically occurs between September 1st and May 30th thus limiting the likelihood of RTA use during the bird breeding season. In order to protect SAR and other locally rare species from potential impacts during operation, annual targeted species surveys will be conducted to confirm the presence and location of nesting sites within the RTA. In the case where ground nesting species with established nests are found to be present on the firing area of the small arms range, range activities will be stopped, pending the approval of a permit to remove the nest.

18. Effect of Project on Federal Lands, Other Provinces or International Boundaries

The proposed Project will not cause any changes to the environment to federal lands, in a province other than Ontario or on an international scale. The LDML reserve is approximately 30 km away from the proposed site. With the exception of the LDML lands, there are no Federal lands in the region of this Project. For potential impacts to other Canadian provinces the expected releases are small in nature, and thus should not migrate beyond the property.

19. Effects of the Project on Aboriginal and Métis peoples

The Project as planned should not create any changes to the environment that may impact Aboriginal peoples, Métis or their traditional land uses. Currently there is no known traditional land use for either the LDML or the Métis at the proposed Project location. DND through their consultation with these Aboriginal groups of any nearby areas of concern. Based on initial discussions with the LDML, they have plans to re-establish their community on their reserve lands. The Savanne Lake Resort is an important business to the LDML because it supports an outfitting business for members. The LDML were concerned that any effects of the Project on moose or bear habitat could result in negative effects to their outfitting business.

Aboriginal and Métis Comments and Concerns

As a result of the consultation to date with LDML, it has been identified that their concern is related to the potential impact of the RTA on wildlife in that area and subsequently the potential impact on big game hunting (specifically moose). Initially, LDML identified a second concern (potential impact to water); however, this is no longer of concern as there are no waterways of use or interest at the proposed site.

LDML concern over the potential impact on big game hunting is related to the community's efforts in establishing the Savanne River Resort and the re-establishment of the community on their reserve. These ventures are important economic drivers for the community. LDML identified that their preference would be that DND keep the range quiet during the first two weeks of moose hunting (first two Saturdays in October). DND can facilitate this request by closing the range to live fire during this period. Information on this closure will be included in the Range Standing Orders.

DND received a letter from the MNO (dated November 14, 2012) that identified that based on the information provided there would be nominal impacts by the Project on the Métis way of life. They identified that potential impacts to the Métis way of life could include disturbance to wildlife

and waterways. The MNO reserves the right to monitor and identify any concerns as the Project progresses if their way of life is threatened.