



Parks Canada Basic Impact Analysis

1. PROJECT TITLE & LOCATION

Maintenance Garage, Fundy National Park.

The project site is located inside Fundy National Park Compound Maintenance, Trades and Storage Facility, accessible from NB Highway 114 in Fundy National Park, Alma, New Brunswick. The project site coordinates are 45.597°N, 64.9541°W (see Figures 1 and 2 for the project location).

2. PROPONENT INFORMATION

Doug Watson, Project Manager
 Parks Canada Agency
 (506) 887-6386
doug.watson@canada.ca

3. PROPOSED PROJECT DATES

Planned commencement:
 Spring 2019

Planned completion:
 Late Fall 2019

4. INTERNAL PROJECT FILE

NBSouth-2018-EIA-02

5. PROJECT DESCRIPTION

The project site is located within the existing maintenance complex, near the East entrance of Fundy National Park (Figures 1-2).

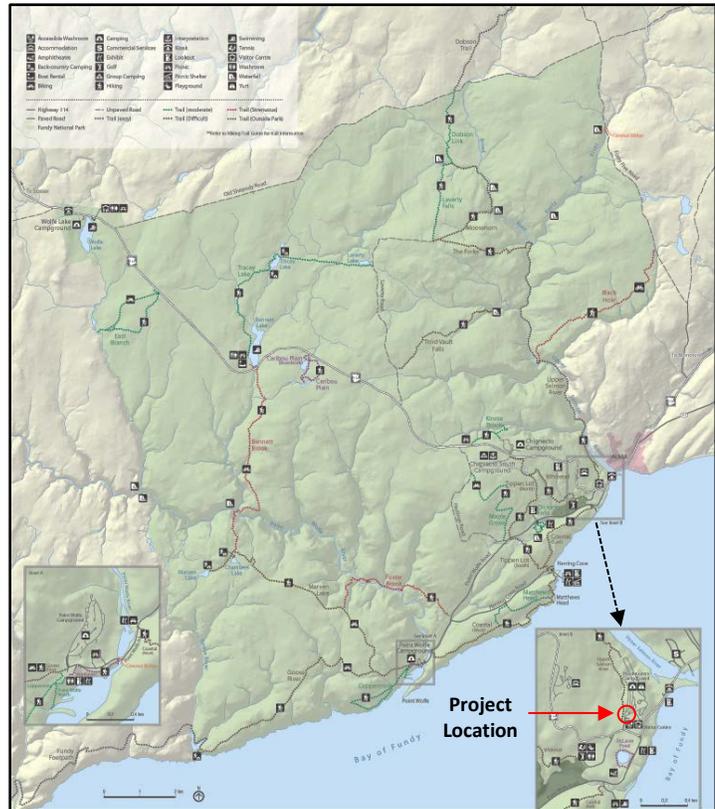
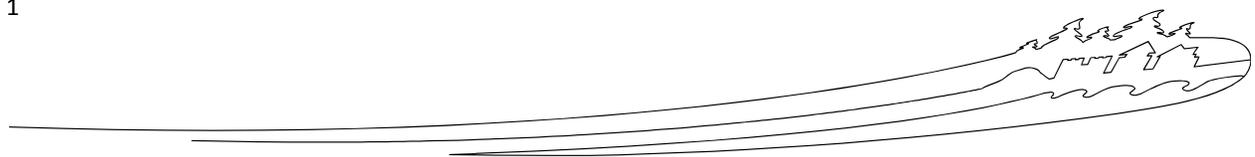


Figure 1: Project Location

This complex is comprised of maintenance/repair shops, trades shops, and storage facilities which were constructed in 1948-50 as temporary structures for the construction of the (new) Fundy National Park. As these facilities were intended to be dismantled following construction of the park, the buildings were constructed inexpensively with wood post and beam structures, wood exterior wall panel infills, and minimal thermal and moisture protection. Nowadays, existing post and beam structures will not meet code; exposed interior wood wall and ceiling finishes are not fire resistant; roof systems are deteriorated and failing; exterior wood siding and trim is rotted, deteriorated and peeling; wood door and window frames are damaged and rotted; door and hardware is damaged and not functional; interior wall and ceiling finishes are water stained from water infiltration and mold is present in some areas; electrical systems are outdated and at capacity; buildings are not mechanically ventilated; and heating systems are inefficient and at the end of their service life. Also, the existing configuration of the maintenance compound poses a safety hazard for operations staff. Overall the compound is cluttered with buildings, site lines are not clear, and the area is busy with service vehicles and heavy equipment traffic.



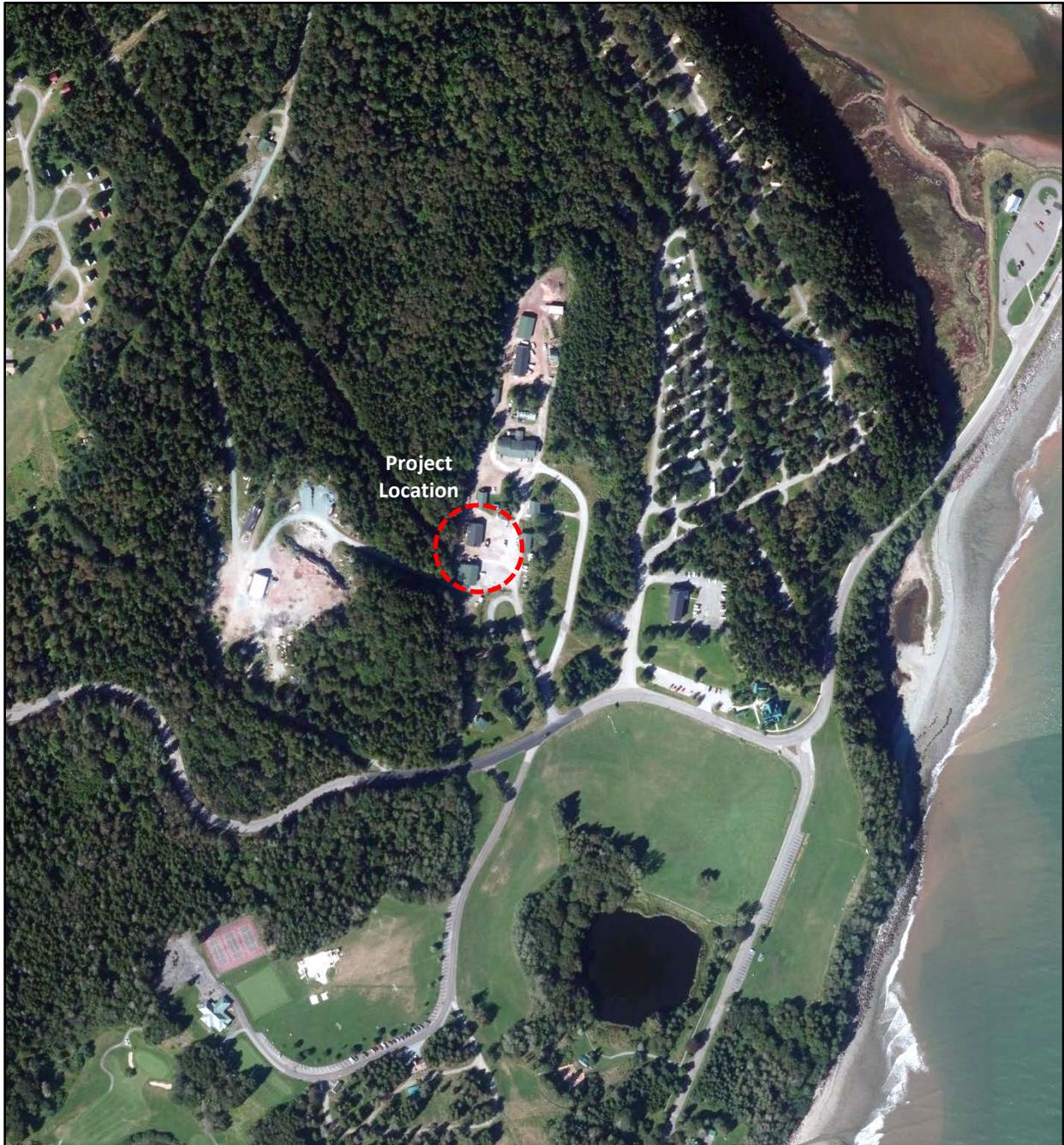
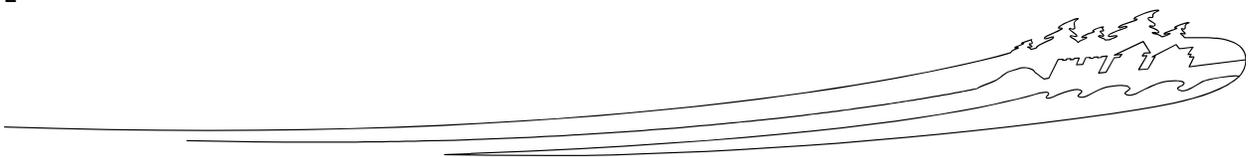


Figure 2: Vertical photography (2013) of the project location (SNB)



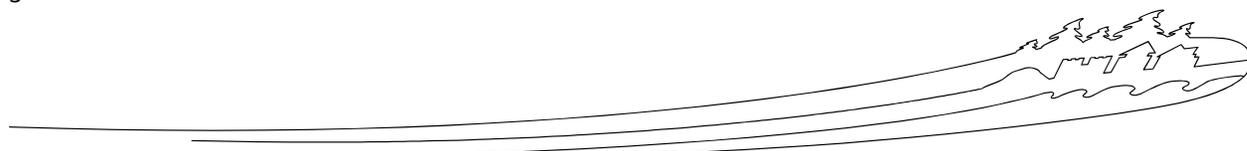


On July 28, 2014, firefighters from Alma, Riverside-Albert and Hillsborough responded to a small fire in the maintenance garage at Fundy National Park (Figure 3). The fire started near an electrical panel, but there was only heavy smoke and no visible flames. One wall and a window were damaged, along with the electrical panel and a welder.

Following a structural assessment of the building, it was determined that it should be decommissioned. A building demolition and petroleum hydrocarbon remediation report was produced by Stantec (2016) after the complete demolition of the building. The report reveals that all contamination has been remediated, which include the removal of exterior lead paint prior to the demolition, the removal of a concrete underground tank identified east of the former garage and the assessment of its footprint for petroleum hydrocarbon impacts; and the remediation of any identified or potential petroleum hydrocarbon impacts following building demolition including any stains, in order to improve site conditions in accordance with federal standards. Stantec personnel did not observe any unacceptable impacts to the surrounding ground surface as a result of the exterior lead paint removal and subsequent general clean-up activities. The results of confirmatory soil sampling from the remedial excavation areas completed by Stantec indicate that unacceptable risks to human and ecological receptors are not expected. Petroleum hydrocarbon impacts above provincial or federal guidelines were not identified in groundwater samples. As a result, the report concluded that no further assessment or remediation at the maintenance garage area is required. However, if future construction projects require soil to be removed from the site, it should be tested to determine appropriate disposal options. Base on a review of previous work conducted by Conestega-Rover and Associates for the general area at the Fundy maintenance compound, outstanding environmental concerns may still be present at the Fundy maintenance compound. A review of these outstanding concerns should be completed to assess any additional environmental assessment or remediation requirements for the compound, including the decommissioning of previously installed monitoring wells.



Figure 3: View of the maintenance garage while on fire on July 28, 2014





The primary purpose of this project is to build a new compound maintenance, trades and storage building that will provide an operationally and energy efficient facility for enhanced delivery of maintenance and repair services. The new facility will combine common areas and services and eliminate duplication of spaces. It will have minimal maintenance requirements for the next 15-20 years

The new building will be located within the existing maintenance complex (Figure 4), more precisely at the site where the old maintenance garage was before it was damaged by fire in 2014. This site is vacant since the building was torn down and is located near the cold storage building (Figure 5), which will be decommissioned to make room for the new maintenance garage. This building is a wood framed structure with wood cladding exterior and pitched metal roof. It consists of one level with a partial attic and a total area of approximately 245 square meters (2,637 square feet). The building consists of a mechanical work area and mechanical storage. The interior floor finishes consist of concrete and wood planks; the interior wall finishes consist of metal siding and exposed wood studs; and the ceiling finishes consist of plywood and exposed wood studs. Lighting is provided by incandescent and fluorescent fixtures. The building is heated by propane-fired heaters. The building is currently used for storage and mechanical shop. A Hazardous Building Materials Survey (HAZMAT) was conducted in August 2017 and revealed the presence of lead-containing paint on exterior wood siding and trim with total and leachable lead concentrations exceeding New Brunswick Department of Environment and Local Government (NBDELG) criteria for construction and demolition debris disposal site (C&D) and landfill disposal. The HAZMAT also revealed the presence of mercury in fluorescent light tubes and the potential presence of polychlorinated biphenyl (PCB) in fluorescent light ballasts; silica in all concrete and brick components of building; and lead solder associated with copper piping and bell fitting joints for cast iron drainage piping, wire connectors, electrical cable sheathing, and other electrical applications (Englobe, 2017). A Phase III ESA completed in 2010 identified a drainage pit located immediately in front of the cold storage building (CRA, 2010). Analysis of pit sludges revealed concentrations of TPH, metals, PAHs and VOC concentrations exceeding applicable guidelines. Should the drain pit still be present, it should be cleaned out and the sludges disposed of at an approved off-site location.

On the west side of the project site are located a steel shed, a tire storage and an electrical substation (Figures 6-7). Two sheds, a fuel tank pad, a storage trailer, the asset management building and a trailer can be found on the east side of the project site (Figures 8-9).



Figure 4: Panoramic view of the south and east sides of the project site

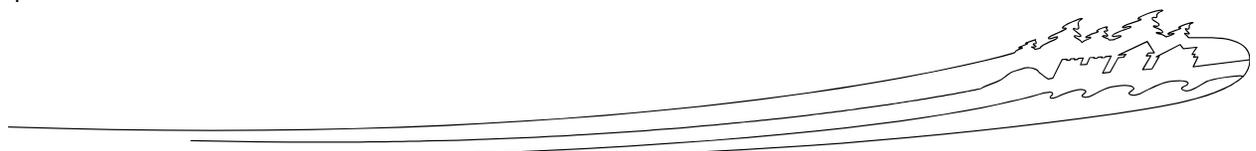




Figure 5: View of the cold storage building



Figures 6-7: View of the steel shed, tire storage and electrical substation



Figures 8-9: View of the sheds, fuel pad, trailers and asset management building

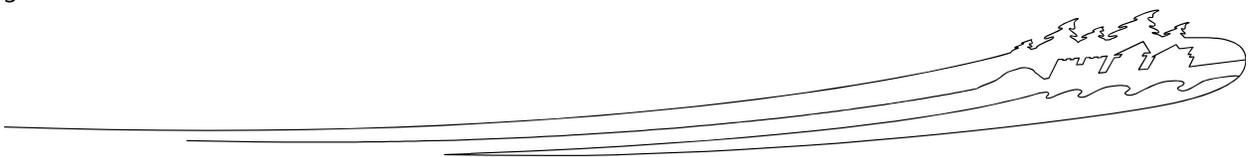




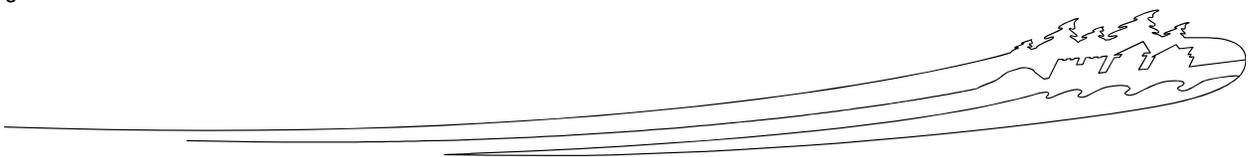
Figure 10: View of the north side of the project site with janitor building (center) and fire shed (right)

On the north side of the project site are located the janitor building, the fire shed and the compound lunch room building (Figure 10).

The maintenance facility will be built to serve an industrial purpose. Overhead doors will exist at the various shops and receiving facilities. The receiving doors will be provided with interior adjustable load platform. The building will also serve as the main base for the various field crews operating within the park. Lunch room, lockers and washroom facilities will also be provided to accommodate.

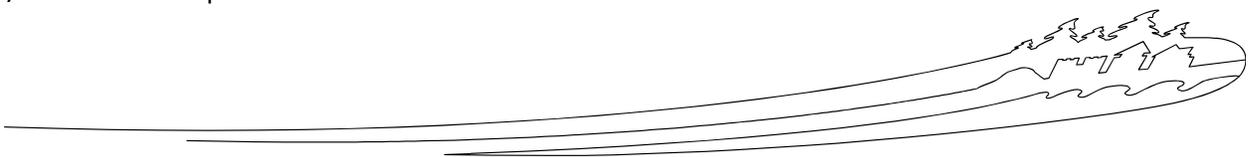
The proposed scope of work involves the complete rebuild of the maintenance garage. The specific scope of work will consist of, but will not necessarily be limited to, the following:

- The decommissioning of the actual cold storage building. Any hazardous material identified in the HAZMAT will have to be recycled or disposed of at an approved facility that accepts such waste.
- The rebuilt of a building measuring approximately 55.766 m by 16.656 m, for an estimated total area of 930 m², is recommended to have the following characteristics:
 - The building will fall into the Group F Division 2, 2010 NBC 3.2.2.77 of the national building code classification and it will be equipped with a fire sprinkler system.
 - The exterior walls will be made of concrete blocks protected by self-adhesive air and vapor barrier, insulation, air space and siding. The siding is to be a combination of metal siding and split face concrete block. The roof is to be made of metal sheets.
 - All personnel (man) doors (and frames) are to be insulated pressed steel with insulated glass panels. All windows will have an aluminum frame with insulated glass panels. Doors and windows will have to be commercial grade. Overhead doors for vehicle and truck access will be rubber roll-up type.





- Interior partitions will be made of concrete masonry units, finished with a layer of paint. Floors in the work areas will be protected by an epoxy coating and clean areas will be covered by porcelain tiles.
- The existing open ditch running along the west perimeter of the site will be used to convey storm water from the hillside west of the ditch behind the proposed maintenance garage. The design will include additional shaping of the ditch along with clearing and stabilization of the hillside using rip-rap and geotextile materials. The high point of the existing ditch is adjacent to the substation with flows then directed to the north and side of this point. The finished floor elevation of the new building will be established at the elevation 45.0 m, which will permit shedding of water away from the building and into the adjacent ditches.
- Plumbing systems will be comprised of:
 - A drainage, waste and vent (DWV) piping serving all equipment with specific drainage and vent requirements, all plumbing fixtures, all floor areas with specific drainage points and storm water collection. All DWV will be collected and piped to the site sanitary drainage and the storm ditching system.
 - A domestic water system consisting of potable water entrance, distribution piping, hot water heaters and plumbing fixtures throughout the facility to suit the floor plans and equipment layouts. Plumbing fixtures will be commercial grade water conserving type to reduce consumption costs.
 - Hot water heating will be accomplished using propane gas-fired units sized to provide hot water needs of the facility.
 - The existing sanitary sewer MH-1 located to the east of the new building will be used to collect sanitary sewage from the new maintenance garage. The other two manholes (MH – 2a and 2b) that are in front of the hydro poles/substation and serviced the old maintenance building destroyed by fire shall be removed, along with all associated piping to the MH-1. A new 150 mm diameter sewer service will be installed from the new building directly into MH-1.
- A new propane systems will be installed and equipped with regulators and manual reset emergency shut-off valve. Distribution piping throughout the facility to supply gas-fired heating equipment as determined during the design phase, utilizing schedule 40 steel pipe. Dedicated pressure regulators at individual appliances requiring lower pressures than the incoming service. The propane storage tank will be located at the rear of the building, mounted on a concrete pad with protection bollards and equipped with vaporizer.
- A heating and ventilation system that will be mechanical, relying on exhaust fans, recirculation type dust collection systems (HEPA), paint exhaust system, localized gas-fired infrared heaters, electric baseboards in smaller areas and a central 100 % fresh air energy recovery ventilator recovering heat from exhaust air streams to pre-heat fresh air. The building's main air handling unit (AHU) will be housed on the mezzanine level and will be an energy recovery ventilator to reduce utility costs during operation. The ventilation equipment will have an interface connection with Building Automation System to allow full control and monitoring from remote control station.
- A new electrical service will be brought to the site from the existing 7.2/12.47 kv in ground splitter in the woods east of the site.





- The grading and paving of the area to the south of the new building, include a parking area for service vehicles, employee vehicles and traffic lanes. This paved area will extend and match the existing pavement elevations next to the fuel tank pad and exit from the compound.

The Existing Site Conditions and Proposed Site plans can be found in Appendix II and III.

It is important to note that an essential part of the building sitting involves accommodating the flow of traffic within the site. That traffic will be comprised of maintenance, delivery and staff vehicles moving through the compound during and after construction.

Project Timing

The project is expected to go to tender in March 2019. Following the tender period the successful contractor will provide a more detailed construction schedule. Mitigation measures are in place to ensure no adverse effects. The anticipated construction dates will be Spring 2019 until late Fall 2019.

Indigenous Setting

Fundy National Park falls within traditional Mi'gmaq territory called Siknikteiwag ("drain-age area"). The Mi'gmaq, Wolastoqiyik (Maliseet) and Peskotomuhkatie Aboriginal Peoples have a long history in Fundy National Park and its greater ecosystem region and consider the area part of their traditional territory. There is currently no documented evidence of Aboriginal presence within the park, possibly due to European settlements being built on top of previously occupied Aboriginal settlements (Parks Canada, 2011).

The project location, New Brunswick, is located in lands governed under the Peace and Friendship Treaties of 1725-1779. On July 15, 1976, the Mi'gmaq and Maliseet Indians of New Brunswick petitioned Her Majesty Queen Elizabeth regarding their traditional Aboriginal rights and lands. At that time, Canada was already funding research for the New Brunswick Indians' asserted claim, but it was not accepted for negotiation until after the 1999 Marshall decision. On September 17, 1999, the Supreme Court of Canada found that the Treaties of 1760-61 affirmed the rights of the Mi'kmaq and Maliseet signatories to hunt, fish and gather to the extent of a "moderate livelihood". Canada subsequently resolved to begin a long-term process that considered both the Aboriginal and treaty rights of the First Nations in New Brunswick.

The closest First Nation Reserve (Fort Folly Indian Reserve NO.1) is located approximately 48 km northeast of the project area. The second closest First Nation Reserve (SOEGAO Indian Reserve NO.35) is located approximately 54 km northwest of the project area. The project is not anticipated to have any potential infringement on Aboriginal rights and interest due to its limited scope of work.

Other Departments Involved

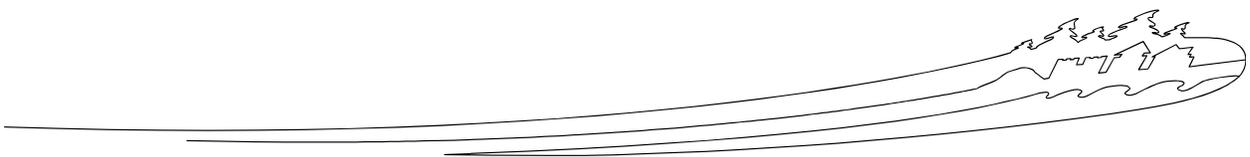
There are no other Federal Departments involved in this project.

6. VALUED COMPONENTS LIKELY TO BE AFFECTED

The Effects Identification Matrix located in Appendix I identifies environmental components likely to be affected by this project. The components most likely to be impacted include air, soil/landforms, water, flora, fauna, cultural resources and visitor experience.

6.1 Air Quality

Air quality is influenced by the concentrations of air contaminants in the atmosphere. Air contaminants are emitted by both natural and anthropogenic sources and are transported, dispersed, or concentrated





by meteorological and topographical conditions. Air contaminants eventually settle or are washed out of the atmosphere by rain and are deposited on vegetation, livestock, soil, water surfaces, and other objects. In some cases, contaminants may be redistributed into the atmosphere by wind.

Prior to 2015, the nearest air quality monitoring station from the project site was located at Alma. This station monitored ground ozone level (O_3) and acid rain which is derived by measuring the annual sulphate (SO_4^{2-}) and nitrate (NO_3^-) wet deposition. In 2014, the last year before this monitoring station was decommissioned, the mean ozone concentration on a one-hour average was approximately 26.5 parts per billion (ppb), well below the one hour standard of 82 ppb. Between 2005 and 2010, the annual sulphate and nitrate wet deposition has significantly decreased from a maximum of 436.28 equivalents per hectare per year (eq/ha/yr) to a mean value of 229 eq/ha/yr which was maintained until the end of December 2014.

The monthly wind roses for the project area show that prevailing winds are from the Northwest, West, South and Southwest directions with seasonal variations. Summer winds are generally below 40 km/h and from the Southwest. Winter winds are generally much stronger (> 50 km/h) and predominantly from the Northwest (CBCL, 2017). If the project activities occur during winter months, the air quality for the project area may be affected by northern source of air pollution generated from anthropic activities. The nearest (60 km north) functional air quality monitoring station from the project site is located in Moncton. This station monitors ground level ozone (O_3), fine particulate matter (FPM), carbon monoxide (CO) and nitrogen dioxide (NO_2). Overall the air quality for the 2014 annual survey was in compliance with Canadian Ambient Air Quality Standards (NBDELG, 2016).

6.2 Soil/Landforms/Physical Environment

Fundy National Park is located within the Atlantic maritime ecozone and extends mostly inside the Southern New Brunswick Uplands ecoregion which forms a 40-km-wide band that runs parallel to the Bay of Fundy and along the United States border to the Saint John River valley (Ecological Stratification Working Group, 1995). Inside this ecoregion, the northern part of Fundy National Park is found inside the Caledonia ecodistrict which is characterized by a broad upland plateau situated along the upper Bay of Fundy. The southern part of Fundy National Park, where the project area is located, is part of the Fundy Coast ecoregion which covers a narrow coastal strip along the Bay of Fundy in New Brunswick and Nova Scotia (Ecological Stratification Working Group, 1995).

The landscape of the Fundy Coast ecoregion owes much of its scenic diversity to the varied types of bedrock, from seaside salt marshes and estuaries to towering cliffs overlooking the Bay of Fundy (Zelazny, 2007). Mean elevation is under 100 m, although some coastal cliffs can reach over 300 m. All rivers in the ecoregion flow into the Bay of Fundy or one of its subsidiary bays and basins. Some rivers meet the ocean directly as waterfalls or swift streams, whereas others enter more gently through coastal estuaries or marshes before mingling with the salt water (Zelazny, 2007). Its proximity with the Atlantic Ocean strongly influence its climate with high winds, high humidity, and fog. Summers are usually cool and wet while winters are mild and wet with most precipitation falling as rain (Ecological Stratification Working Group, 1995).

Canadian Climate Normals (1981-2010) for nearby Alma weather station (45°36' N; 64°57' W) indicate that the project area receives an average of 1,510.1 mm of precipitation annually and experiences measurable precipitation (≥ 0.2 mm) 171.5 days per year. Extreme precipitation events of up to 179.1 mm have been recorded. The temperatures range from an extreme minimum of -31.0°C to an extreme maximum of 35.5°C with an annual daily mean temperature of 5.7°C (Environment Canada, 2017).





Surficial geology maps identifies the surrounding land area of the project area as being made primarily by Wisconsinan morainal sediments which consist of lodgment till, ablation till, and associated sand and gravel deposited directly by Wisconsinan ice or with minor reworking by water (Rampton, 1984). Blanket soil is generally expected to be mainly stony till (more than 35 % of clasts pebble-sized and larger). Bedrock in the area consists of a mixed of Early (Mabou Group) and Late Carboniferous (Cumberland Group) stratified rocks (NBDNR, 2008).

6.3 Water/Hydrology

This project site is not located near any stream or waterbody. A recent geotechnical investigation revealed that groundwater seepage was not observed at any of the three borehole locations (GEMTEC, 2016). The project area is bordered by an open ditch running along the west perimeter which will be used to convey storm water from the hillside west of the ditch behind the proposed maintenance garage. The design will include additional shaping of the ditch along with clearing and stabilization of the hillside using rip-rap and geotextile materials. The high point of the existing ditch is adjacent to the substation with flows then directed to the north and side of this point.

6.4 Flora

Fundy National Park is home to more than 800 species of vascular plants (fern, clubmosses, flowering plants), 270 bryophytes species (mosses and liverworts), and 400 species of lichens.

Through the Fundy Coast ecoregion, the project area is more precisely located inside the Fundy Coastal ecodistrict which comprises the southern coastline of New Brunswick along the Bay of Fundy from east Passamaquoddy Bay to Shepody Bay. It also encompasses the Western Isles, including Campobello, Deer, and Grand Manan islands. The cool and wet climate has created a forest composition with many boreal elements, except for the prominence of red spruce (*Picea rubens*). Forest stands on higher plateaus in the east consist almost solely of pure red spruce. Elsewhere, forests comprise a mixture of red spruce with white spruce (*Picea glauca*) and black spruce (*Picea mariana*), or balsam fir (*Abies balsamea*) with some red maple (*Acer rubrum*), white birch (*Betula papyrifera*), and yellow birch (*Betula alleghaniensis*). Typically, black spruce is associated with the margins of bogs and wet areas; white spruce is the predominant spruce species in a narrow band along the shoreline and on abandoned pastures and fields. Trembling aspen (*Populus tremuloides*) can also be found near the project site (Zelazny, 2007). This species, although native to Fundy National Park, is uncommon and found only with difficulty within habitat types.

No rare plant species have been identified in the area of the proposed works. However, three invasive plant species including reed canary grass (*Phalaris arundinacea*), woodland angelica (*Angelica sylvestris*) and glossy buckthorn (*Frangula alnus*) are found inside or near the project site. Fundy National Park is currently monitoring the abundance, distribution and spread of these species. All three species are considered highly invasive given their potential treat to establish in natural areas where it can displace native plants and degrade wildlife habitat (NBALA, 2017).

The proximity of the project with specimens of woodland angelica, a tall (1-3 m) and robust perennial plant, might be problematic as its sap is rich of an organic chemical compounds, furanocoumarins, that can cause skin rashes and blisters when exposed to ultraviolet light, including sunlight. Native to most of Europe and Western Asia, this tall, purple-stemmed herbaceous plant was intentionally introduced as a garden herb in the 18th century. In North America, the species is only known from New Brunswick, Nova Scotia, Quebec and Ontario. Woodland angelica reproduces by seed and also spread by rhizomes (Appendix IV). During a site visit, this species was located near the chain-link fence surrounding the electrical substation (Figures 11-12). The successful Contractor will be responsible to eradicate populations of invasive plant species that fall within the project limits prior to the start of construction. Eradication efforts must follow the guidelines provided in the Fundy National Park Invasive Plant Action Plan.





Figures 11-12: Location of woodland angelica around the electrical substation

6.5 Fauna

6.5.1 Mammals

Over 38 species of mammals reside in Fundy National Park. These mammals are diverse and are representative of the natural food chain, with species ranging from top carnivores to lower herbivores and scavengers. The mammals that are more likely to be encountered near the project area and which may have a potential interaction (direct or indirect) with the project are described in Table 1.

Scientific literature also confirmed that the project area is potentially inhabited by many micromammals including the cinereus shrew (*Sorex cinereus*), the northern water shrew (*Sorex palustris*), the smoky shrew (*Sorex fumeus*), the arctic shrew (*Sorex arcticus*), the american pygmy shrew (*Sorex hoyi*), the northern short-tailed shrew (*Blarina brevicauda*), the star-nosed mole (*Condylura cristata*), the deer mouse (*Peromyscus maniculatus*), the southern bog lemming (*Synaptomys cooperi*), the gapper's red-backed vole (*Myodes gapperi*), the meadow vole (*Microtus arvalis*), the norway rat (*Rattus norvegicus*), the house mouse (*Mus musculus*), the meadow jumping mouse (*Zapus hudsonius*) and the woodland jumping mouse (*Napoeozapus insignis*) (Desrosiers *et al.*, 2002).

Species		Habitat description	Home range (km ²)
Common name	Scientific name		
Large fauna			
Moose	<i>Alces alces</i>	Mixed forests, particularly Balsam Fir-White and Yellow forests, recently burned areas, clearcutting, swamps and ponds.	20 to 100
Black bear	<i>Ursus americanus</i>	Dense conifer-broadleaf forests, recently burned areas, shrubs, near wetlands, lakes and streams.	Male: 60 to 173 Female: 5 to 50
White-tailed deer	<i>Odocoileus virginianus</i>	Abandoned fields, primary-secondary forests with mixed and hardwoods. In winter, coniferous stands.	Year round: 10 to 30 Winter: 1 to 3
Small fauna - carnivorous			
Eastern coyote	<i>Canis latrans</i>	Rural and suburban areas, fields, bushes, woodlands and marshes	10 to 80

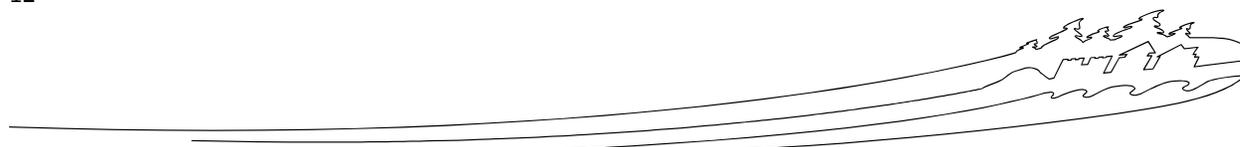




Bobcat	<i>Lynx rufus</i>	Mostly woodlands—deciduous, coniferous, or mixed, marshlands, and areas with abundant hare population.	10 to 200
Marten	<i>Martes americana</i>	Mature coniferous or mixed forests.	2 to 30
Mink	<i>Mustela vison</i>	Along streams and lakes surrounded by forests, brush and urban environments.	1 to 5 km of shoreline
Fisher	<i>Martes pennanti</i>	Forest floor of old-growth forests with continuous overhead cover, extensive conifer forests and also common in mixed hardwood and conifer forests.	5 to 20
Raccoon	<i>Procyon lotor</i>	Mixed and deciduous forests, agricultural regions, fields bordered with hedges, bushes, or large forests, along watercourses and swamps.	Up to 80
Small fauna - rodents			
Beaver	<i>Castor canadensis</i>	Water bodies along woodland and streams.	2.6 to 5.2
Snowshoe hare	<i>Lepus americanus</i>	Young coniferous forests, brush, clearings and along watercourses	0.02 to 0.16
Muskrats	<i>Ondatra zibethicus</i>	Swamps, streams, rivers, ponds, lakes and drainage channels.	0.03 to 0.07
Porcupine	<i>Erethizon dorsatum</i>	Mature coniferous or mixed forests.	0.02 to 0.59
Eastern chipmunk	<i>Tamias striatus</i>	Well-drained broadleaved forests, fields, bushes and hedges.	0.1
Red squirrel	<i>Sciurus vulgaris</i>	Various habitats from coniferous forests to mixed sugar bush.	0.01 to 0.02
Northern flying squirrel	<i>Glaucomys sabrinus</i>	Mature coniferous or mixed forests.	Male: 0.06 to 0.15
			Female: 0.04 to 0.11
Small fauna - chiropter			
Little brown bat	<i>Myotis lucifugus</i>	Day roosts in buildings or trees, under rocks or wood piles and sometimes in caves. Nursery roosts in both natural hollows and in buildings. Night roosts in the similar structures as day roosts and where the bats pack together for warmth.	Up to 0.3
Northern Long-eared Myotis	<i>Myotis septentrionalis</i>	Day roosting in trees or artificial structures during spring and summer, switching to a new roost every other day on average. In the fall, migrate to caves to hibernate.	Up to 1.2
Tri-colored bat	<i>Perimyotis subflavus</i>	Found in a variety of forested habitats. It forms day roosts and maternity colonies in older forest and occasionally in barns or other structures. They forage over water and along streams in the forest. Tri-colored Bats eat flying insects and spiders gleaned from webs. At the end of the summer they travel to a location where they swarm; it is generally near the cave or underground location where they will overwinter. They overwinter in caves where they typically roost by themselves rather than part of a group.	n/a

6.5.2 Avifauna

Fundy National Park is well positioned on the bird Atlantic migration route, and over 260 bird species have been identified in the park or on the adjacent bay. The Maritime Breeding Bird Atlas identifies a total of 96 species of birds in the geographical block which contains the project area (20LR45), 34 of which are listed as confirmed for breeding in the vicinity of the project area (IBA Canada, 2017).





The project site is located less than 10 km southwest of the Shepody Bay West Important Bird Area (IBA), which form a large tidal embayment at the western head of the Bay of Fundy and encompasses an area of 290.63 km² (Birds Studies Canada, 2017). This site has importance due to its mudflats and tidal marshes at the head of the Bay of Fundy which are considered one of the most important stopover sites for shorebirds in eastern North America, especially the semipalmated sandpipers (*Calidris pusilla*) and the endangered piping plover (*melodus* subspecies – *Charadrius melodus melodus*).

6.5.3 Fish

Surface water from the compound area collects in the storm water system and discharges approximately 700 m southeast into the Bay of Fundy. In addition, water flow in the ditch just west of the proposed building site discharge approximately 700 m northeast into the Upper Salmon River. Both water bodies provide habitat for Atlantic salmon (*Salmo salar*) and American eel (*Anguilla rostrata*). The salmon of this area are part of the Inner Bay of Fundy (IBoF) population which is listed on Schedule 1 of the Species at Risk Act (SARA) and Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Endangered (DFO, 2010). American eel is currently listed as threatened by COSEWIC.

6.5.4 Herpetofauna

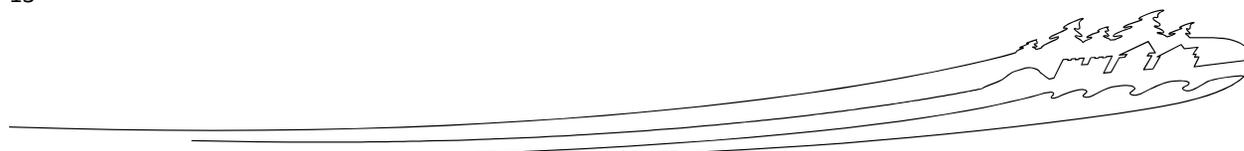
Eighteen species of reptiles and amphibians have been identified in the park. Five of these species are considered rare; these include the Leopard frog (*Lithobates pipiens*), the Ring-neck snake (*Diadophis punctatus*), the Four-toed salamander (*Notophthalmus viridescens*), northern Dusky salamander (*Desmognathus fuscus*), and the blue-spotted salamander (*Ambystoma laterale*). The project location is not expected to have any impacts on those species.

6.5.5 Species at Risk

A search of the Atlantic Canada Conservation Data Centre database was conducted (ACCDC, 2017). The ACCDC provided a list of nationally and/or provincially rare/unique species (i.e. plants and animals) within a 5 km buffer zone (standard ACCDC procedures) of the site of the proposed work. All species were cross-referenced with Schedule 1 of the *Species at Risk Act* (SARA). Species at risk or of concern are listed in Table 2.

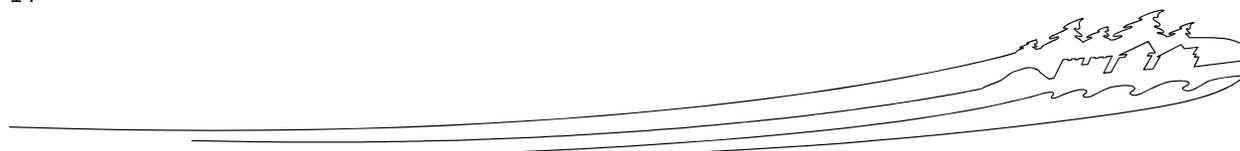
Table 2: Species at risk or of concern around the project area in Fundy National Park

Scientific Name	Common Name	ACCDC Species Rank	General Description	Latest observation recorded	Status
Animals					
<i>Riparia riparia</i>	Bank Swallow	S2S3B	Bank swallows can be found in coastal areas, rivers, streams, and reservoirs. They nest in burrows in vertical banks where they form colonies. They are insectivorous, feeding in the air.	2014	COSEWIC: Threatened
<i>Hirundo rustica</i>	Barn Swallow	S3B	Before European settlement, the Barn Swallow's nesting habitat was mainly characterized by natural features such as caves, holes, crevices, and ledges associated with rocky cliff faces. Although Barn Swallows continue to nest in traditional natural situations, they are now most closely associated with human situations in rural areas. Such nesting sites include a variety of artificial structures that provide either a horizontal nesting surface (e.g., a ledge) or a	2014	COSEWIC: Threatened



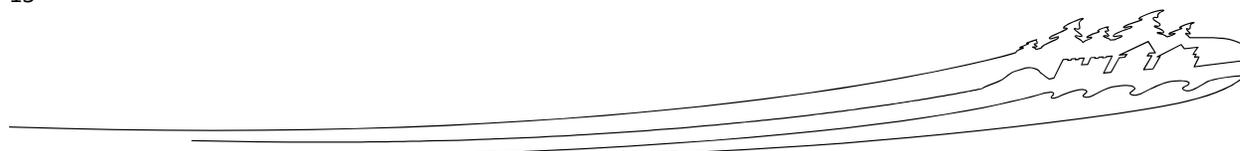


Scientific Name	Common Name	ACCDC Species Rank	General Description	Latest observation recorded	Status
			vertical face, often with some sort of overhang that provides shelter.		
<i>Catharus bicknelli</i>	Bicknell's Thrush	S2B	The thrush breeds mainly in high elevation, dense and stunted fir/spruce forests. Most populations are confined to altitudes of 914 m to the tree line on rocky peaks, but some scattered pairs breed down to 762 m. The subalpine forests favoured by this species are characterized by a wet, cool, windy climate that increases in severity with elevation. Average canopy height ranges from 3-7 m in New Brunswick. The species is an above-ground nester, building bulky, well-constructed nests in small or medium-sized spruce and fir (and sometimes, in alder, birch or striped maple). Most nests are built relatively close to the ground (1-4.5 m above ground level). Nest construction occurs in early June, shortly after the birds arrive on the breeding grounds. Clutches of 3-4 greenish-blue eggs, lightly spotted with brown, are laid around mid-June and are incubated solely by the females.	2007	COSEWIC: Threatened SARA: Schedule 1, Threatened
<i>Dolichonyx oryzivorus</i>	Bobolink	S3B	Bobolink nest primarily in field of forage crops (e.g., hayfields and pastures) dominated by a variety of species, such as clover, timothy, tall grasses, and broadleaved plants. Hayfields and associated pastures are its preferred habitat due to the plant cover present at the start of the nesting season. The bobolink is also known to use sites that have been restored to grassland habitat.	1977	COSEWIC: Threatened
<i>Wilsonia canadensis</i>	Canada Warbler	S3S4B	The Canada Warbler is found in a variety of forest types, but it is most abundant in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. It is also found in riparian shrub forests on slopes and in ravines and in old-growth forests with canopy openings and a high density of shrubs, as well as in stands regenerating after natural disturbances, such as forest fires, or anthropogenic disturbances, such as logging. The Canada Warbler builds its nest on or very close to the ground, often in dense ferns or fallen logs.	1975	COSEWIC: Threatened SARA: Schedule 1 Threatened
<i>Chaetura pelagica</i>	Chimney Swift	S2S3B	The Maritimes Canadian Chimney Swift population is estimated at 900. The Chimney Swift spends the major part of the day in flight feeding on insects. Flocks can often be seen near bodies of water due to the abundance of insects. Prior to the arrival of European settlers in North America, Chimney Swifts nested mainly in the trunks of large, hollow trees, and occasionally on cave walls or in rocky crevices. However, due to the land clearing associated with colonization, hollow trees became increasingly rare, which led Chimney Swifts to move into house chimneys. However, it is likely that a small portion of the population continues to use hollow trees.	2011	COSEWIC: Threatened SARA: Schedule 1 Threatened



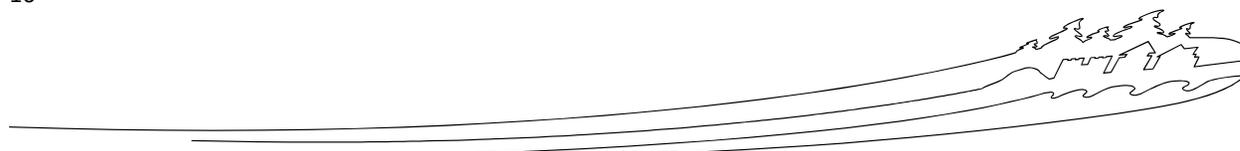


Scientific Name	Common Name	ACCDC Species Rank	General Description	Latest observation recorded	Status
<i>Chordeiles minor</i>	Common Nighthawk	S3B	The Common Nighthawk nests in a wide range of open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. The Common Nighthawk arrives in Canada from early May to mid-June, where it produces one clutch per year. The species migrates to South America between mid-August and mid-September.	1977	COSEWIC: Threatened SARA: Schedule 1, Threatened
<i>Contopus virens</i>	Eastern Wood-Pewee	S4B	In the Maritimes, an analysis of breeding bird atlas point count data suggests that pewees are strongly associated with mature poplar and hardwood forest, with weaker associations with older pine, hemlock and other forest. At the landscape scale in the Maritimes, pewees are associated with the presence of marshes, lakes, ponds and rivers, and negatively associated with harvested forest, human-occupied areas and roads. In Canada, adults arrive on the breeding grounds mostly from mid-May to the end of May. Pair formation and nest building start soon after arrival. Nests are usually located on top of a horizontal limb in a living tree at heights between 2 and 21 m. Clutch size averages 3 eggs. Incubation lasts about 12 to 13 days, and nestlings fledge after about 16 to 18 days. Up to two broods can be produced per year. Generation time is estimated to be 2-3 years.	2009	COSEWIC: Special Concern
<i>Myotis lucifugus</i>	Little Brown Myotis	S1	Little brown myotis is the most widely distributed Canadian bat species. They roost in buildings, tree cavities, or any other dark, warm area they can find. They forage at night on flying insects and roost during the day. The population of little brown myotis in Canada has been reduced by over 75% in the last number of years as a result of White Nose Syndrome, caused by a fungus likely from Europe. Bats hibernate between October and May.	1983	COSEWIC: Endangered SARA: Schedule 1, Endangered
<i>Myotis septentrionalis</i>	Northern Long-eared Myotis	S1	They are found primarily in forested habitats, especially boreal forests, since they typically roost in hardwood trees during the summer. During the spring and summer, northern long-eared bats spend the day roosting in trees or artificial structures, switching to a new roost every other day on average. In the fall, northern long-eared bats migrate to caves to hibernate. Depending on the latitude, this may occur at any time between September and November, and the bats emerge between March and May.	1983	COSEWIC: Endangered SARA: Schedule 1, Endangered
<i>Contopus cooperi</i>	Olive-sided Flycatcher	S3S4B	The Olive-sided Flycatcher is most often associated with open areas containing tall live trees or snags for perching. These vantage points are required for foraging. In the boreal forest, suitable habitat is more likely to be in or near wetland areas. Olive-sided Flycatchers arrive in Canada to breed between April and June, predominantly in mid- to late May.	1997	COSEWIC: Threatened SARA: Schedule 1 Threatened





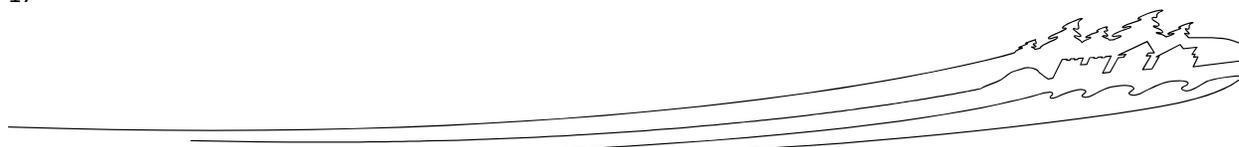
Scientific Name	Common Name	ACCDC Species Rank	General Description	Latest observation recorded	Status
			Females choose the nest site, construct the nest (usually in a conifer) from twigs and rootlets, and lay one egg per day for an average clutch size of three (range of two to five). A single brood is raised each year. The fall migration begins in late July, with most birds travelling to the wintering grounds between mid-August and early September.		
<i>Falco peregrinus anatum/tundrius</i>	Peregrine Falcon - anatum/tundrius	S1B	The Peregrine Falcon is found in various types of habitats, from Arctic tundra to coastal areas and from prairies to urban centres. It usually nests alone on cliff ledges or crevices, preferably 50 to 200 m in height, but sometimes on the ledges of tall buildings or bridges, always near good foraging areas. Suitable nesting sites are usually dispersed, but can be common locally in some areas. In addition, structures built by humans in both rural and urban areas provide the Peregrine Falcon with other potential nesting sites. In the fall, most Peregrine Falcons migrate to the southern United States, Mexico, Central America and South America. However, some couples in coastal and northern areas may remain at the nesting site all winter if there is an abundant supply of food. This is particularly true for anatum Peregrine Falcons that nest in urban areas in Eastern Canada.	2014	COSEWIC: Special Concern SARA: Schedule 1, Special Concern
<i>Calidris canutus rufa</i>	Red Knot rufa ssp	S2M	Red Knots use different habitats during the breeding, wintering, and migration seasons. Nesting sites are usually located in dry, south-facing locations, near wetlands or lakes, where the young are led after hatching. Red Knots generally feed in damp or barren areas that can be as far as 10 km from the nest. Migratory stopovers and wintering grounds are vast coastal zones swept by tides twice a day, usually sandflats but sometimes mudflats. In these areas, the birds feed on molluscs, crustaceans, and other invertebrates. The species also frequents peat-rich banks, salt marshes, brackish lagoons, mangrove areas, and mussel beds.	1971	COSEWIC: Endangered SARA: Schedule 1, Endangered
<i>Phalaropus lobatus</i>	Red-necked Phalarope	S3M	Red-necked Phalaropes spend up to nine months at a time at sea. They nest in the low Arctic, on tundra ponds with marshy shores and bogs. During migration, large numbers gather at hyper-saline lakes before heading south. Many migrate over the open ocean, often within sight of land. Some migrate over land and can be seen on reservoirs, lakes, and coastal marshes. At sea, they gather at upwellings and convergence zones where food is brought to the surface. They are sometimes blown onshore by storms and during these times can be found anywhere, especially at sewage ponds.	1971	COSEWIC: Special Concern
<i>Buteo lineatus</i>	Red-shouldered Hawk	S2B	The Red-shouldered Hawk was the most common diurnal (active in daytime) raptor to breed in the deciduous forests of eastern North America before dramatic declines in the late 1950s through 1970. Since 1970, populations	1971	SARA: Schedule 3, Special Concern





Scientific Name	Common Name	ACCDC Species Rank	General Description	Latest observation recorded	Status
			have either stabilized or increased. The Canadian population is now estimated at 2000 to 5000 pairs. The North American breeding range extends south from Michigan, Ontario, Quebec and New Brunswick to central Mexico and the Gulf of Mexico region of the United States. In Canada, Red-shouldered Hawks breeds in southern Ontario, southwestern Quebec and occasionally in New Brunswick. Most winter in the eastern and southern United States, however, if the food supply is adequate, some may remain in southern Ontario and Quebec. The bird breeds in Canada in late March or early April and it prefers deciduous or mixed-wood forests containing shade-tolerant hardwood trees close to wetland areas.		
<i>Euphagus carolinus</i>	Rusty Blackbird	S3B	The Rusty Blackbird nests in the boreal forest and favours the shores of wetlands such as slow-moving streams, peat bogs, marshes, swamps, beaver ponds and pasture edges. In wooded areas, the Rusty Blackbird only rarely enters the forest interior. During the winter, the Rusty Blackbird mainly frequents damp forests and, to a lesser extent, cultivated fields. Migration begins in late August and lasts until early October.	1998	COSEWIC: Special Concern SARA: Schedule 1, Special Concern
<i>Hylocichla mustelina</i>	Wood Thrush	S1	In Canada, the Wood Thrush nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. This species prefers large forest mosaics, but may also nest in small forest fragments. Wintering habitat is characterized primarily by undisturbed to moderately disturbed wet primary lowland forests. In Canada, most breeding adults arrive on the breeding grounds from mid-late May. Fledglings remain on their natal home range for 24-33 days before departing to the wintering range between mid-August and mid-September.	2003	COSEWIC: Threatened
Invertebrates					
<i>Danaus plexippus</i>	Monarch	S3B	Monarchs in Canada exist primarily wherever milkweed (<i>Asclepius</i>) and wildflowers (such as Goldenrod, asters, and Purple Loosestrife) exist. This includes abandoned farmland, along roadsides, and other open spaces where these plants grow. The eastern and western populations of the Monarch annually migrate south, beginning in August and continuing until mid-October.	2015	COSEWIC: Endangered SARA: Schedule 1, Special Concern

Considering the lack of available habitats in the project area, it is not expected that any (except two) of the above listed species will have any interaction with the project. Older facilities like the cold storage building may be inhabited by the little brown myotis and the barn swallow. From the ACCDC search, both species are known to be present in the vicinity of the project area and may use the cold storage building for nesting or roosting. Mitigation measures have been included to ensure that this facility will be visually inspected prior to demolition activities.





6.6 Cultural/Aboriginal Resources

Although Fundy National Park falls within the traditional territory of both the Mi'kmaq and Wolastoqiyik (Maliseet) people, no physical evidence related to their use or occupation of the park has been found. The Mi'kmaq, Wolastoqiyik (Maliseet), and Peskotomuhkatie Aboriginal Peoples have a long history in Fundy National Park and its greater ecosystem (Fundy Biosphere) region and consider the area as part of their traditional territory, a landscape woven by a labyrinth of water, over which they travelled extensively on its rivers, lakes and coastlines. These people co-occupied the region in permanent villages and semi-permanent, seasonal encampments, for purposes such as salmon fishing. To date, little archaeological evidence of past aboriginal use has been found in the park perhaps largely due to the fact that the sites preferred for traditional encampments in this rugged landscape were also the same sites appropriated for construction of logging mills and modern communities whose activities have obliterated the archaeological record. In addition, other nearby locations, known to have been used until well within living memory, such as Indian Island near Mary's Point, are slowly being lost to coastal erosion and sea-level rise (Cook and McKay, 2010).

An Archaeological Advice, conducted in 2016, indicated that there is a very low potential of archaeological find in the project area (Appendix V). Most of the land within the project area have been previously disturbed resulting from the long history of development, with building construction and demolition throughout the maintenance complex. In addition, the Archaeological Advice indicated that there are no records of previous archaeological work done in the project area and that an Archaeology Overview Assessment (AOA) is not required for this project. The wash bay/cold storage building was evaluated by the Federal Heritage Building Review Office (FHBRO) in 1991 and due to lack of culture value was not designated as a heritage building (FHBRO File: 90-328). The impact from the proposed project on terrestrial archaeological resources are very limited to none.

6.7 Visitor Experience

Fundy National Park receives approximately 350 000 visitors each year. Many of whom entry the park via the East Gate entrance which is the closest to the maintenance complex.

Considering that the project site is located in an area with restricted access, it is expected that construction activities will have a very limited impact on visitor experience. Noise disturbance and traffic generated by delivery trucks (including concrete trucks) could potentially impact the area, although this should be limited to short lived events.

7. EFFECTS ANALYSIS

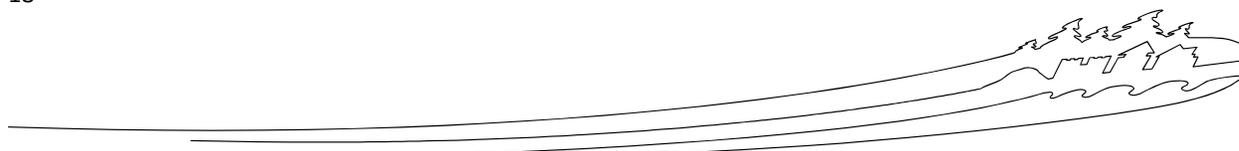
Described below is a list of effects that could potentially impact the identified components at risk.

Air

- Exhaust emissions from vehicles, equipment and small gas operated equipment could potentially have an effect on air quality
- Dust particle pollution generated from vehicles and equipment at the work site or access routes to the site could potentially affect air quality.

Soil/Landforms

- Potential runoff, erosion, sedimentation and soil compaction from movement of machinery
- Potential impact to landscape and visual aesthetic
- Introduction of building materials potentially harmful to the environment





- Potential contamination of soil from the use of machinery with potential leakage issues.

Water/Hydrology

- Potential for dust particles, debris, suspended solid/sediments, and toxic substances to enter any nearby water sources and impact water quality
- Potential contamination of water from the use of machinery during the excavation and shaping of ditches.

Flora

- Potential loss or damage of native flora from stockpiling, vehicle and machinery travel, further erosion if site not stabilized
- Potential decrease in flora diversity
- Introduction or spread of non-native or invasive species through the importation of non-native soil or the spread of local soil already contaminated by invasive species (e.g., woodland angelica)
- Introduction of building materials that could be potentially deleterious to flora habitat

Fauna

- Possible damage or loss of native fauna during construction
- Potential decrease in local fauna diversity during construction
- Noise disturbance
- Introduction of building materials that could be potentially deleterious to fauna habitat

Cultural/Aboriginal Resources

- Unidentified cultural/aboriginal resources could be directly impacted by construction activities

Visitor Experience

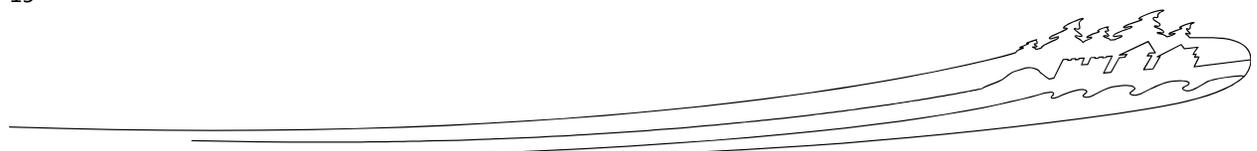
- Increased construction traffic within the Headquarters area of the park could potentially affect visitor experience.
- Inadequate signage, alerting visitors of construction activities, can affect visitor experience and create safety concerns. Without barriers, visitors may wander into an active construction site without knowing the dangers and safety concerns.
- Potential access disruption to the maintenance compound could affect services to visitors.

8. MITIGATION MEASURES

The following mitigation measures are to be followed in order to reduce or eliminate potential negative impacts resulting from the work:

General

- The Project Manager is responsible to ensure all parties (i.e. Park Staff, Contractor, etc.) receive a copy of this Basic Impact Analysis (BIA) prior to project start up.
- The conditions presented in this BIA will be considered part of the project. Failure to comply may result in work being suspended pending rectification of problem(s).
- All activities must conform to relevant Occupational Health and Safety Guidelines and to all relevant Municipal, Provincial and Federal regulations.





- All activities pursuant to the project shall be governed by and carried out in accordance with the Canada National Parks Act and Regulations and with all other laws of Canada and the Province of New Brunswick.
- Before commencing construction activities or delivery of materials to site, the Contractor must submit an Environmental Protection Plan (EPP) for review and approval by PSPC and Parks Canada. The EPP must include a comprehensive overview of known or potential environmental issues to be addressed during construction.
- The Contractor is required to provide for approval ten (10) working days before start-up to PSPC and Parks Canada an erosion and sedimentation control plan, as part of the Environmental Protection Plan. The plan shall incorporate all necessary silt fences, silt traps, plastic lined trenches and ditches as approved by PSPC and Parks Canada.
- The Contractor is required to notify the Project Manager of the proposed work schedule at least one week in advance of potential start up.
- A pre-construction meeting will be held on-site and attended by the Contractor, Project Manager, and the PC Environmental Assessment Officer. The meeting is to ensure construction personnel are aware of the environmental concerns, laws, rules and regulations in Fundy National Park.
- Emergency contact list with phone numbers to be compiled and posted in a conspicuous location at the construction/project site.
- A designated PC Environmental Assessment Officer shall be kept informed of project scheduling and will be notified of changes at all times.
- The Contractor must be aware that they are working in a National Park where emphasis is on ecological/cultural integrity and resource protection.

Vegetation and Soil

- Equipment operators shall take extreme caution to avoid striking vegetation, including trees and tree bark that is outside of the construction corridor. Efforts will also be taken to minimize damage to tree roots. Equipment shall be stored within the project limits.
- The Contractor must set project limits prior to the start of construction. No trees and vegetation will be cut or removed outside these limits. Tree removal will be limited to individuals within the construction site that have been identified by the park representative.
- Measures shall be taken to protect vegetation remaining on the site and not intended for removal. The park representative must be informed if there is a requirement to remove unmarked vegetation. Removal shall only commence with the approval of the park representative. Root systems shall be left intact whenever possible.
- Disturbance of soil and vegetation must be kept to an absolute minimum. This will minimize disturbance and disruption to plants and wildlife communities and habitat.
- All exposed soils must be stabilized as soon as possible in order to control sediment runoff during and after construction.
- Trim trees designated to be left standing within cleared areas of dead branches 4 cm or more in diameter. Prune limbs close to the tree trunk. For a clean cut, make a shallow undercut first, then follow with the top cut. This prevents the limb from peeling bark off the tree as it falls. Do not use an ax for pruning. Cut limbs and branches to be trimmed close to bole of tree or main branches.
- If over half of a tree needs pruning, it is recommended to cut it down. Trees should be cut at ground level and do not leave pointed stumps.
- Any required re-planting for landscaping purposes must utilize native species approved by park representative.





- Minimize equipment travel outside of construction corridor.
- Slash generated from vegetation removal shall be disposed of in an appropriate manner. All work will be done with the goal of having a low aesthetic impact on the landscape.
- All salvageable wood is the property of Parks Canada and must be removed to a pre-determined location. The remaining non-salvageable woody material (e.g., stumps, etc.) will be removed by the Contractor from the National Park and disposed of at a provincially approved site.
- Cover devegetated areas if heavy rains are expected in erosion prone locations.
- Keep excavation to a minimum and reduce disturbance to ground surface and vegetation.
- Organic materials removed during project construction activities must be removed from the project site.
- If soil becomes saturated during extreme wet weather, operations shall be suspended until soil conditions are more favourable.
- To minimize the introduction of invasive species, all construction material must be clean and free of any contaminants and non-native species (refer to invasive plant section below).
- Excavated soil that is suspected of or known to be contaminated (e.g., fuel, oil) is to be placed in covered bins or stockpiled and covered with plastic until the material can be transported to a provincially approved waste management facility.
- All soils brought on site from an outside source must be pre-approved by Parks Canada through inspection at the source location to ensure there are no invasive plants.
- All topsoil material removed during the project and that is not reused in the project will be disposed of outside the National Park at a provincially approved site.
- The use of chemical vegetation control is not permitted.
- Fires and burning of rubbish on site is not permitted.

Hydrology / Water Quality

- Do not use watercourse beds for borrow material.
- Do not skid logs or construction materials across waterways.
- Do not operate construction equipment in waterways.
- No rock, silt, cement, grout, asphalt, petroleum product, lumber, domestic waste, or any deleterious substance shall be placed or allowed to disperse into any stream, river, pond, wetland, lake or other water course.
- Mitigation measures must be in place to reduce the introduction of sediment into any drainage channels.

Mammals / Birds / Fish

- Feeding wildlife is not permitted. All work sites must be kept free of edible and other garbage that could attract or harm wildlife.
- To avoid the risk of nest destruction, the proponent shall avoid vegetation clearing during the most critical period of the migratory bird breeding season, which is May 1st through August 31st.
- In the event that vegetation clearing is to take place inside the May 1st to August 31st window, a qualified biologist must inspect the area prior to potential disturbance or loss of habitat activities to ensure there will be no adverse impacts to birds and wildlife.
- Before cutting of trees, rap their trunks repeatedly with a stick (or similar object) to awaken hibernating mammals.
- The following measures for bat activity / inspection should be strictly followed:





- All work must conform to the mitigation measures outlined in Parks Canada Best Management Practice (BMP) for Management of Bats in Built Assets, Fundy National Park and the National Best Management Practice for Management of Bat Maternity Roosts in Built Assets.
- In Fundy National Park maternity roosts may be active until the end of summer and into early fall. If possible, construction activities should be scheduled outside of this time frame.
- The cold storage building must be checked by Resource Conservation staff within 2 weeks of work commencing. Inspections must follow the guidelines set out in "Fundy National Park Guidance for Inspecting Built Assets for Bats" and the "National Best Management Practices for Management of Bat Maternity Roosts in Built Assets".
- If bat activity is observed during construction, cease work and contact the Project Manager or Environmental Surveillance Officer as soon as possible.
- In the event bats are found inside the cold storage building, an eviction and exclusion program should be implemented preceding construction activity to temporarily exclude bats from directly affected work areas and thereby avoid potential direct impacts. Any such plan must be discussed with appropriate regulators, e.g., Canadian Wildlife Service, prior to implementation.
- Alternative bat roosting habitat should be installed prior to the humane bat eviction/exclusion in order to provide alternative roosting sites for the bats, thereby minimizing the impacts associated with evicting a large number of bats from a roosting site.

Invasive Plants

- All invasive plants (e.g., woodland angelica) in and adjacent to the work area will be identified and secured (e.g., fence) by Parks Canada to ensure the Contractor avoids these areas where possible.
- Construction equipment may facilitate the movement and spread of invasive plants by moving invasive plant seeds from infested areas. Contractors/construction operators are responsible to pressure wash equipment before entering the park or moving from an infested area within the park.
- Hand tools and footwear should be cleaned between work sites to prevent cross contamination and reduce the risk of invasive species introduction.
- Materials to be used on construction projects should be stored in areas free of invasive plant species.
- Freshly disturbed ground created by construction equipment during construction activities provide suitable habitat for invasive plants. Ensure that exposed soil is planted with native vegetation species as soon as feasible to reduce the risk of invasive species invasion.
- Reduce the spread of invasive plants by prohibiting the movement of soil, vegetation and materials from infested areas.
- Excavation and disposal of soils containing invasive plant seed or root material must be conducted under the supervision of the Environmental Assessment Officer and carried out within the guidelines identified in the Fundy National Park Invasive Plant Action Plan (draft).

Machinery / Storage and Handling of Fuels and Dangerous Fluids

- For all contractors, a Spill Response Kit (absorbent materials, etc.) must be on site at all times and the employees trained in its use. In the event of any spill, the offending party (Parks Canada or Contractor) is responsible for containing and cleaning up the spill. The offending party is required by law to report all toxic spills and petroleum spills >20 litres to Environmental Emergency 1-800-565-1633. In addition, for any spill, the Project Manager (506-887-6386) and/or the





Environmental Assessment Officer (506-227-7428) must be notified immediately. If unavailable, contact Jasper Dispatch (1-877-852-3100).

- All mechanical construction equipment should be properly maintained, in good operating order, and fitted with standard air emission control devices. Detection of leaks or exhaust issues shall be fixed immediately or work is suspended until repairs can be made.
- Daylight operation of all mechanized equipment will be respected.
- Gas or diesel operated equipment shall be shut down if not needed for a period greater than 5 minutes to reduce noise and emissions.
- Cleanup, repair and rehabilitation resulting from any spill shall be to the satisfaction of the Parks Canada representative.
- The refuelling or parking of equipment, if required, shall be at a location pre-approved by the Parks Canada representative and will not take place within 30 m of a waterway or critical habitat.
- Refueling shall not take place in locations where runoff could carry contaminants into drainage pathways. An absorbent pad should be placed beneath the machine to capture small spills.
- Minimize quantity of hazardous materials on site to that absolutely necessary to perform the work.
- Disposal of debris or waste into any drain, and/or waterway, is strictly prohibited.
- Any hazardous material/waste is to be stored, handled, transported and disposed of in compliance with Transportation of Dangerous Goods legislation and WHMIS labeling. Disposal shall be at an approved provincial waste management site and proof of disposal provided to the Project Manager.
- Dispose of all waste materials at an appropriate provincial waste/recycle facility.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

Cultural Resources

- If there are any changes to the proposed plans, all additional information and construction drawings must be submitted to Parks Canada's Terrestrial Branch for further review.
- If the project design changes and/or if any activities are proposed to occur in other areas nearby, a separate Archaeology Overview Assessment (AOA) will be required. Activities include other excavations, vehicular access routes, staging areas, landscaping, and installation of additional signage.
- If significant features (i.e., structural remains and/or high artifact concentrations) are encountered during construction activities, excavation should cease in the immediate area, and the Parks Canada Project Manager will be informed. The Project Manager will contact Parks Canada's Terrestrial Archaeology section for advice and assessment of significance, which will in turn determine the requirements to mitigate the find.

Erosion Control

- If there is a requirement to excavate, install sediment and erosion control structures to reduce the introduction of sediment into the open ditch running along the west perimeter or adjacent vegetation.
- Regularly inspect sediment and erosion control structures and repair as required. Remove accumulated sediment at regular intervals and dispose of the sediment at an approved location.





- Ensure an Environmental Protection Plan that highlights procedures is in place before the project begins and have materials readily available for use in the event of a silt release.
- Remove non-biodegradable erosion and sediment control materials once site is stabilized.
- Develop and implement an Erosion and Sediment Control Plan, as part of the Environmental Protection Plan for the site. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized. The plan should, where applicable, include:
 - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering any water body.
 - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
 - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction.
 - Repairs to erosion and sediment control measures and structures if damage occurs.
 - Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
- Remove all construction materials from site upon project completion.
- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.

Air quality

- Minimize the amount of dust created by construction activities on adjacent vegetation and reduce the impact to air quality.
- Construction activities must be carried out during times acceptable to local authorities and smaller, less disturbing equipment will be used where possible.
- Minimize air emissions by ensuring properly maintained exhaust and emission control devices on all construction equipment.

Access

- Access for emergency response, fire suppression and site maintenance will be reflected in the safety plan for the site.
- Whenever possible, only existing roadways or disturbed areas shall be used for site access.

Facilities

- Leave No Trace wilderness ethic principles shall be communicated to/observed by all of the construction crew.
- During the construction phase, store food, garbage and other smelling products in sealed containers. Pack all garbage out from the site daily, unless permanent garbage facilities exist at the site. Garbage structures shall minimize the opportunity for wildlife to feed from the garbage.
- Daily maintenance of the site shall be done to ensure that it is free from accumulations of waste, debris and garbage.
- Remove all construction materials from site upon project completion.
- A complete site cleanup including restoration of exposed and damaged areas, shall be required to the satisfaction of the park representative, before the site is vacated after project completion.
- Fires are only permitted in approved structures at designated sites within the park.





Safety

- On-site work crews must comply with all applicable health/safety regulations, including use of appropriate protective equipment.
- A project safety plan must be in place before project commences.
- The Project Manager is responsible to take all necessary precautions to ensure there is no safety concerns related to visitors of the Park.
- The Contractor shall determine the exact location of all existing buried utilities before commencing work.
- The Contractor must provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from the Project.
- Blasting is not permitted.
- Care and appropriate measures must be taken to ensure dust and other air borne particulates do not reach a level that would compromise air quality or impact vegetation/wildlife.
- The Contractor and all workers are responsible to follow the guidelines set out in the Woodland Angelica - Hazard Information Sheet found in Appendix IV.

9. PUBLIC/STAKEHOLDER ENGAGEMENT & ABORIGINAL CONSULTATION

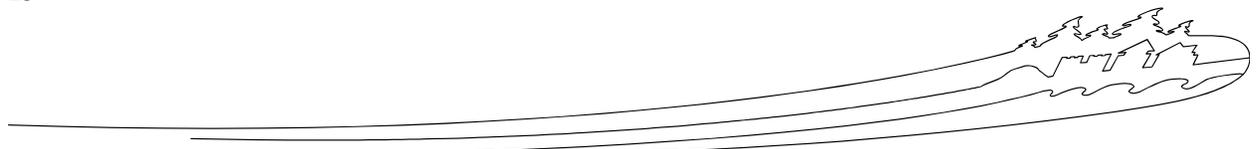
- Indicate whether public/stakeholder engagement was undertaken in relation to potential adverse effects of the proposed project:
 - No
 - Yes (describe the process to involve relevant parties and indicate how comments were taken into consideration).
- Indicate whether Aboriginal consultation was undertaken in relation to potential adverse effects of the proposed project:
 - No
 - Yes (describe the process to involve relevant parties and how the results were taken into consideration).

10. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

All effects are likely not significant or are able to be mitigated. If appropriate mitigating measures described in this report are followed and carried out, the environmental effects should be reduced to minor or insignificant levels. Thus, the level of disturbance is considered to be localized and of low magnitude. The project is not likely to cause significant adverse environmental effects in the short or long term. Impacts to visitors and park staff can be expected during the construction period. These impacts are expected to be short term and all efforts will be taken to mitigate the issues.

11. SURVEILLANCE

- Surveillance is not required
- Surveillance is required (An Environmental Surveillance Officer will conduct daily site inspections to determine if construction activities comply with the mitigation measures, set out in this report, to reduce negative impacts to the site. Items to be monitored during the





inspection include transportation of materials, fuel management, erosion and sediment control, work adjacent to an invasive plant species, management of storm water, public and park employee safety, movement of traffic within the compound area, waste management and general condition of the site).

12. FOLLOW-UP MONITORING

Follow-up monitoring is:

- Not required
- Required by legislation or policy (indicate basis of requirement – e.g. required by the *Species at Risk Act*; *Fisheries Act*, or the *Parks Canada Cultural Resource Management Policy*)
- Required to evaluate effectiveness of mitigation measures and/or assess restoration success

13. SARA NOTIFICATION

Notification is:

- Not required
- Required under the *Species at Risk Act* (outline the nature of and response to any notification)

14. EXPERTS CONSULTED

Department/Agency/Institution: Parks Canada Agency	Date of Request: Various times throughout September 2017
Expert's Name & Contact Information: Shirley Butland	Title: A/ Environmental Assessment Officer
Department/Agency/Institution: Public Services and Procurement Canada	Date of Request: Various times throughout August-September 2017
Expert's Name & Contact Information: Matt Walsh	Title: Project Manager
Expertise Requested: 1) Historical Information, 2) Environmental Information 3) Building Details	
Response: 1) Historical Information by SB, 2) Environmental Information by SB 3) Building Detail by MW	

15. ATTACHMENTS

The following is a list of attachments to this BIA:

- Appendix I:** Environmental Impact Analysis Tool: Effects Identification Matrix
- Appendix II:** Existing Site Conditions
- Appendix III:** Proposed Site Plan
- Appendix IV:** Hazard Information Sheet – Woodland Angelica
- Appendix V:** Archaeological Advice





16. AUTHOR

<p>Prepared by: Mark McNeil, M.Sc. Senior Environmental Specialist, PSPC mark.mcneil@pwgsc-tpsgc.gc.ca / 709-637-4481</p>	<p>Date: February 13, 2019</p>
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17. NATIONAL IMPACT ASSESSMENT TRACKING SYSTEM (Parks Canada Responsibility)

The project must be registered in the Parks Canada National Impact Assessment Tracking System within the fiscal year the project took place. If the project is on hold, was cancelled, or was determined to be likely to cause significant adverse effects and did not proceed, please indicate this information in the tracking system (see selections in the *Assessment Status/Decision* field).

- Project registered in tracking system
- Not yet registered (*CEAA 2012 requires PCA submit a report to Parliament annually. EIAs must be entered in the tracking system **by the end of April** to enable reporting*)

18. DECISION

Taking into account implementation of mitigation measures outlined in the analysis, the project is:

- Not likely to cause significant adverse environmental effects
- Likely to cause significant adverse environmental effects

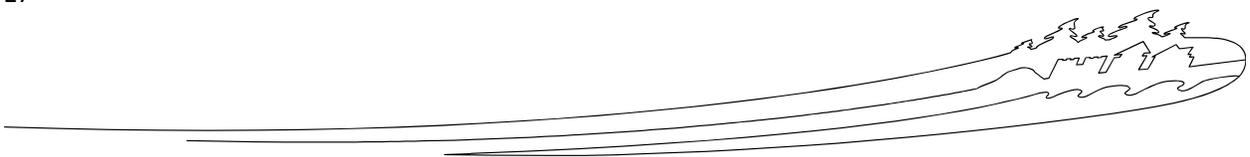
NOTE: If the project is identified as likely to cause significant adverse effects, CEAA 2012 prohibits approval of the project unless the Governor in Council (Cabinet) determines that the effects are justified in the circumstances. A finding of significant effects therefore means the project CANNOT go ahead as proposed.

FOR SARA REQUIREMENTS:

- There are no residual adverse effects to species at risk and therefore the SARA-Compliant Authorization Decision Tool was not required

OR, the SARA-Compliant Authorization Decision Tool was used and determined:

- There is no contravention of SARA prohibitions
- Project activities contravene a SARA prohibition and CAN be authorized under SARA
- Project activities contravene a SARA prohibition and CANNOT be authorized





19. RECOMMENDATION AND APPROVAL (Parks Canada Responsibility)

<p>Reviewed by: Shirley Butland, A/Environmental Assessment Officer (EAO), Parks Canada Agency</p>	<p>Date: January 31, 2019</p>
<p>EIA Specialist Comments: The A/EAO conducted a review and provided edits for this BIA. In addition, Doug Watson, Project Manager, reviewed the document. This BIA identifies potential environmental impacts and the necessary mitigation measures to reduce or eliminate these negative impacts. This project is not likely to cause significant adverse environmental effects in the short or long term. Temporary impact to park staff and visitors can be expected but the impact should be short term.</p>	
<p>Recommended by: Doug Watson, Project Manager, Parks Canada Agency</p>	<p>Date: March 14, 2016</p>
<p>Approved by: Julie M. LeBlanc New Brunswick South Field Unit Superintendent, Parks Canada Agency</p>	<p>Date: <i>2019-02-25</i></p>
<p>Signature: <i>Julie LeBlanc</i></p>	





20. REFERENCES

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Bird Studies Canada (2017) The Second Atlas of Breeding Birds of the Maritime Provinces. Accessed on July 2017 at: <http://www.mba-aom.ca/>

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NBDNR (New Brunswick Department of Natural Resources) (2008) Bedrock Geology of New Brunswick. Minerals. Policy and Planning Division. Map NR-1 (2008 Edition). Scale 1:500 000 (Revised. December 2008).

Parks Canada (2011) Fundy National Park of Canada – Management Plan. 96 p.

Rampton V.N. (1984) Generalized surficial geology map of New Brunswick Department of Natural Resources and Energy, Minerals, Policy and Planning Division, NR-8 (scale: 1:500 000)

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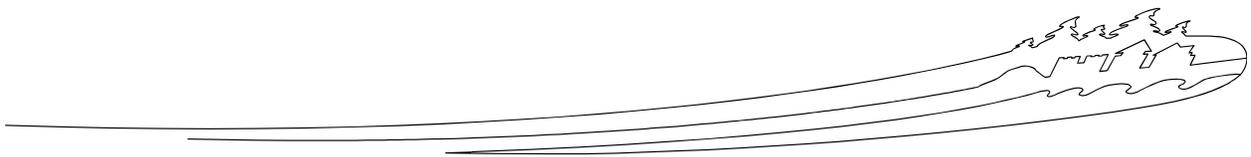
Zelazny V.F. (2007) Our Landscape Heritage: The Story of Ecological Land Classification in New Brunswick. New Brunswick, Dept. of Natural Resources, 359 p.





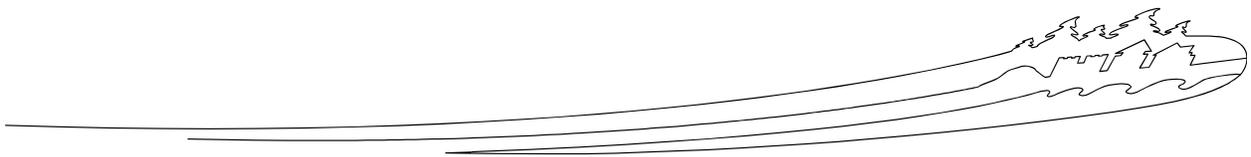
APPENDIX I

Effects Identification Matrix



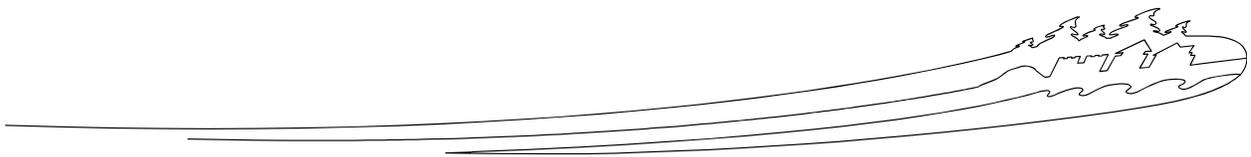


Direct Effects											
		Valued components potentially directly affected by the proposed project									
		Natural Resources					Cultural Resources	Visitor Experience			
		Air	Soil & landforms	Water (surface, ground, crossings, etc.)	Flora (trees and shrubs)	Fauna (mammals, Birds and fish)	Cultural Resources of Local Value	Recreational opportunities	Viewscapes and soundscapes	Visitor Safety	
Phases	Examples of Associated Activities										
Project Components	Preparation / Construction / Operation / Decommissioning	Supply and storage of materials	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Burning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Clearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Demolition	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Disposal of waste	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Blasting/ Drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Dredging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Drainage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Excavation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Grading	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Backfilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use of machinery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Transport of materials/ equipment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Building of fire breaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use of Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set up of temporary facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		



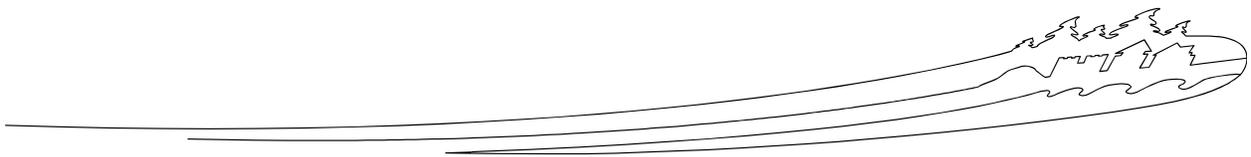


Direct Effects (continued)											
		Valued components potentially affected by the proposed project									
		Natural Resources					Cultural Resources	Visitor Experience			
		Air	Soil & landforms	Water (surface, ground, crossings, etc.)	Flora (trees and shrubs)	Fauna (mammals, Birds and fish)	Cultural Resources of Local Value	Recreational opportunities	Viewscapes and soundscapes	Visitor Safety	
Phases	Examples of Associated Activities										
Project Components	Preparation / Construction / Operation / Decommissioning	Waste disposal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Wastewater disposal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use/Removal of temporary facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use of Chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Active fire stage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Prescribed burn cleanup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Planting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Culling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Vehicle Traffic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		





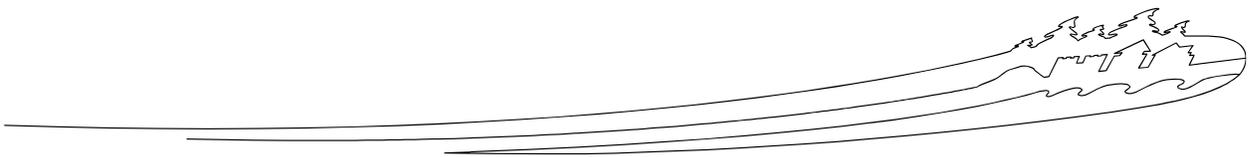
Indirect Effects (all phases)							
		Impacts as a result of changes to the environment					
		With respect to non-Aboriginal peoples:	With respect to Aboriginal peoples:			With respect to visitor experience	
Phases	Natural resource components affected by the project	Health and socio-economic conditions	Health & socio-economic conditions	Current use of lands and resources for traditional purposes	Access & services	Recreation & accommodation opportunities	Safety
Preparation / Construction / Operation / Decommissioning	Could impacts to <u>air</u> lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Could impacts to <u>soils and landforms</u> lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Could impacts to <u>water</u> (e.g. surface, ground water and water crossings) lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Could impacts to <u>flora</u> (including SAR) lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Could impacts to <u>fauna</u> (including SAR) lead to adverse effects on...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





APPENDIX II

Existing Site Conditions

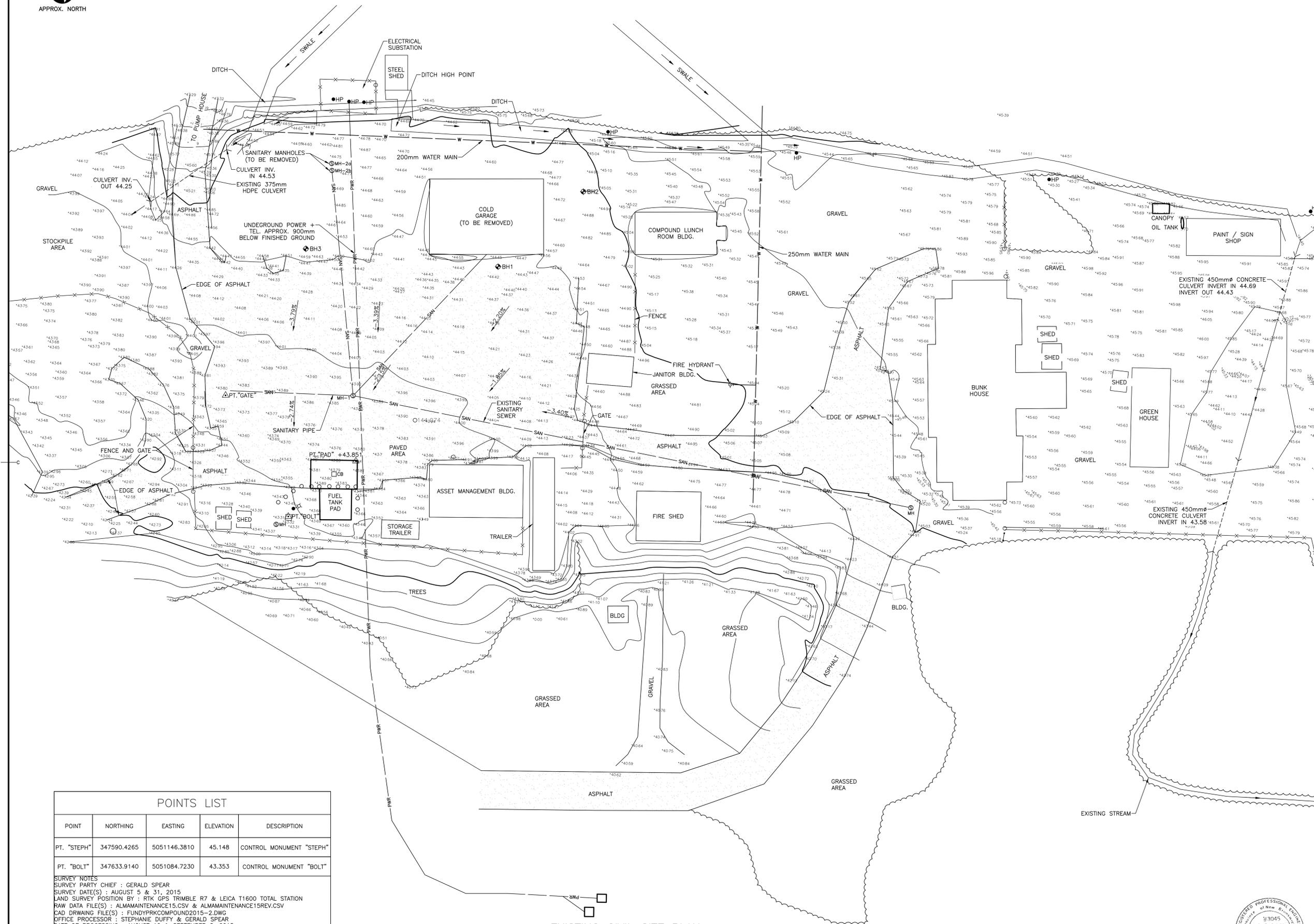




APPROX. NORTH



HATCH
1809 BARRINGTON STREET, SUITE 1009
HALIFAX, NOVA SCOTIA B3J3K8
TEL: (902) 420-1065
HATCH PROJECT # H352258



LEGEND

- PWR — UNDERGROUND POWER
- W — WATER PIPE
- SAN — SANITARY PIPE
- - - FENCE
- - - CULVERT
- HP — HYDRO POLE
- ⊕ — FIRE HYDRANT
- CB — STORM WATER CATCH BASIN
- ⊙ MH — SANITARY SEWER MANHOLE
- ⊕ BH — BOREHOLE
- ⊕ — UTILITY POLE
- SIGN
- DIRECTIONAL FLOW

O	ISSUED FOR TENDER	03/16/2018
F	ISSUED FOR 99% REVIEW	01/09/2018
E	ISSUED FOR 66% REVIEW	10/23/2017
D	ISSUED FOR 66% REVIEW	01/27/2017
C	ISSUED FOR 33% REVIEW	12/08/2016
B	CIVIL DESIGN BRIEF	11/04/2016
A	PREDESIGN REPORT	08/17/2016
revisions		date

project **COMPOUND MAINTENANCE FACILITY FUNDY NATIONAL PARK ALMA, NB ALBERT COUNTY, NB** project

drawing **CIVIL EXISTING SERVICES AND ELEVATIONS** dessin

designed B. COLPITTS conçu
date 03/16/18
drawn A. SCOTT dessiné
date 03/16/18
approved B. COLPITTS approuvé
date 03/16/18
Tender Soumission

PWSSC Project Manager Administrateur de projets TPSSC
project number **R.075814.001** no. du projet
drawing no. **H352258-C-001** no. du dessin

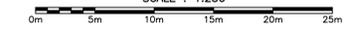


POINTS LIST

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
PT. "STEPH"	347590.4265	5051146.3810	45.148	CONTROL MONUMENT "STEPH"
PT. "BOLT"	347633.9140	5051084.7230	43.353	CONTROL MONUMENT "BOLT"

SURVEY NOTES
SURVEY PARTY CHIEF : GERALD SPEAR
SURVEY DATE(S) : AUGUST 5 & 31, 2015
LAND SURVEY POSITION BY : RTK GPS TRIMBLE R7 & LEICA T1600 TOTAL STATION
RAW DATA FILE(S) : ALMAMAINTEANCE15.CSV & ALMAMAINTEANCE15REV.CSV
CAD DRAWING FILE(S) : FUNDYPRKCOMPOUND2015-2.DWG
OFFICE PROCESSOR : STEPHANIE DUFFY & GERALD SPEAR
DATE OF PROCESSING : AUGUST 10 & SEPTEMBER 8, 2015
CONTROL POINTS : UTM NAD 83 ZONE 20 (CSRS VALUES)

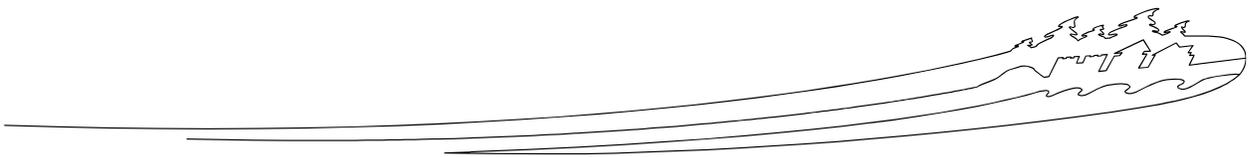
EXISTING CIVIL SITE PLAN
SCALE : 1:250





APPENDIX III

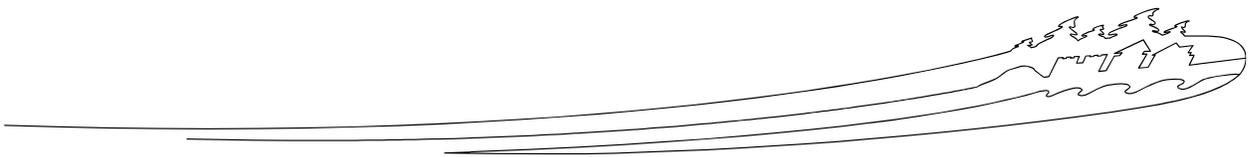
Proposed Site Plan





APPENDIX IV

Hazard Information Sheet – Woodland Angelica





Hazard Information Sheet

Woodland angelica

EMERGENCY PHONE NUMBER: 911



SECTION 1. ACTIVE INGREDIENTS IN SAP

Composition information: **Furanocoumarins**

The furanocoumarins, or furocoumarins, are a class of organic chemical compounds found in the sap of a variety of plants.

SECTION 2. HAZARDS IDENTIFICATION

Routes of entry:

Primary: Skin **Secondary:** Ingestion **Tertiary:** n/a

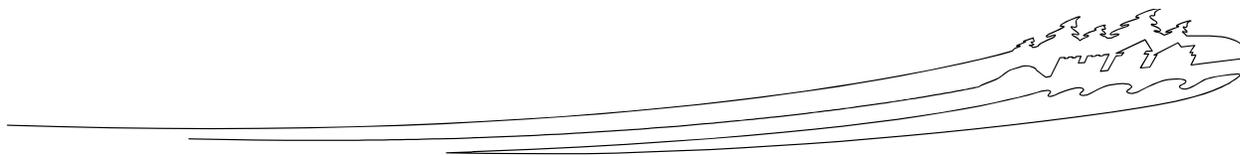
The furanocoumarins react in the presence of ultraviolet light (UV-A) to produce a phototoxic effect, resulting in burns or erythema.

The visible signs can last for weeks, and might be one or more of the following:

- severe redness (sunburn)
- darkening of skin
- edema (swelling)
- in some cases, blistering

CAUTION:

A chemical component of the Woodland angelica's sap may cause painful skin irritations (rash and blisters) when exposed to ultraviolet light, including sunlight.





SECTION 3. PERSONAL PROTECTION

Personal Protective Equipment (PPE):

Skin Protection: Water-proof gloves are mandatory, long sleeve work gloves are recommended.

Eye Protection: Use proper protection – safety glasses as a minimum.

Other: Long sleeve work shirts, work pants and protective boots.

SECTION 4. FIRST AID MEASURES

Have this information sheet with you when seeking treatment.

Skin Contact: Rinse skin immediately with plenty of water and gentle soap and **do not expose your skin to UV light for 12-18 hours.** Call a poison control center or doctor if irritation persists.

Eye Contact: Hold eyes open and rinse slowly and gently for a minimum of 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. **Do not expose your eyes to UV light for 12-18 hours.** Call a poison control center or doctor if irritation persists.

Ingestion: Call a poison control center or doctor. Do not induce vomiting unless told to do so by the poison control center or doctor.

SECTION 5. SPECIES CLASSIFICATION

Rank	Scientific Name - Common Name
Kingdom	Plantae – Plants
Subkingdom	Tracheobionta – Vascular plants
Superdivision	Spermatophyta – Seed plants
Division	Magnoliophyta – Flowering plants
Class	Magnoliopsida – Dicotyledons
Subclass	Rosidae
Order	Apiales
Family	Apiaceae / Umbelliferae – Carrot family
Genus	<i>Angelica</i> L. – angelica
Species	<i>Angelica sylvestris</i> L. – woodland angelica

SECTION 6. BIOLOGY

Reference: New Brunswick Alliance of Lake Association <http://www.nbala.ca/>

Habitat: Woodland angelica can be found in the floodplain plant community. It is found mainly in riparian habitats, open woods, marshes and fields, mostly on richer non-acidic soils.

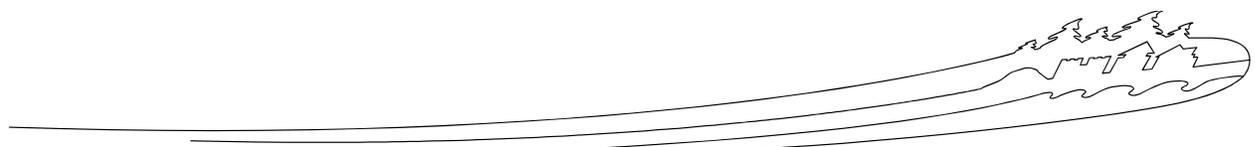
Description: Woodland angelica is a tall (1-3 m), robust, biennial or short-lived perennial plant. The stems are 2-5 cm in diameter, hollow, ridged, often branched and purplish. The leaves are large and leaf stalks are long. The leaves (often over 50 cm in length) are divided into many, oval finely toothed leaflets (3-8 cm long) and the lower leaf surface is hairy along the veins. The leaves gradually decrease in size towards the top of the stem. Stems are topped by a large, rounded, umbrella-shaped inflorescence, which contains clusters of small white flowers. The branches of the flower clusters are densely covered in fine hairs. The fruits are flattened, oval and winged, and 4-6 mm in diameter.

Origin and Range: Native to most of Europe and Western Asia, this tall, purple-stemmed herbaceous plant was intentionally introduced as a garden herb in the 18th century. In North America, the species is only known from New Brunswick, Nova Scotia, Quebec and Ontario. Woodland Angelica has been in New Brunswick and Nova Scotia for a long time, and has spread aggressively in recent decades. It is particularly common along the mid-and lower Saint John River.

Annual Cycle: Woodland angelica is a perennial that reproduces by seed and may also spread by rhizomes (root-like underground stems). Woodland angelica is in flower from July to September.

Look Alikes: It may be confused with: cow parsnip (*Heracleum maximum*), which has large coarsely toothed leaves that are not divided into small leaflets and hairy stems that are mainly green; Queen-Anne’s lace (*Daucus carota*), which is a much shorter plant with much smaller finely-divided leaves (only reaching a length of 15 cm) and purple alexanders (*Angelica atropurpurea*) which is extremely similar but is a native species of wild habitats, mostly found along river shores in the northern interior rather than disturbed habitats in the south of the province.

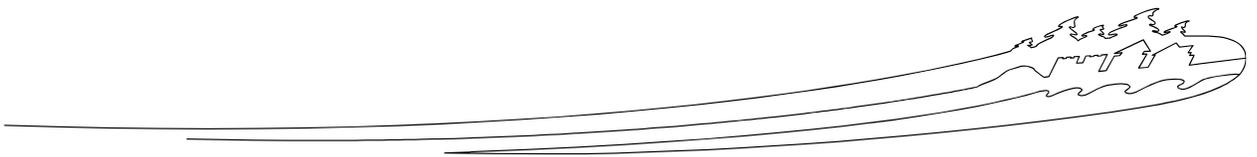
Impacts: Woodland angelica is an aggressive species able to establish in natural areas where it can displace native plants and degrade wildlife habitat.





APPENDIX V

Archaeological Advice



From: [André Miller](#)
To: [Lisa Forbes](#)
Cc: [Charles Burke](#); [Virginia Sheehan](#)
Subject: Request for CRIA: Fundy Maintenance Bldg - RPA 647 & 1310
Date: 29/11/2016 02:13 PM
Attachments: [Fundy NP Compound Maintenance.jpg](#)

Hi Lisa,

Archaeological Advice - Maintenance Complex Project at Fundy National Park - RPA # 647 & 1310

Project:

The project is to build a new consolidated maintenance building in Fundy National Park (Fundy NP). The new building will be within the existing maintenance complex and at a site that has already been disturbed. It roughly covers where Maintenance Garage was until demolished in 2015 and the location of the current Wash Bay/Cold Storage Building. Eventually the other buildings whose functions are being assumed by the new consolidated maintenance complex are to be demolished, but this is not part of this project. It will be reviewed for CRM considerations once that project is active (1).

Construction background:

The soil is already disturbed in this area and the maintenance building to be demolished (Wash Bay/Cold Storage building) was screened by FHBRO in 1991 and was not designated as a heritage building. (FHBRO File: 90-328). The existing maintenance/repairs shops, trade shops and storage facilities were constructed in 1948-50 as temporary structures for the construction of the (new) Fundy National Park (2).

Parks Canada (PC) has done several site works over the past 60 years and the Maintenance Garage building have been demolished. The area has been heavily impacted by the installation of building's, water line, sewage, electrical and facilities services . The proposed work will take place exclusively within already heavily impacted/disturbed areas (e.g. road beds, parking lots, roadways). It is not expected to disturb new undisturbed areas for the completion of this project (Figure attached : Fundy NP Compound Maintenance.jpg).

Archaeological Potential

After reviewing documents, designs and plans provided by Fundy NP and PC documentation on file, there is a very low potential of archaeological find in the project area. Most of the parts of the project area is disturbed resulting of the long history development of the site, with buildings construction; demolitions at the Compound Maintenance Complex.

Archaeological Advice:

There are no records to indicate previous archaeological work done in the project area. Therefore, an Archaeological Impact Assessment (AIA) is not required for this project. The impacts from the proposed project on terrestrial archaeological resources are very limited to none, but the following mitigation measures are proposed to

Minimize potential impacts on other areas nearby:

A) If the project design changes and/or if any activities are proposed to occur in other areas nearby (e.g the forested area), a separate AOA will be required. Activities include other excavations, vehicular access routes, staging areas, landscaping, installation of additional Signage.

B) If significant features (i.e., structural remains and/or artifact concentrations) are encountered during construction activities, works should cease in the immediate area, and Parks Canada project manager will be informed. The project manager should then contact Parks Canada's Terrestrial Archaeology section for advice and assessment of significance, which will in turn determine the requirements to mitigate the find.

References:

(1) Parks Canada, 2016. Request for Cultural Resource Impact Analysis (CRIA). Maintenance Complex at Fundy NP

(2) Parks Canada, 2016. Request for Cultural Resource Impact Analysis (CRIA). Fundy NP Compound Maintenance, Trades & Storage Facility.



Cordialement / Regards

André Miller

Archéologue - Investissement pour les infrastructures fédérales
Direction de l'archéologie et de l'histoire
Direction générale des affaires autochtones et du patrimoine culturel
Parcs Canada, Gouvernement du Canada
30 rue Victoria, 3e étage, bureau 146, Gatineau QC J8X 0B3
andre.miller@pc.gc.ca / Tél. : 819-420-5030 / Tél. cell. : 819-635-8683

Federal Infrastructure Investments Archaeologist
Archaeology and History Branch
Indigenous Affairs and Cultural Heritage Directorate
Parks Canada, Government of Canada
30 Victoria street, 3rd floor, room 146, Gatineau QC J8X 0B3
andre.miller@pc.gc.ca / Tel. : 819-420-5030 / Tel. cell. : 819-635-8683

Un bon temps pour se rapprocher / Time to connect

▼ [Virginia Sheehan---28/11/2016 12:38:25 PM---Bonjour André Un autre stp.](#)

From: Virginia Sheehan/NOTES/PC/CA
To: André Miller/NOTES/PC/CA@PC
Cc: Charles Burke/NOTES/PC/CA@PC, Barbara Leskovec/NOTES/PC/CA@PC, Martin Perron/NOTES/PC/CA@PC