



# Basic Impact Analysis (BIA)

## TCH Climbing Lanes – Tree Clearing

Terra Nova National Park of Canada  
Newfoundland and Labrador

December 2015



Parks  
Canada

Parcs  
Canada

December 2015



December 2015



**1. PROJECT TITLE**

TCH Climbing Lanes – Tree Clearing

**2. PROJECT LOCATION**

Terra Nova National Park of Canada, Newfoundland and Labrador

**3. PROJECT SITE(S)**

Trans Canada Highway, Various locations throughout Terra Nova National Park of Canada, Newfoundland and Labrador

**4. PROPONENT**

Katherine Davey, Project Manager (FII), Parks Canada Agency

**5. PROPONENT CONTACT INFORMATION**

Newfoundland East Field Unit, Parks Canada Agency, Glovertown, NL, A0G 2L0; Telephone: (709) 533-3122; email: [katherine.davey@pc.gc.ca](mailto:katherine.davey@pc.gc.ca)

**6. PROJECT DATES**

Planned commencement: 2016-01-01

Planned completion: 2016-05-15

**7. INTERNAL PROJECT FILE #**

PWGSC # R.075288.001

**8. PROJECT DESCRIPTION**

The Trans-Canada Highway in Terra Nova National Park is 43.4 kilometers in length. It was originally constructed in the late 1950's, paved in 1960 and repaved in 1974 and 2013. It is part of the 800 km National Highway System in Newfoundland. Traffic volumes have grown significantly in recent years and the allowable truck axle loadings have increased by 10% due to the closing of the CN Railway in 1988. The number of heavy commercial semi-trailers utilizing the TCH has increased highway loading and reduced the capacity of the highway.

The highway in Terra Nova forms part of a vital transportation link within the province of Newfoundland and Labrador, linking communities east and west of the Park as part of the National Highway System. To accommodate the increase in highway traffic, Parks Canada is proposing to construct passing lanes in 13 different locations throughout the park (Figure 1-1 and Table 1-1). This will involve widening the existing lanes by approximately 3 meters with additional adjustments to existing road intersections. Of the 13 proposed passing lanes, 7 will be westbound and 6 will be eastbound. The construction of the passing lanes will provide the travelling public with increased opportunities for safe passing and allow for more efficient highway operation throughout the Park.

The project will be completed in phases, timed to reduce the potential environmental impact of the project as a whole on the Terra Nova National Park ecosystem. Specifically vegetation clearing required to accommodate the newly expanded passing lanes will be completed as a separate, standalone project during the Winter – early Spring of 2016. Completing the tree clearing during the winter months is intended to avoid any potential conflict with maternal Newfoundland Marten dens and nesting birds. To ensure Parks Canada obligations under Section 67 of the Canadian Environmental Assessment Act (CEAA) are met, a separate Basic Impact Analysis (BIA) is being completed to further assess the potential environmental impact of the tree clearing. This BIA will be incorporated into the final passing lanes environmental impact analysis (EIA) once completed.



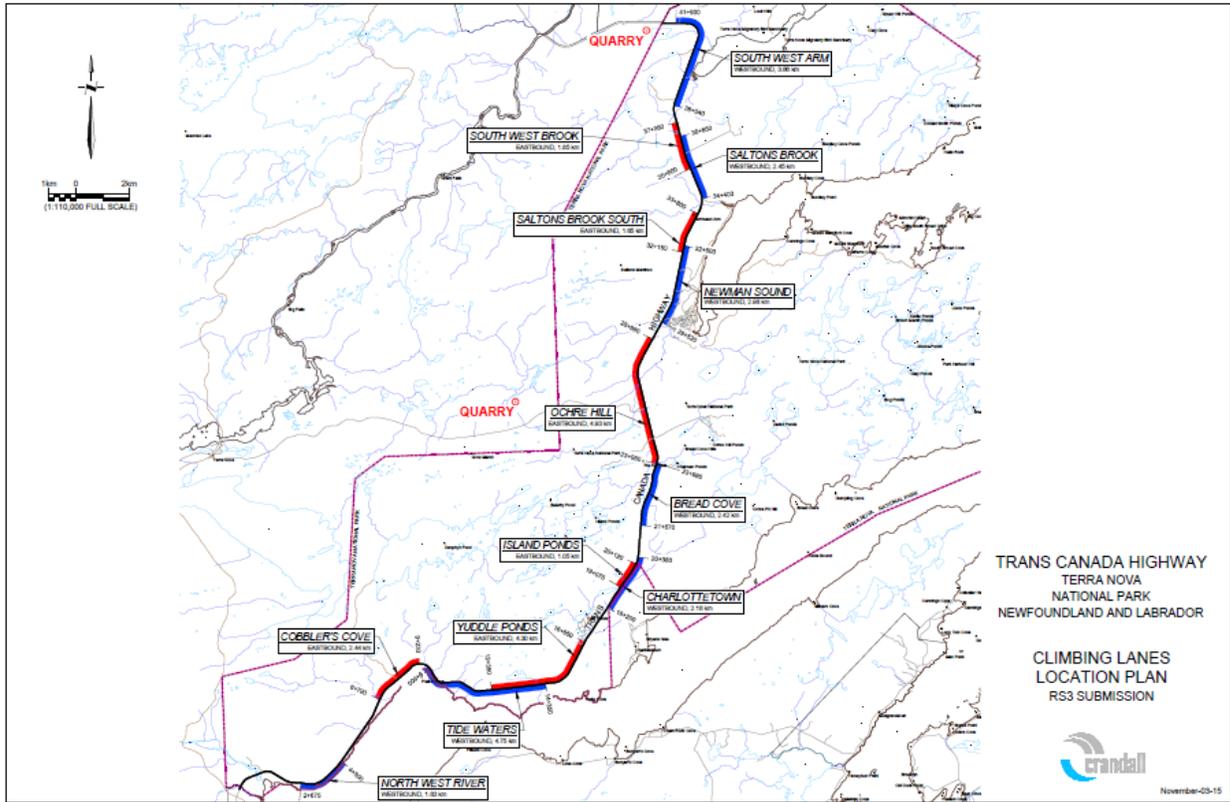


Figure 1-1. Climbing Lanes Location Plan, TCH Terra Nova National Park, NL.

Climbing/Passing Lane Site	Direction	Proposed limits		Length (km)
		From	To	
North West River	WB	2.675	4.500	1.83
Cobbler's Cove	EB	6.790	9.230	2.44
Tide Waters	WB	9.600	14.350	4.75
Yuddle Ponds	EB	12.350	16.650	4.30
Charlottetown	WB	18.200	20.380	2.18
Island Ponds	EB	19.075	20.120	1.05
Bread Cove	WB	21.570	23.985	2.42
Ochre Hill	EB	23.950	28.880	4.93
Newman Sound	WB	29.520	32.500	2.98
Salton's Brook South	EB	32.150	33.800	1.65
Salton's Brook	WB	34.400	36.850	2.45
South West Brook	EB	35.600	37.380	1.78
South West Arm	WB	38.040	41.900	3.86

Table 1-1. Climbing lane locations





The proposed tree clearing involves the cutting and removal of approximately 29.8 hectares of forest located immediately adjacent to the existing Trans-Canada Highway in 13 different locations (Table 1-2). The tree clearing is required to accommodate the footprint of the proposed new passing lanes and side slopes. All cutting will be completed by hand using handheld equipment such as chainsaws. The use of mini-excavators equipped with mulching heads may also be utilized within the excavation footprint associated with each passing lanes. All-Terrain Vehicles (ATV's) and/or over snow vehicles may be permitted for the purpose of removing merchantable timber from the cutting areas, at the discretion of the Field Unit Superintendent (through the issuance of a special activity permit. Conditions stipulated in the permit must be adhered to).

Climbing/Passing Lane Site	Estimated clearing (hectares)
North West River	1.5
Cobbler`s Cove	2.8
Tide Waters	4.0
Yuddle Ponds	3.2
Charlottetown	2.0
Island Ponds	1.0
Bread Cove	2.5
Ochre Hill	2.6
Newman Sound	2.3
Salton`s Brook South	1.0
Salton`s Brook	2.0*
South West Brook	2.0
South West Arm	2.9
<b>TOTAL</b>	<b>29.8</b>
*Visitors Centre intersection clearing included with Saltons Brook passing lane.	

Table 1-2. Climbing lane locations

The project will require 4-5 months to complete, and is tentatively scheduled to commence early January 2016. All cutting must be completed by May 15, 2016, unless otherwise specified by Parks Canada.

Site specific descriptions of the tree clearing associated with each individual passing lane are provided on the following pages.





### North West River

The proposed North West River passing lane will be a west bound lane located near the entrance to Terra Nova National Park (Figure 1-2). The proposed lane will measure approximately 1.83 km in length, beginning at 2.675 km from the eastern entrance to the park (approximate WGS84 coordinates 48°23'31.32"N, 54°10'40.43"W) and extending to the 4.5 km mark (approximate WGS84 coordinates 48°23'42.73"N, 54°09'38.34"W).



Figure 1-2 Limits of North West River passing lane.

The topography of this passing lane is very gentle, with elevation changes from approximately 25 feet above sea level to a maximum elevation of approximately 50 feet. There are no wetlands/bogs or ponds within the limits of the passing lane. There are no roadway intersections within the passing lane but the Cobbles Brook Day Use Area intersection, which is located half a kilometre away, may require upgrading. There are no fish bearing waterways within the limits of the proposed passing lane but there are eight culverts with four requiring extensions (Crandall, 2015). To accommodate the new passing lane, approximately 1.5 hectares of forest adjacent to the highway will need to be cleared (Figure 1-3).



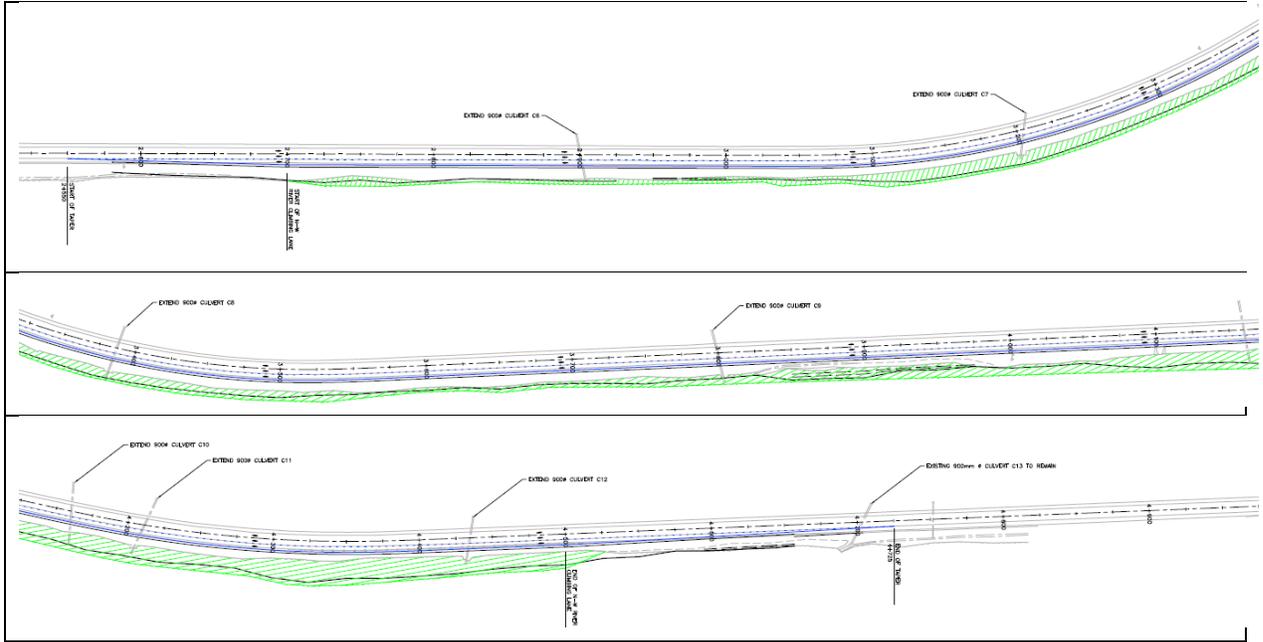
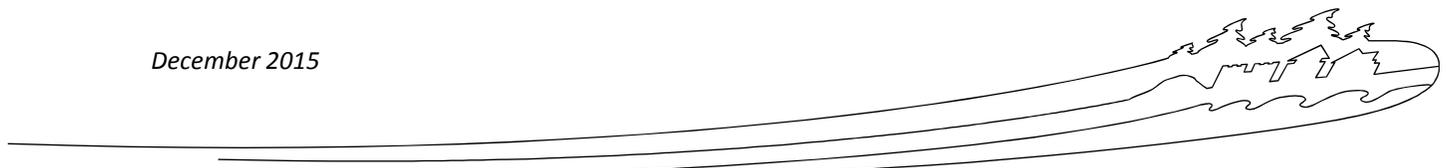


Figure 1-3. Forested areas to be cleared (in green) for North West River passing lane

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### Cobbler's Cove

The proposed Cobblers Cove passing lane will be an east bound lane near the Dunphys Pond access trail (see Figure 1-4). The proposed lane will measure approximately 2.44 km in length, beginning at 6.790 km from the eastern entrance to the park (approximate WGS84 coordinates 48°25'42.38"N, 54° 6'32.89"W) and extending to the 9.230 km mark (approximate WGS84 coordinates 48°24'42.68"N, 54° 8'25.87"W).

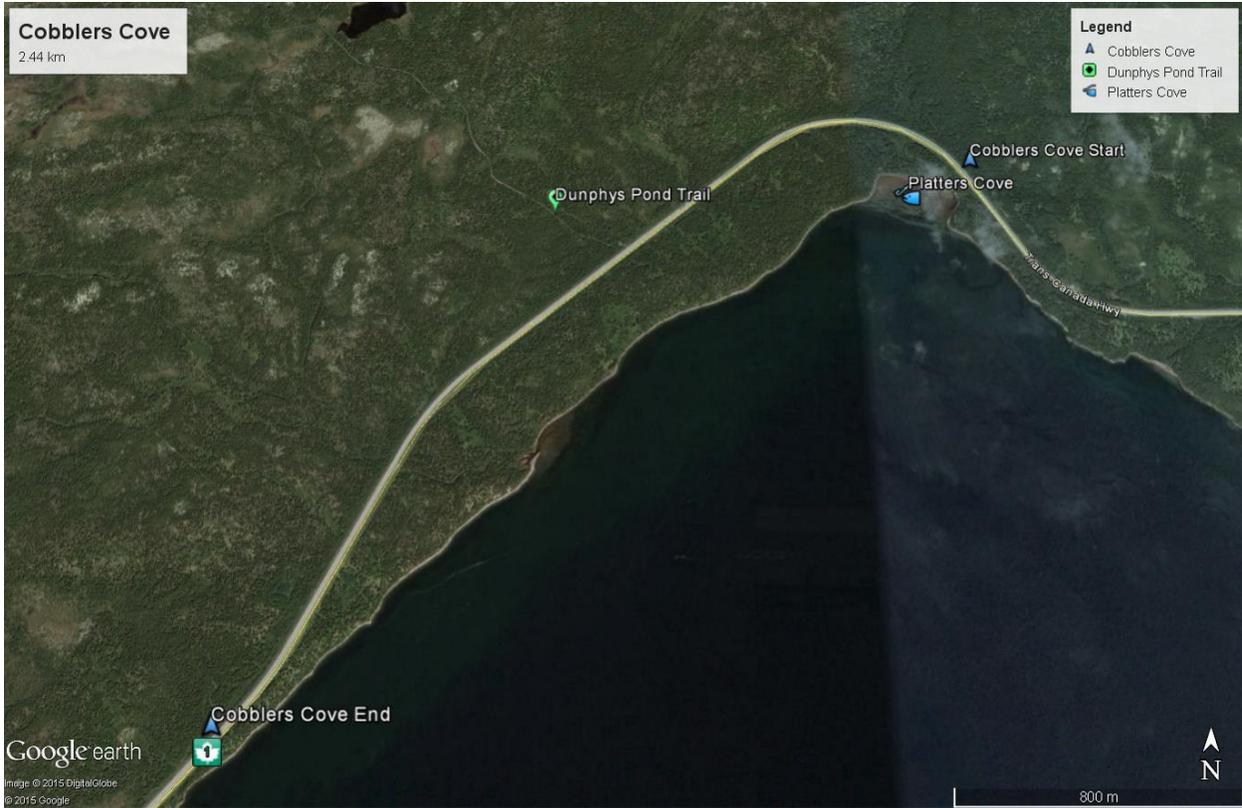
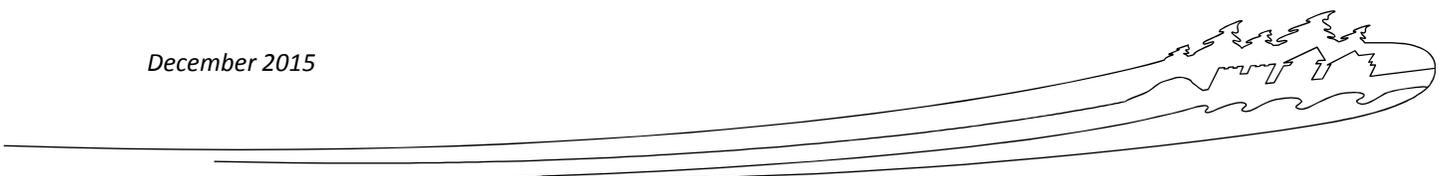


Figure 1-4 Limits of Cobblers Cove passing lane.

The topography of the area throughout the passing lane is relatively gentle, extending along the 50 ft – 100 ft contour elevations (above sea level). The area is largely forested. A small access point and parking area for Dunphys Pond is present within the passing lane. There are 8 culverts, four of which have been identified as fish bearing (Crandall, 2015). To accommodate the new passing lane, approximately 2.2 hectares of forest adjacent to the highway will need to be cleared (Figure 1-5).



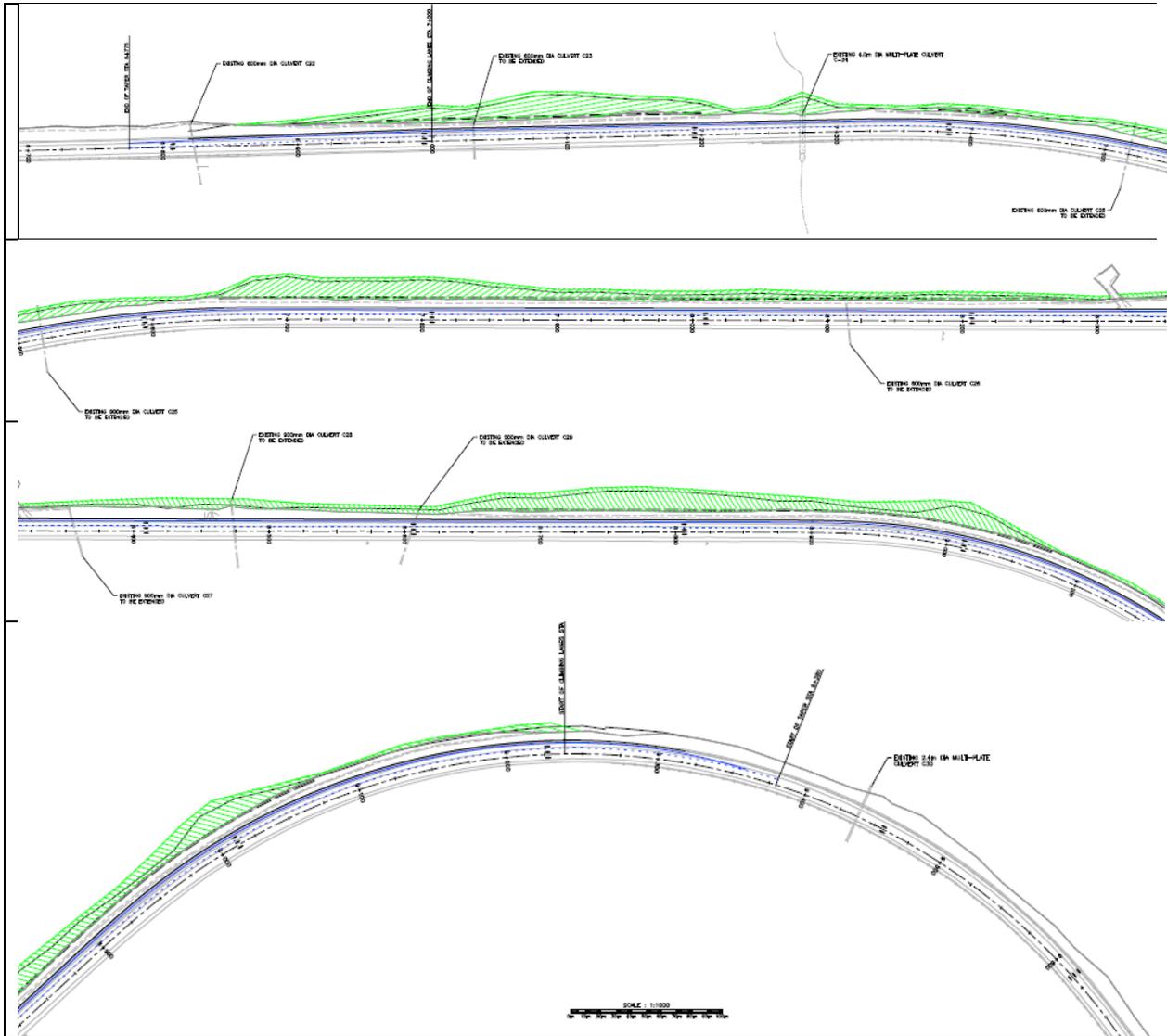


Figure 1-5. Forested areas to be cleared (in green) for Cobblers Cove passing lane.





### Tide Waters

The proposed Tide Waters passing lane will be a west bound lane near White Point Pond (see Figure 1-6). The proposed lane will measure approximately 4.75 km in length, beginning at 9.6 km from the eastern entrance to the park (approximate WGS84 coordinates 48°25'38.22"N, 54° 6'30.55"W) and extending to the 14.35 km mark (approximate WGS84 coordinates 48°25'24.57"N, 54° 2'36.55"W).

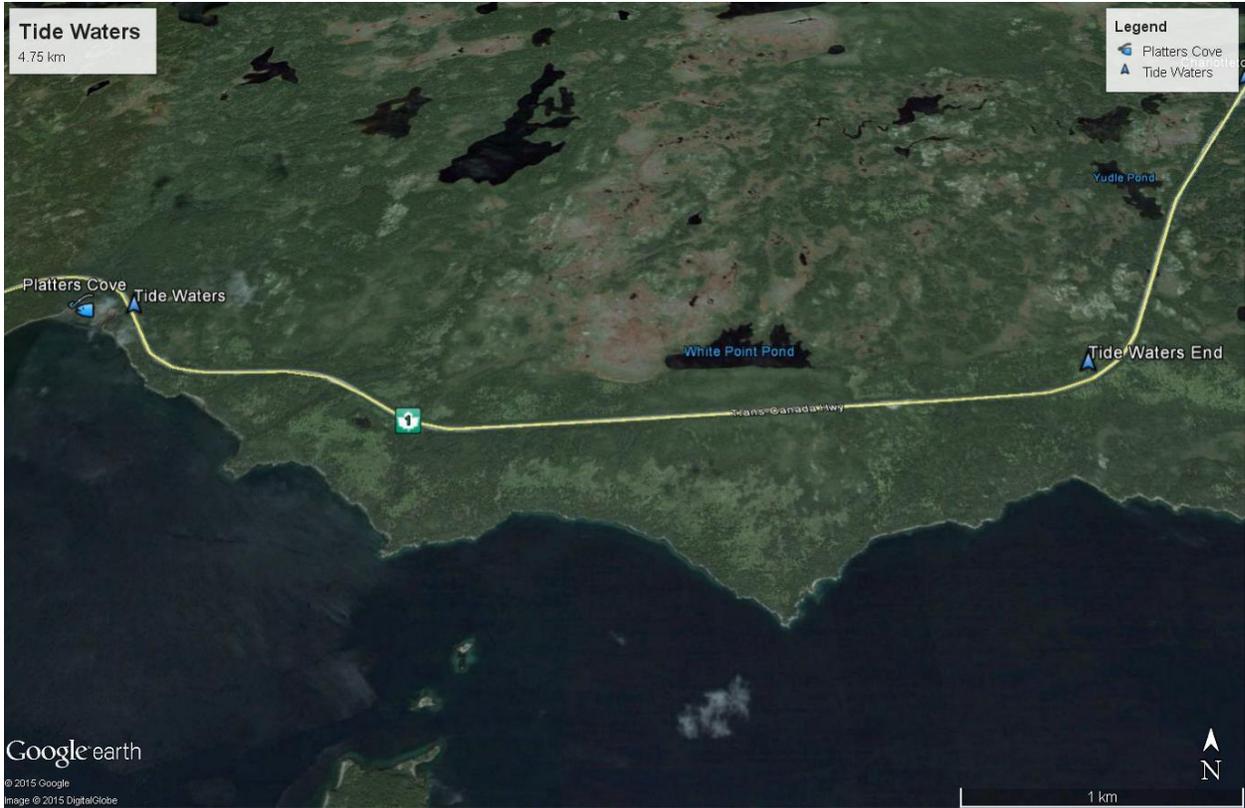


Figure 1-6 Limits of Tide Waters passing lane.

The topography of the area throughout the passing lane is steep, with elevation changes from approximately 50 feet above sea level to a maximum elevation of approximately 450 feet above sea level. The area is largely forested. There are 15 culverts, 3 of which have been identified as fish bearing (Crandall, 2015). To accommodate the new passing lane, approximately 4 hectares of forest adjacent to the highway will need to be cleared (Figure 1-7).



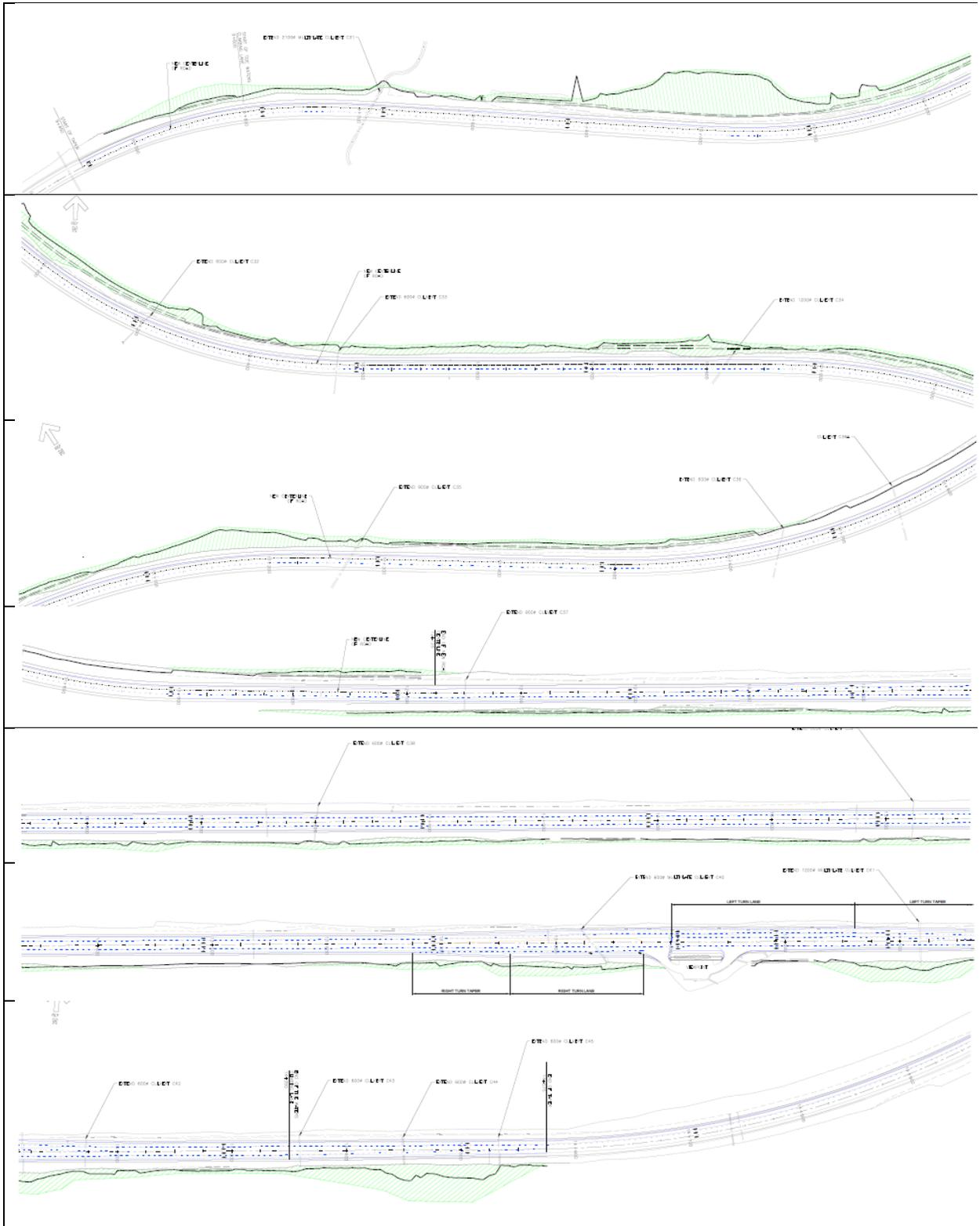


Figure 1-7. Forested areas to be cleared (in green) for Tide Waters passing lane





### Yuddle Ponds

The proposed Yuddle Ponds passing lane will be an east bound lane approximately 3kms outside of the Charlottetown exit (see Figure 1-8). The proposed lane will measure approximately 4.30 km in length, beginning at 12.350 km from the eastern entrance to the park (approximate WGS84 coordinates 48°25'13.52"N, 54°04'41.34"W) and extending to the 16.650 km mark (approximate WGS84 coordinates 48°26'05.55"N, 54°01'55.12"W).



Figure 1-8 Limits of Yuddle Ponds passing lane.

The topography of the area throughout the passing lane is moderate in nature, extending from an elevation of approximately 78 feet above sea level towards the end of the lane to a maximum elevation of approximately 139 feet near the beginning. The area is largely forested with an unnamed pond very close to the highway along the eastbound side, as well as Yuddle Pond located 24 m from the passing lane also along the eastbound side of the highway. There is one roadway intersection within the passing lane and 15 culverts; 4 of which have been identified as fish bearing (Crandall, 2015). To accommodate the new passing lane, approximately 3.2 hectares of forest adjacent to the highway will need to be cleared (Figure 1-9).



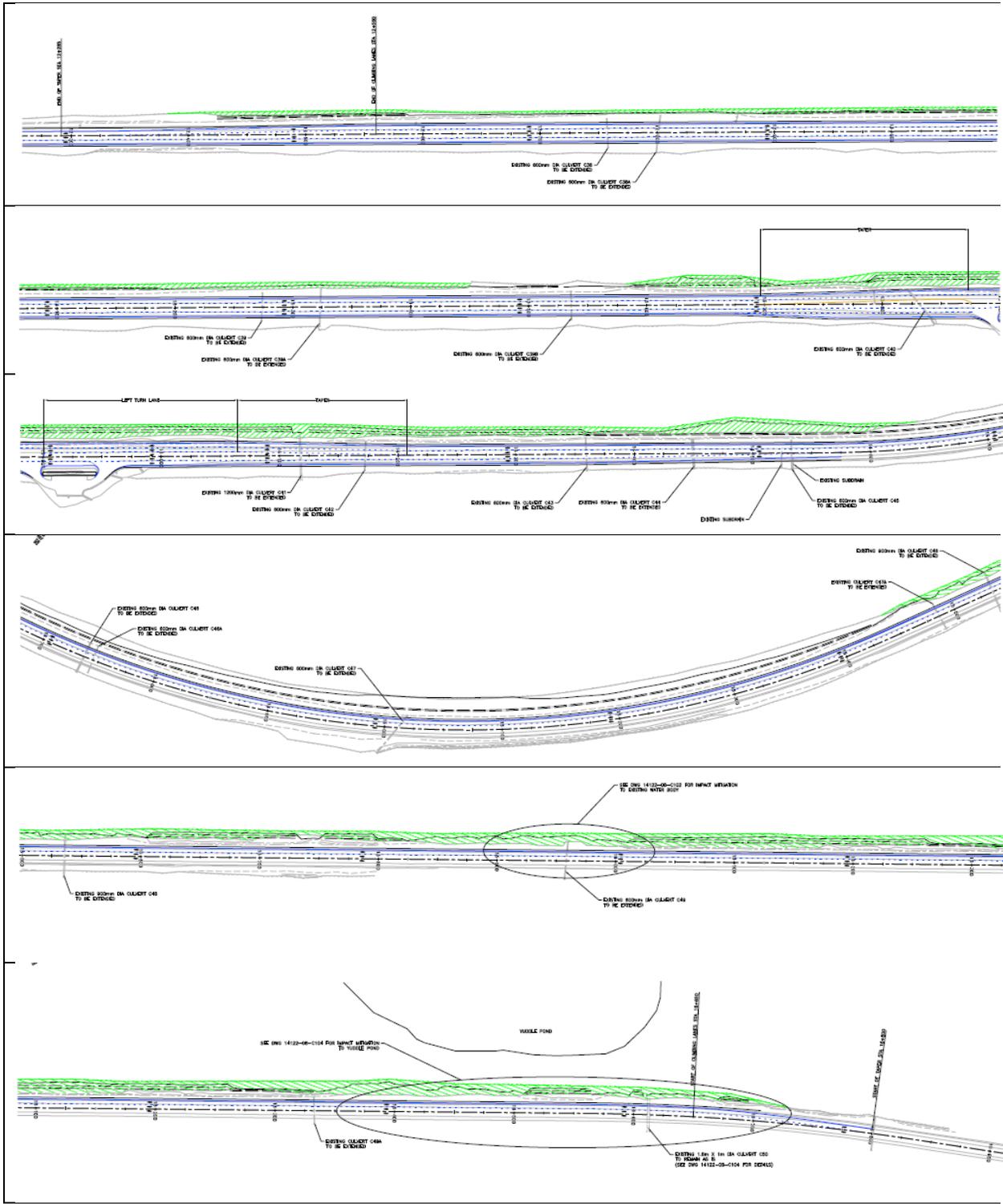
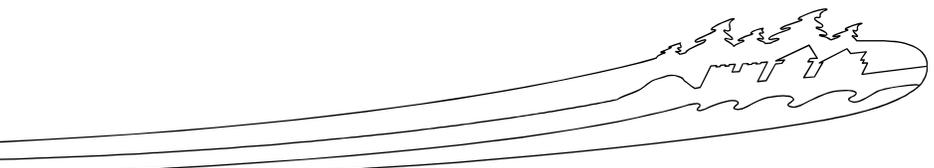


Figure 1-9. Forested area to be cleared (in green) for Yuddle Ponds passing lane.





### Charlottetown

The proposed Charlottetown passing lane will be a west bound lane located near the community of Charlottetown (see Figure 1-10). The proposed lane will measure approximately 2.18 km in length, beginning at 18.20 km from the eastern entrance to the park ( 48°26'50.88"N and 54° 1'7.76"W ) and extending to the 20.38 km mark (48°27'52.39"N and 54° 0'9.94"W ).

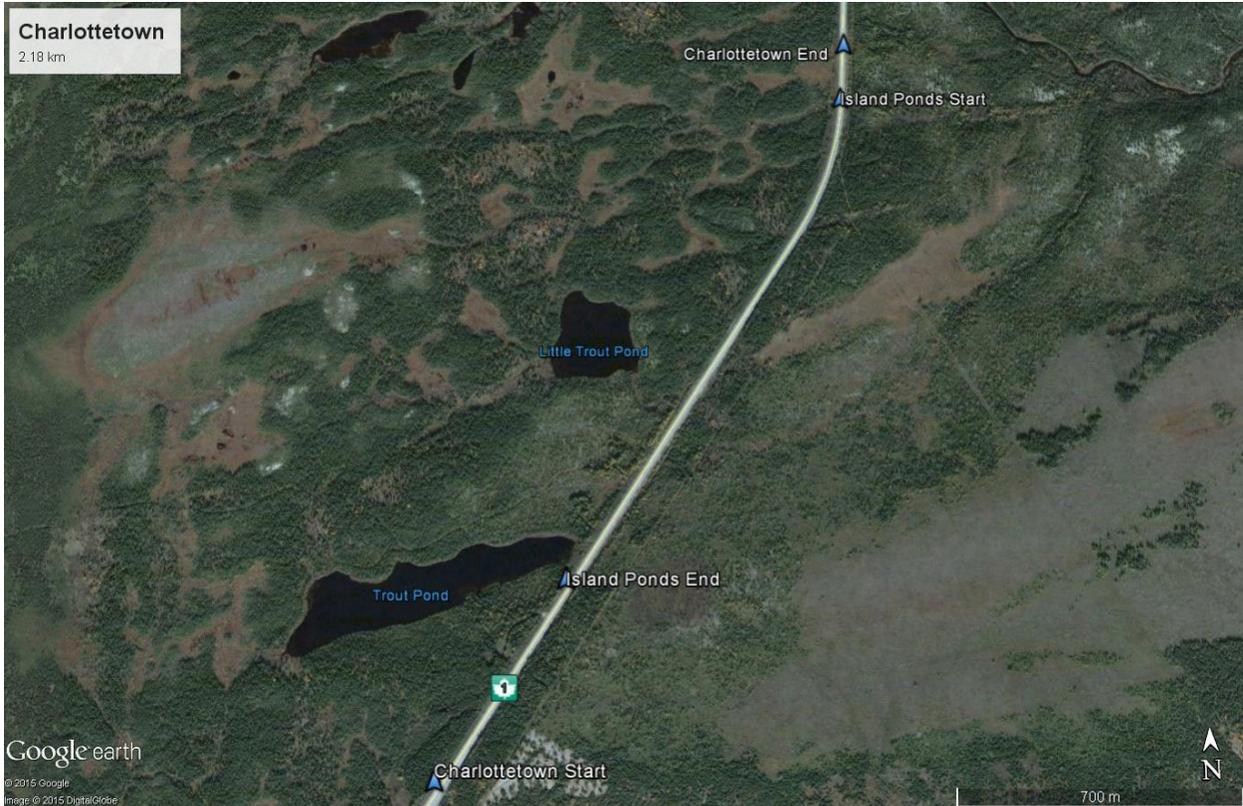


Figure 1-10. Limits of Charlottetown passing lane.

The topography of the area throughout the passing lane consists of a small hill that rises approximately 100 ft to an elevation of 300 ft and then declines back to the original height. The area is largely forested with ponds on the northern side (i.e. Trout Pond and Little Trout Pond) of the highway and a large wetland area on the south side (Figure 1-10). Access to the community of Charlottetown is provided east of this section of highway and there two culverts along this section that are considered to be fish bearing. To accommodate the new passing lane, approximately 1.5 hectares of forest adjacent to the highway will need to be cleared (Figure 1-11).







### Island Ponds

The proposed Island Ponds passing lane will be an east bound lane located west of the community of Charlottetown, however, there are no intersections identified within the bounds of the Island Pond passing lane (see Figure 1-12). The proposed lane will measure approximately 1.05 km in length, beginning at 19.075 km from the eastern entrance to the park (approximate 48°27'47.11"N and 54° 0'11.15"W) and extending to the 20.120 km mark (approximate 48°27'6.03"N, 54° 0'51.05"W).

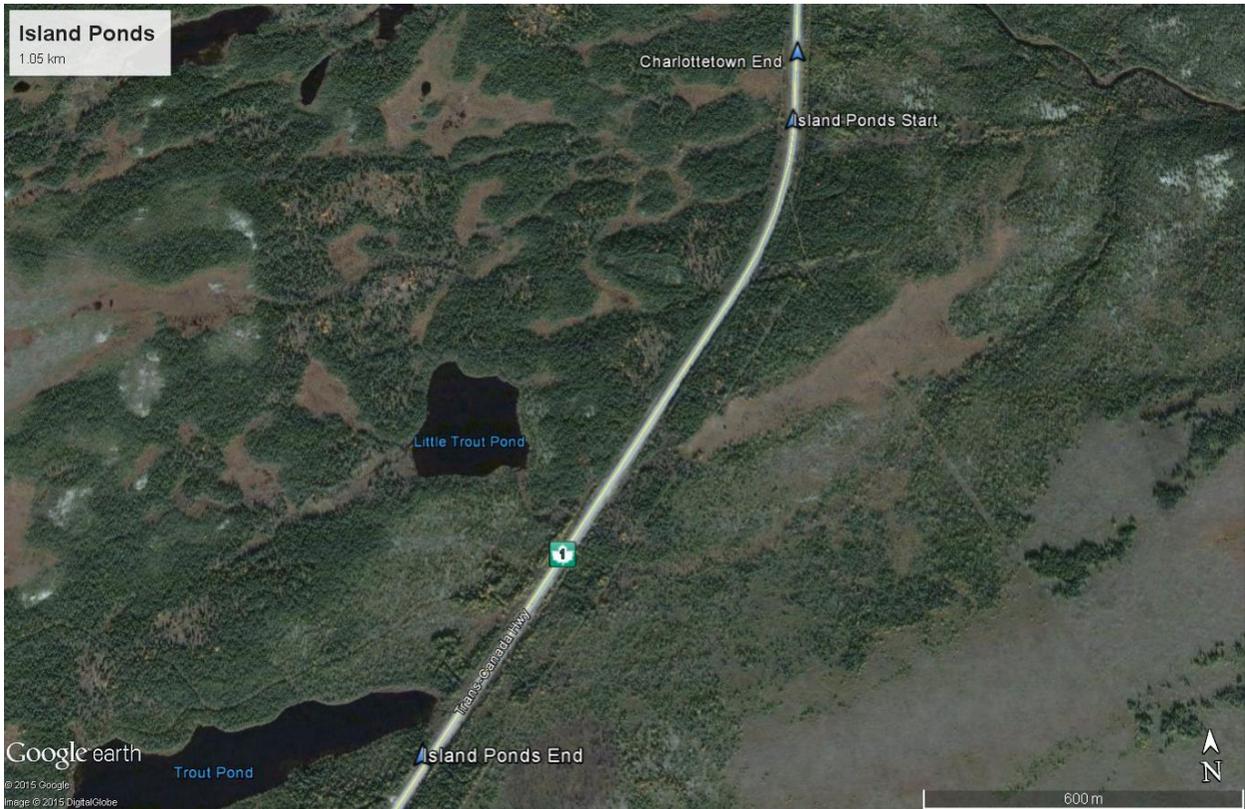


Figure 1-12 Limits of Island Ponds passing lane.

The topography of the area throughout the passing lane extends to an elevation of approximately 102 feet above sea level and back down to around 93 feet. The Island Pond passing lane is approximately half the length of the shared Charlottetown passing lane, and therefore shares the same physical characteristics. There is only one culvert identified as being fish bearing. Four other culverts (that are not fish bearing) are located along this section of highway. To accommodate the new passing lane, approximately 1.0 hectares of forest adjacent to the highway will need to be cleared (Figure 1-13).







### Bread Cove

The proposed Bread Cove passing lane will be a west bound lane measuring approximately 2.42 km (Figure 1-14). The passing lane will begin at 21.570 from the eastern entrance to the park (approximate WGS coordinates 48°28'15.11"N, 54° 0'6.07"W) and extending to the 23.985 mark (approximate WGS coordinates 48°29'50.28"N, 53°59'29.48"W).



Figure 1-14. Limits of Bread Cove passing lane.

The topography of the area consists of a couple of hills, extending from an elevation of approximately 71 feet above sea level at the beginning of the lane to a maximum elevation of almost 123 feet near the end. The area is largely forested with several small wetlands/bogs intersecting the highway and some noteworthy waterways cross the highway along this section. For instance, the Bread Cove culvert is a bottomless concrete arched culvert and is approximately 7 m high by 12 m wide. Three culverts have been identified as being fish bearing waterways within the limits of the proposed passing lane (Crandall, 2015). To accommodate the new passing lane, approximately 2.3 hectares of forest adjacent to the highway will need to be cleared (Figure 1-15).



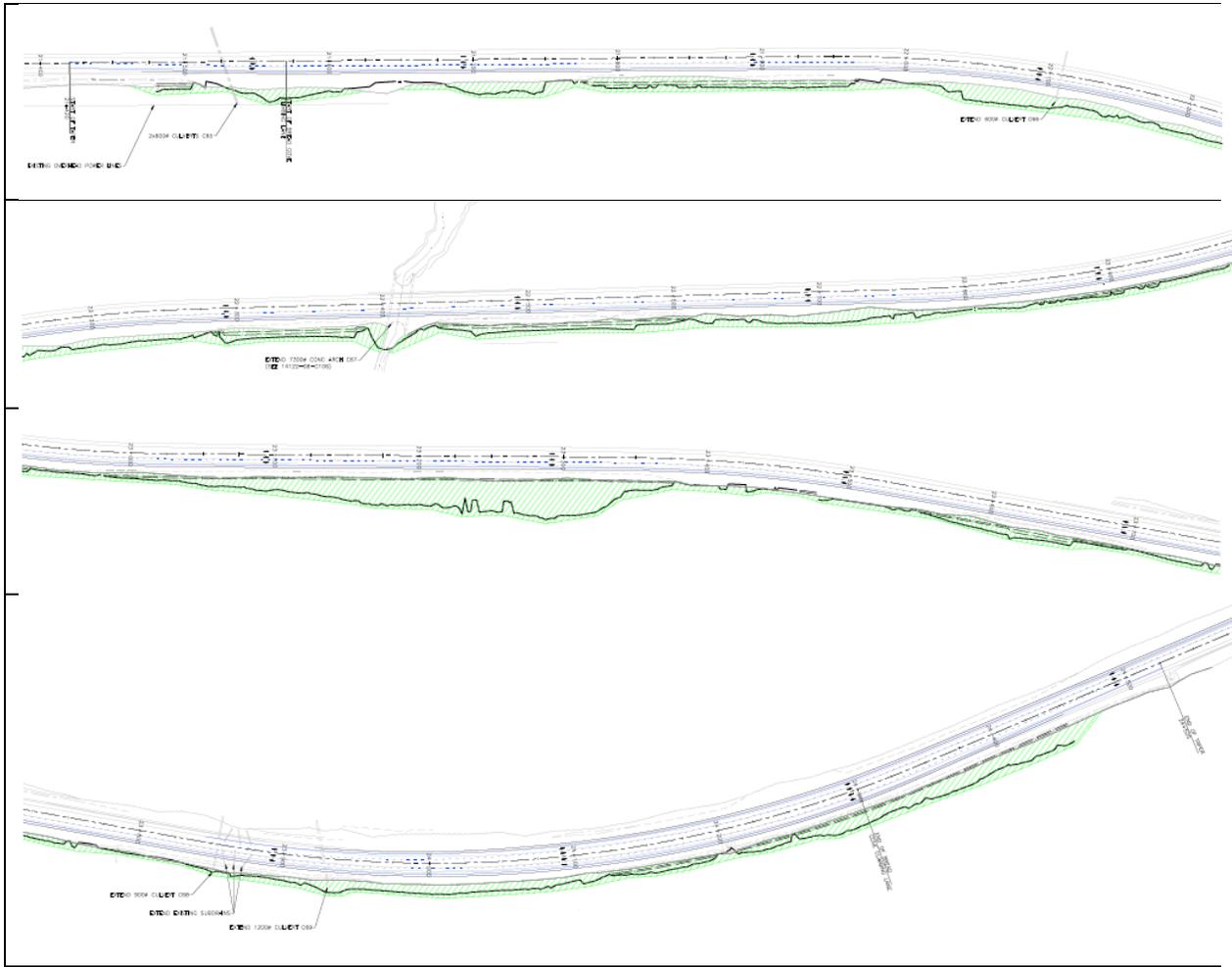
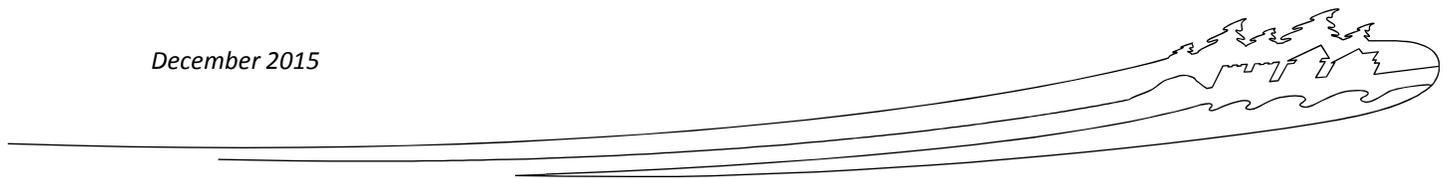


Figure 1-15. Forested areas to be cleared (in green) for Bread Cove passing lane





### Ochre Hill

The proposed Ochre Hill passing lane will be an east bound lane located near the access road to Sandy Pond (see Figure 1-16). The proposed lane will measure approximately 4.93 km in length, beginning at 23.950 km from the eastern entrance to the park (approximate WGS84 coordinates 48°32'16.13"N, 53°59'21.52"W) and extending to the 28.880 km mark (approximate WGS84 coordinates 48°29'31.77"N, 53°59'34.40"W).

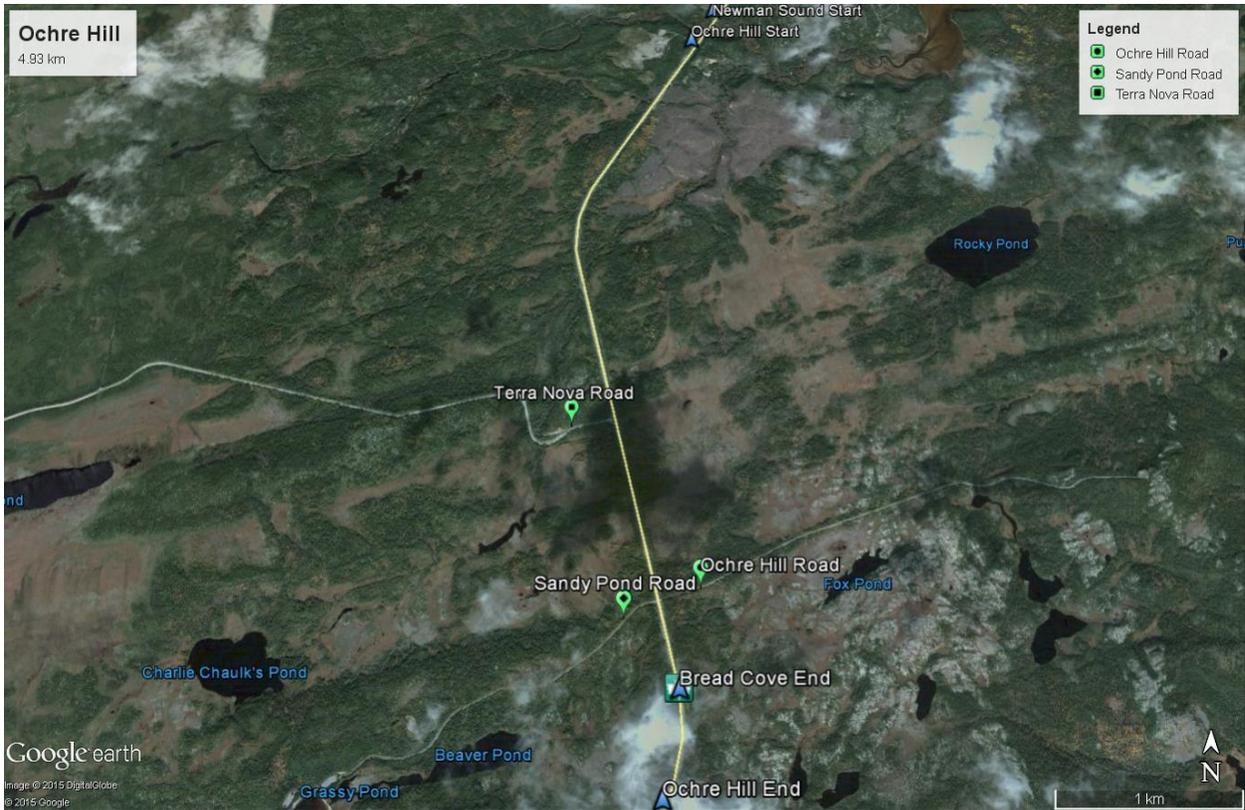


Figure 1-16. Limits of Ochre Hill passing lane.

The topography of the area throughout the passing lane is relatively hilly, ranging in elevation of approximately 22 feet above sea level to a maximum elevation of approximately 128 feet and then declining again. The area is largely forested with several wetlands/bogs within proximity to the highway. There are three roadway intersections within the passing lane (Sand Pond Road, Ochre Hill Road and Terra Nova Road) and 6 fish bearing culverts and another 3 non fish bearing culverts (Crandall, 2015). To accommodate the new passing lane, approximately 2.6 hectares of forest adjacent to the highway will need to be cleared (Figure 1-17).



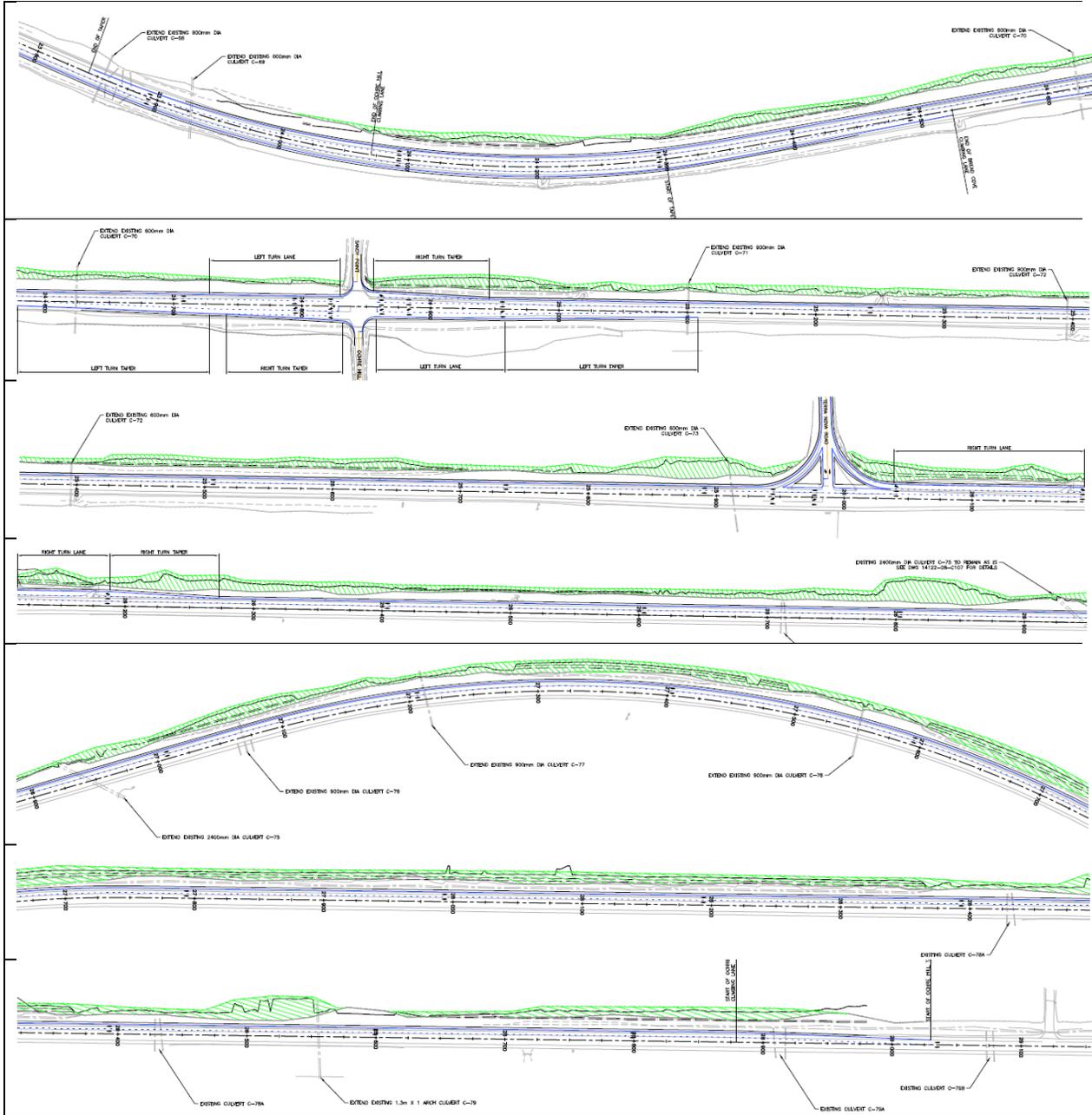


Figure 1-17. Forested areas to be cleared (in green) for Ochre Hill passing lane





### Newman Sound

The proposed Newman Sound passing lane will be a west bound lane located near the access road to the Newman Sound campground (see Figure 1-18). The proposed lane will measure approximately 2.98 km in length, beginning at 29.52 km from the eastern entrance to the park (approximate WGS84 coordinates 48°32'24.79"N, 53°59'13.73"W) and extending to the 32.5 km mark (approximate WGS84 coordinates 48°34'7.81"N, 53°58'21.31"W).

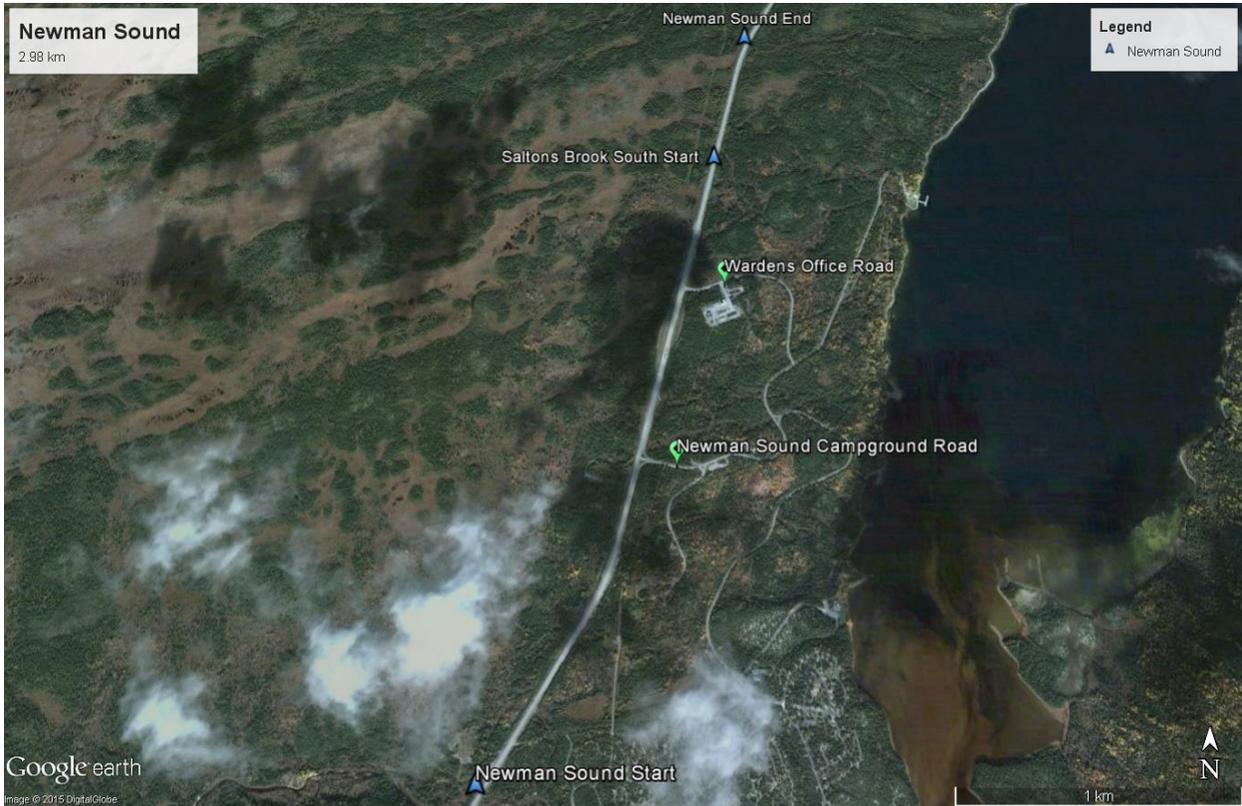


Figure 1-18 Limits of Newman Sound passing lane.

The topography of the area throughout the passing lane is relatively gentle, extending from an elevation of approximately 50 feet above sea level at the beginning of the lane to a maximum elevation of approximately 300 feet near the end. The area is largely forested with several small wetlands/bogs intersecting the highway. There are two roadway intersections within the passing lane (Newman Sound Campground Access and Wardens Office Road) and 7 culverts. There are no fish bearing waterways within the limits of the proposed passing lane (Crandall, 2015). To accommodate the new passing lane, approximately 2.3 hectares of forest adjacent to the highway will need to be cleared (Figure 1-19).







### Salton's Brook South

The proposed Salton's Brook South passing lane will be an eastbound lane located near the access road to the Wardens Office and extending to the confluence of Northwest Arm and Saltons Brook (see Figure 1-20). The proposed lane will measure approximately 1.65 km in length, beginning at 32.15 km from the eastern entrance to the park (approximate WGS84 coordinates 48°33'47.25"N, 53°58'29.08"W) and extending to the 33.8 km mark (approximate WGS84 coordinates 48°34'45.76"N, 53°57'51.36"W).

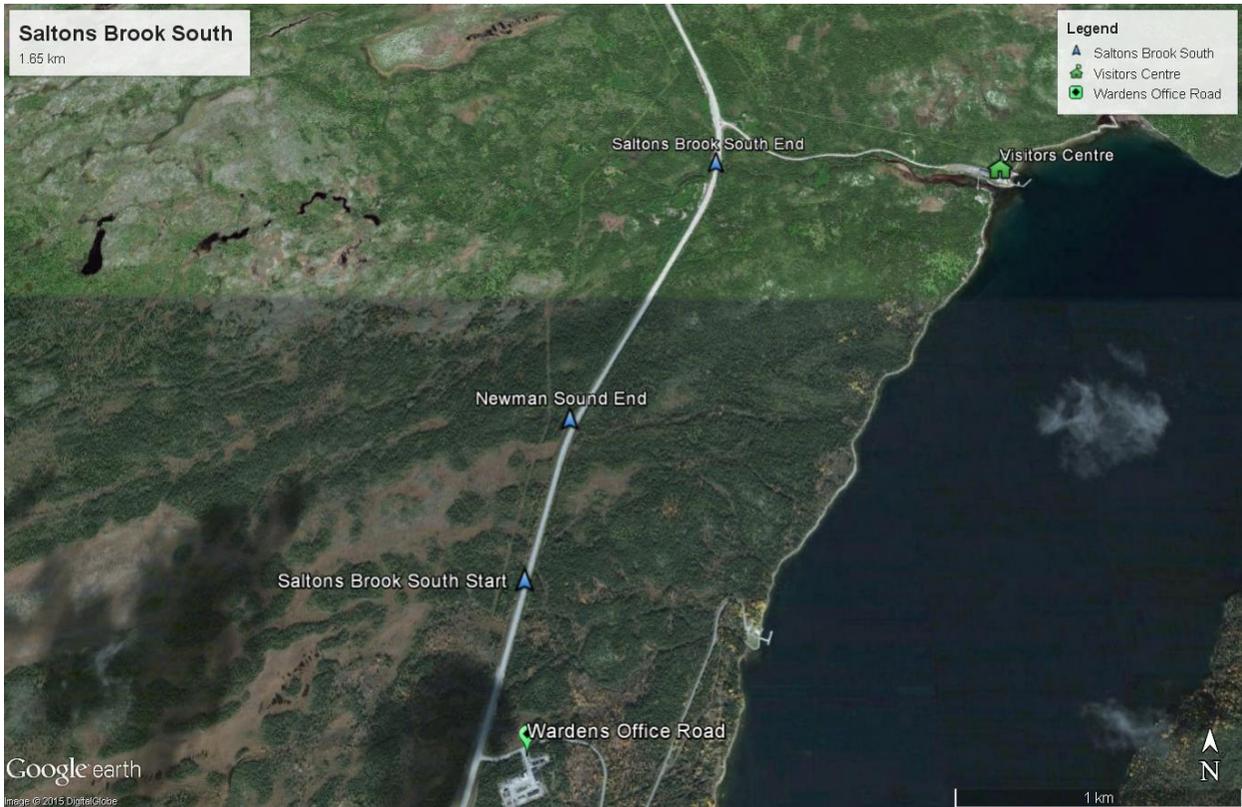
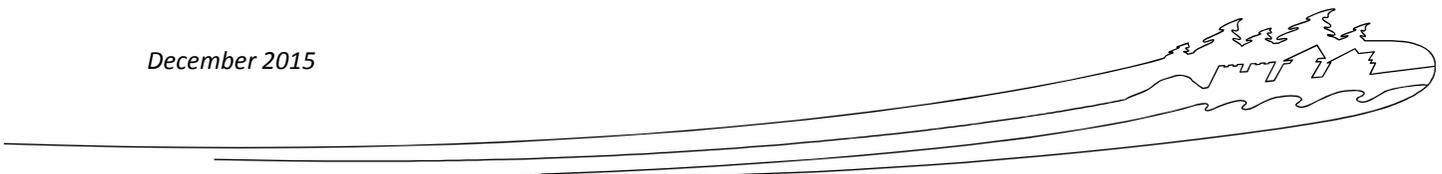


Figure 1-20. Limits of Salton's Brook South passing lane.

The topography of the area throughout the passing lane is moderate, extending from an elevation of approximately 300 feet above sea level at the beginning of the lane to an elevation of approximately 75 feet near the end. The area is largely forested. There are no intersections within the passing lane and 5 culverts. There are no fish bearing waterways within the limits of the proposed passing lane (Crandall, 2015). To accommodate the new passing lane, approximately 0.9 hectares of forest adjacent to the highway will need to be cleared (Figure 1-21).



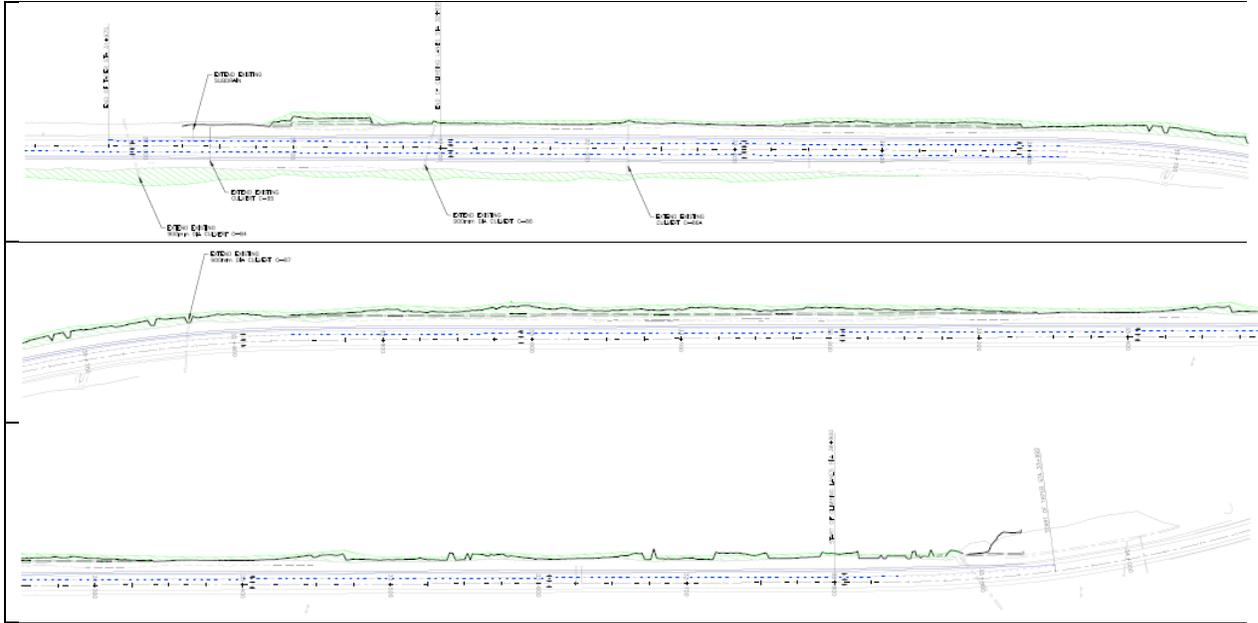


Figure 1-21. Forested area to be cleared (in green) for Saltons' Brook South passing lane.





### Saltons Brook

The proposed Saltons Brook passing lane will be a west bound lane extending from the Visitors Centre road past Blue Hill Road ending near Pine Hill Pond (see Figure 1-22). The proposed lane will measure approximately 2.45 km in length, beginning at 34.4 km from the eastern entrance to the park (approximate WGS84 coordinates 48°34'57.74"N, 53°57'50.82"W) and extending to the 36.85 km mark (approximate WGS84 coordinates 48°36'19.48"N, 53°58'27.80"W).

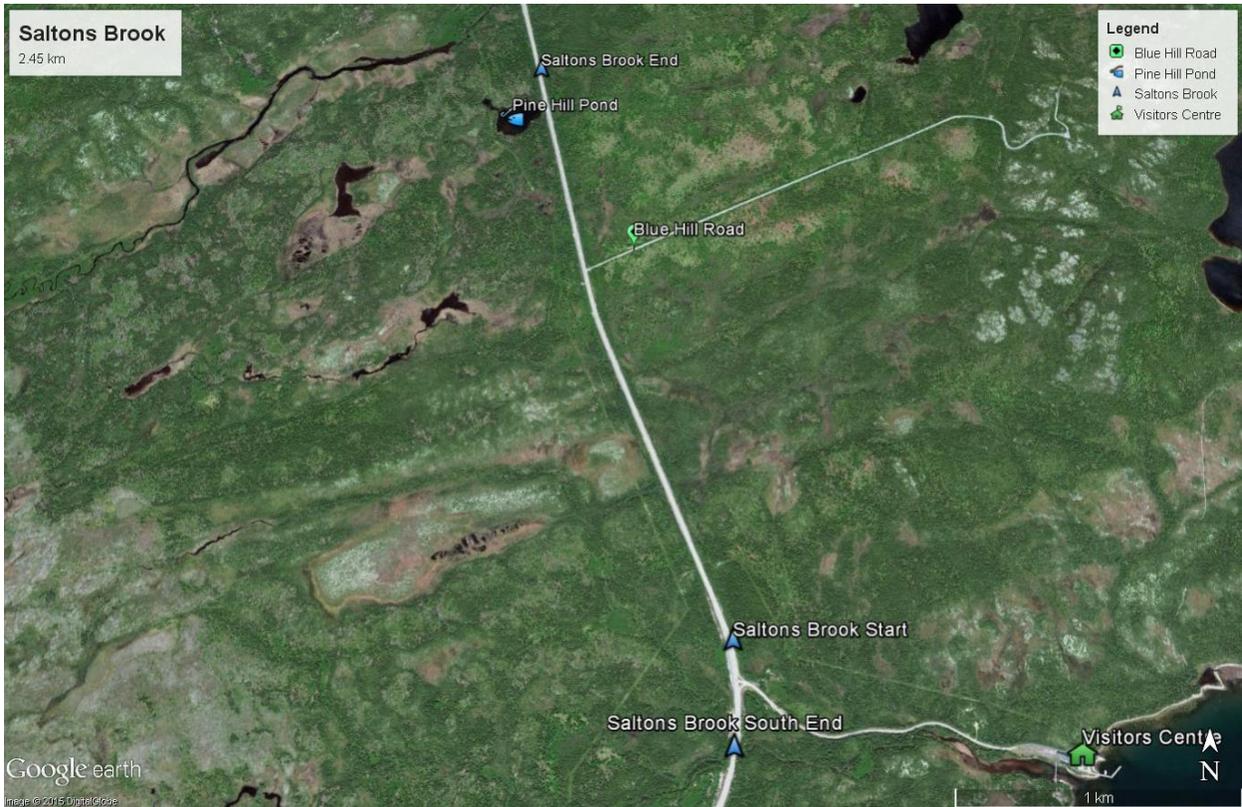
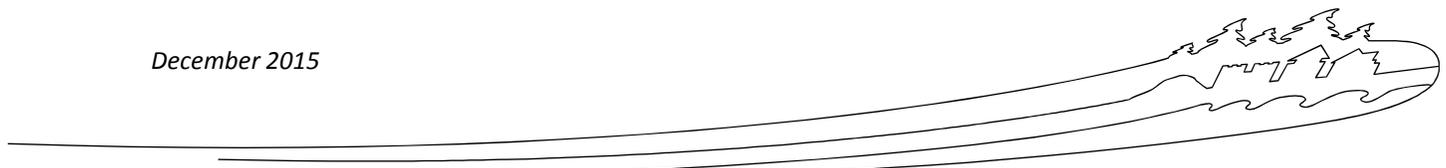


Figure 1-22. Limits of Saltons Brook passing lane.

The topography of the area throughout the passing lane is relatively gentle, extending from an elevation of approximately 150 feet above sea level at the beginning of the lane to a maximum elevation of approximately 250 feet near the centre and returning to approximately 200 feet at the end. The area is largely forested with several small wetlands/bogs intersecting the highway. There is one roadway intersection within the passing lane (Blue Hill Road) and 6 culverts. There are two fish bearing waterways and a pond (Pine Hill Pond) within the limits of the proposed passing lane (Crandall, 2015). To accommodate the new passing lane, approximately 1.5 hectares of forest adjacent to the highway will need to be cleared (Figure 1-23).



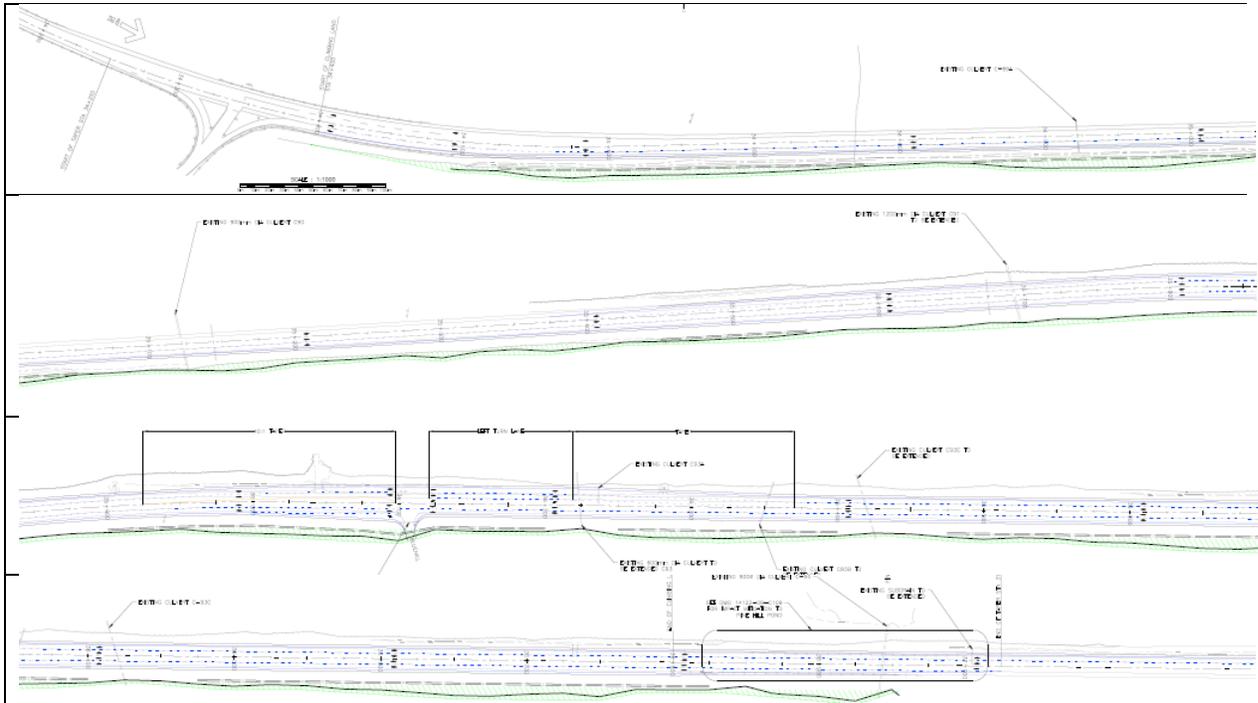
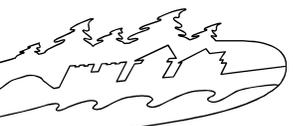


Figure 1-23. Forested area to be cleared (in green) for Saltons Brook passing lane.





### South West Brook

The proposed South West Brook passing lane will be an east bound lane located near Blue Hill Road (see Figure 1-24). The proposed lane will measure approximately 1.78 km in length, beginning at 35.6 km from the eastern entrance to the park (approximate WGS84 coordinates 48°35'22.88"N, 53°58'4.63"W) and extending to the 37.38 km mark (approximate WGS84 coordinates 48°36'39.73"N, 53°58'34.15"W).

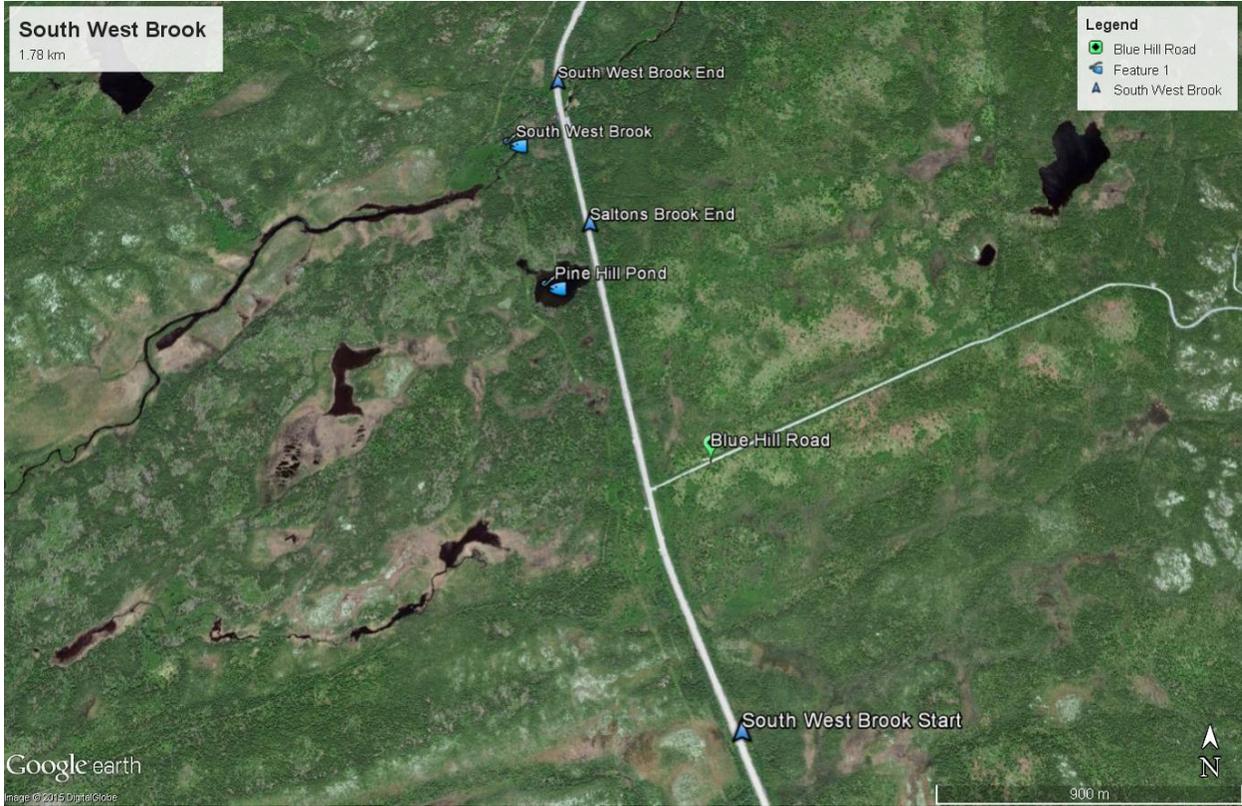
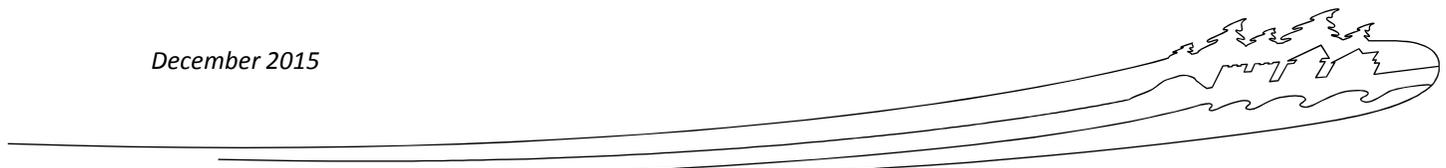


Figure 1-24. Limits of South West Brook passing lane.

The topography of the area throughout the passing lane is moderately sloped, extending from an elevation of approximately 200 feet above sea level at the beginning of the lane to a maximum elevation of approximately 50 feet near the end. The area is largely forested. There is one roadway intersection within the passing lane (Blue Hill Road) and 6 culverts. South West Brook, a fish bearing waterway and a pond (Pine Hill Pond) are within the limits of the proposed passing lane (Crandall, 2015). To accommodate the new passing lane, approximately 1.5 hectares of forest adjacent to the highway will need to be cleared (Figure 1-25).



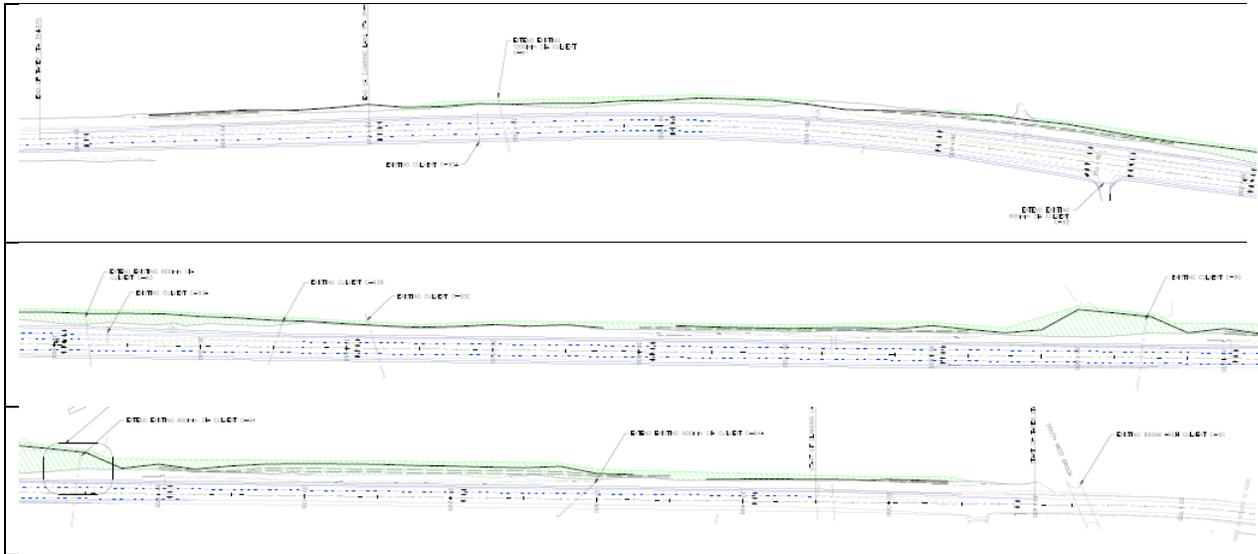


Figure 1-25. Forested area to be cleared (in green) for South West Brook passing lane.





### South West Arm

The proposed South West Arm passing lane will be a west bound lane located near South West Arm (see Figure 1-26). The proposed lane will measure approximately 3.86 km in length, beginning at 38.04 km from the eastern entrance to the park (approximate WGS84 coordinates 48°36'48.56"N, 53°58'32.89"W) and extending to the 41.9 km mark (approximate WGS84 coordinates 48°38'27.47"N, 53°58'40.54"W).



Figure 1-26. Limits of South West Arm passing lane.

The topography of the area throughout the passing lane is moderate, extending from an elevation of approximately 50 feet above sea level at the beginning of the lane to a maximum elevation of approximately 300 feet near the end. The area is largely forested. There are two roadway intersections within the passing lane (South West Arm and Eastport Junction) and 14 culverts; three (3) of these culverts are considered fish bearing waterways (Crandall, 2015). To accommodate the new passing lanes, approximately 2.5 hectares of forest adjacent to the highway will need to be cleared (Figure 1-27).



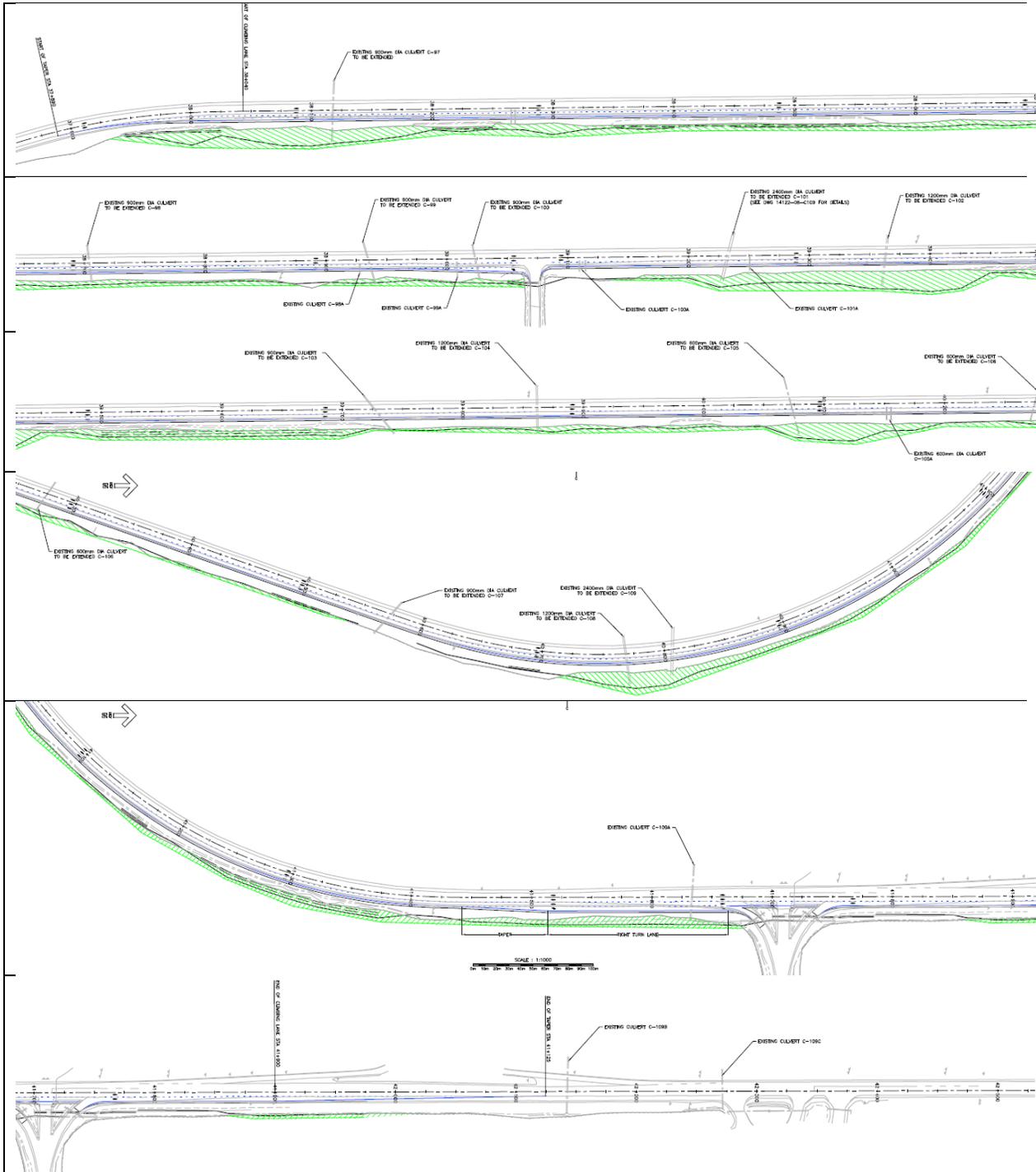


Figure 1-27. Forested area to be cleared (in green) for South West Arm passing lane.





## 9. VALUED COMPONENTS LIKELY TO BE AFFECTED

- Natural resources:
  - soil, water, air, terrestrial and aquatic flora and fauna, including Species at Risk.
- Cultural resources:
  - The Cultural Resource Value Statement for Terra Nova National Park was reviewed as part of this BIA; no impacts are anticipated. However as clearing activities may result in the discovery of a previously unknown cultural resource, best practices in adherence to Parks Canada Cultural Resource Management Policy are contained in this document in the event of an interaction/discovery.
- Visitor Experience (VE) components:
  - The construction period will take place outside the peak tourist season. However, minor interruptions and impacts to aesthetics during project activities to visitors traveling along the Trans-Canada Highway may occur.
- Direct/indirect impacts on Aboriginal and non-Aboriginal peoples:
  - There are no predicted aspects of the project that would result in direct or indirect impacts to the health and socio-economic conditions of Aboriginal and non-aboriginal peoples.
  - There are no known traditional uses of the lands and/or resources in the project area that would be impacted by the project.

The geographic area of the valued components likely to be affected encompasses the areas within and immediately adjacent to the footprint of the proposed tree clearing areas, along the Trans-Canada highway corridor throughout the entire Park (Figure 1-1). The timing of the effects are specific to the tree clearing timing window, which will occur between January 2016 to May 15, 2016, unless otherwise specified by Parks Canada.

## 10. EFFECTS ANALYSIS

The proposed project sites are located immediately adjacent to the Trans-Canada Highway within the boundaries of 13 proposed climbing lane segments (Figure 1-1). The project will take place in terrestrial habitat, with some work to be conducted in proximity to aquatic habitat along each climbing lane segment.

Terra Nova National Park is located in the Central Newfoundland ecoregion of Newfoundland. This maritime-influenced ecoregion covers the north-central part of Newfoundland. The ecoregion is marked by cool summers and short, cold winters. It is the most continental part of the island. This ecoregion is classified as having a maritime mid-boreal ecoclimate. Its forests are dominated by closed, intermediate to low stands of balsam fir and black spruce on steep, moist, upland slopes. Paper birch, aspen, and black spruce are typical of disturbed sites. Drier sites are characterized by woodlands of black spruce, kalmia heath, and lichens. Dwarf, open stands of black spruce and tamarack with ericaceous shrubs are found on raised domed bogs. Where forest growth is poor, exposure to winds and wet, cold soils are the main causes.

This ecoregion is composed of a mixture of crystalline Palaeozoic strata. Where stream erosion has cut deeply, the uplands are rugged and rocky, but elsewhere they present a rolling terrain of low relief. The surface of the uplands is dominated by hummocky to ridged, sandy morainal deposits with slopes that range from 5-30% and are associated predominantly with Humo-Ferric Podzols. Significant inclusions are Ferro-Humic Podzols, Gleyed Podzols, and Brunisolic and Gleysolic soils.

Characteristic wildlife includes moose, lynx, black bear, red fox, and caribou. There are also a number of Species at Risk within the boundaries of the Park, which may also occur in the areas proposed to be cleared. These species are listed in Table 1-3.





Species	COSEWIC Assessment	SARA Status	Provincial Status
Little Brown Myotis	Endangered	Endangered	No status
Northern Myotis	Endangered	Endangered	No status
Red Crossbill – <i>percna</i> subspecies	Endangered	Endangered	Endangered
Olive-sided Flycatcher	Threatened	Threatened	Threatened
American Marten – NL Population	Threatened	Threatened	Threatened
Boreal felt lichen	Special Concern	Special Concern	Vulnerable
Blue felt lichen	Special Concern	Special Concern	Vulnerable
Barrow’s Goldeneye – Eastern Pop.	Special Concern	Special Concern	Vulnerable
Rusty Blackbird	Special Concern	Special Concern	Vulnerable
Short-eared Owl	Special Concern	Special Concern	Vulnerable

Table 1-3. Species at Risk in Terra Nova National Park (Source: Parks Canada, 2015)

**Natural Resources**

Air Quality/Noise and Vibration

Construction activities may result in nuisance impacts due to noise. Given the type of equipment to be used, (e.g. chainsaws, mini-excavators, ATV’s and snowmobiles), the location of the clearing (i.e. within the immediate vicinity of the TCH) and the timing of the proposed clearing (i.e Winter – early Spring 2016) impacts are anticipated to be minimal.

Vegetation and Soils

Seventy-percent of the park is forested, with Black spruce (*Picea mariana*) being the dominant tree species, and smaller areas covered in Balsam fir (*Abies balsamea*) and hardwoods including white birch (*Betula papyrifera*), red maple (*Acer rubrum*) and trembling aspen (*Populus tremuloides*) (Parks Canada 2009). Alders and other similar shrubs are also found as well as ground ferns, various mushrooms and snowberries. Seven percent of the park is characterized as barren land, including rock barrens, kalmia barrens and transition barrens (Karim 2003). Of the seven percent there are 523 species of vascular plants (Brouillet *et al.* 1998), 200 species of moss (Hedderson 1987) and 100 species of lichen (Yetman *et al.* 1999). Amongst the vascular plants, 427 are indigenous to the area, 89 introduced, 29 rare and seven hybrid species. Four main types (orders) of soil are classified in the park such as Podzols, Regisols, Gleysols and Organics with Podzol being the dominant (Parks Canada 1984, 1977). Forested areas within the footprint of the proposed passing lanes will require clearing; the loss of these areas of forest are unavoidable. However, given the close proximity of the areas to be cleared to the TCH, these areas may be considered “less sensitive” to felling relative to areas of pristine forest deeper within the boundaries of the Park. The type of small-scale equipment (e.g. chainsaw, mini-excavators, etc) to be used may also help to limit impacts to the immediate project site. Grubbing will not be completed as part of the current tree clearing project. This will help to ensure site soils remain intact until construction of the passing lanes.

Fauna (terrestrial and aquatic)

The TNNP has a relatively limited number of animal species. Of the 21 species of terrestrial mammals found in the park only twelve are native to insular Newfoundland and Labrador (Parks Canada 2009). The Newfoundland marten (*Martes americanus*), listed as a threatened species on the List of Wildlife Species at Risk set out under the Species at Risk Act (SARA) and extirpated from the park in the late 1970s, has been reintroduced. Non-native mammals present in the park include moose (*Alces alces*), snowshoe hare (*Lepus americanus*) and red squirrel (*Tamiasciurus hudsonicus*). The little brown bat or little brown myotis (*Myotis lucifugus*) and Northern myotis (*Myotis septentrionalis*) are present in the park and protected under the federal SARA. The Atlantic Population of the Boreal felt lichen (*Erioderma pedicellatum*), listed as endangered on Schedule 1 of the SARA and the Blue felt lichen (*Degelia plumbea*), listed as a Species of Special Concern by COSEWIC, are found within park boundaries.

It is possible that these species may be found in and around the limits of the proposed tree clearing.





Large mammals that may occur within the tree clearing areas include black bear (*Ursus americanus*), moose and Newfoundland caribou (*Rangifer tarandus*). The small mammals that may occur include Newfoundland Marten, snowshoe hare, mink (*Neovison vison*), beaver (*Castor canadensis*), coyote (*Canis latrans*), fox (*Vulpes vulpes*), lynx (*Lynx canadensis*) and red squirrel.

There are approximately 169 bird species found in the park and 63 use the park as breeding grounds (Parks Canada 2009). The park is also home to two Canadian Wildlife Service Bird Sanctuaries - one located in Newman Sound and the other in Southwest Arm. The Red crossbill (*Percna* subspecies, unique to insular Newfoundland) is found in the park area and is classified as endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The Olive sided flycatcher (*Contopus cooperi*) and the rusty blackbird (*Euphagus carolinus*) are also species at risk within the park (COSEWIC).

Other birds in the park include osprey (*Pandion haliaetus*), eagle (*Haliaeetus leucocephalus*), ruffed or spruce grouse (*Falci pennis canadensis*), great horned owl (*Bubo virginianus*), boreal owl (*Aegolius funereus*), loon (*Gavia* genus), tern (*Sternidae* family), greater yellowleg (*Tringa melanoleuca*), spotted sandpiper (*Actitis macularius*), white-winged crossbill (*Loxia leucoptera*), hawk owl, finches (*Fringillidea*) and ducks (*Anatidae* family).

The proposed tree clearing will have a direct impact on species which utilize the areas of forest to be cleared. Mobile fauna will be displaced and immobile fauna destroyed. Given the location of the proposed tree clearing limits to the TCH, it is likely that these areas are already impacted by noise generated by highway traffic and are utilized to a lesser degree by terrestrial fauna relative to areas of pristine forest located deeper within the park; this will help to lessen potential impacts.

The timing of the proposed tree clearing should help to mitigate any potential impacts on maternal Newfoundland Marten dens and breeding birds. The tree clearing will occur during the Winter – early Spring period of 2016. Should the proposed tree clearing not be completed by April 1<sup>st</sup>, 2016, Parks Canada staff will survey the remaining areas to be cleared for dens, nests and hibernaculums. If required, Parks Canada will provide immediate protection to these areas from cutting until the den, nest or hibernaculums is naturally abandoned. All areas to be cleared will also be surveyed prior to cutting to identify any potential nests associated with bird species which may establish nesting sites outside of the normal bird nesting period of May 1<sup>st</sup> – July 15 (e.g. Red Crossbill) as well as *Myotis* hibernaculums.

There are seven freshwater species of fish found in Terra Nova National Park (Parks Canada, 2009). The health of fish populations is currently being assessed and research is determining the effects of recreational harvest on freshwater species. Unauthorized fishing activity occurs on a sporadic basis along the coastal areas outside of the park, with potential effects on trout and salmon populations. Invasive fish species have not been found in park waters though their presence in other systems of the east coast of Newfoundland and Labrador could make them a threat in the future. There are several ponds and fish bearing waterways throughout the proposed cutting areas (Table 1-4). The currently proposed scope of work doesn't involve work in any of these waterways. However, to reach the proposed cutting limits, it may be necessary to ford a waterway with a piece of equipment. Additionally, felled timber may fall into, or nearby the waterways. This may result in sedimentation and increased turbidity of the waterbody, potentially resulting in negative impacts to fish and fish habitat. Felled timber left in a waterbody may also create a barrier to fish passage. The accidental spillage of deleterious substances such as fuels and fluids also have the potential to impact aquatic environments.





Climbing/Passing Lane	Location (km from east entrance)	Waterway Type
Cobblers Cove	7+266	Culvert
Cobblers Cove	7+509	Culvert
Cobblers Cove	8+465	Culvert
Cobblers Cove	8+596	Culvert
Tide Waters	9+701	Culvert
Tide Waters	10+806	Culvert
Yuddle Ponds	15+527	Culvert
Yuddle Ponds	16+000	Pond (unnamed)
Yuddle Ponds	16+500	Pond (Yuddle Pond)
Yuddle Ponds	16+630	Culvert
Island Ponds	18+900	Pond (Trout Pond)
Charlottetown & Island Ponds	19+421	Culvert
Charlottetown	20+334	Culvert
Bread Cove	21+516	Culvert
Bread Cove	22+403	Culvert
Bread Cove & Ochre Hill	23+918	Culvert
Bread Cove & Ochre Hill	24+616	Culvert
Bread Cove & Ochre Hill	25+338	Culvert
Ochre Hill	25+905	Culvert
Ochre Hill	25+937	Culvert
Ochre Hill	26+938	Culvert
Ochre Hill	27+205	Culvert
Ochre Hill	27+542	Culvert
Ochre Hill	28+546	Culvert
Saltons Brook	35+112	Culvert
Saltons Brook & South West Brook	35+682	Culvert
Saltons Brook	36+900	Pond (Pine Hill Pond)
South West Arm	39+224	Culvert
South West Arm	40+063	Culvert

Table 1-4. Fish bearing waterways within the vicinity of tree clearing limits.

Species at Risk

There are a number of Species at Risk found throughout the Park (Table 1-3). Activities associated with the proposed tree clearing could potentially destroy boreal felt lichen, blue felt lichen and destroy and displace nesting birds, including the Red Crossbill (*percna* subspecies) and Newfoundland Marten, including their maternal dens.

To alleviate some of these potential concerns, Parks Canada staff completed a field survey for boreal felt lichen and blue felt lichen during the Fall of 2015. The survey was conducted throughout the proposed clearing limits and focused on stands of mature broad leaf trees, birch as well as balsam fir throughout the proposed clearing limits; neither species were identified as part of this survey.

The timing of the proposed tree clearing should help to mitigate any potential impacts on maternal Newfoundland Marten dens and breeding birds. The tree clearing will occur during the Winter – early Spring period of 2016. Should the proposed tree clearing not be completed by April 1<sup>st</sup>, 2016, Parks Canada staff will survey the remaining areas to be cleared for dens, nests and hibernaculums. If required, Parks Canada will provide immediate protection to these areas from cutting until the den, nest or hibernaculums is naturally abandoned. All areas to be cleared will also be surveyed prior to cutting to identify any potential nests associated with bird species which may establish nesting sites outside of the normal bird nesting period of May 1<sup>st</sup> – July 15 (e.g. Red Crossbill) as well as Myotis hibernaculums.





Newfoundland Marten (*Martes americana atrata*), listed as “Threatened” under the Schedule 1 of the Species at Risk Act. The habitat of deep coniferous woods is suitable for these species. A re-introduced population of Newfoundland Marten is found within Terra Nova National Park. The range of these animals does extend into the general project area. Marten critical habitat has previously been identified for Terra Nova National Park (TNNP) by combining marten occurrence data and information on habitat quality, and includes the majority of park landscape. Under the Species at Risk Act, critical habitat is defined as the habitat necessary for the survival or recovery of the species. According to the Recovery Strategy for the American Marten (Environment Canada, 2013), critical habitat is further defined in terms of forested habitat types most used by marten and includes two of the more dominant types found within TNNP. Hearn et al. (2010) recommends in the Recovery Strategy that areas managed at the landscape (ie. home range) scale should include >24% mature and over-mature forest, and not exceed 29% younger aged forest. A third total forest cover threshold of 25% has been used since marten select mainly forested landscapes in the park as part of their home range.

Parks Canada has a legal requirement to ensure that activities or projects within the park do not destroy critical habitat. Road construction is listed in the Recovery Strategy as an activity that has the potential to destroy critical habitat of marten. This activity has the potential to remove denning/resting sites, foraging habitat, and breeding habitat and can also increase energetic demands, increase predation risks, and lower foraging success (Environment Canada 2013). Through GIS analysis using the landscape thresholds above (GIS Critical Habitat Assessment Tool), it has been determined that the total area of forest along the TCH to be removed from the landscape in this project (29.8 ha), does not result in the destruction of critical habitat for marten. While this project does not destroy critical habitat, cumulative effects of these types of projects may be destructive over time. Thus a landscape approach to management will be used to maintain these thresholds on the landscape.

#### **Cultural resources**

The Cultural Resource Value Statement for Terra Nova National Park was reviewed as part of this BIA; no impacts are anticipated. However as clearing activities may result in the discovery of a previously unknown cultural resource, best practices in adherence to Parks Canada Cultural Resource Management Policy are contained in this document in the event of an interaction/discovery.

#### **Visitor Experience (VE) components**

The construction period will take place outside the peak tourist season. However, minor interruptions and impacts to aesthetics during project activities to visitors traveling along the Trans-Canada Highway may occur. Tree clearing activities will also result in increased visibility along portions of the electrical transmission line along the TCH. Cleared and mulched areas will also be visible to the travelling public for an extended period of time.

### **11. MITIGATION MEASURES**

- Activities associated with the proposed tree clearing are permitted between January 1, 2016 and May 15, 2016 only. Tree clearing outside of this timeframe is not permitted, unless prior permission is obtained from Parks Canada. Should the proposed tree clearing not be completed by April 1<sup>st</sup>, 2016, Parks Canada staff will survey the remaining areas to be cleared for dens, nests and hibernaculums. If required, Parks Canada will provide immediate protection to these areas from cutting until the den, nest or hibernaculums is naturally abandoned. All areas to be cleared will also be surveyed prior to cutting to identify any potential nests associated with bird species which may establish nesting sites outside of the normal bird nesting period of May 1<sup>st</sup> – July 15 (e.g. Red Crossbill) as well as Myotis hibernaculums.
- All cutting will be completed by hand using handheld equipment such as chainsaws. The use of mini-excavators equipped with mulching heads may also be utilized within the footprint of the grubbing/excavation areas associated with the proposed passing lanes. All-Terrain Vehicles (ATV’s) and/or over snow vehicles may be permitted for the purpose of removing merchantable timber from the cutting areas, at the discretion of the Field Unit Superintendent (through the issuance of a special activity permit).







No

Yes

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### 13. EFFECT SIGNIFICANCE

The temporal and spatial scope of the project are limited, and considering the work techniques and common mitigation measures involved there are no significant adverse environmental effects anticipated as a result of this project.

This project is not likely to cause significant residual effects and there are no predicted cumulative effects associated with the project.

### 14. SITE INSPECTION

Document whether a site inspection program will be required while the project is underway.

- Site inspection required  
 Site inspection not required

### 15. SPECIES AT RISK MONITORING

There are a number of Species at Risk found throughout the Park (Table 1-3). Activities associated with the proposed tree clearing could potentially destroy boreal felt lichen, blue felt lichen and destroy and displace nesting birds, including the Red Crossbill (*percna* subspecies) and Newfoundland Marten, including their maternal dens.

To alleviate some of these potential concerns, Parks Canada staff completed a field survey for boreal felt lichen and blue felt lichen during the Fall of 2015. The survey was conducted throughout the proposed clearing limits and focused on stands of mature broad leaf trees, birch and balsam fir throughout the proposed clearing limits; nether species were identified as part of this survey.

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Newfoundland Marten (*Martes americana atrata*), listed as “Threatened” under the Schedule 1 of the Species at Risk Act. The habitat of deep coniferous woods is suitable for these species. A re-introduced population of Newfoundland Marten is found within Terra Nova National Park. The range of these animals does extend into the general project area. Marten critical habitat has previously been identified for Terra Nova National Park (TNNP) by combining marten occurrence data and information on habitat quality, and includes the majority of park landscape. Under the Species at Risk Act, critical habitat is defined as the habitat necessary for the survival or recovery of the species. According to the Recovery Strategy for the American Marten (Environment Canada, 2013), critical habitat is further defined in terms of forested habitat types most used by marten and includes two of the more dominant types found within TNNP. Hearn et al. (2010) recommends in the Recovery Strategy that areas managed at the landscape (ie. home range) scale should include >24% mature and overmature forest, and not exceed 29% younger aged forest. A third total forest cover threshold of 25% has been used since marten select mainly forested landscapes in the park as part of their home range.

Parks Canada has a legal requirement to ensure that activities or projects within the park do not destroy critical habitat. Road construction is listed in the Recovery Strategy as an activity that has the potential to destroy critical habitat of marten. This activity has the potential to remove denning/resting sites, foraging habitat, and breeding habitat and can also increase energetic demands, increase predation risks, and lower foraging success (Environment Canada 2013). Through GIS analysis using the landscape thresholds above (GIS Critical Habitat Assessment Tool), it has been determined that the total area of forest along the TCH to be removed from the

December 2015





landscape in this project (29.8 ha), does not result in the destruction of critical habitat for marten. While this project does not destroy critical habitat, cumulative effects of these types of projects may be destructive over time. Thus a landscape approach to management will be used to maintain these thresholds on the landscape.

Activities associated with the proposed tree clearing are permitted between January 1, 2016 and May 15, 2016 only. Tree clearing outside of this timeframe is not permitted, unless prior permission is obtained from Parks Canada. Should the proposed tree clearing not be completed by April 1<sup>st</sup>, 2016, Parks Canada staff will survey the remaining areas to be cleared for dens and nests and if required, provide immediate protection to these areas from cutting until the den or nest is naturally abandoned. All areas to be cleared will also be surveyed prior to cutting to identify any potential nests associated with bird species which may establish nest sites outside of the normal bird nesting period of May 1<sup>st</sup> – July 15 (e.g. Red Crossbill).

**16. SARA NOTIFICATION**

N/A

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**17. EXPERTS CONSULTED**

*Include Parks Canada experts. Add as many entries as necessary for the project.*

Department/Agency/Institution: Parks Canada	Date of Request: 2015-12-14
Expert's Name: Rod Cox	Title: Resource Management Officer II
Contact Information: Terra Nova National Park of Canada, Glovertown, NL, A0G 2L0 Tel. (709) 533-3155	
Expertise Requested: Additional mitigation measures to include in BIA	
Response:	
Department/Agency/Institution: Parks Canada	Date of Request: 2015-12-14
Expert's Name: Janet Feltham	Title: Acting Ecologist Team Leader
Contact Information: Terra Nova National Park of Canada, Glovertown, NL, A0G 2L0 Tel. (709) 533-3156	
Expertise Requested: Additional mitigation measures to include in BIA	
Response:	

**18. DECISION**

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

X 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 that the project CANNOT go ahead.*



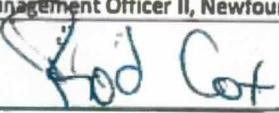
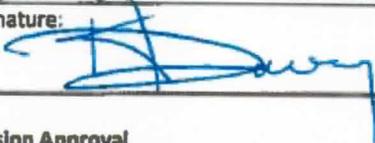


## 19. SIGNATURES AND APPROVAL

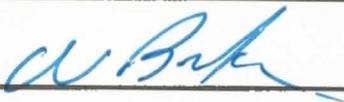
EA Author (Add additional signature blocks for multiple authors as required)

Name: Mark McNeil	Date: December 18, 2015
Position: Environmental Specialist, Public Works and Government Services Canada	
Signature: 	

## Reviewed/Recommended

Name: Rod Cox	Date: December 18/15
Position: Resource Management Officer II, Newfoundland East Field Unit, Parks Canada	
Signature: 	
Name: Katherine Davey	Date: Dec 18 2015
Position: Project Manager, Newfoundland East Field Unit, Parks Canada	
Signature: 	

## Decision Approval

Name: Bill Brake	Date: Dec 21/15
Position: Superintendent, Newfoundland East Field Unit, Parks Canada	
Signature: 	

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## 20. REFERENCE LIST

Brouillet, L., R. Charest, S. G. Hay & A. Bouchard. 1997. Floristic analysis of the rare plants of Terra Nova National Park, Newfoundland. Contract # 2242-96-0010, Natural Resources Division, Parks Canada, Hull, Qc.

Crandall (2015). RS3 Submission, Project Scope of Services Report, TCH Climbing Lanes, Terra Nova National Park (TNNP), NL.

Ecoregions of Newfoundland – North Shore Ecoregion, Department of Forest Resources and Agrifoods, Government of Newfoundland and Labrador, 2014. URL - [http://www.nr.gov.nl.ca/nr/forestry/maps/northshore\\_eco.html](http://www.nr.gov.nl.ca/nr/forestry/maps/northshore_eco.html)

Environment Canada. 2013. Recovery Strategy for the American Marten (*Martes Americana atrata*). Newfoundland Population, in Canada. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa, xi pp. + appendix.

Hearn, B.J., D.J. Harrison, A.K. Fuller, C.G. Lundrigan and W.J. Curran. 2010. Paradigm shifts in habitat ecology of threatened Newfoundland martens. *Journal of Wildlife Management* 74(4): 719-728.

Species at Risk – Environment Canada, Canadian Wildlife Service, 2014. Species at Risk Public Registry. URL - [http://www.sararegistry.gc.ca/species/speciesDetails\\_e.cfm?sid=134](http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=134)

Terra Nova National Park of Canada, 2009. Terra Nova Park Management Plan. <http://www.pc.gc.ca/eng/pn-np/nl/terranova/plan.aspx>

## 21. ATTACHMENTS LIST

Attachment #1: General Study Area, Terra Nova National Park, NL

## 22. ADDITIONAL CONSIDERATIONS / COMMENTS

n/a

## 23. TRACKING SYSTEM

The project must be registered in the [Parks Canada Interim 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 go ahead, please indicate this information in the tracking system (see selections in the *Assessment Status/Decision* field).





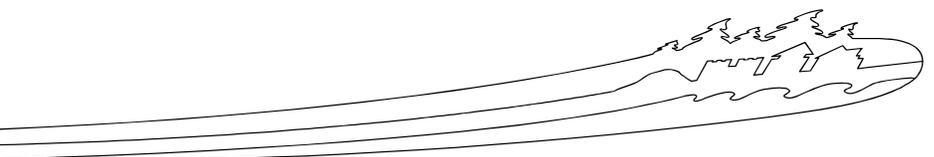
**Appendix 1 Environmental Impact Analysis Tools: Effects Identification Matrix**

Use the matrix to identify potential impacts.

**Section A** focuses on direct effects of the project and **Section B** on indirect effects that are caused by changes to the environment.

A. Direct Effects (during preparation/construction phases)															
			Components potentially directly affected by the proposed project												
			Natural Resources					Cultural Resources		Visitor Experience					
			Air	Soil & landforms	Water (surface, ground, crossings, etc.)	Flora (specify, including SAR)	Fauna (specify, including SAR)	Insert heritage values	Insert heritage values	Visitor access & services	Recreational/Accomm. opportunities	Viewscares and soundscapes	Visitor Safety	Essence of place	
Phase	Examples of Associated Activities														
Project Components	Preparation / construction	Supply and storage of materials	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Clearing	<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"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		Demolition	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Disposal of waste	<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"/>	<input checked="" type="checkbox"/>	<input checked="" 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"/>	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Drainage	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Excavation	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Grading	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		Transport of materials/ equipment	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<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"/>	<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"/>	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

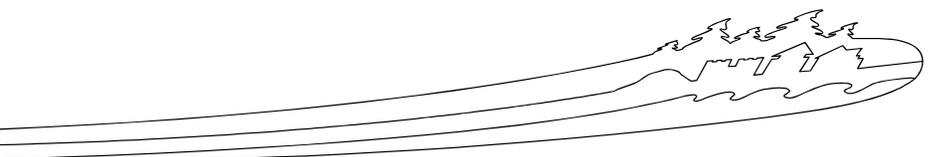
SAR- species at risk





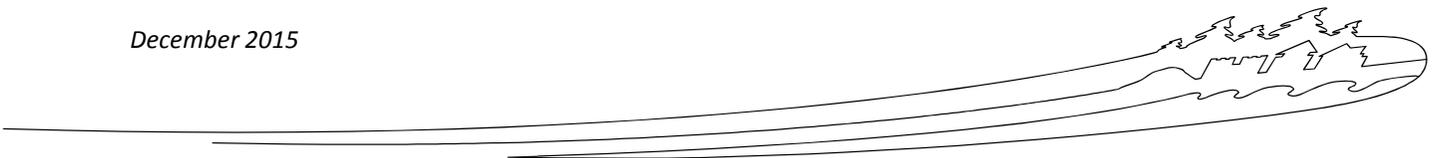
A. Direct effects continued (during operation/implementation/decommissioning phases)														
			Components potentially affected by the proposed project											
			Natural Resources					Cultural Resources		Visitor Experience				
			Air	Soil & landforms	Water (surface, ground, crossings, etc.)	Flora (specify, including SAR)	Fauna (specify, including SAR)	Insert heritage values for your site	Insert heritage values for your site	Visitor access & services	Recreational & Accommod. opportunities	Viewscapes and soundscapes	Visitor Safety	Essence of place
Phase	Examples of Associated Activities													
Project Components	Operation/Implementation/Decommissioning	Waste 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<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"/>	<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"/>	<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"/>	<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"/>	<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"/>	<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"/>	<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"/>	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Vehicle Traffic	<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"/>	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section B- next page





B. Indirect Effects (all phases)				
		Impacts as a result of changes to the environment		
		With respect to non-Aboriginal peoples:		With respect to Aboriginal peoples:
		Health and socio-economic conditions	Health & socio-economic conditions	Current use of lands and resources for traditional purposes
Phase	Natural resource components affected by the project			
All phases: Preparation /construction operation/implementation/decommissioning	Could impacts to <u>air</u> lead to adverse effects on...	<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"/>
	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"/>
	Could impacts to <u>flora</u> (including SAR) lead to adverse effects on...	<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"/>
	Other...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





## Appendix 2: SARA-Compliant Authorization Decision Tool

(Note: Please consult a representative of the Species Conservation and Management team when completing this form)

Date:	Topic/Issue:	Species :	Where: (PCA site)	Who: (your name)

### Part A – Is a SARA authorization required?

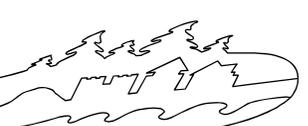
#### 1. Will the activity directly or indirectly affect a listed endangered, threatened or extirpated species at risk, its residence or critical habitat?

*Affect = kill, harm, harass, capture, or take individuals; possess, collect, buy, sell or trade individuals or parts of individuals; damage or destroy residence; destroy any part of critical habitat*

**No**  
**SARA authorization is NOT required. Provide explanation and STOP HERE.**  
 Marten critical habitat has previously been identified for Terra Nova National Park (TNNP) by combining marten occurrence data and information on habitat quality, and includes the majority of park landscape. Under the Species at Risk Act, critical habitat is defined as the habitat necessary for the survival or recovery of the species. According to the Recovery Strategy for the American Marten (Environment Canada, 2013), critical habitat is further defined in terms of forested habitat types most used by marten and includes two of the more dominant types found within TNNP. Hearn et al. (2010) recommends in the Recovery Strategy that areas managed at the landscape (ie. home range) scale should include >24% mature and over-mature forest, and not exceed 29% younger aged forest. A third total forest cover threshold of 25% has been used since marten select mainly forested landscapes in the park as part of their home range.

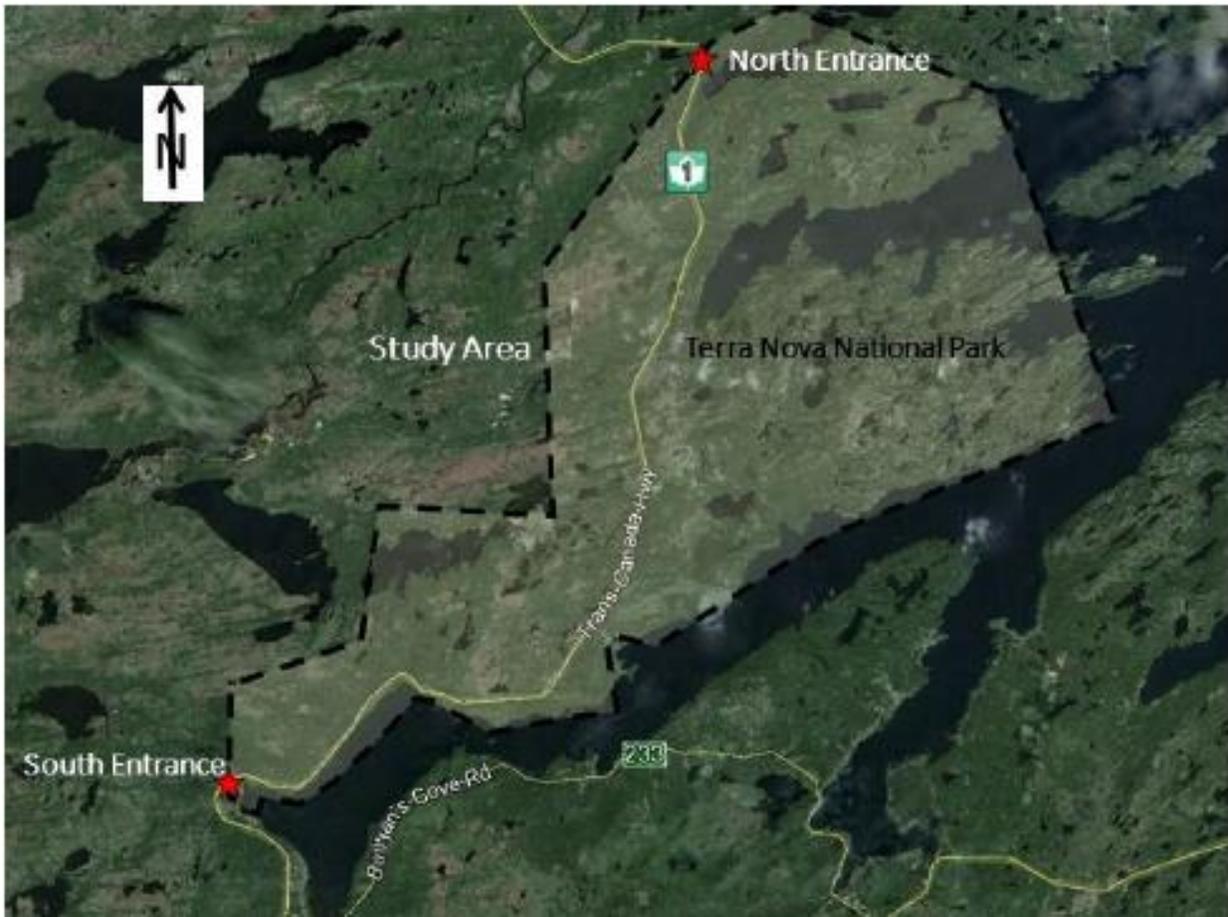
**Yes**  
**SARA authorization IS required. Describe the activity and its effects on the species and continue to Question 2.**  
*Note: If you are contemplating an activity that may destroy critical habitat, it must be discussed with VPs and the CEO due to a recent federal court decision. If possible, find alternatives and mitigation measures to prevent destruction of critical habitat (i.e., to avoid an effect on the critical habitat and the requirement for an authorization).*

**2. Is the activity already authorized in a final recovery document or required for public safety?**





<input type="checkbox"/> Yes	<b>SARA authorization is NOT required</b> . Explain why the activity is exempt and <b>STOP HERE</b> . <ul style="list-style-type: none"><li>• Explain why the activity is needed for public safety and make a reference to the Act of Parliament under which the activity is authorized; OR</li><li>• if the activity is authorized in a final recovery document, refer to the published recovery and explain why the activity is exempt under section 83 of SARA).</li></ul>
<input type="checkbox"/> No	<b>SARA authorization is required</b> . Continue to Part B.



Attachment #1: Aerial overview of project site. Source: Google Earth.

