Parks Canada Basic Impact Analysis

1. PROJECT TITLE & LOCATION

Trans-Canada Highway – Safety and Standards Rehabilitation 2019-20 –Terra Nova National Park

2. PROPONENT INFORMATION

Andrew Fudge – Parks Canada Highway Engineering Services - 709 772 3235

3. PROPOSED PROJECT DATES

Planned commencement: 2019-05-01
Planned completion: 2019-09-30

4. INTERNAL PROJECT FILE # TN-2019-03

5. PROJECT DESCRIPTION

The Trans-Canada Highway (TCH) in Terra Nova National Park (TNNP) 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 and forms part of a vital transportation link within the province of Newfoundland and Labrador, linking communities east and west of the Park. 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. To accommodate the increase in highway traffic, Parks Canada constructed passing lanes in 13 different locations throughout the park in 2016/17. This involved widening the existing lanes by approximately 3 meters with additional adjustments to existing road intersections. The construction of the passing lanes provided the travelling public with increased opportunities for safe passing and allowed for more efficient highway operation throughout the park. The improvements also increased visitor safety and resulted in a more engaging visitor experience. The proposed work for this project is a continuation of the initiative to increase safety and maintain highway standards within TNNP.

The project areas are located on the TCH and Route 310 (Eastport Highway) within Terra Nova National Park. The scope of work for this project includes:

- Excavation and replacement of existing CSP culverts indicated for replacement.
- Ditching in locations on the TCH as indicated or directed by the Departmental Representative and disposal of waste material.
- Brushing/clearing/selective tree removal and disposal of material for various sections of the TCH along the existing right-of-way and around culvert installations.
- Supply and installation of new aluminized CSP culverts, concrete culverts, and HDPE culverts, complete with backfill and rip rap aprons.
- Installation of HDPE liner.
- Rehabilitation and improvements at the outlet pools of Cobblers Brook, Square Pond and Arnolds Pond TCH culverts.
- Supply and installation of wildlife walkway ramp at Salton's Brook culvert.
- Installation of slope erosion protection materials at the Bread Cove, Salton's Brook and Southwest Brook culverts.
- Improvements to asphalt gutter and off-takes at selected locations, including installation of catch basins.
- Cutting and removal of existing asphalt, excavation of roadway structure.
- Placement and compaction of rock fill aggregates and granular materials for bedding and surround, roadway structure and rock-lined ditches.
- Hauling, placement and compaction of granular sub-base, base and shoulder materials.
- Application of fiber reinforced matrix and hydroseed.

- Supply, installation and compaction of new hot mix asphalt pavement.
- Supply and installation of new permanent traffic signage.
- Installation of pavement markings.
- Disposal of projects wastes.

The terrestrial biological environment within the project limits is typical of most biological environments in Newfoundland with minimal disturbance. The terrestrial vegetation existing at the site locations can be described as typical, comprising primarily of spruce, pine, fir, birch, maple, aspen and alder. The ground cover is typically mosses, shrubs (kalmia) and grasses. Wildlife resources typically found in this environment includes songbirds, spruce and ruffed grouse, foxes, snowshoe hare, squirrel, bear, and moose. Aquatic mammals (otters, mink and beaver) may also inhabit the project areas. Species at risk that could inhabit the surrounding areas include the Newfoundland marten (Martes americana atrata), Little brown bat (Myotis lucifugus), Northern myotis (Myotis septentrionalis), Boreal felt lichen (Erioderma pedicullatum), Blue felt Lichen (Degelia plumbea), Red crossbill (Loxia curvirostra percna), Olive sided flycatcher (Contopus cooperi) Rusty blackbird (Euphagus carolinus) and American eel (*Anguilla rostrata*).
There are seven freshwater species of fish found in TNNP, including Atlantic salmon, Eastern brook trout, Arctic char, American eel, Rainbow smelt and Three-spine and Nine-spine stickleback. The main fish species that could be found in the brooks along the TCH would be Atlantic salmon (*Salmo salar*), brook trout (*Salvelinus fontinalis*) and American eel (*Anguilla rostrata*).

6. VALUED COMPONENTS LIKELY TO BE AFFECTED

Potential interactions between the project and the surrounding environment are identified in the Effects Identification Matrix (*Appendix 1*).

7. EFFECTS ANALYSIS

Natural Resources

Air - During removal activities air quality may be reduced due to air borne dust particles. Heavy equipment exhaust may also affect air quality during transportation. Significant effects are not likely.

Soil and landforms - Impacts are expected to be minimal aside from the potential for erosion of soils during excavation activities. There are also the potential impacts from soil compaction and contamination due to accidental spills and improperly disposed of waste material. Introduction of invasive plants species can occur through soils imported from outside the park boundaries. The source of imported soils will be approved by Parks Canada prior to construction. Significant effects are not likely.

Water – As some of the work will be taking place near water, sediment and other deleterious substances have the potential to be released through bank erosion, concrete work, leaks, refueling, spills, etc. There will be in-water work required for this project, therefore there could be a temporary disruption of fish passage during culvert installations. There should be an increase in aquatic connectivity as a result of this project as culverts on fish bearing streams will receive fish passage improvements. Any in-water works will be completed in dry conditions. Significant effects to water or aquatic habitat is not expected.

Flora (including species at risk) – Vegetation removal will be required and any proposed clearing areas will be surveyed for Boreal felt lichen *(Erioderma pedicullatum)* and Blue felt lichen (*Degelia plumbea)* before removal commences**.** Re-vegetation activities will emphasize the use of native species from local Newfoundland seed sources. Introduction of invasive plants species can occur through soils imported from outside the park boundaries. The source of imported soils will be approved by Parks Canada prior to construction. Significant effects to flora not likely.

Fauna (including species at risk) - The temporary operation of equipment and increased human presence and noise may lead to a temporary displacement of wildlife. The project areas are adjacent to the TCH and Route 310, however the construction areas will be surveyed for the presence of mammalian and avian species prior to construction. Marten critical habitat will not be impacted by this project as

vegetation removal will involve trimming of alders and selective tree removal along the existing right of way and minimal removal of vegetation around culvert installations. Significant effects to fauna not likely.

Cultural Resources

Excavation of the roadbed, establishment of detours and widening of inlet/outlet pools will be required around culvert installations. The Cultural Resource Values Statement for Terra Nova National Park has been reviewed for the project. No known archaeological resources exist within the project limits. Significant effects to cultural resources is unlikely.

Visitor Experience

The aesthetics, noise impact and the presence of machinery during the operation are expected to be minimal due to the duration of the project. The project may have a direct but temporary impact on traffic due to reduced speeds and delays at the construction sites.

8. MITIGATION MEASURES

1. The conditions presented in this basic impact analysis (BIA) will be considered part of the project and must be approved by the Field Unit Superintendent prior to the commencement of work.
2. Reclamation techniques will emphasize the re-vegetation of the sloped and cleared areas of the site with local plants, shrubs, trees and hydroseed approved by Parks Canada.
3. The source and use of any soil in this project will require prior approval by Parks Canada before being transported to the site.
4. Where vegetation clearing is required, it will be kept to a minimum and approved by Parks Canada staff prior to the start of the project.
5. All construction personnel are responsible for reporting any unusual materials unearthed during construction activities to the on-site supervisor. In those situations where the find is believed to be an archaeological/cultural resource, the contractor will immediately stop work in the vicinity of the find and notify PWGSC/Parks Canada. A Parks Canada archaeologist will be contacted for further direction. Construction can only resume following the development of an in-depth archaeological impact assessment and the implementation of the necessary mitigations measures.
6. Due to the close proximity of watercourses and in-water work, an **Environmental Protection Plan (EPP)** must be prepared and submitted to Parks Canada for approval before construction begins. The EPP must include erosion and sediment control strategies, de-watering strategies, installation of the HDPE liner at the TCH/Eastport intersection, and measures to be taken for spill response. **A site-specific dewatering plan is required for all in-water work.**
7. All personnel must be aware of the potential for encounters with bears, caribou, moose, etc. and they will be instructed to immediately report any sightings. No attempt to harass or disturb wildlife will be made by any worker.
8. Breeding bird season in Newfoundland occurs between May 1st and August 15th. Vegetation clearing must be avoided during this period. Nests, eggs and nest shelters of migratory birds must not be disturbed or destroyed. If a nest is found, a 20 m radium will be implemented and left undisturbed until nesting is completed, and construction activities should be minimized in the immediate area until nesting is completed. Parks Canada staff will survey any vegetation to be cleared before removal.
9. If the nest of any raptor is encountered during construction and operation activities, work in the vicinity of the nest is to be curtailed until Parks Canada staff has been contacted and appropriate mitigation is applied.
10. Machine operators will be briefed on proper food and garbage disposal and other wildlife issues before work begins.
11. All solid waste will be handled according to and in compliance with applicable federal/provincial regulations and will be considered for reuse, resale or recycling at an approved facility.
12. Work areas will be kept clear of waste and litter to reduce the potential for attracting wildlife and reducing potential interactions with wildlife. Any waste that may attract animals (i.e., food) will be stored in covered, wildlife-proof containers.

13 Burning of waste within Terra Nova National Park is not permitted.
14 Do not bury waste materials within Terra Nova National Park.
15 The handling and storage of hazardous materials will follow all applicable federal legislation/regulations. All relevant current Material Safety Data Sheets (MSDS) will be readily available for the site.
16 Chain saws or other hand-held equipment will be used if clearing of vegetation is required. The use of mechanical clearing methods, such as harvesters, will not be permitted.
17 All trees, limbs and brush from clearing activities must be removed and disposed of outside of the park unless otherwise indicated by the Departmental Representative.
18 If operating chain saws directly over or adjacent to a waterbody is unavoidable, use measures such as tarps to trap and prevent debris from entering the waterbody as much as possible.
19 If grubbing is required, the organic vegetation mat and/or the upper soil horizons will be restricted to the minimum area required. It will be spread, in a manner to cover inactive exposed areas or retained for use in reclamation efforts.
20 If grubbing is required, the grubbed material will not be pushed into areas that are to be left undisturbed.
21 Existing laydown and storage areas will be used, where feasible.
22 Conduct in-stream installations or repair work during periods of low flow and isolate any in-waterworks from flows.
23 Conduct of in-water work will only be permitted between June 1st and September 30th.
24 Work will be conducted in a manner that prevents potential sedimentation of watercourses in or adjacent to the work areas.
25 Water containing suspended materials shall not be pumped into watercourses or drainage systems.
26 If required, overburden storage areas will be located at least 50 m from any waterbody on well-drained soil and will be stored in stable piles and sloped to prevent pooling.
27 All stockpiled soil must be covered and/or dyked to prevent erosion or runoff of sediment-laden water from leaving the site. All stockpiled soil must be stored above the floodplain.
28 Work will be scheduled to avoid periods of heavy precipitation to prevent erosion and release of sediment and/or sediment laden water during the construction phase.
29 Existing or new sediment control structures used in this work will be monitored by the contractor for excessive accumulation of sediment. The contractor will remove accumulated sediment from control structures to gain full effectiveness of the systems. Effluent from control structures will be released to flow overland for appropriate filtration prior to entering any waterbody.
30 Straw or hays bales will not be used for sediment control.
31 If an environmental inspection reveals that sediment is entering any waterbody, further mitigation measures will be implemented, such as erosion control blankets, temporary lined drainage ditches, sediment control (settling) ponds, ditch blocks/check dams or sediment dam traps, to intercept run-off. The necessary or appropriate measures will be determined in the field.
32 Access to public facilities and services will be impacted as minimally as possible.
33 Public safety is of utmost importance during this project and is the intent of Parks Canada to minimize disturbance to the greatest extent possible to the users of the park during construction activities. The contractor is responsible to take all necessary precautions to ensure there are no safety concerns related to visitors of the Park.
34 Machinery is to arrive on-site in a clean condition and must be free of soils and vegetation and maintained free of fluid leaks. For all contractors, Spill Response Kits (absorbent materials, etc.) must be on-site at all times. In the event of any spill of deleterious substances (e.g., petroleum hydrocarbons, hydraulic fluid), the contractor is responsible for containing and cleaning up the spill; the spill is to be reported and sent to Parks Canada. In the event of a spill on-land or a spill, regardless of size, in the freshwater environment, applicable federal legislation/regulations will be followed.
35 No material toxic to fish or any aquatic life shall be permitted to enter any stream, river or lake. This shall include but not limited to lubricants, fuels, testing fluids, detergents, cement lime or concrete.
36 Unused concrete to be disposed of outside of park boundaries. Perform washout of concrete truck chutes in designated areas only or impermeable bags for disposal.
37 Machinery must be well muffled and noise levels should be minimized as much as possible.

38 Only minor repairs and maintenance (e.g., lubrication) of 'non-mobile' equipment such as flatbeds, shovel, etc. will be performed on-site. All major repairs, where possible, are to be performed at an existing garage location outside of the project area.
39 All fuel and other hazardous materials will be handled following applicable federal legislation/regulations.
40 All necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials.
41 Only workers who are qualified and trained in handling these materials as stated in the manufacturer's instructions and government laws and regulations will handle fuel and other hazardous materials.
42 Handling and fuelling procedures will comply with the applicable federal legislation/regulations and any additional requirements in order to limit potential contamination of soil or water, and will not occur within 100 m of any water body. Drums will be tightly sealed against corrosion and rust and surrounded by an impermeable barrier in a dry building with an impermeable floor or outside with appropriate spill containment (110%) and covers.
43 Contracted fuel suppliers will, before transporting or positioning fuel or oil, have a copy of their fuel and hazardous material spills contingency plan. Transportation of hazardous and dangerous materials shall be conducted in accordance with provincial, territorial and federal transportation regulations.
44 Despite measures taken to reduce the potential for spills or leaks, should any soils be contaminated by petroleum hydrocarbons, they will be assessed and managed in accordance with the applicable federal legislation/regulations.
45 Disposal of treated wood waste (CCA, creosote, etc) including sawdust must be outside of the park in accordance with all applicable Federal, Provincial and Municipal regulations.

9. OTHER Considerations

Check all that apply

☐ Public/stakeholder engagement
☐ Aboriginal engagement or consultation
☒ Surveillance

Site inspections by Surveillance Officer to ensure mitigations are being followed.

☐ Follow-up monitoring, required to evaluate effectiveness of mitigation measures and/or assess restoration success
☐ Follow-up monitoring, required by legislation or policy (indicate basis of requirement e.g. required by the *Species at Risk Act)*
☐ SARA Notification

10. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

Residual adverse effects not likely significant

11. EXPERTS CONSULTED

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

Department/Agency/Institution:	Date of Request:
Expert's Name & Contact Information:	Title: :
Expertise Requested:	
Response:	
Department/Agency/Institution: DFO	Date of Request: October 17, 2016

Expert's Name & Contact Information: John O'Rourke	Title:
Expertise Requested: Request for Review of culvert replacements on the TCH	
Response: DFO would be available to offer expert advice if the project was deemed to be serious harm if so determined by park personnel but , for such activities, Parks does not need to contact DFO as their own legislation will allow them to do this work. The project in question is a relatively common type of activity and park personnel are well aware of the mitigations that would be required.	

12. 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.

FOR SARA REQUIREMENTS:

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

The majority of the landscape within TNNP has been identified as Marten Critical Habitat. According to the Recovery Plan for the American Marten in Newfoundland (2010), critical habitat must be maintained above defined thresholds. These thresholds are described in the plan in terms of a minimum amount of total forest, mature and overmature forest, and a maximum amount of younger-aged forest. All projects undertaken within the park must be assessed in terms of its impact on critical habitat for marten. Vegetation removal for this project includes brushing of alders and selective tree removal along the existing TCH right-of-way and minor tree removal for culvert replacements. This removal is not considered to be an activity likely to destroy critical habitat for marten on the landscape.

The Atlantic Population of the Boreal felt lichen (E*rioderma pedicullatum*), and the Blue felt lichen (*Degelia plumbea*) are listed as Special Concern on Schedule 1 of the SARA and are found within park boundaries. Vegetation will be inspected prior to removal to determine if these species are present. 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 presence of individuals or roosting sites for both species will be determined before removal of any structures or vegetation. Avian species protected under SARA that may be found in the park include the Red crossbill (*Loxia curvirostra percna*) - Endangered, Olive sided flycatcher (*Contopus cooperi*) - Threatened and Rusty blackbird (*Euphagus carolinus*) – Special Concern. The presence of individuals or nesting sites will be determined before the project commences. All of the brooks associated with this project most likely contain populations of American eel (*Anguilla rostrata*) which is classified as Threatened by the Committee on the Status of Wildlife in Canada (COSEWIC). There will be in-water work associated with the project therefore there could be temporary barriers to migration.

OR, the SARA-Compliant Authorization Decision Tool (Appendix 2) was used and determined:

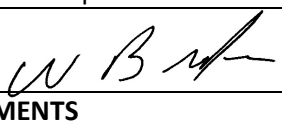
☐ There is no contravention of SARA prohibitions

☐ Project activities contravene a SARA prohibition and CAN be authorized under SARA

☐ Project activities contravene a SARA prohibition and CANNOT be authorized

13. RECOMMENDATION AND APPROVAL

(Add additional blocks as required)

Prepared by: Rod Cox – Resource Management Officer	Date: April 09, 2019
Recommended by: Andrew Fudge - Highway Engineering Services	
Signature: 	Date: 09/04/2019
Approved by: William Brake – Superintendent - NEFU	
Signature: 	Date: April 10, 2019

14. ATTACHMENTS

14.1. BMPS

14.2. Other

Project drawings

15. NATIONAL IMPACT ASSESSMENT TRACKING SYSTEM

☐ 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*.

Appendix 1 : Effects Identification Matrix (optional)

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										
	You may wish to change the components listed under the headings to specify the natural or cultural resources that are priority considerations for your PCA site or for the specific project being reviewed.		**Valued components potentially directly affected by the proposed project**							
			Natural Resources					Cultural Resources		
			Air	Soil & landforms	Water (surface, ground, crossings, etc.)	Flora (specify, including SAR)	Fauna (specify, including SAR)	Archaeological	Landscape	
	Phase	Examples of Associated Activities								
Project Components	Preparation / Construction / Operation / Decommissioning	Supply and storage of materials	☐	☒	☒	☒	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	
		Clearing	☐	☐	☐	☒	☐	☐	☐	
		Demolition	☐	☐	☐	☐	☐	☐	☐	
		Disposal of waste	☐	☒	☒	☒	☒	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	
		Drainage	☐	☐	☒	☐	☐	☐	☐	
		Excavation	☐	☒	☒	☒	☒	☒	☐	
		Grading	☐	☒	☒	☒	☒	☐	☐	
		Backfilling	☐	☒	☒	☒	☒	☒	☐	
		Use of machinery	☒	☒	☒	☒	☒	☒	☐	
		Transport of materials/ equipment	☒	☐	☐	☐	☐	☐	☐	
		Maintenance	☐	☒	☒	☒	☒	☐	☐	
		Use of Chemicals	☐	☒	☒	☒	☒	☐	☐	
		Set up of temporary facilities	☐	☒	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	

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:		With respect to visitor experience		
		Health and socio-economic conditions	Health & socio-economic conditions	Current use of lands and resources for traditional purposes	Access & services	Recreation & accommod'n opportunities	Safety
Phase	**Natural resource components affected by the project**						
Preparation /construction operation/implementation/decommissioning	Could impacts to <u>air</u> lead to adverse effects on…	☐	☐	☐	☐	☐	☐
	Could impacts to <u>soils and landforms</u> lead to adverse effects on…	☐	☐	☐	☒	☐	☒
	Could impacts to <u>water</u> (e.g. surface, ground water and water crossings) lead to adverse effects on…	☐	☐	☐	☐	☐	☐
	Could impacts to <u>flora</u> (including SAR) lead to adverse effects on…	☐	☐	☐	☐	☐	☐
	Could impacts to <u>fauna</u> (including SAR) lead to adverse effects on…	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐