



## Parks Canada Basic Impact Analysis

### 1. PROJECT TITLE & LOCATION

The **Rankin Brook Bridge Replacement** will take place at the intersection of Rankin Brook and Route 117 in Kouchibouguac National Park.

### 2. PROJECT DESCRIPTION

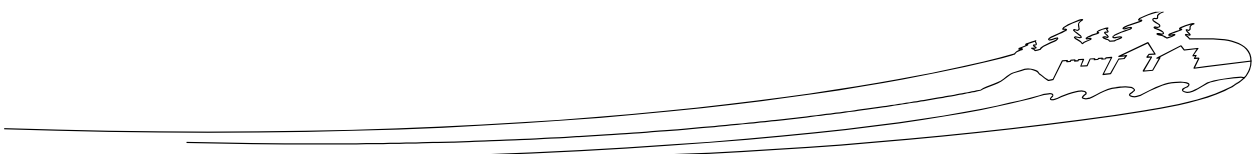
The purpose of this project is to build a temporary bridge before replacing the existing Rankin Brook Bridge which includes realignment of the Route 117. Activities associated with the project include:

- 1) Installation of sedimentation and erosion control structures prior to work commencement.
- 2) Construction of a temporary bridge south of the existing alignment to permit a detour of two way traffic during all phases of the construction.
- 3) Demolition work with the removal of the existing bridge crossing including concrete deck, abutments and retaining walls. All existing foundations shall be removed to a minimum depth of 1 meter below finished grade or streambed. All material will be removed from site and disposed or recycled in an approved method.
- 4) Construction of a new 27.20 meter single-span New England Bulb Tee Girder bridge complete with a composite 225 mm cast-in-place concrete deck crossing Rankine Brook. The new bridge is generally in the same location as the existing bridge and includes crash-tested steel barriers. The bridge superstructure is founded on fully integral piled abutments, supporting a reinforced concrete cap and cantilevered wingwalls along each edge of the abutment. A section of the Route 117 will be realigned which generally includes the vertical realignment of approximately 310 meters of roadway to create the approaches to the new Rankin Brook Bridge and the removals and reshaping of the existing roadway embankments.
- 5) Site restoration.
- 5) Removal of the sedimentation and erosion control structures.

### 3. VALUED COMPONENTS MOSTLY TO BE AFFECTED

Valued components likely to be affected by project activities include:

- I. Vegetation (trees, brushes, shrubs and herbs)
- II. Cultural resources (artefacts)
- III. Soil and ground/surface water
- IV. Fish migration and habitat
- V. Bat roosting, hibernating habitat and temporary shelter





## VI. Visitor experience

The environmental impact analysis showed no presence of flora and fauna species at risk within the project area.

## 4. EFFECTS ANALYSIS

### I. Vegetation (trees, brushes, shrubs and herbs)

Clearing and grubbing to build the temporary bridge will eliminate the vegetation cover.

Equipment and machinery used for this project or top soil imported from outside the park could carry weeds such as invasive plant species.

### II. Cultural resources

There is a high probability that artifacts may be recovered mainly during the soil removal within the undisturbed area of the temporary bridge. There is also a lower probability that artifacts may be recovered in the disturbed area where the road and bridge was constructed since no cultural resource monitoring was done during the existing bridge construction.

### III. Soil and ground/surface water quality

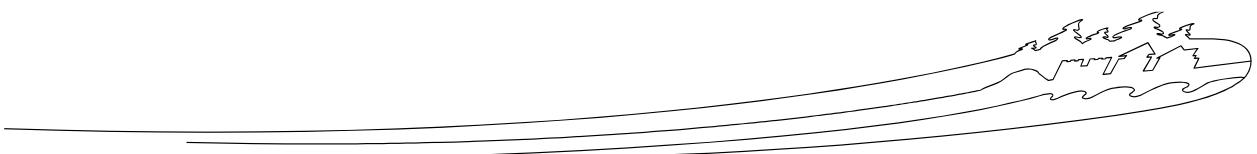
Heavy machines such as bulldozers and excavators and have the potential to contaminate the soil and water with petroleum leakage and spills.

Hazardous materials handling and storage could potentially contaminate the soil or/and water.

### IV. Fish migration and habitat

There is a potential of suspended sediments and debris (wooden, soil, metal, etc.) released in the watercourse during the removal and construction of the bridges. Suspended sediments and debris can potentially alter the water quality and interfere with fish spawning breathing processes, migration patterns and feeding habits. Five species are spawning in the estuary between May and October such as the Smooth Flounder, American Shad, Banded Killifish, Mummichog and Sticklebacks (Tremblay, 1991). Dewatering has the potential to harm or kill fish.

### V. Bat roosting, hibernating habitat and temporary shelter





The *Species at Risk Act* (SARA) prohibits the killing, harming, harassment, capture or taking of a SARA-listed endangered species, the damage or destruction of its residence and the destruction of any part of its critical habitat. Little Brown Myotis, Northern Myotis and Tri-colored Bat, all had been recently added as endangered species under the *Species at Risk Act* (SARA) due to the threat of White-nose Syndrome (WNS). Bats are most vulnerable during summer, when mothers and pups are in maternity roosts (April-September) and winter, when males and females are hibernating (October-April).

Built assets can serve as roosting or hibernating habitat or temporary shelter for bats, especially in areas where suitable natural shelters are limited or absent. Built Assets include buildings, fortifications and infrastructure. Specific examples where bats may be found include buildings, attics, eaves, loose siding, shutters, walls, chimneys, cellars, bridges, canals, wells, tunnels, picnic shelters, outdoor washrooms, kiosks, signs, and other human-made structures. Inspection of built assets for the bat is mandatory after April 1<sup>st</sup> each year.

It is likely that the demolition of the existing Rankin Bridge could potentially impact the roosting or temporary shelter.

VI. Visitor experience

Visitor experience quality can be affected with the building temporary closures or with hazards encountered around the construction site with the waste generated and with structures set up/dismantling.

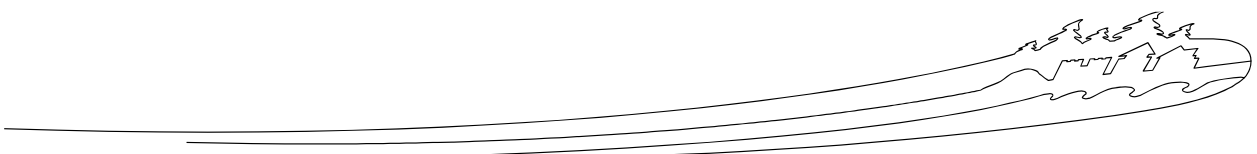
## 5. MITIGATION MEASURES

### Project preparation

- The contractor will have an on-site start up meeting with the Environmental Assessment Officer (EAO) prior to project works beginning.
- The contractor is to receive a copy of the approved Basic Impact Analysis for this project and review, understand and comply with components of the document.
- The conditions presented in this environmental assessment will be considered part of the project. Failure to comply with any part of this screening may result in work being suspended pending rectification of the problem(s).

### General

- The Environmental Assessment Officer shall be kept informed of project scheduling and will be notified of changes to the schedule at all times.





- All National Park Regulations are to be observed by contractors, subcontractors and their employees (no feeding of wildlife, no littering, no camping, etc.). Failure to abide by National Park Regulations may result in charges and/or removal from employment on the project.
- The storage of all materials will be at the pre-approved stockpiling material, storage and staging sites approved by the Environmental Assessment Officer, contractor and project manager.
- The Environmental Assessment Officer will do regular inspections regarding the mitigation measures included in the Basic Impact Analysis and the contracting environmental requirements.
- Using only existing roadways or disturbed areas for site access and travelling within the site to minimize damage.

I. Vegetation (trees, brushes, shrubs and herbs)

Prevention of vegetation damage and invasive species introduced to the park can be done when:

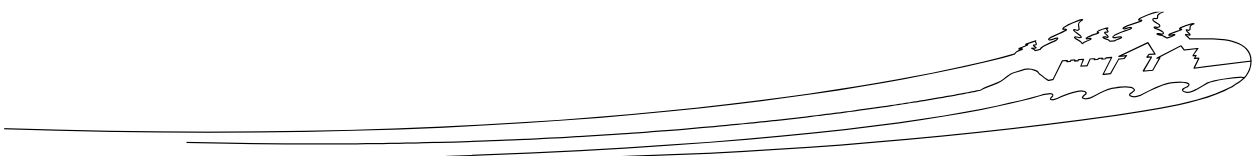
- Ensuring equipment and machinery are clean and weed free prior to entering or leaving the project area.
- Using only existing roadways or disturbed areas for site access and travelling within the site to minimize damage.
- The location of top soil taken outside the park is approved by the Environmental Assessment Officer.
- Returning the disturbed vegetation area to its natural state with weed free grass seed or sod.
- The soil grubbed within vegetated area (trees, brushes, shrubs and herbs) of the temporary bridge and detour surface should be piled on the side and reused to re-vegetate the cleared and grubbed surface since the seed bed will regenerate naturally within a few years.

II. Cultural resources

A Parks Canada archaeologist will carry out an Archaeological Overview Assessment (AOA) and determine if an Archeological Impact Assessment (AIA) and implementation of mitigating measures are required.

III. Soil and ground/surface water quality

Prevention of soil and ground water contamination can be done when:





- All equipment is properly tuned, free of leaks, in good operating order and equipped with standard air emissions control devices. Vehicles found leaking petroleum products at the site shall be ordered off the grounds.
- Refuelling within 100 m of surface water and equipment being refuelled on impermeable pads/pans designated to allow full containment of spills.
- Environmental equipment and supplies are present on-site at all times and employees trained in their spills (petroleum and hazardous material).
- Hazardous materials are stored in designated containers and handled properly.

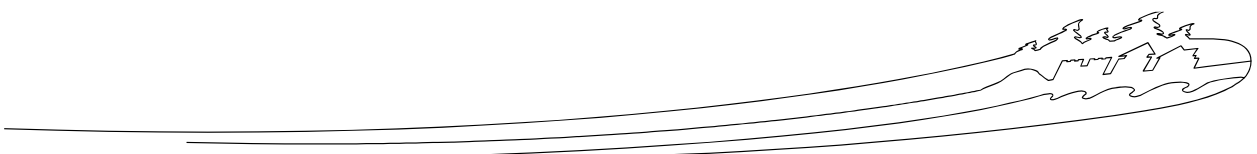
#### IV. Fish migration and habitat

The sediment control devices should be in place before the construction phase, in order to intercept and trap sediment before it reaches the watercourse. These devices must remain in place until permanent vegetation has been established. Prevention of sedimentation can be done when:

- Limiting the size of the disturbed area.
- Retaining existing vegetation wherever feasible.
- Adding hay or straw over the exposed soil before re-vegetation, mainly if reseeded or sod is only done later.
- Placing straw bale barriers and sediment fences around the downslope perimeter of a disturbed area or along the bank of a watercourse.
- Keeping the velocity of surface runoff low by limiting the slope and gradient of disturbed area, covering erodible soils with mulch or vegetation.
- Inspecting and maintaining the erosion and sediment structures in good conditions.
- Re-vegetating exposed areas with seeds and mulch within 45 days of the killing frost or with sod.
- Installing ground covers and/or vertical drapes such as sheets of plastics or air-permeable cloth (e.g., burlap or canvas) prior to removal and construction activities to capture falling debris.
- Installing steel sheet containment walls on each side of Rankin Brook.
- All fish shall be salvaged from areas adjacent to the creek where dewatering will be done.

#### V. Bat roosting, hibernating habitat and temporary shelter

The monitoring of presence/absence of bats in the built asset must be confirmed, within two weeks prior to work commencement and repeated if no work had been done within the 2 week period. Use of acoustic monitoring equipment and visual inspection are recommended. Presence/absence checks must be completed by qualified individuals





familiar with bat ecology and bat roosts within the ecoregion of the existing Rankin Brook Bridge.

VI. Visitor experience

Visitor's hazards can be mitigated with proper traffic control (closure, detour, etc.). Signage and fencing must be installed by the contractor to restrict visitor access within the construction.

Kouchibouguac National Park staff should be aware of the project scheduling to inform properly the visitors of construction conditions.

**6. OTHER Considerations**

Check all that apply

- Public/stakeholder engagement
- Aboriginal engagement or consultation
- Surveillance
- 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

**7. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS**

The project should have no significant residual adverse effects. Any punctual effects can be mitigated on site.

**8. DECISION**

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

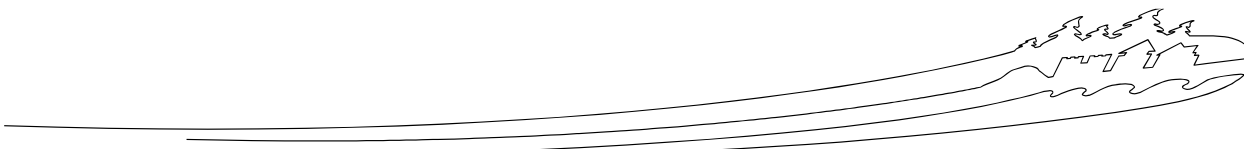
- not likely to cause significant adverse environmental effects.
- likely to cause significant adverse environmental effects.

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

FOR SARA REQUIREMENTS:

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

**OR**, the SARA-Compliant Authorization Decision Tool ([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\

#### 9. 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.*)

#### 10. REFERENCE LIST

Beach, H. (1988. Kouchibouguac National Park Resource Description and Analysis.

Desloges, C. (1980). The Natural Resources of Kouchibouguac National Park.

Parks Canada Agency (2017). PCA Standards for managing bats in Protected Heritage Places.

Parks Canada Agency (2017). Rankin Brook bridge replacement Project 1620.

Province of New Brunswick Department of Environment, Sustainable Development, Planning and Impact Evaluation (2012). Watercourse and Wetland Alteration Technical Guidelines.

Savoie, R., Haché, D., Department of Fisheries and Oceans, Habitat Management Section, (2002). Design criteria for fish passage in new and retrofits culverts in the Maritime Provinces.

Tremblay, E. (1991). Vers une gestion intégrée du dragage au parc national Kouchibouguac.

Tremblay, E. (2007). Screening Report Ryan's Equipment Rental Contract.

