



Basic Impact Assessment

Parks Canada

Version IAA 2019

1. PROJECT TITLE & LOCATION

Water and Sewer Utility Systems Recapitalization Phase 3 - Terra Nova National Park

2. PROPONENT INFORMATION

Stephen Robertson – Senior Project Manager, Project Delivery Services East - (819) 420 9356

3. PROPOSED PROJECT DATES

Planned commencement: 2021-08-23

Planned completion: 2022-07-22

4. NOTICES ON REGISTRY

Title for Registry: Water and Sewer Utility Systems Recapitalization – Phase 3

Project notice posted on Registry 2021-03-02

BIA or any permits approval cannot be taken before 2021-04-01

5. PROJECT FILE NUMBER (internal /Registry) TN-2021-02

6. PROJECT DESCRIPTION

The purpose of the project is to replace all distribution water main and services, and sanitary sewer main and services in both Newman Sound and Malady Head campground not included in Phases 1 or 2, which includes:

- All water distribution main, sanitary sewers and services in Newman Sound Campground east of the limits of the work in Phase 2, as well as the replacement of the existing wood stave tank (reservoir) in Newman Sound Campground;
- The installation of all individual septic tanks and fields in both Newman Sound and Malady

Head Campgrounds as well as that of replacing the existing sewage trickling plant in Malady Head Campground with a new advanced treatment system;

- New water services and sewer services to kitchen shelters, existing washrooms and new water bottling filling stations in both Newman Sound and Malady Head Campgrounds;
- Replacement of the water main and well pump station at the Visitor Centre in Salton's in Terra Nova National Park.

The original water mains and sanitary sewer services were installed in the 1960s and after many decades of use, requires replacement to ensure continued service to the visitors and staff of the park. Parks Canada wishes to have as little disturbance to the park as possible and plans to abandon and leave in place the existing pipes once the new PVC pipes are installed and commissioned.

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 pedicellatum*), Blue felt Lichen (*Degelia plumbea*), Frosted glass-whiskers Lichen (*Sclerophora peronella*), Red crossbill (*Loxia curvirostra perna*), 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.

7. VALUED COMPONENTS LIKELY TO BE AFFECTED

As identified in Appendix 1 - Effects Identification Matrix.

8. EFFECTS ANALYSIS

The primary effects for all valued components will occur during the construction phase of the project.

Natural Resources

Air - airborne dust particles from exposed soil and heavy equipment exhaust may result in reduced air quality. The effect is expected to be low given levels of rainfall typical in the Fall/Spring, reducing the potential for dust.

Water – wastes (e.g., garbage, litter, fuel and construction materials), erosion and sedimentation and surface water runoff may contaminate groundwater and adjacent aquatic environments. Erosion and sediment control and secure storage of materials will be important.

Soil and Landforms - excavation activities and operation of heavy machinery may result in soil compaction and rutting, soil erosion, loss of topsoil, exposure of subsoils, and soil contamination from waste (e.g., garbage, fuel). Construction corridors and laydown areas will be kept to previously disturbed areas as much as possible. Effective restoration of the sites will be important.

Flora (including species at risk) - excavation will require removal of vegetation in some areas resulting in disturbance of adjacent natural areas, potential root exposure and physiological stress. Ground disturbance may result in the introduction of invasive species, or expansion of existing invasive alien populations. Construction corridors and laydown areas will be kept to previously disturbed areas as much as possible. Salvaged topsoil/rootmat will be utilized to cover exposed corridors through vegetated areas after construction. Effects to species at risk are not expected.

Fauna (including species at risk) - operation of heavy equipment, increased human presence and noise may result in temporary habitat displacement/ preferred habitat avoidance (e.g., birds, mammals). Artificial food sources such as garbage and litter may cause wildlife habituation/attraction (e.g., bears, fox). The potential for fuel spills, sediment and runoff may contaminate adjacent aquatic habitats. Effects are expected to be low given that most of the construction sites are disturbed areas with, at times, high levels of human activity. Effects to species at risk are not expected.

Cultural Resources

Archaeological sites – An Archaeological Overview Assessment (AOA) was conducted for the Malady Head, Newman Sound and Headquarters area construction activities in May of 2019 with the archaeological investigation in June of 2019. The replacement of the water main and well pump station at the Visitor Centre was reviewed in May 2021. It was determined that there are no major archaeological concerns with this project. With these results, the proposed work in these areas can continue with no further archaeological oversight. If during the proposed construction any cultural material is encountered, work will stop and the appropriate Parks Canada Agency staff will be contacted.

Landscape and Landscape Features- Impact is expected to be low given that construction corridors and laydown areas will be kept to previously disturbed areas as much as possible (i.e. roads, existing septic fields, open grassy areas, etc).

Visitor Experience

The potential effects on Visitor Experience are anticipated to occur during the construction period, including: reduced quality of visitor experience due to noise and presence of construction equipment; decreased aesthetic appeal and impacted viewscape; and potential hazard to visitors and staff due to construction activities (e.g., heavy equipment operation). The project will temporarily decrease the quality of the overall visitor experience but this is limited to the construction period. Some campsites may be closed to visitors during construction but will be temporary until project completion.

9. MITIGATION MEASURES

General

Work Site Conditions/Staging/Laydown:

1. A project start up meeting will be held with the key people working onsite to review the mitigation measures, Parks Canada contact information and any site specific considerations with Parks Canada staff before work begins.
2. Staging/laydown and parking areas for material and equipment will be located at areas approved by Parks Canada staff.
3. Clearly mark staging/laydown areas, work corridors and restricted areas with stakes, biodegradable flagging tape, fencing, temporary gates or other means; remove when project is completed.
4. Isolate operations, ground intrusion activities to the footprint of the established working corridors, and limit vehicle access to essential vehicles only.
5. Confirm presence of buried infrastructure prior to excavation and take precautions to avoid damage.
6. The contractor is required to submit an Environmental Protection Plan. The plan will outline how the contractor will address the environmental protection requirements, including the installation of pipes and culverts, cleaning equipment prior to entering the site and erosion and sediment control. It will show sufficient detail on products to be used and physical placement on site to determine effectiveness of these items. The plan must cover all activities within the limits of all construction, laydown and traffic diversion areas.

Equipment Operation:

7. Equipment must be washed/cleaned free of soils prior to arrival.
8. Equipment must be properly tuned, clean and free of contaminants, in good operating order, free of leaks (e.g., fuel, oil or grease), and fitted with standard air emission control devices and spark arrestors prior to arrival on site.
9. During construction, any required cleaning of tools and equipment must be done greater than 30 meters from aquatic environments to prevent the release of wash water that may contain deleterious substances.
10. Equipment operators must be fully trained and experienced.
11. Minimize idling of engines, contingent on operating instructions and temperature consideration.
12. Machinery (e.g., excavators, trucks, bobcats, chainsaws, and generators) must be stored, maintained and refuelled on a flat surface at least 100 meters from aquatic environments.

13. Only minor repairs and maintenance (e.g., lubrication) of 'non-mobile' equipment such as flatbeds or shovels are permitted; all major repairs must be undertaken at an appropriate offsite location.
14. Machinery travel in areas outside designated work areas will not be permitted.
15. Adequate quantities of fire-fighting equipment must be available to deal with accidental fires.

Waste:

16. All solid waste will be securely stored and handled according to applicable federal/provincial regulations.
17. All waste materials (e.g., construction material, refuse material, waste petroleum, and demolition waste) shall be removed from the site on project completion and considered, prior to disposal, for reuse, resale or recycling and then disposed of at an approved facility. Cover waste loads during transportation.
18. Portable sanitary facilities must be serviced on a regular basis and accumulated waste disposed of at a sanitary waste disposal facility.
19. Trees and brush removed during construction are the property of the contractor and must be removed from the park.
20. Vegetation will not be chipped and dispersed in natural areas.
21. Burning of waste is not permitted in the park.
22. 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.

Hazardous Materials:

23. Prevent the release of hazardous substances into the environment, including but not limited to, petroleum products and their derivatives and chemicals.
24. All on-site personnel must be briefed on reporting requirements for hazardous materials spills; spills must be reported immediately to the designated Parks Canada contact.
25. All construction sites must be equipped with containers suitable for the secure, temporary storage of hazardous wastes, separated by type.
26. A spill contingency response kit including sorbent material and berms to contain 110% of the largest possible spill (i.e., fuel or other toxic liquids) related to the work must be available on site at all times. On-site personnel must be aware of its location and trained in its use. Any contaminants must be recovered at source and disposed of according to applicable laws, policies and regulations.
27. Handle and store hazardous materials as per applicable federal legislation/regulations. The contractor must have all relevant and current Material Safety Data Sheets available onsite.
28. Petrochemical products, paints and chemicals must be stored 100 meters from aquatic environments.
29. Any hazardous waste or contaminated material uncovered during excavation / construction, must be investigated, source identified, removed and disposed of outside the park at an approved facility. Disposal documentation must be provided to the designated Parks Canada contact.

Natural Resources

Air:

30. Implement dust control measures during grading and re-surfacing especially during dry, windy weather.

Water:

31. Ensure all materials (e.g., organic materials, soil stockpiles, construction waste and materials) are securely stored in place, especially during high wind/storm conditions and at staging areas; materials must not enter aquatic environments or be allowed to disperse around the site.
32. Drainage patterns around/through any wetland areas must be restored at the end of the project.
33. Machinery will not be permitted into any wetland areas and must stay on the established working corridors.
34. Work will be conducted in a manner that prevents potential sedimentation of watercourses in or adjacent to the work areas.

Soil and Landforms:

35. Regularly inspect and maintain erosion and sediment control structures during all phases of the project and modify measures as necessary.
36. Use erosion and sediment control products made of 100% biodegradable materials (e.g., jute, sisal or coir fiber) when possible. Ensure backing materials are also biodegradable. Hay bales are not permitted.
37. Limit duration of soil exposure; phase activities whenever possible and restore disturbed areas as soon as possible.
38. Topsoil separation is required; stockpile topsoil away from subsoils and spoil material and more than 15 meters away from aquatic environments, drainage features and/or the top of steep slopes.
39. Salvaged topsoil for reclamation activities will be stored inside the working corridor or other areas approved by Parks Canada staff. This material will not be pushed or stored in natural areas to be left undisturbed.
40. Excavations must be drained (but not directly into any waterbody), back-filled and compacted as soon as possible.
41. Under thawed conditions, backfill material will be compacted prior to topsoil replacement; distribute topsoil evenly over the excavated area as per Parks Canada specifications.
42. Under frozen ground conditions, material will be sufficiently spread over the excavated site to allow for settlement under thawed conditions. Where practical, topsoil replacement will be postponed until the backfill has thawed.
43. Surface water shall be directed away from work areas. Sediment laden runoff must not enter any watercourse.
44. Remove temporary erosion and sediment control products, especially non-biodegradable materials, when they are no longer required.
45. When installations are complete, remove excess material, shape loosened soils to match the local terrain and ensure noticeable construction impacts (e.g., ruts, holes, depressions,

compacted areas) are appropriately re-graded, back-filled with topsoil, re-contoured and capped in preparation for restoration.

46. During grading, ensure that materials are not pushed, or permitted to enter or erode into water or wetlands and stay within delineated limits.

Flora:

47. Introduction of invasive plant species must be prevented:
 - Minimise bare soil exposure (e.g., plant native species, cover with natural mulch/ground coverings).
 - Minimise ground disturbance and vegetation removal, as practical and within project requirements.
 - Aggregate sources must be free of invasive species and capable of producing clean material to the satisfaction of the Departmental Representative.
 - Equipment must be washed/cleaned free of soils prior to arrival.
48. Clear minimum areas necessary as approved by the Departmental representative.
49. Vegetation will be cut manually (i.e chainsaw, brushsaw). Mechanical removal of trees and brush is not permitted.
50. Protect roots of trees to drip line to prevent disturbance or damage. Avoid traffic, dumping or storage of materials over root zone.
51. Restore any areas affected by construction activity as closely as possible to the natural surrounding area. Specifically:
 - Preserve native topsoil/rootmat from the site, spread over the affected areas, re-grade to natural contour, install effective erosion control measures (e.g., erosion control blankets) on the steepest sections of the excavations to ensure the soil does not wash away prior to native plant re-population next season.
 - Hydro seeding mixes/sod shall be pre-approved by Parks Canada staff.
 - Reclamation techniques will emphasize the revegetation of the sloped and cleared areas of the site with local plants, shrub and trees approved by Parks Canada.

Fauna:

52. All wildlife attractants must be secured (e.g., petroleum products, human food, recyclable drink containers and garbage) within wildlife-proof containers, in a secured building or a vehicle. Keep food waste separate from construction waste and remove daily. Notify the designated Parks Canada contact immediately should wildlife gain access to the above mentioned attractants.
53. Minimize the time excavations remain open and cover or fence when left unattended.
54. Never approach or harass wildlife (e.g., feeding, baiting, luring).
55. Alert the designated Parks Canada contact, immediately to any potential wildlife conflict (e.g., aggressive behaviour, persistent intrusion), distress or mortality. In the case of aggressive behaviour or persistent intrusion, stop work and evacuate the area.
56. The breeding season for most birds within Newfoundland occurs between May 1st and August 15th. Vegetation clearing/grubbing should not take place within this time frame. However, some species protected under the *Migratory Birds Convention Act* nest outside these timeframes. Under section 6 of the *Migratory Birds Regulations*, it is forbidden to disturb,

destroy or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird or its carcass, skin, nest or egg except under authority of a permit.

57. If a nest is found, a 20m radius will be implemented and left undisturbed until nesting is completed, and construction activities will be minimized in the immediate area until nesting is completed.
58. 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.
59. The timing of the proposed tree clearing/grubbing should help to mitigate any potential impacts on maternal Newfoundland Marten dens. The activity should be avoided between April 1st – June 30th. The tree clearing will occur during the Fall/Winter – possibly early spring period of 2022. Should the proposed tree clearing/grubbing not be completed by April 1st, 2022, Parks Canada staff will survey the remaining areas to be cleared for dens.
60. Terra Nova National Park is home to the Little Brown Myotis and Northern Myotis, which are species of bats classified as endangered under the Species at Risk Act. The Contractor is to note that if they encounter bats in or around the construction sites, the following is required:
 - Immediately notify the Departmental Representative for directives to be followed.
 - Stop demolition/construction activities and do not disturb the roost.
 - Do not initiate demolition/construction activities until the bat vacates the premises. The expected time frame for a male bat to vacate the premises would be in the order of 1-3 days. In the event a maternity roost is discovered (females with pups), the expected time frame for the bats to vacate the premises would be in the order of 1-3 weeks.
 - Departmental Representative will make final decision regarding shut-down times and work return times, as it relates to the discovery of bats in or the construction site.
61. The construction limits will be surveyed for wildlife prior to clearing/grubbing. If any nest/dens are discovered within the construction limits, the area will be protected and appropriate mitigation applied.

Cultural Resources

62. If cultural resource features are encountered work should cease in the immediate area. The work area in relation to the cultural features should be photo documented and geo-referenced, and the Parks Canada project manager informed immediately. The project manager should then contact Parks Canada's Terrestrial Archaeology section for advice and assessment of significance, which will in turn determine what will be required to mitigate the chance find. Construction can only resume following the development of an in-depth archaeological impact assessment and the implementation of the necessary mitigations measures.

Visitor Experience

63. Maintain the site in as tidy a condition as possible for the duration of work.
64. Safety risks to visitors during construction must be minimized:
 - o The work site must be closed and clearly delineated with fencing, barriers, temporary gates, caution tape, or combinations thereof.

- Maintain a safe working distance between work activities and visitors/staff, especially when transporting machinery and materials between any staging areas and the working corridors.
- Secure and clearly mark unattended safety hazards (e.g., excavations, debris piles) with fencing, warning signs, caution tape or combinations thereof.

10. OTHER Considerations

☐ Comments received from the public /stakeholder engagement

No comments received

☐ Indigenous peoples engagement or consultation

☒ Surveillance

Periodic inspection by Parks Canada staff to ensure mitigations are being followed.

☐ Follow-up monitoring

☐ SARA Follow-up monitoring

11. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

Given the magnitude of effects, the short term of the project, the timing and reversibility after construction, the project is not likely to cause significant adverse residual environmental effects to natural resources. The project is anticipated to have negligible to minor changes to cultural resources and visitor experience and as such is not likely to cause significant adverse residual effects to the same.

12. EXPERTS CONSULTED

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

Department/Agency/Institution: Parks Canada Indigenous Affairs and Cultural Heritage Directorate	Date of Request: 2019-05 2021-05
Expert's Name & Contact Information:	Title:

Sofie Dejadins John Higdon	CRM Policy Advisor Archaeologist
Expertise Requested: Cultural Resource Impact Analysis (cultural resources, archaeological resources)	
Response: Work must stop immediately if cultural features / artifacts, are encountered during the course of the project. Construction can only resume following the development of an in-depth archaeological impact assessment and the implementation of the necessary mitigations measures.	

13. 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, IAA 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:

- ☒ **Residual adverse effects to species at risk are not likely, and therefore, the SARA- Permit Decision Tool was not required**

OR, the SARA-Permit Decision Tool ([Appendix 2](#)) was used and determined:

- ☐ This activity does not require a SARA permit
☐ This activity requires a SARA permit and one can be issued
☐ This activity requires a SARA permit but one cannot be issued

Almost the entire landscape within Terra Nova National Park has been identified as Marten Critical Habitat. According to the Recovery Strategy for the American Marten (Environment Canada, 2013), critical habitat is 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. Utility corridors, such as the water main replacements in this project, are listed in the Recovery Strategy as an activity that has the potential to destroy critical habitat of marten. A GIS analysis

using the landscape thresholds above was conducted. It has been determined that the maximum total area of forest to be removed in phase 2 and phase 3 of the utilities project (0.4 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. Areas to be cleared and excavated will be inspected for the presence of individual marten or dens prior to construction.

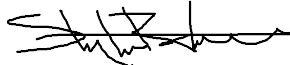

The Atlantic Population of the Boreal felt lichen (*Erioderma pedicullatum*) Blue felt lichen (*Degelia plumbea*) and Frosted glass-whiskers (*Sclerophora peronella*) are listed as Special Concern on Schedule 1 of the SARA and are found within park boundaries. Vegetation identified for removal including areas adjacent to construction limits for phase 2 and phase 3 was inspected on April 9th, March 19th and 26th, December 12th and 16th, 2019 and January 14th and 16th, 2020. These species were not observed during these inspections.

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 the project commences.

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.

14. RECOMMENDATION AND APPROVAL

(Add additional blocks as required)

Prepared by: IA author: Rod Cox - Resource Management Officer		Date: July 08, 2020
Recommended by: Stephen Robertson – Senior Project Manager PDS East		
Signature: 	Date: July 8, 2021	
Approved by: Tara McNally Macphee – A/Superintendent, NEFU		
Signature: 	Date: July 9, 2021	

15. References

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.

16. Attachments

Archaeological Overview Assessment RPA 1716: Terra Nova National Park Utility Systems Recapitalization.

Archaeological Overview Assessment RPA 1716: Terra Nova National Park Utility Systems Recapitalization. AMENDMENT: Phase 3 (Well Pump House to TNNP Visitor Centre Watermain)

Appendix 1: Effects Identification Matrix (optional)