Terms of Reference

Maintenance of the Electrical Power Line in Lac Philippe Sector

Gatineau Park

June 2016

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The National Capital Commission (NCC) requires the services of an electrical contractor to maintain the Lac Philippe power system and to provide emergency services relating to the Lac Philippe Power Line. The Lac Philippe sector is located in the Municipality of LaPêche, in Quebec). The Contractor must hold a license issued by the Corporation of Master Electricians of Québec to perform the work described in this request for services and repair of electrical medium voltage networks.

1.0 Background

Gatineau Park is the National Capital's Conservation Park and covers 36,000 hectares, extending from the City of Gatineau northwest to the municipalities of La Pêche and Pontiac. The Park has a wide variety of natural features and ecosystems, and its recreational facilities complement the Park's primary conservation mandate as laid out in the Gatineau Park Master Plan (2005) and subsequent conservation plans.

The Lac Philippe Sector is a natural area located approximately 35 km to the north of the City of Gatineau and includes many public recreational and service facilities that are powered by an NCC-owned overhead electrical system. This is a four-season recreational area. During the summertime peak use periods, the area often has up to 2000 visitors daily, half of whom are campers. In winter, services are greatly reduced as most buildings and systems are unused.

The Lac Philippe medium-voltage transmission line is owned by the NCC and maintained by a private contractor, not by Hydro-Québec. Most major life-cycle repairs and upgrades were made 10 years ago, and the system is entirely operational and in compliance with current standards. In recent years, there have been two or three service interruptions per year, generally in the summer. These are generally caused by weather-related factors, including trees or branches falling on the wires causing short-circuits. In addition, there have been two transformer breakdowns in recent years. Power outages affecting the potable water supply system are critical in nature. Resolving these outages is considered an essential service as such outages can have an impact on public health and the environment.

2.0 Site installations and management

The range of facilities and services at Lac Philippe include the following:

- Three (3) public beaches with related sanitary facilities (3 buildings);
- Three-hundred (300) campsites with related sanitary facilities (4 buildings), along with ancillary service buildings and facilities (store, concessions, registration offices, gates, lighting systems, garage);
- A workshop, office building, service area, etc., along with a complete water supply and disposal system (pumps, water filtration plant, waste disposal pump stations, communication system, etc.) The system operates at full capacity during the summer, while only the pumping stations are in operation during winter.

The electrical system consists of:

- A 7.4 km of 14.4 KV line, connected with 54 posts and all related equipment;
- 3.1 km of secondary lines with 34 posts and all related equipment;
- 30 transformers (8-10KVA, 21-25KVA, 1-50KVA);
- 2 interrupters on the 14.4 KV line - 1 at the beginning of the line (3-phase) and 1 to isolate the garage/workshop.
- The NCC has one 45-foot pole and 4 25 kVA transformers in storage at the Lac Philippe warehouse.

Please refer to Appendix 1 for more details.

Most of the network is accessible with standard maintenance vehicles but some areas require specialized equipment (snowmobiles or ATVs) at certain times of the year.

Other services in the sector are provided by other contractors. The general maintenance and recreational services contractor is Services récréatifs Demsis inc. http://www.demsis.ca/entreprise.php while the water system operating contractor is Aquatech, société de gestion de l'eau, http://aquatech-inc.com/. Demsis is responsible for all routine maintenance in the Park (grass, roads, campsites, beaches, sanitary buildings, services staffing, etc.) while Aquatech is specifically responsible for the water supply and treatment system, from intake in Lac Philippe to disposal at the sewage lagoon. These contractors work collaboratively and cooperatively to provide a top quality product for the enjoyment of the public. The electrical contractor will play an important role with Demsis and Aquatech in assuring the provision of top-quality services to the public. Park staff directs, manages and coordinates the work of all three contractors. The electrical

contractor will report exclusively to the designated Park representative.

3.0 Mandatory Bidding Requirements

The Contractor must hold a valid license issued by the Corporation of Master Electricians of Québec to perform the work described in this request for services and repair of electrical medium voltage networks. The contractor must include a copy of this valid licence and designation in the tender documents submitted to the NCC. Failure to provide this documentation will result in immediate disqualification.

Other:
All employees and sub-contractors must also possess the permits and certifications needed to undertake the required work.

In addition, the successful bidder shall provide a Health & Safety Plan for work conducted in the natural environment, as well as a Toxic Products Management Plan within ten (10) working days from the date of the letter of notification of acceptance from the NCC.

4.0 Duration of the Contract

The duration of the contract will be a period of three (3) years starting August 3rd, 2016 ending August 2nd, 2019 plus two (2) options to extend for one (1) year each at the same terms and conditions. If the responsibility for operation and maintenance of the electrical transmission line were transferred to Hydro-Québec, this contract would be terminated. The NCC would advise the contactor three (3) months in advance. The NCC does not anticipate that Hydro-Québec will assume responsibility for the operation and maintenance of the electrical transmission line prior to the spring of 2019, but reserves the right to terminate this contract prior to this date, if need be.

5.0 Services Required

5.1 Emergency on-call services for minor works

5.1.1 This service, which is required 24 hours a day, seven days a week, 365 days a year, consists in completing as quickly as possible the work required to ensure provision of a constant supply of electricity to the Lac Philippe facilities.

5.1.1.1 Summer period April 1 to October 15 (peak period approximately May 15 to October 15) upon receiving an emergency call, the contractor shall respond to the Park representative within 15 minutes and shall be on site within 2 hours with appropriate personnel, equipment and materials to commence restoration of electrical service.

5.1.1.2 Winter season (approximately October 16 to March 31), the contractor shall respond within 15 minutes and must be on site within 24 hours.

The initial response to an emergency call shall be assigned to a single person, the 'first responder', who will either complete the work required (if minor in nature such as a disconnected fuse, minor tree removal or trimming to free the line), or will undertake a preliminary assessment of the problem, with further action to follow.

5.1.2 The contractor shall be accessible by pager or mobile phone. An intervention and communication protocol shall be developed jointly by the contractor and the NCC. The NCC reserves the right to develop the protocol unilaterally. The protocol shall remain in force for the duration of the contract.

5.1.3 The electrical contractor shall, at all times, have on hand the necessary equipment, materials and personnel to undertake all work required to re-establish electrical supply. This includes basic tools and parts, for example +/- 500 feet of replacement cable, tie wires, cross-pieces with bolts, insulators, fuses, etc.

5.1.4 All work performed, equipment employed and materials used must be in conformity with all Federal, Provincial and Municipal codes and regulations regarding electrical lines and all related equipment.

5.1.5 The contractor will inform the Park representative immediately upon resumption of electrical service.

5.1.6 Should the severity of the emergency require work in excess of minor repairs, the contractor shall discuss with the Park representative the extent of the problem and the available remediation options. The Park representative shall decide the best course of action.

5.1.7 All work required to ensure resumption of electrical service will be invoiced at the hourly rates provided by the contractor. All work deemed additional to minor emergency repairs shall be undertaken with the requisite labour and materials at the rates indicated in the Standing Offer Agreement (SOA) included in the present request for services (for example, downed pole or power line, blown transformer, etc.)

5.1.8 All material costs incurred above and beyond those described in 5.1.1 will be accounted for and reimbursed by the NCC.

5.1.9 After each minor or major emergency event, the contractor shall submit a report to the Park representative describing the problem, the cause, the response, actions taken and the problem's eventual resolution. Any recommendations must also be submitted to the Park representative for consideration. The report shall be more substantive if the emergency relates to a transformer and a potential PCB spill.

5.2 Annual preventative inspection and maintenance program

5.2.1 An inspection shall be conducted each year beginning in spring 2017. After notifying the NCC at least one week in advance, the contractor shall examine the entire network and all his equipment prior to the sector going into full operation, around May 15th. This will be conducted as a visual inspection to detect any problems with transformers, broken or missing guy wires between each length of cable, cross-braces, ground wires, guy wire tie-ins, poles, neutral coils, sectioning mechanisms, try-plex, etc.

5.2.2 The results of each spring inspection shall be put in writing in a mutually agreed format, and shall be delivered to the Park representative assigned to this contract.

5.2.3 Prior to performing necessary routine repairs detected in the spring inspection, the contractor shall submit an estimate for this work, using the SOA rates. The contractor shall also inform the NCC of any additional major work that is considered to be of a 'life cycle' nature.

5.2.4 Upon approval of the Park representative and issuance of a call up against the SOA, the routine repairs shall be performed as soon as possible.

5.3 Additional Work

5.3.1 When an emergency event is of a major significance (ice/wind/thunder storm with multiple trees over the lines, pole failures, transformer failure, etc.), the contractor will discuss required work with the Park representative and submit an estimate based on the SOA rates submitted with this tender. Material costs will be added to the SOA estimate.

5.3.2 When work in not urgent but required, procedures as described in 5.2.4 will be followed.

6.0 Supplemental Clauses

6.1 The contractor shall perform his duties with a minimum of noise and disruption for the visitors to the Park. All motorized equipment shall be of a four-stroke type to reduce noise and pollution.

6.2 The contractor will work in an efficient and environmentally respectful manner and leave no evidence of his activities (see Appendix 2). All sites will be left clean and any damage repaired. Specific practices as to dispersal of wood, etc. shall be detailed by the NCC representative.

6.3 Access routes and roads to be used for performance of work will be designated by the Park representative.

6.4 The contractor will collaborate with the Park representatives, Demsis & Aquatech personnel, as well as Park conservation officers and other contractors in order to manage any emergency in a secure, efficient manner, including closing areas and installing emergency tape, etc.

6.5 The NCC will issue keys and access codes required to access the various sites for performance of the work. The keys issued shall be signed for and returned at the end of the contract.

6.6 In the event of tree damage, the NCC will arrange for tree removal and line clearing by a firm specialized in this type of work.

6.7

7.0 Tender

The Price Form must be completed, signed and submitted in with the tender document. The all-inclusive bid price shall include professional fees and other related expenses and disbursements, excluding applicable taxes.

The tender price information shall be submitted as follows:

7.1 Lump sum price for the emergency call service to be provided 24 hours a day, 7 days a week, 365 days a year (separately for summer and winter), for one year, refer to section 5.1. Note that for year 1 the lumps sum price is to be pro-rated based on actual contract start date. Subsequent years pricing will be adjusted by the CPI

7.2 Lump sum price for one year preventative maintenance program starting in spring 2017, refer to section 5.2. Subsequent. years pricing will be adjusted by the CPI

7.3 SOA hourly rates for additional works. All hourly rates will include necessary vehicles, including snowmobiles and ATVs, if needed:

7.3.1 Hourly rate for one supervisory electrician to respond/work on site;

7.3.2 Hourly rate for electrical system repair work, including supervising electrician and a lineman, with light equipment (two-person team);

7.3.3 Hourly rate for additional labourer;

7.3.4 Hourly rate for heavy equipment such as a bucket truck, labourer/spotter, lineman, supervisor, with light equipment (three-person team).

The proponent who meets the mandatory requirements and obtains the lowest total price (contract price for items 1 and 2, and SOA total) will be awarded the contract.

PRICE SCHEDULE

- All responses, call-ups and follow-up work calls will be a 4-hour minimum.
- Hourly rates will be paid at a rate of 1.5 times outside of regular weekday working hours (08:00-16:00) on weekdays.
- Hourly rates will be paid at a rate of 2.0 times on weekends and statutory holidays.

		Maintenance contract – Year 1	
Line Item		**Description**	**All-inclusive Lump Sum Amount (excl. taxes)**
1		Lump sum - Lump sum price for the emergency call service to be provided 24 hours a day, 7 days a week, 365 days a year (separately for summer and winter), for one year, refer to section 5.1	
2		Lump sum - Lump sum price for one year preventative maintenance program starting in spring 2017, refer to section 5.2	
		Subtotal 1	
		TPS/TVQ 14.975%	
		TOTAL 1	

*

	Standing Offer Agreement – Year 1 Unit Rates			
Line Item	**Description**	**Estimated hours for bid evaluation purposes**	**Hourly rate (excl taxes)**	**Extended totals (excl. Taxes)**
1	Electrician (Supervisor)	5 hours	$ ____ /hr	
2	Electrical Service Team consists of two people with small equipment (foreman, Installer)	10 hours	$ ____ /hr	
3	Electrical Service Team consists of three people with large equipment (foreman, Installer, operator and bucket truck)	30 hours	$ ____ /hr	
4	Equipment Operator (of what?)	10 hours	$ ____ /hr	
	Subtotal 2			
	TPS/TVQ 14.975%			
	TOTAL 2			

PRICE SCHEDULE

TOTAL 1	
TOTAL 2	
GRAND TOTAL (TOTAL 1 + TOTAL 2)	

8.0 Yearly adjustment to the price of the contract

The NCC shall use the Consumer Price Index (CPI) to adjust on a yearly basis the weekly costs, lump sum prices and hourly rates of the SOA submitted in the Price form. The lump sum prices for the first year of the contract and the hourly rates of the SOA shall be the amounts as provided by the contractor and indicated in the Price form. For subsequent years of the contract, the weekly costs, lump sum prices and hourly rates will be determined as follows:

Year 2 of contract

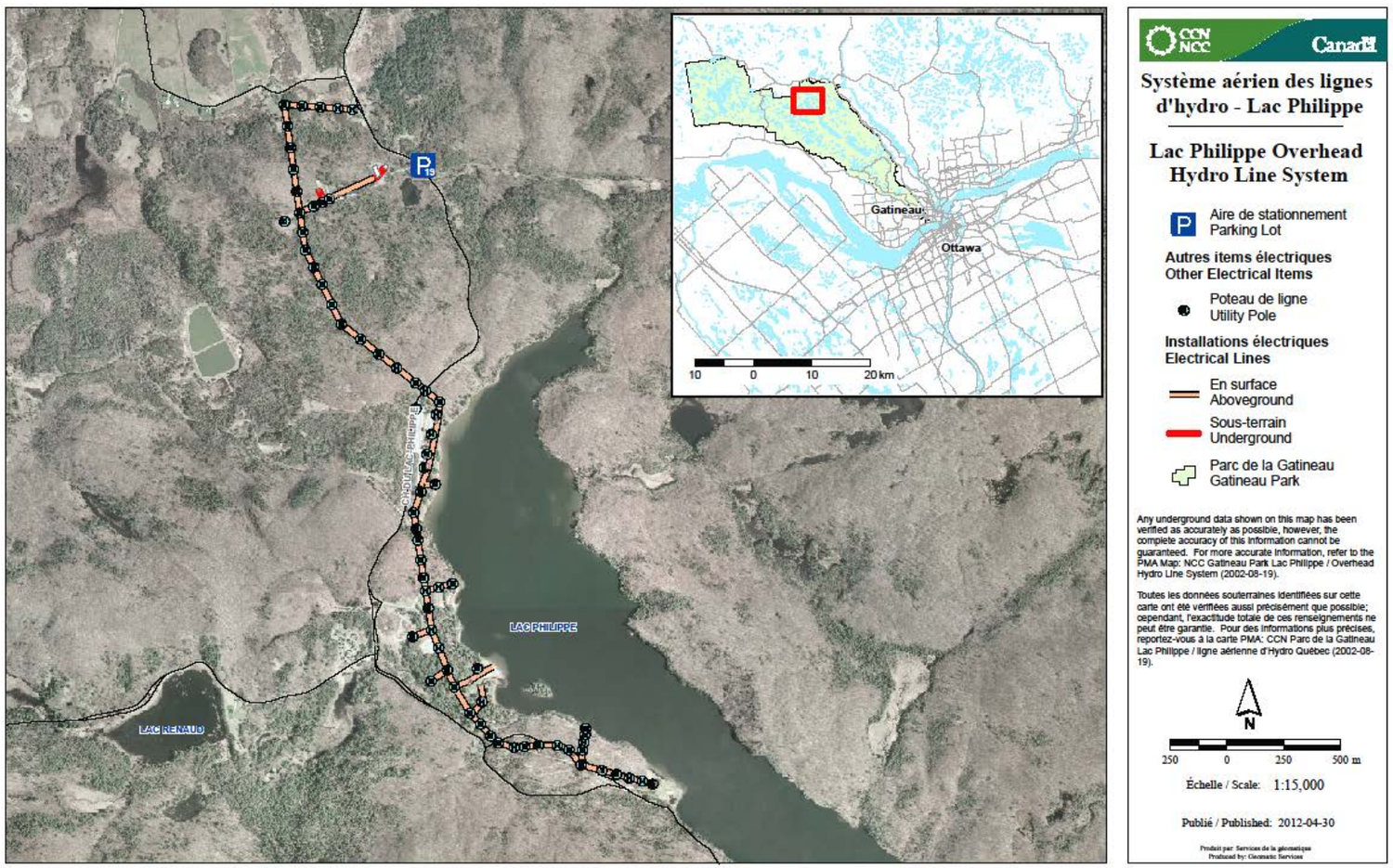
The lump sum prices and hourly rates (excluding taxes) for Year 2 shall be based on the weekly costs, lump sum prices (excluding taxes) and hourly rates during Year 1, plus or minus a price adjustment based on the Consumer Price Index (CPI) – All items Ottawa-Gatineau (AIOG), specifically the percentage difference between the CPI-AIOG of April 2017 and April 2016 plus applicable taxes.

Year 3 of contract

The weekly costs, lump sum prices (excluding taxes) and hourly rates for Year 3 shall be based on the lump sum prices and hourly rates (excluding taxes) during Year 2, plus or minus a price adjustment based on the Consumer Price Index (CPI) – All items Ottawa-Gatineau (AIOG), specifically the percentage difference between the CPI-AIOG of April 2018 and April 2017, plus applicable taxes.

Option years, if exercised, will be adjusted in the same manner.

Appendix 1 Lac Philippe Sector Map



National Capital Commission (NCC)

Appendix 2 Environmental Guidelines for Maintenance Contracts

This document summarizes the mitigation measures to be implemented during the various activities that will be undertaken as part of Maintenance contracts on National Capital Commission (NCC) lands. This document fulfills the requirements under the *Canadian Environmental Assessment Act 2012 (CEAA, 2012)* to determine whether projects on federal lands are likely to cause significant adverse environmental effects[1]. If the mitigation measures outlined within this document are implemented, then the activities described below which are conducted on NCC lands will be unlikely to cause significant adverse environmental effects. This table also takes into account the other legal obligations the NCC has under both provincial and federal environmental legislation (e.g. *Species at Risk Act, Migratory Birds Convention Act, Canadian Environmental Protection Act, et*c). This document complements the NCC's Environmental Strategy and Master Plans.

The NCC Environmental Strategy outlines 5 areas for action: reducing waste, protecting biodiversity, preventing pollution, leading in environmental practices and combating climate change. One of the objectives under the *leading in environmental practices* area is to incorporate environmentally sensitive practices into all Maintenance contracts. This document reflects the NCC's commitment to meeting this objective.

All contractors and contract management officers will be required to have basic training in the use of these environmental guidelines. It is important that these guidelines be strictly followed, as fines may be issued by the provincial or federal government in the event of noncompliance. Repaying these fines will be the responsibility of the contractor.

Environmental Guidelines to be followed for All Maintenance Activities

The following measures and principles must be followed throughout all Maintenance work on NCC lands. Mitigation measures marked with an asterisk (*) will require approval from the NCC prior to the start of the Maintenance activity, or will require the contractor to notify the NCC in the case of an accident or emergency. When a mitigation measure is marked with an asterisk (*), contact the Contract Management Officer (CMO) to inform them of the type of work you are doing. The CMO will then be responsible to contact relevant NCC specialists (e.g. arborist, contaminated site specialists, biologists, archaeologist, etc.) to obtain their recommendations.

[1] The determination of whether an adverse environmental effect is significant is based on several criteria : magnitude, geographic extent, duration and frequency, reversibility and ecological context as per the Canadian Environmental Assessment Agency guidelines

Appendix 2

NCC Mitigation Measures for Maintenance Contracts

Air Emissions

- To the extent possible the Contractor will minimize unnecessary idling of vehicles which can result in wasted fuel and the creation of greenhouse gases (refer to municipal by-laws).
- All air emissions must meet regulatory requirements. Where required, a certificate of approval must be obtained from provincial authorities for stationary sources of air pollution (e.g. stacks, boilers, fume hoods).
- Use low-sulphur diesel or ethanol-based fuel wherever possible to reduce vehicle emissions.
- Regularly service vehicles and practice preventive maintenance to reduce vehicle emissions.
- The use of energy efficient vehicles and machinery is encouraged to reduce carbon emissions.
- Whenever possible, it is recommended to use renewable sources of electricity to prevent unnecessary emissions.

Archaeological Resources

- *If any archaeological resources or human remains are discovered during Maintenance activities, all work at the location concerned must be halted immediately and Ian Badgley, Archaeologist, NCC Heritage Program (613-239-5678, Ext. 5751, ian.badgley@ncc-ccn.ca) must be notified forthwith. Work shall not be resumed at that location until measures for the protection of those resources or remains have been put in place.

Cleaning of Equipment, Machinery, and Vehicles

- Before transporting all-terrain vehicles or other tracked vehicles into and out of an NCC valued ecosystem or valued habitat, ensure appropriate measures have been taken to clean away sludge, dirt, and plant material, the latter to minimize the spread of invasive species.

Contaminated Soils

- *No soils from a contaminated site may be reused elsewhere.
- Management and disposal of contaminated soils will follow all applicable regulations and guidelines.

Appendix 2

NCC Mitigation Measures for Maintenance Contracts

Designated Substances

- *Prior to entering a site, contact the NCC to determine if any designated substances[2] are present.
- Handle and dispose of all designated substances in accordance with all federal, provincial, and municipal requirements.
- Ensure employees are trained on the identification and handling of designated substances.

Pesticides

- In 2012, the NCC developed and approved a policy to eliminate the cosmetic use of pesticides on its lands. All activities that take place on NCC lands must be in full compliance with all federal pesticides legislation and regulations as well as be in full compliance with the requirements under the *Ontario Pesticide Act* and the *Quebec Pesticide Act*, depending on the province where the activity is taking place.

Fauna and Wildlife

- Workers will avoid wilfully disturbing any wildlife at the site.
- If the animal is found inside a structure, contact the CMO who will be advised by the NCC environmental services on the best course of action.
- Workers must keep the work site clean and must not leave behind garbage or food scraps that could attract animals or alter their behaviour.

Site Reinstatement

- To prevent weed germination and establishment, retain native vegetation in and around project activity and keep soil disturbance to a minimum consistent with project objectives.

[2] As per *Ontario Regulation 490/09 Designated Substances* definition

- All materials should be removed at the end of the works, and the site should be reinstated to its original conditions, or better, including the restoration of both topsoil and native vegetation. Seed mixtures are to follow the NCC portfolio approved seeding, sodding or mulch.

- Revegetation must be done as soon as possible within the growing season. If unfeasible, the Contractor must stabilize disturbed areas with erosion control blankets to keep the soil in place and prevent erosion in water bodies. Blankets must be removed only at the end of the revegetation work.

Spills Procedure & Emergency Response

The NCC has developed a Spills Procedure to ensure that appropriate and consistent responses are implemented to deal with emergencies or accidents. All individuals performing work on NCC property are expected to be familiar with the general requirements for reporting and responding to environmental emergencies on NCC property. In addition, the following requirements must be met.

- All emergency situations MUST be reported immediately to 911and then to the NCC 24 Hour Emergency Communications Service at 613 239-5353. Any environmental spills (biological, chemical or petroleum based) must be reported to the NCC 24 Hour Emergency Communication Service at 613-239-5353.

- Spill response materials should be available wherever hazardous materials are used or stored. These spill response materials should be suitable in type and quantity to the type and quantity of hazardous materials being used at that location.

- Employees must be trained on how to use the spill material and equipment.

- All used absorbent material must be disposed of in accordance with applicable regulatory requirements.

- *Any release of potential contaminants, such as fuel, chemicals, or other hazardous materials, must be reported to the NCC immediately.

- All spills must also be reported to the appropriate provincial authority where a spill: discharges to air, land or water, is in excess of normal usage, has escaped its means of containment, or has been combined with other products affecting its chemical stability which could cause an adverse effect (i.e. negative impact on health, environment or property).

- Spills must be contained and cleaned up in accordance with all federal, provincial, and local regulatory requirements.

- A spill report form has been prepared by the NCC and must be completed and sent to Environmental Services within 24 hours of the spill. The spill form is included in the reporting section of this contract. The Spill Report, Response and Review Log must be completed by following the Spill Procedure in place. The Spill Report, Response and Review Log should be submitted to the NCC Contract Manager and it should provide details on the spill.

Appendix 2

NCC Mitigation Measures for Maintenance Contracts

Trees

- *No tree (with a diameter at breast height (DBH) of 10cm or greater) may be cut without prior authorization from the NCC.
- Respect a minimum distance of 2 meters from any trees (species at risk such as Butternut, Rock Elm, or Black Maple may require greater distance) when excavating or installing structures. Install protectors around all trees susceptible of being damaged by machinery. *If damages are done to a tree, it must be reported to the CMO who will decide of the applicable mitigation measures (e.g. proper pruning of the branch, replacement of the tree, report to applicable authorities, etc.) to be implemented by the contractor.
- When feasible, do not park vehicles or machinery or store any materials within the dripline of any trees.
- Any federally or provincially protected tree species (seedling, sapling or tree) must be protected and precautionary measures such as flagging the tree or installing protectors at the dripline of the tree must be taken to ensure they are not damaged or cut, including the critical root zone. These species include, but are not limited to Butternut (Juglans cinerea) in both Quebec and Ontario and Rock Elm (Ulmus thomasii) and Black Maple (Acer nigrum) in Quebec. Any flagging tape used must be removed once work is completed.

Water Quality, Fish, and Fish Habitat

- Any activity that takes place within 30 m of a watercourse or wetland and may release sediment, soil, or any other potentially polluting chemical or product will require the development and implementation of an Erosion and Sediment Control Plan and an Emergency Response Plan.
- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Clearing of riparian vegetation should be kept to a minimum: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When practicable, prune or top the vegetation instead of grubbing/uprooting.
- Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high water mark. If material is removed from the waterbody, set it aside and return it to the original location once construction activities are completed. Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks.
- Whenever possible, operate machinery on land above the high water mark, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the waterbody.

- Limit machinery fording of the watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure.
- Use temporary crossing structures or other practices to cross streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

Weather

- Avoid performing Maintenance activities that have the potential to release dust or other particles during periods of heavy rainfall or high winds.

Table 1: Mitigation Measures for Maintenance Contracts

To use this table, find the Maintenance activity you are performing on the leftmost column, and apply the mitigation measures specified. Mitigation measures marked with an asterisk (*) will require approval from the NCC prior to the start of the Maintenance activity, or will require the contractor to notify the NCC in the case of an accident or emergency. When a mitigation measure is marked with an asterisk (*), contact the Contract Management Officer (CMO) to inform them of the type of work you are doing. The CMO will then be responsible to contact relevant NCC specialists (e.g. arborist, contaminated site specialists, biologists, archaeologist, etc.) to obtain their recommendations.

Important note: The installation or construction of new fixtures, structures, or systems (e.g. culverts, electrical conduits, underground pipes, etc.) is not covered under this guide, and must be reviewed separately under the *Canadian Environmental Assessment Act, 2012*. If your work involves new construction, make sure to contact the CMO.

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
Landscape Management				
Turf: machine and manual cutting, trimming, watering, edging, top dressing, seeding or overseeding, aerating, fertilizing, etc.	No	• Excess or improper application of fertilizers can cause environmental degradation of water bodies. • Potential damage to species protected under the *Species at Risk Act* or provincial legislation during cutting. • Potential destruction of migratory bird nests which are protected under the *Migratory Bird Conventions Act* during cutting.	• Do not apply fertilizers or other products containing phosphorus or nitrogen within 15m of a watercourse or water body. • In 2012, the NCC developed and approved a policy to eliminate the cosmetic use of pesticides on its lands. All activities that take place on NCC lands must be in full compliance with all federal pesticides legislation and regulations as well as be in full compliance with the requirements under the *Ontario Pesticide Act* and the *Quebec Pesticide Act*, depending on the province where the activity is taking place. • Turf cuttings are to be collected and composted on site, where possible. • *When clearing naturalized meadows (e.g. Class C), the NCC will need to verify the presence of any species at risk prior to undertaking the activity. • *To minimize harm to migratory birds, naturalized meadows (e.g. Class C) may not be cut between April 15th and August 15th, which corresponds to the core migratory bird breeding and nesting season. If, by exception or for health and safety reasons (fire breaks), the NCC requires that naturalized	• If activities must be conducted in a naturalized meadow between April 15th and August 15th , conduct area search for evidence of nesting.

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
			meadows or class C areas be cut prior to August 15th, the NCC will be required to conduct an area search for evidence of nesting. Environment Canada recommends that these surveys be carried out by skilled and experienced observers using appropriate methodology[3]	
Tree/shrub: safety and Maintenance, pruning, trimming, cultivating, edging, mulching, removal, winter protection, etc.	Yes, when carried out in relation to a physical work (e.g. pathway Maintenance)	• Potential damage to trees or shrubs protected under the *Species at Risk Act* or provincial legislation. • Potential destruction of migratory bird nests which are protected under the *Migratory Bird Conventions Act*. • Improper disposal of diseased trees or shrubs may spread invasive pests, diseases or pathogens. • Improper pruning may decrease tree health.	• *Any federally or provincially protected tree species (seedling, sapling or tree) must be properly flagged and protected to prevent damage or accidental removal. Highly visible flagging tape (using a pre-determined colour) should be used to clearly identify the tree and removed once work is completed. Presence of such species should be reported to the CMO. These species include **Butternut** (*Juglans cinerea*), **Rock Elm** (*Ulmus thomasii*)) and **Black Maple** (*Acer nigrum*). • *It is prohibited to prune or fell any at risk tree species (live or dead) protected by provincial and/or federal law, unless a permit was first obtained from the appropriate agency, either Environment Canada or MDDEFP, depending on the case. A permit request to these agencies must first be obtained by the NCC. Protected tree species include **Butternut** (*Juglans cinerea*) in both Quebec and Ontario, **Rock Elm** (*Ulmus thomasii*) and **Black Maple** (*Acer nigrum*) in Quebec. • *To minimize harm to migratory birds, no tree or shrub cutting or removal may take place between April 15th and August 15th, which corresponds to the core migratory bird breeding and nesting season. Alternatively, consider conducting an area search for evidence of nesting. Environment Canada recommends that these surveys be carried out by skilled and experienced observers using appropriate methodology[2] • Trees or shrub clippings, branches, or log pieces that show signs of disease	• NCC approval prior to tree pruning, cutting or removal. • If activities must be conducted in a naturalized meadow between April 15th and August 15th , conduct area search for evidence of nesting. • Obtain required authorization to prune or fell a protected tree species. • Monitor compliance of conditions set out in the permit and/or

[3] Environment Canada. Specific considerations related to determining the presence of nests. [http://ec.gc.ca/paom-itmb/default.asp?lang=En&n=8D910CAC-1#_004]. Online December 10, 2013.

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
			or pests must be appropriately disposed of following all federal, provincial, and municipal regulations in order to minimize spread of the disease or pest (e.g. Dutch elm disease, emerald ash borer, etc). Healthy material will be collected and composted on-site, where possible. • Minimize vegetation cutting (DBH < 10 cm), limiting it to vegetation that interferes with the movement of machinery and work. • All tree or vegetation debris that may fall or enter any water bodies must be removed immediately with as little disturbance as possible. • If working in Gatineau Park, any sapling or tree that has to be cut should be cut in 1 meter lengths and dispersed in the surrounding forest on NCC property. • *When removing tree stumps, contact your CMO because the associated excavation may affect archaeological resources and may require testing and disposal if it is located on a contaminated site. • All tree pruning should follow the International Society of Arboriculture (ISA) best practices for tree pruning.	authorization for cutting of protected trees. • Verification of soil and groundwater contamination and archaeological potential when removing stumps.
Annual, bulb, and perennial: mowing of daffodils, planting/removing, watering, fertilizing, cultivating, edging, hang weeding, pinching, roguing, winter protection,	No	• Excess or improper application of fertilizers can cause environmental degradation of water bodies and aquatic life. • Improper disposal of flowers may spread invasive pests, diseases or pathogens.	• Do not apply fertilizers or other products containing phosphorus or nitrogen within 15m of a watercourse or water body. • Flowers that are removed and show signs of disease or pests must be appropriately disposed of following all federal, provincial, and municipal regulations in order to minimize spread of the disease or pest. Healthy clippings are to be collected and composted on-site, where possible. • Use non-invasive plant species and preferably native species for ornamental purposes. Consult invasive alien species lists before the introduction of a new ornamental species.	

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
plant division, etc.				
Non-desirable vegetation / nest / small animal control[4]: inspecting and removing as needed.	Yes	• Potential damage to species protected under the *Species at Risk Act* or provincial legislation. • Potential destruction of migratory bird nests which are protected under the *Migratory Bird Conventions Act*. • Pesticides, herbicides, insecticides, or fungicides may kill non-target species. • Accidental spread of invasive species.	• Ensure that the small nuisance animal is not a species protected under the *Species at Risk Act*, the Ontario *Endangered Species Act*, Quebec *Loi sur les espèces menacées ou vulnérables* or the *Migratory Birds Convention Act*. • *No active bird nests may be disturbed or destroyed. Generally, if migratory birds nesting in buildings are a cause for concern, it is recommended that contractors identify how the birds enter the building and block those entries after nesting is completed and before the birds come back to nest the following season. • Where the presence or effects of the nuisance animal(s) may create a dangerous situation, the Contractor is to contact the CMO who will be advised by the NCC environmental services on the best course of action. • In 2012, the NCC developed and approved a policy to eliminate the cosmetic use of pesticides on its lands. All activities that take place on NCC lands must be in full compliance with all federal pesticides legislation and regulations as well as be in full compliance with the requirements under the *Ontario Pesticide Act* and the *Quebec Pesticide Act*, depending on the province where the activity is taking place. • Only products registered by Agriculture and Agri-Food Canada under the *Pest Control Products Act* may be used.	• Approval of pesticide application. • Verification of appropriate disposal methods for invasive species. • Confirmation of the animal species.

[4] Animals causing material damage to the NCC's Assets

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
			• *The contractor must receive written authorization from the NCC for any exceptional circumstances requiring application of pesticides, herbicides, insecticides or fungicides. • *When removing invasive plant species, ensure that plant material is appropriately disposed of to minimize spread. Consult the NCC for information on the best disposal requirements based on the invasive species you are working with. • Clean sludge, dirt, and plant material from equipment and tools before leaving a site infested with invasive species. High pressure air hoses, mobile cleaning stations which retain water runoff, and brushes or brooms are acceptable cleaning methods.	
Civil Maintenance				
All surfaces: Inspecting, reporting, sweeping, removing hazards (e.g. leaves, encroaching vegetation, etc.), providing emergency services such as accident clean-ups, etc.	Yes	• Accidental spills may degrade environmental quality and have the potential to spread contamination.	• Refer to the Spills Procedure and Emergency Response mitigation measures on page 2. • *Work performed in or near water may require a permit from the Ontario or Quebec provincial and/or federal government. The contractor must contact the CMO to verify permit requirements with the NCC environmental services. • Any activity that takes place within 30 m of a watercourse or wetland and may release sediment, soil, or any other potentially polluting chemical or product will require the development and implementation of an Erosion and Sediment Control Plan and an Emergency Response Plan.	

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
Asphalt surfaces: daily inspection, reporting, and secure any deficiencies (e.g. bumps, cracking, culvert and ditch problems, drainage problems, erosion, manhole and catch basin problems, etc), provide emergency pothole/sinkhole fillings.	Yes	• Accidental spills will degrade environmental quality and have the potential to spread contamination. • The release of sediment and/or chemicals during Maintenance activities that take place in or near water may adversely affect fish, fish habitat, and/or water quality.	• Refer to the Spills Procedure and Emergency Response mitigation measures on page 2. • Asphalt should either be mixed away from the site or should be prepared on paved surfaces to minimize the effects of a spill. Excess asphalt must be disposed off-site at a location that meets all regulatory requirements.	• Receive authorization to work near water. • Monitor compliance of conditions set out in the permit and/or authorization to perform in-water or near-water works. • Periodically inspect the erosion and sediment control measures to ensure proper installation and functioning, especially prior to, and after rainfall events.
Concrete/masonry surfaces (curbs, gutters, concrete steps, exposed aggregate, granite sets, pavers, interlocks, flag stones, cobblestones, patio	Yes	• Accidental spills will degrade environmental quality and have the potential to spread contamination.	• Concrete should either be mixed away from the site or should be prepared on paved surfaces if only small quantities (e.g. for minor repairs) are required. Excess concrete must be disposed off-site at a location that meets all regulatory requirements. • The washing of concrete trucks and other equipment used for mixing concrete should not be carried out within 30 m of a watercourse or wetland and should take place outside of the work site. • All concrete trucks should collect their wash water and recycle it back into their trucks for disposal off-site at a location meeting all regulatory	

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
stones, etc.): re-setting, correcting, etc.			requirements. • When performing gutter repairs or cleaning, ensure that no deleterious substance or debris falls into the gutter system.	
Gravel / granular / stone dust / natural / decorative surfaces: levelling, grading, etc.	Yes	• The release of sediment and/or chemicals during Maintenance activities that take place in or near water may adversely affect fish, fish habitat, and/or water quality. • The release of particulate matter may adversely affect air quality.	• Implement dust control measures. • *No increase in footprint below the High Water Mark • *No new fill placed below the High Water Mark	• Periodically inspect the erosion and sediment control devices to ensure proper installation and functioning, especially after heavy rainfall.
Wood surfaces: repairing, maintaining structural integrity, sanding, painting, etc.	Yes	• Accidental spills will degrade environmental quality and have the potential to spread contamination.	• Ensure proper storage, management and use of materials to minimize spills. • Implement dust control measures when sanding. • Do not use treated wood in or near water (minimum distance is 15m). • Do not use treated wood on surfaces used in the preparation or consumption of food (picnic tables, bird feeders), that would be in direct contact with drinking water or that will be used by people (benches, wooden structures for children). • Refer to the Spills Procedure and Emergency Response mitigation measures on page 2.	
Lighting and electrical (distribution boxes,	Yes	• Spread of contaminated groundwater or soils during excavation.	• *Prior to the start of any digging or excavation for the repair of electrical conduits or any other subsurface lighting and electrical fixture, contact the CMO to verify the presence of soil or groundwater contamination and	• Periodically inspect the erosion and sediment control fences to ensure

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
electrical panels, aboveground and underground electrical conduits and wiring, light standards, etc.): inspecting, repairing, securing, replacing, providing line locates, providing immediate repairs, reporting.		• Health and safety effects from the exposure of contaminated soils. • Damage to archaeological resources as a result of excavation. • Damage to tree roots or trees as a result of excavation. • Accidental erosion of soil that is stored near water may adversely affect fish, fish habitat, and/or water quality. • Improper disposal of hazardous materials could degrade environmental quality and have an impact on health and safety.	archaeological potential. Provide the CMO with details on the location of the digging, and the type of work to be performed (e.g. will the trench be deepened or widened compared to what was previously excavated?). o If soil or groundwater contamination is present, testing prior to off-site disposal may be required. o Management and disposal of contaminated soils will follow all applicable regulations and guidelines. o In the case of new excavation or excavation that will widen, deepen or otherwise alter the footprint of previous excavation in zones of elevated archaeological potential, an archaeologist may need to be called on site to monitor that work. o If the excavation does not involve any alteration to the footprint of previous excavation, then no archaeological investigation or monitoring is required. • *If any suspected soil or groundwater contamination at the site is discovered, the NCC must be notified immediately. • Any activity that takes place within 30 m of a watercourse or wetland and may release sediment, soil, or any other potentially polluting chemical or product will require the development and implementation of an Erosion and Sediment Control Plan and an Emergency Response Plan. • If soils must be stored overnight, they should be covered with a tarp. • *Excavation within the dripline of a Butternut tree cannot proceed without a permit from Environment Canada. • *Excavation within the dripline of any tree is discouraged. If excavation must be performed, then contact the CMO so that they can verify mitigation measures for potential damage to trees. • Ensure proper disposal of hazardous materials (e.g. lamps, ballasts) in accordance with provincial and federal regulations.	proper installation and functioning, especially after heavy rainfall. • May require testing of soils prior to off-site disposal. • May require monitoring by qualified archaeologist. • Attain permit to excavate near Butternut.
Drainage (catch basins, manholes,	Yes	• Spread of contaminated groundwater or soils during	• *Prior to the start of any digging or excavation, contact the CMO to verify the presence of soil or groundwater contamination and	• Periodically inspect the erosion and sediment

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
underground pipes, ditches, side slopes, embankments, culverts, drainage channels, tiles drains, subsurface drains, bridges, tunnels, etc.): inspecting, reporting, cleaning, erosion / flood control prevention, providing line locates, water level control, removing surface water, etc.		excavation. • Health and safety effects from the exposure of contaminated soils. • Damage to archaeological resources as a result of excavation. • Damage to tree roots or trees as a result of excavation. • The release of sediment and/or chemicals during Maintenance activities that take place in or near water may adversely affect fish, fish habitat, and/or water quality. • Potential destruction of migratory bird nests which are protected under the *Migratory Bird Conventions Act*.	archaeological potential. Provide the CMO with details on the location of the digging, and the type of work to be performed (e.g. will the trench be deepened or widened compared to what was previously excavated?). • If soil or groundwater contamination is present, testing prior to off-site disposal may be required. • Management and disposal of contaminated soils will follow all applicable regulations and guidelines. • In the case of new excavation or excavation that will widen, deepen or otherwise alter the footprint of previous excavation in zones of elevated archaeological potential, an archaeologist may need to be called on site to monitor that work. • If the excavation does not involve any alteration to the footprint of previous excavation, then no archaeological investigation or monitoring is required. • *If any suspected contamination at the site is discovered, the NCC must be notified immediately. • Any activity that takes place within 30 m of a watercourse or wetland and may release sediment, soil, or any other potentially polluting chemical or product will require the development and implementation of an Erosion and Sediment Control Plan and an Emergency Response Plan. • If soils must be stored overnight, they should be covered with a tarp. • *Excavation within the dripline of a Butternut tree cannot proceed without a permit from Environment Canada. Contact the CMO prior to excavation in order to obtain the necessary permit. • *Excavation within the dripline of any tree is discouraged. If excavation must be performed, then contact the CMO so that they can verify mitigation measures for potential damage to trees. • *Where Maintenance activities must take place during the the core	control devices to ensure proper functioning, especially after heavy rainfall. • May require testing of soils prior to off-site disposal. • May require monitoring by qualified archaeologist. • Monitor compliance of conditions set out in the permit and/or authorization to perform in-water or near-water works. • If activities must be conducted in a naturalized meadow within April 15th and August 15th, install temporary netting or other appropriate systems prior to the arrival of birds in the spring, in order to

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
			migratory bird breeding and nesting season season (April 15th to August 15th), netting or other appropriate systems may be temporarily installed prior to the arrival of birds in the spring, in order to prevent birds from initiating nesting on the structure (e.g. bridges and culverts). • *No increase in footprint below the High Water Mark. • *No new fill placed below the High Water Mark. Routine clean-out of drainage channels work has to be done in the dry[5] • When cleaning culverts, follow the requirements set out in **Appendix A.** • The following measures should be applied during bridge cleaning: • Adequately seal drains and open joints before sweeping to prevent material from falling into the watercourse. Sweep bridges thoroughly before washing. • Clean and remove debris and sediment from drainage devices and dispose of the material in a way that will prevent it from entering the watercourse. • Direct wash-water past the ends of the bridge deck to a vegetated area to remove suspended solids, dissipate velocity and prevent sediment and other deleterious substances from entering the watercourse. If this cannot be achieved, use silt fences or other sediment and erosion control measures to prevent wash-water from entering the watercourse. • When extracting water from a watercourse, ensure the intakes of pumping hoses are equipped with an appropriate device to avoid entraining and impinging fish. • Remove paint or protective coatings in a manner that prevents any paints, paint flakes, primers, blasting abrasives, rust, solvents, degreasers or other waste material	prevent birds from initiating nesting on the structure.

[5] The recommended method for ditches cleaning and maintenance is the “methode du tiers inférieur” formally adopted by the Quebec Ministry of Transportation [http://www.mtq.gouv.qc.ca/portal/page/portal/Librairie/bpm/Publication_entretien_des_fosses_routiers.pdf]

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
			from entering the watercourse. • Use measures such as barges or shrouding to trap and prevent blasting abrasives, protective coatings, rust and grease from entering the watercourse. • Contain paint flakes, abrasives, and other waste materials for safe disposal. • Store, mix and transfer paints and solvents on land and not on the bridge to prevent these materials from entering the watercourse in the event of a spill. • Do not clean equipment in the watercourse or where the wash-water can enter the watercourse. • Unless the debris accumulation is an immediate threat to the integrity of the piers and abutments, time debris removal to avoid disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the Ontario In-Water Construction Timing Windows), with the exception of ice build-up removal. • Limit the removal of material to that which is necessary to protect piers and abutments. • Remove debris by hand or with machinery operating from shore or a floating barge.	
Plumbing, irrigation, and water (decorative fountains, drinking fountains, outdoor faucets, underground and aboveground water and sewer lines, pit toilets, washroom facilities, pump systems, irrigation controls, lines, heads, control	Yes	• Spread of contaminated groundwater or soils during excavation. • Damage to archaeological resources as a result of excavation. • Damage to tree roots or trees as a result of excavation. • Accidental erosion of soil that is stored near water may adversely affect fish, fish habitat, and/or water quality. • Accidental spills will degrade environmental quality.	• *Prior to the start of any digging or excavation for the repair of water and sewer lines, irrigation lines or heads, or any other subsurface plumbing, irrigation, or water fixture, contact the CMO to verify the presence of soil or groundwater contamination and archaeological potential. Provide the CMO with details on the location of the digging, and the type of work to be performed (e.g. will the trench be deepened or widened compared to what was previously excavated?). o If soil or groundwater contamination is present, testing prior to off-site disposal may be required. o Management and disposal of contaminated soils will follow all applicable regulations and guidelines. o In the case of new excavation or excavation that will widen, deepen or otherwise alter the footprint of previous excavation in zones of elevated archaeological potential, an archaeologist may need to be called on site to monitor that work. o If the excavation does not involve any alteration to the footprint of previous	• Periodically inspect the erosion and sediment control fences to ensure proper functioning, especially after heavy rainfall. • May require testing of soils prior to off-site disposal. • May require monitoring by qualified archaeologist.

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
panels, etc.): inspecting, installing, cleaning, testing, repairing, maintaining, replacing, water testing, providing portable toilets, providing locates, etc.			excavation, then no archaeological investigation or monitoring is required. • If any suspected contamination at the site is discovered, the NCC must be notified immediately. • Any activity that takes place within 30 m of a watercourse or wetland and may release sediment, soil, or any other potentially polluting chemical or product will require the development and implementation of an Erosion and Sediment Control Plan and an Emergency Response Plan. • If soils must be stored overnight, they should be covered with a tarp. • *Excavation within the dripline of a Butternut tree cannot proceed without a permit from Environment Canada. Contact the CMO prior to excavation in order to obtain the necessary permit. • *Excavation within the dripline of any tree is discouraged. If excavation must be performed, then contact the CMO so that they can verify mitigation measures for potential damage to trees. • Refer to the Spills Procedure and Emergency Response mitigation measures on page 2.	
Fixtures, furniture and buildings (NCC furniture only – fences, stone walls, guardrails, barricades, flags, bollards, garbage receptacles, signs, NCC buildings, kiosks, etc.):	Yes	• Spread of contaminated groundwater or soils during excavation. • Damage to archaeological resources as a result of excavation. • Accidental spills will degrade environmental quality. • Potential destruction of migratory bird nests which are	• *Prior to the start of any digging or excavation for the installation of new fixtures or furniture, contact the CMO to verify the presence of soil or groundwater contamination and archaeological potential. Provide the CMO with details on the location of the digging, and the type of work to be performed (e.g. will the trench be deepened or widened compared to what was previously excavated?). o If soil or groundwater contamination is present, testing prior to off-site disposal may be required. o Management and disposal of contaminated soils will follow all applicable regulations and guidelines. o In the case of new excavation or excavation that will widen, deepen or otherwise	• Periodically inspect the erosion and sediment control fences to ensure proper functioning, especially after heavy rainfall. • May require testing of soils prior to off-site disposal. • May require monitoring

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
inspecting, repairing, replacing, cleaning, removing graffiti, painting, staining, displacing furniture, etc.		protected under the *Migratory Bird Conventions Act*. • Dispersion of hazardous and designated substances (e.g. asbestos, lead, mercury, silica, urea formaldehyde foam insulation, vinyl chloride, PCBs, arsenic, etc.) in the environmental and potential adverse human health effects	alter the footprint of previous excavation in zones of elevated archaeological potential, an archaeologist may need to be called on site to monitor that work. o If the excavation does not involve any alteration to the footprint of previous excavation, then no archaeological investigation or monitoring is required. • *If any suspected contamination at the site is discovered, the NCC must be notified immediately. • Soils from excavation may not be stored within 30m of a watercourse or wetland. If no other staging area is available, a silt fence should be erected around the material to minimize erosion. If soils must be stored overnight, they should be covered with a tarp. • Refer to the Spills Procedure and Emergency Response mitigation measures on page 2. • *Where Maintenance activities must take place during the the core migratory bird breeding and nesting season season (April 15th to August 15th), netting or other appropriate systems may be temporarily installed prior to the arrival of birds in the spring, in order to prevent birds from initiating nesting on the structure (e.g. buildings, kiosks, chimneys, roofs, etc.). • Provide the building Designated Substances Survey report to the contractors and ensure recommendations are implemented. If no Designated Substances Survey report exists for the building to be repaired or maintained, contact NCC Contaminated Sites Team (Eric Soulard, Senior Manager, at eric.soulard@ncc-ccn.ca ext. 5418).	by qualified archaeologist. • If activities must be conducted in a naturalized meadow within April 15th and August 15th, install temporary netting or other appropriate systems prior to the arrival of birds in the spring, in order to prevent birds from initiating nesting on the structure.
Snow and Ice Control				
Snow and ice control (roadways	Yes	• Salt and sand from de-icing may adversely affect fish, fish	• Snow that is removed and transported for disposal must be disposed of at an authorized snow dumping facility.	

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
and parking lots, walkways, pathways, sidewalks, steps and building access, buildings, utility service access, trails, lanes, fire lanes, open spaces, fields, etc.): providing equipment and supplies, removing, blowing, plowing,		habitat, and/or water quality. • Accidental damage to trees.	• No snow dumping is permitted on NCC property.Snow storage sites should be located such that meltwater that may contain salt is not directed towards salt vulnerable areas[6].Contractors should implement Environment Canada *Best Management Practices for Salt Use on Private Roads, Parking Lots and Sidewalks*[7]. • Install snow fencing around trees susceptible to damage from snow removal and transport activities. • Do not blow, plow, store, or shovel snow against trees or shrubs.	

[6] For a definition of "salt vulnerable areas" please consult Environment Canada *Code of practice for the Environmental Management of Road Salts* [http://www.ec.gc.ca/nopp/roadsalt/cop/en/guide.htm]. Due to concerns about the large quantities of chlorides being released to the environment, road salts underwent a comprehensive five-year scientific assessment under the *Canadian Environmental Protection Act, 1999* beginning in 1995. The road salts assessment covered the chloride salts — sodium chloride (NaCl), calcium chloride ($CaCl_2$), magnesium chloride ($MgCl_2$) and potassium chloride (KCl) — as well as brines used in road de-icing/anti-icing and dust suppression, the salt portion of abrasive mixtures and ferrocyanide additives. Road salts enter the environment through losses at salt storage and snow disposal sites and through runoff and splash from roadways. The assessment report, published on December 1, 2001 concluded that high releases of road salts were having an adverse effect on freshwater ecosystems, soil, vegetation and wildlife.

[7] Available on the following Website: http://www.ec.gc.ca/nopp/roadsalt/reports/ParkingLot/EN/p5.cfm#section. See footnote 4 for rationale.

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
shoveling, clearing, cleaning, sweeping, de-icing, stockpiling, transporting, disposing, providing floor control and emergency services, etc.				
Waste / Recycling / Cleaning Operations				
Litter / recycling pick-up and cleaning: collecting litter and debris, emptying waste receptacles, cleaning fixtures	Yes	• Improper disposal of waste will degrade environmental quality.	• All solid waste must be disposed of in accordance with all applicable environmental laws. The contractor must be aware of any restrictions or prohibitions in force at the disposal site. Where in effect, all municipal recycling and composting procedures shall be respected. • In general, burning of waste is prohibited on NCC property. Branches and cuttings may only be burned on NCC property with prior NCC	

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
and furniture, sweeping and flushing hard surfaces, bridges and tunnels, removing graffiti and posters from all assets, removing vegetative and non-vegetative material in spring, removing spills.			authorization and with appropriate municipal permits for burning. • Contractors that provide services to the NCC for waste, recycling and composting disposal might be required to report the total weights for specific periods[8]. • Litter or debris must never be swept or pushed into water courses or wetlands. • All hazardous materials on NCC property must be stored in accordance with applicable regulations, standards and guidelines. Flammable materials must be stored in accordance with the National Fire Code of Canada. • Material Safety Data Sheets (MSDS) must be readily available for all hazardous materials brought on to NCC property. All employees handling these materials must have received training on the Workplace Hazardous Materials Information System (WHMIS) and on proper handling, storage and disposal of these materials. • All hazardous materials must be labelled in accordance with WHMIS requirements. • Absorbent material must be available whenever liquid hazardous materials are being used on NCC property. Staff must be trained on how to use and dispose of this material in the event of a spill. • When transporting hazardous materials, these materials must be labelled	

[8] Request for these numbers would come from the Environmental Strategy team in the context of meeting NCC Environmental Strategy objectives and would first be discussed with CMO.

Maintenance Activity	Project Under CEAA, 2012?	Environmental Effects	Mitigation Measures	Responsibilities of NCC Environmental Experts (e.g. monitoring, permitting, approval, terms of reference, etc.)
			and transported in accordance with provincial and federal regulations regarding the transportation of dangerous goods. • Hazardous wastes and containers which previously contained hazardous materials must be disposed of in accordance with provincial and federal regulations.	

Annexe A Culvert Cleaning - Mitigation Measures

The below requirements and mitigation measures apply to the cleaning of culverts by use of a vacuum truck system. All measures should be reviewed and understood prior to commencement of any work.

Culvert Access

- Vacuum truck must remain within paved area of the road to the extent possible or limit encroachment onto road shoulder. It is prohibited to circulate outside of the limits of the road shoulder in order to avoid damage to vegetation.
- Use existing trails, roads, or cut lines wherever possible to avoid disturbance to the riparian vegetation.
- Machinery is prohibited to circulate within the watercourse
- Do not store material or equipment within 30 meters of all water bodies.

Vegetation Removal

- All trees within 2 m of equipment in operation and susceptible to being damaged will have protectors installed around their drip line (e.g. protective fencing);
- No tree (DBH > 10cm) may be cut. If trees with a DBH of 10 cm or higher were to be cut, an authorization from the Contract Management Officer is required.

- These trees will have to be replaced, at a 2:1 ratio, with non-invasive indigenous species, approved by the NCC portfolio. The contractor's tree planting plan must be approved by NCC prior to the tree planting.
- Minimize vegetation cutting (DBH < 10 cm), limiting it to vegetation that interferes with the movement of machinery and work.
- Any federally or provincially protected tree species (seedling, sapling or tree) must be properly flagged and protected to ensure these trees are not damaged, harmed or cut. Highly visible flagging tape (using a pre-determined colour) should be used to clearly identify the tree.
- Trees or shrub clippings, branches, or log pieces that show signs of disease or pests must be appropriately disposed of following all federal, provincial, and municipal regulations in order to minimize spread of the disease or pest (e.g. Dutch elm disease, emerald ash borer, etc).

Migratory Birds

- No activities susceptible to disturb or destroy the nest of a migratory bird can occur during the core migratory bird nesting period as per the *Migratory Bird Convention Act.*

Sediment and Erosion Control

- Install effective sediment and erosion control measures before starting work to prevent sediment from entering the watercourse. Inspect them regularly during the course of debris removal and make all necessary repairs if any damage occurs.
- Maintain existing riparian vegetation in order to help reduce erosion.

Timing of Removal of Accumulated Material

- *Work should be undertaken outside of the fish spawning period and periods of high flooding. Timing windows to conduct projects in or around water may vary by province, species or watercourse and are established by Fisheries and Oceans Canada (DFO) to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed[9]. Avoid Maintenance activities during wet and rainy periods.

[9] Timing windows by province are available on DFO website [http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/index-eng.html] and must be confirmed with CMO.

- Unless accumulated material (i.e., branches, stumps, other woody materials, garbage, ice build-up, etc.) is preventing the passage of water and/or fish through the structure, time material and debris removal to prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see above).

Debris Removal

- Limit the removal of accumulated material (i.e., branches, stumps, other woody materials, garbage, etc.) to the area within the culvert, immediately upstream of the culvert and to that which is necessary to maintain culvert function and fish passage.
- Remove accumulated material and debris slowly to allow clean water to pass, to prevent downstream flooding and reduce the amount of sediment-laden water going downstream. Gradual dewatering will also reduce the potential for stranding fish in upstream areas.
- When water (from the truck) is flushed through the culvert, it must be done at a slow speed (gently) as to prevent sedimentation and impacts downstream.
- Depending on the sensitivity of the downstream fish habitat and amount of sediment in the culvert, installing cofferdams and working in the dry prior to vacuuming should be considered.
- Temporary structures and environmental protection devices must ensure sufficient free movement of water at all times to maintain fish habitat functions (feeding, fry rearing, spawning) downstream from the work site. Take the necessary measures to prevent impacts (e.g. flooding, dewatering, suspended solids, erosion) upstream and downstream of the work site.

Appendix 2

NCC Mitigation Measures for Maintenance Contracts

Machinery Maintenance

- The smallest possible machinery and equipment suitable for the bearing capacity of the soil should be used.
- Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
- It is prohibited to circulate beyond the boundaries of the work site and leave equipment, waste or other materials, even temporarily without the prior authorization of the NCC.
- Wash, refuel and service machinery and store fuel and other materials for the machinery at least 60m away from the high water mark to prevent any deleterious substance from entering the water.
- Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.

Site Reinstatement (if required)

- Disturbed surfaces will be rehabilitated at the end of the work using the portfolio approved seed mixture and topsoil.
- Revegetation must be done as soon as possible within the growing season. If unfeasible, the Contractor must stabilize disturbed areas with erosion control blankets to keep the soil in place and prevent erosion in water bodies. Blankets must be removed only at the end of the revegetation work.
- All tree or vegetation debris that may fall or enter any water bodies must be removed immediately.

Management of Material

- All sludge, dirt, sand, rocks, grease, and any other solid or semi-solid material resulting from the cleaning operation shall be removed at the downstream end of the culvert being cleaned (either manually or with suction). The Contractor shall maintain record of the amount and type of material removed for each culvert in a format approved by the NCC.
- Debris shall be kept in totally enclosed containers at all times and shall be removed from the site at the end of each day or when the containers are full. Under no circumstances will the Contractor be allowed to accumulate debris, etc. on site of work beyond the stated time. All debris shall be removed from the site and disposed by the Contractor at no additional cost to the NCC.

Fauna

- In order to minimize the impact on wildlife, all work will be completed within a reasonable time frame.
- Use caution when driving to and from the work site – watch out for turtles and other small animals on the road surface and shoulder. Avoid hitting them, provided that it is safe to do so.
- Workers must keep the work site clean and must not leave behind garbage or food scraps that could attract animals or alter their behavior.
- Any fauna (mammals, amphibians, reptiles) that are encountered within the work site should not be harmed or harassed. Allow the animal to move away on its own by slowly walking toward it in the direction you want it to move. If necessary to move the animal out of the work area, carefully move it into a similar habitat next to site (within same area).