

## **National Capital Commission (NCC) 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. The NCC has a legal obligation under the *Impact Assessment Act (IAA)*, 2019, to determine if activities conducted on NCC lands, are likely to cause significant adverse environmental effects or other impacts. The maintenance activities outlined in this document are either not considered projects under the IAA or are projects set out in the Ministerial Order issued under subsection 88 (1) of IAA which are excluded from an environmental review as long as the activity does not include:

- Removal of or damage to known potential archaeological, paleontological, heritage, or architectural buildings, structures, or resources;
- Works that can disturb, harm, kill a species at risk protected under the *Species at Risk Act* or its habitat (*such as work in ecologically sensitive areas, removal of butternut or other protected trees, etc.*);
- Works that can disturb, harm, kill a migratory bird or its nest protected under the *Migratory Bird Convention Act* (*such as nest or tree removal, etc.*);
- Changes to any characteristic of a water body;
- Work in-water or placement of temporary or permanent fill in or near water and/or that may require a project review under the *Fisheries Act* (*such as addition of gravel or fill on pathways near water*);
- The loss of reduction of a wetland; and
- The disturbance of known or suspected subsurface contamination.

This list is not exhaustive and only includes constraints that are likely to apply to maintenance activities. Consult applicable legislation for further details and in case of discrepancies. If the maintenance activity is suspected to include any of the above, the CMO must be notified who will in turn contact the Manager, Environmental Assessment for assignment to an Environmental Officer for review (Isabelle Leclerc-Morin, 613-239-5678 Ext: 5737, [Isabelle.Leclerc-Morin@ncc-ccn.ca](mailto:Isabelle.Leclerc-Morin@ncc-ccn.ca)).

The mitigation measures outlined in this document are in accordance with the above regulations, NCC Policies and NCC's Sustainable Development Strategy 2018-2023. The NCC's Sustainable Development Strategy provides a focused agenda for environmental leadership in Canada's Capital Region and serves as an overarching element to be included in all of the NCC's plans, strategies, policies and operations. The NCC is bound by the Federal Sustainable Development Act to implement the actions of its Sustainable Development Strategy, which are in line with the Federal Sustainable Development Strategy and the Greening Government Strategy.

All Contractors and contract management officers will be required to have basic training in the implementation of these environmental guidelines. It is important that these guidelines be strictly followed, as fines may be issued by the municipal, provincial and federal government in the event of noncompliance. The Contractor is responsible for ensuring compliance with all applicable laws and regulations. In the event of non-compliance, the NCC will seek repayment of these fines from the Contractor. The Contractor must follow all applicable provincial and municipal laws and regulations (including waste management, noise, pollution prevention, etc.).

**General Environmental Guidelines to be followed for All Maintenance Activities**

The following measures and principles must be followed during 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. For these mitigation measures marked with an asterisk, the Contractor will contact the Contract Management Officer (CMO) to inform them of the type of work being undertaken. The CMO will then contact the relevant NCC specialists (e.g. environmental office, arborist, contaminated site specialists, biologists, archaeologist, etc.) to obtain their recommendations and any required approvals.

*Air Emissions and noise*

- Minimize unnecessary idling of vehicles which can result in wasted fuel and the creation of greenhouse gases to the extent possible (refer to municipal by-laws).
- Meet all regulatory requirements for air emissions. Where required, an environmental compliance 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.
- To reduce carbon emission, new fleet vehicle purchases should be zero-emissions or hybrid vehicles where these options exist and are economically viable from a life-cycle perspective.
- Use renewable sources of electricity to prevent unnecessary emissions, when possible.
- Avoid performing any maintenance activities that have the potential to release dust or other particles during very dry or windy periods.
- Follow all applicable municipal noise by-laws and conduct construction within permitted hours.

*Designated Substances*

- \*Prior to entering a building or structure under construction or renovation, contact the NCC to determine if any designated substances<sup>1</sup> are present.
- Where available, the CMO will provide the building Designated Substances Survey report to the Contractors to ensure recommendations are implemented. If no Designated Substances Survey report exists for the building to be repaired or maintained, the CMO will contact the NCC Contaminated Sites Team (Eric Soulard, Senior Manager, at [eric.soulard@ncc-ccn.ca](mailto:eric.soulard@ncc-ccn.ca), 613-239-5678 ext. 5418).
- 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.

*Hazardous materials*

- Ensure compliance with any applicable requirements of *Canadian Environmental Protection Act* (and regulations made under this Act).
- Store all hazardous materials on NCC property in accordance with applicable regulations, standards and guidelines. Flammable materials must be stored in accordance with the National Fire Code of Canada.
- Ensure that Material Safety Data Sheets (MSDS) are 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.
- 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.
- Label and transport all hazardous materials in accordance with WHMIS requirements and provincial and federal regulations regarding the transportation of dangerous goods.
- Dispose of all hazardous wastes and containers which previously contained hazardous materials in accordance with provincial and federal regulations.
- Follow all recommendations found in applicable designated substance reports and the advice of the NCC.

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<sup>1</sup> As per *Ontario Regulation 490/09 Designated Substances* definition

## **Spills Procedure & Emergency Response**

### *Spill prevention and readiness*

- Wash, refuel and service machinery and store fuel and other materials for the machinery at least 60m away from a waterway 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.
- 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.
- 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.

### *Spill response*

- **All emergency situations MUST be reported immediately to 911 and 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.
- Spills must be contained and cleaned up in accordance with all federal, provincial, and local regulatory requirements. When safe to do so, immediately contain the spill with spill response materials stored on site. Contractor shall ensure any follow-up cleanup is conducted, in consultation with the NCC.
- All used absorbent material must be disposed of in accordance with applicable regulatory requirements.
- 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). If applicable, coordinate reporting with the NCC.
- Complete NCC spill report and send to Environmental Services ([eric.soulard@ncc-ccn.ca](mailto:eric.soulard@ncc-ccn.ca)) within 24 hours of the spill. The Spill Report must be completed by following the Emergency Operational Procedure in place. The Spill Report should also be submitted to the NCC Contract Manager and it should provide all details on the spill.

### *Wildlife*

- Workers will avoid wilfully disturbing any wildlife at the site.
- \*If an animal is found inside a structure, contact the CMO who seek the advice of the NCC specialists (e.g., biologists, environmental officers, conservation officers) on the best course of action.
- Keep the work site clean and must not leave behind garbage or food scraps that could attract animals or alter their behaviour.
- Do not cut vegetation and naturalized meadows (e.g. Class C) between April 8<sup>th</sup> and August 28<sup>th</sup>, which corresponds to the core migratory bird breeding and nesting season<sup>2</sup>. If, by exception the NCC requires that vegetation in naturalized meadows be cut between August 8<sup>th</sup> and August 28<sup>th</sup> the NCC will require an area search for evidence of grassland bird nesting.
- \*If excavation activities is planned to occur near waterbodies during the turtle breeding season (April – August), consult the NCC to determine the need for installation of reptile exclusion fencing to prevent turtles from nesting in exposed soil<sup>3</sup>.

### *Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control<sup>4</sup>*

<sup>2</sup> 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](http://ec.gc.ca/paom-itmb/default.asp?lang=En&n=8D910CAC-1#_004)]. Online December 10, 2013.

<sup>3</sup> As per the *Ministry of Natural Resources – Reptile and Amphibian Exclusion Fencing*

<sup>4</sup> Mitigation measures have been adapted from the mitigation measures to avoid causing harm to fish and fish habitat provided by the Department of Fisheries and Oceans Canada <http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>

- \*If Activity may release sediment, soil, or any other potentially polluting chemical or product to waterway or sewer: Develop and implement an Erosion and Sediment Control Plan and an Emergency Response Plan.
  - Install all required sediment and erosion control measures before starting work to prevent sediment from entering the watercourse. Regularly inspect during debris removal and make all necessary repairs if any damage occurs.
  - Remove and reinstate to natural conditions upon completion of works.
- Plan activities near water so that materials, such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Minimize any clearing of riparian vegetation: 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 ditches, stormsewers or watercourses
- **\*Perform any work in or near watercourses outside 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) or provincial authorities to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed<sup>5</sup>.
- Avoid maintenance activities during wet and rainy periods.

### *Trees*

- \*Do not cut any tree (with a diameter at breast height (DBH) of 10cm or greater) 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 advise on applicable measures (e.g. proper pruning of the branch, replacement of the tree, report to applicable authorities, etc.) to be implemented by the Contractor.
- Avoid parking vehicles or machinery or store any materials within the dripline of any trees.
- Protect any federally or provincially protected tree species (seedling, sapling or tree). Implement all necessary protective measures, such as flagging the tree or installing protectors at the dripline of the tree 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. Remove any flagging tape once work is completed. \*Never prune or cut these species or trees without authorisation from the NCC (ECCC permits will be required).
- Do not cut any trees between April 8<sup>th</sup> and August 28<sup>th</sup>, which corresponds to the core migratory bird breeding and nesting season. If, by exception the NCC requires that vegetation in naturalized meadows be cut between August 8<sup>th</sup> and 28<sup>th</sup> the NCC will be required to conduct an area search for evidence of nesting.
- Conduct any pruning according to established best practices. At a minimum, the following guidelines apply:
  - Use pruning shears, loppers or a pruning saw;
  - Prune at the collar (a thicker area approximately 2-3cm from the base of the branch). Avoid pruning flush with the main branch/trunk.
  - Cut at a slight angle to prevent water from entering or accumulating in the cut;

<sup>5</sup> 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 NCC Environmental Officer.

- Section branches to a maximum length of 1 m;
- In forested areas, disperse branches in the adjoining forest, taking care not to damage understory vegetation, to allow the organic matter to decompose.

#### *Invasive Species*

- Clean away sludge, dirt, and plant material from equipment and tools and tracked vehicles before leaving a site infested with invasive species to minimize the spread. Ensure clean vehicles and tools prior to entering an NCC valued ecosystem or valued habitat. High pressure air hoses, mobile cleaning stations which retain water runoff, and brushes or brooms are acceptable cleaning methods ([https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/CEP-One-Page-Summary\\_FINAL.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/CEP-One-Page-Summary_FINAL.pdf))
- Follow the Ontario Invasive Plant Council's Best Management Practice guides for the management of invasive species. (<https://www.ontarioinvasiveplants.ca/resources/best-management-practices/>). Try to eliminate invasive plant species in order to reduce their chance of propagation, as possible.

#### *Pesticides*

- \*Do not apply any pesticides for cosmetic purpose on NCC lands (as per NCC Policy adopted in 2012). If a pesticide application is required on NCC lands, it must have received prior authorization from the NCC and be in full compliance with all federal pesticides legislation and regulations as well as be in full compliance with all provincial requirements (*Ontario Pesticide Act* and the *Quebec Pesticide Act*, depending on the province where the activity is taking place).

#### *Heritage Resources*

- \*Prior to any work on a building, confirm with the CMO that the building is not designated or recognized by the Federal Heritage Building Review Officer (FHBRO). The CMO shall contact the NCC's Heritage Program for further assistance.

#### *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.
- Remove all all materials 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.
- All tree or vegetation debris that may fall or enter any water bodies must be removed immediately

#### *Waste:*

- Waste collected from on-site recycling and compost bins:
  - Dispose of all waste collected from recycling bins at a recycling facility and all waste collected from compost bins at a composting facility. When contamination rates preclude the waste from being accepted at the appropriate facility, the Contractor must report this to the CMO.
- Waste generated by contractor activities:
  - Recyclable materials (paper, cardboard, glass, aluminum and plastics) must be disposed of at a recycling facility;
  - Leaf and yard waste must be disposed of at a facility that composts leaf and yard waste;
  - Landscaping products that will not be reused should be disposed of at a facility that recycles such products (e.g., wood, gravel, stones, etc.)

The Contractor must track and disclose all waste diversion rates to the NCC using the Waste Diversion Report for NCC Lands.

#### *Excavation*

**If works require digging or excavation, contact the CMO to verify the presence of soil or groundwater contamination, or archeological or paleontological resources, prior to the start of subsurface activities. Confirm the location of all utility locates (public, private, NCC).** Provide the CMO with details on the location of the digging, and the type of work to be performed (e.g. whether the trench be deepened or widened compared to what was previously excavated).

- Do not store any excavated soils 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. Cover any excavated soils that remain on site overnight with a tarp.
- Do not excavate within the dripline of a tree. \*If excavation must be performed within a dripline, then contact the CMO so that they can verify mitigation measures for potential damage to trees, and whether federally protected species are present. Excavation within the dripline of a Butternut tree or other federally protected species (see above section on Trees) cannot proceed without a permit from Environment Canada.
- If evidence of paleontological resources are discovered during excavation or digging activities, all work in the area must stop immediately and the CMO must be informed as soon as possible. The CMO will communicate with the environmental assessment team (Isabelle.Leclerc-Morin@ncc-ccn.ca ). Work must not resume in the area until protection measures for the resources are implemented.

*Contaminated Soils and Groundwater (for works that require excavation)*

- \*If works require digging or excavation, contact the CMO to verify the presence of soil or groundwater contamination prior to the start.
  - If soil or groundwater contamination is present, analytical testing prior to off-site disposal may be required.
  - No soils from a contaminated site may be reused elsewhere.
  - Management and disposal of contaminated soils will follow all applicable regulations and guidelines.
  - The contractor is responsible for ensuring health and safety of workers potentially exposed to contaminated sites.
- If any evidence of contaminated or deleterious soils is discovered at the site (e.g. bricks, ash, metals, debris, strong odour, oily sheen, etc.) the NCC must be notified immediately.

*Archaeological Resources (for works that require excavation)*

- \*Prior to the start of any digging or excavation activities, contact the CMO to verify the presence of archaeological potential.
  - If the excavation does not involve any alteration to the footprint of previous excavation, then no archaeological investigation or monitoring is required.
- If any evidence of archaeological resources or human remains are discovered during excavation for 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](mailto: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.

**Table 1: Mitigation Measures for Maintenance Contracts**

To use this table, find the Maintenance activity being performed 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 NCC 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. environmental officer, arborist, contaminated site specialists, biologists, archaeologist, etc.) to obtain their recommendations.

**Important note:** The replacement, installation or construction of new fixtures, structures, or systems (e.g. culverts, tile drainage systems, electrical conduits, underground pipes, etc.) is not covered under this guide, and must be reviewed separately under the *Impact Assessment Act, 2019*. If your work involves new construction, contact the CMO.

| Maintenance Activity   | Potential Environmental Effects   | Mitigation Measures  |
|--|---|--|
| <b>Landscape Management</b>  |   |  |
| <b>Turf:</b> <ul style="list-style-type: none"> <li>- machine and manual cutting</li> <li>- trimming</li> <li>- watering</li> <li>- edging</li> <li>- top dressing</li> <li>- seeding or overseeding</li> <li>- aerating</li> <li>- fertilizing</li> <li>- etc.</li> </ul> | <ul style="list-style-type: none"> <li>○ Excess or improper application of fertilizers can cause environmental degradation of water bodies.</li> <li>○ Potential damage to species protected under the <i>Species at Risk Act</i> or provincial legislation during cutting.</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i> during cutting.</li> </ul>                              | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Wildlife;</i></li> <li>● <i>Migratory Birds;</i></li> <li>● <i>Trees; and</i></li> <li>● <i>Pesticides;</i></li> </ul> </li> <li>○ Do not apply fertilizers or other products containing phosphorus or nitrogen within 15m of a watercourse or water body.</li> <li>○ Avoid any application of fertilizer prior to a significant (&gt;20mm) rain event and do not exceed manufacturer recommended application rate.</li> <li>○ Collect turf cuttings and where possible, composted.</li> </ul>  |
| <b>Tree/shrub:</b> <ul style="list-style-type: none"> <li>- safety and maintenance</li> <li>- pruning</li> <li>- trimming</li> <li>- cultivating</li> <li>- edging</li> <li>- mulching</li> <li>- removal</li> <li>- winter protection</li> <li>- etc.</li> </ul>          | <ul style="list-style-type: none"> <li>○ Potential damage to trees or shrubs protected under the <i>Species at Risk Act</i> or provincial legislation.</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>○ Improper disposal of diseased trees or shrubs may spread invasive pests, diseases or pathogens.</li> <li>○ Improper pruning may decrease tree health.</li> </ul> | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Wildlife; and</i></li> <li>● <i>Trees</i></li> </ul> </li> <li>○ Protect and flag any federally or provincially protected tree species (seedling, sapling or tree) to prevent damage or accidental removal. Use highly visible flagging tape (using a pre-determined colour) to clearly identify the tree and remove tape once work is completed. Presence of such species should be reported to the CMO.</li> <li>○ *Obtain approval from the NCC prior to tree pruning, cutting or removal. 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 is first obtained from the appropriate department, ministry or agency. A permit request to the responsible authority must first be obtained by the NCC.</li> <li>○ Appropriately dispose of trees or shrub clippings, branches, or log pieces that show signs of disease or pests 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). Compost healthy material on-site, where possible.</li> <li>○ Limit vegetation cutting (DBH &lt; 10 cm) to vegetation that interferes with the movement of machinery and work.</li> <li>○ Remove any tree or vegetation debris that may fall or enter water bodies without delay and with as little disturbance as possible.</li> <li>○ If working in Gatineau Park, for trees that are removed, cut trees or saplings (non-diseased) in 1-meter lengths and dispersed in the surrounding forest on NCC property.</li> <li>○ *If removing tree stumps, contact the CMO as associated excavation may affect archaeological resources and may require testing and disposal if it is located on a contaminated site.</li> </ul> |

| Maintenance Activity   | Potential Environmental Effects  | Mitigation Measures  |
|--|--|--|
| <b>Annual, bulb, and perennial:</b> <ul style="list-style-type: none"> <li>- mowing of daffodils</li> <li>- planting/removing</li> <li>- watering</li> <li>- fertilizing</li> <li>- cultivating</li> <li>- edging</li> <li>- hang weeding</li> <li>- pinching</li> <li>- rouging</li> <li>- winter protection</li> <li>- plant division</li> <li>- etc.</li> </ul> | <ul style="list-style-type: none"> <li>○ Excess or improper application of fertilizers can cause environmental degradation of water bodies and aquatic life.</li> <li>○ Improper disposal of flowers may spread invasive pests, diseases or pathogens.</li> </ul>  | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Invasive species; and</i></li> <li>• <i>Pesticides</i></li> </ul> </li> <li>○ Do not apply fertilizers or other products containing phosphorus or nitrogen within 15m of a watercourse or water body.</li> <li>○ Dispose appropriately of removed flowers that show signs of disease or pests following all federal, provincial, and municipal regulations in order to minimize spread of the disease or pest. Collect healthy clippings and compost on-site, where possible.</li> <li>○ Plant only non-invasive plant species and preferably native species for ornamental purposes. Consult invasive alien species lists before the introduction of a new ornamental species.</li> </ul>  |
| <b>Non-desirable vegetation / nest / small animal control<sup>6</sup>:</b> <ul style="list-style-type: none"> <li>- inspecting and removing as needed.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Potential damage to species protected under the <i>Species at Risk Act</i> or provincial legislation.</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>○ Pesticides, herbicides, insecticides, or fungicides may kill non-target species.</li> <li>○ Accidental spread of invasive species.</li> </ul> | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Wildlife;</i></li> <li>• <i>Trees;</i></li> <li>• <i>Invasive species; and</i></li> <li>• <i>Pesticides</i></li> </ul> </li> <li>○ Ensure that the small nuisance animal is not a species protected under the <i>Species at Risk Act</i>, the <i>Ontario Endangered Species Act</i>, <i>Quebec Loi sur les espèces menacées ou vulnérables</i> or the <i>Migratory Birds Convention Act</i>.</li> <li>○ *Never disturb or destroy an active bird nest. Generally, if migratory birds nesting in buildings and are a cause for concern, it is recommended that Contractors identify how the birds enter the building. In the case of a nest occupied or formerly used by a species at risk, the contractor must contact the CMO, who will contact an environmental officer from the environmental assessment team for advice, as a <i>Species at Risk Act</i> permit may be required prior to blocking entries to the building, even after birds have left the nest.</li> <li>○ Where the presence or effects of the nuisance animal(s) may create a dangerous situation, contact the CMO who will be advised by the NCC environmental services on the best course of action.</li> <li>○ Seek written authorization from the NCC for any exceptional circumstances requiring application of pesticides, herbicides, insecticides or fungicides. 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 <i>Ontario Pesticide Act</i> and the <i>Quebec Pesticide Act</i>, depending on the province where the activity is taking place. Use only products registered by Agriculture and Agri-Food Canada under the <i>Pest Control Products Act</i>.</li> <li>○</li> </ul> |

<sup>6</sup> Animals causing material damage to the NCC's Assets



| Maintenance Activity   | Potential Environmental Effects  | Mitigation Measures   |
|--|--|---|
| <b>All surfaces:</b> <ul style="list-style-type: none"> <li>- Inspecting</li> <li>- Reporting</li> <li>- Sweeping</li> <li>- removing hazards (e.g. leaves, encroaching vegetation, etc.)</li> <li>- providing emergency services such as accident clean-ups</li> <li>- etc.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Accidental spills may degrade environmental quality and have the potential to spread contamination.</li> </ul>  | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Spills Procedure and Emergency Response</i></li> </ul> </li> <li>○ *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.</li> </ul>  |
| <b>Asphalt surfaces:</b> <ul style="list-style-type: none"> <li>- daily inspection, reporting, and secure any deficiencies <ul style="list-style-type: none"> <li>○ e.g. bumps</li> <li>○ cracking</li> <li>○ culvert and ditch problems</li> <li>○ drainage problems</li> <li>○ erosion</li> <li>○ manhole</li> <li>○ catch basin problems</li> <li>○ etc.</li> </ul> </li> <li>- provide emergency pothole/sinkhole fillings.</li> <li>- Etc.</li> </ul> | <ul style="list-style-type: none"> <li>○ Accidental spills will degrade environmental quality and have the potential to spread contamination.</li> <li>○ 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.</li> </ul> | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Erosion and sediment control;</i></li> <li>● <i>Spills Procedure and Emergency Response;</i></li> <li>● <i>Wildlife; and</i></li> <li>● <i>Water quality, fish and fish habitat;</i></li> </ul> </li> <li>○ Mix asphalt should away from the site or should be prepared on paved surfaces to minimize the effects of a spill. Dispose of excess asphalt off-site at a location that meets all regulatory requirements.</li> </ul>  |
| <b>Concrete/masonry surfaces:</b> <ul style="list-style-type: none"> <li>- Re-setting and correcting of: <ul style="list-style-type: none"> <li>○ Curbs</li> <li>○ Gutters</li> <li>○ concrete steps</li> <li>○ exposed aggregate</li> <li>○ granite sets</li> <li>○ pavers</li> <li>○ interlocks</li> <li>○ flag stones</li> <li>○ cobblestones</li> <li>○ patio stones</li> <li>○ etc.</li> </ul> </li> </ul>  | <ul style="list-style-type: none"> <li>○ Accidental spills will degrade environmental quality and have the potential to spread contamination.</li> <li>○ Damage to heritage resources by affecting character-defining elements</li> </ul>  | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Spills Procedure and Emergency Response;</i></li> <li>● <i>Heritage Resources; and</i></li> <li>● <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> </ul> </li> </ul> </li> <li>○ Use pre-mixed concrete or mix concrete away from the site or on paved surfaces if only small quantities (e.g. for minor repairs) are required. Dispose of excess concrete at an off-site at a location that meets all regulatory requirements.</li> <li>○ Wash concrete trucks and/or other equipment used for mixing concrete at least 30 m away from a watercourse or wetland.</li> <li>○ Collect wash water from concrete trucks and recycle it back into truck for disposal off-site at a location meeting all regulatory requirements.</li> <li>○ When performing gutter repairs or cleaning, ensure that no deleterious substance or debris falls and remains into the gutter system or storm sewer.</li> </ul> |

| Maintenance Activity  | Potential Environmental Effects   | Mitigation Measures   |
|---|---|---|
| <b>Gravel / granular / stone dust / natural / decorative surfaces:</b> <ul style="list-style-type: none"> <li>- Levelling</li> <li>- Grading</li> <li>- etc.</li> </ul>   | <ul style="list-style-type: none"> <li>○ 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.</li> <li>○ The release of particulate matter may adversely affect air quality.</li> <li>○ Damage to species at risk nests as a result of excavated exposed soil</li> </ul>  | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Air emissions;</i></li> <li>• <i>Erosions and sediment control;</i></li> <li>• <i>Wildlife;</i></li> <li>• <i>Water quality, fish and fish habitat; and</i></li> <li>• <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> </ul> </li> </ul> </li> <li>○ If working near water: <ul style="list-style-type: none"> <li>• *Work performed in or near water may require a permit from the provincial (Ontario or Quebec) and/or federal government. Contact the CMO to verify permit requirements with the NCC environmental services.</li> <li>• Do not increase footprint or add no new fill below the high-water mark, unless previously authorized by the NCC.</li> <li>• * Install reptile and amphibian exclusion fencing.</li> </ul> </li> </ul> |
| <b>Wood surfaces (except over waterways):</b> <ul style="list-style-type: none"> <li>- Repairing</li> <li>- Replacing parts of</li> <li>- maintaining structural integrity</li> <li>- sanding</li> <li>- painting</li> <li>- etc.</li> </ul> <p>Note: Wood surfaces over waterways (such as boardwalks, bridges, and docks) treated in separate maintenance activity.</p>           | <ul style="list-style-type: none"> <li>○ Accidental spills will degrade environmental quality and have the potential to spread contamination.</li> </ul>  | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Air emissions; and</i></li> <li>• <i>Spills Procedure and Emergency Response</i></li> </ul> </li> <li>○ Ensure proper storage, management and use of materials to minimize spills.</li> <li>○ Do not use treated wood on surfaces used in the preparation or consumption of food (picnic tables, bird feeders), that could be in direct contact with drinking water or that will be used by people (benches, wooden structures for children).</li> <li>○ Avoid any painting prior to a rain event.</li> </ul>  |
| <b>Lighting and electrical:</b><br>Examples: <ul style="list-style-type: none"> <li>- distribution boxes</li> <li>- electrical panels</li> <li>- aboveground and underground electrical conduits and wiring</li> <li>- light standards</li> <li>- etc.</li> </ul> Activity: <ul style="list-style-type: none"> <li>- inspecting</li> <li>- repairing</li> <li>- securing</li> </ul> | <ul style="list-style-type: none"> <li>○ Accidental erosion of soil that is stored near water may adversely affect fish, fish habitat, and/or water quality.</li> <li>○ Improper disposal of hazardous materials could degrade environmental quality and have an impact on health and safety.</li> <li>○ Damage to tree roots or trees as a result of excavation.</li> <li>○ Damage to archaeological resources as a result of excavation.</li> </ul> | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Erosion and sediment control</i></li> <li>• <i>Spill procedure and emergency response;</i></li> <li>• <i>Water quality, fish and fish habitat</i></li> <li>• <i>Trees;</i></li> <li>• <i>Heritage Resources; and</i></li> <li>• <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> </ul> </li> </ul> </li> <li>○ *</li> <li>○ Ensure proper disposal of hazardous materials (e.g. lamps, ballasts) in accordance with provincial and federal regulations.</li> <li>○</li> </ul>  |

| Maintenance Activity   | Potential Environmental Effects   | Mitigation Measures   |
|--|---|---|
| <ul style="list-style-type: none"> <li>- replacing parts of</li> <li>- replacing entire structure <b>if</b> associated with an existing building or structure</li> <li>- providing line locates</li> <li>- providing immediate repairs</li> <li>- reporting</li> <li>- etc.</li> </ul>   | <ul style="list-style-type: none"> <li>o Damage to heritage resources by affecting character-defining elements</li> <li>o Spread of contaminated groundwater or soils during excavation.</li> <li>o Health and safety effects from the exposure to contaminated soils or hazardous substances.</li> </ul>   |   |
| <p><b>Drainage infrastructure</b><br/>Ex:</p> <ul style="list-style-type: none"> <li>- catch basins</li> <li>- manholes</li> <li>- underground pipes</li> <li>- ditches</li> <li>- side slopes</li> <li>- embankments</li> <li>- drainage channels</li> <li>- tile drains</li> <li>- subsurface drains</li> <li>- tunnels</li> <li>- etc.</li> </ul> <p>Activity:</p> <ul style="list-style-type: none"> <li>- inspecting</li> <li>- reporting</li> <li>- cleaning</li> <li>- erosion / flood control prevention</li> <li>- providing line locates</li> <li>- water level control</li> <li>- removing surface water</li> <li>- replacing parts of</li> <li>- etc.</li> </ul> | <ul style="list-style-type: none"> <li>o Release of sediment and/or chemicals to water</li> <li>o Damage to tree roots or trees as a result of excavation.</li> <li>o Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>o Potential harm to water quality, fish and fish habitat protected under the <i>Species at Risk Act</i> or/and the <i>Fisheries Act</i> and potential harm to other species protected under the <i>Species at Risk Act</i> (such as turtles)</li> <li>o Damage to archaeological resources as a result of excavation.</li> <li>o Spread of contaminated groundwater or soils during excavation.</li> <li>o Health and safety effects from the exposure of contaminated soils.</li> </ul> | <ul style="list-style-type: none"> <li>o See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control</i></li> <li>• <i>Erosion and sediment control</i>;</li> <li>• <i>Spills procedure and emergency response</i>;</li> <li>• <i>Wildlife</i>;</li> <li>• <i>Trees</i>; and</li> <li>• <i>Excavation (if applicable) including</i>: <ul style="list-style-type: none"> <li>o <i>Contaminated soils</i>;</li> <li>o <i>Archaeological resources</i></li> </ul> </li> <li>• *Avoid any disturbance to tree roots or excavation within the dripline of any tree. If excavation within tree dripline must be performed, contact the CMO so that they can verify mitigation measures for potential damage to trees and for the presence of species at risk.</li> </ul> </li> <li>o *Ensure there is no increase in footprint or new fill below the high-water mark.</li> <li>o <b>*Perform work and routine clean-out of drainage channels outside fish spawning period</b> 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<sup>7</sup>. Avoid Maintenance activities during wet and rainy periods.</li> <li>o <b>Respect mitigation measures provided by the Department of Fisheries and Oceans Canada<sup>8</sup> to avoid harm to fish</b></li> <li>o The following measures should be applied during bridge cleaning: <ul style="list-style-type: none"> <li>• Adequately seal drains and open joints before sweeping to prevent material from falling into the watercourse. Sweep bridges thoroughly before washing.</li> </ul> </li> </ul> |

<sup>7</sup> 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 NCC Environmental Officer.

<sup>8</sup> Department of Fisheries and Oceans Canada mitigation measures to avoid causing harm to fish and fish habitat: <http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>

| Maintenance Activity   | Potential Environmental Effects   | Mitigation Measures  |
|--|---|--|
|  |   | <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• When extracting water from a watercourse, ensure the intakes of pumping hoses are equipped with an appropriate device to avoid entraining and impinging fish.</li> <li>• Remove paint or protective coatings in a manner that prevents any paints, paint flakes, primers, blasting abrasives, rust, solvents, degreasers or other waste material from entering the watercourse.</li> <li>• Use measures such as barges or shrouding to trap and prevent blasting abrasives, protective coatings, rust and grease from entering the watercourse.</li> <li>• Contain paint flakes, abrasives, and other waste materials for safe disposal.</li> <li>• 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.</li> <li>• Never clean equipment in the watercourse or where the wash-water can enter the watercourse.</li> <li>• 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.</li> <li>• Limit the removal of material to that which is necessary to protect piers and abutments.</li> <li>• Remove debris by hand or with machinery operating from shore or a floating barge.</li> </ul> |
| <b>Culverts</b> <ul style="list-style-type: none"> <li>- Cleaning; and</li> <li>- Clearing</li> <li>- Lining or re-lining</li> <li>- Etc.</li> </ul> | <ul style="list-style-type: none"> <li>○ Potential harm to water quality, fish and fish habitat protected under the <i>Species at Risk Act</i> or/and the <i>Fisheries Act</i></li> <li>○ Accidental spills will degrade environmental quality</li> </ul> | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control</i></li> <li>• <i>Erosion and sediment control;</i></li> <li>• <i>Spill procedure and emergency response</i></li> <li>• <i>Wildlife; and</i></li> <li>• <i>Invasive species</i></li> </ul> </li> <li>○ *Complete work 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<sup>9</sup>.</li> <li>○ Avoid Maintenance activities during wet and rainy periods.</li> <li>○ 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).</li> <li>○ Do not circulate vehicles (e.g. vacuum truck) beyond the boundaries of the work site and leave equipment, waste or other materials, even temporarily without the prior authorization of the NCC. Use existing trails, roads, or cut lines wherever possible to avoid disturbance to the riparian vegetation.</li> </ul>  |

<sup>9</sup> 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 NCC Environmental Officer.

| Maintenance Activity   | Potential Environmental Effects   | Mitigation Measures  |
|--|---|--|
|  |   | <ul style="list-style-type: none"> <li>○ Never allow machinery to circulate within any watercourse.</li> <li>○ Do not store material or equipment within 30 meters of any water bodies.</li> <li>○ 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.</li> <li>○ 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.</li> <li>○ If water (from the truck) is flushed through the culvert, flush at low volumes (gently) as to prevent sedimentation and impacts downstream.</li> <li>○ Depending on the sensitivity of the downstream fish habitat and amount of sediment in the culvert, consider installing cofferdams and working in the dry prior to vacuuming.</li> <li>○ Ensure that temporary structures and environmental protection devices allow 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.</li> <li>○ Remove all sludge, dirt, sand, rocks, grease, and any other solid or semi-solid material resulting from the cleaning operation at the downstream end of the culvert being cleaned (either manually or with suction). Maintains record of the amount and type of material removed for each culvert in a format approved by the NCC.</li> <li>○ Keep debris in enclosed containers at all times and remove from the site at the end of each day or when the containers are full for appropriate disposal. Under no circumstances will the Contractor be allowed to accumulate debris, etc. on site of work beyond the stated time.</li> </ul> |
| <p><b>Bridges, boardwalks and docks</b></p> <p>Ex:</p> <ul style="list-style-type: none"> <li>- bridges</li> <li>- boardwalks over watercourse or wetland</li> <li>- docks</li> <li>- etc.</li> </ul> <p>Activity:</p> <ul style="list-style-type: none"> <li>- inspecting</li> <li>- reporting</li> <li>- cleaning</li> </ul> | <ul style="list-style-type: none"> <li>○ Potential release of sediment and/or chemicals to water</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>○ Potential harm to water quality, fish and fish habitat protected under the <i>Species at Risk Act</i> or/and the <i>Fisheries Act</i></li> </ul> | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control</i></li> <li>• <i>Erosion and sediment control; and</i></li> <li>• <i>Spills procedure and emergency response</i></li> </ul> </li> <li>• For any works that involve: <ul style="list-style-type: none"> <li>○ An activity referred in subsection 5(1) of the <i>Canadian Navigable Waters Act</i>.</li> <li>○ *An activity referred to in subsection 35(1) or 36(3) of the <i>Fisheries Act</i></li> </ul> </li> <li>• where an authorization from regulatory authorities may be required as well as an Impact Assessment, consult the CMO who will in turn liaise with NCC’s Environmental Assessment group.</li> <li>○ Avoid Maintenance activities during wet and rainy periods.</li> </ul>   |

| Maintenance Activity  | Potential Environmental Effects   | Mitigation Measures  |
|---|---|--|
| <ul style="list-style-type: none"> <li>- re-surfacing (removal of paint, staining or painting)</li> <li>- removing standing water</li> <li>- replacing parts</li> <li>- etc.</li> </ul> |   | <ul style="list-style-type: none"> <li>○ *Avoid maintenance activities on bridges or structures where nesting is likely during the the core migratory bird breeding and nesting season season (April 8<sup>th</sup> to August 28<sup>th</sup>). If work must proceed during this period, install 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.</li> <li>○ Do not use treated wood in or within 15m of water.</li> <li>○ Adequately seal drains and open joints before sweeping to prevent material from falling into the watercourse. Sweep bridges thoroughly before washing.</li> <li>○ 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.</li> <li>○ 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.</li> <li>○ When extracting water from a watercourse, ensure the intakes of pumping hoses are equipped with an appropriate device to avoid entraining and impinging fish.</li> <li>○ Remove paint or protective coatings in a manner that prevents any paints, paint flakes, primers, blasting abrasives, rust, solvents, degreasers or other waste material from entering the watercourse.</li> <li>○ Use measures such as barges or shrouding to trap and prevent blasting abrasives, protective coatings, rust and grease from entering the watercourse.</li> <li>○ Contain paint flakes, abrasives, and other waste materials for safe disposal.</li> <li>○ 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.</li> <li>○ Never clean equipment in the watercourse or where the wash-water can enter the watercourse.</li> <li>○ 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, with the exception of ice build-up removal. 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)<sup>10</sup> and/or provincial authorities.</li> <li>○ Limit the removal of material to that which is necessary to protect piers and abutments.</li> <li>○ Remove debris by hand or with machinery operating from shore or a floating barge.</li> </ul> |
| <b>Plumbing, irrigation, and water</b><br>Examples: <ul style="list-style-type: none"> <li>- decorative fountains</li> <li>- drinking fountains</li> <li>- outdoor faucets</li> </ul>   | <ul style="list-style-type: none"> <li>○ Spread of contaminated groundwater or soils during excavation.</li> <li>○ Accidental spills will degrade environmental quality.</li> </ul> | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Erosion and sediment control;</i></li> <li>● <i>Spill protection and emergency response;</i></li> <li>● <i>Water quality, fish and fish habitat;</i></li> <li>● <i>Heritage resource; and</i></li> <li>● <i>Excavation (if applicable) including:</i></li> </ul> </li> </ul>  |

<sup>10</sup> 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 NCC Environmental Officer.

| Maintenance Activity  | Potential Environmental Effects  | Mitigation Measures   |
|---|--|---|
| <ul style="list-style-type: none"> <li>- underground and aboveground water and sewer lines</li> <li>- pit toilets</li> <li>- washroom facilities</li> <li>- pump systems</li> <li>- irrigation controls lines and heads</li> <li>- control panels</li> <li>- etc.</li> </ul> <p>Activities:</p> <ul style="list-style-type: none"> <li>- inspecting</li> <li>- installing</li> <li>- cleaning</li> <li>- testing</li> <li>- repairing</li> <li>- maintaining</li> <li>- replacing parts of</li> <li>- water testing</li> <li>- providing portable toilets</li> <li>- providing locates</li> <li>- etc.</li> </ul> | <ul style="list-style-type: none"> <li>○ Accidental erosion of soil that is stored near water may adversely affect fish, fish habitat, and/or water quality.</li> <li>○ Damage to archaeological resources as a result of excavation.</li> <li>○ Damage to heritage resources by affecting character-defining elements</li> </ul>  | <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> <li>○ *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.</li> </ul>   |
| <p><b>Fixtures, furniture and buildings</b> (NCC furniture only – fences, stone walls, walls, guardrails, barricades, flags, bollards, garbage receptacles, signs, NCC buildings, kiosks, etc.):</p> <ul style="list-style-type: none"> <li>- Installation</li> <li>- Inspecting</li> <li>- Repairing</li> <li>- Replacing</li> <li>- Cleaning</li> <li>- removing graffiti</li> <li>- painting</li> <li>- staining</li> <li>- displacing furniture</li> <li>- etc.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Accidental spills will degrade environmental quality.</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>○ 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</li> <li>○ Damage to archaeological resources as a result of excavation.</li> <li>○ Damage to heritage resources by affecting character-defining elements</li> </ul> | <ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Designated substances;</i></li> <li>● <i>Hazardous materials</i></li> <li>● <i>Erosion and sediment control;</i></li> <li>● <i>Wildlife;</i></li> <li>● <i>Water quality, fish and fish habitat;</i></li> <li>● <i>Trees;</i></li> <li>● <i>Archaeology resources; and</i></li> <li>● <i>Heritage resources; and</i></li> <li>● <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> </ul> </li> </ul> </li> <li>○ *If any evidence of soil contamination at the site is discovered, notify the NCC immediately.</li> <li>○ Refer to the Spills Procedure and Emergency Response mitigation measures on page 2.</li> <li>○ Cease work if a nest is observed on a structure (e.g. buildings, kiosks, structure roof, etc.).</li> <li>○ Avoid any painting prior to a rain event.</li> </ul> |

| Maintenance Activity   | Potential Environmental Effects   | Mitigation Measures  |
|--|---|--|
|  |   | <ul style="list-style-type: none"> <li>○ Avoid cleaning with products containing phosphates.</li> <li>○ *Consult the CMO from removal or demolition of a building located within 30 meters of a school, hospital or residential building to coordinate preparation of the required Impact Assessment.</li> </ul>   |
| <b>Snow and ice control</b> (roadways and parking lots, walkways, pathways, sidewalks, steps and building access, buildings, utility service access, trails, lanes, fire lanes, open spaces, fields, etc.): <ul style="list-style-type: none"> <li>- providing equipment and supplies</li> <li>- removing</li> <li>- blowing</li> <li>- plowing</li> <li>- shoveling</li> <li>- clearing</li> <li>- cleaning</li> <li>- sweeping</li> <li>- de-icing</li> <li>- stockpiling</li> <li>- transporting</li> <li>- disposing</li> <li>- providing floor control</li> <li>- emergency services</li> <li>- etc.</li> </ul> | <ul style="list-style-type: none"> <li>○ Road salts enter the environment through losses at salt storage and snow disposal sites and through runoff and splash from roadways.</li> <li>○ Salt and sand from de-icing may adversely affect fish, fish habitat, and/or water quality as well as adversely affect vegetation, soil, wildlife and ecosystems.</li> <li>○ Accidental damage to trees.</li> </ul> | <ul style="list-style-type: none"> <li>○ Apply salt at rates that will ensure safety while minimizing amounts of salt applied.</li> <li>○ Where possible (such as on gravel roads and parking lots), apply sand or a mixture of salt and sand, in consultation with the CMO.</li> <li>○ If there is not enough space to store snow at edges of parking lots and pathways, dispose of removed snow at an authorized snow dumping facility.</li> <li>○ Locate snow storage sites such that meltwater that may contain salt is not directed towards waterbodies, water courses or wetlands. Do not dump snow originating from off-site on NCC property.</li> <li>○ Install snow fencing around trees susceptible to damage from snow removal and transport activities.</li> <li>○ Do not blow, plow, store, or shovel snow against trees or shrubs or towards waterbodies or wetlands.</li> </ul> |
| <b>Litter / recycling pick-up and cleaning:</b> <ul style="list-style-type: none"> <li>- collecting litter and debris</li> <li>- emptying waste receptacles</li> <li>- cleaning fixtures and furniture</li> <li>- sweeping and flushing hard surfaces</li> <li>- bridges and tunnels</li> <li>- removing graffiti and posters from all assets</li> <li>- removing vegetative and non-vegetative material in spring</li> <li>- removing spills</li> </ul>   | <ul style="list-style-type: none"> <li>○ Improper disposal of waste will degrade environmental quality.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Dispose of solid waste 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, follow all municipal recycling and composting procedures.</li> <li>○ Do not burn any waste on NCC property, with the following exception: Branches and cuttings may only be burned on NCC property with prior NCC authorization and with appropriate municipal permits for burning.</li> <li>○ If requested, for specific periods, report the total weights for waste, recycling and composting disposal <sup>11</sup>.</li> <li>○ Never sweep or push litter or debris into water courses or wetlands.</li> <li>○ Remove all waste following the completion of works on a site.</li> </ul>   |

<sup>11</sup> Request for these numbers would come from the Sustainable Development Strategy team in the context of meeting NCC Sustainable Development Strategy objectives and would first be discussed with CMO.



| Maintenance Activity  | Potential Environmental Effects  | Mitigation Measures  |
|---|--|--|
| - Etc.  |  |  |
| Activities carried out entirely within the interior of the building | <ul style="list-style-type: none"><li>○ Health and safety effects from the exposure to designated substances or hazardous materials.</li><li>○ Potential damage to species protected under the <i>Species at Risk Act</i> or provincial legislation.</li><li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li></ul> | <ul style="list-style-type: none"><li>○ See General Environmental Guidelines for:<ul style="list-style-type: none"><li>● <i>Designated substances;</i></li><li>● <i>Hazardous materials</i></li><li>● <i>Wildlife; and</i></li><li>● <i>Heritage resources</i></li></ul></li><li>○ *Do not disturb or destroy an active bird nest or bat residence. Prior to undertaking work in buildings where bat or bird nesting is possible:<ul style="list-style-type: none"><li>● Inspect buildings before construction or maintenance activities to ensure that no active bird nests are present and that there are no bats present. If present, advise the CMO who will in turn notify an NCC Environmental Officer. A survey by a qualified biologist for species protected under the <i>Species at Risk Act</i> or the <i>Migratory Birds Convention Act</i> may be required.</li><li>● Work outside of nesting or hibernation periods.</li><li>● If work is planned be done within these periods, implement exclusion measures of potential entries (i.e. netting, boarding) prior to these periods.</li><li>● Train staff to identify Species at Risk that could occur in building. In the event a Species at Risk is encountered in the construction area or inside a structure and does not move from the site and construction activities would result in harm to the animal, stop all activities and notify the NCC (who may consult Environment Canada to discuss mitigation options).</li></ul></li><li>○ Avoid cleaning with products containing phosphates, use environmentally friendly cleaning solutions where possible.</li></ul> |