



# Preapproved Routine Impact Assessment Petroleum Storage Tank Systems

Parks Canada National Office  
*IAA 2019*

Preapproved Routine Impact Assessments (PRIA) are pre-determined environmental management and mitigation measures for a defined class of routine, repetitive projects or activities with well understood and predictable effects. Approved PRIAs are an acceptable Impact Assessment pathway as they fulfill Parks Canada's obligations under the *Impact Assessment Act* (IAA) as a manager of federal lands.

This PRIA applies to the removal, replacement or modification of an above ground petroleum storage tank system for petroleum products or allied petroleum products or its base. It does not include underground storage tank systems or the installation of a new petroleum storage tank system.

**Modification** means an upgrade to the existing storage tank system in the same location that does not alter the purpose or function of the system or increase capacity of the structure it services.

**Replacement** means replacement of an existing storage tank system with a new one equal in size or smaller than the existing system and located in the same area.

**Water body** includes a lake, a canal, a reservoir, an ocean, a river and its tributaries and a wetland, up to the annual high water mark, but does not include sewage or waste treatment lagoon, a mine tailings pond, an artificial irrigation pond, a dugout or a ditch that does not contain fish habitat as defined in subsection 2(1) of the *Fisheries Act*.

**High water mark** is the usual or average level to which a body of water rises at its highest point and remains for a sufficient time so as to leave a mark on the land. (Fisheries and Oceans Canada, 2015.) Upper Controlled Water Elevation (UCWE) is used as definition of high water mark in managed waterways.

## **Scope of Application:**

This PRIA includes:

- Removal, replacement and upgrade of an existing petroleum storage tank system and its base.

## **Conditions and Exceptions:**

This PRIA does not apply under the following exceptions/conditions:

Location:

- When the project results in residual adverse effects to sensitive natural or cultural resources (e.g., nests, dens and roosts, fish spawning areas, cultural resources, riparian areas, wildlife corridors, rare ecotypes, or areas of management concern)
- Project that involve the placement of temporary or permanent fill in a waterbody

Petroleum storage tank system:

- Installation of a new petroleum storage tank system.
- Cutting or removing trees through the use of heavy equipment (e.g. skidders, harvesters or excavators)

General:

- The project permanently alters the characteristics of a water body (e.g., temperature, pH, turbidity, flow, water level, water body bed).
  - This includes, fill placed in a water body or permanently increasing a physical work's footprint below the high water mark; dredging; and construction of a permanent diversion channel.
- The project results in **residual** adverse effects on migratory birds or their nests.
  - Refer to the draft- *Parks Canada Guidance on Reducing Risk to Migratory Birds* and associated draft- *Conservation Measures for Minimizing Impacts to Migratory Birds During the Nesting Period*.
- The project results in **residual** adverse effects on an individual, a residence or the critical habitat of a listed species at risk under the *Species at Risk Act*.
  - Determine if mitigations are needed to ensure no residual adverse effects to species at risk. Such mitigations should be included in the Supplementary Mitigations section.
- The project is likely to require an [approval](#) under the *Canadian Navigable Waters Act* (s. 5(1)). Check if your project is a Major Works in any Navigable Water or Works in Navigable Waters Listed on the [Schedule](#).
- The project is likely to require an [authorization](#) under the *Fisheries Act* (s.35(1) or 36(3)). Check if your projects needs a [review](#).
- The project involves the removal of or causes damage to cultural resources of heritage value, for example, heritage buildings designated by the Federal Heritage Buildings Review Office, archaeological sites, historical and archaeological objects, or cultural landscapes.
- The project involves the removal of or causes damage to paleontological resources.
- The project results in loss or reduction in size of a wetland.
- The project adversely impacts sites of significance to Indigenous peoples or current access and use of areas where hunting, fishing or gathering rights are exercised by Indigenous peoples.

#### **Other Considerations:**

- Supplemental analysis is required if petroleum storage tank system is in a zone susceptible to natural hazards such as a land slide zone, floodplain, or area vulnerable to storm surge and sea level rise or in natural, previously undeveloped areas.
- If contamination is discovered to have spread and the plume may have intersected surface water, wetlands and/or ground water, cultural resources or natural resources of concern.

### **Approved Geographic Area of Application:**

This PRIA may be used within all Parks Canada administered protected heritage places, including national historic sites, canals and communities.

### **Parks Canada Specialists:**

#### **Impact Assessment:**

If there are any questions on how to apply this PRIA, consult a member of the Impact Assessment Team.

#### **Species at Risk:**

If there is any uncertainty regarding potential adverse effects to species at risk, consult a member of the Species Conservation Team.

#### **Environmental Management:**

If there are questions on environmental management issues (e.g., treated wood, contaminated sites, hazardous materials or greening operations), consult a member of the Environmental Management Team.

#### **Cultural Resources:**

If there is any uncertainty regarding potential adverse effects to known or potential cultural resources, consult a member of the Cultural Resource Management Protection Team, or, if applicable, the local Field Unit specialist.

### **Valued Components and Effects Analysis**

#### **Soil/Land Resources**

- Soil compaction and rutting
- Increased sedimentation and erosion
- Contamination from equipment leaks or accidental spills

#### **Air/Noise Quality**

- Temporary decreased ambient air quality from dust and equipment emissions
- Temporary ambient noise disruption
- Temporary increased levels of CO<sub>2</sub> and other pollutants from machinery operation

#### **Water Quality**

- Changes in groundwater flow patterns, recharge and levels
- Adverse modifications to surface drainage patterns
- Reduced water quality and clarity due to increased erosion, sedimentation, transport of debris, point or non-point sources of pollution (e.g., discharge of water, leaks and accidental spills, metal corrosion, contaminated groundwater input, inputs of contaminants from construction activities and from surface runoff)

#### **Wildlife and Vegetation**

- Damage to and/or removal of vegetation
- Introduction of or spread of non-native and invasive plant species
- Wildlife sensory disturbance causing displacement/preferred habitat avoidance
- Wildlife habituation/attraction to artificial food sources

- Damage to nests/disruption of nesting animals

### **Visitor Experience and Safety**

- Reduced quality of visitor experience due to noise and presence of construction equipment
- Reduced accessibility to portions of the site where work is taking place
- Hazard to visitors due to construction activities

### **Cultural Resources**

- Adverse effects on the heritage value or character-defining elements of a cultural resource, including:
  - Impacts to archaeological resources (known or potential) from displacement or destruction, resulting in loss of heritage value

### **Mitigation Measures**

#### **Regulatory Requirements:**

- 1) All replacements, upgrades and removals must be completed by a person approved to do so by the province/territory in which the system or component is located. If no person has been approved in the province/territory where the storage tank system or component is located, the work must be supervised by a professional engineer. A record must be kept that includes the date on which the replacement, upgrade or removal of the storage tank system or component work was completed and that establishes that the work was completed by an approved person or supervised by a professional engineer. Installation records should also include design plans, as-built drawings and specifications of the system that bear the stamp and signature of a professional engineer.
- 2) Replacement systems must be registered in the Federal Identification Registry for Storage Tanks Systems (FIRSTS) database, be clearly labelled with a registration number and have an emergency response plan ready for implementation prior to the first transfer of petroleum or allied petroleum product into the system. The FIRSTS database must also be updated for any changes to the system within 60 days of work completion.
- 3) The following technical and environmental work must comply with applicable federal guidelines/regulations should there be no federal guidelines/regulations then, applicable provincial/territorial regulatory requirements must be followed.
- 4) For further guidance on regulatory requirements on petroleum storage tank systems, please consult existing Parks Canada guidelines and tools on the Environmental Management intranet page and the Environment and Climate Change Canada [website](#).

#### **Pre-Project Planning:**

- 5) Notify designated Parks Canada owners and operators as per FIRSTS prior to work commencing and ensure they are available for onsite consultation before work begins. Consultation with the Environmental Management Team is also advised.
- 6) Work within the vicinity of waterbodies or wetlands may require a site specific Erosion and Sediment Control Plan.
- 7) Clearly identify and avoid sensitive environmental features and habitats in the work area and schedule work to avoid critical wildlife life stages. If useful, complete the Environmental Timing Windows Table.

- 8) Schedule work to avoid wet, windy and rainy periods or very dry periods that may increase erosion and sedimentation
- 9) In consultation with a Parks Canada terrestrial archaeologist, compare excavation plans (including vehicular access routes, proposed staging areas) to local archaeological resource inventories.
- 10) Work with a Cultural Resource Management (CRM) Advisor and CRM specialists (archaeologists, historians, and built heritage advisors) to assess the impact of intervention to cultural resources and identify necessary mitigation measures.
- 11) A Spill Response Plan should be developed prior to work starting.

*Example: Environmental Timing Windows Table (to be deleted or adapted)*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Fish</b>	AVOID INSTREAM WORK					Least risk window for work in and around freshwater, June 15 – Sept 15				AVOID INSTREAM WORK		
<b>Birds</b>	Reduced risk for harm to birds			AVOID VEGETATION REMOVAL Bird Nesting Period: April - Mid August				Reduced risk for harm to birds				
<b>Bats</b>	Bat in Hibernacula				Bats Nursing Pups							Bat in Hibernacula
<b>Turtles</b>	Hibernation		Road Mortality	Nesting -avoid disturbance		Road Mortality		Hatchlings – avoid disturbing	Road Mortality	Hibernation		
<b>Snakes</b>	Avoid disturbance of Hibernacula			Road Mortality		Peak : breeding, live young Mitigate road mortality			Migration Road mortality	Avoid disturbance of Hibernacula		

**Work Site Preparation/Staging/Laydown:**

- 12) People working on the project/activities must review the mitigation measures and any site specific considerations with designated Parks Canada staff before work begins.
- 13) Clearly mark the work site and restricted areas with stakes, biodegradable flagging tape or other means to minimize the disturbance footprint; remove when the project is completed.
- 14) Staging areas, material/equipment drop sites, and parking areas must be identified, including duration of use, within an existing disturbed footprint (e.g., roadway, gravel surface, previously disturbed area with high resiliency) or approved by designated Parks Canada staff.
- 15) Use existing roadways, trails, disturbed areas or other areas as approved by designated Parks Canada staff for site access, travel within the site and construction activities.

**Equipment Operations:**

- 16) Use low pressure or rubber tracked equipment or access matting where feasible to minimize soil compaction and ground disturbance.
- 17) Select equipment appropriate to the nature of work being conducted (e.g., avoid using large scale machinery when hand tools or smaller scale machinery could be used).
- 18) Heavy equipment operating on paved surfaces should be equipped with street pads; damage to paved surfaces must be restored to original conditions.

- 19) Equipment must be properly tuned, clean and free of contaminants, in good operating order, free of leaks (e.g., fuel, oil or grease), and fitted with standard air emission control devices and spark arrestors prior to arrival on site.
- 20) Machinery must be stored, maintained and refuelled on a flat surface, outside the dripline of trees (The area defined by the outermost circumference of a tree canopy where water drips from and onto the ground) and a minimum of 30m from waterbodies, as measured from the high water mark. Increase the buffer zone depending on the level of risk and site-specific conditions.
- 21) Refuelling must take place on an impermeable fuel mat with a berm or within a container. Leaks and spills during refuelling must be cleaned up and contaminated materials must be disposed of appropriately. Fuel must never be dispelled or deposited into the environment or any water body.
- 22) Any required cleaning of tools and equipment should be done off-site. If it must be on-site, it must be in an appropriate area at least 30m from a waterbody.
- 23) Gas generators must be secured to prevent movement during the operation and set up on an impermeable fuel mat with a berm or within a container that can contain 110% of the volume of fuel in the generator.

#### **Wildlife:**

- 24) When possible, conduct work outside critical wildlife timing windows such as the bird nesting period.
- 25) On-site workers must receive any required wildlife awareness training, according to field unit policy.
- 26) On-site workers must be made aware of and subsequently report any incidental sightings of species at risk immediately to designated Parks Canada staff.
- 27) If active nests are discovered, stop work and contact designated Parks Canada staff immediately for direction.
- 28) When possible, conduct activities during daylight hours, avoiding critical foraging times (dusk and dawn). Consult with Parks Canada staff for site-specific advice.
- 29) Never approach or harass wildlife (e.g., feeding, baiting, luring). If wildlife is observed at or near the work site, allow the animal(s) the opportunity to leave the work area.
- 30) Designated Parks Canada staff must be alerted immediately to any potential wildlife conflict (e.g., aggressive behaviour, persistent intrusion), distress or mortality.

#### **Vegetation:**

- 31) Clear minimum area necessary; trees should be removed only if necessary for project completion or visitor/staff safety and vegetation must not be trimmed more than necessary.
- 32) When felling trees, precautions must be taken to minimize damage to surrounding vegetation.
- 33) Retain a 15-30 meter vegetated buffer, from the high-water mark of waterbodies. In sloped areas, buffers should increase in width as the slope increases.
- 34) Removal of riparian vegetation should be kept to a minimum and undertaken only when absolutely required. Ensure the root structure and stability are maintained.
- 35) Protect roots of trees to drip line to prevent disturbance or damage. Avoid traffic, dumping and storage of materials over root zone.

- 36) Where re-vegetation is required, use native plants/soils/seed mix approved by Parks Canada staff.

### **Invasive Alien Species:**

- 37) All construction equipment from outside the Parks Canada protected heritage place must be cleaned and inspected before arrival and following work to minimize risk of introducing or spreading invasive species. Proof that this mitigation was applied may be requested before equipment is permitted into the protected heritage place.
- 38) If invasive species are a serious issue, consider more effective cleaning methods such as pump and high pressure hose or high pressure water unit.
- 39) Work in uninfested sites before moving to infested sites.
- 40) Minimize ground disturbance, vegetation removal and bare soil exposure and stabilize and re-vegetate disturbed areas as soon as possible.

### **Cultural Resources:**

- 41) The designated Parks Canada staff should ensure that on-site workers receive appropriate cultural resource awareness training.
- 42) Avoid known potential cultural resources and archaeological sites.
- 43) Apply additional mitigation measures (in supplementary mitigation section) that may have been previously identified by a Parks Canada archaeologist or cultural resource advisor for the immediate area of work.
- 44) If cultural resources (i.e., structural remains and/or artifact concentrations) are encountered, work must cease in the immediate area, the site secured and the designated Parks Canada staff contacted for further direction.

### **Visitor Experience and Safety:**

- 45) If possible, schedule noisy activities outside peak visitor season or adjust hours of noisy work to minimize disturbance to visitors using the area.
- 46) Close and mark the work site and safety hazards with appropriate signage while active construction, repair or maintenance is underway; consider temporary detours or reroutes as appropriate.
- 47) If closing the area/work site is not possible, maintain a safe working distance between work activities and visitors. If traffic control is required, a flag person should manage traffic through the construction/hazard area.
- 48) Visitor access trails and roads outside the construction area must be free of construction materials, waste, machinery and equipment.

### **Erosion and Sediment Control:**

- 49) Select erosion and sediment control measures that correspond with the nature and duration of the project and install before starting work, especially within 30 meter of a waterbody.
- 50) Regularly inspect and maintain erosion and sediment control structures during all phases of the project and alter measures when necessary.
- 51) Use erosion and sediment control products that reduce potential for wildlife entanglement and are made of 100% biodegradable materials (e.g., jute, sisal or coir fibre) when possible.

Ensure backing materials are also biodegradable. Use of hay or straw in erosion and sediment control must be approved by designated Parks Canada staff.

- 52) Limit duration of soil exposure; phase activities whenever possible and restore disturbed areas as soon as possible.
- 53) Contain and stabilize waste material above the high water mark or top of bank of nearby waterbodies. Cover any stockpiled material with heavy-duty plastic or filter cloth to prevent erosion during inclement weather (e.g., winter conditions, heavy rain).
- 54) Stabilize slopes as appropriate for local site conditions. Possible methods include: armor stones, crib walls or erosion control blankets.
- 55) Reuse excavated material on site, unless there are any indicators of potential contamination
- 56) Maintain effective sediment and erosion control measures until any required re-vegetation of disturbed areas is achieved.
- 57) Remove temporary erosion and sediment control products, especially non-biodegradable materials, when they are no longer required.

#### **Excavation:**

- 58) Excavations must be drained (but not directly into a waterbody), back-filled and compacted as soon as possible. The site must be returned as closely as possible to original condition (e.g., return sod mats and topsoil to the site and re-seed with Parks Canada approved native seed mix as needed). Re-vegetation must be undertaken in consultation with Parks Canada staff after excavations have settled and are level with surrounding landscape.
- 59) Backfill material will be kept free of large rocks and wood material.
- 60) Stockpile excavated soils and fill materials in a location that minimizes the potential for silt transport into water courses from storm water runoff.
- 61) Surface drainage should be diverted around disturbed areas; where this is not possible, unconsolidated material must be protected by erosion control materials such as coco mats, or some other acceptable means.
- 62) Under thawed conditions, backfill material will be compacted prior to topsoil replacement. Topsoil will then be distributed evenly over the excavated area.
- 63) Under frozen ground conditions, material will be sufficiently roached over the excavated site to allow for settlement under thawed conditions. Where practical, topsoil replacement will be postponed until the backfill has thawed, settled and dried out.
- 64) In consultation with Parks Canada staff, re-establish, or make improvements to, original site drainage on completion of the project.
- 65) Where possible, sweep up loose material or debris. Any material thought to pose a risk of contamination to soils, surface water or groundwater should be disposed of appropriately off-site in consultation with the Environmental Management Team.
- 66) Stockpiled material will not be pushed into adjacent vegetation outside of approved work space.

#### **Removal of the Tank and Concrete Foundation:**

- 67) Remove and dispose of all liquids and sludge in the tank in compliance with provincial/territorial guidelines and standards.
- 68) Purge the tank of vapours to less than 10% of the lower flammability limit and check for the presence of vapours with a combustible gas meter.
- 69) Should visual and olfactory evidence and screening for presence of volatile organic compounds suggest soil contamination, contact the designated Parks Canada staff immediately.



- 70) Dispose of tank through certified scrap dealer and landfill in compliance with provincial/territorial guidelines and standards.
- 71) Minimize dust spread during the removal of concrete or gravel base.
- 72) Dispose of concrete in an approved landfill.

**Site Clean-up and Waste Management:**

- 73) All wildlife attractants must be secured (e.g., petroleum products, human food, recyclable drink containers and garbage) in wildlife-proof containers, a secure building or vehicle. When possible, keep food waste separate from construction waste and remove daily.
- 74) Secure all waste materials (e.g., construction waste and materials, excavation, vegetation) above the high water mark of nearby waterbodies to prevent entry.
- 75) Contain wastes and transport to an approved waste landfill site outside the Parks Canada site unless otherwise directed; cover waste loads during transportation.
- 76) All construction materials must be removed from the site on project completion. Burning is not permitted unless approved by Parks Canada.
- 77) Concrete mixing activities must take place over tarps and a minimum of 30m from waterbodies. Fresh, wet, uncured concrete and concrete dust must not come into contact with waterbodies. Secondary containment measures such as collection/drip trays and berms lined with air and water-tight material such as plastic and a layer of sand, and double-lined fuel tanks are required.
- 78) Excess concrete must be disposed of at an appropriate facility outside of the Parks Canada protected heritage place. If excess concrete from pump trucks must be dumped prior to transport outside the protected heritage place, it must be deposited in a location approved by Parks Canada and removed following hardening for disposal at an approved facility.

**Spill Response Plans and Hazardous Material Management:**

- 79) Ensure that all on-site workers receive a briefing about the Spill Response Plan and are aware of the location and use of spill kits and containment devices.
- 80) Follow all applicable regulations and codes for the management and handling of hazardous waste.
- 81) Spill containment equipment must be present on-site. A spill contingency response kit including sorbent material and berms to contain 110% of the largest possible spill related to the work must be available on site at each location of potential spills (sites where equipment is working and at refuelling, lubrication, and repair locations).
- 82) All spills must be contained and cleaned-up as soon as it is possible to safely do so. In the event of a major spill, all other work must stop until the spill has been adequately contained and cleaned up.
- 83) Notify the designated Parks Canada staff and the emergency contact immediately of any spill. In the event of a major spill, call the first contact authority.
- 84) Contaminants must be recovered at the source and disposed of according to applicable laws, policies and regulations. The site will be inspected by Parks Canada staff to ensure completion to expected standards.
- 85) Petrochemical products, paints and chemicals must be used and stored in such a way as to prevent any deleterious substances from entering waterbodies.

- 86) Secure excavated materials to prevent contamination of the surrounding environment, including leaching.
- 87) Conduct field testing to determine the extent of the contamination in compliance with provincial/territorial guidelines and standards.
- 88) Excavate all contaminated soil in compliance with federal guidelines and supplement with provincial/territorial guidelines and standards should federal guidelines be unavailable.
- 89) Store, transport and dispose (outside of the Parks Canada site) of contaminated soil in compliance with federal, provincial/territorial guidelines and standards.

**Supplementary Mitigations:**

- 90) A few supplementary mitigation(s) may be required to ensure all potential impacts are mitigated.

**Approvals**

*Original signed by Julie Tompa*

Dec 13, 2019

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Julia Tompa  
Director, Natural Resource Management  
Branch

\_\_\_\_\_  
Date

*Original signed by Kalvin Mercer*

Dec 09, 2019

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Kalvin Mercer  
Director, Asset Management and Project  
Delivery Branch

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Date

**References:**

Parks Canada. 2015. *National Best Management Practices for Petroleum Storage Tank Systems*.

Parks Canada. 2017. *National Best Management Practices for Common Activities*.

Parks Canada. 2014. Petroleum Storage Tank Systems Guideline.